(19) DANMARK

Patent- og
Varemærkestyrelsen

(10) **DK/EP 3233192 T3**

(12) Oversættelse af
europæisk patentskrift

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(51) Int.Cl.: ***A 61 P 35/00 (2006.01)*** *A 61 K 38/00 (2006.01)* ***A 61 P 31/12 (2006.01)*** *C 07 K 14/005 (2006.01)* ***C 07 K 14/705 (2006.01)*** *C 07 K 14/55 (2006.01)*

(45) Oversættelsen bekendtgjort den: **2021-07-19**

(80) Dato for Den Europæiske Patentmyndigheds
bekendtgørelse om meddelelse af patentet: **2021-04-14**

(86) Europæisk ansøgning nr.: **15870897.4**

(86) Europæisk indleveringsdag: **2015-12-15**

(87) Den europæiske ansøgnings publiceringsdag: **2017-10-25**

(86) International ansøgning nr.: **US2015065872**

(87) Internationalt publikationsnr.: **WO2016100375**

(30) Prioritet: **2014-12-15 US 201462091898 P** **2015-10-20 US 201562243829 P**

(84) Designerede stater: **AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR**

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(54) Benævnelse: **SAMMENSÆTNINGER OG FREMGANGSMÅDER TIL MÅLRETTET CYTOKININDGIVELSE**

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Fortsættes ...

DESCRIPTION

GOVERNMENTAL RIGHTS

[0001] This invention was made with government support under R01 AI073552 and HHSN272200700058C awarded by the NIH/NIAID and R01 HL113931 awarded by the NIH/HLBI. The government has certain rights in the invention.

CROSS REFERENCE TO RELATED APPLICATIONS

[0002] This application claims the benefit of U.S. Provisional Application number 62/243,829, filed October 20, 2015 and U.S. Provisional Application number 62/091,898, filed December 15, 2014.

FIELD OF THE INVENTION

[0003] The present disclosure encompasses compositions and methods for targeted cytokine delivery. Through specific delivery of cytokines, the compositions disclosed herein may improve immunotherapy by limiting side effects associated with immunotherapy.

BACKGROUND OF THE INVENTION

[0004] Systemic administration of high dose interleukin 2 (IL2) is one of the most potent forms of immunotherapy and is currently approved by the FDA for treatment of several malignancies. Efficacy of this treatment depends on activating cytotoxic lymphocytes (CTLs) such as natural killer cells (NK) and $CD8^+$ T lymphocytes ($CD8^+$ CTLs). Clinical trials have demonstrated approximately 15% partial or complete tumor responses, with up to 5% of patients having a durable long-lasting response resembling a cure. Despite these encouraging results in a minority of patients, most do not achieve a benefit or stop IL2 therapy prematurely due to complications such as blood pressure changes and pulmonary or systemic capillary leak. It is thought that the direct action of IL2 on vascular endothelium contributes to the majority of these side effects. The efficacy of IL2 is also limited by preferential activation of $CD4^+Foxp3^+$ regulatory T cells (T_{regs}), which decrease the tumor immune response. For these reasons treatment with high-dose IL2 has fallen out of favor clinically.

[0005] Side effects and deceased efficacy of IL2 therapy occur due to the high affinity trimeric αβγ IL2 receptor (IL2R), which is expressed by vascular endothelial cells and T_{regs} at baseline.

Thus $CD4^+Foxp3^+T_{regs}$ and vascular endothelium are activated at much lower doses of IL2 than NK cells, which express the lower affinity βγ chains of the IL2R at rest. NK cells do express the high affinity α chain of IL2R after activation and depend on this trimeric receptor for peak cytolytic capacity. Mutant forms of IL2 with decreased affinity for IL2Rα have been described and offer a more favorable side effect profile. However, they also result in lower efficacy and decreased therapeutic potential due to decreased CTL activation. Therefore, there is a need in the art for a form of IL2 that could preferentially bind to and activate CTLs without activating T_{regs} and endothelial cells. Such an IL2 derivative might overcome such clinical barriers and result in more efficacious immunotherapy with fewer side effects.

SUMMARY OF THE INVENTION

[0006] In an aspect the disclosure provides, a composition comprising a cytokine linked to a ligand, wherein the ligand is not a corresponding binding partner to the cytokine.

[0007] In another aspect, the disclosure provides a method to deliver a cytokine to a target cell comprising contacting a target cell with a composition comprising a cytokine linked to a ligand. The ligand specifically binds to a receptor on the target cell and the ligand is not a corresponding binding partner to the cytokine.

[0008] In still another aspect, the disclosure provides a method to activate immune cells comprising contacting an immune cell with a composition comprising a proinflammatory cytokine linked to a ligand. The ligand specifically binds to a receptor on the immune cell thereby activating the cell and the ligand is not a corresponding binding partner to the cytokine.

[0009] In still yet another aspect, the disclosure provides a method to treat a tumor comprising identifying a subject with a tumor and administering to the subject a therapeutically effective amount of a composition comprising a proinflammatory cytokine linked to a ligand. The ligand specifically binds to a receptor on a target cell and the ligand is not a corresponding binding partner to the cytokine.

[0010] In a different aspect, the disclosure provides a method to treat a viral infection comprising administering to the subject a therapeutically effective amount of a composition comprising a proinflammatory cytokine linked to a ligand. The ligand specifically binds to a receptor on a target cell and the ligand is not a corresponding binding partner to the cytokine.

[0011] In other aspects, the disclosure provides a chimeric peptide comprising a cytokine peptide and a ligand peptide. The cytokine peptide is not a binding partner of the ligand peptide.

[0012] In certain aspects, the disclosure provides a chimeric peptide comprising a cytokine peptide and a ligand peptide. The ligand peptide binds to an NKG2D receptor.

[0013] In another different aspect, the disclosure provides a nucleic acid molecule comprising a sequence encoding a chimeric peptide of the disclosure.

[0014] In yet another different aspect, the disclosure provides a pharmaceutical composition comprising a chimeric peptide of the disclosure.

[0015] In still yet another different aspect, the disclosure provides a method of treating a subject diagnosed with cancer comprising administering to the subject a pharmaceutical composition of the disclosure.

BRIEF DESCRIPTION OF THE FIGURES

[0016] The application file contains at least one drawing executed in color. Copies of this patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

FIG. 1A, FIG. 1B, FIG. 1C, FIG. 1D, FIG. 1E and **FIG. 1F** depict a diagram, immunoblot and graphs showing the generation and *in vitro* evaluation of OMCP-mutIL-2. **(FIG. 1A)** Schematic structure of OMCP-mutIL-2. **(FIG. 1B)** Molecular weight of OMCP-mutIL-2 compared to mutIL-2 and wild-type IL-2. IL-2, mutIL-2, and OMCP-mutIL-2 were produced in mammalian cells and have higher molecular weights due to glycosylation. The lower migrating band for mutIL-2 corresponds to unglycosylated protein, likely due to lysis of the producing cells. Based on differences in molecular weight all cytokines and construct were administered on a molar basis with 1 µl of 4.4 µM solution defined as 1000 IU equivalents (IUe) herein. This effectively allows for equimolar comparison between IL-2, mutIL-2 and OMCP-mutIL-2 despite different molecular weights. **(FIG. 1C, FIG. 1D)** *In vitro* activation of A/J lymphocyte subsets after 36 hours of culture in 100 IUe of cytokines or OMCP-mutIL-2 construct. **(FIG. 1E, FIG. 1F)** Proliferation of B6 lymphocyte subsets after 5-day culture in 1000 IUe/ml of cytokines or OMCP-mutIL-2 construct. Graphs representative of 3-6 replicates per condition. black=saline; blue=wtIL-2, red=OMCP-mutIL-2, green=mutIL-2.

FIG. 2A, FIG. 2B, FIG. 2C, FIG. 2D, FIG. 2E, FIG. 2F, FIG. 2G, FIG. 2H, FIG. 21, FIG. 2J, FIG. 2K, FIG. 2L, FIG. 2M, FIG. 2N and **FIG. 2O** depict graphs and images showing *in vivo* dosing of IL-2 and IL-2 constructs. Animal mortality **(FIG. 2A)** and morbidity assessed by weight loss **(FIG. 2B)** accumulation of ascites and pleural fluid (representative syringe-**FIG. 2C;** average from all mice in the group-**FIG. 2D)** and **(FIG. 2E)** organ inflammation after administration of wtIL-2. Animal mortality (FIG. 2F, **FIG. 2H, FIG. 2J)** and morbidity as assessed by weight loss **(FIG. 2G, FIG. 21, FIG. 2K)** after administration of high dose wtIL-2 **(FIG. 2F, FIG. 2G),** OMCP-mutIL-2 **(FIG. 2H, FIG. 2I)** and mutIL-2 **(FIG. 2J, FIG. 2K)** in anti-AsialoGM1 (solid line) or rabbit IgG-treated (dotted line) in A/J mice. Weight loss **(FIG. 2L),** ascites (representative syringe-**FIG. 2M;** average from all mice in the group-**FIG. 2N)** and organ inflammation **(FIG. 2O)** in mice treated with 200,000 IUe of either wt IL-2, OMCP-mutIL-2 or mutIL-2. All graphs represent 46 animals per treatment condition. ns p>.05; * p<.05; **

p<.01; *** p<.001; black=saline; blue=wtIL-2, red=OMCP-mutIL-2, green=mutIL-2.

FIG. 3A, FIG. 3B, FIG. 3C, FIG. 3D, FIG. 3E, FIG. 3F, FIG. 3G, FIG. 3H, FIG. 3I and FIG. 3J depict graphs and images showing immunologic changes associated with IL-2 and IL-2 construct administration *in vivo.* **(FIG. 3A, FIG. 3B)** Total splenocyte counts after a five-day course of 200,000 IUe of IL-2 (blue), mutIL-2 (green) and OMCP-mutIL-2 (red). **(FIG. 3C)** NK cell expansion and activation after IL-2, mutIL-2, OMCP-mutIL-2, high dose IL-2, high dose mutIL-2 and IL-2/anti-IL-2 complexes measured by cell counts in the spleen (top) and KLRG1 upregulation (bottom). **(FIG. 3D)** $CD4^{+}Foxp3^{+}T_{reg}$ expansion and activation as measured by cell counts in the spleen (top) and ICOS upregulation (bottom) as well as **(FIG. 3E)** NK/T_{reg} ratio in the spleen. Expansion of splenocytes **(FIG. 3F, FIG. 3G)** and NK cells **(FIG. 3H)** in B6 mice treated with 750,000 IUe of cytokine or construct. T_{reg} expansion and activation **(FIG. 31)** as well as $NK{:}T_{reg}$ ratio **(FIG. 3J)** in the spleen of B6 mice. All graphs represent an average cell count ± SEM from 5-10 mice per group. ns p>.05; * p<.05; ** p<.01; *** p<.001; black=saline; blue=wtIL-2, red=OMCP-mutIL-2, green=mutIL-2.

FIG. 4A, FIG. 4B, FIG. 4C, FIG. 4D and **FIG. 4E** depict graphs and images showing cytokine-mediated tumor immunotherapy. **(FIG. 4A)** *In vivo* cytotoxicity for YAC-1 lymphoma after intravenous injection. **(FIG. 4B, FIG. 4C)** LLC tumor growth after a five-day course of 750,000 IUe of cytokine treatment given as ten doses on days 5-10 post tumor injection. LLC tumor growth in mice depleted on NK cells **(FIG. 4D)** or mutant mice deficient in NKG2D **(FIG. 4E).** Data represents 5-6 mice per group. ns p>.05; * p<.05; ** p<.01; *** p<.001; black=saline; blue=wtIL-2, red=OMCP-mutIL-2, green=mutIL-2.

FIG. 5A, FIG. 5B, FIG. 5C, FIG. 5D, FIG. 5E, FIG. 5F, FIG. 5G, FIG. 5H, FIG. 5I, **FIG. 5J** and **FIG. 5K** depict graphs and a schematic showing IL-2 signaling in NK cells. **(FIG. 5A, FIG. 5B)** Serum levels after injection of $1x10^{6}$ IUe of fluorochromelabeled cytokine or construct i.v. **(FIG. 5C)** Degranulation of NK cells in the presence of cytokines and pentameric OMCP-mediated crosslinking of NKG2D as measured by surface CD107a expression at 1000 IUe/ml. STAT5 phosphorylation in isolated NK cells from A/J **(FIG. 5D)** or B6 mice **(FIG. 5E)** by increasing doses of cytokine. Decay in STAT5 phosphorylation after a 15 minute stimulation by 1000 IUe/ml **(FIG. 5F)** or 100 IUe/ml **(FIG. 5G)** of IL-2 or OMCP-mutIL-2. **(FIG. 5H)** Proposed model of competition between NK cells and stromal cells for IL-2. **(FIG. 5I)** STAT5 phosphorylation of B6 NK cells in the presence of other splenocytes by wtIL-2 and OMCP-mutIL-2. **(FIG. 5J)** STAT5 phosphorylation of wild-type or $NKG2D^{-/-}$ NK cells by wtIL-2 and OMCP-mutIL-2 in the presence of competing splenocytes. **(FIG. 5K)** STAT5 phosphorylation, as measured by fold change over saline-treated controls, of wild-type NK cells in the presence of competing splenocytes treated with saturating concentrations of rat antimouse CD25 (clone 3C7) or rat IgG isotype control.

FIG. 6 depicts graphs showing B6 NK cells are preferentially activated by low dose OMCP-mutIL-2 but this selectivity disappears at the highest doses of cytokine or in the absence of NKG2D expression by NK cells. Left two graphs show B6 NK cells and right two graphs show BK $NKG2D^{-/-}$ NK cells.

FIG. 7A, FIG. 7B and **FIG. 7C** depict imaging showing that inspection of the viscera demonstrates limited food consumption after a 5-day course of 200,000 or 750,000 IUe of wtIL-2. **FIG. 7D** depicts a graph showing that unlike the A/J strain, B6 mice are able to tolerate higher doses of wtIL-2 with only moderate weight loss after 750,000 IUe. Higher doses of 1,500,000 IUe IL-2 resulted in increased weight loss. Doses above this regimen led to animal death.

FIG. 8A depicts a graph showing that A/J mice treated with IL-2/anti-IL-2 antibodies or high dose mutIL-2 lost significant weight during treatment. The majority of IL-2/anti-IL-2 treated mice could not survive the full 200,000 IUe dosing and were sacrificed four days after starting treatment thus receiving 160,000-180,000 IUe. **FIG. 8B** depicts a graph and flow cytometric plot showing NK expansion with ULBP3-mutIL-2 and lower doses of OMCP-mutIL-2 in A/J spleen (top). NK activation, as measured by surface KLRG1 expression on NK cells treated with 200,000 IUe of mutIL-2 (green) or ULBP3-mutIL-2 (purple) in A/J spleen (bottom). **FIG. 8C** and **FIG. 8D** depict graphs showing that unlike the case for NK cells, little expansion of $CD8^+$ or $CD4^+$ $Foxp3^-$ T cells was evident in either IL-2, OMCP-mut-IL-2, or mutIL-2 treated mice. **FIG. 8E** depicts a graph showing weight loss in B6 mice treated with high dose mutIL-2 or IL2/anti-IL-2 antibody complex. **FIG. 8F** and **FIG. 8G** depict graphs showing expansion of $CD8^+$ or $CD4^+Foxp3^-$ T cells in cytokine treated B6 mice. Graphs represent 5-10 mice per group.

FIG. 9A and **FIG. 9B** depict graphs showing *in vitro* lysis of A/J tumors, such as LM2 lung adenocarcinoma **(FIG. 9A)** or YAC-1 lymphoma **(FIG. 9B)** by bulk splenocytes after a five day course of 200,000 IUe of cytokine given over ten doses. **FIG. 9C** shows *in vitro* lysis of LLC lung cancer by B6 splenocytes treated with 750,000 IUe of cytokines or constructs given over five days in ten doses.

FIG. 10A depicts flow cytometric plots showing that plate bound anti-NKG2D antibody (clone A10)-mediated augmentation of NK degranulation with cytokines added at 1000 IUe/ml. **FIG. 10B** depicts a flow cytometric plot showing CD69 levels on NK cells cultured at 100 IUe/ml of OMCP-mut-IL2 or mutIL-2 with pentameric OMCP.

FIG. 11A, FIG. 11B and **FIG. 11C** depict a schematic of the differential IL2 binding and activation *in vivo.* **(FIG. 11A)** Regular wild-type IL2 preferentially binds to cells such as $CD4^+Foxp3^+T_{regs}$ and vascular endothelium, both of which express the high affinity α chain along with the signaling β and γ chains of the IL2 receptor. **(FIG. 11B)** The R38A and F42K mutations in IL2 decrease affinity for the α chain of the IL2 receptor. **(FIG. 11C)** By linking R38A/F42K IL2 to the high affinity NKG2D ligand OMCP delivery and binding of this cytokine to NKG2D-expressing CTLs such as NK cells and activated $CD8^+T$ cells is increased. Width of arrows indicates proposed strength of IL2 binding and/or signaling.

FIG. 12 depicts a schematic of the experimental design of immunotherapy experiments.

FIG. 13 depicts a schematic of the experimental design of vaccination experiments.

FIG. 14A and **FIG. 14B** depict graphs showing lung cancer susceptible and resistant strains of mice. **(FIG. 14A)** AJ and 129 mouse strains are susceptible to lung cancer as evidenced by tumor burden whereas B6 and C3H mouse strains are resistant to lung cancer as evidenced by tumor burden. **(FIG. 14B)** Upon incubation with freshly isolated NK cells from the various mouse strains, B6 and C3H NK cells result in significantly more LM2 lung carcinoma cell lysis than AJ and 129 NK cells.

FIG. 15 depicts a graph showing that in human men, a greater percentage of NK cells appear to produce TNFα in "resistant" patients versus "susceptible" patients.

FIG 16 depicts a graph showing that ex vivo cytokine activation can reverse natural killer cell dysfunction. Mouse NK Cells that did not show significant lysis of cancer cells (NK cells from 129 & AJ strains) were much more effective at lysis when treated with IL-2. NK cells from cancer-resistant strains also showed increase % of specific lysis.

FIG. 17A, FIG. 17B, FIG. 17C, FIG. 17D, FIG. 17E and **FIG. 17F** depict graphs showing binding of fluorescently labeled construct tested *in vitro* at 37 degrees in bulk splenocytes. The construct appears to only bind to NK cells (express NKG2D). Red line is OMCP-IL2 construct. **(FIG. 17A)** DX5+CD3- NK cell; **(FIG. 17B)** CD4+CD3+ T cells; **(FIG. 17C)** CD8+CD3+ T cells; **(FIG. 17D)** CD11C+CD11b- DCs; **(FIG. 17E)** CD11 c-CD11 b+ Macs; **(FIG. 17F)** CD19+CD3- B cells.

FIG. 18 depicts a schematic dosing regimen for IL2 or IL2 constructs.

FIG. 19 depicts a schematic dosing regimen for IL2 or IL2 constructs after irradiation.

FIG. 20A, FIG. 20B and **FIG. 20C** depict images and alignments of the OMCP structure. **(FIG. 20A)** Ribbon diagram of CPXV OMCP. Secondary structure elements are noted, S for beta strands and H for helix. The α1/α2 portions of the platform domain are indicated in cyan and magenta, respectively. **(FIG. 20B)** Ribbon diagram of the α1/α2 domain of MICA (PDB identifier 1HYR), with the α3 domain removed for clarity. Residues that contact NKG2D are colored yellow. **(FIG. 20C)** Structure alignment of OMCP with NKG2DLs. The mature sequences of $OMCP_{BR}$ (CPXV-BR-018; GenBank accession number NP_619807; PDB identifier 4FFE) and $OMCP_{MPX}$ (MPXV-ZAR_1979_005-198; N3R; GenBank accession number AAY97396) are aligned with the ectodomain sequences of MICA (1HYR), MICB (1JE6), ULBP3 (1KCG), and RAE-1β (1JFM). Known NKG2D contact residues for NKG2DLs are indicated in yellow. Asn residues likely to be glycosylated are noted by black boxes in panel C and as black side chains in panels A and B. OMCPbr=SEQ ID NO:13; OMCPmpx=SEQ ID NO:14; MICA=SEQ ID NO:15; MICB=SEQ ID NO:16; ULBP3=SEQ ID NO:17; and RAE-1B=SEQ ID NO:18

FIG. 21 depicts a graph showing OMCP-targeted delivery of IL15. Higher levels of CD25 are evident when IL15 is delivered by OMCP vs naked cytokine alone in equimolar doses.

FIG. 22 depicts a graph showing that the D132R mutation in OMCP significantly decreases its NKG2D binding. NK expansion and activation in the presence of mutIL2, OMCP-mutIL2, and D132ROMCP-mutIL2 was tested. The D132R mutation ameliorated the superiority of natural killer cell activation over cytokine alone.

FIG. 23 depicts various embodiments of the invention. 1. depicts OMCP helix 2 linked to cytokine. 2. depicts pegylation of the composition. 3. depicts a composition comprising engineered glycans. 4. depicts various linker lengths and compositions. 5. depicts an antibody linked to a cytokine. For example a Fab specific NKG2D antibody. 6. depicts a NKG2DL linked to a cytokine. For example, MIC or ULBP. 7 depicts an alternative OMCP linked to a cytokine. For example, $OMCP_{mpx}$ could represent a preferred variant of OMCP, and mutant OMCP could represent either a gain or loss of function for NKG2D binding. 8. depicts re-targeting of the OMCP in a composition. For example, a mutant OMCP may be directed to NKG2A, NKG2C, NKG2E, etc. 9. depicts other viral protein liked to a cytokine. For example, the other viral protein may also bind to receptors on immune cells. 10. depicts OMCP linked to mutant cytokines. It is understood that the OMCP sequence could be from various sources such as cowpox or monkeypox. Also, Fc-chimeras of OMCP and IL2, and variants thereof may be used.

FIG. 24A and **FIG. 24B** depict the structure of OMCP in complex with NKG2D. **(FIG. 24A)** OMCP bound to NKG2D. OMCP is colored magenta and the protomers of NKG2D are colored cyan ("A") and yellow ("B"). $NKG2D^A$ makes contacts primarily with the H2a helix and $NKG2D^B$ with H2b. Mutations introduced to facilitate alternate crystal packing are shown in red. The S193-S194 bond is shown as a ball on each NKG2D protomer. The asparagines of putative hNKG2D glycosylation sites are shown in orange. The asparagine of the confirmed N-glycan site of OMCP is shown green (data not shown) **(FIG. 24B)** View of the interface between OMCP-NKG2D. The α2 domain of OMCP is shown in the front with the α1 domain behind. OMCP and NKG2D are shown with cartoon representations for the main chain, with the side chains of contact residues shown as sticks. Hydrogen bonds and salt bridges are indicated with green dotted lines.

FIG. 25A, FIG. 25B and **FIG. 25C** depicts the interface of OMCP and NKG2D. **(FIG. 25A)** The local environment of the OMCP-NKG2D binding interface surrounding the D132R residue. The D132R mutation ablates OMCP-NKG2D binding. **(FIG. 25B)** A representative experiment for binding of WT and (D132R) OMCP to NKG2D by SPR. 100 nM of OMCP or (D132R) OMCP were injected at 50 µl/min over flowcells containing immobilized biotinylated murine NKG2D. **(FIG. 25C)** Ba/F3 cells transduced with NKG2D, FCRL5, or empty vector were stained with OMCP tetramers (solid line), D132R tetramers (dashed line), or WNV DIII tetramer control (gray histogram). Representative results from three independent experiments.

FIG. 26A, FIG. 26B, FIG. 26C and **FIG. 26D** depict the differences in the β5'-β5 loop (L2) of human and murine NKG2D. **(FIG. 26A, FIG. 26B)** Superimposition of mNKG2D (grey) (PDB ID: 1HQ8) with the structure of OMCP-hNKG2D (yellow and cyan). Core binding residues Y152 (Y168) and Y199 (Y215) are positionally conserved, while core binding residue M184 (I200) is not. **(FIG. 26C)** Surface representation of OMCP (magenta) interacting with the β5'-β5 loop. **(FIG. 26D)** Conservation of M184 and Q185. Only the NKG2D of mice, rats, guinea pigs, and flying foxes (not shown) differ. Conservation score is as computed by the ConSurf server. Human, organgutan, chimpanzee, gibbon, macaque-SEQ ID NO:19; Green monkey-SEQ ID

NO:20; Marmoset-SEQ ID NO:21; Mouse-SEQ ID NO:22; Rat-SEQ ID NO:23; Guinea pig-SEQ ID NO:24; Ground squirrel-SEQ ID NO:25; Deer mouse-SEQ ID NO:26; Naked mole rat-SEQ ID NO:27; Prairie vole-SEQ ID NO:28; European shrew-SEQ ID NO:29; Starnosed mole-SEQ ID NO:30; Chinese hamster-SEQ ID NO:31; Cat-SEQ ID NO:32.

FIG. 27A, FIG. 27B, FIG 27C, FIG. 27D, FIG. 27E, FIG. 27F, FIG. 27G, FIG. 27H and **FIG. 27I** depict a novel NKG2D binding adaptation. Surface representation of NKG2D and surface and cartoon representations of OMCP, MICA and ULBP3. Buried surface areas for NKG2D^A and NKG2D^B are indicated in cyan and yellow, respectively. Buried surface area by NKG2D is indicated for OMCP (magenta), MICA (green), and ULBP3 (orange). The core binding residues of NKG2D and NKG2D-binding elements of NKG2DLs are indicated. NKG2D **(FIG. 27A)** and OMCP **(FIG. 27B, FIG. 27C)** binding interactions. NKG2D **(FIG. 27D)** and MICA **(FIG. 27E, FIG. 27F)** binding interactions. NKG2D **(FIG. 27G)** and ULBP3 **(FIG. 27H, FIG. 27I)** binding interactions. **(FIG. 27J)** Alignment by secondary structure of NKG2DLs (PDB ID: OMCP (4FFE), MICA (1HYR), MICB (1JE6), ULBP3 (1KCG) and RAE-1β (1JSK)). Contact residues are indicated for OMCP (magenta), MICA (green), ULBP3 (orange) and RAE-1β (bold and italics). Secondary structure elements are noted above the sequence (arrow for beta sheets, cylinders for alpha helices). Predicted glycan sites are highlighted in black. OMCPbr=SEQ ID NO:13; OMCPmpx=SEQ ID NO:14; MICA=SEQ ID NO:15; MICB=SEQ ID NO:16; ULBP3=SEQ ID NO:17; and RAE-1B=SEQ ID NO:18

FIG. 28A, FIG. 28B, FIG. 28C, FIG. 28D and **FIG. 28E** depict activation of NK cells by cell-associated OMCP. Model depicting NKG2D interaction with **(FIG. 28A)** host, **(FIG. 28B)** cancer-induced, **(FIG. 28C)** viral, or **(FIG. 28D)** chimeric ligands. Binding interactions that lead to NKG2D-mediated signaling are indicated by DAP10 tyrosine phosphorylation (red filled circles). **(FIG. 28E)** IL-2-activated splenocytes were used as cytotoxic effectors against stably transduced Ba/F3 cell lines. Splenocytes were activated with 200 U/ml of IL-2 for 24 hours. Labeled target cells were co-incubated with activated splenocytes for 4 hours at effector:target ratios of 10:1, 20:1, and 40:1. Killing was measured by incorporation of 7AAD by CFSE-labeled target cells using flow cytometry. Representative data from five independent experiments is shown

FIG. 29A and **FIG. 29B** depict the electron density supporting a *cis* peptide conformation. Stereo view of the β5-β6 loop of hNKG2D. Residues 193-Ala-Ser-Ser-Phe-Lys-197 (SEQ ID NO:33) is displayed for the OMCP-hNKG2D structure (yellow) and the structure of hNKG2D alone (grey). The 2Fo-Fc map for OMCP- hNKG2D is displayed at 2σ.

FIG. 30A and **FIG. 30B** depicts graphs showing survival curves of C57Bl/6J mice following infection with West Nile Virus (WNV). Mice were treated with OMCP-IL2, OMCP(D132R)-IL2, IL2, IL(38R/42A) or PBS after infection with WNV. Infection with OMCP-IL2 and IL2(38R/42A) resulted in survival beyond 21 days in 40% of mice compared to 0 mice following treatment with PBS or OMCP(D132R)-IL2.

FIG. 31A, FIG. 31B, FIG. 31C and **FIG. 31D** depicts flow cytometry data showing that OMCP-Mutant IL2 activates NK and CD8+ T cells. **FIG. 31A** shows that a relatively higher proportion of NK cells was evident in the OMCP-mutant IL2 group. **FIG. 31B** shows that perforin levels were higher in OMCP-mutant IL2 treated NK cells (red) compared to saline (black), IL2 (blue) or mutant IL2 (green) treated ones. **FIG. 31C** shows that similar to NK cells, higher intracellular levels of perforin were evident in CD8+ T cells treated with OMCP-mutant IL2 compared to other conditions. **FIG. 31 D** shows that when gating on CD4+Foxp3+CD45RA- T cells a relatively higher proportion of activated CD25+CD127- regulatory T cells was evident in IL2 treated peripheral blood lymphocyte cultures compared to other conditions.

FIG. 32 depicts a schematic of the various IL18-OMCP constructs. Three versions were made, each having OMCP attached to either WT human IL-18, WT murine IL-18, or mutant human IL-18 (which inhibits its interaction with IL-18BP).

FIG. 33 depicts a flow cytometry plot showing that IL18-OMCP activates NK cells. Peripheral blood lymphocytes were cultured for 48 hours in 4.4 μM of either wild-type IL18 (blue), OMCP-IL18 (red) or saline (black). Activation of CD56+CD3-Natural killer cells, as measured by surface CD69 expression, was superior by OMCP-IL18 compared to wild-type IL18.

DETAILED DESCRIPTION OF THE INVENTION

[0017] The compositions and methods described herein provide for delivery of cytokines to a defined cell via a ligand. The fusion of a cytokine to a ligand which specifically binds to a protein on the target cell creates an "address" for delivery of the cytokine. Specifically, using the invention disclosed herein, IL2 is directly targeted to lymphocytes, such as natural killer (NK) cells and CD8+ cytotoxic T lymphocytes (CTLs), via the orthopoxvirus major histocompatibility complex class I-like protein (OMCP) ligand. However other NKG2D ligands, including but not limited to ULBP1, ULBP2, ULBP3, H60, Rae-1α, Rae-1β, Rae-1δ, Rae-1γ, MICA, MICB, h-HLA-A, could also be used instead of OMCP. Specific delivery of IL2 to lymphocytes will enhance the efficacy of IL2, which could lead to reduced dosages and a significant decrease in associated toxicity. This methodology may be used for other cytokines, including, but not limited to, IL15, IL18 and interferons.

[0018] Specific aspects of the invention are described in detail below.

I. COMPOSITION

[0019] In an aspect, the invention encompasses a composition comprising a cytokine linked to a ligand. The composition may further comprise a linker to connect the cytokine to the ligand. The cytokine, ligand and linker are described in greater detail below. It should be understood that any of the cytokines described in detail below can be linked to any of the ligands described in detail below in the absence or presence of any of the linkers described below. In another aspect, the invention provides a nucleic acid molecule encoding a cytokine, a ligand, and optionally a linker.

(a) <u>cytokine</u>

[0020] As used herein, a "cytokine" is a small protein (~5-20 kDa) that is important in cell signaling. Cytokines are released by cells and affect the behavior of other cells and/or the cells that release the cytokine. Non-limiting examples of cytokines include chemokines, interferons, interleukins, lymphokines, tumor necrosis factor, monokines, and colony stimulating factors. Cytokines may be produced by a broad range of cells including, but not limited to, immune cells such as macrophages, B lymphocytes, T lymphocytes, mast cells and monocytes, endothelial cells, fibroblasts and stromal cells. A cytokine may be produced by more than one type of cell. Cytokines act through receptors and are especially important in the immune system, modulate the balance between humoral and cell-based immune responses, and regulate maturation, growth and responsiveness of cell populations. Cytokines are important in host responses to infection, immune responses, inflammation, trauma, sepsis, cancer and reproduction. A cytokine of the invention may be a naturally occurring cytokine or may be a mutated version of a naturally occurring cytokine. As used herein, "naturally occurring", which may also be referred to as wild-type, includes allelic variances. A mutated version or "mutant" of a naturally occurring cytokine refers to specific mutations that have been made to the naturally occurring sequence to alter the function, activity and/or specificity of the cytokine. In one embodiment, the mutations may enhance the function, activity and/or specificity of the cytokine. In another embodiment, the mutations may decrease the function, activity and/or specificity of the cytokine. The mutation may include deletions or additions of one or more amino acid residues of the cytokine.

[0021] Cytokines may be classified based on structure. For example, cytokines may be classified into four types: the four-α-helix bundle family, the IL1 family, the IL17 family and the cysteine-knot cytokines. Members of the four-α-helix bundle family have three-dimensional structures with four bundles of α-helices. This family is further divided into three sub-families: the IL2 subfamily, the interferon (IFN) subfamily and the IL10 subfamily. The IL2 subfamily is the largest and comprises several non-immunological cytokines including, but not limited to, erythropoietin (EPO) and thrombopoietin (TPO). In certain embodiments, a cytokine of the composition is a cytokine from the four-α-helix bundle family or a mutant thereof. A skilled artisan would be able to determine cytokines within the four-α-helix bundle family. In other embodiments, a cytokine of the composition is an IL2 subfamily cytokine or a mutant thereof. Non-limiting examples of members of the IL2 subfamily include IL2, IL4, IL7, IL9, IL15 and IL21. In a specific embodiment, a cytokine of the composition is IL2 or a mutant thereof. In certain embodiments, a cytokine of the composition is IL15 or a mutant thereof. The sequence information for the full length human IL15 amino acid sequence can be found using, for example, the GenBank accession number CAG46777.1, AAI00962.1 or AAI00963.1. The sequence information for the full length human IL15 mRNA sequence can be found using, for example, the GenBank accession number CR542007.1, KJ891469.1, NM_172175.2, NM_000585.4 or CR541980.1. A skilled artisan will appreciate that IL15 may be found in a variety of species and methods of identifying analogs or homologs of IL15 are known in the art as described in detail below.

[0022] In another embodiment, a cytokine of the invention is an IL1 family cytokine or a mutant thereof. The IL1 family is a group of 11 cytokines, which plays a central role in the regulation of immune and inflammatory responses. Generally, the IL1 family of cytokines are proinflammatory cytokines that regulate and initiate inflammatory responses. Non-limiting examples of IL1 family cytokines include IL1 α, IL1β, IL1Ra, IL18, IL36Ra, IL36α, IL37, IL36β, IL36γ, IL38, and IL33. IL1 family members have a similar gene structure. A skilled artisan would be able to determine cytokines within the IL1 family. In certain embodiments, a cytokine of the composition is IL18 or a mutant thereof. The sequence information for the full length human IL18 amino acid sequence can be found using, for example, the GenBank accession number CAG46771.1. The sequence information for the full length human IL18 mRNA sequence can be found using, for example, the GenBank accession number KR710147.1, CR542001.1, CR541973.1 or KJ897054.1. A skilled artisan will appreciate that IL18 may be found in a variety of species and methods of identifying analogs or homologs of IL18 are known in the art as described in detail below.

[0023] In other embodiments, a cytokine of the composition is an interferon subfamily cytokine or a mutant thereof. Interferons are named for their ability to "interfere" with viral replication by protecting cells from virus infection. IFNs also have other functions: they activate immune cells, such as natural killer cells and macrophages; they increase host defenses by up-regulating antigen presentation by virtue of increasing the expression of major histocompatibility complex (MHC) antigens. Based on the type of receptor through which they signal, human interferons have been classified into three major types: Type I IFN, Type II IFN, and Type III IFN. Type I IFNs bind to a specific cell surface receptor complex known as the IFN-α/β receptor (IFNAR) that consists of IFNAR1 and IFNAR2 chains. Non-limiting examples of type I interferons present in humans are IFN-α, IFN-β, IFN-ε, IFN-κ and IFN-ω. Thus, in certain embodiments, a cytokine of the composition is a Type 1 IFN cytokine or a mutant thereof, including, but not limited to wild-type and mutant forms of IFN-α, IFN-β, IFN-ε, IFN-κ and IFN-ω. Type II IFNs bind to IFNGR that consists of IFNGR1 and IFNGR2 chains. Non-limiting examples of type II interferons present in humans is IFN-γ. Thus, in certain embodiments, a cytokine of the composition is a Type II IFN cytokine or a mutant thereof, including, but not limited to wild-type and mutant forms of IFN-γ. Type III IFNs signal through a receptor complex consisting of IL10R2 (also called CRF2-4) and IFNLR1 (also called CRF2-12). Non-limiting examples of type III interferons include IFN-λ1, IFN-λ2 and IFN-λ3 (also called IL29, IL28A and IL28B respectively). Thus, in certain embodiments, a cytokine of the composition is a Type III IFN cytokine or a mutant thereof, including, but not limited to wild-type and mutant forms of IFN-λ1, IFN-λ2 and IFN-λ3.

[0024] In certain embodiments, a cytokine of the invention is an interleukin or mutant thereof. The majority of interleukins are synthesized by helper CD4 T lymphocytes, as well as through monocytes, macrophages, and endothelial cells. Interleukins may promote the development and differentiation of T and B lymphocytes and hematopoietic cells. Non-limiting examples of interleukins include IL1, IL2, IL3, IL4, IL5, IL6, IL7, IL8 (CXCL8), IL9, IL10, IL11, IL12, IL13, IL14, IL15, IL16, IL17, IL18, IL19, IL20, IL21, IL22, IL23, IL24, IL25, IL26, IL27, IL28, IL29, IL30, IL31, IL32, IL33, IL35, or IL36. Thus, in certain embodiments, a cytokine of the composition is an interleukin or a mutant thereof, including, but not limited to wild-type and mutant forms of IL1, IL2, IL3, IL4, IL5, IL6, IL7, IL8 (CXCL8), IL9, IL10, IL11, IL12, IL13, IL14, IL15, IL16, IL17, IL18, IL19, IL20, IL21, IL22, IL23, IL24, IL25, IL26, IL27, IL28, IL29, IL30, IL31, IL32, IL33, IL35, or IL36. In a specific embodiment, a cytokine of the composition is IL2 or a mutant thereof. IL2 is a lymphokine that induces the proliferation of responsive T cells. In addition, it acts on some B cells, via receptor-specific binding, as a growth factor and antibody production stimulant. The IL2 protein is secreted as a single glycosylated polypeptide, and cleavage of a signal sequence is required for its activity. The structure of IL2 comprises a bundle of 4 helices (termed A-D), flanked by 2 shorter helices and several poorly defined loops. Residues in helix A, and in the loop region between helices A and B, are important for receptor binding. Secondary structure analysis suggests similarity to IL4 and granulocyte-macrophage colony stimulating factor (GMCSF). In a specific embodiment, a cytokine of the composition is IL2 or a variant thereof. A variant may be a truncated or mutated IL2. The sequence information for the full length human IL2 amino acid sequence can be found using, for example, the GenBank accession number AAA59140.1 or AAH70338.1. The sequence information for the full length human IL2 mRNA sequence can be found using, for example, the GenBank accession number BC070338.1 or M22005.1.

[0025] A skilled artisan will appreciate that IL2 may be found in a variety of species. Non-limiting examples include mouse (AAI16874.1), pig (NP_999026.1), cattle (AAQ10670.1), rat (EDM01295.1), rabbit (AAC23838.1), goat (AAQ10671.1), sheep (ABK41601.1), chicken (AAV35056.1), hamster (ERE88380.1), and dog (AAA68969.1). It is appreciated that the present invention is directed to analogs of IL2 in other organisms and is not limited to the human analog. Homologs can be found in other species by methods known in the art. For example, sequence similarity may be determined by conventional algorithms, which typically allow introduction of a small number of gaps in order to achieve the best fit. In particular, "percent identity" of two polypeptides or two nucleic acid sequences is determined using the algorithm of Karlin and Altschul (Proc. Natl. Acad. Sci. USA 87:2264-2268, 1993). Such an algorithm is incorporated into the BLASTN and BLASTX programs of Altschul et al. (J. Mol. Biol. 215:403-410, 1990). BLAST nucleotide searches may be performed with the BLASTN program to obtain nucleotide sequences homologous to a nucleic acid molecule of the invention. Equally, BLAST protein searches may be performed with the BLASTX program to obtain amino acid sequences that are homologous to a polypeptide of the invention. To obtain gapped alignments for comparison purposes, Gapped BLAST is utilized as described in Altschul et al. (Nucleic Acids Res. 25:3389-3402, 1997). When utilizing BLAST and Gapped BLAST programs, the default parameters of the respective programs (e.g., BLASTX and BLASTN) are employed. See www.ncbi.nlm.nih.gov for more details. Generally a homolog will have a least 80, 81, 82, 83, 84, 85, 86, 87, 88, or 89% homology. In another embodiment, the sequence may be at least 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, or 100% homologous to IL2.

[0026] In a specific embodiment, a cytokine of the composition is a wildtype sequence of IL2 such as the sequence set forth in SEQ ID NO:5
(APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRMLTFKFYMPKKATELKHLQCL
EEELKPLEEVLNLAQSKNFHLRPRDLISNINVIVLELKGSETTFMCEYADETATIVEFLNR
WITFCQSIISTLT). In an alternative embodiment, a cytokine is a mutated version of IL2. In an embodiment, a mutation is a mutation that causes IL2 to preferentially bind the receptor IL2βγ. In another embodiment, a mutation is a mutation that alters the function of IL2 such that IL2 has a decreased affinity for the IL2 receptor alpha (IL2Rα). For example, a mutation may be one or more mutations selected from the group consisting of R38A, F42K and/or C125S relative to SEQ ID NO:5. The C125S mutation may be included to reduce protein aggregation. In a specific embodiment, a mutated version of IL2 comprises at least one mutation selected from the group consisting of R38A, F42K and C125S relative to SEQ ID NO:5. In another specific embodiment, a mutated version of IL2 comprises the mutations R38A, F42K and C125S relative to SEQ ID NO:5. In a specific embodiment, a cytokine of the composition is a mutated sequence of IL2 such as the sequence set forth in SEQ ID NO:6
(APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTAMLTKKFYMPKKATELKHLQCL
EEELKPLEEVLNLAQSKNFHLRPRDLISNINVIVLELKGSETTFMCEYADETATIVEFLNR
WITFSQSIISTLT).

[0027] In an alternative aspect, a toxin is substituted for a cytokine. The term "toxin" means the toxic material or product of plants, animals, microorganisms (including, but not limited to, bacteria, viruses, fungi, rickettsiae or protozoa), or infectious substances, or a recombinant or synthesized molecule, whatever their origin and method of production. A toxin may be a small molecule, peptide, or protein that is capable of causing disease on contact with or absorption by body tissues interacting with biological macromolecules such as enzymes or cellular receptors. A toxin may be a "biotoxin" which is used to explicitly identify the toxin as from biological origin. Biotoxins may be further classified into fungal biotoxins, or short mycotoxins, microbial biotoxins, plant biotoxins, short phytotoxins and animal biotoxins. Non-limiting examples of biotoxins include: cyanotoxins, produced by cyanobacteria, such as microcystins, nodularins, anatoxin-a, cylindrospermopsins, lyngbyatoxin-a, saxitoxin, lipopolysaccharides, aplysiatoxins, BMAA; dinotoxins, produced by dinoflagellates, such as saxitoxins and gonyautoxins; necrotoxins produced by, for example, the brown recluse or "fiddle back" spider, most rattlesnakes and vipers, the puff adder, *Streptococcus pyogenes;* neurotoxins, produced by, for example, the black widow spider, most scorpions, the box jellyfish, elapid snakes, the cone snail, the Blue-ringed octopus, venomous fish, frogs, palythoa coral, various different types of algae, cyanobacteria and dinoflagellates, such as botulinum toxin (e.g. Botox), tetanus toxin, tetrodotoxin, chlorotoxin, conotoxin, anatoxin-a, bungarotoxin, caramboxin, curare; myotoxins, found in, for example, snake and lizard venoms; and cytotoxins such as ricin, from castor beans, apitoxin, from honey bees, and T-2 mycotoxin, from certain toxic mushrooms. In certain embodiments, a toxin is a cytotoxin. In an embodiment, a cytotoxin is selected from the group consisting of ricin, apitoxin, and T-2 mycotoxin. In a specific embodiment, a toxin is ricin.

[0028] In certain embodiments, a cytokine or toxin of the invention may be PEGylated for improved systemic half-life and reduced dosage frequency. In an embodiment, PEG may be added to a cytokine or toxin. As such, a composition of the invention may comprise a cytokine or toxin comprising PEG. In an embodiment, PEG may be selected from the group consisting of PEG-10K, PEG-20K and PEG-40K. Methods of conjugating PEG to a protein are standard in the art. For example, see Kolate et al, Journal of Controlled Release 2014; 192(28): 67-81. Still further, a cytokine or toxin of the invention may be modified to remove T cell epitopes. T cell epitopes can be the cause of an immunogenicity issue upon administration of a composition to a subject. Through their presentation to T cells, they activate the process of anti-drug antibody development. Preclinical screening for T cell epitopes may be performed *in silico,* followed by *in vitro* and *in vivo* validation. T cell epitope-mapping tools such as EpiMatrix can be highly accurate predictors of immune response. Deliberate removal of T cell epitopes may reduce immunogenicity. Other means of improving the safety and efficacy of a composition of the invention by reducing their immunogenicity include humanization and PEGylation.

(b) ***ligand***

[0029] As used herein, a "ligand" is a protein that specifically binds to a receptor on a target cell and is not the corresponding binding partner to the cytokine linked to the ligand. A ligand may be from a eukaryote, a prokaryote or a virus. In certain embodiments, a ligand may be from a virus. The phrase "specifically binds" herein means ligands bind to the target protein with an affinity (K_d) in the range of at least 0.1 mM to 1 pM, or in the range of at least 0.1 pM to 200 nM, or in the range of at least 0.1 pM to 10 nM. A dissociation constant (K_d) measures the propensity of a larger object to separate (dissociate) reversibly into smaller components. The dissociation constant is the inverse of the association constant. The dissociation constant may be used to describe the affinity between a ligand (L) and a target protein (P). As such, $K_d = ([P] \times [L]) / [C]$, wherein C is a ligand-target protein complex and wherein [P], [L] and [C] represent molar concentrations of the protein, ligand and complex, respectively. Methods of determining whether a ligand binds to a target protein are known in the art. For instance, see the Rossi and Taylor, Nature Protocols 2011; 6: 365-387.

[0030] A ligand may trigger a signal through its binding to a receptor on a target cell. A receptor is a protein molecule that may be embedded within the plasma membrane surface of a cell that receives chemical signals from outside the cell. When such chemical signals bind to a receptor, they cause some form of cellular/tissue response. In preferred embodiments, a target cell is an immune cell. Accordingly, a ligand of the composition binds to a receptor expressed on immune cells. Non-limiting example of immune cells include macrophages, B lymphocytes, T lymphocytes, mast cells, monocytes, dendritic cells, eosinophils, natural killer cells, basophils, neutrophils. Thus, in certain embodiments, immune cells include, but are not limited to, macrophages, B lymphocytes, T lymphocytes, mast cells, monocytes, dendritic cells, eosinophils, natural killer cells, basophils, neutrophils. In a specific embodiment, an immune cell is a natural killer cell or a T lymphocyte. Non-limiting examples of receptors expressed on immune cells include major histocompatibility complex (MHC; e.g. MHCI, MHCII, and MHCIII), toll-like receptors (TLRs; e.g. TLR1, TLR2, TLR3, TLR4, TLR5, TLR6, TLR7, TLR8, TLR9, TLR10, TLR11, TLR12, and TLR13), CD94/NKG2 family receptor, endothelin receptors, signaling lymphocytic activation molecule (SLAM) family of receptors. Thus, in certain embodiments, a receptor on a target cell includes, but is not limited to, major histocompatibility complex (MHC; e.g. MHCI, MHCII, and MHCIII), toll-like receptors (TLRs; e.g. TLR1, TLR2, TLR3, TLR4, TLR5, TLR6, TLR7, TLR8, TLR9, TLR10, TLR11, TLR12, and TLR13), CD94/NKG2 family receptor, endothelin receptors, signaling lymphocytic activation molecule (SLAM) family of receptors. In a specific embodiment, the receptor on a target cell is a CD94/NKG2 family receptor. In another specific embodiment, a ligand of the composition specifically binds to a receptor expressed on natural killer (NK) cells and CD8+ cytotoxic T lymphocytes (CTLs). In preferred embodiments, a ligand of the composition does not specifically bind to a receptor on vascular endothelial cells or regulatory T cells (T_{regs}).

[0031] A receptor expressed on NK cells and CTLs may be a CD94/NKG2 family receptor or KLRG1. KLRG1 (Killer cell lectin-like receptor subfamily G member 1) is a protein that in humans is encoded by the KLRG1 gene. CD94/NKG2 family receptors are a family of C-type lectin receptors which are expressed predominantly on the surface of NK cells and a subset of CD8+ T-lymphocyte. These receptors stimulate or inhibit cytotoxic activity of NK cells, therefore they are divided into activating and inhibitory receptors according to their function. CD94/NKG2 recognize MHC class I-related glycoproteins. CD94/NKG2 family includes seven members: NKG2A, NKG2B, NKG2C, NKG2D, NKG2E, NKG2F and NKG2H. Thus, in certain embodiments, a ligand of the invention specifically binds to a receptor selected from the group consisting of NKG2A, NKG2B, NKG2C, NKG2D, NKG2E, NKG2F and NKG2H. NKG2 receptors are transmembrane proteins type II which dimerize with CD94 molecule. CD94 contains a short cytoplasmic domain and it is responsible for signal transduction. Therefore NKG2 receptors form disulfide bonded heterodimers. NKG2D represents an exception, it is a homodimer. NKG2A and NKG2B receptors transmit inhibitory signal. NKG2C, NKG2E and NKG2H are activating receptors. NKG2D is activating receptor as well but it couples with adaptor protein DAP10 which carries signaling motif YINM (SEQ ID NO:34). Src or Jak kinases phosphorylate DAP10, which can then associate with p85 subunit of PI(3)K or adaptor molecule Grb2. This signaling triggers actin reorganization (cell polarization) and degranulation. NKG2F receptor function has not been clarified yet.

[0032] In a specific embodiment, a ligand of the composition specifically binds to the NKG2D receptor. NKG2D is an activating receptor found on NK cells and CD8+ T cells (both αβ and γδ). The structure of NKG2D consists of two disulphide-linked type II transmembrane proteins with short intracellular domains incapable of transducing signals. The function of NKG2D on CD8+ T cells is to send co-stimulatory signals to activate them. In an embodiment, a ligand that binds to NKG2D may be an anti-NKG2D antibody. An "anti-NKG2D" includes all antibodies that specifically bind an epitope within NKG2D. The term "antibody' includes the term "monoclonal antibody". "Monoclonal antibody" refers to an antibody that is derived from a single copy or clone, including e.g., any eukaryotic, prokaryotic, or phage clone. Monoclonal antibodies can be produced using e.g., hybridoma techniques well known in the art, as well as recombinant technologies, phage display technologies, synthetic technologies or combinations of such technologies and other technologies readily known in the art. Further by "antibody" is meant a functional monoclonal antibody, or an immunologically effective fragment thereof; such as an Fab, Fab', or F(ab')2 fragment thereof. As long as the protein retains the ability specifically to bind its intended target, it is included within the term "antibody." Also included within the definition "antibody" for example are single chain forms, generally designated Fv, regions, of antibodies with this specificity. These scFvs are comprised of the heavy and light chain variable regions connected by a linker. Methods of making and using scFvs are known in the art. Additionally, included within the definition "antibody" are single-domain antibodies, generally designated sdAb, which is an antibody fragment consisting of a single monomeric variable antibody domain. A sdAb antibody may be derived from camelids (V_HH fragments) or cartilaginous fishes (V_{NAR} fragments). As used herein "humanized antibody" includes an anti-NKG2D antibody that is composed partially or fully of amino acid sequence sequences derived from a human antibody germline by altering the sequence of an antibody having non-human complementarity determining regions ("CDR"). The simplest such alteration may consist simply of substituting the constant region of a human antibody for the murine constant region, thus resulting in a human/murine chimera which may have sufficiently low immunogenicity to be acceptable for pharmaceutical use. Preferably, however, the variable region of the antibody and even the CDR is also humanized by techniques that are by now well known in the art. The framework regions of the variable regions are substituted by the corresponding human framework regions leaving the non-human CDR substantially intact, or even replacing the CDR with sequences derived from a human genome. CDRs may also be randomly mutated such that binding activity and affinity for NKG2D is maintained or enhanced in the context of fully human germline framework regions or framework regions that are substantially human. In certain embodiments, an anti-NKG2D antibody is a Fab, Fab', or F(ab')2 fragment.

[0033] In another embodiment, ligands that bind to NKG2D share an MHC class I-related α1α2 superdomain that constitutes the common site for interaction with NKG2D. Non-limiting examples of ligands that bind to NKG2D include MHC class I-related glycoproteins such as MIC family proteins (i.e., MICA, MICB), UL16-binding family proteins (i.e., ULBP1, ULBP2, ULPB3, ULBP4, ULBP5, ULBP6), retinoid acid early induce gene 1 (Rae1)-like proteins (i.e., Rae1α, Rae1β, Rae1γ, Rae1δ, Rae1ε), members of the H60 protein family (i.e., H60a, H60b, H60c), h-HLA-A, as well as Mult1 in mice and orthopoxvirus major histocompatibility complex class I-like protein (OMCP). In certain embodiments, a ligand is a MHC class-I-related glycoprotein. In other embodiments, a ligand of the invention is selected from the group consisting of MICA, MICB, ULBP1, ULBP2, ULBP3, ULBP4, ULBP5, ULBP6, Rae1α, Rae1β, Rae1γ, Rae1δ, Rae1ε, H60a, H60b, H60c, h-HLA-A, Mult1 and OMCP. In an embodiment, a ligand is a UL16-binding family protein or a MIC family protein. In a specific embodiment, a ligand is selected from the group consisting of ULBP1, ULBP2, ULBP3, ULBP4, ULBP5, and ULBP6. In another specific embodiment, a ligand is ULBP3. In a specific embodiment, a ligand is orthopoxvirus major histocompatibility complex class I-like protein (OMCP) or a variant thereof. A variant may be a truncated or mutated OMCP that has about the same binding affinity of the full length OMCP. In an embodiment, a variant may be a truncated or mutated OMCP that has a slightly lower binding affinity relative to the binding affinity of the full length OMCP. In another embodiment, a variant is a truncated or mutated OMCP that has a slightly higher binding affinity relative to the binding affinity of the full length OMCP. Methods to determine binding affinity of a ligand to target protein are known in the art and described above. OMCP specifically binds to NKG2D with a binding affinity of about 0.1 to about 5 nM. For example, OMCP specially binds to human NKG2D with a binding affinity of about 0.2 nM and mouse NKG2D with a binding affinity of about 3 nM. In a preferred embodiment, OMCP or a variant thereof binds to human NKG2D with a binding affinity of about 1000 nM to about 0.1 nM. In certain embodiments, OMCP or a variant thereof binds to human NKG2D with a binding affinity of about 100 nM to about 0.1 nM, about 10 nM to about 0.1 nM, or about 1 nM to about 0.1 nM. In other embodiments, OMCP or a variant thereof binds to human NKG2D with a binding affinity of about 1000 nM to about 1 nM, or about 1000 nM to about 10 nM, or about 1000 nM to about 100 nM. In still other embodiments, OMCP or a variant thereof binds to human NKG2D with a binding affinity of about 100 nM to about 1 nM, or about 100 nM to 10 nM. For example, OMCP or a variant thereof binds to human NKG2D with a binding affinity of about 1000 nM, about 500 nM, about 100 nM, about 50 nM, about 10 nM, about 9 nM, about 8 nM, about 7 nM, about 6 nM about 5 nM, about 4 nM, about 3 nM, about 2 nM, about 1 nM, about 0.9 nM, about 0.8 nM, about 0.7 nM, about 0.6 nM, about 0.5 nM, about 0.4 nM, about 0.3 nM, about 0.2 nM or about 0.1 nM. In another embodiment, a variant is a truncated or mutated OMCP that has binding affinity for one or more NKG2 family receptors other than NKG2D. For example, a variant is a truncated or mutated OMCP that has binding affinity for one or more NKG2 family receptors selected from the group consisting of NKG2A, NKG2B, NKG2C, NKG2E, NKG2F and NKG2H. Mutations to OMCP may be rationally selected via structure-based knowledge or mutations to OMCP may be identified via selection-based mutagenesis. In certain embodiments, mutations may be rationally selected to occur in the OMCP-NKG2D interface to either enhance or reduce binding affinity. Amino acids involved in binding at the OMCP-NKG2D interface are described in the Examples.

[0034] The structure of OMCP consists of an MHCI-like α1/α2 platform domain **(FIG. 20A).** The platform domain of OMCP has been trimmed to have only a six-stranded beta sheet with shorter flanking helices. The helix of the OMCP α1 domain (H1) is continuous, while the helix of the α2 domain is broken into two regions (H2a and H2b). The helices flank a six-stranded beta sheet and together form the characteristic platform that defines MHC proteins. Like other NKG2DLs **(FIG. 20B),** the alpha helices of OMCP are close together and thus have no groove for binding peptides or other ligands like antigen-presenting MHC platform domains. OMCP contains one disulfide bond between S5 and H2b, and this disulfide bond is conserved in most NKG2DLs **(FIG. 20C).** In certain embodiments, a ligand of the invention comprises one or more of the α helices of a MHC class I-related glycoprotein. In other embodiments, a ligand of the invention consists of one or more of the α helices of a MHC class I-related glycoprotein. More specifically, a ligand of the invention comprises the α1 domain (H1), α2 domain (H2), H2a, H2b, or combinations thereof of a MHC class I-related glycoprotein. Or, a ligand of the invention consists of the α1 domain (H1), α2 domain (H2), H2a, H2b, or combinations thereof of a MHC class I-related glycoprotein. In a specific embodiment, a ligand of the invention comprises the α2 domain (H2) of a MHC class I-related glycoprotein. In another specific embodiment, a ligand of the invention consists of the α2 domain (H2) of a MHC class I-related glycoprotein. A skilled artisan would be able to determine the location of the α helices in other

MHC class I-related glycoproteins, for example, using sequence alignment (see **FIG. 20C,** which is reproduced from Lazear et al. J Virol 2013; 87(2): 840-850, which is hereby incorporated by reference in its entirety). In an embodiment, a ligand of the invention comprises one or more of the α helices of OMCP. In another embodiment, a ligand of the invention comprises the α1 domain (H1), α2 domain (H2), H2a, H2b, or combinations thereof of OMCP. In still another embodiment, a ligand of the invention comprises the α2 domain (H2) of OMCP. In a specific embodiment, a ligand of the invention consists of one or more of the α helices of OMCP. In another specific embodiment, a ligand of the invention consists of the α1 domain (H1), α2 domain (H2), H2a, H2b, or combinations thereof of OMCP. In still another specific embodiment, a ligand of the invention consists of the α2 domain (H2) of OMCP.

[0035] The sequence information for the full length OMCP amino acid sequence can be found using, for example, the GenBank accession number 4FFE_Z, 4FFE_Y or 4FFE_X. A skilled artisan will appreciate that homologs of OMCP may be found in other species or viruses. For example, see Lefkowitz et al, Nucleic Acids Res 2005; 33: D311-316, which describes eighteen OMCP variants between cowpox and monkeypox virus strains. In an embodiment, OMCP is from an orthopoxvirus. In a specific embodiment, OMCP is from a cowpox virus or a monkeypox virus. In another specific embodiment, OMCP is from the Brighton Red strain of cowpoxvirus. Homologs can be found in other species by methods known in the art. For example, sequence similarity may be determined by conventional algorithms, which typically allow introduction of a small number of gaps in order to achieve the best fit. In particular, "percent identity" of two polypeptides or two nucleic acid sequences is determined using the algorithm of Karlin and Altschul (Proc. Natl. Acad. Sci. USA 87:2264-2268, 1993). Such an algorithm is incorporated into the BLASTN and BLASTX programs of Altschul et al. (J. Mol. Biol. 215:403-410, 1990). BLAST nucleotide searches may be performed with the BLASTN program to obtain nucleotide sequences homologous to a nucleic acid molecule of the invention. Equally, BLAST protein searches may be performed with the BLASTX program to obtain amino acid sequences that are homologous to a polypeptide of the invention. To obtain gapped alignments for comparison purposes, Gapped BLAST is utilized as described in Altschul et al. (Nucleic Acids Res. 25:3389-3402, 1997). When utilizing BLAST and Gapped BLAST programs, the default parameters of the respective programs (e.g., BLASTX and BLASTN) are employed. See www.ncbi.nlm.nih.gov for more details. Generally a homolog will have a least 80, 81, 82, 83, 84, 85, 86, 87, 88, or 89% homology. In another embodiment, the sequence may be at least 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, or 100% homologous to OMCP.

[0036] A skilled artisan will appreciate that structural homologs of OMCP may be found in other species or viruses. A structural homolog may be a protein that is structurally related but the sequence is a distal homolog. For example, OMCP has low sequence identity for endogenous NKG2D ligands however it was discovered that OMCP would bind to NKG2D based on structural homology. Structural homologs can be found in other species by methods known in the art. For example, protein structure prediction may be determined by various databases, such as Phyre and Phyre2. Such databases generate reliable protein models that may be used to determine structural homologs. The main results table in Phyre2 provides confidence estimates, images and links to the three-dimensional predicted models and information derived from either Structural Classification of Proteins database (SCOP) or the Protein Data Bank (PDB) depending on the source of the detected template. For each match a link takes the user to a detailed view of the alignment between the user sequence and the sequence of known three-dimensional structure. See www.sbg.bio.ic.ac.uk/phyre2/ for more details. Generally, a structural homolog will have a least 50, 51, 52, 53, 54, 55, 56, 57, 58, or 59% confidence with OMCP. In an embodiment, a structural homolog will have a least 60, 61, 62, 63, 64, 65, 66, 67, 68, or 69% confidence with OMCP. In another embodiment, a structural homolog will have a least 70, 71, 72, 73, 74, 75, 76, 77, 78, or 79% confidence with OMCP. In still another embodiment, a structural homolog will have a least 80, 81, 82, 83, 64, 85, 86, 87, 88, or 89% confidence with OMCP. In still yet another embodiment, a structural homolog may have at least 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, or 100% confidence with OMCP. The structural information for OMCP-human NKG2D may be found using the PDB ID: 4PDC.

[0037] In a specific embodiment, a ligand of the composition is a sequence of OMCP such as the sequence set forth in SEQ ID NO:7 (HKLAFNFNLEINGSDTHSTVDVYLDDSQIITFDGKDIRPTIPFMIGDEIFLPFYKNVFSEFFSLFRRVPTSTPYEDLTYFYECDYTDNKSTFDQFYLYNGEEYTVKTQEATNKNMWLTTSEFRLKKWFDGEDCIMHLRSLVRKMEDSKRNT). In an embodiment, a ligand of the composition is a sequence of OMCP comprising at least 80% identity to SEQ ID NO:7. For example, the ligand may have about 80%, about 81%, about 82%, about 83%, about 84%, about 85%, about 86%, about 87%, about 88%, about 89%, about 90%, about 91%, about 92%, about 93%, about 94%, about 95%, about 96%, about 97%, about 98%, about 99%, or about 100% identity to SEQ ID NO:7.

[0038] In another specific embodiment, a ligand of the composition is a sequence of OMCP such as the sequence set forth in SEQ ID NO:13 (GHKLAFNFNLEINGSDTHSTVDVYLDDSQIITFDGKDIRPTIPFMIGDEIFLPFYKNVFSEFFSLFRRVPTSTPYEDLTYFYECDYTDNKSTFDQFYLYNGEEYTVKTQEATNKNMWLTTSEFRLKKWFDGEDCIMHLRSLVRKMEDSKR). In an embodiment, a ligand of the composition is a sequence of OMCP comprising at least 80% identity to SEQ ID NO:13. For example, the ligand may have about 80%, about 81%, about 82%, about 83%, about 84%, about 85%, about 86%, about 87%, about 88%, about 89%, about 90%, about 91%, about 92%, about 93%, about 94%, about 95%, about 96%, about 97%, about 98%, about 99%, or about 100% identity to SEQ ID NO:13.

[0039] In still another specific embodiment, a ligand of the composition is a sequence of OMCP such as the sequence set forth in SEQ ID NO:14 (HKLVHYFNLKINGSDITNTADILLDNYPIMTFDGKDIYPSIAFMVGNKLFLDLYKNIFVEFFRLFRVSVSSQYEELEYYYSCDYTNNRPTIKQHYFYNGEEYTEIDRSKKATNKNSWLITSGFRLQKWFDSEDCIIYLRSLVRRMEDSNK). In an embodiment, a ligand of the composition is a sequence of OMCP comprising at least 80% identity to SEQ ID NO:14. For example, the ligand may have about 80%, about 81%, about 82%, about 83%, about 84%, about 85%, about 86%, about 87%, about 88%, about 89%, about 90%, about 91%, about 92%, about 93%, about 94%, about 95%, about 96%, about 97%, about 98%, about 99%, or about 100% identity to SEQ ID NO:14.

[0040] In an alternative aspect, a receptor expressed on immune cells may be PD1. PD1, also known as programmed cell death protein 1 and CD279 (cluster of differentiation 279), is a protein that in humans is encoded by the PDCD1 gene. PD1 is a cell surface receptor that belongs to the immunoglobulin superfamily and is expressed on T cells and pro-B cells. PD1 binds two ligands, PDL1 and PDL2. PD1, functioning as an immune checkpoint, plays an important role in down regulating the immune system by preventing the activation of T-cells. In certain embodiments, a ligand of the composition specifically binds to PD1. In an embodiment, a ligand that specifically binds to PD1 may be an anti-PD1 antibody. An "anti-PD1" includes all antibodies that specifically bind an epitope within PD1. The term "antibody" is described above. In another embodiment, a ligand that specifically binds to PD1 may be PDL1. PDL1 (programmed death-ligand 1also known as cluster of differentiation 274 (CD274) or B7 homolog 1 (B7-H1), is a protein that in humans is encoded by the CD274 gene. PDL1 binds to its receptor, PD1, found on activated T cells, B cells, and myeloid cells, to modulate activation or inhibition. The affinity between PDL1 and PD1, as defined by the dissociation constant K_d, is 770nM.

[0041] In another aspect, a ligand of the composition may be Glucocorticoid-induced TNFR-related (GITR) ligand (GITRL). GITR activation by GITRL influences the activity of effector and regulatory T cells, thus participating in the development of immune response against tumors and infectious agents, as well as in autoimmune and inflammatory diseases. GITR triggering stimulates T effector activity and inhibits Treg activity. GITR inhibition may ameliorate autoimmune/inflammatory diseases whereas GITR activation may treat viral, bacterial and parasitic infections, as well as boost immune responses against tumors. GITRL is a type II transmembrane protein expressed at high levels on antigen presenting cells (APC) and endothelial cells.

[0042] In certain embodiments, a ligand of the invention is modified for improved systemic half-life and reduced dosage frequency. In an embodiment, N-glycans may be added to a ligand. While the biological function is typically determined by the protein component, carbohydrate can play a role in molecular stability, solubility, *in vivo* activity, serum half-life, and immunogenicity. The sialic acid component of carbohydrate in particular, can extend the serum half-life of protein therapeutics. Accordingly, new N-linked glycosylation consensus sequences may be introduced into desirable positions in the peptide backbone to generate proteins with increased sialic acid containing carbohydrate, thereby increasing *in vivo* activity due to a longer serum half-life. In another embodiment, PEG may be added to a ligand. Methods of conjugating PEG to a protein are standard in the art. For example, see Kolate et al, Journal of Controlled Release 2014; 192(28): 67-81. In an embodiment, a composition of the invention may comprise a ligand comprising PEG and/or one or more N-glycans. In an embodiment, PEG is selected from the group consisting of PEG-10K, PEG-20K and PEG-40K. Still further, a ligand of the invention may be modified to remove T cell epitopes. T cell epitopes can be the cause of an immunogenicity issue upon administration of a composition to a subject. Through their presentation to T cells, they activate the process of anti-drug antibody development. Preclinical screening for T cell epitopes may be performed *in silico,* followed by *in vitro* and *in vivo* validation. T cell epitope-mapping tools such as EpiMatrix can be highly accurate predictors of immune response. Deliberate removal of T cell epitopes may reduce immunogenicity. Other means of improving the safety and efficacy of a composition of the invention by reducing their immunogenicity include humanization and PEGylation.

(c) linker

[0043] In an aspect, a composition of the invention further comprises a linker. The linker may be used to connect the cytokine to the ligand. It is to be understood that linking the cytokine to the ligand will not adversely affect the function of the cytokine or the ligand. Suitable linkers include amino acid chains and alkyl chains functionalized with reactive groups for coupling to both the cytokine and the ligand or combinations thereof.

[0044] In an embodiment, the linker may include amino acid side chains, referred to as a peptide linker. Amino acid residue linkers are usually at least one residue and can be 50 or more residues, but alone do not specifically bind to the target protein. In an embodiment, a linker may be about 1 to about 10 amino acids. In another embodiment, a linker may be about 10 to about 20 amino acids. In still another embodiment, a linker may be about 20 to about 30 amino acids. In still yet another embodiment, a linker may be about 30 to about 40 amino acids. In different embodiments, a linker may be about 40 to about 50 amino acids. In other embodiments, a linker may be more than 50 amino acids. For instance, a linker may be 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49 or 50 amino acids. In a specific embodiment, a linker is about 20 to about 30 amino acids. In another specific embodiment, a linker is about 26 amino acids.

[0045] Any amino acid residue may be used for the linker provided the linker does not specifically bind to the target protein. Typical amino acid residues used for linking are glycine, serine, alanine, leucine, tyrosine, cysteine, lysine, glutamic and aspartic acid, or the like. For example, a linker may be $(AAS)_n$, $(AAAL)_n$, $(G_nS)_n$ or $(G_2S)_n$, wherein A is alanine, S is serine, L is leucine, and G is glycine and wherein n is an integer from 1-20, or 1-10, or 3-10. Accordingly, n may be 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 or 20. Thus, in certain embodiments, a linker includes, but is not limited to, $(AAS)_n$, $(AAAL)_n$, $(G_nS)_n$ or $(G_2S)_n$, wherein A is alanine, S is serine, L is leucine, and G is glycine and wherein n is an integer from 1-20, or 1-10, or 3-10. A linker may comprise one or more epitope tags. For instance, a linker may comprise 1, 2, 3, 4, 5, 6, 7 or 8 epitope tags. In a specific embodiment, a linker comprises 2 epitope tags. Non-limiting examples of epitope tags include FLAG tag (DYKDDDK epitope (SEQ ID NO:9)), HA tag (YPYDVPDYA epitope (SEQ ID NO:10)), His tag (6x-His or 8x-His), Myc tag (EQKLISEEDL epitope (SEQ ID NO:11)) and V5 tag (GKPIPNPLLGLDST epitope (SEQ ID NO:12)). In an embodiment, a linker may comprise at least one tag selected from the group consisting of a FLAG tag and a His tag. In a specific embodiment, a linker comprises a FLAG tag and a His tag. In another specific embodiment, a linker comprises the sequence set forth in SEQ ID NO:8 (GSSGSSDYKDDDDKHHHHHHHHGSSGSS).

[0046] In another embodiment, an alkyl chain linking group may be coupled to the cytokine by reacting the terminal amino group or the terminal carboxyl group with a functional group on the alkyl chain, such as a carboxyl group or an activated ester. Subsequently the ligand is attached to the alkyl chain to complete the formation of the complex by reacting a second functional group on the alkyl chain with an appropriate group on the ligand. The second functional group on the alkyl chain is selected from substituents that are reactive with a functional group on the ligand while not being reactive with the cytokine. For example, when the ligand incorporates a functional group, such as a carboxyl group or an activated ester, the second functional group of the alkyl chain linking group can be an amino group or vice versa. It will be appreciated that formation of the conjugate may require protection and deprotection of the functional groups present in order to avoid formation of undesired products. Protection and deprotection are accomplished using protecting groups, reagents, and protocols common in the art of organic synthesis. Particularly, protection and deprotection techniques employed in solid phase peptide synthesis may be used. It will be appreciated that linking groups may alternatively be coupled first to the ligand and then to the cytokine.

[0047] An alternative chemical linking group to an alkyl chain is polyethylene glycol (PEG), which is functionalized in the same manner as the alkyl chain described above. Such a linker may be referred to as a heterobifunctional PEG linker or a homobifunctional PEG linker. Non-limiting examples of heterobifunctional PEG linkers include: O-(2-Aminoethyl)-O'-[2-(biotinylamino)ethyl]octaethylene glycol; O-(2-Aminoethyl)-O'-(2-carboxyethyl)polyethylene glycol hydrochloride M_p 3000; O-(2-Aminoethyl)-O'-(2-carboxyethyl)polyethylene glycol 5,000 hydrochloride M_p 5,000; O-(2-Aminoethyl)polyethylene glycol 3,000 Mp 3,000; O-(2-Aminoethyl)-O'-(2-(succinylamino)ethyl)polyethylene glycol hydrochloride M_p 10,000; O-(2-Azidoethyl)heptaethylene glycol; O-[2-(Biotinylamino)ethyl]-O'-(2-carboxyethyl)undecaethylene glycol; 21-[D(+)-Biotinylamino]-4,7,10,13,16,19-hexaoxaheneicosanoic acid; O-(2-Carboxyethyl)-O'-[2-(Fmoc-amino)-ethyl]heptacosaethylene glycol; O-(2-Carboxyethyl)-O'-(2-mercaptoethyl)heptaethylene glycol; O-(3-Carboxypropyl)-O'-[2-(3-mercaptopropionylamino)ethyl]-polyethylene glycol M_w 3000; O-(3-Carboxypropyl)-O'-[2-(3-mercaptopropionylamino)ethyl]-polyethylene glycol M_w 5000; O-[N-(3-Maleimidopropionyl)aminoethyl]-O'-[3-(N-succinimidyloxy)-3-oxopropyl]heptacosaethylene glycol; and O-[2-(3-Tritylthiopropionylamino)ethyl]polyethylene glycol M_p 3,000. Non-limiting examples of homobifunctional PEG linkers include: MAL-PEG-MAL (Bifunctional Maleimide PEG Maleimide); OPSS-PEG-OPSS (OPSS: orthopyridyl disulfide; PDP-PEG-PDP); HS-PEG-SH (Bifunctional Thiol PEG Thiol); SG-PEG-SG (Bifunctional PEG Succinimidyl Glutarate NHS ester); SS-PEG-SS (Bifunctional PEG Succinimidyl Succinate NHS ester); GAS-PEG-GAS (Bifunctional PEG Succinimidyl ester NHS-PEG-NHS); SAS-PEG-SAS (Bifunctional PEG Succinimidyl ester NHS-PEG-NHS); Amine-PEG-Amine (Bifunctional PEG Amine NH2-PEG-

NH2); AC-PEG-AC (Bifunctional Acrylate PEG Acrylate); ACA-PEG-ACA (Bifunctional Polymerizable PEG Acrylate Acrylamide); Epoxide-PEG-Epoxide (Bifunctional PEG Epoxide or EP); NPC-PEG-NPC (Bifunctional NPC PEG, Nitrophenyl Carbonate); Aldehyde-PEG-Aldehyde (ALD-PEG-ALD, bifunctional PEG propionaldehyde); AA-PEG-AA (Acid-PEG-Acid, AA - acetic acid or carboxyl methyl); GA-PEG-GA (Acid - PEG - Acid, GA: Glutaric acid); SA-PEG-SA (Bifunctional PEG carboxylic acid - Succinic Acid); GAA-PEG-GAA (Bifunctional PEG carboxylic acid, Glutaramide Acid); SAA-PEG-SAA (Bifunctional PEG carboxylic acid, Succinamide Acid); Azide-PEG-Azide (Bifunctional PEG azide, N3-PEG-N3); Alkyne-PEG-Alkyne (Bifunctional alkyne or acetylene PEG); Biotin-PEG-Biotin (Bifunctional biotin PEG linker); Silane-PEG-Silane (Bifunctional silane PEG); Hydrazide-PEG-Hydrazide (Bifunctional PEG Hydrazide); Tosylate-PEG-Tosylate (Bifunctional PEG Tosyl); and Chloride-PEG-Chloride (Bifunctional PEG Halide).

[0048] In certain embodiments, a linker of the invention may be modified for improved systemic half-life and reduced dosage frequency. In an embodiment, N-glycans are added to a linker. While the biological function is typically determined by the protein component, carbohydrates can play a role in molecular stability, solubility, *in vivo* activity, serum half-life, and immunogenicity. The sialic acid component of carbohydrate in particular, can extend the serum half-life of protein therapeutics. Accordingly, new N-linked glycosylation consensus sequences may be introduced into desirable positions in the peptide backbone to generate proteins with increased sialic acid containing carbohydrate, thereby increasing *in vivo* activity due to a longer serum half-life. In another embodiment, PEG is added to a linker. Methods of conjugating PEG to a protein are standard in the art. For example, see Kolate et al, Journal of Controlled Release 2014; 192(28): 67-81. In an embodiment, a composition of the invention comprises a ligand comprising PEG and/or one or more N-glycans. In an embodiment, PEG is selected from the group consisting of PEG-1 0K, PEG-20K and PEG-40K.

[0049] Another aspect of the invention involves cross-linking the peptides of the invention to improve their pharmacokinetic, immunogenic, diagnostic, and/or therapeutic attributes. Cross-linking involves joining two molecules by a covalent bond through a chemical reaction at suitable site(s) (e.g., primary amines, sulfhydryls) on the cytokine and ligand of the invention. In an embodiment, the cytokine and ligand may be crosslinked together. The cross-linking agents may form a cleavable or non-cleavable linker between the cytokine and the ligand. Cross-linking agents that form non-cleavable linkers between the cytokine and the ligand may comprise a maleimido- or haloacetyl-based moiety. According to the present invention, such non-cleavable linkers are said to be derived from maleimido- or haloacetyl-based moiety. Cross-linking agents comprising a maleimido-based moiety include N-succinimidyl 4-(maleimidomethyl)cyclohexanecarboxylate (SMCC), N-succinimidyl-4-(N-maleimidomethyl)-cyclohexane-1-carboxy-(6-amidocaproate), which is a "long chain" analog of SMCC (LC-SMCC), κ-maleimidoundecanoic acid N-succinimidyl ester (KMUA), γ-maleimidobutyric acid N-succinimidyl ester (GMBS), ε-maleimidocaproic acid N-hydroxysuccinimide ester (EMCS), m-maleimidobenzoyl-N-hydroxysuccinimide ester (MBS), N-(α-maleimidoacetoxy)-succinimide ester [AMAS], succinimidyl-6-(β-maleimidopropionamido)hexanoate (SMPH), N-succinimidyl 4-(p-maleimidophenyl)-butyrate (SMPB), and N-(p-maleimidophenyl)isocyanate (PMPI). These cross-linking agents form non-cleavable linkers derived from maleimido-based moieties.

Crosslinking agents comprising a haloacetyl-based moiety include N-succinimidyl-4-(iodoacetyl)-aminobenzoate (SIAB), N-succinimidyl iodoacetate (SIA), N-succinimidyl bromoacetate (SBA) and N-succinimidyl 3-(bromoacetamido)propionate (SBAP). These cross-linking agents form non-cleavable linkers derived from haloacetyl-based moieties. Cross-linking agents that form non-cleavable linkers between the cytokine and the ligand may comprise N-succinimidyl 3-(2-pyridyldithio)propionate, 4-succinimidyl-oxycarbonyl-α-methyl-alpha-(2-pyridyldithio)-toluene (SMPT), N-succinimidyl-3-(2-pyridyldithio)-butyrate (SDPB), 2-iminothiolane, or acetylsuccinic anhydride.

(d) ***chimeric peptide***

[0050] According to the present invention, there is provided a chimeric peptide comprising a cytokine peptide and a ligand peptide, wherein the cytokine peptide is not a binding partner of the ligand peptide and wherein the ligand peptide is a binding partner to a receptor expressed on natural killer (NK) cells or CD8+ cytotoxic T lymphocytes (CTLs), wherein the receptor is the NKG2D receptor, and wherein the cytokine peptide is selected from the group consisting of IL2, IL7, IL15, IL18, IL21, and mutants thereof. In still another aspect, the invention encompasses a chimeric peptide comprising a cytokine peptide and a ligand peptide, wherein the ligand peptide binds to an NKG2D receptor. It should be understood that "ligand peptide" is used interchangeably with "ligand" and "cytokine peptide" is used interchangeably with "cytokine" for purposes of descriptions herein of various cytokines and ligands that are suitable for use in the present compositions and methods.

[0051] In certain embodiments, the cytokine peptide is in the IL2 subfamily. More specifically, the cytokine peptide is selected from the group consisting of IL2, IL7, IL15 and IL21. In a specific embodiment, the cytokine peptide is IL15 or a mutant thereof. In another specific embodiment, the cytokine peptide is IL2 or a mutant thereof. In another embodiment, the cytokine peptide is mutant IL2 comprising at least one mutation selected from the group consisting of R38A, F42K and C125S. In a specific embodiment, the cytokine peptide comprises the amino acid sequence set forth in SEQ ID NO:5 or SEQ ID NO:6. In other embodiments, the cytokine peptide is in the IL1 family. More specifically, the cytokine peptide is selected from the group consisting of IL1α, IL1β, IL1Ra, IL18, IL36Ra, IL36α, IL37, IL36β, IL36y, IL38, and IL33. In a specific embodiment, the cytokine peptide is IL18 or a mutant thereof.

[0052] In certain embodiments, the ligand peptide is a MHC class-I-related glycoprotein. In another embodiment, the ligand peptide is OMCP, a portion thereof, or a mutant thereof. In an embodiment, the ligand peptide binds to a receptor expressed on NK cells and CD8+ CTLs. In a specific embodiment, the ligand peptide binds to an NKG2D receptor. In certain embodiments, the ligand peptide comprises the amino acid sequence set forth in SEQ ID NO:7 or a portion thereof that is capable of binding to the NKG2D receptor.

[0053] In other embodiments, a chimeric peptide further comprises a linker peptide. In certain embodiments, a linker peptide comprises the amino acid sequence selected from the group consisting of $(AAS)_n$, $(AAAL)_n$, $(G_nS)_n$ or $(G_2S)_n$, wherein A is alanine, S is serine, L is leucine, and G is glycine and wherein n is an integer from 1-20, or 1-10, or 3-10. In a different embodiment, a linker peptide comprises at least one tag selected from the group consisting of a FLAG tag and a His tag. In an embodiment, a linker peptide is about 20 to about 30 amino acids. In a specific embodiment, a linker peptide comprises the amino acid sequence set forth in SEQ ID NO:8.

[0054] The invention also encompasses a nucleic acid molecule encoding a chimeric peptide as described herein. Additionally, the invention encompasses a pharmaceutical composition comprising a chimeric peptide as described herein. Pharmaceutical compositions are described in more detail in **Section I(f).**

(e) preferred embodiments

[0055] By way of non-limiting example, several preferred compositions of the invention are depicted in **FIG. 23.** 1. depicts a composition comprising α2 domain (H2) of OMCP linked to a cytokine. 2. depicts a composition comprising OMCP linked to a cytokine, wherein the composition is pegylated. 3. depicts a composition comprising OMCP linked to a cytokine, wherein the composition comprises N-glycan. 4. depicts a composition comprising, OMCP linked to a cytokine, wherein the linker comprises various sequences and various lengths. 5. depicts a composition comprising a Fab specific antibody for NKG2D linked to a cytokine. 6. depicts a composition comprising various NKG2D ligands linked to a cytokine. 7. depicts a composition comprising a mutated version of OMCP linked to a cytokine, wherein the OMCP may be mutated to have improved binding affinity or weaker binding affinity. 8. depicts a composition comprising a mutated version of OMCP linked to a cytokine, wherein the OMCP may be mutated to have binding affinity for other NKG2 receptors. 9. depicts a composition comprising a viral protein liked to a cytokine. For example, OMCP binds to NKG2D. Additionally, CPXV203 binds to MHCI. 10. depicts a composition comprising OMCP linked to a mutated cytokine. It is understood that the OMCP sequence could be from various sources such as cowpox or monkeypox. Also, Fc-chimeras of OMCP and IL2, and variants thereof may be used.

[0056] In a preferred embodiment, the composition comprises IL2, IL15 or IL18 linked to OMCP. In another preferred embodiment, the composition comprises IL2, IL15 or IL18 linked to OMCP via a peptide linker. In still another preferred embodiment, the composition comprises IL2, IL15 or IL18 linked to OMCP via a peptide linker comprising about 20 to about 30 amino acids. In still yet another preferred embodiment, the composition comprises IL2, IL15 or IL18 linked to OMCP via a peptide linker comprising a FLAG tag and a His tag. In each of the foregoing embodiments, the IL2 may be a mutated version of IL2 comprising the mutations R38A and F42K.

[0057] In a different preferred embodiment, the composition comprises IL2 linked to OMCP. In another preferred embodiment, the composition comprises IL2 linked to OMCP via a peptide linker. In still another preferred embodiment, the composition comprises IL2 linked to OMCP via a peptide linker comprising about 20 to about 30 amino acids. In still yet another preferred embodiment, the composition comprises IL2 linked to OMCP via a peptide linker comprising a FLAG tag and a His tag. In each of the foregoing embodiments, the IL2 may be a mutated version of IL2 comprising the mutations R38A and F42K.

[0058] In an exemplary embodiment, the composition comprises the DNA sequence set forth in SEQ ID NO:1
(CACAAACTCGCATTCAACTTCAATCTAGAAATAAATGGCAGTGATACACATTCTAC

AGTAGATGTATATCTTGATGATTCTCAAATTATAACGTTTGATGGAAAAGATAT
CCGTCCAACCATCCCGTTCATGATAGGTGATGAAATTTTCTTACCGTTTTATAAAA
ATGTGTTTAGTGAGTTTTTCTCTCTGTTTAGAAGAGTTCCTACAAGTACTCCATATG
AAGACTTGACATATTTTTATGAATGCGACTATACAGACAATAAATCTACATTTGATCA
GTTTTATCTTTATAATGGCGAAGAATATACTGTCAAAACACAGGAGGCCACTAATAA
AAATATGTGGCTAACTACTTCCGAGTTTAGACTAAAAAAATGGTTCGATGGCGAAG
ATTGTATAATGCATCTTAGATCGTTAGTTAGAAAAATGGAGGACAGTAAACGAAACA
CTGGTGGTACCGGAAGTAGCGGTAGTAGTGATTACAAGGACGATGACGACAAGCA
CCACCATCATCATCATCACCACGGTAGCAGCGGCAGCAGTGCCCCCACCTCTAGC
AGCACAAAGAAGACCCAGCTGCAACTGGAACACCTCCTGCTGGACCTGCAGATGA
TCCTGAACGGCATCAACAACTACAAGAACCCCAAGCTGACCGCCATGCTGACCAA
AAAGTTTTACATGCCCAAGAAGGCCACCGAGCTTAAACACCTGCAATGCCTTGAGG
AGGAGCTGAAGCCCTGGAGGAGGTACTGAACCTGGCCCAGAGCAAGAACTTTCAT
CTGAGGCCCAGGGACCTGATTAGCAACATCAACGTGATCGTGTTGGAGTTGAAGG
GCAGCGAGACCACGTTCATGTGCGAGTACGCCGACGAGACGGCCACCATAGTGG
AGTTTCTTAACAGGTGGATCACCTTCTCACAGTCTATCATCAGCACCCTGACC).

[0059] In another exemplary embodiment, the composition comprises the amino acid sequence set forth in SEQ ID NO:2
(HKLAFNFNLEINGSDTHSTVDVYLDDSQIITFDGKDIRPTIPFMIGDEIFLPFYKNVFSEF
FSLFRRVPTSTPYEDLTYFYECDYTDNKSTFDQFYLYNGEEYTVKTQEATNKNMWLTT
SEFRLKKWFDGEDCIMHLRSLVRKMEDSKRNTGGTGSSGSSDYKDDDDKHHHHHHH
HGSSGSSAPTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTAMLTKKFYMPKKATE
LKHLQCLEEELKPLEEVLNLAQSKNFHLRPRDLISNINVIVLELKGSETTFMCEYADETA
TIVEFLNRWITFSQSIISTLT).

(f) pharmaceutical compositions

[0060] The present invention also provides pharmaceutical compositions. The pharmaceutical composition of the invention comprises the chimeric peptide of the invention, which is detailed above, as an active ingredient and at least one pharmaceutically acceptable excipient.

[0061] The pharmaceutically acceptable excipient may be a diluent, a binder, a filler, a buffering agent, a pH modifying agent, a disintegrant, a dispersant, a preservative, a lubricant, taste-masking agent, a flavoring agent, or a coloring agent. The amount and types of excipients utilized to form pharmaceutical compositions may be selected according to known principles of pharmaceutical science.

[0062] In one embodiment, the excipient may be a diluent. The diluent may be compressible (i.e., plastically deformable) or abrasively brittle. Non-limiting examples of suitable compressible diluents include microcrystalline cellulose (MCC), cellulose derivatives, cellulose powder, cellulose esters (i.e., acetate and butyrate mixed esters), ethyl cellulose, methyl cellulose, hydroxypropyl cellulose, hydroxypropyl methylcellulose, sodium carboxymethylcellulose, corn starch, phosphated corn starch, pregelatinized corn starch, rice starch, potato starch, tapioca starch, starch-lactose, starch-calcium carbonate, sodium starch glycolate, glucose, fructose, lactose, lactose monohydrate, sucrose, xylose, lactitol, mannitol, malitol, sorbitol, xylitol, maltodextrin, and trehalose. Non-limiting examples of suitable abrasively brittle diluents include dibasic calcium phosphate (anhydrous or dihydrate), calcium phosphate tribasic, calcium carbonate, and magnesium carbonate.

[0063] In another embodiment, the excipient may be a binder. Suitable binders include, but are not limited to, starches, pregelatinized starches, gelatin, polyvinylpyrrolidone, cellulose, methylcellulose, sodium carboxymethylcellulose, ethylcellulose, polyacrylamides, polyvinyloxoazolidone, polyvinylalcohols, C_{12}-C_{18} fatty acid alcohol, polyethylene glycol, polyols, saccharides, oligosaccharides, polypeptides, oligopeptides, and combinations thereof.

[0064] In another embodiment, the excipient may be a filler. Suitable fillers include, but are not limited to, carbohydrates, inorganic compounds, and polyvinylpyrrolidone. By way of non-limiting example, the filler may be calcium sulfate, both di- and tri-basic, starch, calcium carbonate, magnesium carbonate, microcrystalline cellulose, dibasic calcium phosphate, magnesium carbonate, magnesium oxide, calcium silicate, talc, modified starches, lactose, sucrose, mannitol, or sorbitol.

[0065] In still another embodiment, the excipient may be a buffering agent. Representative examples of suitable buffering agents include, but are not limited to, phosphates, carbonates, citrates, tris buffers, and buffered saline salts (e.g., Tris buffered saline or phosphate buffered saline).

[0066] In various embodiments, the excipient may be a pH modifier. By way of non-limiting example, the pH modifying agent may be sodium carbonate, sodium bicarbonate, sodium citrate, citric acid, or phosphoric acid.

[0067] In a further embodiment, the excipient may be a disintegrant. The disintegrant may be non-effervescent or effervescent. Suitable examples of non-effervescent disintegrants include, but are not limited to, starches such as corn starch, potato starch, pregelatinized and modified starches thereof, sweeteners, clays, such as bentonite, micro-crystalline cellulose, alginates, sodium starch glycolate, gums such as agar, guar, locust bean, karaya, pecitin, and tragacanth. Non-limiting examples of suitable effervescent disintegrants include sodium bicarbonate in combination with citric acid and sodium bicarbonate in combination with tartaric acid.

[0068] In yet another embodiment, the excipient may be a dispersant or dispersing enhancing agent. Suitable dispersants may include, but are not limited to, starch, alginic acid, polyvinylpyrrolidones, guar gum, kaolin, bentonite, purified wood cellulose, sodium starch glycolate, isoamorphous silicate, and microcrystalline cellulose.

[0069] In another alternate embodiment, the excipient may be a preservative. Non-limiting examples of suitable preservatives include antioxidants, such as BHA, BHT, vitamin A, vitamin C, vitamin E, or retinyl palmitate, citric acid, sodium citrate; chelators such as EDTA or EGTA; and antimicrobials, such as parabens, chlorobutanol, or phenol.

[0070] In a further embodiment, the excipient may be a lubricant. Non-limiting examples of suitable lubricants include minerals such as talc or silica; and fats such as vegetable stearin, magnesium stearate or stearic acid.

[0071] In yet another embodiment, the excipient may be a taste-masking agent. Taste-masking materials include cellulose ethers; polyethylene glycols; polyvinyl alcohol; polyvinyl alcohol and polyethylene glycol copolymers; monoglycerides or triglycerides; acrylic polymers; mixtures of acrylic polymers with cellulose ethers; cellulose acetate phthalate; and combinations thereof.

[0072] In an alternate embodiment, the excipient may be a flavoring agent. Flavoring agents may be chosen from synthetic flavor oils and flavoring aromatics and/or natural oils, extracts from plants, leaves, flowers, fruits, and combinations thereof.

[0073] In still a further embodiment, the excipient may be a coloring agent. Suitable color additives include, but are not limited to, food, drug and cosmetic colors (FD&C), drug and cosmetic colors (D&C), or external drug and cosmetic colors (Ext. D&C).

[0074] The weight fraction of the excipient or combination of excipients in the composition may be about 99% or less, about 97% or less, about 95% or less, about 90% or less, about 85% or less, about 80% or less, about 75% or less, about 70% or less, about 65% or less, about 60% or less, about 55% or less, about 50% or less, about 45% or less, about 40% or less, about 35% or less, about 30% or less, about 25% or less, about 20% or less, about 15% or less, about 10% or less, about 5% or less, about 2%, or about 1% or less of the total weight of the composition.

[0075] The composition can be formulated into various dosage forms and administered by a number of different means that will deliver a therapeutically effective amount of the active ingredient. Such compositions can be administered orally, parenterally, or topically in dosage unit formulations containing conventional nontoxic pharmaceutically acceptable carriers, adjuvants, and vehicles as desired. Topical administration may also involve the use of transdermal administration such as transdermal patches or iontophoresis devices. The term parenteral as used herein includes subcutaneous, intravenous, intramuscular, or intrasternal injection, or infusion techniques. Formulation of drugs is discussed in, for example, Gennaro, A. R., Remington's Pharmaceutical Sciences, Mack Publishing Co., Easton, Pa. (18th ed, 1995), and Liberman, H. A. and Lachman, L., Eds., Pharmaceutical Dosage Forms, Marcel Dekker Inc., New York, N.Y. (1980).

[0076] Solid dosage forms for oral administration include capsules, tablets, caplets, pills, powders, pellets, and granules. In such solid dosage forms, the active ingredient is ordinarily combined with one or more pharmaceutically acceptable excipients, examples of which are detailed above. Oral preparations may also be administered as aqueous suspensions, elixirs, or syrups. For these, the active ingredient may be combined with various sweetening or flavoring agents, coloring agents, and, if so desired, emulsifying and/or suspending agents, as well as diluents such as water, ethanol, glycerin, and combinations thereof.

[0077] For parenteral administration (including subcutaneous, intradermal, intravenous, intramuscular, and intraperitoneal), the preparation may be an aqueous or an oil-based solution. Aqueous solutions may include a sterile diluent such as water, saline solution, a pharmaceutically acceptable polyol such as glycerol, propylene glycol, or other synthetic solvents; an antibacterial and/or antifungal agent such as benzyl alcohol, methyl paraben, chlorobutanol, phenol, thimerosal, and the like; an antioxidant such as ascorbic acid or sodium bisulfite; a chelating agent such as etheylenediaminetetraacetic acid; a buffer such as acetate, citrate, or phosphate; and/or an agent for the adjustment of tonicity such as sodium chloride, dextrose, or a polyalcohol such as mannitol or sorbitol. The pH of the aqueous solution may be adjusted with acids or bases such as hydrochloric acid or sodium hydroxide. Oil-based solutions or suspensions may further comprise sesame, peanut, olive oil, or mineral oil.

[0078] For topical (e.g., transdermal or transmucosal) administration, penetrants appropriate to the barrier to be permeated are generally included in the preparation. Transmucosal administration may be accomplished through the use of nasal sprays, aerosol sprays, tablets, or suppositories, and transdermal administration may be via ointments, salves, gels, patches, or creams as generally known in the art.

[0079] In certain embodiments, a composition comprising a compound of the invention is encapsulated in a suitable vehicle to either aid in the delivery of the compound to target cells, to increase the stability of the composition, or to minimize potential toxicity of the composition. As will be appreciated by a skilled artisan, a variety of vehicles are suitable for delivering a composition of the present invention. Non-limiting examples of suitable structured fluid delivery systems may include nanoparticles, liposomes, microemulsions, micelles, dendrimers and other phospholipid-containing systems. Methods of incorporating compositions into delivery vehicles are known in the art.

[0080] In one alternative embodiment, a liposome delivery vehicle may be utilized. Liposomes, depending upon the embodiment, are suitable for delivery of the compound of the invention in view of their structural and chemical properties. Generally speaking, liposomes are spherical vesicles with a phospholipid bilayer membrane. The lipid bilayer of a liposome may fuse with other bilayers (e.g., the cell membrane), thus delivering the contents of the liposome to cells. In this manner, the compound of the invention may be selectively delivered to a cell by encapsulation in a liposome that fuses with the targeted cell's membrane.

[0081] Liposomes may be comprised of a variety of different types of phospholipids having varying hydrocarbon chain lengths. Phospholipids generally comprise two fatty acids linked through glycerol phosphate to one of a variety of polar groups. Suitable phospholipids include phosphatidic acid (PA), phosphatidylserine (PS), phosphatidylinositol (PI), phosphatidylglycerol (PG), diphosphatidylglycerol (DPG), phosphatidylcholine (PC), and phosphatidylethanolamine (PE). The fatty acid chains comprising the phospholipids may range from about 6 to about 26 carbon atoms in length, and the lipid chains may be saturated or unsaturated. Suitable fatty acid chains include (common name presented in parentheses) n-dodecanoate (laurate), n-tretradecanoate (myristate), n-hexadecanoate (palmitate), n-octadecanoate (stearate), n-eicosanoate (arachidate), n-docosanoate (behenate), n-tetracosanoate (lignocerate), cis-9-hexadecenoate (palmitoleate), cis-9-octadecanoate (oleate), cis,cis-9,12-octadecandienoate (linoleate), all cis-9, 12, 15-octadecatrienoate (linolenate), and all cis-5,8,11,14-eicosatetraenoate (arachidonate). The two fatty acid chains of a phospholipid may be identical or different. Acceptable phospholipids include dioleoyl PS, dioleoyl PC, distearoyl PS, distearoyl PC, dimyristoyl PS, dimyristoyl PC, dipalmitoyl PG, stearoyl, oleoyl PS, palmitoyl, linolenyl PS, and the like.

[0082] The phospholipids may come from any natural source, and, as such, may comprise a mixture of phospholipids. For example, egg yolk is rich in PC, PG, and PE, soy beans contains PC, PE, PI, and PA, and animal brain or spinal cord is enriched in PS. Phospholipids may come from synthetic sources too. Mixtures of phospholipids having a varied ratio of individual phospholipids may be used. Mixtures of different phospholipids may result in liposome compositions having advantageous activity or stability of activity properties. The above mentioned phospholipids may be mixed, in optimal ratios with cationic lipids, such as N-(1-(2,3-dioleolyoxy)propyl)-N,N,N-trimethyl ammonium chloride, 1,1'-dioctadecyl-3,3,3',3'-tetramethylindocarbocyanine perchloarate, 3,3'-deheptyloxacarbocyanine iodide, 1,1'-dedodecyl-3,3,3',3'-tetramethylindocarbocyanine perchloarate, 1,1'-dioleyl-3,3,3',3'-tetramethylindo carbocyanine methanesulfonate, N-4-(delinoleylaminostyryl)-N-methylpyridinium iodide, or 1,1,-dilinoleyl-3,3,3',3'-tetramethylindocarbocyanine perchloarate.

[0083] Liposomes may optionally comprise sphingolipids, in which spingosine is the structural counterpart of glycerol and one of the one fatty acids of a phosphoglyceride, or cholesterol, a major component of animal cell membranes. Liposomes may optionally, contain pegylated lipids, which are lipids covalently linked to polymers of polyethylene glycol (PEG). PEGs may range in size from about 500 to about 10,000 daltons.

[0084] Liposomes may further comprise a suitable solvent. The solvent may be an organic solvent or an inorganic solvent. Suitable solvents include, but are not limited to, dimethylsulfoxide (DMSO), methylpyrrolidone, N-methylpyrrolidone, acetronitrile, alcohols, dimethylformamide, tetrahydrofuran, or combinations thereof.

[0085] Liposomes carrying the compound of the invention (i.e., having at least one methionine compound) may be prepared by any known method of preparing liposomes for drug delivery, such as, for example, detailed in U.S. Pat. Nos. 4,241,046, 4,394,448, 4,529,561, 4,755,388, 4,828,837, 4,925,661, 4,954,345, 4,957,735, 5,043,164, 5,064,655, 5,077,211 and 5,264,618. For example, liposomes may be prepared by sonicating lipids in an aqueous solution, solvent injection, lipid hydration, reverse evaporation, or freeze drying by repeated freezing and thawing. In a preferred embodiment the liposomes are formed by sonication. The liposomes may be multilamellar, which have many layers like an onion, or unilamellar. The liposomes may be large or small. Continued high-shear sonication tends to form smaller unilamellar lipsomes.

[0086] As would be apparent to one of ordinary skill, all of the parameters that govern liposome formation may be varied. These parameters include, but are not limited to, temperature, pH, concentration of methionine compound, concentration and composition of lipid, concentration of multivalent cations, rate of mixing, presence of and concentration of solvent.

[0087] In another embodiment, a composition of the invention may be delivered to a cell as a microemulsion. Microemulsions are generally clear, thermodynamically stable solutions comprising an aqueous solution, a surfactant, and "oil." The "oil" in this case, is the supercritical fluid phase. The surfactant rests at the oil-water interface. Any of a variety of surfactants are suitable for use in microemulsion formulations including those described herein or otherwise known in the art. The aqueous microdomains suitable for use in the invention generally will have characteristic structural dimensions from about 5 nm to about 100 nm. Aggregates of this size are poor scatterers of visible light and hence, these solutions are optically clear. As will be appreciated by a skilled artisan, microemulsions can and will have a multitude of different microscopic structures including sphere, rod, or disc shaped aggregates. In one embodiment, the structure may be micelles, which are the simplest microemulsion structures that are generally spherical or cylindrical objects. Micelles are like drops of oil in water, and reverse micelles are like drops of water in oil. In an alternative embodiment, the microemulsion structure is the lamellae. It comprises consecutive layers of water and oil separated by layers of surfactant. The "oil" of microemulsions optimally comprises phospholipids. Any of the phospholipids detailed above for liposomes are suitable for embodiments directed to microemulsions. The composition of the invention may be encapsulated in a microemulsion by any method generally known in the art.

[0088] In yet another embodiment, a composition of the invention may be delivered in a dendritic macromolecule, or a dendrimer. Generally speaking, a dendrimer is a branched tree-like molecule, in which each branch is an interlinked chain of molecules that divides into two new branches (molecules) after a certain length. This branching continues until the branches (molecules) become so densely packed that the canopy forms a globe. Generally, the properties of dendrimers are determined by the functional groups at their surface. For example, hydrophilic end groups, such as carboxyl groups, would typically make a water-soluble dendrimer. Alternatively, phospholipids may be incorporated in the surface of a dendrimer to facilitate absorption across the skin. Any of the phospholipids detailed for use in liposome embodiments are suitable for use in dendrimer embodiments. Any method generally known in the art may be utilized to make dendrimers and to encapsulate compositions of the invention therein. For example, dendrimers may be produced by an iterative sequence of reaction steps, in which each additional iteration leads to a higher order dendrimer. Consequently, they have a regular, highly branched 3D structure, with nearly uniform size and shape. Furthermore, the final size of a dendrimer is typically controlled by the number of iterative steps used during synthesis. A variety of dendrimer sizes are suitable for use in the invention. Generally, the size of dendrimers may range from about 1 nm to about 100 nm

II. METHODS

[0089] In an aspect, the invention encompasses a method to deliver a cytokine to a target cell. The method comprises contacting a target cell with a composition comprising a cytokine linked to a ligand, wherein the ligand specifically binds to a receptor on the target cell. Additionally, the method comprises contacting a target cell with a composition comprising a chimeric peptide as described in **Section I.** A target cell may be any cell comprising a target receptor for which the ligand specifically binds to. The ligand and specific binding are described in **Section I.** In certain embodiments, a target cell may be an immune cell. Non-limiting example of immune cells include macrophages, B lymphocytes, T lymphocytes, mast cells, monocytes, dendritic cells, eosinophils, natural killer cells, basophils, neutrophils. In certain embodiments, an immune cell is selected from the group consisting of a macrophage, B lymphocyte, T lymphocyte, mast cell, monocyte, dendritic cell, eosinophil, natural killer cell, basophil, and neutrophil. In a specific embodiment, a target cell is a natural killer (NK) cell and/or a CD8+ T cell. In other embodiments, a target cell is a NKG2D-expressing cell. Non-limiting examples of NKG2D-expressing cell include natural killer (NK) cells and CD8+ T cells (both αβ and γδ). The chimeric peptide or the pharmaceutical composition of the invention may be used in a method to deliver a cytokine to a target cell, the method comprising contacting a target cell with composition comprising the chimeric peptide.

[0090] In another aspect, the invention encompasses a method to activate immune cells. The method comprises contacting an immune cell with a composition comprising a cytokine linked to a ligand, wherein the ligand specifically binds to a receptor on the immune cell thereby activating the cell. Additionally, the method comprises contacting an immune cell with a composition comprising a chimeric peptide as described in **Section I.** Non-limiting example of immune cells include macrophages, B lymphocytes, T lymphocytes, mast cells, monocytes, dendritic cells, eosinophils, natural killer cells, basophils, neutrophils. In certain embodiments, an immune cell is selected from the group consisting of a macrophage, B lymphocyte, T lymphocyte, mast cell, monocyte, dendritic cell, eosinophil, natural killer cell, basophil, and neutrophil. In a specific embodiment, an immune cell is a natural killer (NK) cell and/or a CD8+ T cell. To facilitate activation of immune cells, a cytokine may be a proinflammatory cytokine. The term "proinflammatory cytokine" is a cytokine which promotes systemic inflammation. A skilled artisan would be able to determine those cytokines that are proinflammatory. In certain embodiments, a proinflammatory cytokine is IL1α, IL1β, IL2, IL3, IL6, IL7, IL9, IL12, IL15, IL17, IL18, IL21, IFNα, IFNγ, TNFα, MIF, G-CSF, GM-CSF or mutants thereof. In an embodiment, a proinflammatory cytokine is an IL1 family cytokine. In certain embodiments, an IL1 family cytokine is selected from the group consisting of IL1α, IL1β, IL1Ra, IL18, IL36Ra, IL36α, IL37, IL36β, IL36γ, IL38, IL33 and mutants thereof. In a specific embodiment, a proinflammatory cytokine is selected from the group consisting of IL2, IL7, IL15, IL18, IL21 and mutants thereof. In another specific embodiment, a proinflammatory cytokine is selected from the group consisting of IL2, IL15, IL18, and mutants thereof. In an exemplary embodiment, a proinflammatory cytokine is IL2 or a mutant thereof. Activation of the immune cells may result in lysis of tumor cells. Accordingly, activation of immune cells may be measured by determining the amount of tumor cell lysis. In an embodiment, activation of the immune cells may result in about 10% to about 100% lysis of tumor cells. In another embodiment, activation of the immune cells may result in about 20% to about 80% lysis of tumor cells. In still another embodiment, activation of the immune cells may result in greater than 40% lysis of tumor cells. For example, activation of the immune cells may result in greater than 40%, greater than 45%, greater than 50%, greater than 55%, greater than 60%, greater than 65%, greater than 70%, greater than 75%, greater than 80%, greater than 85%, greater than 90%, greater than 95%, or greater than 99% lysis of tumor cells. The lysis of tumor cells may be measured using any standard assay (e.g., caspase assays, TUNEL and DNA fragmentation assays, cell permeability assays, and Annexin V assays).

[0091] The invention also provides the chimeric peptide or pharmaceutical composition of the invention for use in a method to treat a tumor. The method comprises identifying a subject with a tumor and administering to the subject a therapeutically effective amount of a composition comprising the chimeric peptide or pharmaceutical composition of the invention, wherein the chimeric peptide activates natural killer (NK) cells or CD8+ cytotoxic T lymphocytes (CTLs), thereby treating a tumor. Additionally, the method comprises administering to the subject a composition comprising a chimeric peptide as described in **Section I.** Specifically, the inventors have shown that delivering a cytokine to a target cell activates the cells bound by the composition, wherein the activated cells specifically lyse tumor cells thereby reducing the amount of cancer cells. In a specific embodiment, a cytokine is a proinflammatory cytokine as described in the preceding paragraph. Accordingly, a composition of the present invention, may be used in treating, stabilizing and preventing cancer and associated diseases in a subject. By "treating, stabilizing, or preventing cancer" is meant causing a reduction in the size of a tumor or in the number of cancer cells, slowing or preventing an increase in the size of a tumor or cancer cell proliferation, increasing the disease-free survival time between the disappearance of a tumor or other cancer and its reappearance, preventing an initial or subsequent occurrence of a tumor or other cancer, or reducing an adverse symptom associated with a tumor or other cancer. The inventors have shown that a composition of the invention activates natural killer (NK) cells bound by the composition, wherein the activated NK cells specifically lyse tumor cells thereby reducing the amount of tumor cells. For example, as cancerous cells are "stressed", NKG2D ligands become upregulated, rendering the cell susceptible to NK cell-mediated lysis. In a desired embodiment, the percent of tumor or cancerous cells surviving the treatment is at least 20, 30, 40, 50, 60, 70, 80, 90 or 100% lower than the initial number of tumor or cancerous cells, as measured using any standard assay (e.g., caspase assays, TUNEL and DNA fragmentation assays, cell permeability assays, and Annexin V assays). Desirably, the decrease in the number of tumor or cancerous cells induced by administration of a composition of the invention is at least 2, 5, 10, 15, 20, 25, 30, 35, 40, 45 or 50-fold greater than the decrease in the number of non-tumor or non-cancerous cells. Desirably, the methods of the present invention result in a decrease of 20, 30, 40, 50, 60, 50, 80, 90 or 100% in the size of a tumor or in the number of cancerous cells, as determined using standard methods. Desirably, at least 20, 30, 40, 50, 60, 70, 80, 90, or 95% of the treated subjects have a complete remission in which all evidence of the tumor or cancer disappears. Desirably, the tumor or cancer does not reappear or reappears after at least 1, 2, 3, 4, 5, 10, 15, or 20 years.

[0092] In another aspect, the invention encompasses a method to suppress immune cells. The method comprises contacting an immune cell with a composition comprising a cytokine linked to a ligand, wherein the ligand specifically binds to a receptor on the immune cell thereby suppressing the cell. Additionally, the method comprises contacting an immune cells with a composition comprising a chimeric peptide as described in **Section I.** Non-limiting example of immune cells include macrophages, B lymphocytes, T lymphocytes, mast cells, monocytes, dendritic cells, eosinophils, natural killer cells, basophils, neutrophils. In certain embodiments, an immune cell is selected from the group consisting of a macrophage, B lymphocyte, T lymphocyte, mast cell, monocyte, dendritic cell, eosinophil, natural killer cell, basophil, and neutrophil. In a specific embodiment, an immune cell is a natural killer (NK) cell and/or a CD8+ T cell. To facilitate suppression of immune cells, a cytokine may be an anti-inflammatory cytokine. The term "anti-inflammatory cytokine" is a cytokine that counteracts various aspects of inflammation, for example cell activation or the production of proinflammatory cytokines, and thus contributes to the control of the magnitude of the inflammatory response. A skilled artisan would be able to determine those cytokines that are anti-inflammatory. In certain embodiments, an anti-inflammatory cytokine is IL4, IL5, IL10, IL11, IL13, IL16, IL35, IFNα, TGFβ, G-CSF or a mutant thereof. In a specific embodiment, an anti-inflammatory cytokine is IL10 or a mutant thereof. In another embodiment, the invention encompasses a method to kill immune cells. The method comprises contacting an immune cell with a composition comprising a toxin linked to a ligand, wherein the ligand specifically binds to a receptor on the immune cell thereby killing the cell. Suppression or killing of the immune cells may result in treatment, stabilization and prevention of autoimmune diseases caused by overactive immune cells. NKG2D-expressing cells and/or aberrant expression of host NKG2DLs have been implicated in diabetes, celiac disease and rheumatoid arthritis. For example, NK cells can recognize pancreatic beta cells and destroy them. The destruction of pancreatic beta cells may lead to type 1 diabetes. By way of another example, overactive immune cells are involved in transplant/graft rejection. Accordingly, a composition of the present invention, may be used in treating, stabilizing and preventing an automimmune disease in a subject. In a specific embodiment, the autoimmune disease is type 1 diabetes. In another specific embodiment, the autoimmune disease is transplant or graft rejection. In still another specific embodiment, the autoimmune disease is rheumatoid arthritis.

[0093] In still yet another aspect, the invention encompasses a method to treat an infection comprising administering a composition comprising a cytokine linked to a ligand. For example, a composition comprising a cytokine linked to a ligand may specifically bind an immune cell that is then activated to target and lyse the infected host cell. Additionally, the method comprises administering to the subject a composition comprising a chimeric peptide as described in **Section I.** The term "infection" as used herein includes the presence of pathogens in or on a subject, which, if its growth were inhibited, would result in a benefit to the subject. As such, the term "infection" in addition to referring to the presence of pathogens also refers to normal flora which are not desirable. The term "pathogen" as used herein refers to an infectious agent that can produce disease. Non-limiting examples of an infectious agent include virus, bacterium, prion, fungus, viroid, or parasite that cause disease in a subject. In a specific embodiment, an infection is caused by pathogens such as bacteria or viruses. In certain embodiments, the infection is an intracellular infection. In an embodiment, the infection is a viral infection. In another embodiment, the viral infection is caused by a flavivirus. Flavivirus is a genus of viruses in the family Flaviviridae. Non-limiting examples of flaviviruses include Gadget's Gully virus, Kadam virus, Kyasanur Forrest disease virus, Langat virus, Omsk hemorrhagic fever virus, Tick-borne encephalitis virus, Louping ill virus, Aroa virus, Dengue viruses 1-4, Kedougou virus, Cacipacore virus, Koutango virus, Murray Valley encephalitis virus, St. Louis encephalitis virus, Usutu virus, West Nile virus, Yaounde virus, Kokobera virus group, Kokobera virus, Bagaza virus, Ilheus virus, Israel turkey meningoencephalomyelitis virus, Ntaya virus, Tembusu virus, Zika virus, Banzi virus, Bouboui virus, Edge Hill virus, Jugra virus, Saboya virus, Sepik virus, Uganda S virus, Wesselsbron virus, Yellow fever virus, Entebbe bat virus, Yokose virus, Apoi virus, Cowbone Ridge virus, Jutiapa virus, Modoc virus, Sal Vieja virus, San Perlita virus, Bukalasa bat virus, Carey Island virus, Dakar bat virus, Montana myotis leukoencephalitis virus, Phnom Penh bat virus, Rio Bravo virus, hepatitis C virus, e.g., hepatitis C virus genotypes 1-6, and GB virus A and B. In a certain embodiment, the flavivirus may be selected from the group consisting of West Nile virus, dengue virus, Japanese encephalitis virus, and yellow fever virus. In a specific embodiment, the viral infection is caused by West Nile virus. In certain embodiments, a pathogen, more specifically a virus, can induce the expression of proteins for which NKG2D binds. Accordingly, a composition comprising a cytokine linked to a ligand may specifically bind a NK cell that is then activated to target and lyse the infected host cell expressing NKG2D. In another embodiment, a composition comprising a cytokine linked to a ligand may activate cytotoxic T lymphocytes that recognize infected cells via other mechanisms for targeted killing.

[0094] In a different aspect, the invention encompasses a method to alleviate immunosuppression related to radiation exposure or lympotoxic substances comprising administering a composition comprising a cytokine linked to a ligand. Additionally, the method comprises administering a composition comprising a chimeric peptide as described in **Section I.** Additionally, a composition of the invention may be used to raise CD4 counts in HIV positive subjects. For example, a composition of the invention may be used to activate immune cells which can help restore the immune system of the subject.

[0095] In an alternative aspect, the invention encompasses a method of use as an adjuvant in a vaccine composition. For example, a composition of the invention may be used to expand CD8+ memory cells.

(a) administration

[0096] In certain aspects, a pharmacologically effective amount of a composition of the invention may be administered to a subject. Administration is performed using standard effective techniques, including peripherally (i.e. not by administration into the central nervous system) or locally to the central nervous system. Peripheral administration includes but is not limited to intravenous, intraperitoneal, subcutaneous, pulmonary, transdermal, intramuscular, intranasal, buccal, sublingual, or suppository administration. Local administration, including directly into the central nervous system (CNS) includes but is not limited to via a lumbar, intraventricular or intraparenchymal catheter or using a surgically implanted controlled release formulation. Pheresis may be used to deliver a composition of the invention. In certain embodiments, a composition of the invention may be administered via an infusion (continuous or bolus).

[0097] Pharmaceutical compositions for effective administration are deliberately designed to be appropriate for the selected mode of administration, and pharmaceutically acceptable excipients such as compatible dispersing agents, buffers, surfactants, preservatives, solubilizing agents, isotonicity agents, stabilizing agents and the like are used as appropriate. Remington's Pharmaceutical Sciences, Mack Publishing Co., Easton Pa., 16Ed ISBN: 0-912734-04-3, latest edition, provides a compendium of formulation techniques as are generally known to practitioners.

[0098] Effective peripheral systemic delivery by intravenous or intraperitoneal or subcutaneous injection is a preferred method of administration to a living patient. Suitable vehicles for such injections are straightforward. In addition, however, administration may also be effected through the mucosal membranes by means of nasal aerosols or suppositories. Suitable formulations for such modes of administration are well known and typically include surfactants that facilitate cross-membrane transfer. Such surfactants are often derived from steroids or are cationic lipids, such as N-[1-(2,3-dioleoyl)propyl]-N,N,N-trimethyl ammonium chloride (DOTMA) or various compounds such as cholesterol hemisuccinate, phosphatidyl glycerols and the like.

[0099] For therapeutic applications, a therapeutically effective amount of a composition of the invention is administered to a subject. A "therapeutically effective amount" is an amount of the therapeutic composition sufficient to produce a measurable response (e.g., an immunostimulatory, an anti-angiogenic response, a cytotoxic response, tumor regression, immunoinhibitory, immunosuppression, infection reduction). Actual dosage levels of active ingredients in a therapeutic composition of the invention can be varied so as to administer an amount of the active compound(s) that is effective to achieve the desired therapeutic response for a particular subject. The selected dosage level will depend upon a variety of factors including the activity of the therapeutic composition, formulation, the route of administration, combination with other drugs or treatments, tumor size and longevity, the autoimmune disease, infection, and the physical condition and prior medical history of the subject being treated. In some embodiments, a minimal dose is administered, and dose is escalated in the absence of dose-limiting toxicity. Determination and adjustment of a therapeutically effective dose, as well as evaluation of when and how to make such adjustments, are known to those of ordinary skill in the art of medicine. In an aspect, a typical dose contains from about 10 IU/kg to about 1,000,000 IU/kg of a cytokine described herein. In an embodiment, a typical dose contains from about 10 IU/kg to about 100 IU/kg. In another embodiment, a typical dose contains about 100 IU/kg to about 1,000 IU/kg. In still another embodiment, a typical dose contains about 1,000 IU/kg to about 10,000 IU/kg. In yet still another embodiment, a typical dose contains about 10,000 IU/kg to about 100,000 IU/kg. In a different embodiment, a typical dose contains about 100,000 IU/kg to about 1,000,000 IU/kg. In certain embodiments, a typical dose contains about 500,000 IU/kg to about 1,000,000 IU/kg. In other embodiments, a typical dose contains about 100,000 IU/kg to about 500,000 IU/kg. Alternatively, a typical dose contains about 50,000 IU/kg to about 100,000 IU/kg. In another embodiment, a typical dose contains about 10,000 IU/kg to about 50,000 IU/kg. In still another embodiment, a typical dose contains about 5,000 IU/kg to about 10,000 IU/kg. In a specific embodiment, a typical dose contains about 5,000 IU/kg to about 200,000 IU/kg. In another specific embodiment, a typical dose contains about 5,000 IU/kg to about 500,000 IU/kg. In still another specific embodiment, a typical dose contains about 50,000 IU/kg to about 500,000 IU/kg. In still yet another specific embodiment, a typical dose contains about 250,000 IU/kg to about 750,000 IU/kg.

[0100] The frequency of dosing may be once, twice, three times or more daily or once, twice, three times or more per week or per month, as needed as to effectively treat the symptoms or disease. In certain embodiments, the frequency of dosing may be once, twice or three times daily. For example, a dose may be administered every 24 hours, every 12 hours, or every 8 hours. In a specific embodiment, the frequency of dosing may be twice daily.

[0101] Duration of treatment could range from a single dose administered on a one-time basis to a life-long course of therapeutic treatments. The duration of treatment can and will vary depending on the subject and the cancer or autoimmune disease or infection to be treated. For example, the duration of treatment may be for 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, or 7 days. Or, the duration of treatment may be for 1 week, 2 weeks, 3 weeks, 4 weeks, 5 weeks or 6 weeks. Alternatively, the duration of treatment may be for 1 month, 2 months, 3 months, 4 months, 5 months, 6 months, 7 months, 8 months, 9 months, 10 months, 11 months, or 12 months. In still another embodiment, the duration of treatment may be for 1 year, 2 years, 3 years, 4 years, 5 years, or greater than 5 years. It is also contemplated that administration may be frequent for a period of time and then administration may be spaced out for a period of time. For example, duration of treatment may be 5 days, then no treatment for 9 days, then treatment for 5 days.

[0102] The timing of administration of the treatment relative to the disease itself and duration of treatment will be determined by the circumstances surrounding the case. Treatment could begin immediately, such as at the time of diagnosis, or treatment could begin following surgery. Treatment could begin in a hospital or clinic itself, or at a later time after discharge from the hospital or after being seen in an outpatient clinic.

[0103] Although the foregoing methods appear the most convenient and most appropriate and effective for administration of a composition of the invention, by suitable adaptation, other effective techniques for administration, such as intraventricular administration, transdermal administration and oral administration may be employed provided proper formulation is utilized herein.

[0104] In addition, it may be desirable to employ controlled release formulations using biodegradable films and matrices, or osmotic mini-pumps, or delivery systems based on dextran beads, alginate, or collagen.

(b) tumor

[0105] A composition of the invention may be used to treat or recognize a tumor derived from a neoplasm or a cancer. The neoplasm may be malignant or benign, the cancer may be primary or metastatic; the neoplasm or cancer may be early stage or late stage. Non-limiting examples of neoplasms or cancers that may be treated include acute lymphoblastic leukemia, acute myeloid leukemia, adrenocortical carcinoma, AIDS-related cancers, AIDS-related lymphoma, anal cancer, appendix cancer, astrocytomas (childhood cerebellar or cerebral), basal cell carcinoma, bile duct cancer, bladder cancer, bone cancer, brainstem glioma, brain tumors (cerebellar astrocytoma, cerebral astrocytoma/malignant glioma, ependymoma, medulloblastoma, supratentorial primitive neuroectodermal tumors, visual pathway and hypothalamic gliomas), breast cancer, bronchial adenomas/carcinoids, Burkitt lymphoma, carcinoid tumors (childhood, gastrointestinal), carcinoma of unknown primary, central nervous system lymphoma (primary), cerebellar astrocytoma, cerebral astrocytoma/malignant glioma, cervical cancer, childhood cancers, chronic lymphocytic leukemia, chronic myelogenous leukemia, chronic myeloproliferative disorders, colon cancer, cutaneous T-cell lymphoma, desmoplastic small round cell tumor, endometrial cancer, ependymoma, esophageal cancer, Ewing's sarcoma in the Ewing family of tumors, extracranial germ cell tumor (childhood), extragonadal germ cell tumor, extrahepatic bile duct cancer, eye cancers (intraocular melanoma, retinoblastoma), gallbladder cancer, gastric (stomach) cancer, gastrointestinal carcinoid tumor, gastrointestinal stromal tumor, germ cell tumors (childhood extracranial, extragonadal, ovarian), gestational trophoblastic tumor, gliomas (adult, childhood brain stem, childhood cerebral astrocytoma, childhood visual pathway and hypothalamic), gastric carcinoid, hairy cell leukemia, head and neck cancer, hepatocellular (liver) cancer, Hodgkin lymphoma, hypopharyngeal cancer, hypothalamic and visual pathway glioma (childhood), intraocular melanoma, islet cell carcinoma, Kaposi sarcoma, kidney cancer (renal cell cancer), laryngeal cancer, leukemias (acute lymphoblastic, acute myeloid, chronic lymphocytic, chronic myelogenous, hairy cell), lip and oral cavity cancer, liver cancer (primary), lung cancers (non-small cell, small cell), lymphomas (AIDS-related, Burkitt, cutaneous T-cell, Hodgkin, non-Hodgkin, primary central nervous system), macroglobulinemia (Waldenstrom), malignant fibrous histiocytoma of bone/osteosarcoma, medulloblastoma (childhood), melanoma, intraocular melanoma, Merkel cell carcinoma, mesotheliomas (adult malignant, childhood), metastatic squamous neck cancer with occult primary, mouth cancer, multiple endocrine neoplasia syndrome (childhood), multiple myeloma/plasma cell neoplasm, mycosis fungoides, myelodysplastic syndromes, myelodysplastic/myeloproliferative diseases, myelogenous leukemia (chronic), myeloid leukemias (adult acute, childhood acute), multiple myeloma, myeloproliferative disorders (chronic), nasal cavity and paranasal sinus cancer, nasopharyngeal carcinoma, neuroblastoma, non-Hodgkin lymphoma, non-small cell lung cancer, oral cancer, oropharyngeal cancer, osteosarcoma/malignant fibrous histiocytoma of bone, ovarian cancer, ovarian epithelial cancer (surface epithelial-stromal tumor), ovarian germ cell tumor, ovarian low malignant potential tumor, pancreatic cancer, pancreatic cancer (islet cell), paranasal sinus and nasal cavity cancer, parathyroid cancer, penile cancer, pharyngeal cancer, pheochromocytoma, pineal astrocytoma, pineal germinoma, pineoblastoma and supratentorial primitive neuroectodermal tumors (childhood), pituitary adenoma, plasma cell neoplasia, pleuropulmonary blastoma, primary central nervous system lymphoma, prostate cancer, rectal cancer, renal cell carcinoma (kidney cancer), renal pelvis and ureter transitional cell cancer, retinoblastoma, rhabdomyosarcoma (childhood), salivary gland cancer, sarcoma (Ewing family of tumors, Kaposi, soft tissue, uterine), Sezary syndrome, skin cancers (nonmelanoma, melanoma), skin carcinoma (Merkel cell), small cell lung cancer, small intestine cancer, soft tissue sarcoma, squamous cell carcinoma, squamous neck cancer with occult primary (metastatic), stomach cancer, supratentorial primitive neuroectodermal tumor (childhood), T-Cell lymphoma (cutaneous), testicular cancer, throat cancer, thymoma (childhood), thymoma and thymic carcinoma, thyroid cancer, thyroid cancer (childhood), transitional cell cancer of the renal pelvis and ureter, trophoblastic tumor (gestational), unknown primary site (adult, childhood), ureter and renal pelvis transitional cell cancer, urethral cancer, uterine cancer (endometrial), uterine sarcoma, vaginal cancer, visual pathway and hypothalamic glioma (childhood), vulvar cancer, Waldenstrom macroglobulinemia, and Wilms tumor (childhood). In certain embodiments, the neoplasm or cancer may be selected from the group consisting of melanoma, renal cell carcinoma, lung cancer and blood cancer. As used herein, a "blood cancer" is a cancer that affects the blood, bone marrow and lymphatic system. There are three main groups of blood cancer: leukemia, lymphoma and myeloma. The four broad classification of leukemia are: acute lymphocytic leukemia (ALL), acute myelogenous leukemia (AML), chronic lymphocytic leukemia (CLL) and chronic myelogenous leukemia (CML). Lymphomas are divided into two categories: Hodgkin lymphoma and non-Hodgkin lymphoma. Most non-Hodgkin lymphomas are B-cell lymphomas, and either grow quickly (high-grade) or slowly (low-grade). There are 14 types of B-cell non-Hodgkin lymphomas. The rest are T-cell lymphomas, named after a different cancerous white blood cell, or lymphocyte. Because myeloma frequently occurs at many sites in the bone marrow, it is often referred to as multiple myeloma.

(c) ***subject***

[0106] A suitable subject includes a human, a livestock animal, a companion animal, a lab animal, or a zoological animal. In one embodiment, the subject may be a rodent, e.g. a mouse, a rat, a guinea pig, etc. In another embodiment, the subject may be a livestock animal. Non-limiting examples of suitable livestock animals may include pigs, cows, horses, goats, sheep, llamas and alpacas. In yet another embodiment, the subject may be a companion animal. Non-limiting examples of companion animals may include pets such as dogs, cats, rabbits, and birds. In yet another embodiment, the subject may be a zoological animal. As used herein, a "zoological animal" refers to an animal that may be found in a zoo. Such animals may include non-human primates, large cats, wolves, and bears. In a specific embodiment, the animal is a laboratory animal. Non-limiting examples of a laboratory animal may include rodents, canines, felines, and non-human primates. In certain embodiments, the animal is a rodent. Non-limiting examples of rodents may include mice, rats, guinea pigs, etc. In preferred embodiments, the subject is a human.

Table A. Sequences

SEQ ID NO	Name	Sequence	Source
1	R38A, F42K, C125S IL2-OMCP construct	CACAAACTCGCATTCAACTTCAATCTAGAAATAAATGGCAGTGATACACATTCTACAGTAGATGTATATCTTGATGATTCTCAAATTATAACGTTTGATGGAAAAGATATCCGTCCAACCATCCCGTTCATGATAGGTGATGAAATTTTCTTACCGTTTTATAAAAATGTGTTTAGTGAGTTTTTCTCTCTGTTTAGAAGAGTTCCTACAAGTACTCCATATGAAGACTTGACATATTTTTATGAATGCGACTATACAGACAATAAATCTACATTTGATCAGTTTTATCTTTATAATGGCGAAGAATATACTGTCAAAACACAGGAGGCCACTAATAAAAATATGTGGCTAACTACTTCCGAGTTTAGACTAAAAAAATGGTTCGATGGCGAAGATTGTATAATGCATCTTAGATCGTTAGTTAGAAAAATGGAGGACAGTAAACGAAACACTGGTGGTACCGGAAGTAGCGGTAGTAGTGATTACAAGGACGATGACGACAAGCACCACCATCATCATCATCACCACGGTAGCAGCGGCAGCAGTGCCCCCACCTCTAGCAGCACAAAGAAGACCCAGCTGCAACT	Synthesized
		GGAACACCTCCTGCTGGACCTGCAGATGATCCTGAACGGCATCAACAACTACAAGAACCCCAAGCTGACCGCCATGCTGACCAAAAAGTTTTACATGCCCAAGAAGGCCACCGAGCTTAAACACCTGCAATGCCTTGAGGAGGAGCTGAAGCCCTGGAGGAGGTACTGAACCTGGCCCAGAGCAAGAACTTTCATCTGAGGCCCAGGGACCTGATTAGCAACATCAACGTGATCGTGTTGGAGTTGAAGGGCAGCGAGACCACGTTCATGTGCGAGTACGCCGACGA	

Table A. Sequences

SEQ ID NO	Name	Sequence	Source
		GACGGCCACCATAGTGGAGTTTCTTAACAGGTGGAT CACCTTCTCACAGTCTATCATCAGCACCCTGACC	
2	R38A, F42K, C125S IL2-OMCP construct	HKLAFNFNLEINGSDTHSTVDVYLDDSQIITFDGKDIRPT IPFMIGDEIFLPFYKNVFSEFFSLFRRVPTSTPYEDLTYF YECDYTDNKSTFDQFYLYNGEEYTVKTQEATNKNMWL TTSEFRLKKWFDGEDCIMHLRSLVRKMEDSKRNTGGT GSSGSSDYKDDDDKHHHHHHHHGSSGSSAPTSSSTK KTQLQLEHLLLDLQMILNGINNYKNPKLTAMLTKKFYMP KKATELKHLQCLEEELKPLEEVLNLAQSKNFHLRPRDLI SNINVIVLELKGSETTFMCEYADETATIVEFLNRWITFSQ SIISTLT	Synthesized
3	Melanoma tumor associate antigen tyrosinase-related protein 2 peptide	SVYDFFVWL	Homo sapiens
4	Highly immunogenic peptide	SIINFEKL	Homo sapiens
5	WT IL2 (C125S)	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTRM LTFKFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNF HLRPRDLISNINVIVLELKGSETTFMCEYADETATIVEFL NRWITFCQSIISTLT	Homo sapiens
6	R38A, F42K, C125S IL2	APTSSSTKKTQLQLEHLLLDLQMILNGINNYKNPKLTAM LTKKFYMPKKATELKHLQCLEEELKPLEEVLNLAQSKNF HLRPRDLISNINVIVLELKGSETTFMCEYADETATIVEFL NRWITFSQSIISTLT	Synthesized
7	OMCP	HKLAFNFNLEINGSDTHSTVDVYLDDSQIITFDGKDIRPT IPFMIGDEIFLPFYKNVFSEFFSLFRRVPTSTPYEDLTYF YECDYTDNKSTFDQFYLYNGEEYTVKTQEATNKNMWL TTSEFRLKKWFDGEDCIMHLRSLVRKMEDSKRNT	Synthesized
8	Linker	GSSGSSDYKDDDDKHHHHHHHHGSSGSS	Synthesized
9	FLAG tag	DYKDDDK	Synthesized
10	HA tag	YPYDVPDYA	Synthesized

Table A. Sequences			
SEQ ID NO	Name	Sequence	Source
11	Myc tag	EQKLISEEDL	Synthesized
12	V5 tag	GKPIPNPLLGLDST	Synthesized
13	OMCPbr	GHKLAFNFNLEINGSDTHSTVDVYLDDSQIITFDGKDIRPTIPFMIGDEIFLPFYKNVFSEFFSLFRRVPTSTPYEDLTY	Cowpox virus
		FYECDYTDNKSTFDQFYLYNGEEYTVKTQEATNKNMWLTTSEFRLKKWFDGEDCIMHLRSLVRKMEDSKR	
14	OMCPmpx	HKLVHYFNLKINGSDITNTADILLDNYPIMTFDGKDIYPSIAFMVGNKLFLDLYKNIFVEFFRLFRVSVSSQYEELEYYYSCDYTNNRPTIKQHYFYNGEEYTEIDRSKKATNKNSWLITSGFRLQKWFDSEDCIIYLRSLVRRMEDSNK	Monkeypox virus
15	MICA	MEPHSLRYNLTVLSWDGSVQSGFLTEVHLDGQPFLRCRDRQKCRAKPQGQWAEDVLGNKTWDRETRDLTGNGKDLRMTLAHIKDQKEGLHSLQEIRVCEIHEDNSTRSSQHFYYDGELFLSQNLETKEWTMPQSSRAQTLAMNVRNFLKEDAMKTKTHYHAMHADCLQELRRYLKSGVVLR	Homo sapiens
16	MICB	MEPHSLRYNLMVLSQDGSVQSGFLAEGHLDGQPFLRYDRQKRRAKPQGQWAEDVLGAETWDTETEDLTENGQDLRRTLTHIKDQKGGLHSLQEIRVCEIHEDSSTRGSRHFYYNGELFLSQNLETQESTVPQSSRAQTLAMNVTNFWKEDAMKTKTHYRAMQADCLQKLQRYLKSGVAIR	Homo sapiens
17	ULBP3	DAHSLWYNFTIIHLPRHGQQWCEVQSQVDQKNFLSYDCGSDKVLSMGHLEEQLYATDAWGKQLEMLREVGQRLRLELADTELEDFTPSGPLTLQVRMSCECEADGYIRGSWQFSFDGRKFLLFDSNNRKWTVVHAGARRMKEKWEKDSGLTTFFKMVSMRDCKSWLRDFLMHRKKRLE	Homo sapiens
18	RAE-1B	DAHSLRCNLTIKDPTPADPLWYEAKCFVGEILILHLSNINKTMTSGDPGETANATEVKKCLTQPLKNLCQKLRNKVSNTKVDTHKTNGYPHLQVTMIYPQSQGRTPSATWEFNISDSYFFTFYTENMSWRSANDESGVIMNKWKDDGEFVKQLKFLIHECSQKMDEFLKQSKEK	Homo sapiens
19	NKG2D portion	LTIIEMQKGDCALYAS	Homo sapiens
20	NKG2D	LTIIEMQKGECALYAS	Green

Table A. Sequences

SEQ ID NO	Name	Sequence	Source
	portion		monkey
21	NKG2D portion	LTIIEMQKGDCAVYAS	Marmoset
22	NKG2D portion	LTLVEIPKGSCAVYGS	Mouse
23	NKG2D portion	LTLVKTPSGTCAVYGS	Rat
24	NKG2D portion	LTLMDTQNGKCALYGS	Guinea pig
25	NKG2D portion	LTLVEMQNGTCIVYGS	Ground squirrel
26	NKG2D portion	LTVVEMQSGSCAVYGS	Deer mouse
27	NKG2D portion	LSMVEMQNGTCAVYAS	Naked mole rat
28	NKG2D portion	LTLVEMQRGSCAVYGS	Prairie vole
29	NKG2D portion	VSIVEMQGGNCAVYGS	European shrew
30	NKG2D portion	VTVYEMQNGSCAVYGS	Star-nosed mole
31	NKG2D portion	LTLVEMQNGSCAVYGS	Chinese hamster
32	NKG2D portion	LTMVDMQNGTCAVYGS	Cat
33	OMCP portion	ASSFK	Cowpox virus
34	DAP10 signaling motif	YINM	Synthesized

EXAMPLES

[0107] The following examples are included to demonstrate preferred embodiments of the invention. It should be appreciated by those of skill in the art that the techniques disclosed in the examples that follow represent techniques discovered by the inventors to function well in the practice of the invention, and thus can be considered to constitute preferred modes for its practice. However, those of skill in the art should, in light of the present disclosure, appreciate that many changes can be made in the specific embodiments which are disclosed and still obtain a like or similar result without departing from the spirit and scope of the invention.

Introduction to Examples 1-6.

[0108] The IL-2Rα chain serves to capture IL-2 at the cell surface to facilitate subsequent binding to the signaling part of the receptor, namely the IL-2Rβγ chains. Resting cytotoxic lymphocytes, such as natural killer (NK) and $CD8^+T$ cells, do not express appreciable IL-2Rα at the cell surface and are thus not activated by low levels of IL-2[1]. IL-2Rα is expressed on this population after initial activation, however, and is required for maximum cytotoxic lymphocyte expansion[2]. High dose IL-2 can induce the activation of all cytotoxic lymphocytes and is approved for treatment of several malignancies with an approximately 15% partial or complete tumor response[3-5]. Most patients do not benefit from such therapy due to activation of regulatory T cell (T_{regs}) and complications such as severe blood pressure alteration, generalized capillary leak, and end organ failure due to activation of vascular endothelium[6,3,7]. Both vascular endothelium and T_{regs} express IL-2Rα and are thus preferentially activated by IL-2 over cytotoxic lymphocytes[8]. Lowering the IL-2 dose can ameliorate side effects but also decreases efficacy. Mutant forms of IL-2, such as those with substitutions of alanine for arginine at the 38 position (R38A) and/or lysine for phenylalanine at the 42 position (F42K), decrease the affinity of IL-2 for IL-2Rα and thus eliminate many side effects[9]. Such IL-2α mutants may also decrease the efficacy of immunotherapy[2]. A form of IL-2 that could preferentially activate cytotoxic lymphocytes in the absence of IL-2Rα reactivity would be highly advantageous for clinical applications.

[0109] NKG2D recognizes MHC class-I-related stress ligands expressed by malignant or virally-transformed cells[10]. Of all the activating immunoreceptors NKG2D has the highest specificity for cytotoxic lymphocytes as it is constitutively expressed on both murine and human NK cells as well as activated $CD8^+T$ cells[11]. Consequentially it has been argued that tumors and virally infected cells utilize shed NKG2D ligands as a mechanism of immune evasion[12,13]. Orthopox major histocompatibility complex class I-like protein, or OMCP, is an NKG2D ligand decoy shed by monkeypox and cowpox virus infected cells. It is not expressed by small pox or vaccinia virus and thus not recognized by those immunized with small pox vaccine. As OMCP binds to both human and murine NKG2D with the highest affinity of any known ligand we thought it might function as an ideal targeting vector to optimally deliver IL-2 to cytotoxic lymphocytes[14,15]. Here we describe the construction and function of a fusion protein designed to deliver an IL-2Rα mutant to NKG2D-expressing lymphocytes[15]. We demonstrate that this construct overcomes decreased efficacy associated with mutations in the IL-2Rα binding region while retaining a favorable safety profile. Systemic administration of this fusion protein improves immunotherapy against both solid and liquid tumors. Targeted delivery of IL-2 can thus be safely used to maximally activate NKG2D-expressing lymphocytes, such as NK cells, to optimize immunotherapy without systemic side effects.

Example 1. NKG2D-targeted delivery of an IL-2 mutant preferentially activates cytotoxic lymphocytes *in vitro.*

[0110] To overcome the preferential activation of IL-2Rα-expressing cells, we designed an IL-2 fusion protein that would target cytotoxic lymphocytes directly via the NKG2D receptor. This fusion protein combines the high affinity NKG2D ligand OMCP with an IL-2 mutated to reduce IL-2Rα reactivity. Our construct, termed OMCP-mutIL-2, consists of the 152 residue OMCP protein fused to the N-terminus of the 133 amino acid R38A/F42K mutant form of human IL-2 (mutIL-2) via a flexible 30 residue linker **(FIG. 1A-B).** The construct was first assessed for its *in vitro* binding ability. Binding of fluorescently labeled construct was tested *in vitro* at 37°C in bulk splenocytes. **FIG. 17** shows that the construct appears to only bind to NK cells which express NKG2D. The construct does not show binding to CD4+CD3+ T cells, CD8+CD3+ T cells, CD11C+CD11b- DCs, CD11c-CD11b+ Macs or CD19+CD3- B cells.

[0111] We have previously demonstrated strain-specific differences in murine NK cell cytotoxicity and lung cancer immunosurveillance[16] (and **Example 7**). Therefore, we set out to examine the efficacy of OMCP-mut-IL2 in activation of NK cells from two different strains of mice, namely A/J and B6 with poor and robust NK function, respectively. Compared to wild-type IL-2 (wtIL-2) or mutIL-2, OMCP-mutIL-2 strongly upregulated CD69 on NK cells of both strains after 36-hour co-culture with 100 IUe/ml of cytokine **(FIG. 1C,** left; **FIG. 6,** left two graphs)[16,17]. At high concentrations a similar increase in CD69 expression was observed with OMCP-mut-IL-2, wtIL-2 or mutIL-2 **(FIG. 6).** Activation of $CD4^+Foxp3^+T_{regs}$,, as measured by upregulation of ICOS, was evident with wtIL-2 only, but not with mutIL-2 nor OMCP-mutIL-2 **(FIG. 1C-D).** $CD8^+$ and $CD4^+Foxp3^-$ effector T cells, on the other hand, demonstrated no upregulation of CD69 after 36 hours, even at highest doses of cytokines **(FIG. 1C-D** and data not shown). Longer exposure over a period of five days led to proliferation of both NK and $CD8^+$ T cells exposed to wtIL-2 and OMCP-mutIL-2 **(FIG. 1E-F).** Importantly, OMCP-mutIL-2 activated $CD8^+$ T cells and NK cells equivalently to mutIL-2 in $NKG2D^{-/-}$ splenocytes, indicating that the increased activation was due to the effect of OMCP targeting upon NKG2D-bearing cells **(FIG. 1F; FIG. 6,** right two graphs). Only incubation with wtIL-2 led to $CD4^+Foxp3^+T_{regs}$ and $CD4^+Foxp3^-$ effector cell proliferation **(FIG. 1E-F).** Thus exposure to OMCP-mutIL-2 results in preferential NK activation that is superior or equivalent to wtIL-2 in a dose-dependent manner. $CD8^+$ T cells can also be activated but require prolonged exposure to higher doses of OMCP-mutIL-2.

Example 2. Low-dose cytokine therapy offers a favorable safety profile.

[0112] Dose-dependent toxicity can limit cytokine administration *in vivo.* To model human immunotherapy protocols we next treated A/J mice with wtIL-2 given as ten doses over a five day cycle[18]. While A/J mice tolerated 750,000 IUe of wtIL-2, significant mortality was evident at higher doses **(FIG. 2A-B).** Even after a 750,000 IUe dose mice demonstrated extreme distress, weight loss, decreased food consumption, ascites and hepatic inflammation **(FIG. 2A-E; FIG. 7A-C).** These side-effects mirror the capillary leak and distress associated with high dose IL-2 therapy in humans[7]. Treatment with anti-Asialo-GM1 ameliorated mortality, but not weight loss, induced by high dose wtIL-2 (1,500,000 IUe) in A/J mice, confirming that side effects of such therapy can occur independent of NK cells **(FIG. 2F-K).** Unlike the case for wtIL-2 no animal death was evident after 1,500,000 IUe of OMCP-mutIL-2 or mutIL-2 in the presence or absence of NK cells. Animal weight loss after 1,500,000 IUe of OMCP-mutIL-2 occurred only in NK-sufficient mice suggesting that toxicity of our construct was solely due to immunoactivation **(FIG. 2F-K).** A regimen of 200,000 IUe was well tolerated in A/J mice with minimal weight loss, distress, or organ inflammation for all cytokines **(FIG. 2L-O).** Capillary leak, however, was still evident by accumulation of pleural effusion and ascites after wtIL-2, but not OMCP-mutIL-2 or mutIL-2, at this dose. B6 mice were able to tolerate higher doses of wtIL-2 but still suffered significant morbidity over 750,000 IUe **(FIG. 7D).**

Example 3. OMCP-mutIL-2 preferentially expands and activates NK cells *in vivo* compared to wtIL-2 or mutIL-2.

[0113] To evaluate immunologic changes associated with cytokine treatment, A/J mice received 200,000 IUe of cytokine or construct given as ten equal doses over five days. Splenic lymphocytes were evaluated flow cytometrically on day six. Both wtIL-2 and OMCP-mutIL-2 increased lymphocyte content and splenic size over saline-treated controls **(FIG. 3A-B).** OMCP-mutIL-2 led to a substantial expansion and activation of NK cells measured by cellularity and surface KLRG1 levels **(FIG. 3C).** In OMCP-mutIL-2 treated mice NK cells comprised close to half of all splenic lymphocytes, paralleling or even surpassing the total lymphocyte counts of saline or mutIL-2-treated mice **(FIG. 3A vs. FIG. 3C).** NK expansion by 200,000 IUe of OMCP-mutIL-2 was superior to near toxic doses of wtIL-2 (750,000IU), high dose mutIL-2 (3,500,000 IUe), or wtIL-2 complexed to anti-IL-2 antibody (clone MAB602)[19] **(FIG. 3C).** In fact, the majority of mice could not tolerate the full 200,000 IUe of wtIL-2/anti-IL-2 antibody and injections had to be terminated at 160,000 or 180,000 IUe with requisite animal sacrifice due to animal distress and rapid weight loss **(FIG. 8A).** WtIL-2 led to a significant expansion of $CD4^+Foxp3^+T_{regs}$, specifically the $ICOS^+$ subset[6] in A/J mice even when complexed to anti-IL-2 antibodies **(FIG. 3D).** Importantly the NK/T_{reg} ratio, which has been described as a predictive factor for success of immunotherapy[20], was dramatically increased in OMCP-mutIL-2 treated mice compared to all other treatment conditions **(FIG. 3E).** Superior expansion of NK cells by

OMCP-mutIL-2 was even possible at doses 2-fold lower than wtIL-2 **(FIG. 8B).** However, targeting NKG2D with a ~500-fold lower affinity NKG2D ligand, ULBP3, ameliorated efficacy of the fusion construct for expansion but still offered superior NK activation compared to mutIL-2 alone **(FIG. 8B).** No statistically significant increase in CD4$^+$Foxp3$^-$ or CD8$^+$ T lymphocytes was evident after wtIL-2 or OMCP-mutIL-2 treatment, although a trend for CD8$^+$ T cell expansion was evident **(FIG. 8C-D).** Such data is consistent with the prevalence of naïve T lymphocytes, expressing low levels of IL-2 receptors and NKG2D in specific pathogen-free mice.

[0114] Unlike the A/J strain little immunoactivation of lymphocytes was evident in B6 mice treated with 200,000 IUe of wtIL-2 (data not shown). At higher doses of 750,000 IUe OMCP-mutIL-2 expanded NK cells more robustly than wtIL-2 in this strain **(FIG. 3F-H).** IL-2/anti-IL-2 antibody complexes prevented T$_{reg}$ expansion but, similar to the A/J strain, such treatment had toxicity and the majority of B6 mice could not tolerate the full 750,000 IUe dose **(FIG. 3I).** OMCP-mutIL-2, however, was well tolerated at this dose and led to a high NK/T$_{reg}$ ratio **(FIG. 3J).** No expansion of NK cells was evident in OMCP-mutIL-2 treated B6 NKG2D$^{-/-}$ mutants, confirming the requirement for NKG2D in the function of our construct (data not shown). No statistically significant expansion of B6 CD8$^+$ or CD4$^+$Foxp3$^-$ T cells was evident in any treatment group although a trend for CD8$^+$ T cell expansion was evident after wtIL-2 administration **(FIG. 8F-G).** Identical data was obtained for lung resident lymphocytes in both the A/J and B6 strains (data not shown).

Example 4. OMCP-mutIL-2 preferentially expands and activates NK cells in human peripheral blood lymphocytes compared to wtIL-2 or mutIL-2.

[0115] To demonstrate the effectiveness of OMCP-mutIL-2 in human lymphocytes, human peripheral blood lymphocytes were co-cultured for 36 hours in 100IUe of either wild-type IL2, R38A/F42K mutant form of IL-2 or OMCP-mutant IL-2.

<u>NK cells:</u> The cells were flow cytometrically analyzed and relative prevalence of CD56+CD3- NK cells compared between conditions. A relatively higher proportion of NK cells was evident in the OMCP-mutant IL-2 group **(FIG. 31A).** Perforin levels were higher in OMCP-mutant IL-2 treated NK cells (red) compared to saline (black), IL-2 (blue) or mutant IL-2 (green) treated ones **(FIG. 31B).**

<u>CD8+ T cells:</u> Similar to NK cells, higher intracellular levels of perforin were evident in CD8+ T cells treated with OMCP-mutant IL-2 compared to other conditions **(FIG. 31C).**

<u>Tregs:</u> When gating on CD4+Foxp3+CD45RA- T cells a relatively higher proportion of activated CD25+CD127- regulatory T cells was evident in IL-2 treated peripheral blood lymphocyte cultures compared to other conditions **(FIG. 31D)**. Taken together this data suggests that OMCP-mutIL-2 preferentially expands and activates NK cells and CD8+ cells in human peripheral blood lymphocytes compared to wtIL-2 or mutIL-2. Importantly, OMCP-mutIL-2 does

not activated regulatory T cells significantly relative to IL2.

Example 5. Treatment with OMCP-mutIL-2 offers superior immunologic control of malignancies *in vivo.*

[0116] Unlike T lymphocytes, which require prior antigen encounter for optimal antigen-specific tumor cytotoxicity, NK cells can mediate natural cytotoxicity without prior sensitization. NK cells also form the primary barrier for expansion of select malignancies, such as lymphoma and lung cancer[16,17,21,22]. Treatment of A/J mice with OMCP-mutIL-2, compared to wtIL-2 or mutIL-2, led to enhanced *in vivo* clearance and *in vitro* lysis of YAC-1 cells by bulk splenocytes **(FIG. 4A, FIG. 9A-B).** Decreased growth of the highly aggressive Lewis Lung Carcinoma (LLC) cell line was evident in B6 mice after 750,000 IUe of OMCP-mutIL-2 compared to wtIL-2 or mutIL-2. Increased cytotoxicity was evident in OMCP-mutIL-2 treated splenocytes for the LLC cell line as well **(FIG. 4B-C; FIG. 9A-C).** Enhanced immunotherapy was lost in NKG2D$^{-/-}$ mice or following NK depletion **(FIG. 4D-E).** In the absence of host NKG2D mutIL-2 actually increased the rate of LLC growth. Thus OMCP-mediated targeting of mutIL-2 offers a safer and more efficacious form of immunotherapy for both solid and liquid tumors in various strains of mice.

Example 6. Impact of NKG2D targeting on IL-2 signaling.

[0117] Antibody-IL-2 conjugates, or IL-2/anti-IL-2 antibody complexes demonstrate improved biologic activity over purified cytokine by extending the duration of serum half-life[23,24]. To investigate whether linking IL-2 to OMCP increased serum half-life, we injected 500,000 IUe of fluorescently-labeled wtIL-2, mutIL-2 or OMCP-mutIL-2 into A/J and B6 mice and monitored serum clearance by serial blood draws. While OMCP-mutIL-2 had a slightly higher serum concentration at early time points, all constructs were undetectable in the blood one hour post-injection **(FIG. 5A-B).** This is significantly shorter than the described 11-14 hour serum half-life of antibody-IL-2 conjugates[23]. Interestingly, despite the injection of identical amount of cytokine, lower cytokine levels were detected in B6 mice compared to A/J mice at all time points. Such data points to strain-specific differences in clearance of IL-2 and may explain why B6 mice are able to both tolerate and require higher doses of cytokine for NK expansion. Nevertheless, based on this data it is unlikely that prolonged circulation of construct was responsible for the increased activity of OMCP-mutIL-2 over wtIL-2.

[0118] We next considered the possibility that the superiority of OMCP-mutIL-2 was the result of signaling through NKG2D as antibody-mediated crosslinking of this receptor can activate NK cells **(FIG. 10A)[25].** While the addition of purified OMCP to mutIL-2 did not augment NK activation or expansion *in vitro* or *in vivo* (data not shown) we would not expect a monomeric ligand to crosslink NKG2D. We thus directly compared NK cell activation in the presence of

1000 IUe of OMCP-mutIL-2, mutIL-2 and mutIL-2 combined with equimolar concentration of pentamerized OMCP. No increase in NK activation, as measured by CD69 upregulation or degranulation, was evident in the presence of pentamerized OMCP **(FIG. 5C, FIG. 10B).** This suggests that NKG2D crosslinking is not responsible for augmented NK cell activation by OMCP-mutIL-2 at physiologic concentrations.

[0119] To evaluate IL-2 signaling we next quantitated STAT5 phosphorylation after a 15 minute cytokine stimulation of freshly isolated NK cells *in vitro.* Lower levels of STAT5 phosphorylation were evident in A/J compared to B6 NK cells at all concentrations tested **(FIG. 5D-E)** suggesting that lymphocyte dysfunction of A/J mice may at least partially be the result of inefficient IL-2 signal transduction. Surprisingly, for both B6 and A/J NK cells wtIL-2 and OMCP-mutIL-2 demonstrated an identical dose-dependent pattern of STAT5 phosphorylation **(FIG. 5D-E).** In the absence of NKG2D reactivity OMCP-mutIL-2 failed to increase STAT5 phosphorylation over mutIL-2 alone. Taken together these data suggested that IL-2α reactivity is important for peak IL-2 signaling in resting NK cells, and that NKG2D-binding may effectively substitute for IL-2Rα-binding in IL-2-mediated signal transduction. Such data, however, failed to explain the superior NK activation by OMCP-mutIL-2 *in vivo* or in bulk splenocyte cultures **(FIG. 1C-D, FIG. 3).**

[0120] IL-2 signaling results in the internalization of IL-2/IL-2R, with subsequent degradation of IL-2 and IL-2Rβγ. The binding of OMCP-mutIL-2 to both the IL-2 receptor and NKG2D could thus lead to altered internalization and enhanced NK cell activation by prolonging IL-2 signaling. To test this we stimulated freshly isolated NK cells for 15 minutes, replaced the culture media with cytokine free media, and monitored STAT5 phosphorylation for four hours. Identical decay of phospho-STAT5 was evident for both wtIL-2 and OMCP-mutIL-2 **(FIG. 5F-G).** Thus altering duration of IL-2 signaling is not responsible for superior NK activation by OMCP-mutIL-2.

[0121] We next considered the possibility that superior NK activation by OMCP-mutIL-2 may be the result of altered cytokine interaction with competing stromal cells **(FIG. 5H).** Indeed, in the presence of other splenocytes OMCP-mutIL-2 demonstrated a dose-dependent enhancement in NK STAT5 phosphorylation over wtIL-2 **(FIG. 5I).** We next explored the interplay between IL-2Rα expression by stromal cells and NKG2D expression by NK cells on IL-2 signal transduction. To accomplish this we isolated splenic NK cells from either wild-type or NKG2D$^{-/-}$ B6 mice and combined them with wild-type splenocytes depleted of NK cells. Cultures were recombined in a 1:20 NK:splenocyte ratio, resembling the proportion normally present in resting wild-type B6 mice. For some cultures NK cell depleted splenocytes were treated with saturating concentrations of IL-2Rα-blocking antibody (clone 3C7) prior to recombining with wild-type NK cells. The cultures were then stimulated with 1000 IUe of either wtIL-2 or OMCP-mutIL-2 for 15 minutes. STAT5 phosphorylation was identical in NKG2D$^{-/-}$ or wild type NK cells in the presence of wtIL-2 (**FIG. 5J,** left two columns). Wild-type NK cells cultured with OMCP-mutIL-2 demonstrated superior STAT5 phosphorylation to cultures with wtIL-2. Little STAT5 phosphorylation was evident in NKG2D$^{-/-}$ NK cells cultured with OMCP-mutIL-2 (**FIG. 5J,** right two columns). In the presence of IL-2Rα-blockade of competing splenocyte stromal cells, NK cell STAT5 phosphorylation by wtIL-2 increased to levels comparable to OMCP-mutIL-2 **(FIG. 5K).** Taken together these data demonstrate that IL-2-Rα expression by "competing" stromal cells limits NK cell activation by wtIL-2 and this competition can be eliminated by the NKG2D-targeted, IL-2Rα-binding impaired OMCP-mutIL-2 construct.

Discussion for Examples 1-6.

[0122] While IL-2 therapy initially showed great promise, it has been limited by activation of T_{regs} and toxic side effects associated with activation of vascular endothelium. Several strategies have been proposed to preferentially activate cytotoxic lymphocytes. One strategy has been to create mutants with increased affinity for IL-2Rβ to remove the preference for IL-2Rα[26,27]. Importantly, these IL-2 mutants retain wild type binding for IL-2Rα, and would therefore still be recognized by T_{reg} cells and vascular endothelium. Our results also suggest that competition with IL2-Rα$^+$-expressing cells limits bioavailability of wtIL-2 to cytotoxic lymphocytes.

[0123] Another promising therapy involves anti-IL2 antibodies that sterically inhibit wtIL-2 binding to IL-2Rα[1,28,29]. Such treatment can extend serum half-life[24] due to the Fc region of the antibody and potentially due to reduced competition for wtIL-2 from IL-2Rα-expressing cells. Antibody-IL-2 fusion proteins have also been designed to target IL-2 to specific tumor antigens[30,31]. While offering the potential for personalized therapy such antibody-mediated delivery of IL-2 to the tumor depends on the expression of a known tumor associated antigen, a situation that often does not exist. This approach could potentially be further limited by tumor-mediated alteration of the targeted antigen.

[0124] Finally, IL-2 mutants with reduced affinity for IL-2Rα have been tested extensively. Compared to wtIL-2 these mutants can be administered in supratherapeutic doses without IL-2Rα-mediated capillary leak or systemic toxicity[32]. While these mutants have excellent safety profiles, they activate cytotoxic lymphocytes poorly **(FIG. 5C-E)**[33]. Our approach combines several of the concepts above to target a safe form of IL-2 directly to cytotoxic lymphocytes, instead of tumors. This is accomplished by replacing the normal targeting of IL-2 to IL-2Rα with NKG2D. The combination of an IL-2Rα-deficient IL-2 fused to a high affinity NKG2D-ligand improves upon previous strategies by specifically expanding NK cells without any apparent activation of T_{regs} or capillary leak. These findings offer the promise of a potentially safe and highly efficacious form of IL-2.

[0125] One limitation in translating results from inbred lab animals to humans is the natural diversity in cytokine reactivity and environmentally dependent threshold for lymphocyte activation. Previous studies have demonstrated a correlation between *ex vivo* killing of tumor cells and enhanced long-term cancer immunity[34]. Therefore, any potential therapy needs to account for a population that has differential levels of cytotoxic lymphocyte activity. We have thus attempted to model this natural variation by using two strains of mice known to be highly resistant (B6) or susceptible (A/J) to carcinogenesis. For example, NK cells from B6 mice, are activated by wtIL-2 and extreme doses of mutIL-2. In contrast, IL-2/anti-IL-2 antibody complexes resulted in expansion of NK cells in A/J but not in B6 mice. Such variations highlight the limitations of translating results derived from a single strain of mice to immunologically diverse humans. Importantly, the OMCP-mutIL-2 construct was able to expand NK cells in both strains of mice, indicating that this therapy could be efficacious in populations with diverse NK function and cytokine reactivity.

[0126] Since OMCP has been described as an evolutionary antagonist of NKG2D[35] blockade of this immunoreceptor at the time of tumor therapy may be construed as counterproductive. Nevertheless, natural cytotoxicity and tumor clearance was augmented in OMCP-mutIL-2-treated mice even in the presence of established tumors. This suggests minimal or transient NKG2D receptor occupancy and preservation of function. Alternatively recent reports have demonstrated that shed NKG2D ligands may actually promote tumor immunity through reversal of NK desensitization imposed by chronic agonistic engagement[36]. While we did not detect NK activation or expansion by monomeric or even pentameric OMCP, it is possible that within the tumor bed such competitive antagonism plays a paradoxical role in NK activation. In addition, IL-2 may upregulate receptors necessary for NK migration and tumor infiltration. It is thus possible that anti-tumor immunity mediated by OMCP-mutIL-2 may depend on NK cells located outside the tumor bed and not subject to local tumor-specific tolerance or anergy. Furthermore, OMCP maybe the ideal "targeting vector" due to its high affinity and long half-life of binding to human NKG2D.

[0127] While NK cells from two separate strains of mice were activated by OMCP-mutIL-2 we did not detect global expansion of activation of CD8$^+$ T cells by our construct. This is most likely due to the fact that NKG2D is expressed only on select subsets of CD8$^+$ T cells, namely memory or activated cytotoxic lymphocytes. Based on the paucity of this cell population in mice raised in specific pathogen-free environment, OMCP-mutIL-2-mediated activation was limited in our system to NK cells. To this end we focused on immunotherapy for lung cancer and lymphoma, whose growth is regulated primarily by NK cells[16,17,22,37]. Nevertheless OMCP-mutIL-2 was able to expand CD8$^+$ T cells when administered in high concentrations *in vitro* **(FIG. 1E-F)**. Thus, it may be possible that NKG2D-targeted delivery of immunostimulatory cytokines may lead to the expansion and/or activation of antigen-specific CD8$^+$ memory cells for long-term tumor immunity under normal immunologic conditions.

Methods for Examples 1-6.

[0128] _Cytokine and Construct Generation:_ The sequences encoding human IL-2 (1-133; C125S) and mutant IL2 (1-133; R38A, F42K, C125S) were cloned into the pFM1.2R[38] with an

N-terminal FLAG/hexahistidine tag. The chimeric OMCP-mutIL-2 molecule comprises the full-length OMCP (1-152) coding sequence cloned in frame with a C-terminal FLAG/hexahistidine tag-mutant IL-2 (1-133; R38A, F42k, C125S) cloned into the pFM1.2R vector. Proteins were expressed by transient transfection into HEK293F (Life_Technologies). Supernatant was recovered at 72h and 144h post-transfection. Supernatants were supplemented with 5 mM imidazole and 0.02% sodium azide and purified by nickel-nitrilotriacetic acid (Ni-NTA) chromatography (Qiagen). Purified proteins were buffer exchanged into saline and flash frozen in liquid nitrogen. Equivalent *in vitro* and *in vivo* activity was documented for wild-type IL-2 generated in house and Teceleukin (TecinTM) available from the NCI repository (Frederick National Laboratory for Cancer Research). Thus for some experiments these two preparations of IL-2 were used interchangeably.

[0129] Wild-type IL-2 has a specific activity of $15x10^6$ IU/mg[39]. Thus, based on the molecular weight of 15.5kDa a 4.4 µM solution is equivalent to 1000 IU/µl. Based on this calculation all cytokines and construct were administered on a molar basis with 1 µl of 4.4 µM solution defined as 1000IU equivalents (IUe from here on). Such a system allows for equimolar comparison between IL-2, mutIL-2 and OMCP-mutIL-2 despite difference in molecular weight.

[0130] *Animals:* A/J (8-12 weeks) and C57BL/6J (6-9 weeks) strains of mice were purchased from the Jackson Laboratory (Bar Harbor, Maine). $NKG2D^{-/-}$ mice on the B6 background were kindly provided by Wayne Yokoyama and bred in house (Howard Hughes Institute of Medicine at Washington University in St. Louis). Animals were housed in a barrier facility in air-filtered cages and allowed free access to food and water. For some experiments A/J mice were treated with depleting concentrations of anti-Asialo-GM1 (50 µl day -2; 25 µl day -1) or control rabbit IgG (Wako Chemical Company). Animal procedures were approved by the animal studies committee of Washington University School of Medicine, St. Louis, MO.

[0131] *Tissue harvest and in vitro cultures:* Single cell suspension of splenocytes were obtained by crushing whole spleens through 70 µm cell strainers prior to RBC lysis by ACK buffer (Lonza, Walkersville, MD) and re-filtration through a 40 µm filter. Lungs were digested for 90 minutes at 37°C in 1 mg/ml collagenase II (Fisher Scientific), and 5 U/ml DNase I (Sigma-Aldridge) prior to processing in an identical fashion to spleens.

[0132] For *in vitro* cultures splenocytes from either A/J, B6, or $NKG2D^{-/-}$ mice were extracted in a sterile fashion and seeded in 12-well plates in complete media (RPMI 1640 supplemented with 10% FBS, 100 U/ml Penicillin and Streptomycin, 2 mM L-glutamine and 50 µM 2-Mercaptoethanol) at 5 million cells per ml per well. The cells were treated with increasing doses of human recombinant IL-2, mutIL-2, OMCP-mutIL-2, or OMCP for 36 hours as described in the manuscript. For some experiments bulk splenocytes were labeled with CFSE and cultured in 1000 IUe/ml of cytokine for 5 days prior to flow cytometric analysis. For NK isolation experiments bulk splenocytes were processed using either the NK cell isolation kit II or CD49b (DX5) positive magnetic bead selection (both from Miltenyi Biotech). For STAT5 phosphorylation experiments, isolated NK cells were stimulated in increasing concentrations of

IL-2 or construct at 100,000 cells/500μl for 15 minutes. For experiments evaluating the interaction of NK cells with splenic stroma, DX5 positively selected NK cells were labeled with CFSE (for identification after fixation and permeabilization) and recombined with NK depleted stromal cells. As described in the manuscript, for some studies NKG2D$^{-/-}$ NK cells were combined with wild-type splenocyte stromal cells. For other experiments, NK-depleted splenocytes from wild-type B6 mice were treated with saturating concentrations of anti-IL-2α blocking antibody (clone 3C7) or isotype control (both from Biolegend) prior to recombining with NK cells. For such competitive STAT5 phosphorylation experiments 100,000 cells were resuspended into 2 μl complete media containing 1,000 IU/ml of either wtIL2, mutIL-2 or OMCP-mut-IL-2 (freshly prepared and pre-warmed). The cells were then incubated at 37 °C for 15 minutes

[0133] _Flow Cytometry:_ All flow cytometric analysis was performed using saturating concentrations of fluorochrome-conjugated antibodies at 4°C in FACS buffer consisting of PBS with 2% FBS and 0.4% EDTA. All antibodies were anti-mouse and purchased from BD Bioscience or eBioscience and consisted of anti-CD4 (clones GK1.5 or RM4-5), anti-CD8 (clone 53-6.7), anti-CD278 (ICOS) (clone: 7E.17G9), anti-CD25 (clone PC61), anti-KLRG1 (clone 2F1), CD49b (Integrin alpha 2) (clone DX5), anti-CD3e (clone 1452C11), anti-CD45 (clone 30-F11), anti-CD69 PE (clone H1.2F3), anti-GITR (clone DTA-1), anti-Foxp3 (clone: FJK-16s) and Anti-Stat5 (clone 47/Stat5; pY694). Antibodies were conjugated to either FITC, PE, PerCP-CyTM5.5, PE-Cyanine7, APC, APC-eFluor® 780, eFluor® 450, or Alexa Fluor® 647.

[0134] Phospho-STAT5 evaluation was performed by paraformaldehyde fixation, methanol permeabilization and staining with AlexaFluor488-conjugated Anti-Stat5 (pY694) (BD Pharmingen; clone 612599). To accomplish this isolated NK cells or NK cells combined with NK-depleted splenocyte stromal cells were fixed in 2% paraformaldehyde (PFA) at 37 °C for 10 minutes after IL-2 stimulation for 15 minutes. The cells were then washed once with ice-cold PBS and permeabilized by adding 0.5 ml/tube of 90% Methanol on ice for 1 hour. The cells were washed once with ice-cold PBS (to remove methanol), and stained for 1 hour with anti-Stat5 (pY694) antibody at room temperature followed by one wash in PBS/0.5% fetal calf serum.

[0135] _In Vitro Cytotoxicity:_ ^{51}Chromium release was conducted by incubating the target cells with 100 mCi sodium ^{51}chromate (PerkinElmer) for 1 hour. Bulk splenocytes were used as effector cells and incubated with targets at defined effector:target ratios for 4 hours at 37°C in round bottom 96 well plates. Specific lysis was expressed as (experimental release-spontaneous release)/(maximum release-spontaneous release) X100% with 0% specific lysis as lowest expressed value.

[0136] _In vivo cytokine injections:_ For select experiment, the mice received intraperitoneal injections of cytokines in 200 μl volume given as ten equal doses given twice a day over a period of five days. As described above all cytokines were normalized to IUe on a molar basis.

For select experiments, the mice were then sacrificed on day 6 and organs were fixed in 10% buffered formalin for histological analyses. For other experiments splenocyte and lung lymphocyte populations were analyzed flow cytometrically. For all the *in vivo* cytokine treatment experiments, animals were weighed (daily or every other day) and expressed as % change from start of cytokine therapy.

[0137] For evaluation of serum concentration wtIL-2, mutIL-2 or OMCP-mutIL-2 were labeled with Alexa Fluor® 647 (LifeTechnologies Inc.) according to manufacturer instructions. Serum was collected at times specified and concentration of cytokine determined fluoroscopically according to a standard curve.

[0138] *In vivo tumor studies:* Lewis lung carcinoma (LLC) cells were subcutaneously injected into B6 or B6 NKG20$^{-/-}$ mice at 1 x 10^5 cells per mouse in 100 µl of sterile saline. Once visible tumors were evident, day 5 post-injection, a five day course of cytokine treatment was started as described above. Measurement of cross sectional tumor diameter was performed using calipers and tumor volume estimated as $4/3\pi r^3$. The mice were sacrificed on day 24 post injection or once they reached a maximal tumor diameter of 20mm. For NK cell depletion, mice were treated with anti-NK1.1 antibody (clone PK136) or mouse IgG isotype control (both from BioXcell) at 500 µg day -2, 250 µg day -1 and 250 µg weekly for the duration of the experiment. For lymphoma clearance experiments A/J mice were treated with ten doses of cytokine over a period of five days as described above and on day #6 injected intravenously with YAC-1 cells that were labeled with CFSE at 5 x 10^6 cells/mouse. Mice were sacrificed 4 hours later, lungs were digested and viability of YAC-1 determined by forward and side scatter analysis of CFSE$^+$ cells.

[0139] *Statistics:* Comparison of splenic and lung-resident lymphocytes between various cytokine treatment conditions was performed by unpaired T-test with Welch's correction to account for unequal variance or unequal sample size. Tumor growth between different cytokine conditions was compared by multiple unpaired-T tests performed between various conditions at various time points using the Sidak-Bonferroni correction. Fold change in STAT5 phosphorylation was evaluated by unpaired T-test with Welch's correction in a similar fashion.

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Introduction to Examples 7-10.

[0141] Intracellular surveillance mediated by MHC class I (MHCI) is a critical host immune function and as such MHCI molecules are frequently targeted for destruction or intracellular retention by viruses [1]. Many herpesviruses encode at least one protein that prevents the cell surface expression of MHCI [1,2]. However, this immune evasion strategy renders the infected cell susceptible to NK cell-mediated lysis due to loss of inhibitory signals [3]. Viral infection also leads to cell surface display of NKG2D ligands (NKG2DLs) recognized by the activating receptor NKG2D, further predisposing the infected cell towards NK cell-mediated lysis. Therefore, viruses that target MHCI expression often also sabotage NKG2D-mediated cell responses by targeting NKG2DLs on the infected cell [4-7].

[0142] NKG2DLs are not normally expressed on the cell surface but can be induced by cellular stress [8]. The specific trigger for NKG2DL expression is not known but NKG2DLs are upregulated in response to several viral infections [9-12]. NKG2DLs comprise a large group of proteins all recognized by NKG2D, despite having low sequence identity. NKG2DLs include the MIC (A and B) and ULBP (1-6) families in humans as well as MULT1 and the RAE-1 (α-ε) and H60 (a-c) families in mice [13]. The redundancy in NKG2DLs is likely due to a combination of tissue specific expression patterns of the ligands and the need to counter viral NKG2D evasion strategies [14]. Many viruses have evolved mechanisms to inhibit the cell surface expression of NKG2DLs as a means of interfering with NKG2D surveillance of viral infection. This strategy is most apparent among β- and γ-herpesviruses, in which four murine cytomegalovirus proteins (m138, m145, m152, m155) [15-18], two human cytomegalovirus proteins (UL16, UL142) [19,20] and one Kaposi's sarcoma-associated herpesvirus protein (K5) [21] have been demonstrated to block NKG2DL surface expression. This evasion strategy is also found in RNA viruses, as hepatitis C virus NS3/4a and human immunodeficiency virus Nef proteins also block the expression of a subset of NKG2DLs [22,23]. Additionally, human cytomegalovirus, herpes simplex virus type 1 and Epstein-Barr virus each also encode at least one miRNA that prevents translation of MICB [24,25]. Similarly, JCV and BKV polyoma viruses target ULBP3 with miRNAs [26]. However, blocking NKG2DL expression on the infected cell is an imperfect evasion strategy, since no single viral protein or miRNA has been shown to block the expression of all NKG2DLs.

[0143] Like several herpesviruses, cowpoxvirus (CPXV) also sabotages MHCI expression. CPXV expresses CPXV012 and CPXV203, two proteins that prevent TAP-mediated peptide transport and MHCI trafficking to the cell surface, respectively [27-34]. Ectromelia virus, a related orthopoxvirus, induces NKG2DL expression and NKG2D is critical for the control of ectomelia virus pathogensis [35]. Infection with another orthopoxvirus, monkeypox virus, leads to dramatic expansion of NK cells but impaired NK cell function [36]. Together this suggests that CPXV infected cells would be sensitive to NK cell-mediated lysis.

[0144] Unlike herpesviruses, CPXV does not target NKG2DLs. Instead this virus targets NKG2D directly by encoding a competitive inhibitor of NKG2DLs, orthopoxvirus MHC class I-like protein (OMCP) [37,38]. OMCP is a 152 residue protein that is secreted from infected cells and antagonizes the NKG2D-mediated killing of NKG2DL-expressing target cells [37]. OMCP also plays an important role *in vivo,* with OMCP-null CPXV attenuated in mouse models of infection (M. Sun *et al,* personal communication). OMCP binds to murine NKG2D with an affinity equal or greater than all tested murine NKG2DLs, and to human NKG2D with an affinity ~5,000-fold higher than human NKG2DLs [37-40].

[0145] Despite their divergence in sequence identity, all known host NKG2DLs share common structural features [41,42]. NKG2DLs contain an MHCI-like platform domain composed of an eight-stranded beta sheet with two helices [43-47]. The platform domain is subdivided into α1 and α2 domains, with each domain containing four beta strands and an alpha helix. Unlike MHCI, the groove between the helices of the NKG2DL platform domain is closed and therefore NKG2DLs do not bind peptides.

[0146] Like host NKG2DLs, OMCP also adopts an MHCI-like platform domain [38]. However, the platform domain of OMCP has been trimmed to have only a six-stranded beta sheet with shorter flanking helices. We termed the helix of the α1 domain H1 and the discontinuous helix of the α2 domain is termed H2a and H2b. The H2a and H2b helices of OMCP are also rearranged to be flatter against the beta sheet and to be splayed apart from each other. These differences in the OMCP structure were hypothesized to be important for the high affinity binding of OMCP to NKG2D. However, OMCP was still expected to bind to NKG2D in the same orientation as host NKG2DLs, i.e. with the alpha helices oriented diagonally within the symmetric NKG2D binding groove.

[0147] Here we report the 2.0 Å-resolution structure of human NKG2D bound to OMCP of the Brighton Red strain of cowpoxvirus. The structure reveals a significant reorientation of OMCP in the NKG2D binding groove relative to host NKG2DLs. The interface of OMCP with NKG2D is highly complementary, buries a significantly larger surface area than host NKG2DLs, and remains continuous across the entire NKG2D binding groove. This novel binding adaptation and high affinity allows OMCP to compete with the high local concentration of membrane-associated host NKG2DLs. We further show that the mechanism of NKG2D antagonism requires OMCP to be secreted, lest it lead to NKG2D signaling.

Example 7. Structure determination of OMCP-NKG2D.

[0148] We had previously solved the structure of OMCP alone and shown that, similar to host NKG2DLs, OMCP adopts an MHCI-like platform domain [38]. Despite the overall similarity of the domain structure of OMCP to host NKG2DLs, OMCP had several notable deviations in the putative NKG2D-binding site that were hypothesized to be important for the high affinity binding of OMCP to NKG2D. To further understand the unusually high affinity of OMCP for NKG2D, we crystallized and solved the structure of OMCP bound to human NKG2D.

[0149] Initial crystallization trials with OMCP and NKG2D yielded -30 different crystallization conditions. Subsequent data collection and molecular replacement of multiple low-resolution crystal forms all yielded similar partial solutions, with alternating sheets of OMCP-NKG2D complexes separated by undefined density. In the original structure of OMCP alone, the beta sheets packed to form a trimer with the alpha helices oriented away from the center [38]. An identical OMCP trimer formed in the OMCP-NKG2D partial solutions, with NKG2D now bound to the outward facing helices (data not shown). In an attempt to change the lattice packing, we introduced mutations into the beta sheet of OMCP that were designed to break the trimeric interface. These mutations were on the opposite face of OMCP from the NKG2D binding site to avoid disrupting OMCP-NKG2D binding. A mutant form of OMCP (Y23D, F95D) crystallized with NKG2D in a new space group and the crystals diffracted to 2.0 Å **(Table 1)(FIG. 24A).**

[0150] The electron density map was continuous and unambiguous throughout all chains of the structure, with the exception of Q108 in OMCP. This residue was situated in the center of the largest loop of OMCP and unambiguous density for this residue was also absent from the structure of OMCP alone [38]. The structure of OMCP bound to NKG2D showed no major differences from our previous structure of OMCP alone, with an RMSD for all atoms of 0.8 Å.

Likewise, NKG2D was also similar to previous NKG2D structures with RMSDs ranging from 0.5-0.9 Å. The β3-β4 loop of NKG2D is the only region of either OMCP or NKG2D that displayed above-average B factors. This loop is thought to be flexible and has had above average B factors in all previous NKG2D structures [48]. Interestingly, the peptide bond between S193-S194 in our NKG2D structure had a *cis* conformation not described in other NKG2D structures **(FIG. 29).**

Example 8. The interface between OMCP and NKG2D.

[0151] OMCP was hypothesized to bind to the same surface of NKG2D used by host NKG2DLs because (i) OMCP competed with host NKG2DLs for NKG2D and (ii) mutations within the NKG2DL-binding pocket of NKG2D altered OMCP binding affinity [38]. OMCP does bind NKG2D using the same concave binding pocket as host NKG2DLs **(FIG. 24A).** OMCP binds primarily using the discontinuous helices of its α2 domain, H2a and H2b. The position of the H2a and H2b helices is such that every surface exposed side chain of both helices within the binding site directly contacts NKG2D **(FIG. 24B).** Only two contacts are found outside of H2a and H2b, Ile49 and Arg66. Both of these residues are within the α1 domain but lie outside of the H1 helix.

[0152] Twelve OMCP residues contact eighteen NKG2D residues to form a mixture of bond types **(Table 2).** Three residues in each NKG2D half-site are known as core binding residues because they make contacts with all known host NKG2DLs. The core residues of NKG2D subunit A (NKG2D^A) (Tyr152, Tyr199, Met184) form two hydrogen bonds and make extensive hydrophobic contacts with OMCP residues. The core residues of NKG2D^A contact four OMCP residues and the most critical of these residues is Phe122. Phe122 makes multiple hydrophobic contacts with all three NKG2D^A core residues, including *pi*-stacking with Tyr152. Phe122 also forms a backbone-to-sidechain hydrogen bond with Tyr152. Interestingly, OMCP is the first NKG2D ligand not to utilize all six NKG2D core-binding residues, with only Met184 and Tyr152 of NKG2D subunit B (NKG2D^B) contacting OMCP. NKG2D^B Met184 and Tyr152 each make a single hydrogen bond and hydrophobic contacts with OMCP residues. Two OMCP residues, Trp127 and Asp132, make contacts with both NKG2D protomers. OMCP Trp127 forms a hydrogen bond to Lys150 of NKG2D^A and makes several hydrophobic contacts with Leu148 of NKG20^B, Lys150 and Ser151 of NKG2D^A. OMCP Asp132 forms a hydrogen bond with Tyr152 of NKG2D^B and a salt bridge with Lys150 of NKG2D^A **(FIG. 25A).**

[0153] Due to the high affinity of the OMCP-NKG2D interaction we harnessed a high throughput *in vitro* selection approach to find NKG2D-binding null mutants **(Table 3).** The results of the screen identified D132 as an important residue for disrupting NKG2D binding. We then generated the mutation D132R in attempt to completely ablate NKG2D binding. Surprisingly, the D132R mutant alone was unable to bind to NKG2D at concentrations 35-fold above the K_D **(FIG. 25B),** but did not affect binding of OMCP to FcRL5-expressing cells **(FIG.**

25C). This mutation is likely to cause significant steric clashes, as well as disrupting both interactions made by Asp132 to NKG2D^A Lys150 and NKG2D^B Tyr152 **(FIG. 25A).**

[0154] Previously, the 14-fold higher affinity of OMCP for human vs murine NKG2D was mapped to three amino acid substitutions in the β5'-β5 loop of NKG2D, abbreviated L2 [38]. In addition to the substitutions themselves (1182V, M1841 and Q185P), the position of the loop between NKG2D orthologs differs. L2 in human NKG2D is bent towards the center of the concave binding cavity compared to L2 of murine NKG2D. Superimposition of murine NKG2D onto the human NKG2D-OMCP structure reveals that the contacts between OMCP and Met184 (mNKG2D residue 1200) in NKG2D^B and between Met184 (1200) and Glu185 (P201) in NKG2D^A would be altered due to the different position of the murine β5'-β5 loop **(FIG. 26A-B).** This alteration would disrupt contacts with three residues in OMCP H2a, three residues in H2b and Arg66 within the α1 domain. Of the contact residues of L2, Met184 makes the most significant contacts in both NKG2Ds **(Table 2)(FIG. 26C).** Critically, of the 58 NKG2D sequences available in GenBank, 54 conserve the Met184 and Glu185 found in the high affinity human NKG2D **(FIG. 26D).**

[0155] Eighteen OMCP variants have been described between different CPXV and MPXV strains [51]. In this study we have crystallized OMCP from the Brighton Red strain of CPXV which has >60% sequence identity with the highly conserved sequence of the other 17 OMCP variants, collectively termed OMCP$_{mpx}$. Of the 12 OMCP contact residues observed, 9 are identical to OMCP$_{mpx}$. Of the remaining contacts, all three are conservative hydrophobic substitutions (I49L, T118I and M135I) (FIG. 27). OMCP$_{mpx}$ binds to NKG2D and the substitutions in the NKG2D contact residues are unlikely to grossly affect the affinity of OMCP$_{mpx}$ for NKG2D [37].

Example 9. A novel NKG2D-binding adaptation.

[0156] Host NKG2DLs have low sequence identity but overall similar structures, with MHCI-like platform domains binding diagonally across the symmetric binding groove created by the NKG2D homodimer [13,41,52]. Host ligands contact one NKG2D half site with H1 and the S1-S2 loop, and contact the second NKG2D half site with H2b. Despite the similar MHCI-like fold, OMCP binds the NKG2D binding groove in a novel orientation, rotating ~45° relative to host NKG2DLs **(FIG. 27).** Instead of using H1 and S1-S2 loop like host ligands, OMCP has replaced these contacts with H2a. This rotation leads to the helices of OMCP being perpendicular to the NKG2D binding groove, instead of lying diagonally across it.

[0157] Two unique rearrangements of H2a and H2b make the OMCP orientation possible. The α2 helices of OMCP and host NKG2DLs are discontinuous, with the two shorter helices hinged relative to each other. For host ligands, the angle between H2a and H2b is ~90°, positioning H2a away from the NKG2D interface. In contrast, OMCP has increased the hinge angle between the helices by ~20°, leading to a α2 helix that is flatter relative to the beta sheet of OMCP. The flattening of the α2 helix allows H2a and H2b to closely complement the concave binding groove of the NKG2D homodimer **(FIG. 24B).** The tight fit of the α2 helix for NKG2D is reflected in the high shape complementarity (0.77) and buried surface area (2,612 $Å^2$). In contrast, host NKG2DLs have shape complementarity ranging from 0.63-0.72 and buried surface areas ranging from 1,700-2,180 $Å^2$ [43,44,46].

[0158] The second unique feature of the α2 helix is the separation of H2a and H2b relative to each other. This region also contains a translation that completely separates H2a and H2b into two distinct helices. This translation is critical for NKG2D binding because it allows each helix to be directly centered on the core binding sites of each NKG2D monomer **(FIG. 27).** This creates a symmetric binding site on OMCP that recognizes the symmetric binding groove created by the NKG2D dimer. The symmetry between OMCP and NKG2D binding is in stark contrast to the canonical binding of an asymmetric host ligand to the symmetric NKG2D binding groove [52]. However, one element of asymmetry remains in the OMCP-NKG2D interaction because each NKG2D half-site recognizes an OMCP helix in a different N- to C-terminal orientation, demonstrating again the flexibility of NKG2Ds rigid adaptation recognition [41,53].

[0159] The contact sites between NKG2D and host NKG2DLs are made up of two patches centered on the core binding sites of NKG2D and H1/S1-S2 loop and H2b of NKG2DLs [41]. As a result, the interface of NKG2D with NKG2DLs is discontinuous, particularly in the center of the NKG2D binding groove **(FIG. 27).** Due to the unique orientation of OMCP, H2a and H2b make continuous contacts along the entire NKG2D binding groove **(FIG. 27).** The sidechains of OMCP Lys126, Trp127, Glu131 and Asp132 make contacts with residues in the center of the NKG2D binding groove and bridge the core binding sites on each NKG2D monomer **(FIG. 24B).** In particular, OMCP Trp127 is directed towards the center of the NKG2D dimer and makes hydrophobic contacts with residues on both NKG2D monomers, effectively closing any gaps in the binding interface.

Example 10. Signaling of NKG2D upon ligand engagement.

[0160] CPXV and MPXV-infected cells secrete OMCP, which can act as an NKG2D-antagonist [37]. This immune evasion strategy is reminiscent of cancer induced-NKG2DL shedding. Some cancer cells proteolytically cleave NKG2DLs from the cell surface using matrix metalloproteinases (MMPs), simultaneously preventing NKG2D-bearing lymphocytes from targeting the cancer cell, as well as creating soluble NKG2DLs to inhibit NKG2D in *trans.* Cell-associated NKG2DLs trigger NKG2D effector functions **(FIG. 28A),** while cancer-induced, soluble NKG2DLs block NKG2D function **(FIG. 28B).** Like shed NKG2DLs, OMCP is soluble and blocks NKG2D function in *trans* [37] **(FIG. 28C).** Unlike host NKG2DLs, OMCP binds NKG2D with a novel orientation. We therefore asked whether OMCP could serve as a NKG2D agonist in the context of the cell membrane, analogously to host NKG2D ligands. Since OMCP is a secreted protein, an artificially cell-associated OMCP was constructed by using a heterologous transmembrane domain from Thy1.1 [37] **(FIG. 28D).** To measure NKG2D-mediated cell killing, we stably transduced Ba/F3 cells with retroviral vectors expressing either the OMCP-Thy1.1 construct or host NKG2DLs. OMCP-Thy1.1 -expressing target cells were killed equivalently to host NKG2DL-transduced target cells, indicating that despite its altered binding orientation, cell-associated OMCP was able to activate NKG2D signaling **(FIG. 28E).** Thus, OMCP must be secreted lest it active NKG2D-effector functions itself, despite potential loss of efficacy due to diffusion.

Discussion for Examples 7-10.

[0161] While many viruses have adopted a general mechanism of NKG2D-sabotage by trying to retain multiple host-encoded NKG2D ligands within the infected cell, CPXV and MPXV take the very different approach of targeting NKG2D directly. Since NKG2D is monomorphic, this mechanism has the significant advantage of requiring a single protein to prevent NKG2D recognition of the infected cell. The large number of sequence-divergent host NKG2DLs and their associated polymorphisms are thought to be driven by selection from pathogen-encoded NKG2DL antagonists [14]. Likewise, viral NKG2L antagonists are under selective pressure from the diverse host NKG2DLs in a continual cycle of adaptation. Due to the need to recognize multiple NKG2DLs, NKG2D has a limited mutational space to adapt. The limited ability of NKG2D to mutate is yet another advantage of OMCP directly targeting NKG2D, instead of NKG2DLs.

[0162] Similarly to OMCP, some cancer cells shed host NKG2DLs to create their own soluble NKG2D antagonists. However, this strategy has the additional benefit of removing host NKG2DL from the surface of cancer cells. In contrast, CPXV and MPXV lack a known mechanism of blocking host NKG2DL surface expression. Secreted OMCP must then be able to compete efficiently against the high local concentration of multiple host NKG2DLs on the infected cell, as well as against diffusion away from the infected cell. One possible way to increase OMCP's ability to compete with host ligands would be to increase the avidity of OMCP by having multiple NKG2D-binding domains. However, a multimeric OMCP could crosslink NKG2D and potentially trigger NKG2D-mediated killing. Therefore, secreted OMCP must be monomeric to prevent aberrant NKG2D signaling. Thus to compensate for these deficiencies, OMCP must have the highest affinity possible to effectively compete against cell-associated host NKG2DLs [37,38]. The half-life of ligand-receptor interactions correlate well with physiological competitiveness [55]. OMCP binds human and murine NKG2D with half-lives of 348 and 54 seconds, respectively, compared to half-lives of 1.5-18 seconds for most NKG2DLs [38,44,56]. Indeed, the increased half-life for NKG2D allows OMCP to effectively antagonize NKG2D-mediated immunity in a murine infection model (M. Sun *et al,* personal communication).

[0163] To understand the molecular basis for the long half-life of OMCP for NKG2D, we previously determined the structure of OMCP alone, and here, we report the structure of OMCP bound to NKG2D. The structure of OMCP alone was grossly similar to that of host

NKG2D ligands, containing an atypical MHCI-like platform domain. Host NKG2D ligands bind with the helices of their platform domains oriented diagonally within the symmetric binding groove of NKG2D. Thus it was expected that OMCP was a viral mimic of host NKG2D ligands and would interact with NKG2D analogously.

[0164] The structure of OMCP-NKG2D instead revealed a novel orientation for an NKG2D ligand in the NKG2D binding groove. Alterations within the α2 domain helix allow OMCP to arrange its helices perpendicularly within the binding groove. This reorientation places the H2a and H2b helices directly in contact with the core binding sites of NKG2D and also forms the largest and most continuous binding interface with NKG2D. Because the forces (hydrogen bonds, van der Waals, hydrophobic interactions) that mediate protein-protein interactions are individually weak, a large, continuous interface with high shape complementary allows for a cumulatively strong interaction between proteins. This change in the binding orientation of OMCP reveals how the MHCI-like platform used by host ligands can be adapted by a pathogen to enhance NKG2D binding.

[0165] Since host NKG2DLs and OMCP have a similar MHCI-like platform, it is reasonable to wonder why no host ligand has evolved an analogous high-affinity interaction with NKG2D. One likely reason is that the host immune response must be carefully calibrated to balance the need for protection against the threat of autoimmunity. Since the expression of NKG2DLs on the cell surface signals for effector functions, even a small amount of high affinity host ligand on the cell surface could trigger an immune response, and the resulting tissue damage could be deleterious for the host. Indeed, NKG2D-expressing cells and/or aberrant expression of host NKG2DLs have been implicated in diabetes, celiac disease and rheumatoid arthritis [57-60]. Viruses are not constrained by autoimmune selective pressures. Therefore, CPXV and MPXV were free to evolve a viral NKG2DL with the highest possible affinity to maximize immune evasion potential.

[0166] Interestingly, OMCP triggers NKG2D signaling when attached to a target cell membrane, despite the novel orientation of OMCP relative to host NKG2DLs. The interaction of host NKG2DLs with the dimeric NKG2D bears broad structural similarity to the interaction between MHC molecules with their cognate T cell receptors (TCRs). In both cases, the NKG2DL/MHC lies diagonally across the surface created by the dimeric NKG2D/TCR. However, there are several examples of MHC-TCR complexes that, like OMCP-NKG2D, interact with unconventional orientations [61-65]. Several of these complexes involved autoimmune MHC-TCR complexes that were tilted or rotated outside of the normal range for MHC-TCR complexes [61,65]. While these receptors could induce TCR signaling at high MHC concentrations, they failed to assemble characteristic immunological synapses [66]. A striking example of unconventional binding was found when an *in vitro* peptide library-MHC-TCR (H2-L^d-42F3) screen produced a p3A1-H2-L^d-42F3 complex with an interface rotated ~40° relative to other H2-L^d-42F3 complexes. This rotation places the TCR nearly parallel with the MHC peptide-binding groove and shifted the interface center almost entirely on one of the MHC α helices - an orientation strikingly similar to the interface of OMCP-NKG2D [65]. Interestingly, the p3A1-H2-L^d-42F3 complex failed to induce TCR signaling [65]. Thus, unlike OMCP/NKG2D, the orientation of MHC relative to TCR is an important factor for signaling.

[0167] OMCP-NKG2D and p3A1-H2-L^d-42F3 have opposite signaling outcomes, despite having very similar orientations. TCR signaling requires co-receptor binding to either the α2/β2 or α3 domains of MHCII or MHCI, respectively. The failure of p3A1-H2-L^d-42F3 to signal, and of other unconventional MHC-TCR complexes to form true immunological synapses, is potentially due to the inability of co-receptors to form correct quaternary structures for signaling [64,65,67]. Signaling by NKG2D is not known to require co-receptor stimulation and the majority of NKG2DLs lack the co-receptor binding α2/β2 or α3 domains of true MHC molecules. This difference in co-receptor dependency likely explains why OMCP (when attached via transmembrane) is still competent to stimulate NKG2D-signaling compared to MHC-TCR complexes with unconventional binding orientations. Further, it suggests that clustering of NKG2D on the cell surface is the major determinant of NKG2D-mediated activation.

Methods for Examples 7-10.

[0168] *Identification of NKG2D-binding null mutant D132R.* A high throughput *in vitro* selection approach based on combinatorial cell surface display was utilized to identify NKG2D-binding null mutants. The sequence of OMCP was globally mutagenized using error-prone PCR, and the mutated amplicons were spliced to a signal-less Thy1.1 cDNA via overlap extension PCR. This library of mutated OMCPs fused to unmutated Thy1.1 was cloned into the pMXs-IRES-EGFP retroviral transfer vector (kind gift of Toshio Kitamura, University of Tokyo) to generate a molecular library for transduction into Ba/F3 cells. The transductants were then sorted for green fluorescence and anti-Thy1.1 expression to yield a cellular library whose members all had surface expression of OMCP, filtering out mutations giving frameshifts, premature stop codons, and folding-incompetent OMCP. This OMCP library was sorted for NKG2D binding using NKG2D-tetramers. Sorted cells were cloned by limiting dilution and analyzed. The retroviral cassettes of cells lacking or having reduced NKG2D-binding activity were amplified and sequenced. Utilizing this approach, we identified Asp132 as a critical residue for NKG2D binding.

[0169] *Protein expression and purification.* $OMCP_{BR}$ and human NKG2D expression constructs were previously described [38]. The (D132R) $OMCP_{BR}$ protein was prepared identically to WT $OMCP_{BR}$. (23D/95D) OMCP-NKG2D complex was reconstituted by oxidative co-refolding from purified inclusion bodies, as described previously [38]. Refolded protein was slowly diluted 10-fold with water and captured on a 5 ml HiTrap Q HP column (GE Healthcare) using a Profinia instrument (Bio-Rad). The captured protein was washed with 50 mM Tris, pH 8.5, 20 mM NaCl and bulk eluted with 50 mM Tris, pH 8.5, 250 mM NaCl. The eluted protein was then concentrated and further purified by gel filtration chromatography on a Superdex S75 column (16/60; Amersham Biosciences). Fractions containing mono-dispersed OMCP-NKG2D complex (-50 KDa) were pooled and buffer exchanged into 25mM Ammonium acetate pH 7.4.

[0170] _Crystallization, data collection and processing._ Native protein crystals were grown by hanging drop vapor diffusion at 20°C by streak seeding into a well solution containing 15% PEG 3350, 0.2M $MgCl_2$, 0.1M Bis-Tris pH 6.75. Crystals were cryoprotected with well solution containing 15% glycerol before flash freezing directly in a liquid nitrogen bath. Diffraction data were collected at the Advanced Light Source synchrotron (beamline 4.2.2). Native (23D/95D) OMCP-hNKG2D crystal diffraction data were collected at 100 K and at a wavelength of 1.00004 Å. Additional diffraction data statistics are summarized in **Table 1**. Data processing with HKL2000 [68] showed the crystals belonged to the primitive monoclinic space group $P2_1$ (space group #4). The asymmetric unit of the crystal contained two copies of the (23D/95D) OMCP-hNKG2D complex.

[0171] _Model building and refinement._ The structures of human NKG2D (1MPU) [48] and OMCP (4FFE) [38] were used as search models for molecular replacement through Phenix [69]. Reiterative refinement and manual rebuilding were performed using Phenix and Coot [70], respectively. Both 2Fo-Fc and Fo-Fc maps were used for manual building and to place solvent molecules. The final model yielded an R_{work} of 16.6% and R_{free} of 21.4%, with 4% of all reflections set aside for free R factor cross-validation. Progress in refinement was also measured using the MOLPROBITY webserver [71]. The final Ramachandran statistics for the model were 98% favored and 0% outliers. Additional refinement statistics are summarized in **Table 1.** Images of structures were produced using the program PyMol [72].

[0172] _Structure analysis._ Analysis of the contact residues, buried surface area and shape complementarity of the OMCP-NKG2D interface were carried out using the programs Ligplot+ [73], PISA [74] and SC [75]. Structural programs as compiled by the SBGrid consortium [76]. Analysis of NKG2D conservation was performed using the ConSurf server [77-80]. GenBank numbers for species used in Consurf analysis are: Humans (30749494), Borean orangutan (21902299), Chimpanzee (57113989), Gibbon (332232684), Macaque (355785888), Green Monkey (635063485), Common marmoset (380848799), Mouse (148667521), Brown rat (149049263), Guinea Pig (348569092), Ground squirrel (532114387), Deer mouse (589967905), Naked mole rat (512868733), Prairie vole (532053033), European Shrew (505834608), Star-nosed mole (507978716), Chinese hamster (537136230), and Cat (410963826).

[0173] _Atomic coordinates._ The atomic coordinates (accession code 4PDC) have been deposited in the Protein Data Bank, Research Collaboratory for Structural Bioinformatics (Rutgers University, New Brunswick, NJ)

[0174] _In vitro NK cell killing assays._ Splenocytes from C57BL/6 mice were preactivated with 200 U/ml IL-2 for 24 hours and used as cytotoxic effectors against stably transduced Ba/F3 cell lines in standard killing assays. Target cells were carboxyfluorescein succinimidyl ester (CFSE) labeled and co-incubated with activated splenocytes at 37°C, 5% CO2 for 4 hours at effector:target ratios of 10:1, 20:1, and 40:1. Killing percentage was determined by incorporation of the dead cell exclusion dye 7-amino-actinomycin D (7AAD) in the CFSE+

target population as assessed by flow cytometry. Percent specific lysis was calculated using the formula [(experimental dead % - background dead %) / (maximum release dead % - background dead %)] x 100. C57BL/6 mice were obtained from the National Cancer Institute (Charles River, MA). Mice were maintained under specific pathogen-free conditions and used between 8 and 12 weeks of age. Single cell suspensions of splenocytes used in killing assays were generated using standard protocols [81].

Table 1: Data collection and refinement statistics	
	$\underline{\text{OMCP}_{\text{BR}}\text{-hNKG2D}}$
Data collection	
Space group	$P2_1$
Cell dimensions	
a, b, c (Å)	43.3, 101.1, 91.4
α, β, γ (°)	90.0, 91.6, 90.0
Resolution (Å)	50-2.0 (2.07-2.00)
R_{sym}	11.8 (48.5)
I/σ	14.5 (3.8)
Completeness (%)	93.5 (91.5)
Redundancy	6.2 (5.3)
Refinement	
Resolution (Å)	44-2.0
Total reflections	309693
Unique reflection	50139
R_{work}	16.6% (21.0%)
R_{free}	21.4% (29.5%)
Wilson B-factor	21.62
Protein residues	791
Water molecules	524
R.M.S. deviations	
Bond lengths (Å)	0.003
Bond angles (°)	0.79
[a] As defined by PHENIX [69]	

Table 2: Interface contacts between NKG2D and OMCP		
NKG2D-A	**OMCP**	**Bond type**
Lys150	Asp132	Salt bridge
Lys150	Trp127	H bond
Lys150	Trp127	Φ(3)

Table 2: Interface contacts between NKG2D and OMCP

NKG2D-A	OMCP	Bond type
Ser151	Lys126	H bond
Ser151	Trp127	Φ(1)
Tyr152	Phe122	H bond
Tyr152	Phe122	Φ(9)
Tyr152	Lys126	Φ(5)
Met184	Thr118	H bond
Met184	Thr119	Φ(1)
Met184	Phe122	Φ(5)
Gln185	Arg66	Φ(1)
Leu191	Phe122	Φ(1)
Tyr199	Phe122	Φ(4)
Glu201	Arg66	Salt bridge
Thr205	Arg66	H bond
NKG2D-B	**OMCP**	**Bond type**
Leu148	Trp127	Φ(1)
Ser151	Glu131	H bond
Tyr152	Asp132	H bond
Tyr152	Glu131	Φ(3)
Tyr152	Met135	Φ(5)
Ile182	Ile49	Φ(2)
Glu183	Arg142	Salt bridge
Met184	Met135	Φ(1)
Met184	Arg138	Φ(2)
Met184	Arg142	H bond
Lys186	Arg142	Φ(1)
Leu191	Met135	Φ(1)
Glu201	Arg138	Salt bridge

Hydrogen bonds (H bonds), salt bridges and carbon-to-carbon hydrophobic interactions (Φ) are shown for each contact residue. The number of hydrophobic interactions between contact residues is designated in parenthesis.

Table 3:NKG2D binding mutations identified through global

Amino Acid	Frequency of Mutation	Associated Mutations	Solvent Accessible
D132	4	D132N D132N, T31S, V68A	++

K126	4	D132G, K126N, D76V D132G, K126N, D76V K126N K126N, S71G K126N, D132G, D76V K126N, D132G, D76V	++
K125	2	K125E, F65C K125E, F92V	-
S120	2	S120Y S120Y, E10A, N56K	-
D76	2	D76V, D132G, K126N D76V, D132G, K126N	++
W116	2	W116R W116R, K113Q	-
R123	2	R123G, D26G, F50L R123G, D21V, F128L	-
E75	1	E75D	-
S71	1	S71G, K126N	++
F92	1	F92V, K125E	+
F65	1	F65C, K125E	-
K113	1	K113Q, W116R	+
E10	1	E10A, N56K, S120Y	++
N56	1	E10A, N56K, S120Y	++
D21	1	D21V, R123G, F128L	++
F128	1	D21V, R123G, F128L	-
D26	1	D26G, F50L, R123G	++
F50	1	D26G, F50L, R123G	-
T31	1	T31S, V68A, D132N	++
V68	1	T31S, V68A, D132N	+
I30	1	I30L, L51F, L64P, M135T	-
L51	1	I30L, L51F, L64P, M135T	-
L64	1	I30L, L51F, L64P, M135T	++
M135	1	I30L, L51F, L64P, M135T	++
R67	1	R67S, L117P, T119N, F122L	+
L117	1	R67S, L117P, T119N, F122L	-
T119	1	R67S, L117P, T119N, F122L	++
F122	1	R67S, L117P, T119N, F122L	++

Mutations were sequenced from 17 clones expressing mutagenized OMCP-Thy1.1. Clones were selected for reduced binding to NKG2D tetramers. The selected clones showed variable deficits in NKG2D binding. Each clone had 1-4 mutations in the amino acid sequence of OMCP (5 clones with 1 mutation; 4 clones with 2 mutations; 6 clones with 3 mutations; 2 clones with 4 mutations). Silent mutations are not indicated. Mutations are listed in the order of frequency sequenced from the selected clones, and mutations that occurred together within individual clones are listed where applicable. Clones highlighted in grey have at least one mutation in a solvent inaccessible residue that may alter the overall stability of OMCP.

References for Examples 7-10.

[0175]

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Example 11. Individuals with poorly functioning natural killer cells are more susceptible to malignancies.

[0176] FIG. 14A shows that AJ and 129 are lung cancer susceptible strain of mice and B6 and C3H are lung cancer resistant strains of mice based on the larger tumor burden found in AJ and 129 mice. **FIG. 14B** shows that when NK cells from the various mouse strains were incubated with LM2 lung carcinoma cells at varying ratios, the NK cells freshly isolated from B6 and C3H mice (lung cancer resistant strains) resulted in significantly more lysis of LM2 lung carcinoma cells than the NK cells freshly isolated from AJ and 129 mice (lung cancer susceptible strains). Taken together these data show that strains of mice that are resistant to lung cancer have NK cells that more effectively lyse lung carcinoma cells. Further, susceptible strains have poorly functioning NK cells.

[0177] That data also correlates with human data. **FIG. 15** shows that a greater percentage of NK cells appear to produce TNFα in "resistant" patients versus "susceptible" patients. Further, it has been shown that tumors downregulate the lytic capacity of NK cells, even if they were highly functional before.[53] Thus, even individuals with highly functioning NK cells may benefit from therapy to enhance NK cell function.

[0178] Notably, *ex vivo* cytokine activation can reverse natural killer cell dysfuction. **FIG. 16** shows that IL-2 activated NK cells from both resistant (B6 and C3H) and susceptible (AJ and 129) mouse strains can lyse LM2 lung cancer cells. Accordingly, mouse NK Cells that did not show significant lysis of cancer cells (NK cells from 129 & AJ strains) were much more effective at lysis when treated with IL-2. NK cells from cancer-resistant strains also showed increase % of specific lysis.

Example 12. OMCP-mutIL2 mediated immunotherapy *in vivo.*

[0179] Immunoregulation of malignancies involves an intricate interplay of multiple cellular components. $CD4^+Foxp3^+$ T_{regs} have been shown in multiple models to contribute to tumor-specific tolerance and facilitate tumor growth[4,16,11]. NK cells and $CD8^+$ CTLs contribute to immunoregulation of multiple tumors, such as melanoma[12,18]. Other tumors, such as lung cancer, are controlled almost exclusively by NK cells with little contribution by the adaptive immune system[19,20] (and unpublished data AS. Krupnick). In order to test OMCP-mutIL2 mediated immunotherapy we will rely on B16 melanoma expressing the model tumor antigen ovalbumin (MO5 tumor cell line)[21]. Multiple studies have demonstrated a role for both NK cells and $CD8^+$ CTLs in controlling melanoma growth[22-24]. Thus the melanoma model offers an experimental advantage in studying OMCP-mutIL2, which can activate both types of cells **(FIG. 1E-F).** Reagents specific to this tumor, such as tetramers for the MHC Class I-restricted $CD8^+$ T cell receptor specific for the melanoma tumor associated antigen tyrosinase-related protein 2 peptide SVYDFFVWL (SEQ ID NO:3), can be readily purchased commercially (Proimmune, Sarasota, Fl.). The use of an ovalbumin-expressing cell line also offers the advantage of studying the immune response to a the highly immunogenic peptide SIINFEKL (SEQ ID NO:4) in addition to naturally occurring tumor associated antigens such as tyrosinase-related protein 2 which generally expands T cells with low avidity[25,26].

[0180] In order to perform the studies B6 mice will be injected subcutaneously with $1x10^6$ MO5 melanoma cells. One week after tumor injection mice will be divided into 4 groups (10 mice per group) and treated with ten twice a day injections of either: wild type IL2 (group #1); mutIL2 (group #2); OMCP-mutIL2 (group #3) or; saline (group #4) **(FIG. 12).** Tumor growth will be followed by daily measurements of diameter for 4 weeks, or until one of the groups develops tumors > 2cm in diameter. At that point mice in all groups will be sacrificed for analysis. In addition to tumor growth, lymphocyte infiltration of both the tumor and draining inguinal lymph node will be evaluated by flow cytometry. We will quantitate the total number and activation status of $CD4^+Foxp3^+$ Tregs (evaluated by ICOS and GITR upregulation). We will also evaluate NK cell number and activation as measured by IFN-γ production and CD69 upregulation. Antigen-specific CTL generation will be evaluated by quantitating both $CD8^+$ T cells and $CD8^+CD44^{hi}CD62L^{low}$ effector cells (ECs) that are primarily responsible for tumor clearance[22,27,28]. Antigen specificity will be determined by identifying $CD8^+$ CTLs with T cell receptor specific for either the ovalbumin peptide SIINFEKL (SEQ ID NO:4) or melanoma specific tyrosinase-related protein 2 peptide SVYDFFVWL (SEQ ID NO:3) (both tetramers from Proimmune, Sarasota, Fl.). Tumor apoptosis will be quantitated by TUNEL staining.

[0181] Based on our *in vitro* tumor data and *in vivo* phenotypic analysis we suspect that the OMCP-mutIL2 group will demonstrate attenuation in tumor growth with high number of NK cells, antigen-specific CTLs, specifically $CD8^+$ ECs, and fewer $CD4^+Foxp3^+T_{regs.}$ If this turns out to be the case we would determine the relative role for $CD8^+$ or NK CTLs by depletion experiments. Even if CTLs increase it is possible that MO5 growth will not be altered. If that turns out to be the case we would look in closer detail at the $CD4^+Foxp3^+T_{regs}$ or in the presence and activation of myeloid-derived suppressor cells in **OMCP-mutIL2** treated mice. Based on melanoma data additional tumors will be tested using similar methods.

Example 13. $CD8^+$ memory T cell generation after treatment with OMCP-mutIL2 fusion construct.

[0182] Once activation through their T cell receptor, naive $CD8^+$ T cells primarily differentiate into short-lived $CD44^{hi}CD62L^{low}$ effector cells (ECs) with cytolytic potential. A portion of activated cells, however, differentiate to long-lived $CD44^{hi}CD62L^{hi}$ central memory T cells ($CD8^+$ CMs)[29-31]. $CD8^+$ CMs act as an antigen specific reservoir for cellular protection and upon restimulation differentiate into $CD8^+$ ECs with cytolytic function. The durability of $CD8^+$ CMs makes them an ideal target for *ex vivo* generation and adoptive transfer for long-term protection[31]. The possibility of generating this cell population *in vivo* offers multiple advantages over an *ex vivo* system, including establishing a polyclonal population reactive to multiple tumor associated antigens and avoidance of costs associated with donor pheresis and *ex vivo* expansion. *In vivo* expansion of tumor antigen specific $CD8^+$ CMs could also eliminate the need for frequent pheresis and cell readministration.

[0183] High dose IL2 therapy results in activation of both $CD4^+Foxp3^+T_{regs}$ and $CD8^+$ T cells but its effect on tumor associated antigen specific $CD8^+$ CM generation is unknown. Some have demonstrated, using antibody depletion, that CD4$^+$Foxp3$^+$T$_{regs}$ interfere with tumor specific CD8$^+$ CM generation[17,32] while others, using different models, have demonstrated that CD4$^+$Foxp3$^+$T$_{reg}$ depletion impairs CD8$^+$ memory formation[33,34]. OMCP-mutIL2 creates a unique immunologic environment where CD4$^+$Foxp3$^+$T$_{regs}$ are maintained but not actively expanded **(FIG. 3).** While NKG2D is not expressed on resting CD8$^+$ T cells, it is induced on this population upon activation[35]. Thus, unlike mutIL2, OMCP-mutIL2 results in CD8$^+$ T cell proliferation at levels comparable to wild-type IL2 in NKG2D-sufficent mice **(FIG. 1E-F).** The effect of OMCP-mutIl2 on CD8$^+$ T cell memory formation, however, is unknown but is critical to decipher based on the long-term tumor specific immunity that this cell population can confer.

[0184] In order to test long-term memory formation after cytokine stimulation *in vivo* we will utilize a model of irradiated tumor cell vaccination and cytokine treatment. In order to accomplish this we will subcutaneously inject 1x10^7 lethally irradiated (10Gy) MO5 melanoma cells into C57Bl/6 mice. The recipient mice will then be treated either regular IL2 (group #1), mutIL2 (group #2), OMCP-mutIL2 (group #3) or saline (group #4) in twice daily doses over a course of 5 days **(FIG. 13).** The mice will be sacrificed at various time points ranging from one to three months post infection **(FIG. 13).** Antigen-specific CD8$^+$ CM formation will be assessed by phenotypic analysis of splenic, peripheral lymph node, lung, and liver-resident CD8$^+$CD44^{hi}CD62L^{hi} CMs. Antigen specificity will be determined by MHC Class I staining for either the ovalbumin peptide, SIINFEKL (SEQ ID NO:4), or melanoma specific tyrosinase-related protein 2 peptide SVYDFFVWL (SEQ ID NO:3) (both from Proimmune, Sarasota, Fl.).

[0185] In order to test the functional protection of such vaccination protocols in a separate set of experiments mice from the four groups described above will not be sacrificed for phenotypic analysis and will be reinjected with live MO5 melanoma (1x10^6 cells/mouse subcutaneously). Melanoma growth will be assessed by serial measurement of tumor diameter. Contribution of CD8$^+$ T cells to any immunologic protection will be assessed by CD8-specific antibody depletion in a portion of mice (clone YTS 169.4, BioXcell Inc., West Lebanon, NH).

Example 14. Mechanism of CTL activation by OMCP-mutIL2 fusion construct.

[0186] A mechanistic understanding of the enhanced activation of effector cell function by the OMCP-mutIL2 chimera will be critical for optimizing this therapeutic agent. The interaction of the fusion protein with IL2R and NKG2D are likely to be dependent on several factors including the length of the linker peptide **(FIG. 1E-F).** Therefore, it is critical to understand the mechanism of OMCP-mutIL2 chimera mediated CTL activation in order to allow for optimization of the construct and design of future immunotherapy protocols. The two-domain chimeric protein could potentially increase the activation of NKG2D-expressing cells by three non-mutually exclusive mechanisms. First and foremost the OMCP-mutIL2 construct could increase the avidity of mutIL2 binding to targeted cells. This could lead to an increase in the number of receptors occupied and increased signaling intensity compared to mutIL2. Additionally dual binding to both NKG2D and IL2R could decrease the rate of receptor internalization and increase the duration of signaling by IL2. It is also possible that the **OMCP-mutIL2** construct alters the signaling profile by the target cell by activating both the IL2 and NKG2D stimulatory pathways. These three non-mutually exclusive effects could explain the increase in activation of our construct of CTLs in an NKG2D-mediated fashion.

[0187] There are several methods for determining the avidity of a protein for a cell, either directly (radiolabeled, fluorescent) or indirectly (antigen exclusion)[38,39]. We plan to determine the avidity of wild-type IL2, mutIL2, or OMCP-mutIL2 for CD4$^+$Foxp3$^+$ T$_{regs}$, NK cells, and CD8$^+$ T lymphocytes using KinExA[40]. To accomplish this we will isolate cells from splenocytes of either wild-type C57Bl/6 or NKG2D$^{-/-}$mice on a C57Bl/6 background using a magnetic bead isolation kit (Miltenyi Biotech, San Diego, Ca.). Target cells will be serially diluted by a factor of 2 in 11 falcon tubes in media containing 0.05% NaN_3. The 12th tube will contain just the media. OMCP-mutIL2 or mutIL2 alone will then be added to each tube of either wild-type or NKG2D$^{-/-}$ cells and the cells with cytokine will be rotated at 4 °C for 36 h. At the end of 36 h, the cells were centrifuged at 2400 rpm for 4 min and the free construct present in the supernatant will be measured by an anti-IL2 ELISA. The equilibrium dissociation constant (Kd) will then be calculated[41]. This approach has the advantage of measuring the avidity of cell surface molecules at physiologic densities and obviates the need for labeling, which can artificially lower the affinity of antibodies for their antigens[42,43].

[0188] The two-domain structure of the fusion protein is likely to significantly increase the half-life of the protein on the surface of NKG2D$^+$ and IL2R$^+$ cells. Any increase in surface half-life likely affects both the internalization of the bound receptors and signaling intensity and duration. To address the internalization of receptors, we will incubate each construct with the above mentioned cell types over a range of times and monitor the change in cell surface expression of IL2Rβγ and NKG2D using flow cytometry as previously described[44]. Of key interest will be the signaling profile of each construct. IL2-IL2R engagement signals through JAK-STAT pathways, while NKG2D signals through DAP10/12 pathways. While monomeric, soluble OMCP does not induce NKG2D signaling, OMCP can signal when concentrated locally on the cell surface[45]. Therefore, it is critical to determine whether the chimera is capable of inducing dual signaling through IL2R and NKG2D. IL2-mediated signaling will be assessed by Western blot for phosphorylated JAK1 and JAK3 in freshly isolated CD4+Foxp3+ T$_{regs}$, NK cells or CD8$^+$ T cells incubated in vitro with the construct[46,47]. NKG2D-mediated signaling will be assessed by immunoprecipitation of DAP10 or DAP12 followed by Western blotting for phosphotyrosine as previously described[48,49].

[0189] Both IL2 and OMCP interact with their cognate receptors with high affinity; the fusion of the two proteins is anticipated to greatly enhance the avidity of the chimeric construct for cells expressing both IL2R and NKG2D. As a consequence, the tethering of the construct to two cell surface receptors may lead to reduced internalization and increased duration of signaling. Combined these two phenomena represent the most likely mechanism for increased proliferation of NK cells *in vivo.* The signaling via NKG2D relies upon receptor clustering[45]. Since the construct is soluble it is possible, though unlikely, that the chimera will cluster NKG2D and induce DAP10/12 signaling. However, should DAP10/12 signaling be detected, we will then investigate the importance of this signaling in the expansion of NK cells using cells derived from Vav1 knockout mice. Vav1 is a signal mediator downstream of DAP10[50]. Using a Vav1 knockout has the advantage of leaving NKG2D expression intact, in contrast to DAP knockouts[50]. This will remove the NKG2D signaling component while leaving the NKG2D-dependent targeting intact. A clearer understanding of the mechanism of action for OMCP-IL2 chimera dependent expansion will be crucial for further refinements of the therapeutic agent. Understanding these parameters will allow for testing of different construct designs, primarily in the length of the linker between OMCP and IL2, to calibrate the effects of the chimera.

Example 15. *In vivo* immunotherapy with IL-2, R38A/F42K IL2 or OMCP targeted IL2 constructs.

[0190] In order to determine if our construct plays a role in immunoregulation of malignancies as well as viral infections we will rely on *in vivo* models of B16 melanoma and mouse cytomegalovirus (MCMV). In one set of experiments B6 mice will be injected subcutaneously with $1x10^6$ cells of the poorly immunogenic B16 melanoma cell line. One week after tumor injection mice will be divided into 13 groups (5 mice per group) and treated with five daily injections of IL2, R38A/F42K IL2, OMCP fusion constructs or saline as described in **FIG. 18** and **Table 4.** Tumor growth will be followed by daily measurements of diameter for 4 weeks or until one of the groups develops tumors > 2cm in diameter. At that point mice in all groups will be sacrificed for analysis. In addition to tumor growth lymphocyte infiltration of both the tumor and draining inguinal lymph node will be evaluated by flow cytometry. We will quantitate the total number and activation status of $CD4^+Foxp3^+$ Tregs (expressed as % of tumor infiltrating lymphocytes and % $ICOS^+$). We will also evaluate NK cell number and activation as measured by IFN-γ production and CD69 upregulation. Tumor apoptosis will be evaluated by TUNEL staining.

Table 4: Experimental Design for Dosing for IL2, R38A/F42K IL2, OMCP-R38A/F42K IL2 or OMCP linked IL2 constructs

Dose Cytokine	**LOW DOSE**	**INTERMEDIATE DOSE**	**HIGH DOSE**
IL2	Group 1	Group 2	Group 3
R38A/F42K IL2	Group 4	Group 5	Group 6
OMCP-wild-type IL2	Group 7	Group 8	Group 9
OMCP-R38A/F42K	Group 10	Group 11	Group 12

Table 4: Experimental Design for Dosing for IL2, R38A/F42K IL2, OMCP-R38A/F42K IL2 or OMCP linked IL2 constructs			
Dose Cytokine	**LOW DOSE**	**INTERMEDIATE DOSE**	**HIGH DOSE**
IL2			
Saline	Group 13		

[0191] In order to evaluate the therapeutic potential of IL2 in an infectious disease model, B6 mice will be infected with a sublethal dose of MCMV (5×10^4) particle forming units (PFUs) as previously described[29]. Day 1 post infection the mice will be divided into 13 groups (5 mice per group) and treated with five daily injections of IL2, R38A/F42K IL2, OMCP fusion constructs or saline as described in **FIG. 18** and **Table 4.** On post-infection day #6 the mice will be sacrificed and splenic and pulmonary viral load determined by standard plaque assay.

[0192] We expect that treatment with pure IL2 will have little effect on tumor growth or viral load as we expect to see preferential activation of T_{regs} over CTLs. We suspect that administration of the mutant R38A/F42K form of IL2 will result a lower tumor and viral burden compared to wild-type IL2 due to less activation of $CD4^+Foxp3^+$ Tregs. Nevertheless it is possible that despite lower levels of T_{reg} activation the tumor burden will be identical between IL2 and R38A/F42K IL2 due to decreased NK activation by the mutant form of IL2 as well. We expect OMCP IL2 construct-treated mice to have lower tumor burden compared to pure cytokine and predict that OMCP-R38A/F42K IL2 will demonstrate the best efficacy for immunotherapy with the most favorable side effect profile.

[0193] If we do not see an effect of OMCP expressing IL2 constructs we will closely evaluate our data for confounding factors such as excessive CTL death due to extreme stimulation as well as possible sequestration of CTLs in systemic organs such as the liver and lungs. If our hypothesis is supported and NK cells are activated and tumor growth ameliorated after OMCP-construct treatment we would repeat these experiments after NK depletion (using anti-NK1.1 clone PK136, mouse anti-mouse depleting antibody) and CD8 depletion (clone YTS169, rat anti-mouse $CD8^+$ T cell-depleting antibody) (both from BioXcell, West Lebanon, NH). Based on these results future work will focus on immunotherapy in primary carcinogenesis models.

Example 16. The effects of IL-2, R38A/F42K IL2 or OMCP targeted IL2 constructs on immunosuppression after radiation exposure.

[0194] Sublethal radiation exposure is a constant risk to those involved in combat duty. In addition to the direct carcinogenic effects of radiation-induced DNA damage, sublethal irradiation results in immunologic damage due to selective death of lymphocyte subsets. $CD8^+$

T cells and $CD44^{lo}$ naïve T cells are specifically sensitive to radiation-induced death while NK cell function significantly declines after irradiation. $CD4^{+}25^{+}$ T cells as well as $CD44^{hi}$ memory-like T cells, however, have a survival advantage after radiation. Both $CD4^{+}25^{+}$ T cells and $CD8^{+}CD44^{hi}$ T cells can downregulate immune responses, explaining why even limited exposure to radiation can result in significant immunosuppression. Pharmacologic interventions to restore the immune system can alleviate morbidity and mortality of radiation poisoning. Surprisingly the role of IL2 in alleviating radiation-induced changes has never been studied. The low affinity IL2 receptor is expressed on bone marrow-resident hematopoietic stem cells and committed NK progenitors. NK cells, in turn, can secrete granulocyte-macrophage colony-stimulating factor (GM-CSF) upon stimulation, a cytokine that can assist with hematopoietic recovery. Based on these data in this aim we plan to test the hypothesis that IL2 or OMCP-IL2 constructs can assist with hematopoietic recovery after sublethal and lethal irradiation.

[0195] Based on previously described models of radiation-induced hematopoietic damage and recovery we will irradiate B6 mice with either sublethal 4.5 or lethal 7.5Gy from a cesium source. Within one hour of exposure mice in both radiation doses will be randomly divided into 13 groups as described in **Table 4** and treated for five days with low, intermediate or high dose IL2, R38A/F42K IL2 or OMCP expressing IL2 constructs (**FIG. 18**). A portion of the mice will be injected with saline after irradiation (group 13) **(Table 4)** and unirradiated untreated B6 mice will be included as a control as well (group 14). On day 6 hematopoietic recovery will be monitored by flow cytometric analysis of peripheral blood obtained by superficial mandibular vein sampling. The sample will be analyzed for total number of NK cells, T cells, B cells, granulocytes, as well as monocytes and macrophages per ml of blood. Since 90% of untreated mice die 15-25 days after exposure to 7.5Gy, mice will be followed daily and survival curves in each treatment group will be compared by Kaplan-Meier analysis. Moribund mice in the 7.5Gy group will be carefully analyzed for cause of death evaluating the bone marrow, spleen and peripheral organs for both infection as well as hematopoietic failure by flow cytometry and tissue culture. Since mice in the sublethal 4.5Gy group are expected to survive long term, they will be sacrificed one month after exposure and peripheral lymphoid organs as well as bone marrow evaluated for hematopoietic recovery by flow cytometric analysis.

[0196] Radiation related DNA damage results in malignant transformation. Hematopoietic malignancies are especially prominent after radiation exposure. In order to evaluate the ability of IL2 or OMCP linked IL2 constructs to facilitate in clearing hematopoietic malignancies after radiation exposure we will treat B6 mice with sublethal exposure to 4.5Gy from a cesium source. Two days after irradiation the mice will be injected with 10^{3} RMA-S lymphoma cells i.p. and three days later treated for a five day course with low, intermediate or high dose IL2, R38A/F42K IL2 or OMCP expressing IL2 constructs **(Table 4, FIG. 19).** Unirradiated B6 mice will be included as a control (group 14) as well. The mice will be followed for survival.

[0197] We anticipate that wild-type IL2 alone will have a negligible effect on immunorestoration since it will most likely result in preferential expansion of $CD4^{+}Foxp3^{+}$ T_{regs}, which are already preserved after irradiation. We suspect, however, that R38A/F42K IL2 as well as OMCP expressing IL2 constructs will expand the NK fraction in the peripheral blood and will contribute to broad hematopoietic recovery, albeit indirectly through secretion of homeostatic cytokines such as GM-CSF. If we detect no differences in hematopoietic recovery between IL2 and saline-treated groups, we will examine other confounding factors, such as homeostatic proliferation induced alteration of the immune system and the effect of IL2 or OMCP expressing IL2 constructs on such proliferation. While 200,000 IU of IL2 administered daily to B6 mice is not lethal, we realize that in the face of irradiation the mice might be weaker. It is thus possible that dosing might need to be adjusted. For the "functional" part of this experiment we plan to specifically utilize the well-established model of RMA-S lymphoma challenge due to the role of NK cells in controlling hematologic malignancies. This established assay will allow us to gain rapid experimental data to advance this aim. Based on this data we would extend this aim in the future utilizing a primary carcinogenesis model as well.

Example 17. OMCP-targeted delivery of IL15 enhances CD25 upregulation.

[0198] Interleukin 15 (IL15) is a cytokine with structural similarity to IL2. Like IL2, IL15 binds to and signals through a complex composed of IL2/IL15 receptor beta chain (CD122) and the common gamma chain (gamma-C, CD132). IL15 is secreted by mononuclear phagocytes (and some other cells) following infection by viruses. IL15 regulates T and natural killer (NK) cell activation and proliferation. Survival signals that maintain memory T cells in the absence of antigen are provided by IL15. This cytokine is also implicated in NK cell development. IL-15 belongs to the four α-helix bundle family of cytokine.

[0199] OMCP was linked to the cytokine IL15 and its ability to active NK cells compared to IL15 alone was examined. NK cell activation was measured by CD25 upregulation. As demonstrated in **FIG. 21,** higher levels of CD25 are evident when IL15 is delivered by OMCP vs naked cytokine alone in equimolar doses.

Example 18. OMCP-targeted delivery of IL18 enhances NK cell activation.

[0200] OMCP was linked to WT human IL18, WT murine IL18 or mutant human IL18 (which inhibits its interaction with IL18BP) and its ability to active NK cells was examined (**FIG. 32**). Peripheral blood lymphocytes were cultured for 48 hours in 4.4 µM of either wild-type IL18 (blue), OMCP-IL18 (red) or saline (black). Activation of CD56+CD3- natural killer cells, as measured by surface CD69 expression, was superior by OMCP-IL18 compared to wild-type IL18 (**FIG. 33**). This data demonstrates that linking OMCP to IL18 also enhances NK cell activation relative to IL18 without OMCP.

Example 19. The D132R mutation in OMCP significantly decreases its NKG2D binding.

[0201] To further test the necessity of NKG2D binding in targeted delivery of IL2, we tested NK expansion and activation in the presence of mutIL2, OMCP-mutIL2, and (D132R) OMCP-mutIL2. The D132R mutation ameliorated the superiority of natural killer cell activation over cytokine alone (**FIG. 22**). Thus high affinity NKG2D binding is critical for targeted delivery and lymphocyte activation by IL2.

Example 20. OMCP-IL2 effectively treats infection caused by West Nile Virus (WNV).

[0202] The ability of various constructs of the invention to treat infection caused by West Nile Virus (WNV) was evaluated. Mice were given OMCP-IL2, the binding null mutant of OMCP, OMCP(D132R)-IL2, IL2 alone, IL2(38R/42A) alone and PBS. Upon treatment with OMCP(D132R)-IL2 and PBS all mice succumbed to infection by about day 11. Following treatment with IL2 alone, approximately 20% of mice survived until day 21. However, treatment with IL2(38R/42A) and OMCP-IL2 resulted in about 40% of mice surviving beyond 21 days **(FIG. 30A).** These results were consistently repeatable as demonstrated in **FIG. 30B.**

References for Example 11-20.

[0203]

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HEADER    IMMUNE SYSTEM/VIRAL PROTEIN            17-APR-14   4PDC
TITLE     CRYSTAL STRUCTURE OF COWPOX VIRUS CPXV018 (OMCP) BOUND TO HUMAN NKG2D
COMPND    MOL_ID: 1;
COMPND   2 MOLECULE: NKG2-D TYPE II INTEGRAL MEMBRANE PROTEIN;
COMPND   3 CHAIN: A, B, C, D;
COMPND   4 FRAGMENT: UNP RESIDUES 93-215;
COMPND   5 SYNONYM: KILLER CELL LECTIN-LIKE RECEPTOR SUBFAMILY K MEMBER 1,NK
COMPND   6 CELL RECEPTOR D,NKG2-D-ACTIVATING NK RECEPTOR;
COMPND   7 ENGINEERED: YES;
COMPND   8 MOL_ID: 2;
COMPND   9 MOLECULE: CPXV018 PROTEIN;
COMPND  10 CHAIN: E, F;
COMPND  11 FRAGMENT: UNP RESIDUES 20-168;
COMPND  12 ENGINEERED: YES;
COMPND  13 MUTATION: YES
SOURCE    MOL_ID: 1;
SOURCE   2 ORGANISM_SCIENTIFIC: HOMO SAPIENS;
SOURCE   4 ORGANISM_TAXID: 9606;
SOURCE   5 GENE: KLRK1, D12S2489E, NKG2D;
SOURCE   6 EXPRESSION_SYSTEM: ESCHERICHIA COLI;
SOURCE   7 EXPRESSION_SYSTEM_TAXID: 469008;
SOURCE   8 EXPRESSION_SYSTEM_STRAIN: BL21(DE3)RIL;
SOURCE   9 EXPRESSION_SYSTEM_VECTOR_TYPE: PLASMID;
SOURCE  10 EXPRESSION_SYSTEM_PLASMID: PET21A(+);
SOURCE  11 MOL_ID: 2;
SOURCE  12 ORGANISM_SCIENTIFIC: COWPOX VIRUS;
SOURCE  13 ORGANISM_COMMON: CPV;
SOURCE  14 ORGANISM_TAXID: 10243;
SOURCE  15 GENE: CPXV018 CDS;
SOURCE  16 EXPRESSION_SYSTEM: ESCHERICHIA COLI;
SOURCE  17 EXPRESSION_SYSTEM_TAXID: 469008;
SOURCE  18 EXPRESSION_SYSTEM_STRAIN: BL21(DE3)RIL;
SOURCE  19 EXPRESSION_SYSTEM_VECTOR_TYPE: PLASMID;
SOURCE  20 EXPRESSION_SYSTEM_PLASMID: PET21A(+)
KEYWDS    SECRETED VIRAL PROTEIN, IMMUNE EVASION, ORTHOPOXVIRUS, MHC-LIKE FOLD,
KEYWDS   2 NK CELL RECEPTOR LIGAND, STRUCTURAL GENOMICS, CENTER FOR STRUCTURAL
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KEYWDS  3 GENOMICS OF INFECTIOUS DISEASES, CSGID, IMMUNE SYSTEM-VIRAL PROTEIN
KEYWDS  4 COMPLEX


EXPDTA    X-RAY DIFFRACTION
AUTHOR    E.LAZEAR,C.A.NELSON,D.H.FREMONT,CENTER FOR STRUCTURAL GENOMICS OF
AUTHOR  2 INFECTIOUS DISEASES (CSGID)
REVDAT  2   30-JUL-14 4PDC    1       JRNL
REVDAT  1   21-MAY-14 4PDC    0
JRNL        AUTH   E.LAZEAR,M.SUN,C.A.NELSON,J.A.CAMPBELL,L.N.CARAYANNOPOULOS,
JRNL        AUTH 2 A.R.FRENCH,D.H.FREMONT,
JRNL        AUTH 3 CENTER FOR STRUCTURAL GENOMICS OF INFECTIOUS DISEASES
JRNL        AUTH 4 (CSGID)
JRNL        TITL   COWPOX VIRUS OMCP ANTAGONIZES NKG2D VIA AN UNEXPECTED
JRNL        TITL 2 BINDING ORIENTATION
JRNL        REF    TO BE PUBLISHED
REMARK   2 RESOLUTION.    1.99 ANGSTROMS.
REMARK   3 REFINEMENT.
REMARK   3   PROGRAM     : PHENIX (PHENIX.REFINE: 1.8.4_1496)
REMARK   3   AUTHORS     : PAUL ADAMS,PAVEL AFONINE,VINCENT CHEN,IAN
REMARK   3    REFINEMENT TARGET : ML
REMARK   3  DATA USED IN REFINEMENT.
REMARK   3   RESOLUTION RANGE HIGH (ANGSTROMS) : 1.99
REMARK   3   RESOLUTION RANGE LOW  (ANGSTROMS) : 45.67
REMARK   3   MIN(FOBS/SIGMA_FOBS)              : 1.380
REMARK   3   COMPLETENESS FOR RANGE        (%) : 92.9
REMARK   3   NUMBER OF REFLECTIONS             : 50042
REMARK   3  FIT TO DATA USED IN REFINEMENT.
REMARK   3   R VALUE     (WORKING + TEST SET) : 0.168
REMARK   3   R VALUE            (WORKING SET) : 0.166
REMARK   3   FREE R VALUE                     : 0.214
REMARK   3   FREE R VALUE TEST SET SIZE   (%) : 3.980
REMARK   3   FREE R VALUE TEST SET COUNT      : 1994
REMARK   3  FIT TO DATA USED IN REFINEMENT (IN BINS).
REMARK   3   BIN  RESOLUTION RANGE  COMPL.    NWORK NFREE   RWORK  RFREE
REMARK   3     1 45.6774 -  4.7969    1.00     3740   160  0.1646 0.1709
REMARK   3     2  4.7969 -  3.8080    1.00     3733   155  0.1289 0.1960
REMARK   3     3  3.8080 -  3.3268    1.00     3673   151  0.1493 0.1701
REMARK   3     4  3.3268 -  3.0227    0.99     3700   158  0.1688 0.2284
REMARK   3     5  3.0227 -  2.8061    0.95     3529   151  0.1864 0.2352
REMARK   3     6  2.8061 -  2.6407    0.91     3353   142  0.1826 0.2189
REMARK   3     7  2.6407 -  2.5084    0.90     3309   133  0.1790 0.2297
REMARK   3     8  2.5084 -  2.3993    0.89     3281   134  0.1744 0.2545
REMARK   3     9  2.3993 -  2.3069    0.89     3285   132  0.1778 0.2825
REMARK   3    10  2.3069 -  2.2273    0.90     3327   131  0.1764 0.2197
REMARK   3    11  2.2273 -  2.1577    0.90     3302   127  0.1777 0.2202
REMARK   3    12  2.1577 -  2.0960    0.91     3328   152  0.1834 0.2460
REMARK   3    13  2.0960 -  2.0408    0.91     3341   145  0.2098 0.2812
REMARK   3    14  2.0408 -  1.9910    0.85     3147   123  0.2098 0.2951
REMARK   3  BULK SOLVENT MODELLING.
REMARK   3   METHOD USED        : FLAT BULK SOLVENT MODEL
REMARK   3   SOLVENT RADIUS     : 1.11
REMARK   3   SHRINKAGE RADIUS   : 0.90
REMARK   3   K_SOL              : NULL
REMARK   3   B_SOL              : NULL
REMARK   3  ERROR ESTIMATES.
REMARK   3   COORDINATE ERROR (MAXIMUM-LIKELIHOOD
BASED)    : 0.230
REMARK   3   PHASE ERROR (DEGREES, MAXIMUM-LIKELIHOOD
BASED) : 20.990
REMARK   3  B VALUES.
REMARK   3   FROM WILSON PLOT           (A**2) : 21.62
REMARK   3   MEAN B VALUE      (OVERALL, A**2) : NULL
REMARK   3   OVERALL ANISOTROPIC B VALUE.
REMARK   3    B11 (A**2) : NULL
REMARK   3    B22 (A**2) : NULL
REMARK   3    B33 (A**2) : NULL
REMARK   3    B12 (A**2) : NULL
REMARK   3    B13 (A**2) : NULL
REMARK   3    B23 (A**2) : NULL
REMARK   3  TWINNING INFORMATION.
REMARK   3   FRACTION: NULL
REMARK   3   OPERATOR: NULL
REMARK   3  DEVIATIONS FROM IDEAL VALUES.


REMARK   3                RMSD          COUNT
REMARK   3   BOND      :  0.003          6687
REMARK   3   ANGLE     :  0.786          9030
REMARK   3   CHIRALITY :  0.031           933
REMARK   3   PLANARITY :  0.003          1150
REMARK   3   DIHEDRAL  : 13.423          2426
REMARK   3  TLS DETAILS
REMARK   3   NUMBER OF TLS GROUPS  : NULL
REMARK   3  NCS DETAILS
REMARK   3   NUMBER OF NCS GROUPS : NULL
REMARK   3  OTHER REFINEMENT REMARKS: NULL
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REMARK   4 4PDC COMPLIES WITH FORMAT V. 3.30, 13-JUL-11
REMARK 100 THIS ENTRY HAS BEEN PROCESSED BY RCSB ON 21-APR-14.
REMARK 100 THE DEPOSITION ID IS D_1000201141.
REMARK 200 EXPERIMENTAL DETAILS
REMARK 200  EXPERIMENT TYPE                : X-RAY DIFFRACTION
REMARK 200  DATE OF DATA COLLECTION        : 19-OCT-10
REMARK 200  TEMPERATURE           (KELVIN) : 100
REMARK 200  PH                             : 6.75
REMARK 200  NUMBER OF CRYSTALS USED        : 1
REMARK 200  SYNCHROTRON              (Y/N) : Y
REMARK 200  RADIATION SOURCE               : ALS
REMARK 200  BEAMLINE                       : 4.2.2
REMARK 200  X-RAY GENERATOR MODEL          : NULL
REMARK 200  MONOCHROMATIC OR LAUE    (M/L) : M
REMARK 200  WAVELENGTH OR RANGE        (A) : 1.00004
REMARK 200  MONOCHROMATOR                  : NULL
REMARK 200  OPTICS                         : NULL
REMARK 200  DETECTOR TYPE                  : CCD
REMARK 200  DETECTOR MANUFACTURER          : NOIR-1
REMARK 200  INTENSITY-INTEGRATION SOFTWARE : HKL
REMARK 200  DATA SCALING SOFTWARE          : HKL
REMARK 200  NUMBER OF UNIQUE REFLECTIONS   : 50139
REMARK 200  RESOLUTION RANGE HIGH      (A) : 1.991
REMARK 200  RESOLUTION RANGE LOW       (A) : 50.000
REMARK 200  REJECTION CRITERIA  (SIGMA(I)) : NULL
REMARK 200 OVERALL.
REMARK 200  COMPLETENESS FOR RANGE     (%) : 93.5
REMARK 200  DATA REDUNDANCY                : 6.200
REMARK 200  R MERGE                    (I) : 0.11800
REMARK 200  R SYM                      (I) : NULL
REMARK 200  <I/SIGMA(I)> FOR THE DATA SET  : 12.7000
REMARK 200 IN THE HIGHEST RESOLUTION SHELL.
REMARK 200  HIGHEST RESOLUTION SHELL, RANGE HIGH (A) : 2.00
REMARK 200  HIGHEST RESOLUTION SHELL, RANGE LOW  (A) : 2.07
REMARK 200  COMPLETENESS FOR SHELL     (%) : 91.5
REMARK 200  DATA REDUNDANCY IN SHELL       : 5.30
REMARK 200  R MERGE FOR SHELL          (I) : 0.48500
REMARK 200  R SYM FOR SHELL            (I) : NULL
REMARK 200  <I/SIGMA(I)> FOR SHELL         : NULL
REMARK 200 DIFFRACTION PROTOCOL: SINGLE WAVELENGTH
REMARK 200 METHOD USED TO DETERMINE THE STRUCTURE: MOLECULAR
REPLACEMENT
REMARK 200 SOFTWARE USED: PHASER
REMARK 200 STARTING MODEL: 1MPU, 4FFE
REMARK 200 REMARK: NULL
REMARK 280 CRYSTAL
REMARK 280 SOLVENT CONTENT, VS   (%): 42.94
REMARK 280 MATTHEWS COEFFICIENT, VM (ANGSTROMS**3/DA): 2.16
REMARK 280 CRYSTALLIZATION CONDITIONS: 15% PEG 3350, 0.2M MGCL2, 0.1M BIS
REMARK 280  -TRIS
REMARK 290 CRYSTALLOGRAPHIC SYMMETRY
REMARK 290 SYMMETRY OPERATORS FOR SPACE GROUP: P 1 21 1
REMARK 290      SYMOP   SYMMETRY
REMARK 290     NNNMMM   OPERATOR
REMARK 290       1555   X,Y,Z
REMARK 290       2555   -X,Y+1/2,-Z
REMARK 290     WHERE NNN -> OPERATOR NUMBER
REMARK 290           MMM -> TRANSLATION VECTOR
REMARK 290 CRYSTALLOGRAPHIC SYMMETRY TRANSFORMATIONS


REMARK 290 THE FOLLOWING TRANSFORMATIONS OPERATE ON THE ATOM/HETATM
REMARK 290 RECORDS IN THIS ENTRY TO PRODUCE CRYSTALLOGRAPHICALLY
REMARK 290 RELATED MOLECULES.
REMARK 290   SMTRY1   1  1.000000  0.000000  0.000000        0.00000
REMARK 290   SMTRY2   1  0.000000  1.000000  0.000000        0.00000
REMARK 290   SMTRY3   1  0.000000  0.000000  1.000000        0.00000
REMARK 290   SMTRY1   2 -1.000000  0.000000  0.000000        0.00000
REMARK 290   SMTRY2   2  0.000000  1.000000  0.000000       50.55500
REMARK 290   SMTRY3   2  0.000000  0.000000 -1.000000        0.00000
REMARK 290 REMARK: NULL
REMARK 300 BIOMOLECULE: 1, 2
REMARK 300 SEE REMARK 350 FOR THE AUTHOR PROVIDED AND/OR PROGRAM
REMARK 300 GENERATED ASSEMBLY INFORMATION FOR THE STRUCTURE IN
REMARK 300 THIS ENTRY. THE REMARK MAY ALSO PROVIDE INFORMATION ON
REMARK 300 BURIED SURFACE AREA.
REMARK 300 REMARK: THE BIOLOGICAL UNIT OF HNKG2D IS A DIMER (CHAINS A & B AND
REMARK 300 CHAINS C & D
REMARK 350 COORDINATES FOR A COMPLETE MULTIMER REPRESENTING THE KNOWN
REMARK 350 BIOLOGICALLY SIGNIFICANT OLIGOMERIZATION STATE OF THE
REMARK 350 MOLECULE CAN BE GENERATED BY APPLYING BIOMT TRANSFORMATIONS
REMARK 350 GIVEN BELOW.  BOTH NON-CRYSTALLOGRAPHIC AND
REMARK 350 CRYSTALLOGRAPHIC OPERATIONS ARE GIVEN.
REMARK 350 BIOMOLECULE: 1
REMARK 350 AUTHOR DETERMINED BIOLOGICAL UNIT: TRIMERIC
REMARK 350 APPLY THE FOLLOWING TO CHAINS: A, B, E
REMARK 350   BIOMT1   1  1.000000  0.000000  0.000000        0.00000
REMARK 350   BIOMT2   1  0.000000  1.000000  0.000000        0.00000
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REMARK 350   BIOMT3   1  0.000000  0.000000  1.000000        0.00000
REMARK 350 BIOMOLECULE: 2
REMARK 350 AUTHOR DETERMINED BIOLOGICAL UNIT: TRIMERIC
REMARK 350 APPLY THE FOLLOWING TO CHAINS: C, D, F
REMARK 350   BIOMT1   1  1.000000  0.000000  0.000000        0.00000
REMARK 350   BIOMT2   1  0.000000  1.000000  0.000000        0.00000
REMARK 350   BIOMT3   1  0.000000  0.000000  1.000000        0.00000
REMARK 465 MISSING RESIDUES
REMARK 465 THE FOLLOWING RESIDUES WERE NOT LOCATED IN THE
REMARK 465 EXPERIMENT. (M=MODEL NUMBER; RES=RESIDUE NAME; C=CHAIN
REMARK 465 IDENTIFIER; SSSEQ=SEQUENCE NUMBER; I=INSERTION CODE.)
REMARK 465   M RES C SSSEQI
REMARK 465     GLU B   93
REMARK 500 GEOMETRY AND STEREOCHEMISTRY
REMARK 500 SUBTOPIC: CLOSE CONTACTS IN SAME ASYMMETRIC UNIT
REMARK 500 THE FOLLOWING ATOMS ARE IN CLOSE CONTACT.
REMARK 500  ATM1  RES C  SSEQI   ATM2  RES C  SSEQI           DISTANCE
REMARK 500   O    HOH F  293     O    HOH F  324            2.19
REMARK 500 REMARK: NULL
REMARK 500 GEOMETRY AND STEREOCHEMISTRY
REMARK 500 SUBTOPIC: CLOSE CONTACTS
REMARK 500 THE FOLLOWING ATOMS THAT ARE RELATED BY CRYSTALLOGRAPHIC
REMARK 500 SYMMETRY ARE IN CLOSE CONTACT.  AN ATOM LOCATED WITHIN 0.15
REMARK 500 ANGSTROMS OF A SYMMETRY RELATED ATOM IS ASSUMED TO BE ON A
REMARK 500 SPECIAL POSITION AND IS, THEREFORE, LISTED IN REMARK 375
REMARK 500 INSTEAD OF REMARK 500.  ATOMS WITH NON-BLANK ALTERNATE
REMARK 500 LOCATION INDICATORS ARE NOT INCLUDED IN THE CALCULATIONS.
REMARK 500 DISTANCE CUTOFF:
REMARK 500 2.2 ANGSTROMS FOR CONTACTS NOT INVOLVING HYDROGEN ATOMS
REMARK 500 1.6 ANGSTROMS FOR CONTACTS INVOLVING HYDROGEN ATOMS
REMARK 500  ATM1  RES C  SSEQI   ATM2  RES C  SSEQI  SSYMOP   DISTANCE
REMARK 500   O    HOH C  301     O    HOH D  306     1655     2.15
REMARK 500   O    HOH C  318     O    HOH D  306     1655     2.19
REMARK 500 REMARK: NULL
REMARK 500 GEOMETRY AND STEREOCHEMISTRY
REMARK 500 SUBTOPIC: TORSION ANGLES
REMARK 500 TORSION ANGLES OUTSIDE THE EXPECTED RAMACHANDRAN REGIONS:
REMARK 500 (M=MODEL NUMBER; RES=RESIDUE NAME; C=CHAIN IDENTIFIER;
REMARK 500 SSEQ=SEQUENCE NUMBER; I=INSERTION CODE).
REMARK 500 STANDARD TABLE:
REMARK 500 FORMAT:(10X,I3,1X,A3,1X,A1,I4,A1,4X,F7.2,3X,F7.2)
REMARK 500 EXPECTED VALUES: GJ KLEYWEGT AND TA JONES (1996). PHI/PSI-
REMARK 500 CHOLOGY: RAMACHANDRAN REVISITED. STRUCTURE 4, 1395 - 1400


REMARK 500  M RES CSSEQI        PSI       PHI
REMARK 500    SER A 151    -170.24     71.72
REMARK 500    THR A 162     -74.87    -58.64
REMARK 500    MET A 184     -75.63   -143.50
REMARK 500    TYR B 106     114.87   -162.70
REMARK 500    SER B 151    -171.27     67.58
REMARK 500    THR B 162     -35.85    164.34
REMARK 500    MET B 184     -59.05   -140.78
REMARK 500    SER C 151    -172.20     65.21
REMARK 500    MET C 184     -64.72   -143.36
REMARK 500    SER D 151    -170.57     74.89
REMARK 500    MET D 184     -66.96   -138.40
REMARK 500    ASN E  88      16.97     57.97
REMARK 500    THR E 104     -12.21   -141.68
REMARK 500    LYS F  35     -52.70   -131.11
REMARK 500    THR F 104      -6.09   -145.54
REMARK 500 REMARK: NULL
REMARK 525 SOLVENT
REMARK 525 THE SOLVENT MOLECULES HAVE CHAIN IDENTIFIERS THAT
REMARK 525 INDICATE THE POLYMER CHAIN WITH WHICH THEY ARE MOST
REMARK 525 CLOSELY ASSOCIATED. THE REMARK LISTS ALL THE SOLVENT
REMARK 525 MOLECULES WHICH ARE MORE THAN 5A AWAY FROM THE
REMARK 525 NEAREST POLYMER CHAIN (M = MODEL NUMBER;
REMARK 525 RES=RESIDUE NAME; C=CHAIN IDENTIFIER; SSEQ=SEQUENCE
REMARK 525 NUMBER; I=INSERTION CODE):
REMARK 525  M RES CSSEQI
REMARK 525    HOH A 385        DISTANCE =  6.57 ANGSTROMS
REMARK 525    HOH A 387        DISTANCE =  6.32 ANGSTROMS
REMARK 525    HOH F 337        DISTANCE =  5.90 ANGSTROMS
REMARK 900 RELATED ENTRIES
REMARK 900 RELATED ID: 4FFE   RELATED DB: PDB
REMARK 900 4FFE IS THE STRUCTURE OF FREE COWPOX VIRUS CPXV018 (OMCP)
REMARK 900 RELATED ID: 1MPU   RELATED DB: PDB
REMARK 900 1MPU IS THE STRUCTURE OF FREE HUMAN NKG2D
IMMUNORECEPTOR.
REMARK 900 RELATED ID: 1HYR   RELATED DB: PDB
REMARK 900 HUMAN NKG2D IN COMPLEX WITH MIC-A
REMARK 900 RELATED ID: 1JSK   RELATED DB: PDB
REMARK 900 MOUSE NKG2D IN COMPLEX WITH RAE-1BETA
REMARK 900 RELATED ID: 1KCG   RELATED DB: PDB
REMARK 900 HUMAN NKG2D IN COMPLEX WITH ULBP3
REMARK 900 RELATED ID: CSGID-IDP00259   RELATED DB: TARGETTRACK
DBREF  4PDC A   93   215  UNP    P26718   NKG2D HUMAN     93    215
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DBREF  4PDC B   93  215  UNP    P26718  NKG2D_HUMAN     93   215
DBREF  4PDC C   93  215  UNP    P26718  NKG2D_HUMAN     93   215
DBREF  4PDC D   93  215  UNP    P26718  NKG2D_HUMAN     93   215
DBREF  4PDC E    1  149  UNP    Q8QN43  Q8QN43_COWPX    20   168
DBREF  4PDC F    1  149  UNP    Q8QN43  Q8QN43_COWPX    20   168
SEQADV 4PDC GLY E    0  UNP  Q8QN43              EXPRESSION TAG
SEQADV 4PDC ASP E   23  UNP  Q8QN43    TYR    42 ENGINEERED MUTATION
SEQADV 4PDC ASP E   95  UNP  Q8QN43    PHE   114 ENGINEERED MUTATION
SEQADV 4PDC GLY F    0  UNP  Q8QN43              EXPRESSION TAG
SEQADV 4PDC ASP F   23  UNP  Q8QN43    TYR    42 ENGINEERED MUTATION
SEQADV 4PDC ASP F   95  UNP  Q8QN43    PHE   114 ENGINEERED MUTATION
SEQRES   1 A  123  GLU SER TYR CYS GLY PRO CYS PRO LYS ASN TRP ILE CYS
SEQRES   2 A  123  TYR LYS ASN ASN CYS TYR GLN PHE PHE ASP GLU SER LYS
SEQRES   3 A  123  ASN TRP TYR GLU SER GLN ALA SER CYS MET SER GLN ASN
SEQRES   4 A  123  ALA SER LEU LEU LYS VAL TYR SER LYS GLU ASP GLN ASP
SEQRES   5 A  123  LEU LEU LYS LEU VAL LYS SER TYR HIS TRP MET GLY LEU
SEQRES   6 A  123  VAL HIS ILE PRO THR ASN GLY SER TRP GLN TRP GLU ASP
SEQRES   7 A  123  GLY SER ILE LEU SER PRO ASN LEU LEU THR ILE ILE GLU
SEQRES   8 A  123  MET GLN LYS GLY ASP CYS ALA LEU TYR ALA SER SER PHE
SEQRES   9 A  123  LYS GLY TYR ILE GLU ASN CYS SER THR PRO ASN THR TYR
SEQRES  10 A  123  ILE CYS MET GLN ARG THR
SEQRES   1 B  123  GLU SER TYR CYS GLY PRO CYS PRO LYS ASN TRP ILE CYS
SEQRES   2 B  123  TYR LYS ASN ASN CYS TYR GLN PHE PHE ASP GLU SER LYS
SEQRES   3 B  123  ASN TRP TYR GLU SER GLN ALA SER CYS MET SER GLN ASN
SEQRES   4 B  123  ALA SER LEU LEU LYS VAL TYR SER LYS GLU ASP GLN ASP
SEQRES   5 B  123  LEU LEU LYS LEU VAL LYS SER TYR HIS TRP MET GLY LEU
SEQRES   6 B  123  VAL HIS ILE PRO THR ASN GLY SER TRP GLN TRP GLU ASP


SEQRES   7 B  123  GLY SER ILE LEU SER PRO ASN LEU LEU THR ILE ILE GLU
SEQRES   8 B  123  MET GLN LYS GLY ASP CYS ALA LEU TYR ALA SER SER PHE
SEQRES   9 B  123  LYS GLY TYR ILE GLU ASN CYS SER THR PRO ASN THR TYR
SEQRES  10 B  123  ILE CYS MET GLN ARG THR
SEQRES   1 C  123  GLU SER TYR CYS GLY PRO CYS PRO LYS ASN TRP ILE CYS
SEQRES   2 C  123  TYR LYS ASN ASN CYS TYR GLN PHE PHE ASP GLU SER LYS
SEQRES   3 C  123  ASN TRP TYR GLU SER GLN ALA SER CYS MET SER GLN ASN
SEQRES   4 C  123  ALA SER LEU LEU LYS VAL TYR SER LYS GLU ASP GLN ASP
SEQRES   5 C  123  LEU LEU LYS LEU VAL LYS SER TYR HIS TRP MET GLY LEU
SEQRES   6 C  123  VAL HIS ILE PRO THR ASN GLY SER TRP GLN TRP GLU ASP
SEQRES   7 C  123  GLY SER ILE LEU SER PRO ASN LEU LEU THR ILE ILE GLU
SEQRES   8 C  123  MET GLN LYS GLY ASP CYS ALA LEU TYR ALA SER SER PHE
SEQRES   9 C  123  LYS GLY TYR ILE GLU ASN CYS SER THR PRO ASN THR TYR
SEQRES  10 C  123  ILE CYS MET GLN ARG THR
SEQRES   1 D  123  GLU SER TYR CYS GLY PRO CYS PRO LYS ASN TRP ILE CYS
SEQRES   2 D  123  TYR LYS ASN ASN CYS TYR GLN PHE PHE ASP GLU SER LYS
SEQRES   3 D  123  ASN TRP TYR GLU SER GLN ALA SER CYS MET SER GLN ASN
SEQRES   4 D  123  ALA SER LEU LEU LYS VAL TYR SER LYS GLU ASP GLN ASP
SEQRES   5 D  123  LEU LEU LYS LEU VAL LYS SER TYR HIS TRP MET GLY LEU
SEQRES   6 D  123  VAL HIS ILE PRO THR ASN GLY SER TRP GLN TRP GLU ASP
SEQRES   7 D  123  GLY SER ILE LEU SER PRO ASN LEU LEU THR ILE ILE GLU
SEQRES   8 D  123  MET GLN LYS GLY ASP CYS ALA LEU TYR ALA SER SER PHE
SEQRES   9 D  123  LYS GLY TYR ILE GLU ASN CYS SER THR PRO ASN THR TYR
SEQRES  10 D  123  ILE CYS MET GLN ARG THR
SEQRES   1 E  150  GLY HIS LYS LEU ALA PHE ASN PHE ASN LEU GLU ILE ASN
SEQRES   2 E  150  GLY SER ASP THR HIS SER THR VAL ASP VAL ASP LEU ASP
SEQRES   3 E  150  ASP SER GLN ILE ILE THR PHE ASP GLY LYS ASP ILE ARG
SEQRES   4 E  150  PRO THR ILE PRO PHE MET ILE GLY ASP GLU ILE PHE LEU
SEQRES   5 E  150  PRO PHE TYR LYS ASN VAL PHE SER GLU PHE PHE SER LEU
SEQRES   6 E  150  PHE ARG ARG VAL PRO THR SER THR PRO TYR GLU ASP LEU
SEQRES   7 E  150  THR TYR PHE TYR GLU CYS ASP TYR THR ASP ASN LYS SER
SEQRES   8 E  150  THR PHE ASP GLN ASP TYR LEU TYR ASN GLY GLU GLU TYR
SEQRES   9 E  150  THR VAL LYS THR GLN GLU ALA THR ASN LYS ASN MET TRP
SEQRES  10 E  150  LEU THR THR SER GLU PHE ARG LEU LYS LYS TRP PHE ASP
SEQRES  11 E  150  GLY GLU ASP CYS ILE MET HIS LEU ARG SER LEU VAL ARG
SEQRES  12 E  150  LYS MET GLU ASP SER LYS ARG
SEQRES   1 F  150  GLY HIS LYS LEU ALA PHE ASN PHE ASN LEU GLU ILE ASN
SEQRES   2 F  150  GLY SER ASP THR HIS SER THR VAL ASP VAL ASP LEU ASP
SEQRES   3 F  150  ASP SER GLN ILE ILE THR PHE ASP GLY LYS ASP ILE ARG
SEQRES   4 F  150  PRO THR ILE PRO PHE MET ILE GLY ASP GLU ILE PHE LEU
SEQRES   5 F  150  PRO PHE TYR LYS ASN VAL PHE SER GLU PHE PHE SER LEU
SEQRES   6 F  150  PHE ARG ARG VAL PRO THR SER THR PRO TYR GLU ASP LEU
SEQRES   7 F  150  THR TYR PHE TYR GLU CYS ASP TYR THR ASP ASN LYS SER
SEQRES   8 F  150  THR PHE ASP GLN ASP TYR LEU TYR ASN GLY GLU GLU TYR
SEQRES   9 F  150  THR VAL LYS THR GLN GLU ALA THR ASN LYS ASN MET TRP
SEQRES  10 F  150  LEU THR THR SER GLU PHE ARG LEU LYS LYS TRP PHE ASP
SEQRES  11 F  150  GLY GLU ASP CYS ILE MET HIS LEU ARG SER LEU VAL ARG
SEQRES  12 F  150  LYS MET GLU ASP SER LYS ARG
FORMUL   7  HOH   *660(H2 O)
HELIX    1 AA1 ASN A  119  SER A  129  1                                  11
HELIX    2 AA2 GLN A  143  VAL A  149  5                                   7
HELIX    3 AA3 ASN B  119  SER B  129  1                                  11
HELIX    4 AA4 GLN B  143  VAL B  149  5                                   7
HELIX    5 AA5 ASN C  119  SER C  129  1                                  11
HELIX    6 AA6 GLN C  143  VAL C  149  5                                   7
HELIX    7 AA7 ASN D  119  GLN D  130  1                                  12
HELIX    8 AA8 GLN D  143  VAL D  149  5                                   7

SHEET    1 AA1 2 SER A  94  CYS A  96  0
SHEET    2 AA1 2 CYS B  96  CYS B  99 -1  O  CYS B  99   N  SER A
94

SHEET    1 AA2 4 ILE A 104  TYR A 106  0
SHEET    2 AA2 4 ASN A 109  LYS A 118 -1  O  TYR A 111   N  ILE A
104
SHEET    3 AA2 4 ASN A 207  GLN A 213 -1  O  GLN A 213   N  CYS A
HELIX    9 AA9 ILE E   41  ILE E   45  5                                   5
HELIX   10 AB1 ILE E   49  LEU E   64  1                                  16
HELIX   11 AB2 THR E  111  LYS E  126  1                                  16
HELIX   12 AB3 ASP E  129  ASP E  146  1                                  18
HELIX   13 AB4 ILE F   41  ILE F   45  5                                   5
HELIX   14 AB5 ILE F   49  LEU F   64  1                                  16
HELIX   15 AB6 THR F  111  LYS F  125  1                                  15
HELIX   16 AB7 ASP F  129  ASP F  146  1                                  18
SHEET    5 AA8 8 ILE D 104  TYR D 106 -1  O  CYS D 105   N  CYS C
105
SHEET    6 AA8 8 ASN D 109  LYS D 118 -1  O  TYR D 111   N  ILE D
104
SHEET    7 AA8 8 ASN D 207  GLN D 213 -1  O  ASN D 207   N  LYS D
118
SHEET    8 AA8 8 SER D 133  LEU D 134 -1  N  SER D 133   O  MET D
212
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110
SHEET   4 AA2 4 SER A 133  LEU A 134 -1  N  SER A 133   O  MET A
212


SHEET   1 AA3 4 HIS A 153  TRP A 154  0
SHEET   2 AA3 4 CYS A 189  ALA A 193 -1  O  TYR A 192   N  HIS A
153
SHEET   3 AA3 4 LYS A 197  GLU A 201 -1  O  GLU A 201   N  CYS A
189
SHEET   4 AA3 4 THR A 180  ILE A 182  1  N  ILE A 182   O  GLY A 198

SHEET   1 AA4 2 LEU A 157  HIS A 159  0
SHEET   2 AA4 2 TRP A 166  TRP A 168 -1  O  GLN A 167   N  VAL A
158

SHEET   1 AA5 5 ILE B 104  TYR B 106  0
SHEET   2 AA5 5 ASN B 109  LYS B 118 -1  O  TYR B 111   N  ILE B
104
SHEET   3 AA5 5 ASN B 207  ARG B 214 -1  O  ASN B 207   N  LYS B
118
SHEET   4 AA5 5 HIS B 153  HIS B 159  1  N  TRP B 154   O  THR B
208
SHEET   5 AA5 5 TRP B 166  TRP B 168 -1  O  GLN B 167   N  VAL B
158
SHEET   1 AA6 6 SER B 133  LEU B 134  0
SHEET   2 AA6 6 ASN B 207  ARG B 214 -1  O  MET B 212   N  SER B
133
SHEET   3 AA6 6 HIS B 153  HIS B 159  1  N  TRP B 154   O  THR B
208
SHEET   4 AA6 6 CYS B 189  ALA B 193 -1  O  TYR B 192   N  HIS B
153
SHEET   5 AA6 6 LYS B 197  GLU B 201 -1  O  LYS B 197   N  ALA B
193

SHEET   6 AA6 6 THR B 180  ILE B 182  1  N  ILE B 182   O  GLY B 198
SHEET   1 AA7 2 CYS C  96  CYS C  99  0
SHEET   2 AA7 2 SER D  94  CYS D  96 -1  O  SER D  94   N  CYS C
99
SHEET   1 AA8 8 SER C 133  LEU C 134  0
SHEET   2 AA8 8 ASN C 207  ARG C 214 -1  O  MET C 212   N  SER C
133
SHEET   3 AA8 8 ASN C 109  LYS C 118 -1  N  CYS C 110   O  GLN C
213
SHEET   4 AA8 8 ILE C 104  TYR C 106 -1  N  ILE C 104   O  TYR C
111
SSBOND  1 CYS A   96   CYS A  105                  1555   1555  2.05
SSBOND  2 CYS A   99   CYS A  110                  1555   1555  2.03
SSBOND  3 CYS A  127   CYS A  211                   1555   1555  2.04
SSBOND  4 CYS A  189   CYS A  203                   1555   1555  2.03
SSBOND  5 CYS B   96   CYS B  105             1555   1555  2.03
SSBOND  6 CYS B   99   CYS B  110                  1555   1555  2.03
SSBOND  7 CYS B  127   CYS B  211                   1555   1555  2.04
SSBOND  8 CYS B  189   CYS B  203                   1555   1555  2.04
SSBOND  9 CYS C   96   CYS C  105                  1555   1555  2.03
SSBOND  10 CYS C   99   CYS C  110                  1555   1555  2.03
CISPEP  1 GLY A   97   PRO A   98        0       1.20
CISPEP  2 SER A  194   SER A  195        0      -3.36
CISPEP  3 GLY B   97   PRO B   98        0       1.05
CISPEP  4 SER B  194   SER B  195        0      -1.59
CRYST1   43.315  101.110   91.368  90.00  91.63  90.00 P 1 21 1      8
ORIGX1      1.000000  0.000000  0.000000        0.00000
ORIGX2      0.000000  1.000000  0.000000        0.00000
ORIGX3      0.000000  0.000000  1.000000        0.00000
SCALE1      0.023087  0.000000  0.000659        0.00000
SCALE2      0.000000  0.009890  0.000000        0.00000
SCALE3      0.000000  0.000000  0.010949        0.00000
ATOM      1  N   GLU A  93    -14.924   7.066 -22.137  1.00 59.38     N
ATOM      2  CA  GLU A  93    -14.415   6.924 -23.496  1.00 58.81     C
ATOM      3  C   GLU A  93    -15.440   6.231 -24.389  1.00 56.95     C
ATOM      4  O   GLU A  93    -16.124   5.303 -23.956  1.00 61.11     O
ATOM      5  CB  GLU A  93    -13.098   6.143 -23.497  1.00 60.00      C
ATOM      6  CG  GLU A  93    -13.220   4.711 -22.996  1.00 72.71     C
ATOM      7  CD  GLU A  93    -11.880   3.998 -22.928  1.00 80.57     C


ATOM      8  OE1 GLU A  93    -10.846   4.640 -23.211  1.00 79.10     O
ATOM      9  OE2 GLU A  93    -11.862   2.794 -22.593  1.00 85.72 O1-
ATOM     10  HA  GLU A  93    -14.242   7.805 -23.864  1.00 70.57     H
ATOM     11  HB2 GLU A  93    -12.756   6.110 -24.404  1.00 72.00       H
ATOM     12  HB3 GLU A  93    -12.464   6.603 -22.925  1.00 72.00     H
ATOM     13  HG2 GLU A  93    -13.601   4.719 -22.104  1.00 87.25      H
ATOM     14  HG3 GLU A  93    -13.794   4.213 -23.598  1.00 87.25      H
ATOM     15  N   SER A  94   -15.537   6.687 -25.634  1.00 47.51    N
ATOM     16  CA  SER A  94    -16.522   6.163 -26.571  1.00 43.60      C
ATOM     17  C   SER A  94   -15.911   5.889 -27.937  1.00 40.17    C
ATOM     18  O   SER A  94   -14.793   6.312 -28.231  1.00 42.40     O
ATOM     19  CB  SER A  94    -17.684   7.143 -26.716  1.00 50.65      C
ATOM     20  OG  SER A  94    -17.227   8.391 -27.207  1.00 53.61    O
ATOM     21  H   SER A  94   -15.038   7.306 -25.963  1.00 57.02      H
ATOM     22  HA  SER A  94    -16.874   5.328 -26.226  1.00 52.32     H
ATOM     23  HB2 SER A  94     -18.332   6.777 -27.339  1.00 60.78       H
ATOM     24  HB3 SER A  94     -18.096   7.276 -25.848  1.00 60.78      H
ATOM     25  HG  SER A  94    -17.873   8.923 -27.284  1.00 64.33       H
ATOM     26  N   TYR A  95   -16.662   5.174 -28.766  1.00 37.41    N
ATOM     27  CA  TYR A  95    -16.245   4.875 -30.126  1.00 36.16     C
ATOM     28  C   TYR A  95   -16.815   5.907 -31.089  1.00 32.15     C
ATOM     29  O   TYR A  95   -17.812   6.566 -30.789  1.00 28.55
O
ATOM     30  CB  TYR A  95    -16.696   3.473 -30.528  1.00 35.46      C
ATOM     31  CG  TYR A  95    -15.877   2.361 -29.913  1.00 39.96     C
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SHEET   1 AA9 5 SER C 165  TRP C 168  0
SHEET   2 AA9 5 HIS C 153  ILE C 160 -1  N  VAL C 158   O  GLN C
167


SHEET   3 AA9 5 CYS C 189  ALA C 193 -1  O  TYR C 192   N  HIS C
153
SHEET   4 AA9 5 LYS C 197  GLU C 201 -1  O  GLU C 201   N  CYS C
189
SHEET   5 AA9 5 THR C 180  ILE C 182  1  N  ILE C 182   O  GLY C
198
SHEET   1 AB1 5 TRP D 166  TRP D 168  0
SHEET   2 AB1 5 HIS D 153  HIS D 159 -1  N  VAL D 158   O  GLN D
167
SHEET   3 AB1 5 CYS D 189  ALA D 193 -1  O  TYR D 192   N  HIS D
153
SHEET   4 AB1 5 LYS D 197  GLU D 201 -1  O  GLU D 201   N  CYS D
189
SHEET   5 AB1 5 THR D 180  ILE D 182  1  N  ILE D 182   O  GLY D
198

SHEET   1 AB2 7 ILE E  37  PRO E  39  0
SHEET   2 AB2 7 GLN E  28  PHE E  32 -1  N  THR E  31   O  ARG E
38

SHEET   3 AB2 7 ASP E  15  LEU E  24 -1  N  VAL E  22   O  ILE E  29
SHEET   4 AB2 7 HIS E   1  ASN E  12 -1  N  ALA E   4   O  ASP E  23

SHEET   5 AB2 7 TYR E  74  THR E  86 -1  O  GLU E  75   N  ILE E  11
SHEET   6 AB2 7 LYS E  89  TYR E  98 -1  O  ASP E  93   N  GLU E
82
SHEET   7 AB2 7 GLU E 101  TYR E 103 -1  O  GLU E 101   N  TYR E
98

SHEET   1 AB3 7 ILE F  37  PRO F  39  0
SHEET   2 AB3 7 SER F  27  PHE F  32 -1  N  THR F  31   O  ARG F
38
SHEET   3 AB3 7 ASP F  15  LEU F  24 -1  N  LEU F  24   O  SER F  27

SHEET   4 AB3 7 HIS F   1  ASN F  12 -1  N  ASN F  12   O  ASP F  15
SHEET   5 AB3 7 GLU F  75  THR F  86 -1  O  TYR F  81   N  PHE F   5

SHEET   6 AB3 7 LYS F  89  TYR F  98 -1  O  THR F  91   N  ASP F  84
SHEET   7 AB3 7 GLU F 101  TYR F 103 -1  O  GLU F 101   N  TYR F
98

SSBOND  11 CYS C  127   CYS C  211             1555   1555  2.03
SSBOND  12 CYS C  189   CYS C  203              1555   1555  2.04
SSBOND  13 CYS D   96   CYS D  105           1555   1555  2.04
SSBOND  14 CYS D   99   CYS D  110            1555   1555  2.03
SSBOND  15 CYS D  127   CYS D  211               1555   1555  2.04
SSBOND  16 CYS D  189   CYS D  203                1555   1555  2.04
SSBOND  17 CYS E   83   CYS E  133               1555   1555  2.06
SSBOND  18 CYS F   83   CYS F  133               1555   1555  2.06


CISPEP  5 GLY C   97   PRO C   98        0       2.40
CISPEP  6 SER C  194   SER C  195        0        1.38
CISPEP  7 GLY D   97   PRO D   98        0       0.65
CISPEP  8 SER D  194   SER D  195        0      -3.12


ATOM   6301  HB2 ALA D 125    -19.830  59.309  14.613  1.00 31.59 H
ATOM   6302  HB3 ALA D 125    -18.315  59.403  14.144  1.00 31.59    H
ATOM   6303  N   SER D 126   -17.562  59.727  11.351  1.00 25.39     N
ATOM   6304  CA  SER D 126    -16.606  60.338  10.437  1.00 25.90      C
ATOM   6305  C   SER D 126   -17.233  60.587   9.066  1.00 21.76          C
ATOM   6306  O   SER D 126   -17.156  61.693   8.535  1.00 20.77     O
ATOM   6307  CB  SER D 126    -15.363  59.460  10.298  1.00 24.59     C


ATOM   6308  OG  SER D 126    -14.403  60.072   9.456  1.00 23.90     O
ATOM   6309  H   SER D 126   -17.305  58.973  11.676  1.00 30.47    H
ATOM   6310  HA  SER D 126   -16.328  61.195  10.798  1.00 31.08      H
ATOM   6311  HB2 SER D 126    -14.973  59.325  11.175  1.00 29.51       H
ATOM   6312  HB3 SER D 126    -15.621  58.607   9.915  1.00 29.51      H
ATOM   6313  HG  SER D 126    -13.725  59.580   9.388  1.00 28.69       H
ATOM   6314  N   CYS D 127   -17.866  59.564   8.501  1.00 22.12          N
ATOM   6315  CA  CYS D 127   -18.500  59.692   7.192  1.00 22.37      C
ATOM   6316  C   CYS D 127   -19.619  60.731   7.206  1.00 23.64          C
ATOM   6317  O   CYS D 127   -19.765  61.513   6.260  1.00 23.85   O
ATOM   6318  CB  CYS D 127   -19.053  58.341   6.731  1.00 23.71      C
ATOM   6319  SG  CYS D 127   -17.786  57.091   6.427  1.00 20.25     S
ATOM   6320  H   CYS D 127   -17.943  58.784   8.855  1.00 26.54          H
ATOM   6321  HA  CYS D 127   -17.834  59.978   6.548  1.00 26.84     H
ATOM   6322  HB2 CYS D 127    -19.648  57.998   7.415  1.00 28.45     H
ATOM   6323  HB3 CYS D 127    -19.544  58.471   5.905  1.00 28.45   H
ATOM   6324  N   MET D 128   -20.406  60.737   8.277  1.00 24.97          N
ATOM   6325  CA  MET D 128   -21.524  61.668   8.398  1.00 26.23     C
ATOM   6326  C   MET D 128   -21.036  63.111   8.394  1.00 26.46          C
ATOM   6327  O   MET D 128   -21.642  63.975   7.764  1.00 29.60     O
ATOM   6328  CB  MET D 128    -22.322  61.394   9.673  1.00 27.84   C

ATOM   6329  CG  MET D 128    -23.246  60.187   9.582  1.00 42.42     C
ATOM   6330  SD  MET D 128    -24.266  59.966  11.056  1.00 63.01     S
ATOM   6331  CE  MET D 128    -25.311  61.419  10.970  1.00 61.60      C
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ATOM   32 CD1 TYR A  95   -16.234  1.797 -28.694  1.00 39.91     C
ATOM   33 CD2 TYR A  95   -14.750  1.870 -30.557  1.00 39.04     C
ATOM   34 CE1 TYR A  95   -15.488  0.775 -28.135  1.00 45.29     C
ATOM   35 CE2 TYR A  95   -13.998  0.850 -30.006  1.00 44.91     C
ATOM   36 CZ  TYR A  95  -14.370  0.306 -28.795  1.00 46.64    C
ATOM   37 OH  TYR A  95   -13.617 -0.710 -28.249  1.00 43.67    O
ATOM   38 H   TYR A  95  -17.430  4.846 -28.559  1.00 44.89     H
ATOM   39 HA  TYR A  95   -15.278  4.910 -30.179  1.00 43.39     H
ATOM   40 HB2 TYR A  95   -17.617  3.350 -30.250  1.00 42.56     H
ATOM   41 HB3 TYR A  95   -16.630  3.389 -31.492  1.00 42.56     H
ATOM   42 HD1 TYR A  95   -16.988  2.111 -28.248  1.00 47.89     H
ATOM   43 HD2 TYR A  95   -14.496  2.234 -31.374  1.00 46.85      H
ATOM   44 HE1 TYR A  95   -15.737  0.407 -27.318  1.00 54.35     H
ATOM   45 HE2 TYR A  95   -13.244  0.533 -30.449  1.00 53.90  H
ATOM   46 HH  TYR A  95   -13.948 -0.951 -27.516  1.00 52.40    H
ATOM   47 N   CYS A  96  -16.167  6.043 -32.241  1.00 28.25    N
ATOM   48 CA  CYS A  96   -16.597  6.969 -33.278  1.00 23.26     C
ATOM   49 C   CYS A  96  -16.818  6.214 -34.584  1.00 27.35    C
ATOM   50 O   CYS A  96  -15.989  5.397 -34.985  1.00 25.95    O
ATOM   51 CB  CYS A  96   -15.561  8.079 -33.472  1.00 25.56    C
ATOM   52 SG  CYS A  96   -16.018  9.334 -34.695  1.00 27.03   S
ATOM   53 H   CYS A  96  -15.460  5.599 -32.448  1.00 33.90     H
ATOM   54 HA  CYS A  96   -17.437  7.378 -33.016  1.00 27.92     H
ATOM   55 HB2 CYS A  96   -15.428  8.530 -32.624  1.00 30.68      H
ATOM   56 HB3 CYS A  96   -14.727  7.677 -33.761  1.00 30.68
H
ATOM   57 N   GLY A  97   -17.937  6.497 -35.244  1.00 24.78
N
ATOM   58 CA  GLY A  97   -18.277  5.840 -36.491  1.00 28.73
C
ATOM   59 C   GLY A  97   -19.711  5.345 -36.494  1.00 30.42
C
ATOM   60 O   GLY A  97   -20.560  5.912 -35.807  1.00 28.09
O
ATOM   61 H   GLY A  97   -18.520  7.074 -34.984  1.00 29.73
H
ATOM   62 HA2 GLY A  97    -18.162  6.460 -37.228  1.00 34.47
H
ATOM   63 HA3 GLY A  97    -17.688  5.082 -36.630  1.00 34.47
H
ATOM   64 N   PRO A  98   -19.994  4.281 -37.266  1.00 30.69
N
ATOM   65 CA  PRO A  98    -19.033  3.536 -38.091  1.00 29.74
C


ATOM   66 C   PRO A  98   -18.509  4.341 -39.280  1.00 26.22
C
ATOM   67 O   PRO A  98   -19.241  5.130 -39.878  1.00 28.36
O
ATOM   68 CB  PRO A  98    -19.843  2.324 -38.566  1.00 27.73
C
ATOM   69 CG  PRO A  98    -21.247  2.772 -38.528  1.00 29.99
C
ATOM   70 CD  PRO A  98    -21.353  3.723 -37.371  1.00 26.89
C
ATOM   71 HA  PRO A  98    -18.286  3.234 -37.551  1.00 35.69
H
ATOM   72 HB2 PRO A  98    -19.581  2.088 -39.469  1.00 33.28
H
ATOM   73 HB3 PRO A  98    -19.703  1.579 -37.960  1.00 33.28
H
ATOM   74 HG2 PRO A  98     -21.466  3.222 -39.358  1.00 35.98
H
ATOM   75 HG3 PRO A  98     -21.827  2.006 -38.392  1.00 35.98
H
ATOM   76 HD2 PRO A  98    -21.993  4.424 -37.567  1.00 32.27
H
ATOM   77 HD3 PRO A  98    -21.585  3.244 -36.559  1.00 32.27
H
ATOM   78 N   CYS A  99   -17.232  4.142 -39.591  1.00 22.72
N
ATOM   79 CA  CYS A  99    -16.582  4.768 -40.737  1.00 27.89
C
ATOM   80 C   CYS A  99   -15.575  3.793 -41.326  1.00 21.11
C
ATOM   81 O   CYS A  99   -15.165  2.848 -40.653  1.00 25.21
O
ATOM   82 CB  CYS A  99    -15.865  6.062 -40.337  1.00 25.67
C
ATOM   83 SG  CYS A  99    -16.919  7.351 -39.649  1.00 24.92
S
ATOM   84 H   CYS A  99   -16.707  3.634 -39.138  1.00 27.26
H
ATOM   85 HA  CYS A  99    -17.245  4.977 -41.414  1.00 33.47
H
ATOM   86 HB2 CYS A  99    -15.194  5.847 -39.670  1.00 30.81
H
ATOM   87 HB3 CYS A  99    -15.433  6.429 -41.124  1.00 30.81
H
ATOM   88 N   PRO A 100    -15.165  4.018 -42.583  1.00 24.66
N
ATOM   89 CA  PRO A 100    -14.053  3.244 -43.146  1.00 24.78
C
ATOM   90 C   PRO A 100    -12.777  3.400 -42.312  1.00 27.64
C
ATOM   91 O   PRO A 100    -12.552  4.460 -41.723  1.00 21.92
O
ATOM   92 CB  PRO A 100    -13.882  3.841 -44.546  1.00 25.09
C
ATOM   93 CG  PRO A 100    -15.217  4.427 -44.874  1.00 26.97
C
ATOM   94 CD  PRO A 100    -15.757  4.935 -43.574  1.00 24.88
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ATOM  6332 H   MET D 128   -20.314 60.209  8.950  1.00 29.96        H
ATOM  6333 HA  MET D 128   -22.120 61.539  7.643  1.00 31.47     H
ATOM  6334 HB2 MET D 128   -21.701 61.237 10.401  1.00 33.41    H
ATOM  6335 HB3 MET D 128   -22.869 62.171  9.871  1.00 33.41    H
ATOM  6336 HG2 MET D 128   -23.839 60.301  8.823  1.00 50.90     H
ATOM  6337 HG3 MET D 128   -22.710 59.388  9.467  1.00 50.90    H
ATOM  6338 HE1 MET D 128   -25.919 61.416 11.726  1.00 73.92    H
ATOM  6339 HE2 MET D 128   -24.752 62.212 10.998  1.00 73.92     H
ATOM  6340 HE3 MET D 128   -25.814 61.398 10.141  1.00 73.92     H
ATOM  6341 N   SER D 129  -19.934 63.362  9.092  1.00 27.28        N
ATOM  6342 CA  SER D 129   -19.385 64.711  9.196  1.00 30.17    C
ATOM  6343 C   SER D 129  -18.834 65.196  7.859  1.00 28.90   C
ATOM  6344 O   SER D 129  -18.574 66.386  7.686  1.00 28.22   O
ATOM  6345 CB  SER D 129   -18.286 64.764 10.259  1.00 35.60    C
ATOM  6346 OG  SER D 129   -17.121 64.078  9.831  1.00 30.81    O
ATOM  6347 H   SER D 129  -19.482 62.766  9.517  1.00 32.74        H
ATOM  6348 HA  SER D 129   -20.092 65.318  9.466  1.00 36.20  H
ATOM  6349 HB2 SER D 129   -18.059 65.691 10.431  1.00 42.72    H
ATOM  6350 HB3 SER D 129   -18.614 64.348 11.072  1.00 42.72    H
ATOM  6351 HG  SER D 129   -17.301 63.272  9.680  1.00 36.97    H
ATOM  6352 N   GLN D 130  -18.659 64.270  6.920  1.00 27.90        N
ATOM  6353 CA  GLN D 130   -18.164 64.603  5.589  1.00 25.08   C
ATOM  6354 C   GLN D 130  -19.291 64.546  4.564  1.00 25.68        C
ATOM  6355 O   GLN D 130  -19.051 64.318  3.379  1.00 25.29   O
ATOM  6356 CB  GLN D 130  -17.035 63.654  5.189  1.00 27.46
C
ATOM  6357 CG  GLN D 130   -15.877 63.654  6.167  1.00 29.13
C
ATOM  6358 CD  GLN D 130   -14.797 62.669  5.790  1.00 26.28
C
ATOM  6359 OE1 GLN D 130    -14.110 62.843  4.786  1.00 25.42
O
ATOM  6360 NE2 GLN D 130    -14.637 61.625  6.598  1.00 26.08
N
ATOM  6361 H   GLN D 130   -18.821 63.433  7.032  1.00 33.48        H
ATOM  6362 HA  GLN D 130   -17.811 65.506  5.599  1.00 30.10
H
ATOM  6363 HB2 GLN D 130    -17.385 62.751  5.141  1.00 32.95
H
ATOM  6364 HB3 GLN D 130    -16.692 63.922  4.322  1.00 32.95
H
ATOM  6365 HG2 GLN D 130    -15.482 64.539  6.190  1.00 34.95
H


ATOM  6366 HG3 GLN D 130    -16.207 63.415  7.047  1.00 34.95
H
ATOM  6367 HE21 GLN D 130    -14.034 61.036  6.425  1.00 31.30
H
ATOM  6368 HE22 GLN D 130    -15.136 61.539  7.293  1.00 31.30
H

ATOM  6369 N   ASN D 131   -20.515 64.766  5.035  1.00 26.26        N
ATOM  6370 CA  ASN D 131    -21.699 64.750  4.182  1.00 29.68
C

ATOM  6371 C   ASN D 131   -21.772 63.462  3.370  1.00 28.66        C
ATOM  6372 O   ASN D 131   -21.989 63.485  2.157  1.00 26.21
O
ATOM  6373 CB  ASN D 131    -21.704 65.965  3.251  1.00 33.82
C
ATOM  6374 CG  ASN D 131    -23.039 66.164  2.559  1.00 43.32
C
ATOM  6375 OD1 ASN D 131    -24.084 65.767  3.074  1.00 57.86
O
ATOM  6376 ND2 ASN D 131    -23.009 66.779  1.382  1.00 51.68
N

ATOM  6377 H   ASN D 131   -20.689 64.929  5.861  1.00 31.51        H
ATOM  6378 HA  ASN D 131    -22.490 64.797  4.740  1.00 35.61
H
ATOM  6379 HB2 ASN D 131    -21.512 66.761  3.770  1.00 40.59
H
ATOM  6380 HB3 ASN D 131    -21.026 65.842  2.568  1.00 40.59
H
ATOM  6381 HD21 ASN D 131    -23.740 66.916  0.950  1.00 62.02
H
ATOM  6382 HD22 ASN D 131    -22.259 67.041  1.052  1.00 62.02
H

ATOM  6383 N   ALA D 132   -21.587 62.341  4.058  1.00 29.65        N
ATOM  6384 CA  ALA D 132    -21.549 61.035  3.420  1.00 21.47
C

ATOM  6385 C   ALA D 132   -22.010 59.962  4.394  1.00 21.23        C

ATOM  6386 O   ALA D 132   -22.408 60.258  5.521  1.00 20.92        O
ATOM  6387 CB  ALA D 132    -20.139 60.734  2.924  1.00 25.52
C

ATOM  6388 H   ALA D 132   -21.479 62.313  4.911  1.00 35.58        H
ATOM  6389 HA  ALA D 132    -22.148 61.033  2.657  1.00 25.77
H
ATOM  6390 HB1 ALA D 132    -20.133 59.860  2.502  1.00 30.63
H
ATOM  6391 HB2 ALA D 132    -19.879 61.413  2.282  1.00 30.63
H
ATOM  6392 HB3 ALA D 132    -19.530 60.741  3.679  1.00 30.63
H

ATOM  6393 N   SER D 133   -21.960 58.712  3.950  1.00 20.34        N
ATOM  6394 CA  SER D 133    -22.241 57.581  4.818  1.00 23.44
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C
ATOM   95  HA  PRO A 100    -14.288   2.306 -43.216  1.00 29.73
H
ATOM   96  HB2 PRO A 100    -13.199   4.530 -44.527  1.00 30.11
H
ATOM   97  HB3 PRO A 100    -13.649   3.141 -45.175  1.00 30.11
H
ATOM   98  HG2 PRO A 100    -15.108   5.153 -45.507  1.00 32.37
H
ATOM   99  HG3 PRO A 100    -15.795   3.738 -45.239  1.00 32.37
H
ATOM   100  HD2 PRO A 100    -15.458   5.844 -43.415  1.00 29.86
H


ATOM   101  HD3 PRO A 100    -16.725   4.870 -43.560  1.00 29.86
H
ATOM   102  N   LYS A 101   -11.958   2.356 -42.268  1.00 25.51
N
ATOM   103  CA  LYS A 101   -10.803   2.317 -41.372  1.00 31.26
C
ATOM   104  C   LYS A 101    -9.762   3.391 -41.680  1.00 29.73
C
ATOM   105  O   LYS A 101    -9.072   3.864 -40.778  1.00 35.56
O
ATOM   106  CB  LYS A 101   -10.142   0.936 -41.429  1.00 34.82
C
ATOM   107  CG  LYS A 101   -10.941  -0.169 -40.743  1.00 42.12
C
ATOM   108  CD  LYS A 101   -10.935  -0.038 -39.222  1.00 53.27
C
ATOM   109  CE  LYS A 101    -9.570  -0.367 -38.628  1.00 64.08
C
ATOM   110  NZ  LYS A 101    -9.569  -0.299 -37.138  1.00 67.45
N1+
ATOM   111  H   LYS A 101   -12.048   1.650 -42.750  1.00 30.62
H
ATOM   112  HA  LYS A 101   -11.111   2.460 -40.464  1.00 37.51
H
ATOM   113  HB2 LYS A 101    -10.027   0.684 -42.358  1.00 41.79
H
ATOM   114  HB3 LYS A 101     -9.276   0.988 -40.994  1.00 41.79
H
ATOM   115  HG2 LYS A 101    -11.862  -0.127 -41.045  1.00 50.54
H
ATOM   116  HG3 LYS A 101    -10.554  -1.028 -40.973  1.00 50.54
H
ATOM   117  HD2 LYS A 101    -11.158   0.874 -38.979  1.00 63.92
H
ATOM   118  HD3 LYS A 101    -11.585  -0.652 -38.846  1.00 63.92
H
ATOM   119  HE2 LYS A 101     -9.319  -1.267 -38.889  1.00 76.89
H
ATOM   120  HE3 LYS A 101     -8.917   0.270 -38.959  1.00 76.89
H
ATOM   121  HZ1 LYS A 101     -8.759  -0.496 -36.825  1.00 80.94
H
ATOM   122  HZ2 LYS A 101     -9.791   0.520 -36.870  1.00 80.94
H
ATOM   123  HZ3 LYS A 101    -10.156  -0.880 -36.807  1.00 80.94
H
ATOM   124  N   ASN A 102    -9.648   3.770 -42.949  1.00 25.43
N
ATOM   125  CA  ASN A 102    -8.650   4.749 -43.370  1.00 29.54
C
ATOM   126  C   ASN A 102    -9.227   6.159 -43.532  1.00 27.18
C
ATOM   127  O   ASN A 102    -8.621   7.013 -44.180  1.00 24.09
O
ATOM   128  CB  ASN A 102    -7.995   4.294 -44.680  1.00 34.94
C
ATOM   129  CG  ASN A 102    -9.006   3.828 -45.715  1.00 30.75
C
ATOM   130  OD1 ASN A 102    -10.215   3.951 -45.520  1.00 34.90
O
ATOM   131  ND2 ASN A 102     -8.512   3.285 -46.823  1.00 37.11
N
ATOM   132  H   ASN A 102   -10.139   3.473 -43.589  1.00 30.52
H
ATOM   133  HA  ASN A 102    -7.956   4.793 -42.695  1.00 35.45
H
ATOM   134  HB2 ASN A 102     -7.498   5.035 -45.060  1.00 41.92
H
ATOM   135  HB3 ASN A 102     -7.396   3.554 -44.493  1.00 41.92
H


ATOM   136 HD21 ASN A 102     -9.043   3.006 -47.439  1.00 44.53
H
ATOM   137 HD22 ASN A 102     -7.661   3.213 -46.923  1.00 44.53
H
ATOM   138  N   TRP A 103   -10.392   6.399 -42.932  1.00 22.81
N
ATOM   139  CA  TRP A 103   -11.038   7.712 -42.979  1.00 22.94
C
ATOM   140  C   TRP A 103   -11.012   8.411 -41.623  1.00 21.34
C
ATOM   141  O   TRP A 103   -10.915   7.764 -40.583  1.00 18.27
O
ATOM   142  CB  TRP A 103   -12.492   7.586 -43.443  1.00 21.32
C
ATOM   143  CG  TRP A 103   -12.658   7.417 -44.919  1.00 26.61
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C

ATOM  6395  C   SER D 133   -21.204  56.498   4.567  1.00 19.78           C
ATOM  6396  O   SER D 133   -20.410  56.591   3.631  1.00 21.50
O
ATOM  6397  CB  SER D 133    -23.655  57.042   4.580  1.00 25.25
C
ATOM  6398  OG  SER D 133    -23.728  56.304   3.372  1.00 29.15
O

ATOM  6399  H   SER D 133   -21.763  58.493   3.142  1.00 24.41           H
ATOM  6400  HA  SER D 133    -22.172  57.861   5.744  1.00 28.13
H


ATOM  6401  HB2 SER D 133    -23.898  56.461   5.318  1.00 30.30
H
ATOM  6402  HB3 SER D 133    -24.272  57.788   4.530  1.00 30.30
H
ATOM  6403  HG  SER D 133    -23.521  56.795   2.723  1.00 34.98
H

ATOM  6404  N   LEU D 134   -21.197  55.478   5.414  1.00 20.00           N
ATOM  6405  CA  LEU D 134    -20.356  54.318   5.176  1.00 20.07
C

ATOM  6406  C   LEU D 134   -20.763  53.669   3.859  1.00 17.40           C

ATOM  6407  O   LEU D 134   -21.874  53.883   3.376  1.00 16.70           O
ATOM  6408  CB  LEU D 134    -20.465  53.326   6.331  1.00 20.33
C
ATOM  6409  CG  LEU D 134    -19.715  53.750   7.595  1.00 21.63
C
ATOM  6410  CD1 LEU D 134    -20.135  52.914   8.797  1.00 22.51
C
ATOM  6411  CD2 LEU D 134    -18.214  53.647   7.381  1.00 18.39
C

ATOM  6412  H   LEU D 134   -21.669  55.435   6.132  1.00 23.99           H
ATOM  6413  HA  LEU D 134    -19.431  54.601   5.104  1.00 24.08
H
ATOM  6414  HB2 LEU D 134    -21.401  53.222   6.565  1.00 24.39
H
ATOM  6415  HB3 LEU D 134    -20.102  52.473   6.045  1.00 24.39
H
ATOM  6416  HG  LEU D 134    -19.925  54.677   7.789  1.00 25.96
H
ATOM  6417 HD11 LEU D 134    -19.640  53.211   9.576  1.00 27.02
H
ATOM  6418 HD12 LEU D 134    -21.087  53.030   8.944  1.00 27.02
H
ATOM  6419 HD13 LEU D 134    -19.939  51.981   8.616  1.00 27.02
H
ATOM  6420 HD21 LEU D 134    -17.760  53.920   8.194  1.00 22.07
H
ATOM  6421 HD22 LEU D 134    -17.988  52.728   7.169  1.00 22.07
H
ATOM  6422 HD23 LEU D 134    -17.959  54.228   6.648  1.00 22.07
H

ATOM  6423  N   LEU D 135   -19.852  52.894   3.279  1.00 16.34           N
ATOM  6424  CA  LEU D 135    -20.103  52.208   2.015  1.00 15.50
C

ATOM  6425  C   LEU D 135   -21.457  51.505   1.999  1.00 13.53           C

ATOM  6426  O   LEU D 135   -21.796  50.755   2.914  1.00 17.46           O
ATOM  6427  CB  LEU D 135    -18.996  51.190   1.734  1.00 18.55
C
ATOM  6428  CG  LEU D 135    -19.162  50.301   0.498  1.00 20.09
C
ATOM  6429  CD1 LEU D 135    -19.189  51.135  -0.777  1.00 17.39
C
ATOM  6430  CD2 LEU D 135    -18.048  49.257   0.440  1.00 19.20
C

ATOM  6431  H   LEU D 135   -19.068  52.747   3.602  1.00 19.60           H
ATOM  6432  HA  LEU D 135    -20.098  52.861   1.298  1.00 18.60
H
ATOM  6433  HB2 LEU D 135    -18.163  51.674   1.627  1.00 22.27
H
ATOM  6434  HB3 LEU D 135    -18.927  50.601   2.501  1.00 22.27
H
ATOM  6435  HG  LEU D 135    -20.007  49.829   0.562  1.00 24.11
H


ATOM  6436 HD11 LEU D 135    -19.295  50.543  -1.539  1.00 20.87
H
ATOM  6437 HD12 LEU D 135    -19.935  51.754  -0.733  1.00 20.87
H
ATOM  6438 HD13 LEU D 135    -18.356  51.625  -0.852  1.00 20.87
H
ATOM  6439 HD21 LEU D 135    -18.172  48.707  -0.349  1.00 23.04
H
ATOM  6440 HD22 LEU D 135    -17.192  49.712   0.395  1.00 23.04
H
ATOM  6441 HD23 LEU D 135    -18.089  48.707   1.238  1.00 23.04
H

ATOM  6442  N   LYS D 136   -22.225  51.785   0.953  1.00 17.78           N
ATOM  6443  CA  LYS D 136   -23.470  51.084   0.685  1.00 21.52
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C
ATOM   144  CD1 TRP A 103    -11.883  6.664 -45.755  1.00 30.04
C
ATOM   145  CD2 TRP A 103    -13.663  8.023 -45.738  1.00 23.17
C
ATOM   146  NE1 TRP A 103    -12.351  6.759 -47.044  1.00 29.11
N
ATOM   147  CE2 TRP A 103    -13.442  7.588 -47.061  1.00 26.93
C
ATOM   148  CE3 TRP A 103    -14.731  8.887 -45.481  1.00 20.70
C
ATOM   149  CZ2 TRP A 103    -14.249  7.990 -48.123  1.00 28.53
C
ATOM   150  CZ3 TRP A 103    -15.530  9.286 -46.534  1.00 24.02
C
ATOM   151  CH2 TRP A 103    -15.285  8.837 -47.841  1.00 22.80
C
ATOM   152  H   TRP A 103   -10.834  5.812 -42.486  1.00 27.37
H
ATOM   153  HA  TRP A 103   -10.568  8.273 -43.816  1.00 27.52
H
ATOM   154  HB2 TRP A 103    -12.889  6.814 -43.011  1.00 25.59
H
ATOM   155  HB3 TRP A 103    -12.971  8.389 -43.183  1.00 25.59
H
ATOM   156  HD1 TRP A 103    -11.150  6.157 -45.490  1.00 36.05
H
ATOM   157  HE1 TRP A 103    -12.012  6.365 -47.729  1.00 34.93
H
ATOM   158  HE3 TRP A 103    -14.900  9.188 -44.618  1.00 24.84
H
ATOM   159  HZ2 TRP A 103    -14.088  7.695 -48.990  1.00 34.23
H
ATOM   160  HZ3 TRP A 103    -16.243  9.861 -46.374  1.00 28.82
H
ATOM   161  HH2 TRP A 103    -15.840  9.122 -48.531  1.00 27.37
H
ATOM   162  N   ILE A 104   -11.122  9.737 -41.653  1.00 15.59
N
ATOM   163  CA  ILE A 104    -11.210 10.546 -40.444  1.00 17.76
C
ATOM   164  C   ILE A 104   -12.621 10.491 -39.868  1.00 21.68
C
ATOM   165  O   ILE A 104   -13.587 10.764 -40.577  1.00 20.98
O
ATOM   166  CB  ILE A 104    -10.853 12.022 -40.718  1.00 19.18
C
ATOM   167  CG1 ILE A 104     -9.470 12.139 -41.368  1.00 22.53
C
ATOM   168  CG2 ILE A 104    -10.910 12.835 -39.425  1.00 20.64
C
ATOM   169  CD1 ILE A 104     -9.156 13.530 -41.903  1.00 18.10
C
ATOM   170  H   ILE A 104    -11.147 10.199 -42.378  1.00 18.71
H

ATOM   171  HA  ILE A 104   -10.594 10.201 -39.779  1.00 21.31
H
ATOM   172  HB  ILE A 104    -11.510 12.384 -41.333  1.00 23.02
H
ATOM   173 HG12 ILE A 104     -8.795 11.917 -40.708  1.00 27.03
H
ATOM   174 HG13 ILE A 104     -9.421 11.518 -42.111  1.00 27.03
H
ATOM   175 HG21 ILE A 104    -10.683 13.757 -39.622  1.00 24.77
H
ATOM   176 HG22 ILE A 104    -11.803 12.785 -39.061  1.00 24.77
H
ATOM   177 HG23 ILE A 104    -10.275 12.465 -38.792  1.00 24.77
H
ATOM   178 HD11 ILE A 104     -8.270 13.523 -42.297  1.00 21.72
H
ATOM   179 HD12 ILE A 104     -9.815 13.765 -42.575  1.00 21.72
H
ATOM   180 HD13 ILE A 104     -9.189 14.164 -41.171  1.00 21.72
H
ATOM   181  N   CYS A 105   -12.734 10.151 -38.587  1.00 19.34
N
ATOM   182  CA  CYS A 105   -14.026 10.133 -37.909  1.00 18.07
C
ATOM   183  C   CYS A 105   -14.117 11.285 -36.914  1.00 21.22
C
ATOM   184  O   CYS A 105   -13.216 11.497 -36.102  1.00 21.20
O
ATOM   185  CB  CYS A 105   -14.249  8.800 -37.196  1.00 23.12
C
ATOM   186  SG  CYS A 105   -15.944  8.565 -36.591  1.00 26.35
S
ATOM   187  H   CYS A 105   -12.073  9.926 -38.085  1.00 23.20
H
ATOM   188  HA  CYS A 105   -14.731 10.246 -38.566  1.00 21.68
H
ATOM   189  HB2 CYS A 105    -14.053  8.079 -37.814  1.00 27.74
H
ATOM   190  HB3 CYS A 105    -13.653  8.750 -36.433  1.00 27.74
H
ATOM   191  N   TYR A 106   -15.207 12.035 -37.000  1.00 17.94
N
ATOM   192  CA  TYR A 106   -15.451 13.148 -36.097  1.00 18.87
C
ATOM   193  C   TYR A 106   -16.943 13.284 -35.857  1.00 20.09
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C
ATOM  6444  C   LYS D 136   -23.326 50.350 -0.635  1.00 16.54       C
ATOM  6445  O   LYS D 136   -23.061 50.967 -1.664  1.00 16.88       O
ATOM  6446  CB  LYS D 136   -24.652 52.054  0.638  1.00 21.22
C
ATOM  6447  CG  LYS D 136    -25.972 51.387  0.267  1.00 24.56
C
ATOM  6448  CD  LYS D 136    -27.137 52.358  0.370  1.00 28.19
C
ATOM  6449  CE  LYS D 136    -28.427 51.738 -0.151  1.00 28.08
C
ATOM  6450  NZ  LYS D 136    -29.569 52.692 -0.091  1.00 28.58
N1+
ATOM  6451  H   LYS D 136   -22.040 52.391  0.372  1.00 21.34       H
ATOM  6452  HA  LYS D 136   -23.633 50.432  1.385  1.00 25.82
H
ATOM  6453  HB2 LYS D 136    -24.759 52.480  1.512  1.00 25.47
H
ATOM  6454  HB3 LYS D 136    -24.468 52.739 -0.024  1.00 25.47
H
ATOM  6455  HG2 LYS D 136    -25.923 51.067 -0.648  1.00 29.47
H
ATOM  6456  HG3 LYS D 136    -26.138 50.648  0.872  1.00 29.47
H
ATOM  6457  HD2 LYS D 136    -27.270 52.601  1.300  1.00 33.82
H
ATOM  6458  HD3 LYS D 136    -26.944 53.148 -0.159  1.00 33.82
H
ATOM  6459  HE2 LYS D 136    -28.302 51.473 -1.076  1.00 33.70
H
ATOM  6460  HE3 LYS D 136    -28.650 50.965  0.391  1.00 33.70
H
ATOM  6461  HZ1 LYS D 136    -30.307 52.302 -0.401  1.00 34.29
H
ATOM  6462  HZ2 LYS D 136    -29.708 52.947  0.751  1.00 34.29
H
ATOM  6463  HZ3 LYS D 136    -29.391 53.410 -0.585  1.00 34.29
H
ATOM  6464  N   VAL D 137   -23.490 49.032 -0.592  1.00 15.00       N
ATOM  6465  CA  VAL D 137   -23.377 48.194 -1.777  1.00 14.80
C
ATOM  6466  C   VAL D 137   -24.767 47.914 -2.328  1.00 15.82       C
ATOM  6467  O   VAL D 137   -25.542 47.181 -1.714  1.00 17.01       O
ATOM  6468  CB  VAL D 137   -22.661 46.870 -1.462  1.00 18.73
C
ATOM  6469  CG1 VAL D 137    -22.505 46.037 -2.723  1.00 21.27
C
ATOM  6470  CG2 VAL D 137    -21.293 47.142 -0.828  1.00 19.01
C

ATOM  6471  H   VAL D 137   -23.670 48.594  0.126  1.00 18.00       H
ATOM  6472  HA  VAL D 137   -22.867 48.663 -2.456  1.00 17.76
H
ATOM  6473  HB  VAL D 137   -23.193 46.363 -0.829  1.00 22.47
H
ATOM  6474 HG11 VAL D 137    -22.052 45.209 -2.500  1.00 25.53
H
ATOM  6475 HG12 VAL D 137    -23.384 45.846 -3.086  1.00 25.53
H
ATOM  6476 HG13 VAL D 137    -21.961 46.537 -3.368  1.00 25.53
H
ATOM  6477 HG21 VAL D 137    -20.859 46.296 -0.638  1.00 22.82
H
ATOM  6478 HG22 VAL D 137    -20.755 47.658 -1.449  1.00 22.82
H
ATOM  6479 HG23 VAL D 137    -21.420 47.641 -0.006  1.00 22.82
H
ATOM  6480  N   TYR D 138   -25.068 48.500 -3.485  1.00 15.98       N
ATOM  6481  CA  TYR D 138   -26.410 48.453 -4.061  1.00 20.40
C
ATOM  6482  C   TYR D 138   -26.439 47.849 -5.467  1.00 19.25       C
ATOM  6483  O   TYR D 138   -27.512 47.551 -5.991  1.00 19.44
O
ATOM  6484  CB  TYR D 138    -27.006 49.865 -4.106  1.00 16.40
C
ATOM  6485  CG  TYR D 138    -26.405 50.758 -5.170  1.00 15.53
C
ATOM  6486  CD1 TYR D 138    -26.952 50.820 -6.446  1.00 18.12
C
ATOM  6487  CD2 TYR D 138    -25.293 51.544 -4.897  1.00 20.57
C
ATOM  6488  CE1 TYR D 138    -26.406 51.635 -7.419  1.00 18.07
C
ATOM  6489  CE2 TYR D 138    -24.742 52.366 -5.864  1.00 14.74
C
ATOM  6490  CZ  TYR D 138    -25.298 52.407 -7.121  1.00 19.68
C
ATOM  6491  OH  TYR D 138    -24.748 53.225 -8.080  1.00 18.98
O
ATOM  6492  H   TYR D 138   -24.502 48.937 -3.963  1.00 19.16       H
ATOM  6493  HA  TYR D 138   -26.976 47.909 -3.492  1.00 24.48
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C
ATOM   194  O   TYR A 106    -17.711  13.548 -36.785  1.00 17.41
O
ATOM   195  CB  TYR A 106    -14.881  14.452 -36.659  1.00 17.90
C
ATOM   196  CG  TYR A 106    -14.966  15.613 -35.696  1.00 17.46
C
ATOM   197  CD1 TYR A 106    -14.351  15.552 -34.452  1.00 24.97
C
ATOM   198  CD2 TYR A 106    -15.651  16.774 -36.031  1.00 21.85
C
ATOM   199  CE1 TYR A 106    -14.424  16.610 -33.562  1.00 22.33
C
ATOM   200  CE2 TYR A 106    -15.726  17.841 -35.148  1.00 20.74
C
ATOM   201  CZ  TYR A 106    -15.112  17.752 -33.915  1.00 22.72
C
ATOM   202  OH  TYR A 106    -15.177  18.806 -33.030  1.00 19.96
O
ATOM   203  H   TYR A 106    -15.829  11.918 -37.582  1.00 21.53
H
ATOM   204  HA  TYR A 106    -15.021  12.971 -35.245  1.00 22.65
H
ATOM   205  HB2 TYR A 106    -13.947  14.316 -36.880  1.00 21.49
H


ATOM   206  HB3 TYR A 106    -15.377  14.692 -37.458  1.00 21.49
H
ATOM   207  HD1 TYR A 106    -13.888  14.783 -34.209  1.00 29.97
H
ATOM   208  HD2 TYR A 106    -16.068  16.836 -36.860  1.00 26.22
H
ATOM   209  HE1 TYR A 106    -14.008  16.553 -32.732  1.00 26.79
H
ATOM   210  HE2 TYR A 106    -16.190  18.611 -35.385  1.00 24.89
H
ATOM   211  HH  TYR A 106    -15.622  19.435 -33.364  1.00 23.95
H
ATOM   212  N   LYS A 107    -17.336  13.091 -34.602  1.00 16.90
N
ATOM   213  CA  LYS A 107    -18.732  13.154 -34.190  1.00 20.74
C
ATOM   214  C   LYS A 107    -19.605  12.235 -35.048  1.00 17.68
C
ATOM   215  O   LYS A 107    -20.703  12.597 -35.458  1.00 16.31
O
ATOM   216  CB  LYS A 107    -19.221  14.602 -34.239  1.00 23.06
C
ATOM   217  CG  LYS A 107    -18.453  15.502 -33.268  1.00 17.83
C
ATOM   218  CD  LYS A 107    -18.965  16.932 -33.266  1.00 24.69
C
ATOM   219  CE  LYS A 107    -18.353  17.730 -32.122  1.00 26.16
C
ATOM   220  NZ  LYS A 107    -18.797  19.153 -32.118  1.00 29.75
N1+
ATOM   221  H   LYS A 107    -16.797  12.917 -33.955  1.00 20.28
H
ATOM   222  HA  LYS A 107    -18.800  12.851 -33.271  1.00 24.89
H
ATOM   223  HB2 LYS A 107    -19.096  14.949 -35.136  1.00 27.68
H
ATOM   224  HB3 LYS A 107    -20.160  14.629 -33.998  1.00 27.68
H
ATOM   225  HG2 LYS A 107    -18.545  15.149 -32.369  1.00 21.40
H
ATOM   226  HG3 LYS A 107    -17.518  15.519 -33.524  1.00 21.40
H
ATOM   227  HD2 LYS A 107    -18.723  17.362 -34.102  1.00 29.63
H
ATOM   228  HD3 LYS A 107    -19.929  16.929 -33.155  1.00 29.63
H
ATOM   229  HE2 LYS A 107    -18.618  17.329 -31.279  1.00 31.40
H
ATOM   230  HE3 LYS A 107    -17.387  17.716 -32.208  1.00 31.40
H
ATOM   231  HZ1 LYS A 107    -18.421  19.587 -31.438  1.00 35.70
H
ATOM   232  HZ2 LYS A 107    -18.560  19.548 -32.880  1.00 35.70
H
ATOM   233  HZ3 LYS A 107    -19.682  19.195 -32.034  1.00 35.70
H
ATOM   234  N   ASN A 108    -19.079  11.040 -35.303  1.00 22.60
N
ATOM   235  CA  ASN A 108    -19.770   9.979 -36.040  1.00 25.82
C
ATOM   236  C   ASN A 108    -20.056  10.310 -37.506  1.00 27.70
C
ATOM   237  O   ASN A 108    -20.822   9.609 -38.164  1.00 25.85
O
ATOM   238  CB  ASN A 108    -21.069   9.606 -35.324  1.00 25.22
C
ATOM   239  CG  ASN A 108    -20.816   8.947 -33.984  1.00 29.09
C
ATOM   240  OD1 ASN A 108    -19.803   8.274 -33.796  1.00 25.84
O


ATOM   241  ND2 ASN A 108    -21.733   9.139 -33.043  1.00 32.94
N
ATOM   242  H   ASN A 108    -18.290  10.810 -35.050  1.00 27.12
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ATOM  6494  HB2 TYR D 138    -27.958  49.795  -4.283  1.00 19.68
H
ATOM  6495  HB3 TYR D 138    -26.863  50.291  -3.247  1.00 19.68
H
ATOM  6496  HD1 TYR D 138    -27.696  50.301  -6.650  1.00 21.75
H
ATOM  6497  HD2 TYR D 138    -24.913  51.519  -4.049  1.00 24.68
H
ATOM  6498  HE1 TYR D 138    -26.782  51.666  -8.269  1.00 21.68
H
ATOM  6499  HE2 TYR D 138    -23.996  52.885  -5.666  1.00 17.69
H
ATOM  6500  HH  TYR D 138    -25.181  53.160  -8.797  1.00 22.78
H

ATOM  6501  N   SER D 139    -25.271  47.667  -6.080  1.00 18.67           N
ATOM  6502  CA  SER D 139    -25.222  47.169  -7.456  1.00 20.25
C

ATOM  6503  C   SER D 139    -23.873  46.574  -7.844  1.00 24.81           C
ATOM  6504  O   SER D 139    -22.843  47.241  -7.753  1.00 16.53
O
ATOM  6505  CB  SER D 139    -25.563  48.296  -8.428  1.00 18.66
C


ATOM  6506  OG  SER D 139    -25.305  47.903  -9.763  1.00 22.13
O

ATOM  6507  H   SER D 139    -24.502  47.821  -5.728  1.00 22.40           H
ATOM  6508  HA  SER D 139    -25.891  46.475  -7.560  1.00 24.30
H
ATOM  6509  HB2 SER D 139    -26.504  48.515  -8.339  1.00 22.39
H
ATOM  6510  HB3 SER D 139    -25.021  49.071  -8.216  1.00 22.39
H
ATOM  6511  HG  SER D 139    -25.496  48.530 -10.289  1.00 26.55
H

ATOM  6512  N   LYS D 140    -23.891  45.327  -8.307  1.00 22.07           N
ATOM  6513  CA  LYS D 140    -22.670  44.654  -8.737  1.00 22.87
C
ATOM  6514  C   LYS D 140    -22.131  45.225 -10.041  1.00 25.49
C
ATOM  6515  O   LYS D 140    -20.981  44.981 -10.396  1.00 28.27
O
ATOM  6516  CB  LYS D 140    -22.907  43.153  -8.904  1.00 25.37
C
ATOM  6517  CG  LYS D 140    -22.861  42.373  -7.607  1.00 28.96
C
ATOM  6518  CD  LYS D 140    -22.757  40.877  -7.865  1.00 34.51
C
ATOM  6519  CE  LYS D 140    -22.573  40.100  -6.570  1.00 36.49
C
ATOM  6520  NZ  LYS D 140    -22.353  38.648  -6.819  1.00 49.97
N1+

ATOM  6521  H   LYS D 140    -24.601  44.848  -8.383  1.00 26.49           H
ATOM  6522  HA  LYS D 140    -21.990  44.774  -8.056  1.00 27.44
H
ATOM  6523  HB2 LYS D 140    -23.783  43.018  -9.299  1.00 30.45
H
ATOM  6524  HB3 LYS D 140    -22.224  42.792  -9.491  1.00 30.45
H
ATOM  6525  HG2 LYS D 140    -22.085  42.648  -7.094  1.00 34.76
H
ATOM  6526  HG3 LYS D 140    -23.673  42.539  -7.103  1.00 34.76
H
ATOM  6527  HD2 LYS D 140    -23.571  40.568  -8.292  1.00 41.41
H
ATOM  6528  HD3 LYS D 140    -21.992  40.703  -8.435  1.00 41.41
H
ATOM  6529  HE2 LYS D 140    -21.801  40.447  -6.097  1.00 43.79
H
ATOM  6530  HE3 LYS D 140    -23.370  40.196  -6.025  1.00 43.79
H
ATOM  6531  HZ1 LYS D 140    -22.249  38.220  -6.046  1.00 59.97
H
ATOM  6532  HZ2 LYS D 140    -23.051  38.304  -7.249  1.00 59.97
H
ATOM  6533  HZ3 LYS D 140    -21.622  38.532  -7.314  1.00 59.97
H
ATOM  6534  N   GLU D 141    -22.959  45.974 -10.758  1.00 21.06
N
ATOM  6535  CA  GLU D 141    -22.523  46.596 -12.001  1.00 23.91
C
ATOM  6536  C   GLU D 141    -21.994  48.009 -11.753  1.00 24.83
C
ATOM  6537  O   GLU D 141    -20.867  48.325 -12.135  1.00 23.48
O
ATOM  6538  CB  GLU D 141    -23.666  46.614 -13.015  1.00 31.80
C
ATOM  6539  CG  GLU D 141    -23.913  45.254 -13.656  1.00 35.80
C
ATOM  6540  CD  GLU D 141    -25.007  45.285 -14.707  1.00 40.22
C


ATOM  6541  OE1 GLU D 141    -26.098  45.818 -14.415  1.00 42.25
O
ATOM  6542  OE2 GLU D 141    -24.775  44.777 -15.825  1.00 36.77
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H
ATOM   243  HA  ASN A 108    -19.204  9.191 -36.033  1.00 30.98
H
ATOM   244  HB2 ASN A 108    -21.590  10.410 -35.172  1.00 30.27
H
ATOM   245  HB3 ASN A 108    -21.569  8.984 -35.876  1.00 30.27
H
ATOM   246 HD21 ASN A 108    -21.632  8.784 -32.266  1.00 39.52
H
ATOM   247 HD22 ASN A 108    -22.427  9.617 -33.210  1.00 39.52
H
ATOM   248  N   ASN A 109   -19.429  11.369 -38.013  1.00 18.88
N
ATOM   249  CA  ASN A 109    -19.347  11.605 -39.450  1.00 16.87
C
ATOM   250  C   ASN A 109   -17.968  11.166 -39.936  1.00 20.87
C
ATOM   251  O   ASN A 109   -17.001  11.227 -39.174  1.00 18.96
O
ATOM   252  CB  ASN A 109    -19.587  13.078 -39.786  1.00 18.38
C
ATOM   253  CG  ASN A 109    -21.004  13.525 -39.487  1.00 25.45
C
ATOM   254  OD1 ASN A 109    -21.960  12.779 -39.697  1.00 23.05
O
ATOM   255  ND2 ASN A 109    -21.145  14.749 -38.994  1.00 21.26
N
ATOM   256  H   ASN A 109   -19.038  11.971 -37.539  1.00 22.66
H
ATOM   257  HA  ASN A 109    -20.019  11.072 -39.905  1.00 20.25
H
ATOM   258  HB2 ASN A 109    -18.983  13.625 -39.259  1.00 22.05
H
ATOM   259  HB3 ASN A 109    -19.422  13.218 -40.731  1.00 22.05
H
ATOM   260 HD21 ASN A 109    -21.929  15.050 -38.808  1.00 25.51
H
ATOM   261 HD22 ASN A 109    -20.453  15.242 -38.862  1.00 25.51
H
ATOM   262  N   CYS A 110   -17.878  10.721 -41.188  1.00 16.93
N
ATOM   263  CA  CYS A 110    -16.608  10.264 -41.760  1.00 16.78
C
ATOM   264  C   CYS A 110   -16.142  11.205 -42.866  1.00 19.88
C
ATOM   265  O   CYS A 110   -16.951  11.666 -43.665  1.00 18.76
O
ATOM   266  CB  CYS A 110    -16.748  8.846 -42.312  1.00 23.56
C
ATOM   267  SG  CYS A 110    -17.888  7.805 -41.378  1.00 24.98
S
ATOM   268  H   CYS A 110   -18.543  10.673 -41.732  1.00 20.32
H
ATOM   269  HA  CYS A 110    -15.931  10.253 -41.065  1.00 20.14
H
ATOM   270  HB2 CYS A 110    -17.074  8.898 -43.224  1.00 28.27
H
ATOM   271  HB3 CYS A 110    -15.878  8.419 -42.297  1.00 28.27
H
ATOM   272  N   TYR A 111   -14.842  11.489 -42.904  1.00 14.28
N
ATOM   273  CA  TYR A 111    -14.262  12.364 -43.921  1.00 17.86
C
ATOM   274  C   TYR A 111   -12.987  11.787 -44.505  1.00 17.19
C
ATOM   275  O   TYR A 111   -12.298  10.990 -43.866  1.00 20.29
O


ATOM   276  CB  TYR A 111    -13.932  13.740 -43.342  1.00 15.15
C
ATOM   277  CG  TYR A 111    -15.080  14.434 -42.669  1.00 16.62
C
ATOM   278  CD1 TYR A 111    -15.332  14.246 -41.317  1.00 16.48
C
ATOM   279  CD2 TYR A 111    -15.907  15.292 -43.381  1.00 18.87
C
ATOM   280  CE1 TYR A 111    -16.382  14.887 -40.694  1.00 16.82
C
ATOM   281  CE2 TYR A 111    -16.956  15.935 -42.770  1.00 19.83
C
ATOM   282  CZ  TYR A 111    -17.191  15.730 -41.425  1.00 18.41
C
ATOM   283  OH  TYR A 111    -18.242  16.373 -40.816  1.00 19.61
O
ATOM   284  H   TYR A 111   -14.266  11.182 -42.343  1.00 17.13
H
ATOM   285  HA  TYR A 111    -14.901  12.482 -44.642  1.00 21.43
H
ATOM   286  HB2 TYR A 111    -13.226  13.638 -42.685  1.00 18.18
H
ATOM   287  HB3 TYR A 111    -13.625  14.313 -44.063  1.00 18.18
H
ATOM   288  HD1 TYR A 111    -14.786  13.677 -40.825  1.00 19.77
H
ATOM   289  HD2 TYR A 111    -15.751  15.431 -44.287  1.00 22.65
H
ATOM   290  HE1 TYR A 111    -16.543  14.750 -39.788  1.00 20.19
H
ATOM   291  HE2 TYR A 111    -17.505  16.505 -43.259  1.00 23.79
H
ATOM   292  HH  TYR A 111    -18.275  16.163 -40.004  1.00 23.53
H
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O1-
ATOM  6543  H   GLU D 141   -23.776  46.138 -10.547  1.00 25.27
H
ATOM  6544  HA  GLU D 141    -21.800  46.070 -12.378  1.00 28.69
H
ATOM  6545  HB2 GLU D 141    -24.482  46.886 -12.566  1.00 38.16
H
ATOM  6546  HB3 GLU D 141    -23.451  47.243 -13.722  1.00 38.16
H
ATOM  6547  HG2 GLU D 141    -23.096  44.954 -14.084  1.00 42.96
H
ATOM  6548  HG3 GLU D 141    -24.178  44.624 -12.968  1.00 42.96
H
ATOM  6549  N   ASP D 142   -22.795  48.851 -11.106  1.00 22.91
N
ATOM  6550  CA  ASP D 142    -22.382  50.226 -10.809  1.00 21.81
C

ATOM  6551  C   ASP D 142   -21.179  50.272  -9.870  1.00 17.14          C
ATOM  6552  O   ASP D 142   -20.484  51.284  -9.793  1.00 18.60
O
ATOM  6553  CB  ASP D 142    -23.534  51.015 -10.182  1.00 23.08
C
ATOM  6554  CG  ASP D 142    -24.591  51.429 -11.192  1.00 29.65
C
ATOM  6555  OD1 ASP D 142    -24.549  50.952 -12.347  1.00 32.81
O
ATOM  6556  OD2 ASP D 142    -25.474  52.232 -10.819  1.00 29.12
O1-
ATOM  6557  H   ASP D 142   -23.584  48.654 -10.827  1.00 27.49
H
ATOM  6558  HA  ASP D 142    -22.133  50.666 -11.637  1.00 26.17
H
ATOM  6559  HB2 ASP D 142    -23.963  50.465  -9.508  1.00 27.70
H
ATOM  6560  HB3 ASP D 142    -23.179  51.821  -9.774  1.00 27.70
H

ATOM  6561  N   GLN D 143   -20.951  49.180  -9.149  1.00 17.82          N
ATOM  6562  CA  GLN D 143    -19.869  49.108  -8.173  1.00 20.33
C

ATOM  6563  C   GLN D 143   -19.029  47.858  -8.395  1.00 17.41          C
ATOM  6564  O   GLN D 143   -18.528  47.255  -7.444  1.00 16.39
O
ATOM  6565  CB  GLN D 143    -20.433  49.119  -6.754  1.00 16.84
C
ATOM  6566  CG  GLN D 143    -21.350  50.301  -6.464  1.00 19.15
C
ATOM  6567  CD  GLN D 143    -21.996  50.201  -5.100  1.00 15.77
C
ATOM  6568  OE1 GLN D 143    -22.746  49.264  -4.827  1.00 18.59
O
ATOM  6569  NE2 GLN D 143    -21.696  51.156  -4.229  1.00 14.45
N

ATOM  6570  H   GLN D 143   -21.414  48.458  -9.208  1.00 21.39          H
ATOM  6571  HA  GLN D 143    -19.294  49.882  -8.276  1.00 24.40
H
ATOM  6572  HB2 GLN D 143    -20.944  48.306  -6.615  1.00 20.21
H
ATOM  6573  HB3 GLN D 143    -19.695  49.155  -6.125  1.00 20.21
H
ATOM  6574  HG2 GLN D 143    -20.832  51.120  -6.493  1.00 22.98
H
ATOM  6575  HG3 GLN D 143    -22.054  50.327  -7.130  1.00 22.98
H


ATOM  6576 HE21 GLN D 143    -22.039  51.141  -3.440  1.00 17.34
H
ATOM  6577 HE22 GLN D 143    -21.159  51.789  -4.453  1.00 17.34
H

ATOM  6578  N   ASP D 144   -18.880  47.478  -9.659  1.00 18.01          N
ATOM  6579  CA  ASP D 144    -18.187  46.248 -10.016  1.00 19.97
C

ATOM  6580  C   ASP D 144   -16.735  46.242  -9.540  1.00 19.34          C
ATOM  6581  O   ASP D 144   -16.177  45.186  -9.256  1.00 20.61
O
ATOM  6582  CB  ASP D 144    -18.247  46.025 -11.534  1.00 22.96
C
ATOM  6583  CG  ASP D 144    -17.787  47.234 -12.330  1.00 26.02
C
ATOM  6584  OD1 ASP D 144    -17.622  48.322 -11.741  1.00 22.89
O
ATOM  6585  OD2 ASP D 144    -17.611  47.097 -13.558  1.00 29.55
O1-
ATOM  6586  H   ASP D 144   -19.175  47.921 -10.335  1.00 21.62
H
ATOM  6587  HA  ASP D 144    -18.639  45.503  -9.590  1.00 23.97
H
ATOM  6588  HB2 ASP D 144    -17.672  45.278 -11.765  1.00 27.56
H
ATOM  6589  HB3 ASP D 144    -19.162  45.830 -11.788  1.00 27.56
H

ATOM  6590  N   LEU D 145   -16.128  47.417  -9.434  1.00 17.08          N
ATOM  6591  CA  LEU D 145    -14.718  47.487  -9.074  1.00 21.64
C

ATOM  6592  C   LEU D 145   -14.485  47.240  -7.581  1.00 19.33          C
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ATOM   293  N   GLN A 112   -12.659  12.214 -45.716  1.00 18.48
N
ATOM   294  CA  GLN A 112   -11.331  11.972 -46.254  1.00 20.70
C
ATOM   295  C   GLN A 112   -10.973  13.053 -47.256  1.00 20.13
C
ATOM   296  O   GLN A 112   -11.606  13.479 -48.055  1.00 20.24
O
ATOM   297  CB  GLN A 112   -11.233  10.591 -46.905  1.00 24.04
C
ATOM   298  CG  GLN A 112    -9.818  10.232 -47.369  1.00 23.23
C
ATOM   299  CD  GLN A 112    -8.771  10.400 -46.272  1.00 29.49
C
ATOM   300  OE1 GLN A 112    -8.311  11.511 -45.994  1.00 31.23
O
ATOM   301  NE2 GLN A 112    -8.392   9.296 -45.845  1.00 30.50
N
ATOM   302  H   GLN A 112   -13.184  12.644 -46.244  1.00 22.17
H
ATOM   303  HA  GLN A 112   -10.687  12.008 -45.530  1.00 24.84
H
ATOM   304  HB2 GLN A 112   -11.513   9.921 -46.262  1.00 28.85
H
ATOM   305  HB3 GLN A 112   -11.815  10.567 -47.680  1.00 28.85
H
ATOM   306  HG2 GLN A 112    -9.806   9.306 -47.655  1.00 27.88
H
ATOM   307  HG3 GLN A 112    -9.573  10.811 -48.108  1.00 27.88
H
ATOM   308 HE21 GLN A 112    -7.804   9.338 -45.018  1.00 36.60
H
ATOM   309 HE22 GLN A 112    -8.733   8.538 -45.864  1.00 36.60
H
ATOM   310  N   PHE A 113    -9.722  13.492 -47.189  1.00 18.31
N


ATOM   311  CA  PHE A 113    -9.211  14.536 -48.062  1.00 22.45
C
ATOM   312  C   PHE A 113    -8.399  13.908 -49.187  1.00 18.61
C
ATOM   313  O   PHE A 113    -7.556  13.051 -48.936  1.00 23.89
O
ATOM   314  CB  PHE A 113    -8.360  15.523 -47.259  1.00 23.17
C
ATOM   315  CG  PHE A 113    -9.135  16.272 -46.211  1.00 24.24
C
ATOM   316  CD1 PHE A 113    -9.569  15.633 -45.060  1.00 29.05
C
ATOM   317  CD2 PHE A 113    -9.431  17.615 -46.375  1.00 27.58
C
ATOM   318  CE1 PHE A 113   -10.287  16.317 -44.096  1.00 26.86
C
ATOM   319  CE2 PHE A 113   -10.149  18.306 -45.412  1.00 28.41
C
ATOM   320  CZ  PHE A 113   -10.574  17.655 -44.272  1.00 30.16
C
ATOM   321  H   PHE A 113    -9.138  13.192 -46.634  1.00 21.97
H
ATOM   322  HA  PHE A 113    -9.954  15.021 -48.454  1.00 26.94
H
ATOM   323  HB2 PHE A 113    -7.651  15.034 -46.812  1.00 27.81
H
ATOM   324  HB3 PHE A 113    -7.977  16.174 -47.868  1.00 27.81
H
ATOM   325  HD1 PHE A 113    -9.379  14.731 -44.936  1.00 34.86
H
ATOM   326  HD2 PHE A 113    -9.147  18.058 -47.142  1.00 33.09
H
ATOM   327  HE1 PHE A 113   -10.572  15.877 -43.328  1.00 32.23
H
ATOM   328  HE2 PHE A 113   -10.342  19.208 -45.533  1.00 34.10
H
ATOM   329  HZ  PHE A 113   -11.055  18.118 -43.624  1.00 36.22
H
ATOM   330  N   PHE A 114    -8.669  14.324 -50.420  1.00 16.59
N
ATOM   331  CA  PHE A 114    -7.977  13.782 -51.589  1.00 20.44
C
ATOM   332  C   PHE A 114    -7.120  14.850 -52.250  1.00 23.27
C
ATOM   333  O   PHE A 114    -7.637  15.860 -52.728  1.00 21.65
O
ATOM   334  CB  PHE A 114    -8.987  13.208 -52.582  1.00 23.69
C
ATOM   335  CG  PHE A 114    -9.683  11.983 -52.077  1.00 18.44
C
ATOM   336  CD1 PHE A 114   -10.811  12.092 -51.285  1.00 22.02
C
ATOM   337  CD2 PHE A 114    -9.190  10.723 -52.366  1.00 25.83
C
ATOM   338  CE1 PHE A 114   -11.447  10.964 -50.805  1.00 26.42
C
ATOM   339  CE2 PHE A 114    -9.821   9.592 -51.890  1.00 23.06
C
ATOM   340  CZ  PHE A 114   -10.949   9.712 -51.107  1.00 25.76
C
ATOM   341  H   PHE A 114    -9.255  14.925 -50.610  1.00 19.91
H
ATOM   342  HA  PHE A 114    -7.393  13.062 -51.305  1.00 24.52
H
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ATOM  6593  O   LEU D 145   -13.340  47.192  -7.132  1.00 18.18           O
ATOM  6594  CB  LEU D 145   -14.139  48.835  -9.498  1.00 22.74
C
ATOM  6595  CG  LEU D 145   -14.106  49.032 -11.021  1.00 27.25
C
ATOM  6596  CD1 LEU D 145   -13.556  50.397 -11.374  1.00 29.85
C
ATOM  6597  CD2 LEU D 145   -13.283  47.949 -11.725  1.00 30.04
C

ATOM  6598  H   LEU D 145   -16.504  48.179  -9.563  1.00 20.50           H
ATOM  6599  HA  LEU D 145   -14.240  46.798  -9.562  1.00 25.97
H
ATOM  6600  HB2 LEU D 145   -14.683  49.543  -9.118  1.00 27.29
H
ATOM  6601  HB3 LEU D 145   -13.230  48.905  -9.168  1.00 27.29
H
ATOM  6602  HG  LEU D 145   -15.013  48.982 -11.361  1.00 32.69
H
ATOM  6603 HD11 LEU D 145   -13.546  50.493 -12.339  1.00 35.82
H
ATOM  6604 HD12 LEU D 145   -14.123  51.077 -10.979  1.00 35.82
H
ATOM  6605 HD13 LEU D 145   -12.654  50.474 -11.024  1.00 35.82
H
ATOM  6606 HD21 LEU D 145   -13.293  48.117 -12.680  1.00 36.04
H
ATOM  6607 HD22 LEU D 145   -12.372  47.979 -11.392  1.00 36.04
H
ATOM  6608 HD23 LEU D 145   -13.676  47.082 -11.537  1.00 36.04
H

ATOM  6609  N   LEU D 146   -15.561  47.059  -6.818  1.00 14.34           N
ATOM  6610  CA  LEU D 146   -15.431  46.629  -5.427  1.00 15.08
C



ATOM  6611  C   LEU D 146   -14.819  45.229  -5.369  1.00 15.01           C

ATOM  6612  O   LEU D 146   -14.308  44.808  -4.332  1.00 16.15           O
ATOM  6613  CB  LEU D 146   -16.784  46.644  -4.710  1.00 19.54
C
ATOM  6614  CG  LEU D 146   -17.430  48.005  -4.436  1.00 17.93
C
ATOM  6615  CD1 LEU D 146   -18.798  47.820  -3.797  1.00 17.26
C
ATOM  6616  CD2 LEU D 146   -16.545  48.849  -3.537  1.00 18.06
C

ATOM  6617  H   LEU D 146   -16.372  47.177  -7.079  1.00 17.21           H
ATOM  6618  HA  LEU D 146   -14.836  47.238  -4.961  1.00 18.10
H
ATOM  6619  HB2 LEU D 146   -17.413  46.135  -5.246  1.00 23.45
H
ATOM  6620  HB3 LEU D 146   -16.673  46.206  -3.851  1.00 23.45
H
ATOM  6621  HG  LEU D 146   -17.548  48.477  -5.275  1.00 21.51
H
ATOM  6622 HD11 LEU D 146   -19.189  48.692  -3.632  1.00 20.71
H
ATOM  6623 HD12 LEU D 146   -19.362  47.312  -4.400  1.00 20.71
H
ATOM  6624 HD13 LEU D 146   -18.692  47.340  -2.960  1.00 20.71
H
ATOM  6625 HD21 LEU D 146   -16.977  49.703  -3.381  1.00 21.67
H
ATOM  6626 HD22 LEU D 146   -16.416  48.384  -2.695  1.00 21.67
H
ATOM  6627 HD23 LEU D 146   -15.689  48.986  -3.974  1.00 21.67
H

ATOM  6628  N   LYS D 147   -14.872  44.513  -6.490  1.00 14.65           N
ATOM  6629  CA  LYS D 147   -14.213  43.214  -6.620  1.00 17.93
C

ATOM  6630  C   LYS D 147   -12.713  43.325  -6.339  1.00 15.43           C

ATOM  6631  O   LYS D 147   -12.098  42.393  -5.821  1.00 16.29           O
ATOM  6632  CB  LYS D 147   -14.423  42.649  -8.031  1.00 22.58
C
ATOM  6633  CG  LYS D 147   -13.517  43.312  -9.070  1.00 45.24
C
ATOM  6634  CD  LYS D 147   -13.950  43.075 -10.516  1.00 79.42
C
ATOM  6635  CE  LYS D 147   -13.696  44.304 -11.398  1.00 90.15
C
ATOM  6636  NZ  LYS D 147   -12.667  44.084 -12.457  1.00103.84
N1+

ATOM  6637  H   LYS D 147   -15.290  44.761  -7.199  1.00 17.58           H
ATOM  6638  HA  LYS D 147   -14.598  42.593  -5.982  1.00 21.51
H
ATOM  6639  HB2 LYS D 147   -14.228  41.699  -8.024  1.00 27.09
H
ATOM  6640  HB3 LYS D 147   -15.344  42.796  -8.298  1.00 27.09
H
ATOM  6641  HG2 LYS D 147   -13.514  44.269  -8.915  1.00 54.29
H
ATOM  6642  HG3 LYS D 147   -12.618  42.961  -8.969  1.00 54.29
H
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ATOM   343  HB2 PHE A 114     -9.662  13.880 -52.767  1.00 28.43
H
ATOM   344  HB3 PHE A 114     -8.524  12.972 -53.401  1.00 28.43
H
ATOM   345  HD1 PHE A 114    -11.149  12.933 -51.079  1.00 26.43
H


ATOM   346  HD2 PHE A 114     -8.428  10.637 -52.893  1.00 31.00
H
ATOM   347  HE1 PHE A 114    -12.209  11.047 -50.278  1.00 31.70
H
ATOM   348  HE2 PHE A 114     -9.485   8.749 -52.095  1.00 27.69
H
ATOM   349  HZ  PHE A 114    -11.377   8.951 -50.787  1.00 30.91
H
ATOM   350  N   ASP A 115    -5.810  14.617 -52.275  1.00 21.39
N
ATOM   351  CA  ASP A 115     -4.861  15.629 -52.727  1.00 28.87
C
ATOM   352  C   ASP A 115    -4.607  15.563 -54.233  1.00 29.39
C
ATOM   353  O   ASP A 115    -3.870  16.383 -54.778  1.00 29.44
O
ATOM   354  CB  ASP A 115     -3.541  15.496 -51.959  1.00 30.80
C
ATOM   355  CG  ASP A 115     -2.889  14.136 -52.135  1.00 36.31
C
ATOM   356  OD1 ASP A 115     -3.559  13.199 -52.615  1.00 34.47
O
ATOM   357  OD2 ASP A 115     -1.698  14.005 -51.780  1.00 46.52
O1-
ATOM   358  H   ASP A 115    -5.444  13.877 -52.034  1.00 25.67
H
ATOM   359  HA  ASP A 115     -5.228  16.505 -52.530  1.00 34.65
H
ATOM   360  HB2 ASP A 115     -2.921  16.169 -52.278  1.00 36.95
H
ATOM   361  HB3 ASP A 115     -3.713  15.625 -51.013  1.00 36.95
H
ATOM   362  N   GLU A 116    -5.226  14.596 -54.903  1.00 28.73
N
ATOM   363  CA  GLU A 116     -5.170  14.520 -56.362  1.00 33.21
C
ATOM   364  C   GLU A 116    -6.288  15.378 -56.938  1.00 33.91
C
ATOM   365  O   GLU A 116    -7.466  15.116 -56.699  1.00 38.64
O
ATOM   366  CB  GLU A 116     -5.287  13.075 -56.860  1.00 37.54
C
ATOM   367  CG  GLU A 116     -6.251  12.196 -56.072  1.00 39.66
C
ATOM   368  CD  GLU A 116     -5.606  11.573 -54.842  1.00 41.78
C
ATOM   369  OE1 GLU A 116     -4.525  10.959 -54.979  1.00 47.28
O
ATOM   370  OE2 GLU A 116     -6.177  11.707 -53.737  1.00 32.41
O1-
ATOM   371  H   GLU A 116    -5.687  13.969 -54.536  1.00 34.48
H
ATOM   372  HA  GLU A 116     -4.323  14.880 -56.669  1.00 39.85
H
ATOM   373  HB2 GLU A 116     -5.592  13.090 -57.781  1.00 45.05
H
ATOM   374  HB3 GLU A 116     -4.411  12.662 -56.815  1.00 45.05
H
ATOM   375  HG2 GLU A 116     -7.001  12.735 -55.777  1.00 47.60
H
ATOM   376  HG3 GLU A 116     -6.563  11.477 -56.643  1.00 47.60
H
ATOM   377  N   SER A 117    -5.915  16.408 -57.690  1.00 24.41
N
ATOM   378  CA  SER A 117     -6.878  17.401 -58.140  1.00 29.40
C
ATOM   379  C   SER A 117    -7.682  16.920 -59.344  1.00 31.91
C
ATOM   380  O   SER A 117    -7.135  16.366 -60.296  1.00 31.79
O


ATOM   381  CB  SER A 117     -6.169  18.715 -58.475  1.00 29.88
C
ATOM   382  OG  SER A 117     -5.324  18.570 -59.597  1.00 37.03
O
ATOM   383  H   SER A 117    -5.109  16.553 -57.953  1.00 29.30
H
ATOM   384  HA  SER A 117     -7.502  17.578 -57.419  1.00 35.28
H
ATOM   385  HB2 SER A 117     -6.836  19.392 -58.669  1.00 35.86
H
ATOM   386  HB3 SER A 117     -5.634  18.987 -57.712  1.00 35.86
H
ATOM   387  HG  SER A 117     -4.943  19.299 -59.767  1.00 44.43
H
ATOM   388  N   LYS A 118    -8.992  17.136 -59.276  1.00 27.54
N
ATOM   389  CA  LYS A 118     -9.912  16.776 -60.348  1.00 27.36
C
ATOM   390  C   LYS A 118   -10.967  17.859 -60.482  1.00 25.25
C
ATOM   391  O   LYS A 118   -11.153  18.661 -59.564  1.00 21.89
O
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ATOM  6643  HD2 LYS D 147    -13.447  42.331 -10.882  1.00 95.30
H
ATOM  6644  HD3 LYS D 147    -14.900  42.879 -10.536  1.00 95.30
H
ATOM  6645  HE2 LYS D 147    -14.526  44.550 -11.837  1.00108.18
H


ATOM  6646  HE3 LYS D 147    -13.392  45.034 -10.836  1.00108.18
H
ATOM  6647  HZ1 LYS D 147    -12.923  43.424 -12.998  1.00124.61
H
ATOM  6648  HZ2 LYS D 147    -12.561  44.826 -12.937  1.00124.61
H
ATOM  6649  HZ3 LYS D 147    -11.889  43.866 -12.085  1.00124.61
H

ATOM  6650  N   LEU D 148   -12.136  44.472  -6.685  1.00 14.11           N
ATOM  6651  CA  LEU D 148    -10.686  44.663  -6.635  1.00 14.27
C

ATOM  6652  C   LEU D 148   -10.199  45.320  -5.346  1.00 14.62           C

ATOM  6653  O   LEU D 148    -9.001  45.581  -5.189  1.00 17.22           O
ATOM  6654  CB  LEU D 148    -10.235  45.508  -7.827  1.00 14.41
C
ATOM  6655  CG  LEU D 148    -10.319  44.864  -9.212  1.00 21.00
C
ATOM  6656  CD1 LEU D 148     -9.959  45.879 -10.272  1.00 22.02
C
ATOM  6657  CD2 LEU D 148     -9.408  43.651  -9.311  1.00 24.34
C

ATOM  6658  H   LEU D 148   -12.567  45.165  -6.956  1.00 16.94           H
ATOM  6659  HA  LEU D 148    -10.256  43.797  -6.706  1.00 17.12
H
ATOM  6660  HB2 LEU D 148    -10.780  46.309  -7.852  1.00 17.29
H
ATOM  6661  HB3 LEU D 148     -9.308  45.758  -7.685  1.00 17.29
H
ATOM  6662  HG  LEU D 148    -11.230  44.571  -9.371  1.00 25.20
H
ATOM  6663 HD11 LEU D 148    -10.016  45.457 -11.144  1.00 26.42
H
ATOM  6664 HD12 LEU D 148    -10.580  46.622 -10.222  1.00 26.42
H
ATOM  6665 HD13 LEU D 148     -9.054  46.192 -10.115  1.00 26.42
H
ATOM  6666 HD21 LEU D 148     -9.487  43.270 -10.199  1.00 29.20
H
ATOM  6667 HD22 LEU D 148     -8.493  43.930  -9.151  1.00 29.20
H
ATOM  6668 HD23 LEU D 148     -9.677  42.999  -8.645  1.00 29.20
H

ATOM  6669  N   VAL D 149   -11.114  45.590  -4.424  1.00 18.94           N
ATOM  6670  CA  VAL D 149    -10.744  46.245  -3.176  1.00 18.09
C

ATOM  6671  C   VAL D 149    -9.970  45.299  -2.268  1.00 14.58           C

ATOM  6672  O   VAL D 149   -10.466  44.240  -1.876  1.00 14.09           O
ATOM  6673  CB  VAL D 149    -11.983  46.778  -2.430  1.00 19.00
C
ATOM  6674  CG1 VAL D 149    -11.624  47.240  -1.013  1.00 15.72
C
ATOM  6675  CG2 VAL D 149    -12.601  47.914  -3.214  1.00 15.52
C

ATOM  6676  H   VAL D 149   -11.951  45.406  -4.495  1.00 22.73           H
ATOM  6677  HA  VAL D 149    -10.170  47.001  -3.377  1.00 21.71
H
ATOM  6678  HB  VAL D 149    -12.640  46.068  -2.359  1.00 22.80
H
ATOM  6679 HG11 VAL D 149    -12.426  47.568  -0.576  1.00 18.87
H
ATOM  6680 HG12 VAL D 149    -11.261  46.489  -0.519  1.00 18.87
H


ATOM  6681 HG13 VAL D 149    -10.964  47.949  -1.070  1.00 18.87
H
ATOM  6682 HG21 VAL D 149    -13.379  48.240  -2.736  1.00 18.62
H
ATOM  6683 HG22 VAL D 149    -11.947  48.624  -3.309  1.00 18.62
H
ATOM  6684 HG23 VAL D 149    -12.863  47.587  -4.089  1.00 18.62
H

ATOM  6685  N   LYS D 150    -8.748  45.704  -1.934  1.00 11.38           N

ATOM  6686  CA  LYS D 150    -7.897  44.949  -1.021  1.00 13.03           C

ATOM  6687  C   LYS D 150    -8.243  45.267   0.428  1.00 12.12           C

ATOM  6688  O   LYS D 150    -8.703  46.366   0.733  1.00 11.51           O

ATOM  6689  CB  LYS D 150    -6.421  45.270  -1.290  1.00 15.75           C
ATOM  6690  CG  LYS D 150    -5.427  44.415  -0.510  1.00 18.85
C

ATOM  6691  CD  LYS D 150    -4.028  45.031  -0.525  1.00 25.97           C
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ATOM   392  CB  LYS A 118    -10.586  15.433 -60.070  1.00 24.18
C
ATOM   393  CG  LYS A 118     -9.635  14.268 -59.906  1.00 30.02
C
ATOM   394  CD  LYS A 118    -10.378  12.951 -60.041  1.00 32.21
C
ATOM   395  CE  LYS A 118     -9.457  11.767 -59.823  1.00 34.89
C
ATOM   396  NZ  LYS A 118     -9.058  11.664 -58.403  1.00 38.04
N1+
ATOM   397  H   LYS A 118    -9.381  17.499 -58.600  1.00 33.04
H
ATOM   398  HA  LYS A 118     -9.427  16.712 -61.185  1.00 32.84
H
ATOM   399  HB2 LYS A 118    -11.100  15.508 -59.252  1.00 29.02
H
ATOM   400  HB3 LYS A 118    -11.178  15.225 -60.810  1.00 29.02
H
ATOM   401  HG2 LYS A 118     -8.953  14.308 -60.595  1.00 36.02
H
ATOM   402  HG3 LYS A 118     -9.230  14.303 -59.025  1.00 36.02
H
ATOM   403  HD2 LYS A 118    -11.085  12.913 -59.378  1.00 38.65
H
ATOM   404  HD3 LYS A 118    -10.752  12.885 -60.934  1.00 38.65
H
ATOM   405  HE2 LYS A 118     -9.918  10.950 -60.071  1.00 41.87
H
ATOM   406  HE3 LYS A 118     -8.656  11.879 -60.358  1.00 41.87
H
ATOM   407  HZ1 LYS A 118     -9.779  11.559 -57.891  1.00 45.64
H
ATOM   408  HZ2 LYS A 118     -8.518  10.966 -58.288  1.00 45.64
H
ATOM   409  HZ3 LYS A 118     -8.631  12.404 -58.152  1.00 45.64
H
ATOM   410  N   ASN A 119   -11.664  17.885 -61.612  1.00 23.33
N
ATOM   411  CA  ASN A 119    -12.769  18.818 -61.770  1.00 22.32
C
ATOM   412  C   ASN A 119   -13.904  18.370 -60.861  1.00 18.79
C
ATOM   413  O   ASN A 119   -13.846  17.281 -60.292  1.00 20.16
O
ATOM   414  CB  ASN A 119    -13.213  18.920 -63.235  1.00 26.91
C
ATOM   415  CG  ASN A 119    -13.744  17.612 -63.795  1.00 27.14
C


ATOM   416  OD1 ASN A 119    -14.413  16.842 -63.110  1.00 23.11
O
ATOM   417  ND2 ASN A 119    -13.453  17.366 -65.066  1.00 29.78
N
ATOM   418  H   ASN A 119   -11.520  17.380 -62.293  1.00 27.99
H
ATOM   419  HA  ASN A 119    -12.483  19.699 -61.481  1.00 26.78
H
ATOM   420  HB2 ASN A 119    -13.919  19.582 -63.304  1.00 32.29
H
ATOM   421  HB3 ASN A 119    -12.454  19.189 -63.775  1.00 32.29
H
ATOM   422 HD21 ASN A 119    -13.728  16.641 -65.437  1.00 35.74
H
ATOM   423 HD22 ASN A 119    -12.990  17.932 -65.518  1.00 35.74
H
ATOM   424  N   TRP A 120   -14.925  19.204 -60.713  1.00 19.00
N
ATOM   425  CA  TRP A 120    -15.991  18.921 -59.760  1.00 20.49
C
ATOM   426  C   TRP A 120   -16.696  17.599 -60.061  1.00 22.80
C
ATOM   427  O   TRP A 120   -16.990  16.822 -59.150  1.00 19.34
O
ATOM   428  CB  TRP A 120    -17.014  20.055 -59.746  1.00 21.71
C
ATOM   429  CG  TRP A 120    -18.043  19.878 -58.679  1.00 20.57
C
ATOM   430  CD1 TRP A 120    -17.954  20.290 -57.382  1.00 20.10
C
ATOM   431  CD2 TRP A 120    -19.313  19.229 -58.808  1.00 20.41
C
ATOM   432  NE1 TRP A 120    -19.092  19.944 -56.696  1.00 18.87
N
ATOM   433  CE2 TRP A 120    -19.942  19.290 -57.548  1.00 21.17
C
ATOM   434  CE3 TRP A 120    -19.978  18.602 -59.865  1.00 22.60
C
ATOM   435  CZ2 TRP A 120    -21.205  18.749 -57.316  1.00 22.12
C
ATOM   436  CZ3 TRP A 120    -21.230  18.065 -59.635  1.00 20.75
C
ATOM   437  CH2 TRP A 120    -21.832  18.142 -58.371  1.00 28.09
C
ATOM   438  H   TRP A 120   -15.025  19.938 -61.149  1.00 22.80
H
ATOM   439  HA  TRP A 120    -15.606  18.856 -58.872  1.00 24.58
H
ATOM   440  HB2 TRP A 120    -16.555  20.894 -59.586  1.00 26.06
H
ATOM   441  HB3 TRP A 120    -17.470  20.082 -60.602  1.00 26.06
H
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ATOM  6692  CE  LYS D 150     -2.999 44.123  -1.170  1.00 28.15         C
ATOM  6693  NZ  LYS D 150     -2.862 42.800  -0.512  1.00 27.44
N1+

ATOM  6694  H   LYS D 150    -8.384 46.425  -2.228  1.00 13.65         H

ATOM  6695  HA  LYS D 150     -8.034 43.999  -1.166  1.00 15.63         H
ATOM  6696  HB2 LYS D 150     -6.243 45.139  -2.234  1.00 18.90
H
ATOM  6697  HB3 LYS D 150     -6.259 46.197  -1.054  1.00 18.90
H
ATOM  6698  HG2 LYS D 150     -5.719 44.345   0.412  1.00 22.62
H
ATOM  6699  HG3 LYS D 150     -5.376 43.535  -0.914  1.00 22.62
H
ATOM  6700  HD2 LYS D 150     -4.053 45.861  -1.027  1.00 31.17
H
ATOM  6701  HD3 LYS D 150     -3.748 45.203   0.388  1.00 31.17
H
ATOM  6702  HE2 LYS D 150     -3.254 43.968  -2.093  1.00 33.78
H
ATOM  6703  HE3 LYS D 150     -2.133 44.560  -1.137  1.00 33.78
H
ATOM  6704  HZ1 LYS D 150     -3.639 42.367  -0.535  1.00 32.92
H
ATOM  6705  HZ2 LYS D 150     -2.246 42.314  -0.932  1.00 32.92
H
ATOM  6706  HZ3 LYS D 150     -2.616 42.907   0.337  1.00 32.92
H

ATOM  6707  N   SER D 151    -8.011 44.299   1.308  1.00  9.93         N
ATOM  6708  CA  SER D 151     -8.161 44.483   2.751  1.00 17.48
C

ATOM  6709  C   SER D 151    -9.629 44.513   3.165  1.00 15.32         C
ATOM  6710  O   SER D 151   -10.520 44.226   2.361  1.00 11.83
O
ATOM  6711  CB  SER D 151     -7.461 45.765   3.220  1.00 14.44
C
ATOM  6712  OG  SER D 151     -7.316 45.776   4.629  1.00 15.79
O

ATOM  6713  H   SER D 151    -7.760 43.506   1.090  1.00 11.92         H
ATOM  6714  HA  SER D 151     -7.742 43.735   3.205  1.00 20.98
H
ATOM  6715  HB2 SER D 151     -6.582 45.812   2.812  1.00 17.33
H


ATOM  6716  HB3 SER D 151     -7.993 46.531   2.952  1.00 17.33
H
ATOM  6717  HG  SER D 151     -6.857 45.117   4.875  1.00 18.95
H

ATOM  6718  N   TYR D 152    -9.849 44.872   4.428  1.00 14.15         N
ATOM  6719  CA  TYR D 152   -11.134 44.731   5.099  1.00 14.23
C

ATOM  6720  C   TYR D 152   -11.546 46.065   5.719  1.00 15.88         C

ATOM  6721  O   TYR D 152   -10.765 46.681   6.436  1.00 15.07         O
ATOM  6722  CB  TYR D 152   -11.037 43.620   6.152  1.00 14.66
C
ATOM  6723  CG  TYR D 152   -10.793 42.275   5.507  1.00 14.16
C
ATOM  6724  CD1 TYR D 152    -9.544 41.942   4.993  1.00 16.37
C
ATOM  6725  CD2 TYR D 152   -11.819 41.354   5.375  1.00 12.96
C
ATOM  6726  CE1 TYR D 152    -9.327 40.728   4.372  1.00 16.79
C
ATOM  6727  CE2 TYR D 152   -11.611 40.138   4.758  1.00 17.09
C
ATOM  6728  CZ  TYR D 152   -10.365 39.830   4.257  1.00 15.39
C
ATOM  6729  OH  TYR D 152   -10.164 38.616   3.641  1.00 19.34
O

ATOM  6730  H   TYR D 152    -9.243 45.214   4.934  1.00 16.98         H
ATOM  6731  HA  TYR D 152   -11.809 44.477   4.449  1.00 17.08
H
ATOM  6732  HB2 TYR D 152   -10.298 43.809   6.751  1.00 17.59
H
ATOM  6733  HB3 TYR D 152   -11.870 43.574   6.647  1.00 17.59
H
ATOM  6734  HD1 TYR D 152    -8.845 42.551   5.062  1.00 19.64
H
ATOM  6735  HD2 TYR D 152   -12.664 41.561   5.704  1.00 15.55
H
ATOM  6736  HE1 TYR D 152    -8.486 40.518   4.035  1.00 20.15
H
ATOM  6737  HE2 TYR D 152   -12.309 39.529   4.679  1.00 20.50
H
ATOM  6738  HH  TYR D 152   -10.877 38.172   3.641  1.00 23.21
H

ATOM  6739  N   HIS D 153   -12.762 46.519   5.418  1.00 15.60         N

ATOM  6740  CA  HIS D 153   -13.195 47.868   5.791  1.00 14.87         C

ATOM  6741  C   HIS D 153   -14.638 47.906   6.274  1.00 15.50         C
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ATOM   442  HD1 TRP A 120    -17.230  20.744 -57.017  1.00 24.12
H
ATOM   443  HE1 TRP A 120    -19.246  20.110 -55.866  1.00 22.64
H
ATOM   444  HE3 TRP A 120    -19.585  18.546 -60.706  1.00 27.12
H
ATOM   445  HZ2 TRP A 120    -21.607  18.799 -56.479  1.00 26.54
H
ATOM   446  HZ3 TRP A 120    -21.683  17.647 -60.331  1.00 24.90
H
ATOM   447  HH2 TRP A 120    -22.677  17.774 -58.246  1.00 33.71
H
ATOM   448  N   TYR A 121   -16.960  17.346 -61.339  1.00 21.32
N
ATOM   449  CA  TYR A 121    -17.709  16.158 -61.743  1.00 25.07
C
ATOM   450  C   TYR A 121   -16.927  14.885 -61.415  1.00 20.81
C


ATOM   451  O   TYR A 121   -17.473  13.937 -60.848  1.00 21.52
O
ATOM   452  CB  TYR A 121    -18.037  16.221 -63.238  1.00 23.23
C
ATOM   453  CG  TYR A 121    -18.622  17.550 -63.662  1.00 26.15
C
ATOM   454  CD1 TYR A 121    -19.935  17.885 -63.353  1.00 33.80
C
ATOM   455  CD2 TYR A 121    -17.859  18.473 -64.363  1.00 24.99
C
ATOM   456  CE1 TYR A 121    -20.471  19.105 -63.734  1.00 30.23
C
ATOM   457  CE2 TYR A 121    -18.386  19.693 -64.748  1.00 33.24
C
ATOM   458  CZ  TYR A 121    -19.689  20.003 -64.431  1.00 29.90
C
ATOM   459  OH  TYR A 121    -20.210  21.217 -64.815  1.00 39.68
O
ATOM   460  H   TYR A 121   -16.717  17.848 -61.993  1.00 25.59
H
ATOM   461  HA  TYR A 121    -18.546  16.130 -61.254  1.00 30.08
H
ATOM   462  HB2 TYR A 121    -17.222  16.079 -63.745  1.00 27.87
H
ATOM   463  HB3 TYR A 121    -18.683  15.529 -63.448  1.00 27.87
H
ATOM   464  HD1 TYR A 121    -20.462  17.281 -62.882  1.00 40.56
H
ATOM   465  HD2 TYR A 121    -16.978  18.268 -64.578  1.00 29.99
H
ATOM   466  HE1 TYR A 121    -21.351  19.317 -63.521  1.00 36.27
H
ATOM   467  HE2 TYR A 121    -17.862  20.301 -65.218  1.00 39.89
H
ATOM   468  HH  TYR A 121    -21.008  21.280 -64.562  1.00 47.62
H
ATOM   469  N   GLU A 122   -15.645  14.883 -61.760  1.00 20.76
N
ATOM   470  CA  GLU A 122    -14.760  13.767 -61.449  1.00 22.88
C
ATOM   471  C   GLU A 122   -14.653  13.563 -59.938  1.00 22.74
C
ATOM   472  O   GLU A 122   -14.647  12.432 -59.451  1.00 21.61
O
ATOM   473  CB  GLU A 122    -13.374  14.011 -62.049  1.00 30.20
C
ATOM   474  CG  GLU A 122    -13.320  13.954 -63.575  1.00 37.52
C
ATOM   475  CD  GLU A 122    -11.969  14.386 -64.136  1.00 47.14
C
ATOM   476  OE1 GLU A 122    -11.248  15.152 -63.458  1.00 45.66
O
ATOM   477  OE2 GLU A 122    -11.625  13.956 -65.257  1.00 59.27
O1-
ATOM   478  H   GLU A 122   -15.258  15.525 -62.180  1.00 24.92
H
ATOM   479  HA  GLU A 122    -15.121  12.956 -61.839  1.00 27.46
H
ATOM   480  HB2 GLU A 122    -13.070  14.891 -61.777  1.00 36.24
H
ATOM   481  HB3 GLU A 122    -12.766  13.337 -61.708  1.00 36.24
H
ATOM   482  HG2 GLU A 122    -13.487  13.042 -63.863  1.00 45.03
H
ATOM   483  HG3 GLU A 122    -13.998  14.545 -63.937  1.00 45.03
H
ATOM   484  N   SER A 123   -14.565  14.666 -59.202  1.00 22.30
N
ATOM   485  CA  SER A 123    -14.528  14.613 -57.745  1.00 20.93
C


ATOM   486  C   SER A 123   -15.806  13.978 -57.214  1.00 20.42
C
ATOM   487  O   SER A 123   -15.762  13.104 -56.344  1.00 18.79
O
ATOM   488  CB  SER A 123    -14.345  16.015 -57.155  1.00 20.25
C
ATOM   489  OG  SER A 123    -13.110  16.585 -57.557  1.00 15.46
O
ATOM   490  H   SER A 123   -14.526  15.463 -59.524  1.00 26.76
H
ATOM   491  HA  SER A 123    -13.779  14.066 -57.465  1.00 25.12
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ATOM   6742  O   HIS D 153    -15.492  47.185   5.761  1.00 15.53        O

ATOM   6743  CB  HIS D 153    -13.048  48.819   4.603  1.00 14.96        C
ATOM   6744  CG  HIS D 153    -11.822  48.574   3.783  1.00 17.33
C
ATOM   6745  ND1 HIS D 153    -10.655  49.285   3.958  1.00 14.80
N
ATOM   6746  CD2 HIS D 153    -11.579  47.690   2.786  1.00 15.17
C

ATOM   6747  CE1 HIS D 153     -9.747  48.853   3.100  1.00 17.80        C
ATOM   6748  NE2 HIS D 153    -10.283  47.885   2.377  1.00 14.81
N

ATOM   6749  H   HIS D 153    -13.358  46.064   4.996  1.00 18.72        H

ATOM   6750  HA  HIS D 153    -12.630  48.194   6.509  1.00 17.84        H


ATOM   6751  HB2 HIS D 153    -13.819  48.715   4.023  1.00 17.95
H
ATOM   6752  HB3 HIS D 153    -13.007  49.730   4.935  1.00 17.95
H
ATOM   6753  HD1 HIS D 153    -10.537  49.914   4.533  1.00 17.76
H
ATOM   6754  HD2 HIS D 153    -12.179  47.069   2.441  1.00 18.21
H

ATOM   6755  HE1 HIS D 153     -8.879  49.175   3.020  1.00 21.36        H

ATOM   6756  HE2 HIS D 153     -9.884  47.448   1.753  1.00 17.77        H

ATOM   6757  N   TRP D 154    -14.911  48.764   7.251  1.00 14.83        N
ATOM   6758  CA  TRP D 154    -16.280  48.975   7.703  1.00 18.59
C

ATOM   6759  C   TRP D 154    -17.160  49.471   6.558  1.00 16.71        C

ATOM   6760  O   TRP D 154    -16.792  50.405   5.843  1.00 15.23        O
ATOM   6761  CB  TRP D 154    -16.340  49.994   8.849  1.00 20.54
C
ATOM   6762  CG  TRP D 154    -15.871  49.510  10.190  1.00 19.81
C
ATOM   6763  CD1 TRP D 154    -14.965  50.126  11.007  1.00 23.78
C
ATOM   6764  CD2 TRP D 154    -16.298  48.331  10.886  1.00 21.11
C
ATOM   6765  NE1 TRP D 154    -14.798  49.402  12.160  1.00 23.26
N
ATOM   6766  CE2 TRP D 154    -15.604  48.295  12.112  1.00 23.65
C
ATOM   6767  CE3 TRP D 154    -17.194  47.300  10.591  1.00 19.42
C
ATOM   6768  CZ2 TRP D 154    -15.774  47.269  13.040  1.00 25.29
C
ATOM   6769  CZ3 TRP D 154    -17.362  46.281  11.514  1.00 22.46
C
ATOM   6770  CH2 TRP D 154    -16.657  46.275  12.723  1.00 25.53
C

ATOM   6771  H   TRP D 154    -14.324  49.234   7.667  1.00 17.80        H
ATOM   6772  HA  TRP D 154    -16.644  48.135   8.024  1.00 22.30
H
ATOM   6773  HB2 TRP D 154    -15.789  50.756   8.609  1.00 24.65
H
ATOM   6774  HB3 TRP D 154    -17.260  50.283   8.952  1.00 24.65
H
ATOM   6775  HD1 TRP D 154    -14.527  50.922  10.811  1.00 28.53
H
ATOM   6776  HE1 TRP D 154    -14.270  49.609  12.808  1.00 27.92
H
ATOM   6777  HE3 TRP D 154    -17.667  47.298   9.790  1.00 23.30
H
ATOM   6778  HZ2 TRP D 154    -15.305  47.261  13.843  1.00 30.35
H
ATOM   6779  HZ3 TRP D 154    -17.957  45.591  11.329  1.00 26.95
H
ATOM   6780  HH2 TRP D 154    -16.791  45.577  13.323  1.00 30.63
H

ATOM   6781  N   MET D 155    -18.321  48.845   6.392  1.00 16.33        N
ATOM   6782  CA  MET D 155    -19.362  49.379   5.519  1.00 14.51
C

ATOM   6783  C   MET D 155    -20.595  49.713   6.361  1.00 17.12        C
ATOM   6784  O   MET D 155    -20.603  49.497   7.573  1.00 19.71
O
ATOM   6785  CB  MET D 155    -19.704  48.392   4.397  1.00 15.94
C


ATOM   6786  CG  MET D 155    -19.896  46.957   4.840  1.00 16.64
C
ATOM   6787  SD  MET D 155    -20.468  45.915   3.480  1.00 19.78
S
ATOM   6788  CE  MET D 155    -20.186  44.291   4.179  1.00 21.22
C

ATOM   6789  H   MET D 155    -18.533  48.105   6.776  1.00 19.60        H
ATOM   6790  HA  MET D 155    -19.035  50.194   5.107  1.00 17.42
H
ATOM   6791  HB2 MET D 155    -20.528  48.680   3.974  1.00 19.13
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ATOM   491  HA  SER A 123    -15.778  14.066 -57.465  1.00 25.12
H
ATOM   492  HB2 SER A 123    -15.069  16.583 -57.463  1.00 24.31
H
ATOM   493  HB3 SER A 123    -14.363  15.953 -56.187  1.00 24.31
H
ATOM   494  HG  SER A 123    -13.080  16.645 -58.395  1.00 18.56
H
ATOM   495  N   GLN A 124   -16.941  14.421 -57.749  1.00 19.50
N
ATOM   496  CA  GLN A 124    -18.241  13.880 -57.365  1.00 18.56
C
ATOM   497  C   GLN A 124    -18.300  12.380 -57.618  1.00 21.42
C
ATOM   498  O   GLN A 124    -18.736  11.612 -56.758  1.00 18.75
O
ATOM   499  CB  GLN A 124    -19.363  14.585 -58.134  1.00 22.37
C
ATOM   500  CG  GLN A 124    -20.744  13.971 -57.944  1.00 25.68
C
ATOM   501  CD  GLN A 124    -21.805  14.643 -58.800  1.00 30.60
C
ATOM   502  OE1 GLN A 124    -21.672  14.729 -60.023  1.00 32.60
O
ATOM   503  NE2 GLN A 124    -22.862  15.130 -58.159  1.00 27.20
N
ATOM   504  H   GLN A 124    -16.985  15.041 -58.344  1.00 23.40
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ATOM   505  HA  GLN A 124    -18.382  14.033 -56.418  1.00 22.27
H
ATOM   506  HB2 GLN A 124    -19.408  15.508 -57.839  1.00 26.84
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ATOM   507  HB3 GLN A 124    -19.156  14.555 -59.082  1.00 26.84
H
ATOM   508  HG2 GLN A 124    -20.710  13.033 -58.189  1.00 30.82
H
ATOM   509  HG3 GLN A 124    -21.006  14.062 -57.014  1.00 30.82
H
ATOM   510 HE21 GLN A 124    -23.489  15.520 -58.599  1.00 32.63
H
ATOM   511 HE22 GLN A 124    -22.918  15.055 -57.305  1.00 32.63
H
ATOM   512  N   ALA A 125   -17.868  11.972 -58.807  1.00 21.97
N
ATOM   513  CA  ALA A 125    -17.868  10.561 -59.176  1.00 20.84
C
ATOM   514  C   ALA A 125    -16.946   9.762 -58.260  1.00 21.56
C
ATOM   515  O   ALA A 125    -17.233   8.613 -57.929  1.00 23.96
O
ATOM   516  CB  ALA A 125    -17.448  10.394 -60.623  1.00 22.81
C
ATOM   517  H   ALA A 125   -17.569  12.494 -59.420  1.00 26.37
H
ATOM   518  HA  ALA A 125    -18.767  10.208 -59.081  1.00 25.01
H
ATOM   519  HB1 ALA A 125    -17.455   9.450 -60.846  1.00 27.37
H
ATOM   520  HB2 ALA A 125    -18.072  10.873 -61.190  1.00 27.37
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ATOM   521  HB3 ALA A 125    -16.554  10.754 -60.735  1.00 27.37
H
ATOM   522  N   SER A 126    -15.841  10.380 -57.850  1.00 19.66
N
ATOM   523  CA  SER A 126    -14.891   9.726 -56.960  1.00 21.36
C
ATOM   524  C   SER A 126    -15.528   9.424 -55.597  1.00 20.78
C
ATOM   525  O   SER A 126    -15.400   8.316 -55.079  1.00 20.50
O
ATOM   526  CB  SER A 126    -13.644  10.595 -56.782  1.00 21.76
C
ATOM   527  OG  SER A 126    -12.641   9.910 -56.052  1.00 22.07
O
ATOM   528  H   SER A 126    -15.619  11.180 -58.074  1.00 23.59
H
ATOM   529  HA  SER A 126    -14.615   8.884 -57.355  1.00 25.64
H
ATOM   530  HB2 SER A 126    -13.294  10.826 -57.657  1.00 26.11
H
ATOM   531  HB3 SER A 126    -13.888  11.401 -56.301  1.00 26.11
H
ATOM   532  HG  SER A 126    -11.965  10.401 -55.964  1.00 26.49
H
ATOM   533  N   CYS A 127    -16.208  10.408 -55.018  1.00 17.68
N
ATOM   534  CA  CYS A 127    -16.855  10.214 -53.722  1.00 20.49
C
ATOM   535  C   CYS A 127   -17.995   9.206 -53.839  1.00 20.57
C
ATOM   536  O   CYS A 127    -18.171   8.348 -52.973  1.00 19.87
O
ATOM   537  CB  CYS A 127    -17.379  11.542 -53.174  1.00 18.87
C
ATOM   538  SG  CYS A 127    -16.086  12.764 -52.854  1.00 19.71
S
ATOM   539  H   CYS A 127    -16.312  11.193 -55.352  1.00 21.21
H
ATOM   540  HA  CYS A 127    -16.206   9.863 -53.092  1.00 24.59
H
ATOM   541  HB2 CYS A 127    -17.995  11.925 -53.818  1.00 22.65
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ATOM  6791  HB2 MET D 155    -20.528  46.680   3.974  1.00 19.13
H
ATOM  6792  HB3 MET D 155    -18.984  48.403   3.747  1.00 19.13
H
ATOM  6793  HG2 MET D 155    -19.050  46.605   5.158  1.00 19.97
H
ATOM  6794  HG3 MET D 155    -20.560  46.927   5.547  1.00 19.97
H
ATOM  6795  HE1 MET D 155    -20.458  43.619   3.535  1.00 25.46
H
ATOM  6796  HE2 MET D 155    -19.242  44.194   4.381  1.00 25.46
H
ATOM  6797  HE3 MET D 155    -20.709  44.202   4.992  1.00 25.46
H

ATOM  6798  N   GLY D 156   -21.629  50.248   5.719  1.00 19.69           N
ATOM  6799  CA  GLY D 156    -22.778  50.784   6.429  1.00 20.08
C

ATOM  6800  C   GLY D 156    -23.884  49.782   6.697  1.00 27.40           C

ATOM  6801  O   GLY D 156    -25.047  50.157   6.856  1.00 25.15           O

ATOM  6802  H   GLY D 156    -21.686  50.313   4.863  1.00 23.63           H
ATOM  6803  HA2 GLY D 156    -22.484  51.139   7.282  1.00 24.09
H
ATOM  6804  HA3 GLY D 156    -23.155  51.514   5.913  1.00 24.09
H

ATOM  6805  N   LEU D 157   -23.523  48.505   6.755  1.00 22.24           N
ATOM  6806  CA  LEU D 157   -24.486  47.457   7.038  1.00 24.99
C

ATOM  6807  C   LEU D 157   -24.748  47.391   8.542  1.00 32.61           C

ATOM  6808  O   LEU D 157   -23.816  47.402   9.348  1.00 32.90           O
ATOM  6809  CB  LEU D 157   -23.981  46.116   6.506  1.00 27.86
C
ATOM  6810  CG  LEU D 157    -25.030  45.102   6.053  1.00 31.65
C
ATOM  6811  CD1 LEU D 157    -25.857  45.622   4.884  1.00 33.53
C
ATOM  6812  CD2 LEU D 157    -24.345  43.799   5.675  1.00 34.82
C

ATOM  6813  H   LEU D 157   -22.720  48.221   6.632  1.00 26.69           H
ATOM  6814  HA  LEU D 157   -25.323  47.663   6.594  1.00 29.98
H
ATOM  6815  HB2 LEU D 157    -23.408  46.293   5.743  1.00 33.43
H
ATOM  6816  HB3 LEU D 157    -23.459  45.693   7.205  1.00 33.43
H
ATOM  6817  HG  LEU D 157    -25.633  44.921   6.790  1.00 37.98
H
ATOM  6818 HD11 LEU D 157    -26.507  44.947   4.632  1.00 40.23
H
ATOM  6819 HD12 LEU D 157    -26.312  46.434   5.156  1.00 40.23
H
ATOM  6820 HD13 LEU D 157    -25.266  45.808   4.137  1.00 40.23
H


ATOM  6821 HD21 LEU D 157    -25.017  43.161   5.389  1.00 41.79
H
ATOM  6822 HD22 LEU D 157    -23.720  43.968   4.953  1.00 41.79
H
ATOM  6823 HD23 LEU D 157    -23.871  43.456   6.449  1.00 41.79
H

ATOM  6824  N   VAL D 158   -26.026  47.342   8.902  1.00 33.79           N
ATOM  6825  CA  VAL D 158    -26.462  47.376  10.293  1.00 34.56
C
ATOM  6826  C   VAL D 158   -27.282  46.133  10.623  1.00 40.45
C

ATOM  6827  O   VAL D 158   -28.183  45.762   9.871  1.00 38.74           O
ATOM  6828  CB  VAL D 158    -27.307  48.635  10.579  1.00 31.82
C
ATOM  6829  CG1 VAL D 158    -27.896  48.591  11.984  1.00 45.90
C
ATOM  6830  CG2 VAL D 158    -26.472  49.890  10.392  1.00 35.55
C

ATOM  6831  H   VAL D 158   -26.677  47.288   8.342  1.00 40.54           H
ATOM  6832  HA  VAL D 158    -25.685  47.392  10.873  1.00 41.47
H
ATOM  6833  HB  VAL D 158    -28.043  48.669   9.948  1.00 38.18
H
ATOM  6834 HG11 VAL D 158    -28.419  49.394  12.131  1.00 55.08
H
ATOM  6835 HG12 VAL D 158    -28.461  47.807  12.064  1.00 55.08
H
ATOM  6836 HG13 VAL D 158    -27.172  48.545  12.628  1.00 55.08
H
ATOM  6837 HG21 VAL D 158    -27.024  50.666  10.577  1.00 42.66
H
ATOM  6838 HG22 VAL D 158    -25.721  49.863  11.006  1.00 42.66
H
ATOM  6839 HG23 VAL D 158    -26.151  49.922   9.477  1.00 42.66
H

ATOM  6840  N   HIS D 159   -26.974  45.501  11.751  1.00 42.21           N
ATOM  6841  CA  HIS D 159   -27.698  44.309  12.176  1.00 47.51
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H
ATOM   542  HB3 CYS A 127    -17.842  11.374 -52.337  1.00 22.65
H
ATOM   543  N   MET A 128   -18.765   9.315 -54.918  1.00 17.80
N
ATOM   544  CA  MET A 128    -19.856   8.382 -55.179  1.00 25.06
C
ATOM   545  C   MET A 128   -19.319   6.961 -55.283  1.00 22.86
C
ATOM   546  O   MET A 128   -19.956   6.008 -54.835  1.00 25.41
O
ATOM   547  CB  MET A 128    -20.593   8.754 -56.464  1.00 28.91
C
ATOM   548  CG  MET A 128    -22.085   8.970 -56.280  1.00 40.17
C
ATOM   549  SD  MET A 128    -22.957   9.136 -57.850  1.00 65.50
S
ATOM   550  CE  MET A 128    -22.156  10.582 -58.544  1.00 43.48
C
ATOM   551  H   MET A 128   -18.675   9.925 -55.518  1.00 21.37
H
ATOM   552  HA  MET A 128    -20.490   8.426 -54.447  1.00 30.08
H
ATOM   553  HB2 MET A 128    -20.216   9.577 -56.812  1.00 34.70
H
ATOM   554  HB3 MET A 128    -20.474   8.040 -57.110  1.00 34.70
H
ATOM   555  HG2 MET A 128    -22.459   8.210 -55.808  1.00 48.20
H


ATOM   556  HG3 MET A 128    -22.227   9.782 -55.769  1.00 48.20
H
ATOM   557  HE1 MET A 128    -22.549  10.776 -59.410  1.00 52.17
H
ATOM   558  HE2 MET A 128    -22.288  11.334 -57.945  1.00 52.17
H
ATOM   559  HE3 MET A 128    -21.208  10.401 -58.644  1.00 52.17
H
ATOM   560  N   SER A 129   -18.133   6.833 -55.865  1.00 22.61
N
ATOM   561  CA  SER A 129    -17.491   5.535 -56.033  1.00 26.16
C
ATOM   562  C   SER A 129   -17.085   4.913 -54.697  1.00 25.71
C
ATOM   563  O   SER A 129   -16.695   3.745 -54.645  1.00 24.09
O
ATOM   564  CB  SER A 129    -16.261   5.674 -56.935  1.00 25.52
C
ATOM   565  OG  SER A 129    -15.546   4.455 -57.022  1.00 33.82
O
ATOM   566  H   SER A 129   -17.673   7.491 -56.175  1.00 27.13
H
ATOM   567  HA  SER A 129    -18.113   4.930 -56.467  1.00 31.39
H
ATOM   568  HB2 SER A 129    -16.551   5.932 -57.824  1.00 30.62
H
ATOM   569  HB3 SER A 129    -15.677   6.355 -56.567  1.00 30.62
H
ATOM   570  HG  SER A 129    -16.039   3.855 -57.341  1.00 40.59
H
ATOM   571  N   GLN A 130   -17.171   5.694 -53.623  1.00 20.18
N
ATOM   572  CA  GLN A 130    -16.753   5.233 -52.303  1.00 22.43
C
ATOM   573  C   GLN A 130   -17.916   5.241 -51.317  1.00 24.16
C
ATOM   574  O   GLN A 130   -17.715   5.372 -50.111  1.00 27.76
O
ATOM   575  CB  GLN A 130    -15.612   6.103 -51.779  1.00 23.18
C
ATOM   576  CG  GLN A 130    -14.386   6.095 -52.674  1.00 25.86
C
ATOM   577  CD  GLN A 130    -13.321   7.067 -52.215  1.00 22.81
C
ATOM   578  OE1 GLN A 130    -12.837   6.988 -51.087  1.00 19.87
O
ATOM   579  NE2 GLN A 130    -12.951   7.993 -53.091  1.00 20.58
N
ATOM   580  H   GLN A 130   -17.470   6.500 -53.634  1.00 24.21
H
ATOM   581  HA  GLN A 130    -16.427   4.322 -52.375  1.00 26.92
H
ATOM   582  HB2 GLN A 130    -15.923   7.019 -51.709  1.00 27.81
H
ATOM   583  HB3 GLN A 130    -15.345   5.778 -50.905  1.00 27.81
H
ATOM   584  HG2 GLN A 130    -14.001   5.205 -52.674  1.00 31.04
H
ATOM   585  HG3 GLN A 130    -14.650   6.342 -53.574  1.00 31.04
H
ATOM   586 HE21 GLN A 130    -12.349   8.569 -52.879  1.00 24.70
H
ATOM   587 HE22 GLN A 130    -13.313   8.016 -53.871  1.00 24.70
H
ATOM   588  N   ASN A 131   -19.127   5.083 -51.839  1.00 23.03
N
ATOM   589  CA  ASN A 131    -20.331   5.118 -51.016  1.00 28.97
C
ATOM   590  C   ASN A 131   -20.370   6.396 -50.190  1.00 27.25
C
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C
ATOM   6842  C   HIS D 159   -28.905  44.685  13.029  1.00 56.08           C
ATOM   6843  O   HIS D 159   -28.829  45.584  13.867  1.00 51.08           O
ATOM   6844  CB  HIS D 159    -26.785  43.370  12.962  1.00 48.52
C
ATOM   6845  CG  HIS D 159    -27.304  41.969  13.065  1.00 50.74
C
ATOM   6846  ND1 HIS D 159    -26.815  41.062  13.981  1.00 52.54
N
ATOM   6847  CD2 HIS D 159    -28.266  41.318  12.369  1.00 56.93
C
ATOM   6848  CE1 HIS D 159    -27.454  39.914  13.845  1.00 63.50
C
ATOM   6849  NE2 HIS D 159    -28.340  40.043  12.874  1.00 64.61
N

ATOM   6850  H   HIS D 159   -26.348  45.743  12.289  1.00 50.65           H
ATOM   6851  HA  HIS D 159    -28.018  43.835  11.392  1.00 57.02
H
ATOM   6852  HB2 HIS D 159    -25.920  43.334  12.524  1.00 58.23
H
ATOM   6853  HB3 HIS D 159    -26.683  43.715  13.863  1.00 58.23
H
ATOM   6854  HD1 HIS D 159    -26.191  41.219  14.552  1.00 63.05
H
ATOM   6855  HD2 HIS D 159    -28.781  41.669  11.679  1.00 68.31
H


ATOM   6856  HE1 HIS D 159    -27.305  39.145  14.347  1.00 76.20
H
ATOM   6857  HE2 HIS D 159    -28.875  39.427  12.601  1.00 77.54
H

ATOM   6858  N   ILE D 160   -30.011  43.984  12.807  1.00 60.19           N
ATOM   6859  CA  ILE D 160    -31.243  44.209  13.553  1.00 72.28
C

ATOM   6860  C   ILE D 160   -31.530  43.001  14.446  1.00 84.70           C

ATOM   6861  O   ILE D 160   -31.991  41.970  13.955  1.00 84.61           O
ATOM   6862  CB  ILE D 160    -32.433  44.447  12.609  1.00 73.35
C
ATOM   6863  CG1 ILE D 160    -32.142  45.623  11.674  1.00 59.74
C
ATOM   6864  CG2 ILE D 160    -33.694  44.725  13.407  1.00 85.05
C
ATOM   6865  CD1 ILE D 160    -33.047  45.674  10.476  1.00 64.40
C

ATOM   6866  H   ILE D 160   -30.074  43.361  12.218  1.00 72.23           H
ATOM   6867  HA  ILE D 160    -31.139  44.990  14.119  1.00 86.74
H
ATOM   6868  HB  ILE D 160    -32.571  43.650  12.074  1.00 88.02
H
ATOM   6869 HG12 ILE D 160    -32.255  46.450  12.168  1.00 71.69
H
ATOM   6870 HG13 ILE D 160    -31.229  45.551  11.355  1.00 71.69
H
ATOM   6871 HG21 ILE D 160    -33.883  43.961  13.974  1.00102.06
H
ATOM   6872 HG22 ILE D 160    -33.555  45.516  13.952  1.00102.06
H
ATOM   6873 HG23 ILE D 160    -34.430  44.872  12.793  1.00102.06
H
ATOM   6874 HD11 ILE D 160    -32.806  46.440   9.932  1.00 77.27
H
ATOM   6875 HD12 ILE D 160    -32.939  44.857   9.964  1.00 77.27
H
ATOM   6876 HD13 ILE D 160    -33.965  45.757  10.778  1.00 77.27
H
ATOM   6877  N   PRO D 161    -31.256  43.117  15.758  1.00 91.91
N
ATOM   6878  CA  PRO D 161    -31.459  41.971  16.655  1.00100.89
C
ATOM   6879  C   PRO D 161    -32.918  41.531  16.773  1.00107.68
C
ATOM   6880  O   PRO D 161    -33.184  40.448  17.295  1.00110.28
O
ATOM   6881  CB  PRO D 161    -30.946  42.484  18.008  1.00104.17
C
ATOM   6882  CG  PRO D 161    -30.073  43.643  17.685  1.00 92.23
C
ATOM   6883  CD  PRO D 161    -30.672  44.267  16.470  1.00 90.01
C
ATOM   6884  HA  PRO D 161    -30.917  41.218  16.370  1.00121.07
H
ATOM   6885  HB2 PRO D 161    -31.696  42.763  18.557  1.00125.00
H
ATOM   6886  HB3 PRO D 161    -30.439  41.786  18.451  1.00125.00
H
ATOM   6887  HG2 PRO D 161    -30.073  44.268  18.426  1.00110.68
H
ATOM   6888  HG3 PRO D 161    -29.173  43.331  17.500  1.00110.68
H
ATOM   6889  HD2 PRO D 161    -31.365  44.898  16.720  1.00108.01
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ATOM   6890  HD3 PRO D 161    -29.984  44.687  15.930  1.00108.01
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ATOM   591  O   ASN A 131    -20.655   6.375 -48.992  1.00 24.85
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ATOM   592  CB  ASN A 131    -20.396   3.890 -50.104  1.00 30.97
C
ATOM   593  CG  ASN A 131    -21.744   3.736 -49.429  1.00 34.40
C
ATOM   594  OD1 ASN A 131    -22.772   4.158 -49.962  1.00 38.37
O
ATOM   595  ND2 ASN A 131    -21.745   3.139 -48.241  1.00 40.30
N
ATOM   596  H   ASN A 131    -19.280   4.953 -52.676  1.00 27.63
H
ATOM   597  HA  ASN A 131    -21.111   5.107 -51.593  1.00 34.76
H
ATOM   598  HB2 ASN A 131    -20.232   3.093 -50.633  1.00 37.17
H
ATOM   599  HB3 ASN A 131    -19.721   3.973 -49.413  1.00 37.17
H
ATOM   600 HD21 ASN A 131    -22.485   3.028 -47.817  1.00 48.35
H
ATOM   601 HD22 ASN A 131    -21.006   2.864 -47.897  1.00 48.35
H
ATOM   602  N   ALA A 132    -20.066   7.510 -50.846  1.00 25.64
N
ATOM   603  CA  ALA A 132    -19.980   8.800 -50.181  1.00 21.88
C
ATOM   604  C   ALA A 132    -20.378   9.915 -51.139  1.00 21.78
C
ATOM   605  O   ALA A 132    -20.768   9.663 -52.277  1.00 22.40
O
ATOM   606  CB  ALA A 132    -18.570   9.026 -49.656  1.00 20.15
C
ATOM   607  H   ALA A 132    -19.903   7.543 -51.690  1.00 30.77
H
ATOM   608  HA  ALA A 132    -20.591   8.813 -49.428  1.00 26.25
H
ATOM   609  HB1 ALA A 132    -18.531   9.890 -49.217  1.00 24.18
H
ATOM   610  HB2 ALA A 132    -18.352   8.323 -49.025  1.00 24.18
H
ATOM   611  HB3 ALA A 132    -17.949   9.006 -50.401  1.00 24.18
H
ATOM   612  N   SER A 133    -20.270  11.151 -50.672  1.00 18.84
N
ATOM   613  CA  SER A 133    -20.529  12.309 -51.509  1.00 21.81
C
ATOM   614  C   SER A 133    -19.499  13.378 -51.190  1.00 19.07
C
ATOM   615  O   SER A 133    -18.693  13.211 -50.276  1.00 17.95
O
ATOM   616  CB  SER A 133    -21.945  12.833 -51.281  1.00 25.17
C
ATOM   617  OG  SER A 133    -22.071  13.372 -49.979  1.00 30.73
O
ATOM   618  H   SER A 133    -20.045  11.346 -49.865  1.00 22.61
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ATOM   619  HA  SER A 133    -20.438  12.061 -52.442  1.00 26.18
H
ATOM   620  HB2 SER A 133    -22.134  13.528 -51.931  1.00 30.20
H
ATOM   621  HB3 SER A 133    -22.574  12.102 -51.384  1.00 30.20
H
ATOM   622  HG  SER A 133    -21.908  12.780 -49.406  1.00 36.88
H
ATOM   623  N   LEU A 134    -19.516  14.469 -51.947  1.00 18.66
N
ATOM   624  CA  LEU A 134    -18.644  15.594 -51.646  1.00 18.37
C
ATOM   625  C   LEU A 134    -19.076  16.218 -50.327  1.00 17.90
C


ATOM   626  O   LEU A 134    -20.216  16.046 -49.898  1.00 17.30
O
ATOM   627  CB  LEU A 134    -18.675  16.627 -52.772  1.00 17.75
C
ATOM   628  CG  LEU A 134    -17.977  16.210 -54.067  1.00 16.83
C
ATOM   629  CD1 LEU A 134    -18.320  17.168 -55.192  1.00 18.55
C
ATOM   630  CD2 LEU A 134    -16.469  16.142 -53.878  1.00 18.53
C
ATOM   631  H   LEU A 134    -20.019  14.581 -52.635  1.00 22.40
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ATOM   632  HA  LEU A 134    -17.733  15.276 -51.549  1.00 22.05
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ATOM   633  HB2 LEU A 134    -19.601  16.817 -52.988  1.00 21.31
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ATOM   634  HB3 LEU A 134    -18.243  17.436 -52.457  1.00 21.31
H
ATOM   635  HG  LEU A 134    -18.287  15.327 -54.322  1.00 20.20
H
ATOM   636 HD11 LEU A 134    -18.028  18.060 -54.946  1.00 22.26
H
ATOM   637 HD12 LEU A 134    -17.866  16.882 -56.000  1.00 22.26
H
ATOM   638 HD13 LEU A 134    -19.280  17.161 -55.331  1.00 22.26
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ATOM   639 HD21 LEU A 134    -16.266  15.491 -53.188  1.00 22.24
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ATOM  6891  N   THR D 162    -33.845  42.358  16.298  1.00107.82
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ATOM  6892  CA  THR D 162    -35.265  42.042  16.398  1.00113.32
C
ATOM  6893  C   THR D 162    -35.606  40.838  15.526  1.00113.82
C
ATOM  6894  O   THR D 162    -36.327  39.935  15.953  1.00117.27
O
ATOM  6895  CB  THR D 162    -36.158  43.231  15.977  1.00116.05
C
ATOM  6896  OG1 THR D 162    -36.171  43.348  14.549  1.00118.64
O
ATOM  6897  CG2 THR D 162    -35.669  44.537  16.597  1.00119.38
C
ATOM  6898  H   THR D 162    -33.677  43.109  15.914  1.00129.39
H
ATOM  6899  HA  THR D 162    -35.476  41.818  17.318  1.00135.98
H
ATOM  6900  HB  THR D 162    -37.063  43.072  16.288  1.00139.27
H
ATOM  6901  HG1 THR D 162    -36.656  43.994  14.318  1.00142.36
H
ATOM  6902 HG21 THR D 162    -36.242  45.270  16.321  1.00143.26
H
ATOM  6903 HG22 THR D 162    -35.687  44.471  17.565  1.00143.26
H
ATOM  6904 HG23 THR D 162    -34.761  44.721  16.310  1.00143.26
H
ATOM  6905  N   ASN D 163    -35.079  40.834  14.305  1.00109.79
N
ATOM  6906  CA  ASN D 163    -35.341  39.764  13.348  1.00106.91
C
ATOM  6907  C   ASN D 163    -34.070  39.304  12.634  1.00 99.24
C
ATOM  6908  O   ASN D 163    -34.132  38.638  11.599  1.00 96.09
O
ATOM  6909  CB  ASN D 163    -36.389  40.223  12.329  1.00110.79
C
ATOM  6910  CG  ASN D 163    -36.099  41.606  11.774  1.00109.36
C
ATOM  6911  OD1 ASN D 163    -34.944  41.980  11.575  1.00 98.35
O
ATOM  6912  ND2 ASN D 163    -37.154  42.377  11.533  1.00116.08
N
ATOM  6913  H   ASN D 163    -34.559  41.449  14.003  1.00131.75
H
ATOM  6914  HA  ASN D 163    -35.705  39.001  13.824  1.00128.29
H
ATOM  6915  HB2 ASN D 163    -36.404  39.599  11.587  1.00132.95
H
ATOM  6916  HB3 ASN D 163    -37.258  40.249  12.759  1.00132.95
H
ATOM  6917 HD21 ASN D 163    -37.044  43.170  11.218  1.00139.29
H
ATOM  6918 HD22 ASN D 163    -37.947  42.084  11.692  1.00139.29
H
ATOM  6919  N   GLY D 164    -32.918  39.661  13.195  1.00 96.98
N
ATOM  6920  CA  GLY D 164    -31.634  39.227  12.670  1.00 87.96
C
ATOM  6921  C   GLY D 164    -31.365  39.684  11.248  1.00 79.64
C
ATOM  6922  O   GLY D 164    -30.536  39.102  10.548  1.00 69.70
O
ATOM  6923  H   GLY D 164    -32.856  40.162  13.892  1.00116.37
H
ATOM  6924  HA2 GLY D 164    -30.926  39.570  13.237  1.00105.56
H
ATOM  6925  HA3 GLY D 164    -31.595  38.258  12.689  1.00105.56
H


ATOM  6926  N   SER D 165    -32.062  40.732  10.822  1.00 81.83
N
ATOM  6927  CA  SER D 165    -31.935  41.238   9.460  1.00 71.12
C

ATOM  6928  C   SER D 165    -30.735  42.170   9.313  1.00 57.71           C
ATOM  6929  O   SER D 165    -30.340  42.844  10.265  1.00 55.24
O
ATOM  6930  CB  SER D 165    -33.213  41.973   9.050  1.00 73.02
C
ATOM  6931  OG  SER D 165    -33.077  42.556   7.766  1.00 71.30
O
ATOM  6932  H   SER D 165    -32.620  41.171  11.307  1.00 98.19
H
ATOM  6933  HA  SER D 165    -31.810  40.491   8.855  1.00 85.34
H
ATOM  6934  HB2 SER D 165    -33.948  41.341   9.033  1.00 87.63
H
ATOM  6935  HB3 SER D 165    -33.394  42.674   9.696  1.00 87.63
H
ATOM  6936  HG  SER D 165    -33.785  42.955   7.555  1.00 85.56
H

ATOM  6937  N   TRP D 166    -30.159  42.193   8.114  1.00 41.62           N
ATOM  6938  CA  TRP D 166    -29.122  43.161   7.768  1.00 41.01
C
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H
ATOM   640 HD22 LEU A 134    -16.058  15.876 -54.716  1.00 22.24
H
ATOM   641 HD23 LEU A 134    -16.144  17.017 -53.613  1.00 22.24
H
ATOM   642  N   LEU A 135   -18.157  16.926 -49.681  1.00 15.27
N
ATOM   643  CA  LEU A 135    -18.428  17.543 -48.386  1.00 14.24
C
ATOM   644  C   LEU A 135   -19.756  18.295 -48.351  1.00 13.72
C
ATOM   645  O   LEU A 135   -20.021  19.141 -49.207  1.00 14.87
O
ATOM   646  CB  LEU A 135    -17.299  18.503 -48.018  1.00 11.92
C
ATOM   647  CG  LEU A 135    -17.524  19.369 -46.773  1.00 13.80
C
ATOM   648  CD1 LEU A 135    -17.707  18.499 -45.536  1.00 16.19
C
ATOM   649  CD2 LEU A 135    -16.366  20.340 -46.586  1.00 15.37
C
ATOM   650  H   LEU A 135   -17.361  17.065 -49.975  1.00 18.33
H
ATOM   651  HA  LEU A 135    -18.461  16.848 -47.710  1.00 17.09
H
ATOM   652  HB2 LEU A 135    -16.495  17.982 -47.865  1.00 14.30
H
ATOM   653  HB3 LEU A 135    -17.156  19.104 -48.765  1.00 14.30
H
ATOM   654  HG  LEU A 135    -18.333  19.889 -46.894  1.00 16.56
H
ATOM   655 HD11 LEU A 135    -17.846  19.072 -44.766  1.00 19.43
H
ATOM   656 HD12 LEU A 135    -18.477  17.924 -45.666  1.00 19.43
H
ATOM   657 HD13 LEU A 135    -16.910  17.961 -45.409  1.00 19.43
H
ATOM   658 HD21 LEU A 135    -16.529  20.877 -45.795  1.00 18.45
H
ATOM   659 HD22 LEU A 135    -15.545  19.835 -46.480  1.00 18.45
H
ATOM   660 HD23 LEU A 135    -16.305  20.912 -47.367  1.00 18.45
H


ATOM   661  N   LYS A 136   -20.583  17.967 -47.359  1.00 11.97
N
ATOM   662  CA  LYS A 136    -21.789  18.732 -47.064  1.00 19.27
C
ATOM   663  C   LYS A 136   -21.649  19.428 -45.714  1.00 16.87
C
ATOM   664  O   LYS A 136   -21.409  18.784 -44.691  1.00 16.35
O
ATOM   665  CB  LYS A 136    -23.029  17.836 -47.062  1.00 20.92
C
ATOM   666  CG  LYS A 136    -24.294  18.572 -46.624  1.00 23.85
C
ATOM   667  CD  LYS A 136    -25.542  17.721 -46.767  1.00 27.86
C
ATOM   668  CE  LYS A 136    -26.766  18.475 -46.263  1.00 36.34
C
ATOM   669  NZ  LYS A 136    -28.041  17.844 -46.689  1.00 34.12
N1+
ATOM   670  H   LYS A 136   -20.463  17.295 -46.836  1.00 14.37
H
ATOM   671  HA  LYS A 136    -21.908  19.412 -47.745  1.00 23.12
H
ATOM   672  HB2 LYS A 136    -23.176  17.498 -47.959  1.00 25.11
H
ATOM   673  HB3 LYS A 136    -22.885  17.099 -46.448  1.00 25.11
H
ATOM   674  HG2 LYS A 136    -24.207  18.824 -45.691  1.00 28.62
H
ATOM   675  HG3 LYS A 136    -24.406  19.364 -47.172  1.00 28.62
H
ATOM   676  HD2 LYS A 136    -25.679  17.503 -47.702  1.00 33.44
H
ATOM   677  HD3 LYS A 136    -25.443  16.912 -46.241  1.00 33.44
H
ATOM   678  HE2 LYS A 136    -26.749  18.494 -45.294  1.00 43.61
H
ATOM   679  HE3 LYS A 136    -26.746  19.379 -46.614  1.00 43.61
H
ATOM   680  HZ1 LYS A 136    -28.730  18.312 -46.377  1.00 40.94
H
ATOM   681  HZ2 LYS A 136    -28.086  17.820 -47.577  1.00 40.94
H
ATOM   682  HZ3 LYS A 136    -28.088  17.013 -46.374  1.00 40.94
H
ATOM   683  N   VAL A 137   -21.807  20.746 -45.726  1.00 17.32
N
ATOM   684  CA  VAL A 137    -21.728  21.552 -44.516  1.00 16.33
C
ATOM   685  C   VAL A 137   -23.137  21.792 -43.974  1.00 18.35
C
ATOM   686  O   VAL A 137   -23.930  22.488 -44.603  1.00 20.87
O
ATOM   687  CB  VAL A 137    -21.028  22.895 -44.788  1.00 17.82
C
ATOM   688  CG1 VAL A 137    -20.955  23.732 -43.518  1.00 22.96
C
ATOM   689  CG2 VAL A 137    -19.627  22.656 -45.354  1.00 18.45
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ATOM  6939  C   TRP D 166   -29.709  44.238   6.867  1.00 35.15           C

ATOM  6940  O   TRP D 166   -30.344  43.933   5.858  1.00 33.29           O
ATOM  6941  CB  TRP D 166    -27.942  42.481   7.067  1.00 31.04
C
ATOM  6942  CG  TRP D 166    -27.138  41.590   7.958  1.00 32.96
C
ATOM  6943  CD1 TRP D 166    -27.222  40.232   8.050  1.00 39.24
C
ATOM  6944  CD2 TRP D 166    -26.124  41.993   8.889  1.00 33.27
C
ATOM  6945  NE1 TRP D 166    -26.324  39.763   8.979  1.00 36.80
N
ATOM  6946  CE2 TRP D 166    -25.639  40.824   9.509  1.00 32.66
C
ATOM  6947  CE3 TRP D 166    -25.582  43.227   9.257  1.00 32.29
C
ATOM  6948  CZ2 TRP D 166    -24.637  40.854  10.475  1.00 31.08
C
ATOM  6949  CZ3 TRP D 166    -24.586  43.254  10.217  1.00 29.48
C
ATOM  6950  CH2 TRP D 166    -24.125  42.074  10.815  1.00 29.86
C

ATOM  6951  H   TRP D 166   -30.355  41.652   7.476  1.00 49.94           H
ATOM  6952  HA  TRP D 166    -28.795  43.584   8.577  1.00 49.21
H
ATOM  6953  HB2 TRP D 166    -28.282  41.940   6.337  1.00 37.24
H
ATOM  6954  HB3 TRP D 166    -27.349  43.165   6.720  1.00 37.24
H
ATOM  6955  HD1 TRP D 166    -27.803  39.700   7.556  1.00 47.09
H
ATOM  6956  HE1 TRP D 166    -26.212  38.938   9.194  1.00 44.16
H
ATOM  6957  HE3 TRP D 166    -25.883  44.014   8.865  1.00 38.74
H
ATOM  6958  HZ2 TRP D 166    -24.328  40.072  10.873  1.00 37.29
H
ATOM  6959  HZ3 TRP D 166    -24.218  44.069  10.470  1.00 35.37
H
ATOM  6960  HH2 TRP D 166    -23.455  42.123  11.457  1.00 35.83
H


ATOM  6961  N   GLN D 167   -29.503  45.497   7.238  1.00 34.74           N
ATOM  6962  CA  GLN D 167    -29.909  46.611   6.392  1.00 36.36
C

ATOM  6963  C   GLN D 167   -28.873  47.728   6.465  1.00 32.14           C
ATOM  6964  O   GLN D 167   -27.979  47.711   7.315  1.00 28.97
O
ATOM  6965  CB  GLN D 167    -31.294  47.127   6.800  1.00 43.23
C
ATOM  6966  CG  GLN D 167    -31.323  47.983   8.059  1.00 42.74
C
ATOM  6967  CD  GLN D 167    -32.719  48.487   8.383  1.00 45.63
C
ATOM  6968  OE1 GLN D 167    -33.717  47.883   7.991  1.00 48.25
O
ATOM  6969  NE2 GLN D 167    -32.795  49.599   9.102  1.00 46.85
N

ATOM  6970  H   GLN D 167   -29.130  45.732   7.976  1.00 41.69           H
ATOM  6971  HA  GLN D 167    -29.960  46.308   5.472  1.00 43.63
H
ATOM  6972  HB2 GLN D 167    -31.649  47.663   6.074  1.00 51.88
H
ATOM  6973  HB3 GLN D 167    -31.874  46.364   6.953  1.00 51.88
H
ATOM  6974  HG2 GLN D 167    -31.012  47.454   8.810  1.00 51.28
H
ATOM  6975  HG3 GLN D 167    -30.747  48.753   7.932  1.00 51.28
H
ATOM  6976 HE21 GLN D 167    -33.563  49.925   9.312  1.00 56.22
H
ATOM  6977 HE22 GLN D 167    -32.076  49.994   9.360  1.00 56.22
H

ATOM  6978  N   TRP D 168   -28.992  48.694   5.561  1.00 29.94           N
ATOM  6979  CA  TRP D 168    -28.064  49.813   5.524  1.00 27.82
C

ATOM  6980  C   TRP D 168   -28.475  50.864   6.546  1.00 33.11           C

ATOM  6981  O   TRP D 168   -29.618  50.874   7.009  1.00 32.83           O
ATOM  6982  CB  TRP D 168    -28.007  50.400   4.117  1.00 27.85
C
ATOM  6983  CG  TRP D 168    -27.611  49.378   3.104  1.00 29.12
C
ATOM  6984  CD1 TRP D 168    -28.412  48.801   2.163  1.00 27.50
C
ATOM  6985  CD2 TRP D 168    -26.317  48.788   2.946  1.00 22.83
C
ATOM  6986  NE1 TRP D 168    -27.694  47.894   1.423  1.00 27.86
N
ATOM  6987  CE2 TRP D 168    -26.404  47.868   1.882  1.00 21.96
C
ATOM  6988  CE3 TRP D 168    -25.090  48.953   3.596  1.00 24.25
C
ATOM  6989  CZ2 TRP D 168    -25.312  47.116   1.454  1.00 18.62
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ATOM   690  H   VAL A 137    -21.964  21.205 -46.436  1.00 20.78
H
ATOM   691  HA  VAL A 137    -21.220  21.073 -43.843  1.00 19.60
H
ATOM   692  HB  VAL A 137    -21.539  23.391 -45.447  1.00 21.39
H
ATOM   693 HG11 VAL A 137    -20.510  24.571 -43.719  1.00 27.55
H
ATOM   694 HG12 VAL A 137    -21.856  23.903 -43.201  1.00 27.55
H
ATOM   695 HG13 VAL A 137    -20.454  23.244 -42.847  1.00 27.55
H


ATOM   696 HG21 VAL A 137    -19.203  23.513 -45.519  1.00 22.14
H
ATOM   697 HG22 VAL A 137    -19.109  22.148 -44.711  1.00 22.14
H
ATOM   698 HG23 VAL A 137    -19.703  22.159 -46.184  1.00 22.14
H
ATOM   699  N   TYR A 138    -23.437  21.220 -42.810  1.00 19.32
N
ATOM   700  CA  TYR A 138    -24.792  21.266 -42.259  1.00 24.49
C
ATOM   701  C   TYR A 138    -24.832  21.797 -40.830  1.00 24.58
C
ATOM   702  O   TYR A 138    -25.909  22.078 -40.302  1.00 22.30
O
ATOM   703  CB  TYR A 138    -25.423  19.871 -42.295  1.00 21.46
C
ATOM   704  CG  TYR A 138    -24.849  18.919 -41.271  1.00 22.69
C
ATOM   705  CD1 TYR A 138    -23.689  18.203 -41.533  1.00 21.21
C
ATOM   706  CD2 TYR A 138    -25.463  18.742 -40.037  1.00 22.66
C
ATOM   707  CE1 TYR A 138    -23.160  17.331 -40.598  1.00 19.74
C
ATOM   708  CE2 TYR A 138    -24.940  17.874 -39.095  1.00 23.87
C
ATOM   709  CZ  TYR A 138    -23.788  17.172 -39.380  1.00 23.25
C
ATOM   710  OH  TYR A 138    -23.263  16.308 -38.446  1.00 19.45
O
ATOM   711  H   TYR A 138    -22.873  20.797 -42.318  1.00 23.18
H
ATOM   712  HA  TYR A 138    -25.334  21.853 -42.809  1.00 29.39
H
ATOM   713  HB2 TYR A 138    -26.374  19.954 -42.123  1.00 25.75
H
ATOM   714  HB3 TYR A 138    -25.279  19.485 -43.173  1.00 25.75
H
ATOM   715  HD1 TYR A 138    -23.263  18.308 -42.353  1.00 25.45
H
ATOM   716  HD2 TYR A 138    -26.239  19.214 -39.842  1.00 27.20
H
ATOM   717  HE1 TYR A 138    -22.383  16.857 -40.788  1.00 23.69
H
ATOM   718  HE2 TYR A 138    -25.363  17.766 -38.274  1.00 28.64
H
ATOM   719  HH  TYR A 138    -23.740  16.308 -37.755  1.00 23.34
H
ATOM   720  N   SER A 139    -23.668  21.933 -40.202  1.00 16.32
N
ATOM   721  CA  SER A 139    -23.620  22.342 -38.802  1.00 22.45
C
ATOM   722  C   SER A 139    -22.280  22.946 -38.399  1.00 21.92
C
ATOM   723  O   SER A 139    -21.243  22.310 -38.547  1.00 20.19
O
ATOM   724  CB  SER A 139    -23.922  21.142 -37.908  1.00 20.56
C
ATOM   725  OG  SER A 139    -23.630  21.435 -36.555  1.00 23.25
O
ATOM   726  H   SER A 139    -22.899  21.796 -40.560  1.00 19.58
H
ATOM   727  HA  SER A 139    -24.306  23.010 -38.646  1.00 26.94
H
ATOM   728  HB2 SER A 139    -24.862  20.918 -37.987  1.00 24.67
H
ATOM   729  HB3 SER A 139    -23.377  20.391 -38.193  1.00 24.67
H
ATOM   730  HG  SER A 139    -23.799  20.768 -36.073  1.00 27.89
H


ATOM   731  N   LYS A 140    -22.304  24.164 -37.869  1.00 21.91
N
ATOM   732  CA  LYS A 140    -21.074  24.803 -37.417  1.00 22.19
C
ATOM   733  C   LYS A 140    -20.566  24.160 -36.132  1.00 22.96
C
ATOM   734  O   LYS A 140    -19.382  24.240 -35.823  1.00 23.93
O
ATOM   735  CB  LYS A 140    -21.280  26.304 -37.215  1.00 25.51
C
ATOM   736  CG  LYS A 140    -21.119  27.111 -38.497  1.00 26.71
C
ATOM   737  CD  LYS A 140    -21.243  28.605 -38.258  1.00 29.71
C
ATOM   738  CE  LYS A 140    -20.959  29.383 -39.534  1.00 30.52
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ATOM  6990  CZ3 TRP D 168    -24.008  48.207   3.169  1.00 21.72
C
ATOM  6991  CH2 TRP D 168    -24.127  47.296   2.111  1.00 18.99
C

ATOM  6992  H   TRP D 168    -29.604  48.723   4.958  1.00 35.93           H
ATOM  6993  HA  TRP D 168    -27.176  49.498   5.755  1.00 33.38
H
ATOM  6994  HB2 TRP D 168    -28.884  50.740   3.877  1.00 33.42
H
ATOM  6995  HB3 TRP D 168    -27.354  51.116   4.096  1.00 33.42
H


ATOM  6996  HD1 TRP D 168    -29.313  48.995   2.041  1.00 33.00
H
ATOM  6997  HE1 TRP D 168    -28.004  47.421   0.775  1.00 33.44
H
ATOM  6998  HE3 TRP D 168    -25.004  49.554   4.301  1.00 29.10
H
ATOM  6999  HZ2 TRP D 168    -25.387  46.512   0.750  1.00 22.35
H
ATOM  7000  HZ3 TRP D 168    -23.188  48.308   3.595  1.00 26.06
H
ATOM  7001  HH2 TRP D 168    -23.381  46.810   1.845  1.00 22.79
H

ATOM  7002  N   GLU D 169    -27.541  51.742   6.905  1.00 32.76           N
ATOM  7003  CA  GLU D 169    -27.781  52.721   7.962  1.00 34.47
C

ATOM  7004  C   GLU D 169    -28.861  53.734   7.566  1.00 29.80           C
ATOM  7005  O   GLU D 169    -29.420  54.412   8.425  1.00 39.17
O
ATOM  7006  CB  GLU D 169    -26.473  53.442   8.329  1.00 36.50
C
ATOM  7007  CG  GLU D 169    -25.907  54.339   7.239  1.00 37.04
C
ATOM  7008  CD  GLU D 169    -24.412  54.619   7.405  1.00 37.98
C
ATOM  7009  OE1 GLU D 169    -23.995  55.125   8.473  1.00 34.25
O
ATOM  7010  OE2 GLU D 169    -23.651  54.335   6.457  1.00 31.91
O1-

ATOM  7011  H   GLU D 169    -26.759  51.790   6.551  1.00 39.31           H
ATOM  7012  HA  GLU D 169    -28.091  52.254   8.753  1.00 41.37
H
ATOM  7013  HB2 GLU D 169    -26.634  53.996   9.109  1.00 43.80
H
ATOM  7014  HB3 GLU D 169    -25.800  52.775   8.537  1.00 43.80
H
ATOM  7015  HG2 GLU D 169    -26.036  53.909   6.379  1.00 44.45
H
ATOM  7016  HG3 GLU D 169    -26.374  55.189   7.256  1.00 44.45
H

ATOM  7017  N   ASP D 170    -29.163  53.822   6.273  1.00 30.55           N
ATOM  7018  CA  ASP D 170    -30.212  54.719   5.789  1.00 31.25
C

ATOM  7019  C   ASP D 170    -31.587  54.053   5.821  1.00 31.67           C

ATOM  7020  O   ASP D 170    -32.580  54.645   5.407  1.00 37.31           O
ATOM  7021  CB  ASP D 170    -29.900  55.192   4.366  1.00 25.76
C
ATOM  7022  CG  ASP D 170    -30.035  54.083   3.334  1.00 29.56
C
ATOM  7023  OD1 ASP D 170    -30.204  52.907   3.720  1.00 30.98
O
ATOM  7024  OD2 ASP D 170    -29.959  54.387   2.127  1.00 27.01
O1-

ATOM  7025  H   ASP D 170    -28.774  53.372   5.652  1.00 36.66           H
ATOM  7026  HA  ASP D 170    -30.246  55.501   6.362  1.00 37.50
H
ATOM  7027  HB2 ASP D 170    -30.517  55.901   4.127  1.00 30.92
H
ATOM  7028  HB3 ASP D 170    -28.988  55.521   4.335  1.00 30.92
H

ATOM  7029  N   GLY D 171    -31.629  52.808   6.286  1.00 31.62           N
ATOM  7030  CA  GLY D 171    -32.877  52.081   6.423  1.00 31.76
C


ATOM  7031  C   GLY D 171    -33.213  51.178   5.248  1.00 32.34           C

ATOM  7032  O   GLY D 171    -34.017  50.259   5.393  1.00 36.75           O

ATOM  7033  H   GLY D 171    -30.937  52.361   6.531  1.00 37.95           H
ATOM  7034  HA2 GLY D 171    -32.836  51.532   7.221  1.00 38.11
H
ATOM  7035  HA3 GLY D 171    -33.603  52.715   6.531  1.00 38.11
H

ATOM  7036  N   SER D 172    -32.609  51.426   4.088  1.00 29.62           N
ATOM  7037  CA  SER D 172    -32.938  50.654   2.888  1.00 31.61
C

ATOM  7038  C   SER D 172    -32.552  49.188   3.061  1.00 30.37           C
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ATOM   739  NZ  LYS A 140    -21.099  30.852 -39.352  1.00 46.50
N1+
ATOM   740  H   LYS A 140   -23.013  24.638 -37.760  1.00 26.29
H
ATOM   741  HA  LYS A 140    -20.392  24.686 -38.097  1.00 26.63
H
ATOM   742  HB2 LYS A 140    -22.177  26.456 -36.877  1.00 30.61
H
ATOM   743  HB3 LYS A 140    -20.627  26.628 -36.574  1.00 30.61
H
ATOM   744  HG2 LYS A 140    -20.242  26.938 -38.873  1.00 32.06
H
ATOM   745  HG3 LYS A 140    -21.809  26.848 -39.126  1.00 32.06
H
ATOM   746  HD2 LYS A 140    -22.145  28.811 -37.969  1.00 35.66
H
ATOM   747  HD3 LYS A 140    -20.601  28.877 -37.584  1.00 35.66
H
ATOM   748  HE2 LYS A 140    -20.049  29.201 -39.819  1.00 36.62
H
ATOM   749  HE3 LYS A 140    -21.584  29.104 -40.220  1.00 36.62
H
ATOM   750  HZ1 LYS A 140    -20.925  31.271 -40.118  1.00 55.80
H
ATOM   751  HZ2 LYS A 140    -21.928  31.049 -39.097  1.00 55.80
H
ATOM   752  HZ3 LYS A 140    -20.529  31.138 -38.731  1.00 55.80
H
ATOM   753  N   GLU A 141   -21.459  23.513 -35.390  1.00 22.30
N
ATOM   754  CA  GLU A 141    -21.065  22.818 -34.170  1.00 22.51
C
ATOM   755  C   GLU A 141   -20.504  21.427 -34.473  1.00 23.38
C
ATOM   756  O   GLU A 141   -19.397  21.093 -34.048  1.00 20.37
O
ATOM   757  CB  GLU A 141    -22.250  22.705 -33.215  1.00 27.68
C
ATOM   758  CG  GLU A 141    -21.925  22.006 -31.910  1.00 37.33
C
ATOM   759  CD  GLU A 141    -23.137  21.869 -31.013  1.00 48.81
C
ATOM   760  OE1 GLU A 141    -23.280  22.685 -30.079  1.00 53.50
O
ATOM   761  OE2 GLU A 141    -23.950  20.947 -31.241  1.00 51.65
O1-
ATOM   762  H   GLU A 141   -22.298  23.461 -35.571  1.00 26.77
H
ATOM   763  HA  GLU A 141    -20.370  23.330 -33.727  1.00 27.01
H
ATOM   764  HB2 GLU A 141    -22.565  23.598 -33.003  1.00 33.21
H
ATOM   765  HB3 GLU A 141    -22.956  22.203 -33.652  1.00 33.21
H


ATOM   766  HG2 GLU A 141    -21.589  21.116 -32.101  1.00 44.80
H
ATOM   767  HG3 GLU A 141    -21.254  22.520 -31.433  1.00 44.80
H
ATOM   768  N   ASP A 142   -21.273  20.619 -35.200  1.00 22.34
N
ATOM   769  CA  ASP A 142    -20.873  19.244 -35.515  1.00 21.81
C
ATOM   770  C   ASP A 142   -19.649  19.185 -36.433  1.00 18.46
C
ATOM   771  O   ASP A 142   -18.949  18.171 -36.480  1.00 19.90
O
ATOM   772  CB  ASP A 142    -22.029  18.486 -36.178  1.00 21.93
C
ATOM   773  CG  ASP A 142    -23.054  17.966 -35.180  1.00 25.65
C
ATOM   774  OD1 ASP A 142    -23.061  18.415 -34.015  1.00 31.16
O
ATOM   775  OD2 ASP A 142    -23.865  17.101 -35.576  1.00 29.49
O1-
ATOM   776  H   ASP A 142   -22.037  20.843 -35.526  1.00 26.80
H
ATOM   777  HA  ASP A 142    -20.649  18.786 -34.690  1.00 26.17
H
ATOM   778  HB2 ASP A 142    -22.485  19.082 -36.792  1.00 26.32
H
ATOM   779  HB3 ASP A 142    -21.670  17.725 -36.661  1.00 26.32
H
ATOM   780  N   GLN A 143   -19.407  20.265 -37.169  1.00 17.54
N
ATOM   781  CA  GLN A 143    -18.302  20.325 -38.124  1.00 18.55
C
ATOM   782  C   GLN A 143   -17.408  21.528 -37.839  1.00 21.09
C
ATOM   783  O   GLN A 143   -16.838  22.123 -38.756  1.00 15.66
O
ATOM   784  CB  GLN A 143    -18.842  20.393 -39.553  1.00 17.56
C
ATOM   785  CG  GLN A 143    -19.803  19.267 -39.896  1.00 20.23
C
ATOM   786  CD  GLN A 143    -20.459  19.445 -41.251  1.00 20.71
C
ATOM   787  OE1 GLN A 143    -21.171  20.425 -41.486  1.00 19.03
O
ATOM   788  NE2 GLN A 143    -20.225  18.496 -42.152  1.00 18.38
N
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ATOM  7039  O   SER D 172    -31.747  48.846   3.927  1.00 33.60
O
ATOM  7040  CB  SER D 172    -32.246  51.240   1.650  1.00 33.37
C
ATOM  7041  OG  SER D 172    -30.837  51.125   1.737  1.00 30.18
O

ATOM  7042  H   SER D 172    -32.009  52.031   3.968  1.00 35.54          H
ATOM  7043  HA  SER D 172    -33.895  50.696   2.742  1.00 37.93
H
ATOM  7044  HB2 SER D 172    -32.552  50.761   0.864  1.00 40.04
H
ATOM  7045  HB3 SER D 172    -32.479  52.179   1.576  1.00 40.04
H
ATOM  7046  HG  SER D 172    -30.619  50.316   1.800  1.00 36.22
H

ATOM  7047  N   ILE D 173   -33.139  48.325   2.236  1.00 34.65          N

ATOM  7048  CA  ILE D 173    -32.919  46.889   2.352  1.00 35.81          C

ATOM  7049  C   ILE D 173   -31.672  46.444   1.600  1.00 32.48          C

ATOM  7050  O   ILE D 173   -31.201  47.117   0.676  1.00 25.43          O

ATOM  7051  CB  ILE D 173    -34.131  46.073   1.827  1.00 36.56          C
ATOM  7052  CG1 ILE D 173    -34.365  46.330   0.332  1.00 38.02
C
ATOM  7053  CG2 ILE D 173    -35.382  46.407   2.633  1.00 43.13
C
ATOM  7054  CD1 ILE D 173    -35.348  45.372  -0.303  1.00 40.93
C

ATOM  7055  H   ILE D 173   -33.671  48.548   1.598  1.00 41.58          H

ATOM  7056  HA  ILE D 173    -32.796  46.667   3.289  1.00 42.97          H

ATOM  7057  HB  ILE D 173    -33.936  45.130   1.945  1.00 43.88          H
ATOM  7058 HG12 ILE D 173    -34.713  47.229   0.220  1.00 45.63
H
ATOM  7059 HG13 ILE D 173    -33.521  46.243  -0.137  1.00 45.63
H
ATOM  7060 HG21 ILE D 173    -36.126  45.888   2.289  1.00 51.76
H
ATOM  7061 HG22 ILE D 173    -35.225  46.186   3.564  1.00 51.76
H
ATOM  7062 HG23 ILE D 173    -35.570  47.355   2.544  1.00 51.76
H
ATOM  7063 HD11 ILE D 173    -35.444  45.595  -1.242  1.00 49.11
H
ATOM  7064 HD12 ILE D 173    -35.010  44.467  -0.211  1.00 49.11
H
ATOM  7065 HD13 ILE D 173    -36.203  45.453   0.147  1.00 49.11
H


ATOM  7066  N   LEU D 174    -31.153  45.293   2.007  1.00 31.77          N
ATOM  7067  CA  LEU D 174    -30.037  44.657   1.330  1.00 27.52
C

ATOM  7068  C   LEU D 174    -30.557  43.827   0.166  1.00 25.72          C

ATOM  7069  O   LEU D 174    -31.252  42.838   0.374  1.00 30.63          O
ATOM  7070  CB  LEU D 174    -29.257  43.784   2.312  1.00 31.85
C
ATOM  7071  CG  LEU D 174    -28.071  42.986   1.764  1.00 33.37
C
ATOM  7072  CD1 LEU D 174    -27.043  43.905   1.129  1.00 26.92
C
ATOM  7073  CD2 LEU D 174    -27.441  42.169   2.880  1.00 26.89
C

ATOM  7074  H   LEU D 174    -31.438  44.853   2.688  1.00 38.12          H
ATOM  7075  HA  LEU D 174    -29.440  45.337   0.980  1.00 33.02
H
ATOM  7076  HB2 LEU D 174    -28.912  44.357   3.015  1.00 38.22
H
ATOM  7077  HB3 LEU D 174    -29.874  43.144   2.700  1.00 38.22
H
ATOM  7078  HG  LEU D 174    -28.389  42.372   1.084  1.00 40.04
H
ATOM  7079 HD11 LEU D 174    -26.307  43.370   0.793  1.00 32.31
H
ATOM  7080 HD12 LEU D 174    -27.461  44.389   0.400  1.00 32.31
H
ATOM  7081 HD13 LEU D 174    -26.721  44.528   1.799  1.00 32.31
H
ATOM  7082 HD21 LEU D 174    -26.692  41.669   2.521  1.00 32.27
H
ATOM  7083 HD22 LEU D 174    -27.134  42.771   3.577  1.00 32.27
H
ATOM  7084 HD23 LEU D 174    -28.105  41.559   3.239  1.00 32.27
H

ATOM  7085  N   SER D 175    -30.242  44.239  -1.058  1.00 27.73          N
ATOM  7086  CA  SER D 175    -30.653  43.479  -2.231  1.00 23.91
C

ATOM  7087  C   SER D 175    -30.187  42.029  -2.083  1.00 28.76          C
ATOM  7088  O   SER D 175    -28.991  41.786  -1.925  1.00 27.41
O
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ATOM   789  H   GLN A 143    -19.874  20.986 -37.134  1.00 21.05
H
ATOM   790  HA  GLN A 143    -17.765  19.521 -38.041  1.00 22.26
H
ATOM   791  HB2 GLN A 143    -19.314  21.232 -39.670  1.00 21.08
H
ATOM   792  HB3 GLN A 143    -18.096  20.345 -40.172  1.00 21.08
H
ATOM   793  HG2 GLN A 143    -19.315  18.428 -39.907  1.00 24.27
H
ATOM   794  HG3 GLN A 143    -20.503  19.234 -39.226  1.00 24.27
H
ATOM   795 HE21 GLN A 143    -20.574  18.552 -42.935  1.00 22.06
H
ATOM   796 HE22 GLN A 143    -19.724  17.827 -41.950  1.00 22.06
H
ATOM   797  N   ASP A 144    -17.288  21.876 -36.561  1.00 17.64
N
ATOM   798  CA  ASP A 144    -16.568  23.078 -36.157  1.00 19.87
C
ATOM   799  C   ASP A 144    -15.114  23.071 -36.621  1.00 19.55
C
ATOM   800  O   ASP A 144    -14.547  24.122 -36.920  1.00 19.43
O


ATOM   801  CB  ASP A 144    -16.632  23.247 -34.636  1.00 21.16
C
ATOM   802  CG  ASP A 144    -16.132  22.027 -33.882  1.00 25.44
C
ATOM   803  OD1 ASP A 144    -16.127  20.917 -34.455  1.00 24.83
O
ATOM   804  OD2 ASP A 144    -15.753  22.181 -32.702  1.00 30.53
O1-
ATOM   805  H   ASP A 144    -17.618  21.429 -35.904  1.00 21.16
H
ATOM   806  HA  ASP A 144    -17.001  23.848 -36.558  1.00 23.85
H
ATOM   807  HB2 ASP A 144    -16.081  24.004 -34.380  1.00 25.40
H
ATOM   808  HB3 ASP A 144    -17.552  23.405 -34.374  1.00 25.40
H
ATOM   809  N   LEU A 145    -14.516  21.891 -36.711  1.00 17.05
N
ATOM   810  CA  LEU A 145    -13.098  21.807 -37.047  1.00 17.13
C
ATOM   811  C   LEU A 145    -12.832  22.091 -38.531  1.00 17.51
C
ATOM   812  O   LEU A 145    -11.681  22.142 -38.963  1.00 18.01
O
ATOM   813  CB  LEU A 145    -12.549  20.442 -36.639  1.00 22.72
C
ATOM   814  CG  LEU A 145    -12.526  20.245 -35.115  1.00 27.83
C
ATOM   815  CD1 LEU A 145    -12.087  18.841 -34.761  1.00 30.89
C
ATOM   816  CD2 LEU A 145    -11.610  21.254 -34.415  1.00 26.54
C
ATOM   817  H   LEU A 145    -14.900  21.132 -36.585  1.00 20.46
H
ATOM   818  HA  LEU A 145    -12.621  22.478 -36.533  1.00 20.56
H
ATOM   819  HB2 LEU A 145    -13.109  19.748 -37.023  1.00 27.26
H
ATOM   820  HB3 LEU A 145    -11.641  20.355 -36.967  1.00 27.26
H
ATOM   821  HG  LEU A 145    -13.424  20.371 -34.770  1.00 33.39
H
ATOM   822 HD11 LEU A 145    -12.082  18.746 -33.795  1.00 37.07
H
ATOM   823 HD12 LEU A 145    -12.709  18.208 -35.152  1.00 37.07
H
ATOM   824 HD13 LEU A 145    -11.196  18.691 -35.113  1.00 37.07
H
ATOM   825 HD21 LEU A 145    -11.630  21.089 -33.459  1.00 31.85
H
ATOM   826 HD22 LEU A 145    -10.706  21.145 -34.750  1.00 31.85
H
ATOM   827 HD23 LEU A 145    -11.927  22.151 -34.602  1.00 31.85
H
ATOM   828  N   LEU A 146    -13.892  22.317 -39.300  1.00 14.54
N
ATOM   829  CA  LEU A 146    -13.741  22.812 -40.663  1.00 17.73
C
ATOM   830  C   LEU A 146    -13.100  24.200 -40.661  1.00 13.72
C
ATOM   831  O   LEU A 146    -12.574  24.650 -41.679  1.00 14.63
O
ATOM   832  CB  LEU A 146    -15.093  22.857 -41.382  1.00 16.27
C
ATOM   833  CG  LEU A 146    -15.734  21.525 -41.770  1.00 19.70
C
ATOM   834  CD1 LEU A 146    -17.090  21.764 -42.414  1.00 16.79
C
ATOM   835  CD2 LEU A 146    -14.839  20.740 -42.715  1.00 17.92
C


ATOM   836  H   LEU A 146    -14.708  22.193 -39.057  1.00 17.45
H
ATOM   837  HA  LEU A 146    -13.158  22.212 -41.155  1.00 21.28
H
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ATOM  7089  CB  SER D 175    -30.077  44.098  -3.505  1.00 26.73
C
ATOM  7090  OG  SER D 175    -30.445  43.344  -4.648  1.00 22.87
O

ATOM  7091  H   SER D 175    -29.793  44.951  -1.234  1.00 33.27           H
ATOM  7092  HA  SER D 175    -31.620  43.485  -2.297  1.00 28.69
H
ATOM  7093  HB2 SER D 175    -30.419  45.000  -3.600  1.00 32.07
H
ATOM  7094  HB3 SER D 175    -29.110  44.116  -3.438  1.00 32.07
H
ATOM  7095  HG  SER D 175    -30.123  43.694  -5.340  1.00 27.44
H
ATOM  7096  N   PRO D 176    -31.127  41.063  -2.098  1.00 25.88
N
ATOM  7097  CA  PRO D 176    -30.728  39.659  -1.923  1.00 27.19
C
ATOM  7098  C   PRO D 176    -29.657  39.204  -2.916  1.00 26.97
C
ATOM  7099  O   PRO D 176    -29.693  39.601  -4.079  1.00 27.85
O
ATOM  7100  CB  PRO D 176    -32.035  38.891  -2.155  1.00 23.99
C


ATOM  7101  CG  PRO D 176    -33.107  39.860  -1.828  1.00 25.30
C
ATOM  7102  CD  PRO D 176    -32.588  41.204  -2.234  1.00 25.95
C
ATOM  7103  HA  PRO D 176    -30.418  39.504  -1.017  1.00 32.63
H
ATOM  7104  HB2 PRO D 176    -32.092  38.614  -3.082  1.00 28.78
H
ATOM  7105  HB3 PRO D 176    -32.073  38.123  -1.563  1.00 28.78
H
ATOM  7106  HG2 PRO D 176    -33.907  39.638  -2.330  1.00 30.36
H
ATOM  7107  HG3 PRO D 176    -33.285  39.837  -0.875  1.00 30.36
H
ATOM  7108  HD2 PRO D 176    -32.825  41.393  -3.155  1.00 31.14
H
ATOM  7109  HD3 PRO D 176    -32.919  41.889  -1.633  1.00 31.14
H

ATOM  7110  N   ASN D 177    -28.715  38.392  -2.442  1.00 24.96           N
ATOM  7111  CA  ASN D 177    -27.667  37.810  -3.280  1.00 24.54
C

ATOM  7112  C   ASN D 177    -26.704  38.844  -3.866  1.00 29.77           C
ATOM  7113  O   ASN D 177    -26.083  38.603  -4.900  1.00 33.58
O
ATOM  7114  CB  ASN D 177    -28.291  36.990  -4.415  1.00 30.08
C
ATOM  7115  CG  ASN D 177    -29.188  35.884  -3.905  1.00 29.31
C
ATOM  7116  OD1 ASN D 177    -30.398  35.883  -4.142  1.00 27.98
O
ATOM  7117  ND2 ASN D 177    -28.598  34.933  -3.193  1.00 30.03
N

ATOM  7118  H   ASN D 177    -28.660  38.158  -1.616  1.00 29.95           H
ATOM  7119  HA  ASN D 177    -27.144  37.202  -2.735  1.00 29.44
H
ATOM  7120  HB2 ASN D 177    -28.825  37.576  -4.974  1.00 36.09
H
ATOM  7121  HB3 ASN D 177    -27.583  36.585  -4.940  1.00 36.09
H
ATOM  7122 HD21 ASN D 177    -29.062  34.281  -2.879  1.00 36.03
H
ATOM  7123 HD22 ASN D 177    -27.752  34.969  -3.046  1.00 36.03
H

ATOM  7124  N   LEU D 178    -26.577  39.988  -3.202  1.00 29.98           N
ATOM  7125  CA  LEU D 178    -25.592  40.989  -3.594  1.00 25.52
C

ATOM  7126  C   LEU D 178    -24.290  40.721  -2.851  1.00 26.67           C

ATOM  7127  O   LEU D 178    -23.228  40.588  -3.463  1.00 28.33           O
ATOM  7128  CB  LEU D 178    -26.098  42.400  -3.295  1.00 26.47
C
ATOM  7129  CG  LEU D 178    -25.654  43.482  -4.281  1.00 26.81
C
ATOM  7130  CD1 LEU D 178    -26.117  44.846  -3.805  1.00 26.04
C
ATOM  7131  CD2 LEU D 178    -24.150  43.470  -4.484  1.00 28.87
C

ATOM  7132  H   LEU D 178    -27.051  40.209  -2.520  1.00 35.97           H
ATOM  7133  HA  LEU D 178    -25.423  40.919  -4.546  1.00 30.62
H
ATOM  7134  HB2 LEU D 178    -27.068  42.385  -3.298  1.00 31.77
H
ATOM  7135  HB3 LEU D 178    -25.781  42.659  -2.416  1.00 31.77
H


ATOM  7136  HG  LEU D 178    -26.070  43.312  -5.141  1.00 32.18
H
ATOM  7137 HD11 LEU D 178    -25.727  45.025  -2.934  1.00 31.25
H
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ATOM   838  HB2 LEU A 146    -15.723  23.318 -40.806  1.00 19.52
H
ATOM   839  HB3 LEU A 146    -14.980  23.366 -42.200  1.00 19.52
H
ATOM   840  HG  LEU A 146    -15.869  20.992 -40.971  1.00 23.64
H
ATOM   841 HD11 LEU A 146    -17.481  20.909 -42.653  1.00 20.15
H
ATOM   842 HD12 LEU A 146    -17.663  22.224 -41.782  1.00 20.15
H
ATOM   843 HD13 LEU A 146    -16.970  22.307 -43.209  1.00 20.15
H
ATOM   844 HD21 LEU A 146    -15.275  19.903 -42.940  1.00 21.50
H
ATOM   845 HD22 LEU A 146    -14.692  21.264 -43.518  1.00 21.50
H
ATOM   846 HD23 LEU A 146    -13.992  20.565 -42.275  1.00 21.50
H
ATOM   847  N   LYS A 147   -13.140  24.875 -39.517  1.00 15.29
N
ATOM   848  CA  LYS A 147    -12.485  26.173 -39.360  1.00 18.16
C
ATOM   849  C   LYS A 147   -10.973  26.053 -39.545  1.00 16.32
C
ATOM   850  O   LYS A 147   -10.321  26.979 -40.029  1.00 15.57
O
ATOM   851  CB  LYS A 147    -12.798  26.763 -37.981  1.00 22.56
C
ATOM   852  CG  LYS A 147    -12.018  28.031 -37.645  1.00 33.54
C
ATOM   853  CD  LYS A 147    -12.430  28.588 -36.287  1.00 49.30
C
ATOM   854  CE  LYS A 147    -11.588  29.796 -35.894  1.00 57.42
C
ATOM   855  NZ  LYS A 147    -11.760  30.941 -36.829  1.00 59.81
N1+
ATOM   856  H   LYS A 147   -13.544  24.601 -38.808  1.00 18.35
H
ATOM   857  HA  LYS A 147    -12.824  26.783 -40.034  1.00 21.79
H
ATOM   858  HB2 LYS A 147    -13.742  26.980 -37.943  1.00 27.07
H
ATOM   859  HB3 LYS A 147    -12.587  26.100 -37.305  1.00 27.07
H
ATOM   860  HG2 LYS A 147    -11.070  27.826 -37.616  1.00 40.24
H
ATOM   861  HG3 LYS A 147    -12.197  28.705 -38.318  1.00 40.24
H
ATOM   862  HD2 LYS A 147    -13.359  28.864 -36.324  1.00 59.16
H
ATOM   863  HD3 LYS A 147    -12.310  27.902 -35.612  1.00 59.16
H
ATOM   864  HE2 LYS A 147    -11.851  30.089 -35.008  1.00 68.91
H
ATOM   865  HE3 LYS A 147    -10.652  29.543 -35.897  1.00 68.91
H
ATOM   866  HZ1 LYS A 147    -11.255  31.626 -36.567  1.00 71.78
H
ATOM   867  HZ2 LYS A 147    -11.519  30.701 -37.652  1.00 71.78
H
ATOM   868  HZ3 LYS A 147    -12.612  31.199 -36.841  1.00 71.78
H
ATOM   869  N   LEU A 148   -10.426  24.903 -39.166  1.00 13.11
N
ATOM   870  CA  LEU A 148    -8.984  24.680 -39.204  1.00 13.14
C


ATOM   871  C   LEU A 148    -8.491  24.075 -40.519  1.00 13.81
C
ATOM   872  O   LEU A 148    -7.296  23.812 -40.667  1.00 17.85
O
ATOM   873  CB  LEU A 148    -8.568  23.765 -38.052  1.00 15.95
C
ATOM   874  CG  LEU A 148    -8.725  24.317 -36.634  1.00 20.41
C
ATOM   875  CD1 LEU A 148    -8.325  23.250 -35.630  1.00 17.28
C
ATOM   876  CD2 LEU A 148    -7.903  25.578 -36.435  1.00 21.97
C
ATOM   877  H   LEU A 148   -10.875  24.228 -38.879  1.00 15.73
H
ATOM   878  HA  LEU A 148    -8.534  25.531 -39.084  1.00 15.77
H
ATOM   879  HB2 LEU A 148    -9.099  22.954 -38.103  1.00 19.14
H
ATOM   880  HB3 LEU A 148    -7.631  23.540 -38.169  1.00 19.14
H
ATOM   881  HG  LEU A 148   -9.657  24.538 -36.482  1.00 24.49
H
ATOM   882 HD11 LEU A 148    -8.427  23.607 -34.733  1.00 20.73
H
ATOM   883 HD12 LEU A 148    -8.898  22.477 -35.746  1.00 20.73
H
ATOM   884 HD13 LEU A 148    -7.400  23.003 -35.784  1.00 20.73
H
ATOM   885 HD21 LEU A 148    -8.028  25.897 -35.527  1.00 26.36
H
ATOM   886 HD22 LEU A 148    -6.967  25.372 -36.587  1.00 26.36
H
ATOM   887 HD23 LEU A 148    -8.200  26.252 -37.066  1.00 26.36
H
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ATOM  7138 HD12 LEU D 178    -25.826  45.518  -4.442  1.00 31.25
H
ATOM  7139 HD13 LEU D 178    -27.085  44.847  -3.741  1.00 31.25
H
ATOM  7140 HD21 LEU D 178    -23.910  44.168  -5.113  1.00 34.64
H
ATOM  7141 HD22 LEU D 178    -23.716  43.630  -3.631  1.00 34.64
H
ATOM  7142 HD23 LEU D 178    -23.885  42.605  -4.833  1.00 34.64
H

ATOM  7143  N   LEU D 179   -24.389  40.630  -1.528  1.00 19.13        N
ATOM  7144  CA  LEU D 179   -23.244  40.332  -0.679  1.00 21.55
C

ATOM  7145  C   LEU D 179   -23.321  38.920  -0.113  1.00 28.27        C

ATOM  7146  O   LEU D 179   -24.408  38.392   0.125  1.00 25.28        O
ATOM  7147  CB  LEU D 179   -23.155  41.335   0.469  1.00 22.39
C
ATOM  7148  CG  LEU D 179    -22.856  42.788   0.096  1.00 22.47
C
ATOM  7149  CD1 LEU D 179    -22.901  43.661   1.336  1.00 24.98
C
ATOM  7150  CD2 LEU D 179    -21.504  42.910  -0.586  1.00 23.45
C

ATOM  7151  H   LEU D 179   -25.123  40.739  -1.093  1.00 22.95        H
ATOM  7152  HA  LEU D 179   -22.432  40.403  -1.205  1.00 25.86
H
ATOM  7153  HB2 LEU D 179    -24.003  41.329   0.941  1.00 26.87
H
ATOM  7154  HB3 LEU D 179    -22.453  41.043   1.071  1.00 26.87
H
ATOM  7155  HG  LEU D 179    -23.535  43.104  -0.521  1.00 26.97
H
ATOM  7156 HD11 LEU D 179    -22.710  44.577   1.083  1.00 29.97
H
ATOM  7157 HD12 LEU D 179    -23.786  43.604   1.729  1.00 29.97
H
ATOM  7158 HD13 LEU D 179    -22.237  43.346   1.968  1.00 29.97
H
ATOM  7159 HD21 LEU D 179    -21.346  43.840  -0.809  1.00 28.13
H
ATOM  7160 HD22 LEU D 179    -20.816  42.593   0.020  1.00 28.13
H
ATOM  7161 HD23 LEU D 179    -21.508  42.372  -1.393  1.00 28.13
H

ATOM  7162  N   THR D 180   -22.153  38.316   0.088  1.00 19.72        N
ATOM  7163  CA  THR D 180   -22.040  37.069   0.827  1.00 19.71
C

ATOM  7164  C   THR D 180   -21.583  37.388   2.242  1.00 23.17        C
ATOM  7165  O   THR D 180   -20.446  37.813   2.455  1.00 23.15
O
ATOM  7166  CB  THR D 180    -21.059  36.099   0.154  1.00 23.54
C
ATOM  7167  OG1 THR D 180    -21.581  35.709  -1.122  1.00 25.00
O
ATOM  7168  CG2 THR D 180    -20.847  34.854   1.006  1.00 24.90
C

ATOM  7169  H   THR D 180   -21.401  38.616  -0.201  1.00 23.66        H
ATOM  7170  HA  THR D 180   -22.910  36.642   0.875  1.00 23.65
H


ATOM  7171  HB  THR D 180    -20.203  36.538   0.032  1.00 28.24
H
ATOM  7172  HG1 THR D 180    -21.682  36.386  -1.610  1.00 30.00
H
ATOM  7173 HG21 THR D 180    -20.225  34.253   0.566  1.00 29.88
H
ATOM  7174 HG22 THR D 180    -20.486  35.102   1.872  1.00 29.88
H
ATOM  7175 HG23 THR D 180    -21.691  34.394   1.137  1.00 29.88
H

ATOM  7176  N   ILE D 181   -22.478  37.187   3.204  1.00 22.44        N

ATOM  7177  CA  ILE D 181    -22.186  37.469   4.602  1.00 23.18        C

ATOM  7178  C   ILE D 181   -21.541  36.264   5.269  1.00 25.41        C

ATOM  7179  O   ILE D 181   -22.102  35.168   5.252  1.00 23.82        O

ATOM  7180  CB  ILE D 181   -23.459  37.851   5.386  1.00 25.11        C
ATOM  7181  CG1 ILE D 181   -24.171  39.037   4.725  1.00 25.99
C
ATOM  7182  CG2 ILE D 181    -23.116  38.174   6.841  1.00 32.01
C
ATOM  7183  CD1 ILE D 181   -23.360  40.323   4.695  1.00 29.24
C

ATOM  7184  H   ILE D 181   -23.271  36.883   3.069  1.00 26.93        H

ATOM  7185  HA  ILE D 181    -21.565  38.212   4.654  1.00 27.81        H

ATOM  7186  HB  ILE D 181    -24.062  37.091   5.377  1.00 30.13        H
ATOM  7187 HG12 ILE D 181    -24.382  38.800   3.809  1.00 31.19
H
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ATOM   888  N   VAL A 149    -9.396  23.849 -41.467  1.00 14.39
N
ATOM   889  CA  VAL A 149    -9.009  23.240 -42.738  1.00 13.95
C
ATOM   890  C   VAL A 149    -8.252  24.220 -43.624  1.00 15.01
C
ATOM   891  O   VAL A 149    -8.734  25.307 -43.936  1.00 13.43
O
ATOM   892  CB  VAL A 149   -10.234  22.703 -43.505  1.00 13.62
C
ATOM   893  CG1 VAL A 149    -9.869  22.333 -44.945  1.00 18.07
C
ATOM   894  CG2 VAL A 149   -10.796  21.498 -42.787  1.00 13.27
C
ATOM   895  H   VAL A 149   -10.233  24.036 -41.401  1.00 17.27
H
ATOM   896  HA  VAL A 149    -8.422  22.490 -42.557  1.00 16.74
H
ATOM   897  HB  VAL A 149   -10.920  23.388 -43.532  1.00 16.34
H
ATOM   898 HG11 VAL A 149   -10.661  22.000 -45.396  1.00 21.68
H
ATOM   899 HG12 VAL A 149    -9.537  23.123 -45.400  1.00 21.68
H
ATOM   900 HG13 VAL A 149    -9.184  21.646 -44.930  1.00 21.68
H
ATOM   901 HG21 VAL A 149   -11.566  21.169 -43.278  1.00 15.93
H
ATOM   902 HG22 VAL A 149   -10.113  20.811 -42.742  1.00 15.93
H
ATOM   903 HG23 VAL A 149   -11.062  21.760 -41.892  1.00 15.93
H
ATOM   904  N   LYS A 150    -7.063  23.797 -44.032  1.00 13.03
N
ATOM   905  CA  LYS A 150    -6.189  24.572 -44.898  1.00 14.72
C


ATOM   906  C   LYS A 150    -6.493  24.295 -46.366  1.00 13.85
C
ATOM   907  O   LYS A 150    -6.988  23.224 -46.705  1.00 15.19
O
ATOM   908  CB  LYS A 150    -4.730  24.229 -44.589  1.00 17.03
C
ATOM   909  CG  LYS A 150    -3.696  25.097 -45.282  1.00 16.21
C
ATOM   910  CD  LYS A 150    -2.302  24.647 -44.880  1.00 15.63
C
ATOM   911  CE  LYS A 150    -1.224  25.608 -45.344  1.00 20.81
C
ATOM   912  NZ  LYS A 150     0.121  25.154 -44.907  1.00 24.83
N1+
ATOM   913  H   LYS A 150    -6.729  23.036 -43.810  1.00 15.64
H
ATOM   914  HA  LYS A 150    -6.324  25.518 -44.730  1.00 17.66
H
ATOM   915  HB2 LYS A 150    -4.590  24.317 -43.633  1.00 20.44
H
ATOM   916  HB3 LYS A 150    -4.567  23.312 -44.857  1.00 20.44
H
ATOM   917  HG2 LYS A 150    -3.786  25.006 -46.243  1.00 19.45
H
ATOM   918  HG3 LYS A 150    -3.813  26.021 -45.013  1.00 19.45
H
ATOM   919  HD2 LYS A 150    -2.255  24.587 -43.913  1.00 18.76
H
ATOM   920  HD3 LYS A 150    -2.122  23.780 -45.276  1.00 18.76
H
ATOM   921  HE2 LYS A 150    -1.230  25.654 -46.313  1.00 24.98
H
ATOM   922  HE3 LYS A 150    -1.389  26.484 -44.964  1.00 24.98
H
ATOM   923  HZ1 LYS A 150     0.296  24.350 -45.246  1.00 29.79
H
ATOM   924  HZ2 LYS A 150     0.741  25.728 -45.186  1.00 29.79
H
ATOM   925  HZ3 LYS A 150     0.151  25.106 -44.018  1.00 29.79
H
ATOM   926  N   SER A 151    -6.191  25.271 -47.219  1.00 11.64
N
ATOM   927  CA  SER A 151    -6.340  25.146 -48.669  1.00 12.00
C
ATOM   928  C   SER A 151    -7.809  25.150 -49.090  1.00 15.77
C
ATOM   929  O   SER A 151    -8.698  25.423 -48.283  1.00 13.47
O
ATOM   930  CB  SER A 151    -5.657  23.875 -49.185  1.00 15.08
C
ATOM   931  OG  SER A 151    -5.545  23.900 -50.600  1.00 18.05
O
ATOM   932  H   SER A 151    -5.889  26.038 -46.975  1.00 13.97
H
ATOM   933  HA  SER A 151    -5.910  25.905 -49.092  1.00 14.40
H
ATOM   934  HB2 SER A 151    -4.769  23.815 -48.800  1.00 18.09
H
ATOM   935  HB3 SER A 151    -6.184  23.104 -48.924  1.00 18.09
H
ATOM   936  HG  SER A 151    -5.169  23.200 -50.871  1.00 21.66
H
ATOM   937  N   TYR A 152    -8.034  24.838 -50.363  1.00 15.37
N
ATOM   938  CA  TYR A 152    -9.332  24.985 -51.015  1.00 14.25
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ATOM  7188 HG13 ILE D 181   -24.990  39.218   5.213  1.00 31.19
H
ATOM  7189 HG21 ILE D 181   -23.930  38.411   7.312  1.00 38.41
H
ATOM  7190 HG22 ILE D 181   -22.71'  37.393   7.250  1.00 38.41
H
ATOM  7191 HG23 ILE D 181   -22.494  38.918   6.861  1.00 38.41
H
ATOM  7192 HD11 ILE D 181   -23.883  41.016   4.262  1.00 35.08
H
ATOM  7193 HD12 ILE D 181   -23.151  40.586   5.605  1.00 35.08
H
ATOM  7194 HD13 ILE D 181   -22.541  40.168   4.198  1.00 35.08
H

ATOM  7195  N   ILE D 182   -20.375  36.484   5.873  1.00 23.72           N

ATOM  7196  CA  ILE D 182   -19.615  35.416   6.521  1.00 22.37           C

ATOM  7197  C   ILE D 182   -19.531  35.640   8.024  1.00 22.69           C

ATOM  7198  O   ILE D 182   -19.146  36.717   8.478  1.00 17.58           O

ATOM  7199  CB  ILE D 182   -18.184  35.315   5.950  1.00 20.91           C
ATOM  7200  CG1 ILE D 182   -18.233  35.144   4.428  1.00 19.30
C
ATOM  7201  CG2 ILE D 182   -17.422  34.159   6.609  1.00 18.99
C
ATOM  7202  CD1 ILE D 182   -16.890  35.250   3.753  1.00 20.70
C

ATOM  7203  H   ILE D 182   -19.997  37.255   5.922  1.00 28.47           H

ATOM  7204  HA  ILE D 182   -20.062  34.569   6.366  1.00 26.85           H

ATOM  7205  HB  ILE D 182   -17.716  36.141   6.149  1.00 25.09           H


ATOM  7206 HG12 ILE D 182   -18.598  34.269   4.225  1.00 23.16
H
ATOM  7207 HG13 ILE D 182   -18.805  35.833   4.056  1.00 23.16
H
ATOM  7208 HG21 ILE D 182   -16.528  34.116   6.235  1.00 22.78
H
ATOM  7209 HG22 ILE D 182   -17.373  34.318   7.565  1.00 22.78
H
ATOM  7210 HG23 ILE D 182   -17.894  33.330   6.435  1.00 22.78
H
ATOM  7211 HD11 ILE D 182   -17.007  35.131   2.797  1.00 24.84
H
ATOM  7212 HD12 ILE D 182   -16.513  36.125   3.934  1.00 24.84
H
ATOM  7213 HD13 ILE D 182   -16.305  34.559   4.103  1.00 24.84
H

ATOM  7214  N   GLU D 183   -19.895  34.615   8.789  1.00 24.20           N
ATOM  7215  CA  GLU D 183   -19.788  34.661  10.241  1.00 26.38
C
ATOM  7216  C   GLU D 183   -18.337  34.472  10.651  1.00 31.18
C
ATOM  7217  O   GLU D 183   -17.673  33.538  10.205  1.00 29.96
O
ATOM  7218  CB  GLU D 183   -20.662  33.587  10.888  1.00 35.36
C
ATOM  7219  CG  GLU D 183   -22.150  33.765  10.648  1.00 46.80
C
ATOM  7220  CD  GLU D 183   -22.982  32.679  11.304  1.00 73.69
C
ATOM  7221  OE1 GLU D 183   -22.398  31.680  11.776  1.00 79.19
O
ATOM  7222  OE2 GLU D 183   -24.222  32.825  11.351  1.00 81.50
O1-

ATOM  7223  H   GLU D 183   -20.210  33.874   8.486  1.00 29.04           H
ATOM  7224  HA  GLU D 183   -20.085  35.529  10.557  1.00 31.66
H
ATOM  7225  HB2 GLU D 183   -20.407  32.722  10.531  1.00 42.43
H
ATOM  7226  HB3 GLU D 183   -20.514  33.602  11.847  1.00 42.43
H
ATOM  7227  HG2 GLU D 183   -22.430  34.619  11.013  1.00 56.15
H
ATOM  7228  HG3 GLU D 183   -22.322  33.739   9.694  1.00 56.15
H
ATOM  7229  N   MET D 184   -17.846  35.363  11.502  1.00 30.31
N
ATOM  7230  CA  MET D 184   -16.458  35.313  11.938  1.00 29.78
C
ATOM  7231  C   MET D 184   -16.376  35.603  13.430  1.00 35.79
C
ATOM  7232  O   MET D 184   -16.026  34.731  14.229  1.00 37.59
O
ATOM  7233  CB  MET D 184   -15.621  36.315  11.147  1.00 27.05
C
ATOM  7234  CG  MET D 184   -14.138  36.253  11.442  1.00 26.53
C
ATOM  7235  SD  MET D 184   -13.261  37.651  10.735  1.00 30.02
S
ATOM  7236  CE  MET D 184   -13.846  38.985  11.783  1.00 31.51
C
ATOM  7237  H   MET D 184   -18.299  36.010  11.843  1.00 36.37
H
ATOM  7238  HA  MET D 184   -16.104  34.426  11.768  1.00 35.73
```

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C
ATOM   939  C   TYR A 152    -9.729  23.674 -51.687  1.00 16.05
C
ATOM   940  O   TYR A 152    -8.929  23.071 -52.401  1.00 15.60
O


ATOM   941  CB  TYR A 152    -9.270  26.138 -52.025  1.00 15.37
C
ATOM   942  CG  TYR A 152    -8.986  27.455 -51.343  1.00 16.48
C
ATOM   943  CD1 TYR A 152    -7.721  27.747 -50.853  1.00 14.01
C
ATOM   944  CD2 TYR A 152    -9.991  28.393 -51.161  1.00 18.15
C
ATOM   945  CE1 TYR A 152    -7.464  28.935 -50.202  1.00 15.58
C
ATOM   946  CE2 TYR A 152    -9.745  29.584 -50.511  1.00 16.03
C
ATOM   947  CZ  TYR A 152    -8.480  29.850 -50.032  1.00 17.68
C
ATOM   948  OH  TYR A 152    -8.237  31.038 -49.385  1.00 16.49
O
ATOM   949  H   TYR A 152    -7.428  24.528 -50.888  1.00 18.44
H
ATOM   950  HA  TYR A 152   -10.003  25.200 -50.348  1.00 17.09
H
ATOM   951  HB2 TYR A 152    -8.560  25.967 -52.663  1.00 18.44
H
ATOM   952  HB3 TYR A 152   -10.123  26.210 -52.482  1.00 18.44
H
ATOM   953  HD1 TYR A 152    -7.036  27.127 -50.958  1.00 16.82
H
ATOM   954  HD2 TYR A 152   -10.847  28.212 -51.474  1.00 21.78
H
ATOM   955  HE1 TYR A 152    -6.611  29.117 -49.879  1.00 18.70
H
ATOM   956  HE2 TYR A 152   -10.428  30.204 -50.396  1.00 19.23
H
ATOM   957  HH  TYR A 152    -8.940  31.496 -49.353  1.00 19.79
H
ATOM   958  N   HIS A 153   -10.959  23.228 -51.441  1.00 16.84
N
ATOM   959  CA  HIS A 153   -11.394  21.895 -51.859  1.00 17.66
C
ATOM   960  C   HIS A 153   -12.829  21.891 -52.367  1.00 16.44
C
ATOM   961  O   HIS A 153   -13.682  22.586 -51.821  1.00 13.76
O
ATOM   962  CB  HIS A 153   -11.271  20.913 -50.690  1.00 13.32
C
ATOM   963  CG  HIS A 153   -10.048  21.124 -49.856  1.00 19.37
C
ATOM   964  ND1 HIS A 153    -8.865  20.454 -50.086  1.00 19.53
N
ATOM   965  CD2 HIS A 153    -9.819  21.941 -48.801  1.00 16.93
C
ATOM   966  CE1 HIS A 153    -7.963  20.843 -49.203  1.00 16.06
C
ATOM   967  NE2 HIS A 153    -8.516  21.746 -48.413  1.00 15.08
N
ATOM   968  H   HIS A 153   -11.565  23.680 -51.031  1.00 20.20
H
ATOM   969  HA  HIS A 153   -10.819  21.584 -52.576  1.00 21.19
H
ATOM   970  HB2 HIS A 153   -12.044  21.015 -50.113  1.00 15.98
H
ATOM   971  HB3 HIS A 153   -11.239  20.010 -51.041  1.00 15.98
H
ATOM   972  HD1 HIS A 153    -8.736  19.870 -50.705  1.00 23.43
H
ATOM   973  HD2 HIS A 153   -10.430  22.523 -48.411  1.00 20.31
H
ATOM   974  HE1 HIS A 153    -7.087  20.535 -49.149  1.00 19.27
H
ATOM   975  HE2 HIS A 153    -8.124  22.146 -47.760  1.00 18.09
H


ATOM   976  N   TRP A 154   -13.094  21.106 -53.409  1.00 16.17
N
ATOM   977  CA  TRP A 154   -14.461  20.939 -53.897  1.00 16.21
C
ATOM   978  C   TRP A 154   -15.351  20.404 -52.787  1.00 14.86
C
ATOM   979  O   TRP A 154   -14.984  19.458 -52.093  1.00 13.34
O
ATOM   980  CB  TRP A 154   -14.523  19.976 -55.092  1.00 15.43
C
ATOM   981  CG  TRP A 154   -14.018  20.527 -56.390  1.00 17.31
C
ATOM   982  CD1 TRP A 154   -13.089  19.957 -57.210  1.00 18.38
C
ATOM   983  CD2 TRP A 154   -14.421  21.746 -57.029  1.00 22.30
C
ATOM   984  NE1 TRP A 154   -12.884  20.744 -58.317  1.00 20.02
N
ATOM   985  CE2 TRP A 154   -13.687  21.850 -58.230  1.00 22.60
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H
ATOM  7239  HB2 MET D 184   -15.741  36.142  10.200  1.00 32.46
H
ATOM  7240  HB3 MET D 184   -15.927  37.211  11.357  1.00 32.46
H


ATOM  7241  HG2 MET D 184   -14.002  36.265  12.403  1.00 31.83
H
ATOM  7242  HG3 MET D 184   -13.770  35.441  11.062  1.00 31.83
H
ATOM  7243  HE1 MET D 184   -13.435  39.816  11.496  1.00 37.82
H
ATOM  7244  HE2 MET D 184   -14.811  39.049  11.703  1.00 37.82
H
ATOM  7245  HE3 MET D 184   -13.602  38.795  12.702  1.00 37.82
H
ATOM  7246  N   GLN D 185   -16.705  36.837  13.791  1.00 33.99
N
ATOM  7247  CA  GLN D 185   -16.777  37.246  15.185  1.00 37.58
C
ATOM  7248  C   GLN D 185   -18.202  37.678  15.488  1.00 40.84
C
ATOM  7249  O   GLN D 185   -18.821  38.383  14.691  1.00 36.32
O
ATOM  7250  CB  GLN D 185   -15.797  38.383  15.470  1.00 40.17
C
ATOM  7251  CG  GLN D 185   -15.634  38.706  16.944  1.00 46.92
C
ATOM  7252  CD  GLN D 185   -14.883  37.625  17.695  1.00 55.70
C
ATOM  7253  OE1 GLN D 185   -13.773  37.249  17.317  1.00 53.14
O
ATOM  7254  NE2 GLN D 185   -15.487  37.116  18.763  1.00 59.98
N
ATOM  7255  H   GLN D 185   -16.894  37.467  13.236  1.00 40.79
H
ATOM  7256  HA  GLN D 185   -16.554  36.495  15.756  1.00 45.09
H
ATOM  7257  HB2 GLN D 185   -14.925  38.137  15.124  1.00 48.21
H
ATOM  7258  HB3 GLN D 185   -16.111  39.185  15.025  1.00 48.21
H
ATOM  7259  HG2 GLN D 185   -15.139  39.535  17.034  1.00 56.30
H
ATOM  7260  HG3 GLN D 185   -16.512  38.797  17.347  1.00 56.30
H
ATOM  7261 HE21 GLN D 185   -15.101  36.500  19.222  1.00 71.97
H
ATOM  7262 HE22 GLN D 185   -16.264  37.402  18.995  1.00 71.97
H
ATOM  7263  N   LYS D 186   -18.723  37.242  16.631  1.00 46.47
N
ATOM  7264  CA  LYS D 186   -20.057  37.639  17.061  1.00 45.40
C
ATOM  7265  C   LYS D 186   -20.143  39.158  17.171  1.00 39.69
C
ATOM  7266  O   LYS D 186   -19.414  39.777  17.947  1.00 41.64
O
ATOM  7267  CB  LYS D 186   -20.405  36.981  18.398  1.00 51.52
C
ATOM  7268  CG  LYS D 186   -20.680  35.489  18.289  1.00 65.11
C
ATOM  7269  CD  LYS D 186   -19.861  34.683  19.288  1.00 84.25
C
ATOM  7270  CE  LYS D 186   -20.168  33.195  19.180  1.00 86.61
C
ATOM  7271  NZ  LYS D 186   -18.935  32.360  19.163  1.00 76.57
N1+
ATOM  7272  H   LYS D 186   -18.321  36.712  17.176  1.00 55.77
H
ATOM  7273  HA  LYS D 186   -20.705  37.346  16.402  1.00 54.47
H
ATOM  7274  HB2 LYS D 186   -19.662  37.103  19.010  1.00 61.82
H
ATOM  7275  HB3 LYS D 186   -21.200  37.405  18.758  1.00 61.82
H


ATOM  7276  HG2 LYS D 186   -21.619  35.325  18.466  1.00 78.14
H
ATOM  7277  HG3 LYS D 186   -20.450  35.188  17.397  1.00 78.14
H
ATOM  7278  HD2 LYS D 186   -18.917  34.814  19.108  1.00101.10
H
ATOM  7279  HD3 LYS D 186   -20.076  34.975  20.188  1.00101.10
H
ATOM  7280  HE2 LYS D 186   -20.703  32.926  19.943  1.00103.94
H
ATOM  7281  HE3 LYS D 186   -20.654  33.031  18.357  1.00103.94
H
ATOM  7282  HZ1 LYS D 186   -19.151  31.500  19.100  1.00 91.88
H
ATOM  7283  HZ2 LYS D 186   -18.426  32.583  18.467  1.00 91.88
H
ATOM  7284  HZ3 LYS D 186   -18.471  32.488  19.912  1.00 91.88
H
ATOM  7285  N   GLY D 187   -21.027  39.755  16.379  1.00 38.31
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C
ATOM   986  CE3 TRP A 154    -15.326  22.761 -56.702  1.00 18.30
C
ATOM   987  CZ2 TRP A 154    -13.831  22.927 -59.104  1.00 22.55
C
ATOM   988  CZ3 TRP A 154    -15.464  23.831 -57.568  1.00 19.05
C
ATOM   989  CH2 TRP A 154    -14.723  23.904 -58.757  1.00 23.40
C
ATOM   990  H   TRP A 154   -12.504  20.661 -53.848  1.00 19.40
H
ATOM   991  HA  TRP A 154    -14.808  21.799 -54.179  1.00 19.45
H
ATOM   992  HB2 TRP A 154    -13.992  19.192 -54.882  1.00 18.52
H
ATOM   993  HB3 TRP A 154    -15.447  19.714 -55.226  1.00 18.52
H
ATOM   994  HD1 TRP A 154    -12.657  19.150 -57.044  1.00 22.06
H
ATOM   995  HE1 TRP A 154    -12.338  20.572 -58.959  1.00 24.02
H
ATOM   996  HE3 TRP A 154    -15.821  22.720 -55.916  1.00 21.96
H
ATOM   997  HZ2 TRP A 154    -13.339  22.979 -59.891  1.00 27.07
H
ATOM   998  HZ3 TRP A 154    -16.064  24.511 -57.361  1.00 22.86
H
ATOM   999  HH2 TRP A 154    -14.838  24.635 -59.321  1.00 28.08
H
ATOM  1000  N   MET A 155    -16.514  21.022 -52.612  1.00 17.17
N
ATOM  1001  CA  MET A 155    -17.553  20.465 -51.758  1.00 15.84
C
ATOM  1002  C   MET A 155    -18.796  20.242 -52.615  1.00 16.30
C
ATOM  1003  O   MET A 155    -18.784  20.513 -53.816  1.00 19.47
O
ATOM  1004  CB  MET A 155    -17.852  21.382 -50.569  1.00 15.20
C
ATOM  1005  CG  MET A 155    -18.223  22.801 -50.940  1.00 12.06
C
ATOM  1006  SD  MET A 155    -18.683  23.761 -49.486  1.00 15.98
S
ATOM  1007  CE  MET A 155    -18.393  25.415 -50.109  1.00 15.70
C
ATOM  1008  H   MET A 155    -16.726  21.770 -52.980  1.00 20.60
H
ATOM  1009  HA  MET A 155    -17.252  19.612 -51.410  1.00 19.01
H
ATOM  1010  HB2 MET A 155    -18.592  21.006 -50.068  1.00 18.23
H
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N
ATOM  7286  CA  GLY D 187    -21.164  41.200  16.353  1.00 35.66
C
ATOM  7287  C   GLY D 187    -22.311  41.654  15.477  1.00 29.40
C
ATOM  7288  O   GLY D 187    -22.977  40.839  14.843  1.00 28.79
O
ATOM  7289  H   GLY D 187    -21.560  39.342  15.845  1.00 45.97
H
ATOM  7290  HA2 GLY D 187    -21.318  41.526  17.254  1.00 42.79
H
ATOM  7291  HA3 GLY D 187    -20.345  41.596  16.018  1.00 42.79
H
ATOM  7292  N   ASP D 188    -22.528  42.966  15.435  1.00 30.44
N
ATOM  7293  CA  ASP D 188    -23.660  43.549  14.722  1.00 29.39
C
ATOM  7294  C   ASP D 188    -23.208  44.460  13.580  1.00 29.72
C
ATOM  7295  O   ASP D 188    -24.003  45.223  13.031  1.00 31.13
O
ATOM  7296  CB  ASP D 188    -24.540  44.327  15.705  1.00 37.77
C
ATOM  7297  CG  ASP D 188    -25.117  43.439  16.801  1.00 39.59
C
ATOM  7298  OD1 ASP D 188    -25.551  42.311  16.485  1.00 40.77
O
ATOM  7299  OD2 ASP D 188    -25.127  43.863  17.977  1.00 38.82
O1-
ATOM  7300  H   ASP D 188    -22.025  43.548  15.819  1.00 36.53
H
ATOM  7301  HA  ASP D 188    -24.195  42.835  14.341  1.00 35.27
H
ATOM  7302  HB2 ASP D 188    -24.007  45.019  16.128  1.00 45.33
H
ATOM  7303  HB3 ASP D 188    -25.280  44.726  15.221  1.00 45.33
H
ATOM  7304  N   CYS D 189    -21.928  44.372  13.230  1.00 29.33
N
ATOM  7305  CA  CYS D 189    -21.362  45.161  12.140  1.00 27.86
C
ATOM  7306  C   CYS D 189    -20.576  44.256  11.195  1.00 25.45
C
ATOM  7307  O   CYS D 189    -20.198  43.145  11.568  1.00 23.49
O
ATOM  7308  CB  CYS D 189    -20.468  46.272  12.692  1.00 28.54
C
ATOM  7309  SG  CYS D 189    -21.349  47.483  13.716  1.00 29.86
S
ATOM  7310  H   CYS D 189    -21.358  43.854  13.613  1.00 35.19
H
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ATOM  1011  HB3 MET A 155    -17.064  21.423 -50.005  1.00 18.23
H
ATOM  1012  HG2 MET A 155    -17.463  23.231 -51.362  1.00 14.47
H
ATOM  1013  HG3 MET A 155    -18.980  22.785 -51.547  1.00 14.47
H
ATOM  1014  HE1 MET A 155    -18.606  26.056 -49.412  1.00 18.84
H
ATOM  1015  HE2 MET A 155    -17.461  25.498 -50.362  1.00 18.84
H
ATOM  1016  HE3 MET A 155    -18.961  25.565 -50.881  1.00 18.84
H
ATOM  1017  N   GLY A 156   -19.859  19.739 -52.000  1.00 16.55
N
ATOM  1018  CA  GLY A 156    -21.008  19.259 -52.744  1.00 17.95
C
ATOM  1019  C   GLY A 156   -22.078  20.285 -53.069  1.00 23.68
C
ATOM  1020  O   GLY A 156   -23.217  19.911 -53.339  1.00 23.71
O
ATOM  1021  H   GLY A 156   -19.937  19.667 -51.147  1.00 19.86
H
ATOM  1022  HA2 GLY A 156    -20.698  18.882 -53.582  1.00 21.54
H
ATOM  1023  HA3 GLY A 156    -21.428  18.546 -52.237  1.00 21.54
H
ATOM  1024  N   LEU A 157   -21.732  21.569 -53.048  1.00 20.60
N
ATOM  1025  CA  LEU A 157    -22.694  22.607 -53.407  1.00 26.74
C
ATOM  1026  C   LEU A 157   -22.917  22.621 -54.914  1.00 32.20
C
ATOM  1027  O   LEU A 157   -21.984  22.421 -55.695  1.00 30.50
O
ATOM  1028  CB  LEU A 157    -22.230  23.992 -52.945  1.00 23.22
C
ATOM  1029  CG  LEU A 157    -22.516  24.455 -51.512  1.00 27.17
C
ATOM  1030  CD1 LEU A 157    -22.148  25.924 -51.377  1.00 29.03
C
ATOM  1031  CD2 LEU A 157    -23.963  24.244 -51.093  1.00 26.60
C
ATOM  1032  H   LEU A 157   -20.953  21.864 -52.831  1.00 24.72
H
ATOM  1033  HA  LEU A 157    -23.543  22.415 -52.978  1.00 32.08
H
ATOM  1034  HB2 LEU A 157    -21.268  24.030 -53.059  1.00 27.87
H
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ATOM  7311  HA  CYS D 189    -22.082  45.573  11.637  1.00 33.43
H
ATOM  7312  HB2 CYS D 189    -19.773  45.872  13.238  1.00 34.24
H
ATOM  7313  HB3 CYS D 189    -20.067  46.749  11.948  1.00 34.24
H

ATOM  7314  N   ALA D 190   -20.337  44.731   9.975  1.00 22.91          N
ATOM  7315  CA  ALA D 190    -19.680  43.915   8.960  1.00 22.33
C

ATOM  7316  C   ALA D 190   -18.577  44.667   8.221  1.00 20.44          C

ATOM  7317  O   ALA D 190   -18.711  45.845   7.890  1.00 20.09          O
ATOM  7318  CB  ALA D 190    -20.702  43.395   7.971  1.00 21.39
C

ATOM  7319  H   ALA D 190   -20.546  45.522   9.710  1.00 27.50          H
ATOM  7320  HA  ALA D 190    -19.273  43.149   9.394  1.00 26.80
H
ATOM  7321  HB1 ALA D 190    -20.250  42.855   7.304  1.00 25.67
H
ATOM  7322  HB2 ALA D 190    -21.355  42.856   8.446  1.00 25.67
H
ATOM  7323  HB3 ALA D 190    -21.141  44.148   7.545  1.00 25.67
H

ATOM  7324  N   LEU D 191   -17.484  43.959   7.972  1.00 17.46          N
ATOM  7325  CA  LEU D 191    -16.381  44.479   7.183  1.00 17.75
C

ATOM  7326  C   LEU D 191   -16.573  44.087   5.727  1.00 15.67          C

ATOM  7327  O   LEU D 191   -16.806  42.915   5.429  1.00 16.92          O
ATOM  7328  CB  LEU D 191    -15.052  43.935   7.699  1.00 15.85
C
ATOM  7329  CG  LEU D 191    -14.674  44.331   9.125  1.00 17.91
C
ATOM  7330  CD1 LEU D 191    -13.616  43.387   9.665  1.00 17.38
C
ATOM  7331  CD2 LEU D 191    -14.181  45.770   9.157  1.00 16.48
C

ATOM  7332  H   LEU D 191   -17.356  43.157   8.256  1.00 20.95          H
ATOM  7333  HA  LEU D 191    -16.364  45.447   7.244  1.00 21.30
H
ATOM  7334  HB2 LEU D 191    -15.087  42.966   7.668  1.00 19.03
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ATOM   1035  HB3 LEU A 157    -22.639  24.647 -53.532  1.00 27.87
H
ATOM   1036  HG  LEU A 157    -21.954  23.951 -50.903  1.00 32.60
H
ATOM   1037 HD11 LEU A 157    -22.331  26.212 -50.469  1.00 34.83
H
ATOM   1038 HD12 LEU A 157    -21.205  26.033 -51.576  1.00 34.83
H
ATOM   1039 HD13 LEU A 157    -22.681  26.440 -52.002  1.00 34.83
H
ATOM   1040 HD21 LEU A 157    -24.076  24.556 -50.181  1.00 31.92
H
ATOM   1041 HD22 LEU A 157    -24.540  24.747 -51.689  1.00 31.92
H
ATOM   1042 HD23 LEU A 157    -24.173  23.299 -51.148  1.00 31.92
H
ATOM   1043  N   VAL A 158   -24.164  22.860 -55.306  1.00 35.94
N
ATOM   1044  CA  VAL A 158    -24.554  22.891 -56.709  1.00 35.15
C
ATOM   1045  C   VAL A 158   -25.361  24.154 -56.983  1.00 41.48
C


ATOM   1046  O   VAL A 158   -26.272  24.493 -56.226  1.00 36.73
O
ATOM   1047  CB  VAL A 158    -25.393  21.662 -57.097  1.00 38.21
C
ATOM   1048  CG1 VAL A 158    -25.423  21.504 -58.607  1.00 49.98
C
ATOM   1049  CG2 VAL A 158    -24.839  20.401 -56.443  1.00 39.33
C
ATOM   1050  H   VAL A 158   -24.816  23.011 -54.765  1.00 43.13
H
ATOM   1051  HA  VAL A 158    -23.759  22.908 -57.265  1.00 42.18
H
ATOM   1052  HB  VAL A 158    -26.303  21.787 -56.788  1.00 45.85
H
ATOM   1053 HG11 VAL A 158    -25.955  20.725 -58.832  1.00 59.98
H
ATOM   1054 HG12 VAL A 158    -25.816  22.299 -58.999  1.00 59.98
H
ATOM   1055 HG13 VAL A 158    -24.515  21.389 -58.930  1.00 59.98
H
ATOM   1056 HG21 VAL A 158    -25.386  19.644 -56.704  1.00 47.20
H
ATOM   1057 HG22 VAL A 158    -23.925  20.267 -56.739  1.00 47.20
H
ATOM   1058 HG23 VAL A 158    -24.863  20.510 -55.479  1.00 47.20
H
ATOM   1059  N   HIS A 159   -25.018  24.849 -58.062  1.00 40.87
N
ATOM   1060  CA  HIS A 159    -25.710  26.078 -58.427  1.00 49.33
C
ATOM   1061  C   HIS A 159   -26.895  25.782 -59.331  1.00 56.17
C
ATOM   1062  O   HIS A 159   -26.738  25.178 -60.390  1.00 50.22
O
ATOM   1063  CB  HIS A 159    -24.759  27.046 -59.131  1.00 49.48
C
ATOM   1064  CG  HIS A 159    -25.285  28.444 -59.229  1.00 56.01
C
ATOM   1065  ND1 HIS A 159    -24.876  29.324 -60.207  1.00 66.11
N
ATOM   1066  CD2 HIS A 159    -26.184  29.115 -58.470  1.00 57.64
C
ATOM   1067  CE1 HIS A 159    -25.502  30.477 -60.048  1.00 76.90
C
ATOM   1068  NE2 HIS A 159    -26.301  30.377 -59.001  1.00 68.99
N
ATOM   1069  H   HIS A 159   -24.386  24.629 -58.601  1.00 49.05
H
ATOM   1070  HA  HIS A 159    -26.041  26.509 -57.624  1.00 59.20
H
ATOM   1071  HB2 HIS A 159    -23.924  27.077 -58.639  1.00 59.38
H
ATOM   1072  HB3 HIS A 159    -24.598  26.726 -60.032  1.00 59.38
H
ATOM   1073  HD1 HIS A 159    -24.304  29.150 -60.825  1.00 79.33
H
ATOM   1074  HD2 HIS A 159    -26.637  28.784 -57.729  1.00 69.17
H
ATOM   1075  HE1 HIS A 159    -25.397  31.231 -60.582  1.00 92.28
H
ATOM   1076  HE2 HIS A 159    -26.811  31.000 -58.701  1.00 82.79
H
ATOM   1077  N   ILE A 160   -28.078  26.209 -58.904  1.00 63.42
N
ATOM   1078  CA  ILE A 160    -29.278  26.111 -59.725  1.00 74.82
C
ATOM   1079  C   ILE A 160   -29.379  27.349 -60.618  1.00 81.75
C
ATOM   1080  O   ILE A 160   -29.585  28.452 -60.113  1.00 78.84
O


ATOM   1081  CB  ILE A 160    -30.549  25.992 -58.859  1.00 74.40
C
ATOM   1082  CG1 ILE A 160    -30.450  24.786 -57.917  1.00 65.58
C
ATOM   1083  CG2 ILE A 160    -31.790  25.885 -59.736  1.00 81.67
C
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ATOM   7335  HB3 LEU D 191    -14.346  44.251   7.115  1.00 19.03
H
ATOM   7336  HG  LEU D 191    -15.458  44.265   9.693  1.00 21.50
H
ATOM   7337 HD11 LEU D 191    -13.388  43.652  10.569  1.00 20.86
H
ATOM   7338 HD12 LEU D 191    -13.969  42.483   9.664  1.00 20.86
H
ATOM   7339 HD13 LEU D 191    -12.830  43.436   9.097  1.00 20.86
H
ATOM   7340 HD21 LEU D 191    -13.946  46.003  10.069  1.00 19.78
H
ATOM   7341 HD22 LEU D 191    -13.402  45.850   8.584  1.00 19.78
H
ATOM   7342 HD23 LEU D 191    -14.888  46.353   8.838  1.00 19.78
H

ATOM   7343  N   TYR D 192   -16.495  45.052   4.819  1.00 15.37           N
ATOM   7344  CA  TYR D 192    -16.479  44.714   3.406  1.00 13.02
C

ATOM   7345  C   TYR D 192   -15.140  44.117   3.025  1.00 16.84           C



ATOM   7346  O   TYR D 192   -14.100  44.556   3.500  1.00 13.73           O
ATOM   7347  CB  TYR D 192    -16.737  45.919   2.500  1.00 14.04
C
ATOM   7348  CG  TYR D 192    -16.606  45.490   1.060  1.00 15.73
C
ATOM   7349  CD1 TYR D 192    -17.668  44.878   0.411  1.00 15.86
C
ATOM   7350  CD2 TYR D 192    -15.399  45.615   0.376  1.00 15.68
C
ATOM   7351  CE1 TYR D 192    -17.553  44.440  -0.884  1.00 16.16
C
ATOM   7352  CE2 TYR D 192    -15.272  45.172  -0.928  1.00 16.99
C
ATOM   7353  CZ  TYR D 192    -16.358  44.585  -1.552  1.00 18.72
C
ATOM   7354  OH  TYR D 192    -16.257  44.134  -2.845  1.00 20.02
O

ATOM   7355  H   TYR D 192   -16.451  45.893   4.992  1.00 18.45           H
ATOM   7356  HA  TYR D 192    -17.166  44.052   3.231  1.00 15.62
H
ATOM   7357  HB2 TYR D 192    -17.637  46.252   2.645  1.00 16.85
H
ATOM   7358  HB3 TYR D 192    -16.082  46.611   2.680  1.00 16.85
H
ATOM   7359  HD1 TYR D 192    -18.477  44.774   0.858  1.00 19.03
H
ATOM   7360  HD2 TYR D 192    -14.670  46.006   0.800  1.00 18.82
H
ATOM   7361  HE1 TYR D 192    -18.279  44.042  -1.308  1.00 19.40
H
ATOM   7362  HE2 TYR D 192    -14.466  45.270  -1.381  1.00 20.39
H
ATOM   7363  HH  TYR D 192    -15.484  44.279  -3.140  1.00 24.03
H

ATOM   7364  N   ALA D 193   -15.174  43.130   2.136  1.00 16.16           N
ATOM   7365  CA  ALA D 193    -13.962  42.620   1.512  1.00 15.91
C

ATOM   7366  C   ALA D 193   -14.293  41.994   0.167  1.00 17.11           C

ATOM   7367  O   ALA D 193   -15.458  41.709  -0.137  1.00 14.31           O
ATOM   7368  CB  ALA D 193    -13.279  41.614   2.413  1.00 17.57
C

ATOM   7369  H   ALA D 193   -15.894  42.736   1.876  1.00 19.39           H
ATOM   7370  HA  ALA D 193    -13.349  43.356   1.360  1.00 19.09
H
ATOM   7371  HB1 ALA D 193    -12.476  41.292   1.974  1.00 21.09
H
ATOM   7372  HB2 ALA D 193    -13.047  42.047   3.250  1.00 21.09
H
ATOM   7373  HB3 ALA D 193    -13.885  40.876   2.578  1.00 21.09
H

ATOM   7374  N   SER D 194   -13.261  41.795  -0.642  1.00 13.16           N
ATOM   7375  CA  SER D 194    -13.424  41.159  -1.940  1.00 19.38
C

ATOM   7376  C   SER D 194   -13.783  39.688  -1.736  1.00 15.86           C
ATOM   7377  O   SER D 194   -13.257  39.081  -0.811  1.00 17.79
O
ATOM   7378  CB  SER D 194    -12.134  41.288  -2.759  1.00 16.87
C
ATOM   7379  OG  SER D 194    -12.254  40.631  -4.006  1.00 19.40
O

ATOM   7380  H   SER D 194   -12.452  42.020  -0.461  1.00 15.79           H


ATOM   7381  HA  SER D 194    -14.144  41.590  -2.427  1.00 23.26
H
ATOM   7382  HB2 SER D 194    -11.953  42.228  -2.914  1.00 20.25
H
ATOM   7383  HB3 SER D 194    -11.404  40.888  -2.261  1.00 20.25
H
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ATOM   1084  CD1 ILE A 160    -30.357  23.442 -58.622  1.00 62.63
C
ATOM   1085  H   ILE A 160   -28.213  26.565 -58.132  1.00 76.11
H
ATOM   1086  HA  ILE A 160    -29.219  25.326 -60.292  1.00 89.78
H
ATOM   1087  HB  ILE A 160   -30.626  26.794 -58.319  1.00 89.28
H
ATOM   1088 HG12 ILE A 160    -29.657  24.886 -57.368  1.00 78.70
H
ATOM   1089 HG13 ILE A 160    -31.238  24.768 -57.352  1.00 78.70
H
ATOM   1090 HG21 ILE A 160    -32.573  25.811 -59.168  1.00 98.00
H
ATOM   1091 HG22 ILE A 160    -31.856  26.680 -60.288  1.00 98.00
H
ATOM   1092 HG23 ILE A 160    -31.713  25.097 -60.297  1.00 98.00
H
ATOM   1093 HD11 ILE A 160    -30.298  22.740 -57.955  1.00 75.15
H
ATOM   1094 HD12 ILE A 160    -31.150  23.316 -59.166  1.00 75.15
H
ATOM   1095 HD13 ILE A 160    -29.565  23.434 -59.182  1.00 75.15
H
ATOM   1096  N   PRO A 161   -29.227  27.178 -61.946  1.00 91.79
N
ATOM   1097  CA  PRO A 161    -29.299  28.358 -62.819  1.00 98.12
C
ATOM   1098  C   PRO A 161   -30.683  29.003 -62.824  1.00100.10
C
ATOM   1099  O   PRO A 161    -30.811  30.182 -63.157  1.00100.43
O
ATOM   1100  CB  PRO A 161    -28.959  27.797 -64.208  1.00103.41
C
ATOM   1101  CG  PRO A 161    -28.314  26.477 -63.957  1.00 98.76
C
ATOM   1102  CD  PRO A 161    -28.948  25.953 -62.715  1.00 93.32
C
ATOM   1103  HA  PRO A 161    -28.634  29.015 -62.561  1.00117.74
H
ATOM   1104  HB2 PRO A 161    -29.774  27.687 -64.723  1.00124.09
H
ATOM   1105  HB3 PRO A 161    -28.346  28.398 -64.660  1.00124.09
H
ATOM   1106  HG2 PRO A 161    -28.485  25.884 -64.705  1.00118.52
H
ATOM   1107  HG3 PRO A 161    -27.360  26.600 -63.829  1.00118.52
H
ATOM   1108  HD2 PRO A 161    -29.774  25.489 -62.925  1.00111.99
H
ATOM   1109  HD3 PRO A 161    -28.330  25.383 -62.232  1.00111.99
H
ATOM   1110  N   THR A 162   -31.699  28.227 -62.458  1.00100.32
N
ATOM   1111  CA  THR A 162    -33.074  28.712 -62.425  1.00102.58
C
ATOM   1112  C   THR A 162   -33.221  29.911 -61.488  1.00 98.89
C
ATOM   1113  O   THR A 162   -33.339  31.051 -61.940  1.00100.64
O
ATOM   1114  CB  THR A 162    -34.048  27.597 -61.978  1.00103.40
C
ATOM   1115  OG1 THR A 162    -33.897  26.454 -62.828  1.00102.81
O


ATOM   1116  CG2 THR A 162    -35.492  28.078 -62.034  1.00106.25
C
ATOM   1117  H   THR A 162   -31.616  27.405 -62.222  1.00120.38
H
ATOM   1118  HA  THR A 162    -33.331  28.995 -63.316  1.00123.09
H
ATOM   1119  HB  THR A 162    -33.847  27.345 -61.063  1.00124.08
H
ATOM   1120  HG1 THR A 162    -34.066  26.664 -63.624  1.00123.38
H
ATOM   1121 HG21 THR A 162    -36.089  27.368 -61.751  1.00127.50
H
ATOM   1122 HG22 THR A 162    -35.610  28.842 -61.447  1.00127.50
H
ATOM   1123 HG23 THR A 162    -35.719  28.339 -62.940  1.00127.50
H
ATOM   1124  N   ASN A 163   -33.204  29.643 -60.185  1.00 94.97
N
ATOM   1125  CA  ASN A 163    -33.435  30.674 -59.178  1.00 91.11
C
ATOM   1126  C   ASN A 163   -32.140  31.232 -58.589  1.00 85.58
C
ATOM   1127  O   ASN A 163   -32.171  32.030 -57.651  1.00 80.37
O
ATOM   1128  CB  ASN A 163    -34.319  30.117 -58.057  1.00 85.28
C
ATOM   1129  CG  ASN A 163    -33.748  28.858 -57.431  1.00 81.50
C
ATOM   1130  OD1 ASN A 163    -32.899  28.188 -58.018  1.00 80.62
O
ATOM   1131  ND2 ASN A 163    -34.221  28.525 -56.236  1.00 76.73
N
ATOM   1132  H   ASN A 163   -33.060  28.862 -59.856  1.00113.96
H
ATOM   1133  HA  ASN A 163    -33.912  31.411 -59.591  1.00109.34
H
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ATOM   7384  HG  SER D 194    -11.540  40.711  -4.442  1.00 23.28
H

ATOM   7385  N   SER D 195   -14.655  39.097  -2.558  1.00 16.08           N
ATOM   7386  CA  SER D 195    -15.382  39.753  -3.644  1.00 19.93
C

ATOM   7387  C   SER D 195   -16.864  39.846  -3.286  1.00 18.77           C
ATOM   7388  O   SER D 195   -17.570  38.835  -3.271  1.00 17.62
O
ATOM   7389  CB  SER D 195    -15.212  38.984  -4.953  1.00 17.02
C
ATOM   7390  OG  SER D 195    -15.833  39.680  -6.022  1.00 21.30
O

ATOM   7391  H   SER D 195   -14.851  38.262  -2.497  1.00 19.30           H
ATOM   7392  HA  SER D 195    -15.037  40.652  -3.768  1.00 23.92
H
ATOM   7393  HB2 SER D 195    -14.266  38.888  -5.144  1.00 20.43
H
ATOM   7394  HB3 SER D 195    -15.623  38.110  -4.863  1.00 20.43
H
ATOM   7395  HG  SER D 195    -15.736  39.252  -6.738  1.00 25.57
H

ATOM   7396  N   PHE D 196   -17.323  41.062  -3.010  1.00 16.50           N
ATOM   7397  CA  PHE D 196    -18.681  41.297  -2.521  1.00 18.66
C

ATOM   7398  C   PHE D 196   -18.989  40.392  -1.338  1.00 16.83           C
ATOM   7399  O   PHE D 196   -19.992  39.680  -1.320  1.00 17.38
O
ATOM   7400  CB  PHE D 196    -19.699  41.099  -3.646  1.00 16.78
C
ATOM   7401  CG  PHE D 196    -19.660  42.189  -4.674  1.00 18.16
C
ATOM   7402  CD1 PHE D 196    -18.851  42.083  -5.789  1.00 19.31
C
ATOM   7403  CD2 PHE D 196    -20.415  43.336  -4.509  1.00 23.49
C
ATOM   7404  CE1 PHE D 196    -18.805  43.095  -6.725  1.00 21.60
C
ATOM   7405  CE2 PHE D 196    -20.372  44.349  -5.443  1.00 21.99
C
ATOM   7406  CZ  PHE D 196    -19.567  44.230  -6.549  1.00 21.26
C

ATOM   7407  H   PHE D 196   -16.860  41.782  -3.098  1.00 19.80           H
ATOM   7408  HA  PHE D 196    -18.750  42.215  -2.218  1.00 22.39
H
ATOM   7409  HB2 PHE D 196    -19.513  40.259  -4.095  1.00 20.13
H
ATOM   7410  HB3 PHE D 196    -20.590  41.080  -3.264  1.00 20.13
H
ATOM   7411  HD1 PHE D 196    -18.334  41.320  -5.911  1.00 23.17
H
ATOM   7412  HD2 PHE D 196    -20.960  43.423  -3.761  1.00 28.18
H
ATOM   7413  HE1 PHE D 196    -18.261  43.011  -7.475  1.00 25.93
H
ATOM   7414  HE2 PHE D 196    -20.888  45.114  -5.323  1.00 26.39
H
ATOM   7415  HZ  PHE D 196    -19.540  44.911  -7.181  1.00 25.51
H


ATOM   7416  N   LYS D 197   -18.103  40.436  -0.351  1.00 14.08           N
ATOM   7417  CA  LYS D 197   -18.266  39.684   0.880  1.00 14.96
C

ATOM   7418  C   LYS D 197   -18.416  40.637   2.051  1.00 18.83           C

ATOM   7419  O   LYS D 197   -17.959  41.781   2.004  1.00 17.01           O
ATOM   7420  CB  LYS D 197    -17.076  38.744   1.114  1.00 17.88
C
ATOM   7421  CG  LYS D 197    -17.105  37.490   0.254  1.00 16.95
C
ATOM   7422  CD  LYS D 197    -15.837  36.661   0.414  1.00 18.84
C
ATOM   7423  CE  LYS D 197    -15.895  35.393  -0.433  1.00 17.58
C
ATOM   7424  NZ  LYS D 197    -14.589  34.675  -0.468  1.00 18.73
N1+

ATOM   7425  H   LYS D 197   -17.383  40.906  -0.373  1.00 16.90           H
ATOM   7426  HA  LYS D 197   -19.071  39.146   0.822  1.00 17.95
H
ATOM   7427  HB2 LYS D 197    -16.256  39.222   0.913  1.00 21.45
H
ATOM   7428  HB3 LYS D 197    -17.075  38.466   2.043  1.00 21.45
H
ATOM   7429  HG2 LYS D 197    -17.860  36.941   0.517  1.00 20.35
H
ATOM   7430  HG3 LYS D 197    -17.184  37.744  -0.678  1.00 20.35
H
ATOM   7431  HD2 LYS D 197    -15.073  37.185   0.128  1.00 22.61
H
ATOM   7432  HD3 LYS D 197    -15.738  36.402   1.344  1.00 22.61
H
ATOM   7433  HE2 LYS D 197    -16.559  34.792  -0.061  1.00 21.10
H
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ATOM   1134  HB2 ASN A 163     -34.404  30.787 -57.360  1.00102.34
H
ATOM   1135  HB3 ASN A 163     -35.192  29.903 -58.420  1.00102.34
H
ATOM   1136 HD21 ASN A 163     -33.930  27.820 -55.839  1.00 92.07
H
ATOM   1137 HD22 ASN A 163     -34.819  29.015 -55.858  1.00 92.07
H
ATOM   1138  N   GLY A 164   -31.005  30.815 -59.141  1.00 84.69
N
ATOM   1139  CA  GLY A 164    -29.712  31.301 -58.690  1.00 79.34
C
ATOM   1140  C   GLY A 164   -29.381  30.898 -57.264  1.00 74.41
C
ATOM   1141  O   GLY A 164   -28.510  31.495 -56.630  1.00 68.03
O
ATOM   1142  H   GLY A 164   -30.959  30.245 -59.784  1.00101.63
H
ATOM   1143  HA2 GLY A 164    -29.019  30.953 -59.273  1.00 95.20
H
ATOM   1144  HA3 GLY A 164    -29.698  32.269 -58.744  1.00 95.20
H
ATOM   1145  N   SER A 165   -30.073  29.880 -56.761  1.00 71.84
N
ATOM   1146  CA  SER A 165    -29.858  29.399 -55.402  1.00 60.50
C
ATOM   1147  C   SER A 165   -28.787  28.313 -55.373  1.00 53.12
C
ATOM   1148  O   SER A 165   -28.365  27.818 -56.418  1.00 52.63
O
ATOM   1149  CB  SER A 165    -31.163  28.861 -54.811  1.00 63.49
C
ATOM   1150  OG  SER A 165    -31.594  27.699 -55.498  1.00 66.50
O


ATOM   1151  H   SER A 165   -30.679  29.448 -57.192  1.00 86.21
H
ATOM   1152  HA  SER A 165    -29.556  30.135 -54.847  1.00 72.59
H
ATOM   1153  HB2 SER A 165    -31.018  28.639 -53.878  1.00 76.19
H
ATOM   1154  HB3 SER A 165    -31.848  29.544 -54.886  1.00 76.19
H
ATOM   1155  HG  SER A 165    -31.724  27.876 -56.309  1.00 79.80
H
ATOM   1156  N   TRP A 166   -28.355  27.956 -54.167  1.00 44.12
N
ATOM   1157  CA  TRP A 166    -27.377  26.893 -53.971  1.00 38.56
C
ATOM   1158  C   TRP A 166   -27.987  25.748 -53.173  1.00 36.68
C
ATOM   1159  O   TRP A 166   -28.722  25.969 -52.211  1.00 33.26
O
ATOM   1160  CB  TRP A 166    -26.135  27.424 -53.250  1.00 32.81
C
ATOM   1161  CG  TRP A 166    -25.290  28.347 -54.080  1.00 38.99
C
ATOM   1162  CD1 TRP A 166    -25.364  29.709 -54.125  1.00 41.82
C
ATOM   1163  CD2 TRP A 166    -24.237  27.973 -54.978  1.00 38.51
C
ATOM   1164  NE1 TRP A 166    -24.424  30.207 -54.996  1.00 39.58
N
ATOM   1165  CE2 TRP A 166    -23.720  29.162 -55.533  1.00 36.70
C
ATOM   1166  CE3 TRP A 166    -23.682  26.751 -55.366  1.00 35.41
C
ATOM   1167  CZ2 TRP A 166    -22.678  29.163 -56.458  1.00 35.25
C
ATOM   1168  CZ3 TRP A 166    -22.646  26.753 -56.282  1.00 32.08
C
ATOM   1169  CH2 TRP A 166    -22.154  27.952 -56.817  1.00 33.54
C
ATOM   1170  H   TRP A 166   -28.620  28.321 -53.435  1.00 52.94
H
ATOM   1171  HA  TRP A 166    -27.102  26.548 -54.835  1.00 46.28
H
ATOM   1172  HB2 TRP A 166    -26.418  27.912 -52.461  1.00 39.37
H
ATOM   1173  HB3 TRP A 166    -25.581  26.672 -52.989  1.00 39.37
H
ATOM   1174  HD1 TRP A 166    -25.964  30.226 -53.637  1.00 50.18
H
ATOM   1175  HE1 TRP A 166    -24.300  31.039 -55.177  1.00 47.49
H
ATOM   1176  HE3 TRP A 166    -24.003  25.951 -55.015  1.00 42.49
H
ATOM   1177  HZ2 TRP A 166    -22.348  29.956 -56.813  1.00 42.30
H
ATOM   1178  HZ3 TRP A 166    -22.270  25.946 -56.548  1.00 38.50
H
ATOM   1179  HH2 TRP A 166    -21.457  27.923 -57.432  1.00 40.24
H
ATOM   1180  N   GLN A 167   -27.678  24.524 -53.583  1.00 31.80
N
ATOM   1181  CA  GLN A 167    -28.116  23.343 -52.859  1.00 37.87
C
ATOM   1182  C   GLN A 167   -27.035  22.268 -52.901  1.00 26.79
C
ATOM   1183  O   GLN A 167   -26.107  22.337 -53.706  1.00 25.74
O
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ATOM   7434  HE3 LYS D 197     -16.132  35.630  -1.343  1.00 21.10
H
ATOM   7435  HZ1 LYS D 197     -14.658  33.943  -0.969  1.00 22.47
H
ATOM   7436  HZ2 LYS D 197     -13.961  35.204  -0.812  1.00 22.47
H
ATOM   7437  HZ3 LYS D 197     -14.350  34.440   0.356  1.00 22.47
H

ATOM   7438  N   GLY D 198   -19.080  40.155   3.094  1.00 20.04           N
ATOM   7439  CA  GLY D 198    -19.195  40.872   4.344  1.00 19.36
C

ATOM   7440  C   GLY D 198   -18.810  39.944   5.473  1.00 16.53           C

ATOM   7441  O   GLY D 198   -19.383  38.868   5.610  1.00 23.62           O

ATOM   7442  H   GLY D 198   -19.482  39.394   3.096  1.00 24.05           H
ATOM   7443  HA2 GLY D 198    -18.603  41.640   4.346  1.00 23.23
H
ATOM   7444  HA3 GLY D 198    -20.108  41.172   4.476  1.00 23.23
H

ATOM   7445  N   TYR D 199   -17.821  40.349   6.262  1.00 15.37           N
ATOM   7446  CA  TYR D 199    -17.404  39.590   7.436  1.00 16.35
C

ATOM   7447  C   TYR D 199   -17.961  40.233   8.696  1.00 19.39           C

ATOM   7448  O   TYR D 199   -17.670  41.391   8.988  1.00 22.65           O
ATOM   7449  CB  TYR D 199    -15.879  39.512   7.523  1.00 21.01
C
ATOM   7450  CG  TYR D 199    -15.236  38.665   6.450  1.00 15.07
C


ATOM   7451  CD1 TYR D 199    -15.126  39.129   5.146  1.00 19.90
C
ATOM   7452  CD2 TYR D 199    -14.730  37.408   6.742  1.00 17.60
C
ATOM   7453  CE1 TYR D 199    -14.536  38.361   4.162  1.00 14.62
C
ATOM   7454  CE2 TYR D 199    -14.134  36.631   5.763  1.00 18.84
C
ATOM   7455  CZ  TYR D 199    -14.039  37.115   4.476  1.00 15.72
C
ATOM   7456  OH  TYR D 199    -13.448  36.351   3.498  1.00 18.51
O

ATOM   7457  H   TYR D 199   -17.370  41.070   6.137  1.00 18.44           H
ATOM   7458  HA  TYR D 199    -17.753  38.687   7.375  1.00 19.62
H
ATOM   7459  HB2 TYR D 199    -15.517  40.409   7.447  1.00 25.22
H
ATOM   7460  HB3 TYR D 199    -15.636  39.133   8.383  1.00 25.22
H
ATOM   7461  HD1 TYR D 199    -15.459  39.970   4.930  1.00 23.88
H
ATOM   7462  HD2 TYR D 199    -14.792  37.081   7.611  1.00 21.12
H
ATOM   7463  HE1 TYR D 199    -14.470  38.685   3.293  1.00 17.55
H
ATOM   7464  HE2 TYR D 199    -13.799  35.789   5.973  1.00 22.61
H
ATOM   7465  HH  TYR D 199    -13.459  36.762   2.766  1.00 22.22
H

ATOM   7466  N   ILE D 200   -18.760  39.478   9.443  1.00 24.76           N
ATOM   7467  CA  ILE D 200    -19.354  39.983  10.674  1.00 23.61
C

ATOM   7468  C   ILE D 200   -18.272  40.156  11.733  1.00 26.05           C

ATOM   7469  O   ILE D 200   -17.486  39.242  11.981  1.00 24.51           O
ATOM   7470  CB  ILE D 200    -20.449  39.045  11.204  1.00 25.21
C
ATOM   7471  CG1 ILE D 200    -21.472  38.752  10.102  1.00 25.80
C
ATOM   7472  CG2 ILE D 200    -21.132  39.664  12.427  1.00 27.37
C
ATOM   7473  CD1 ILE D 200    -22.495  37.695  10.470  1.00 32.98
C

ATOM   7474  H   ILE D 200   -18.974  38.667   9.257  1.00 29.71           H
ATOM   7475  HA  ILE D 200    -19.753  40.850  10.504  1.00 28.33
H
ATOM   7476  HB  ILE D 200    -20.037  38.209  11.472  1.00 30.25
H
ATOM   7477 HG12 ILE D 200    -21.953  39.569   9.898  1.00 30.95
H
ATOM   7478 HG13 ILE D 200    -21.000  38.443   9.313  1.00 30.95
H
ATOM   7479 HG21 ILE D 200    -21.818  39.058  12.745  1.00 32.84
H
ATOM   7480 HG22 ILE D 200    -20.468  39.807  13.119  1.00 32.84
H
ATOM   7481 HG23 ILE D 200    -21.530  40.511  12.170  1.00 32.84
H
ATOM   7482 HD11 ILE D 200    -23.102  37.570   9.724  1.00 39.58
H
ATOM   7483 HD12 ILE D 200    -22.034  36.864  10.665  1.00 39.58
H
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ATOM  1184  CB  GLN A 167    -29.425  22.807 -53.444  1.00 40.72
C
ATOM  1185  CG  GLN A 167    -29.394  22.600 -54.947  1.00 46.08
C


ATOM  1186  CD  GLN A 167    -30.494  21.674 -55.428  1.00 45.10
C
ATOM  1187  OE1 GLN A 167    -30.226  20.635 -56.033  1.00 47.82
O
ATOM  1188  NE2 GLN A 167    -31.737  22.046 -55.162  1.00 41.89
N
ATOM  1189  H   GLN A 167    -27.212  24.352 -54.285  1.00 38.17
H
ATOM  1190  HA  GLN A 167    -28.273  23.578 -51.932  1.00 45.44
H
ATOM  1191  HB2 GLN A 167    -29.623  21.952 -53.032  1.00 48.87
H
ATOM  1192  HB3 GLN A 167    -30.135  23.438 -53.248  1.00 48.87
H
ATOM  1193  HG2 GLN A 167    -29.507  23.457 -55.387  1.00 55.29
H
ATOM  1194  HG3 GLN A 167    -28.541  22.209 -55.195  1.00 55.29
H
ATOM  1195 HE21 GLN A 167    -32.397  21.555 -55.414  1.00 50.26
H
ATOM  1196 HE22 GLN A 167    -31.885  22.779 -54.737  1.00 50.26
H
ATOM  1197  N   TRP A 168    -27.159  21.284 -52.019  1.00 29.00
N
ATOM  1198  CA  TRP A 168    -26.234  20.160 -51.988  1.00 25.20
C
ATOM  1199  C   TRP A 168    -26.642  19.126 -53.024  1.00 33.37
C
ATOM  1200  O   TRP A 168    -27.778  19.137 -53.500  1.00 26.70
O
ATOM  1201  CB  TRP A 168    -26.194  19.554 -50.590  1.00 25.54
C
ATOM  1202  CG  TRP A 168    -25.774  20.563 -49.587  1.00 26.46
C
ATOM  1203  CD1 TRP A 168    -26.564  21.196 -48.677  1.00 29.23
C
ATOM  1204  CD2 TRP A 168    -24.458  21.094 -49.417  1.00 24.51
C
ATOM  1205  NE1 TRP A 168    -25.818  22.082 -47.938  1.00 25.79
N
ATOM  1206  CE2 TRP A 168    -24.520  22.038 -48.376  1.00 20.96
C
ATOM  1207  CE3 TRP A 168    -23.231  20.858 -50.044  1.00 20.74
C
ATOM  1208  CZ2 TRP A 168    -23.402  22.746 -47.944  1.00 18.61
C
ATOM  1209  CZ3 TRP A 168    -22.122  21.558 -49.613  1.00 18.82
C
ATOM  1210  CH2 TRP A 168    -22.215  22.493 -48.573  1.00 19.65
C
ATOM  1211  H   TRP A 168    -27.777  21.244 -51.423  1.00 34.80
H
ATOM  1212  HA  TRP A 168    -25.343  20.474 -52.207  1.00 30.24
H
ATOM  1213  HB2 TRP A 168    -27.078  19.235 -50.351  1.00 30.65
H
ATOM  1214  HB3 TRP A 168    -25.556  18.823 -50.573  1.00 30.65
H
ATOM  1215  HD1 TRP A 168    -27.476  21.048 -48.569  1.00 35.07
H
ATOM  1216  HE1 TRP A 168    -26.116  22.582 -47.306  1.00 30.95
H
ATOM  1217  HE3 TRP A 168    -23.162  20.241 -50.736  1.00 24.89
H
ATOM  1218  HZ2 TRP A 168    -23.459  23.364 -47.251  1.00 22.33
H
ATOM  1219  HZ3 TRP A 168    -21.300  21.410 -50.023  1.00 22.59
H
ATOM  1220  HH2 TRP A 168    -21.451  22.949 -48.303  1.00 23.58
H


ATOM  1221  N   GLU A 169    -25.718  18.238 -53.379  1.00 30.13
N
ATOM  1222  CA  GLU A 169    -25.959  17.297 -54.468  1.00 31.20
C
ATOM  1223  C   GLU A 169    -27.056  16.293 -54.122  1.00 30.15
C
ATOM  1224  O   GLU A 169    -27.646  15.685 -55.013  1.00 35.52
O
ATOM  1225  CB  GLU A 169    -24.668  16.564 -54.842  1.00 34.22
C
ATOM  1226  CG  GLU A 169    -24.055  15.756 -53.726  1.00 30.07
C
ATOM  1227  CD  GLU A 169    -22.585  15.446 -53.980  1.00 32.91
C
ATOM  1228  OE1 GLU A 169    -22.224  15.153 -55.140  1.00 30.13
O
ATOM  1229  OE2 GLU A 169    -21.789  15.504 -53.021  1.00 27.40
O1-
ATOM  1230  H   GLU A 169    -24.947  18.160 -53.007  1.00 36.15
H
ATOM  1231  HA  GLU A 169    -26.252  17.794 -55.248  1.00 37.44
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ATOM  7484 HD13 ILE D 200    -22.988  37.992  11.251  1.00 39.58
H
ATOM  7485  N   GLU D 201    -18.251  41.329  12.359  1.00 25.97
N


ATOM  7486  CA  GLU D 201    -17.193  41.698  13.295  1.00 27.39
C
ATOM  7487  C   GLU D 201    -17.754  42.496  14.470  1.00 26.93
C
ATOM  7488  O   GLU D 201    -18.775  43.171  14.345  1.00 25.15
O
ATOM  7489  CB  GLU D 201    -16.114  42.507  12.562  1.00 22.39
C
ATOM  7490  CG  GLU D 201    -15.018  43.107  13.435  1.00 30.66
C
ATOM  7491  CD  GLU D 201    -14.139  42.058  14.079  1.00 34.67
C
ATOM  7492  OE1 GLU D 201    -12.954  41.963  13.696  1.00 37.53
O
ATOM  7493  OE2 GLU D 201    -14.628  41.333  14.970  1.00 42.28
O1-
ATOM  7494  H   GLU D 201    -18.849  41.939  12.256  1.00 31.16
H
ATOM  7495  HA  GLU D 201    -16.782  40.892  13.645  1.00 32.87
H
ATOM  7496  HB2 GLU D 201    -15.683  41.926  11.916  1.00 26.87
H
ATOM  7497  HB3 GLU D 201    -16.546  43.241  12.097  1.00 26.87
H
ATOM  7498  HG2 GLU D 201    -14.454  43.675  12.887  1.00 36.80
H
ATOM  7499  HG3 GLU D 201    -15.428  43.629  14.142  1.00 36.80
H
ATOM  7500  N   ASN D 202    -17.082  42.406  15.611  1.00 31.13
N
ATOM  7501  CA  ASN D 202    -17.415  43.226  16.767  1.00 31.58
C
ATOM  7502  C   ASN D 202    -17.351  44.709  16.409  1.00 28.02
C
ATOM  7503  O   ASN D 202    -16.326  45.199  15.934  1.00 27.55
O
ATOM  7504  CB  ASN D 202    -16.463  42.920  17.926  1.00 33.82
C
ATOM  7505  CG  ASN D 202    -16.877  43.595  19.223  1.00 40.88
C
ATOM  7506  OD1 ASN D 202    -17.685  44.526  19.228  1.00 37.61
O
ATOM  7507  ND2 ASN D 202    -16.317  43.129  20.332  1.00 46.74
N
ATOM  7508  H   ASN D 202    -16.421  41.870  15.742  1.00 37.35
H
ATOM  7509  HA  ASN D 202    -18.318  43.022  17.055  1.00 37.89
H
ATOM  7510  HB2 ASN D 202    -16.449  41.962  18.078  1.00 40.59
H
ATOM  7511  HB3 ASN D 202    -15.574  43.232  17.695  1.00 40.59
H
ATOM  7512 HD21 ASN D 202    -16.516  43.476  21.094  1.00 56.09
H
ATOM  7513 HD22 ASN D 202    -15.754  42.479  20.290  1.00 56.09
H
ATOM  7514  N   CYS D 203    -18.448  45.418  16.648  1.00 31.67
N
ATOM  7515  CA  CYS D 203    -18.552  46.823  16.270  1.00 32.67
C
ATOM  7516  C   CYS D 203    -17.468  47.680  16.919  1.00 30.69
C
ATOM  7517  O   CYS D 203    -17.086  48.716  16.382  1.00 28.93
O
ATOM  7518  CB  CYS D 203    -19.932  47.370  16.639  1.00 28.67
C
ATOM  7519  SG  CYS D 203    -21.284  46.744  15.612  1.00 35.00
S
ATOM  7520  H   CYS D 203    -19.152  45.107  17.032  1.00 38.00
H


ATOM  7521  HA  CYS D 203    -18.451  46.896  15.308  1.00 39.21
H
ATOM  7522  HB2 CYS D 203    -20.125  47.130  17.559  1.00 34.41
H
ATOM  7523  HB3 CYS D 203    -19.917  48.336  16.550  1.00 34.41
H
ATOM  7524  N   SER D 204    -16.966  47.234  18.066  1.00 29.38
N
ATOM  7525  CA  SER D 204    -16.014  48.019  18.843  1.00 30.77
C
ATOM  7526  C   SER D 204    -14.590  47.917  18.316  1.00 28.07
C
ATOM  7527  O   SER D 204    -13.735  48.720  18.680  1.00 28.24
O
ATOM  7528  CB  SER D 204    -16.041  47.577  20.308  1.00 33.15
C
ATOM  7529  OG  SER D 204    -17.311  47.822  20.885  1.00 37.66
O
ATOM  7530  H   SER D 204    -17.163  46.474  18.418  1.00 35.26
H
ATOM  7531  HA  SER D 204    -16.277  48.952  18.809  1.00 36.93
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H
ATOM  1232  HB2 GLU A 169   -24.858  15.957 -55.574  1.00 41.07
H
ATOM  1233  HB3 GLU A 169   -24.011  17.219 -55.125  1.00 41.07
H
ATOM  1234  HG2 GLU A 169   -24.119  16.257 -52.898  1.00 36.08
H
ATOM  1235  HG3 GLU A 169   -24.531  14.914 -53.644  1.00 36.08
H
ATOM  1236  N   ASP A 170   -27.342  16.132 -52.834  1.00 31.34
N
ATOM  1237  CA  ASP A 170   -28.442  15.270 -52.412  1.00 30.16
C
ATOM  1238  C   ASP A 170   -29.781  15.998 -52.539  1.00 31.43
C
ATOM  1239  O   ASP A 170   -30.818  15.465 -52.124  1.00 29.59
O
ATOM  1240  CB  ASP A 170   -28.229  14.785 -50.974  1.00 32.21
C
ATOM  1241  CG  ASP A 170   -28.404  15.887 -49.939  1.00 31.98
C
ATOM  1242  OD1 ASP A 170   -28.531  17.071 -50.314  1.00 33.58
O
ATOM  1243  OD2 ASP A 170   -28.398  15.562 -48.733  1.00 27.25
O1-
ATOM  1244  H   ASP A 170   -26.918  16.508 -52.187  1.00 37.61
H
ATOM  1245  HA  ASP A 170   -28.470  14.491 -52.989  1.00 36.19
H
ATOM  1246  HB2 ASP A 170   -28.874  14.087 -50.779  1.00 38.65
H
ATOM  1247  HB3 ASP A 170   -27.328  14.435 -50.890  1.00 38.65
H
ATOM  1248  N   GLY A 171   -29.741  17.204 -53.098  1.00 35.35
N
ATOM  1249  CA  GLY A 171   -30.939  17.987 -53.336  1.00 37.34
C
ATOM  1250  C   GLY A 171   -31.329  18.850 -52.152  1.00 34.83
C
ATOM  1251  O   GLY A 171   -32.126  19.779 -52.294  1.00 36.63
O
ATOM  1252  H   GLY A 171   -29.017  17.594 -53.351  1.00 42.42
H
ATOM  1253  HA2 GLY A 171   -30.798  18.565 -54.102  1.00 44.81
H
ATOM  1254  HA3 GLY A 171   -31.678  17.390 -53.535  1.00 44.81
H
ATOM  1255  N   SER A 172   -30.760  18.555 -50.987  1.00 33.06
N

ATOM  1256  CA  SER A 172   -31.137  19.238 -49.752  1.00 34.83
C
ATOM  1257  C   SER A 172   -30.789  20.720 -49.789  1.00 39.00
C
ATOM  1258  O   SER A 172   -30.003  21.170 -50.623  1.00 36.04
O
ATOM  1259  CB  SER A 172   -30.454  18.589 -48.551  1.00 37.68
C
ATOM  1260  OG  SER A 172   -29.067  18.869 -48.560  1.00 31.69
O
ATOM  1261  H   SER A 172   -30.149  17.959 -50.883  1.00 39.68
H
ATOM  1262  HA  SER A 172   -32.096  19.160 -49.630  1.00 41.80
H
ATOM  1263  HB2 SER A 172   -30.844  18.943 -47.736  1.00 45.22
H
ATOM  1264  HB3 SER A 172   -30.584  17.629 -48.593  1.00 45.22
H
ATOM  1265  HG  SER A 172   -28.718  18.569 -49.263  1.00 38.03
H
ATOM  1266  N   ILE A 173   -31.374  21.467 -48.859  1.00 40.76
N
ATOM  1267  CA  ILE A 173   -31.214  22.915 -48.809  1.00 44.21
C
ATOM  1268  C   ILE A 173   -29.943  23.328 -48.070  1.00 35.14
C
ATOM  1269  O   ILE A 173   -29.563  22.716 -47.069  1.00 35.11
O
ATOM  1270  CB  ILE A 173   -32.431  23.587 -48.128  1.00 50.72
C
ATOM  1271  CG1 ILE A 173   -32.642  23.026 -46.711  1.00 49.11
C
ATOM  1272  CG2 ILE A 173   -33.678  23.388 -48.982  1.00 62.02
C
ATOM  1273  CD1 ILE A 173   -33.764  23.689 -45.932  1.00 53.43
C
ATOM  1274  H   ILE A 173   -31.876  21.153 -48.236  1.00 48.91
H
ATOM  1275  HA  ILE A 173   -31.154  23.254 -49.716  1.00 53.05
H
ATOM  1276  HB  ILE A 173   -32.256  24.538 -48.058  1.00 60.86
H
ATOM  1277 HG12 ILE A 173   -32.849  22.081 -46.779  1.00 58.93
H
ATOM  1278 HG13 ILE A 173   -31.822  23.145 -46.205  1.00 58.93
H
ATOM  1279 HG21 ILE A 173   -34.431  23.814 -48.543  1.00 74.42
H
ATOM  1280 HG22 ILE A 173   -33.532  23.790 -49.852  1.00 74.42
H

H
ATOM  7532  HB2 SER D 204   -15.851  46.627  20.355  1.00 39.78
H
ATOM  7533  HB3 SER D 204   -15.370  48.075  20.800  1.00 39.78
H
ATOM  7534  HG  SER D 204   -17.314  47.576  21.688  1.00 45.19
H
ATOM  7535  N   THR D 205   -14.331  46.924  17.472  1.00 31.36
N
ATOM  7536  CA  THR D 205   -12.979  46.684  16.975  1.00 30.91
C
ATOM  7537  C   THR D 205   -12.561  47.749  15.956  1.00 29.01
C
ATOM  7538  O   THR D 205   -13.268  47.974  14.975  1.00 28.55
O
ATOM  7539  CB  THR D 205   -12.869  45.296  16.324  1.00 34.84
C
ATOM  7540  OG1 THR D 205   -13.239  44.290  17.277  1.00 35.51
O
ATOM  7541  CG2 THR D 205   -11.447  45.032  15.835  1.00 30.24
C
ATOM  7542  H   THR D 205   -14.920  46.375  17.171  1.00 37.63
H
ATOM  7543  HA  THR D 205   -12.357  46.719  17.719  1.00 37.09
H
ATOM  7544  HB  THR D 205   -13.467  45.251  15.562  1.00 41.81
H
ATOM  7545  HG1 THR D 205   -13.181  43.529  16.928  1.00 42.61
H
ATOM  7546 HG21 THR D 205   -11.394  44.154  15.428  1.00 36.29
H
ATOM  7547 HG22 THR D 205   -11.193  45.700  15.179  1.00 36.29
H
ATOM  7548 HG23 THR D 205   -10.827  45.072  16.580  1.00 36.29
H
ATOM  7549  N   PRO D 206   -11.413  48.410  16.184  1.00 24.70
N
ATOM  7550  CA  PRO D 206   -10.936  49.381  15.192  1.00 29.16
C
ATOM  7551  C   PRO D 206   -10.597  48.762  13.834  1.00 29.75
C
ATOM  7552  O   PRO D 206    -9.898  47.749  13.760  1.00 25.31
O
ATOM  7553  CB  PRO D 206    -9.674  49.960  15.845  1.00 31.51
C
ATOM  7554  CG  PRO D 206    -9.855  49.738  17.291  1.00 28.53
C
ATOM  7555  CD  PRO D 206   -10.598  48.444  17.410  1.00 34.12
C

ATOM  7556  HA  PRO D 206   -11.589  50.088  15.070  1.00 34.99
H
ATOM  7557  HB2 PRO D 206    -8.892  49.488  15.520  1.00 37.81
H
ATOM  7558  HB3 PRO D 206    -9.610  50.908  15.648  1.00 37.81
H
ATOM  7559  HG2 PRO D 206    -8.988  49.676  17.721  1.00 34.23
H
ATOM  7560  HG3 PRO D 206   -10.372  50.466  17.669  1.00 34.23
H
ATOM  7561  HD2 PRO D 206    -9.978  47.698  17.426  1.00 40.94
H
ATOM  7562  HD3 PRO D 206   -11.167  48.452  18.195  1.00 40.94
H
ATOM  7563  N   ASN D 207   -11.101  49.384  12.772  1.00 27.98
N
ATOM  7564  CA  ASN D 207   -10.802  48.982  11.404  1.00 25.19
C
ATOM  7565  C   ASN D 207   -10.805  50.193  10.486  1.00 22.66
C
ATOM  7566  O   ASN D 207   -11.386  51.228  10.813  1.00 22.52
O
ATOM  7567  CB  ASN D 207   -11.816  47.951  10.899  1.00 21.57
C
ATOM  7568  CG  ASN D 207   -11.586  46.572  11.476  1.00 23.31
C
ATOM  7569  OD1 ASN D 207   -12.271  46.152  12.410  1.00 30.03
O
ATOM  7570  ND2 ASN D 207   -10.620  45.858  10.922  1.00 21.76
N
ATOM  7571  H   ASN D 207   -11.631  50.060  12.822  1.00 33.58
H
ATOM  7572  HA  ASN D 207    -9.919  48.579  11.374  1.00 30.23
H
ATOM  7573  HB2 ASN D 207   -12.708  48.237  11.150  1.00 25.88
H
ATOM  7574  HB3 ASN D 207   -11.748  47.888   9.933  1.00 25.88
H
ATOM  7575 HD21 ASN D 207   -10.448  45.067  11.213  1.00 26.11
H
ATOM  7576 HD22 ASN D 207   -10.163  46.185  10.270  1.00 26.11
H

ATOM  7577  N   THR D 208   -10.153  50.066   9.337  1.00 21.73           N
ATOM  7578  CA  THR D 208   -10.243  51.086   8.302  1.00 17.49
C

ATOM  7579  C   THR D 208   -11.686  51.128   7.807  1.00 18.74           C
ATOM  7580  O   THR D 208   -12.457  50.211   8.075  1.00 15.97
O
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ATOM   1281 HG23 ILE A 173    -33.845  22.438 -49.079  1.00 74.42
H
ATOM   1282 HD11 ILE A 173    -33.826  23.276 -45.056  1.00 64.11
H
ATOM   1283 HD12 ILE A 173    -33.568  24.634 -45.840  1.00 64.11
H
ATOM   1284 HD13 ILE A 173    -34.596  23.568 -46.415  1.00 64.11
H
ATOM   1285  N   LEU A 174   -29.284  24.363 -48.579  1.00 36.19
N
ATOM   1286  CA  LEU A 174    -28.194  25.002 -47.854  1.00 33.01
C
ATOM   1287  C   LEU A 174   -28.785  25.874 -46.762  1.00 25.23
C
ATOM   1288  O   LEU A 174   -29.378  26.910 -47.051  1.00 35.07
O
ATOM   1289  CB  LEU A 174    -27.317  25.839 -48.788  1.00 28.79
C
ATOM   1290  CG  LEU A 174    -26.268  26.722 -48.096  1.00 30.47
C


ATOM   1291  CD1 LEU A 174    -25.235  25.873 -47.369  1.00 28.59
C
ATOM   1292  CD2 LEU A 174    -25.593  27.650 -49.086  1.00 23.68
C
ATOM   1293  H   LEU A 174   -29.449  24.715 -49.346  1.00 43.42
H
ATOM   1294  HA  LEU A 174    -27.640  24.322 -47.438  1.00 39.62
H
ATOM   1295  HB2 LEU A 174    -26.843  25.238 -49.385  1.00 34.54
H
ATOM   1296  HB3 LEU A 174    -27.892  26.422 -49.307  1.00 34.54
H
ATOM   1297  HG  LEU A 174    -26.715  27.273 -47.434  1.00 36.57
H
ATOM   1298 HD11 LEU A 174    -24.589  26.458 -46.944  1.00 34.31
H
ATOM   1299 HD12 LEU A 174    -25.685  25.334 -46.699  1.00 34.31
H
ATOM   1300 HD13 LEU A 174    -24.790  25.299 -48.012  1.00 34.31
H
ATOM   1301 HD21 LEU A 174    -24.939  28.191 -48.616  1.00 28.42
H
ATOM   1302 HD22 LEU A 174    -25.154  27.119 -49.768  1.00 28.42
H
ATOM   1303 HD23 LEU A 174    -26.265  28.221 -49.492  1.00 28.42
H
ATOM   1304  N   SER A 175   -28.630  25.450 -45.513  1.00 30.51
N
ATOM   1305  CA  SER A 175    -29.152  26.205 -44.382  1.00 30.76
C
ATOM   1306  C   SER A 175   -28.581  27.619 -44.380  1.00 30.60
C
ATOM   1307  O   SER A 175   -27.416  27.820 -44.727  1.00 29.98
O
ATOM   1308  CB  SER A 175    -28.819  25.511 -43.063  1.00 29.16
C
ATOM   1309  OG  SER A 175    -29.013  24.111 -43.155  1.00 41.38
O
ATOM   1310  H   SER A 175   -28.224  24.724 -45.293  1.00 36.61
H
ATOM   1311  HA  SER A 175    -30.117  26.267 -44.458  1.00 36.91
H
ATOM   1312  HB2 SER A 175    -27.891  25.686 -42.842  1.00 35.00
H
ATOM   1313  HB3 SER A 175    -29.396  25.863 -42.368  1.00 35.00
H
ATOM   1314  HG  SER A 175    -28.825  23.746 -42.422  1.00 49.66
H
ATOM   1315  N   PRO A 176   -29.399  28.608 -43.989  1.00 27.59
N
ATOM   1316  CA  PRO A 176    -28.904  29.986 -43.961  1.00 27.04
C
ATOM   1317  C   PRO A 176   -27.802  30.194 -42.923  1.00 27.52
C
ATOM   1318  O   PRO A 176   -27.783  29.514 -41.898  1.00 28.41
O
ATOM   1319  CB  PRO A 176    -30.154  30.800 -43.603  1.00 27.57
C
ATOM   1320  CG  PRO A 176    -31.030  29.849 -42.883  1.00 31.89
C
ATOM   1321  CD  PRO A 176    -30.791  28.510 -43.515  1.00 24.67
C
ATOM   1322  HA  PRO A 176    -28.583  30.252 -44.837  1.00 32.45
H
ATOM   1323  HB2 PRO A 176    -29.908  31.544 -43.030  1.00 33.08
H
ATOM   1324  HB3 PRO A 176    -30.583  31.117 -44.414  1.00 33.08
H
ATOM   1325  HG2 PRO A 176    -30.787  29.831 -41.944  1.00 38.27
H


ATOM   1326  HG3 PRO A 176    -31.957  30.116 -42.990  1.00 38.27
H
ATOM   1327  HD2 PRO A 176    -30.876  27.804 -42.856  1.00 29.60
H
ATOM   1328  HD3 PRO A 176    -31.394  28.376 -44.262  1.00 29.60
H
ATOM   1329  N   ASN A 177   -26.890  31.117 -43.213  1.00 26.69
N
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ATOM   7581  CB  THR D 208    -9.287  50.797   7.138  1.00 18.70
C
ATOM   7582  OG1 THR D 208     -9.593  49.516   6.576  1.00 17.72
O
ATOM   7583  CG2 THR D 208     -7.842  50.802   7.622  1.00 23.48
C

ATOM   7584  H   THR D 208    -9.652  49.398   9.132  1.00 26.07          H
ATOM   7585  HA  THR D 208   -10.019  51.952   8.678  1.00 20.99
H
ATOM   7586  HB  THR D 208    -9.386  51.482   6.458  1.00 22.43
H
ATOM   7587  HG1 THR D 208     -9.072  49.351   5.937  1.00 21.26
H
ATOM   7588 HG21 THR D 208     -7.244  50.618   6.881  1.00 28.17
H
ATOM   7589 HG22 THR D 208     -7.622  51.668   7.999  1.00 28.17
H
ATOM   7590 HG23 THR D 208     -7.719  50.121   8.303  1.00 28.17
H


ATOM   7591  N   TYR D 209   -12.065  52.188   7.099  1.00 18.19          N
ATOM   7592  CA  TYR D 209   -13.438  52.291   6.614  1.00 18.43
C

ATOM   7593  C   TYR D 209   -13.528  53.013   5.280  1.00 18.76          C

ATOM   7594  O   TYR D 209   -12.606  53.722   4.865  1.00 18.98          O
ATOM   7595  CB  TYR D 209   -14.322  52.995   7.651  1.00 18.49
C
ATOM   7596  CG  TYR D 209   -13.825  54.355   8.083  1.00 19.96
C
ATOM   7597  CD1 TYR D 209    -12.821  54.477   9.032  1.00 23.84
C
ATOM   7598  CD2 TYR D 209    -14.367  55.516   7.550  1.00 21.18
C
ATOM   7599  CE1 TYR D 209    -12.364  55.717   9.433  1.00 23.52
C
ATOM   7600  CE2 TYR D 209    -13.918  56.763   7.947  1.00 23.67
C
ATOM   7601  CZ  TYR D 209   -12.914  56.856   8.887  1.00 25.34
C
ATOM   7602  OH  TYR D 209   -12.459  58.091   9.288  1.00 25.68
O

ATOM   7603  H   TYR D 209   -11.557  52.849   6.888  1.00 21.83          H
ATOM   7604  HA  TYR D 209   -13.789  51.396   6.487  1.00 22.12
H
ATOM   7605  HB2 TYR D 209    -15.209  53.112   7.275  1.00 22.19
H
ATOM   7606  HB3 TYR D 209    -14.375  52.437   8.443  1.00 22.19
H
ATOM   7607  HD1 TYR D 209    -12.446  53.711   9.401  1.00 28.60
H
ATOM   7608  HD2 TYR D 209    -15.043  55.455   6.914  1.00 25.42
H
ATOM   7609  HE1 TYR D 209    -11.688  55.783  10.068  1.00 28.22
H
ATOM   7610  HE2 TYR D 209    -14.288  57.533   7.579  1.00 28.40
H
ATOM   7611  HH  TYR D 209   -11.853  58.001   9.862  1.00 30.82
H

ATOM   7612  N   ILE D 210   -14.657  52.805   4.615  1.00 17.13          N

ATOM   7613  CA  ILE D 210    -14.930  53.405   3.322  1.00 15.89          C

ATOM   7614  C   ILE D 210   -16.147  54.297   3.433  1.00 16.38          C

ATOM   7615  O   ILE D 210   -17.221  53.836   3.825  1.00 16.32          O

ATOM   7616  CB  ILE D 210    -15.183  52.337   2.244  1.00 15.95          C
ATOM   7617  CG1 ILE D 210    -13.990  51.379   2.155  1.00 22.22
C
ATOM   7618  CG2 ILE D 210    -15.457  52.997   0.902  1.00 16.76
C
ATOM   7619  CD1 ILE D 210    -14.247  50.150   1.290  1.00 22.46
C

ATOM   7620  H   ILE D 210   -15.296  52.307   4.902  1.00 20.56          H

ATOM   7621  HA  ILE D 210    -14.173  53.947   3.049  1.00 19.06          H

ATOM   7622  HB  ILE D 210    -15.967  51.826   2.498  1.00 19.13          H
ATOM   7623 HG12 ILE D 210    -13.235  51.856   1.775  1.00 26.67
H
ATOM   7624 HG13 ILE D 210    -13.769  51.072   3.048  1.00 26.67
H
ATOM   7625 HG21 ILE D 210    -15.614  52.308   0.238  1.00 20.12
H


ATOM   7626 HG22 ILE D 210    -16.240  53.563   0.983  1.00 20.12
H
ATOM   7627 HG23 ILE D 210    -14.687  53.531   0.650  1.00 20.12
H
ATOM   7628 HD11 ILE D 210    -13.451  49.596   1.284  1.00 26.95
H
ATOM   7629 HD12 ILE D 210    -14.993  49.653   1.662  1.00 26.95
H
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ATOM   1330  CA  ASN A 177     -25.849  31.524 -42.273  1.00 28.90
C
ATOM   1331  C   ASN A 177    -24.926  30.384 -41.861  1.00 30.53
C
ATOM   1332  O   ASN A 177    -24.475  30.324 -40.719  1.00 37.62
O
ATOM   1333  CB  ASN A 177     -26.488  32.149 -41.034  1.00 32.10
C
ATOM   1334  CG  ASN A 177     -27.336  33.353 -41.374  1.00 27.74
C
ATOM   1335  OD1 ASN A 177     -26.880  34.275 -42.050  1.00 29.89
O
ATOM   1336  ND2 ASN A 177     -28.585  33.345 -40.927  1.00 27.40
N
ATOM   1337  H   ASN A 177    -26.853  31.532 -43.965  1.00 32.03
H
ATOM   1338  HA  ASN A 177     -25.302  32.204 -42.696  1.00 34.68
H
ATOM   1339  HB2 ASN A 177     -27.057  31.492 -40.604  1.00 38.52
H
ATOM   1340  HB3 ASN A 177     -25.789  32.435 -40.426  1.00 38.52
H
ATOM   1341 HD21 ASN A 177     -29.106  34.008 -41.095  1.00 32.88
H
ATOM   1342 HD22 ASN A 177     -28.873  32.676 -40.469  1.00 32.88
H
ATOM   1343  N   LEU A 178    -24.646  29.488 -42.802  1.00 23.55
N
ATOM   1344  CA  LEU A 178     -23.682  28.417 -42.587  1.00 26.07
C
ATOM   1345  C   LEU A 178    -22.392  28.718 -43.335  1.00 25.37
C
ATOM   1346  O   LEU A 178    -21.299  28.646 -42.771  1.00 26.43
O
ATOM   1347  CB  LEU A 178     -24.243  27.071 -43.052  1.00 27.18
C
ATOM   1348  CG  LEU A 178     -24.863  26.136 -42.012  1.00 31.75
C
ATOM   1349  CD1 LEU A 178     -25.286  24.847 -42.694  1.00 32.44
C
ATOM   1350  CD2 LEU A 178     -23.906  25.830 -40.869  1.00 27.31
C
ATOM   1351  H   LEU A 178    -25.006  29.479 -43.583  1.00 28.26
H
ATOM   1352  HA  LEU A 178     -23.478  28.353 -41.641  1.00 31.28
H
ATOM   1353  HB2 LEU A 178     -24.931  27.249 -43.712  1.00 32.62
H
ATOM   1354  HB3 LEU A 178     -23.522  26.579 -43.475  1.00 32.62
H
ATOM   1355  HG  LEU A 178     -25.655  26.555 -41.639  1.00 38.10
H
ATOM   1356 HD11 LEU A 178     -25.679  24.255 -42.034  1.00 38.93
H
ATOM   1357 HD12 LEU A 178     -25.937  25.054 -43.383  1.00 38.93
H
ATOM   1358 HD13 LEU A 178     -24.505  24.430 -43.091  1.00 38.93
H
ATOM   1359 HD21 LEU A 178     -24.345  25.236 -40.240  1.00 32.77
H
ATOM   1360 HD22 LEU A 178     -23.113  25.403 -41.228  1.00 32.77
H


ATOM   1361 HD23 LEU A 178     -23.665  26.660 -40.428  1.00 32.77
H
ATOM   1362  N   LEU A 179    -22.536  29.044 -44.614  1.00 21.47
N
ATOM   1363  CA  LEU A 179     -21.403  29.358 -45.471  1.00 22.73
C
ATOM   1364  C   LEU A 179    -21.496  30.785 -45.977  1.00 24.99
C
ATOM   1365  O   LEU A 179    -22.580  31.279 -46.292  1.00 21.88
O
ATOM   1366  CB  LEU A 179     -21.340  28.399 -46.660  1.00 20.75
C
ATOM   1367  CG  LEU A 179     -21.094  26.923 -46.352  1.00 20.55
C
ATOM   1368  CD1 LEU A 179     -21.138  26.111 -47.637  1.00 23.59
C
ATOM   1369  CD2 LEU A 179     -19.764  26.739 -45.650  1.00 20.81
C
ATOM   1370  H   LEU A 179    -23.295  29.090 -45.015  1.00 25.76
H
ATOM   1371  HA  LEU A 179     -20.582  29.267 -44.963  1.00 27.27
H
ATOM   1372  HB2 LEU A 179     -22.182  28.454 -47.137  1.00 24.90
H
ATOM   1373  HB3 LEU A 179     -20.623  28.691 -47.245  1.00 24.90
H
ATOM   1374  HG  LEU A 179     -21.795  26.598 -45.764  1.00 24.66
H
ATOM   1375 HD11 LEU A 179     -20.980  25.178 -47.426  1.00 28.30
H
ATOM   1376 HD12 LEU A 179     -22.011  26.216 -48.047  1.00 28.30
H
ATOM   1377 HD13 LEU A 179     -20.449  26.436 -48.238  1.00 28.30
H
ATOM   1378 HD21 LEU A 179     -19.632  25.796 -45.465  1.00 24.97
H
ATOM   1379 HD22 LEU A 179     -19.055  27.066 -46.226  1.00 24.97
H
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ATOM   7630 HD13 ILE D 210     -14.458  50.438   0.388  1.00 26.95
H

ATOM   7631  N   CYS D 211    -15.976  55.568   3.085  1.00 14.23          N
ATOM   7632  CA  CYS D 211     -17.094  56.494   3.006  1.00 16.85
C

ATOM   7633  C   CYS D 211    -17.596  56.584   1.574  1.00 18.03          C
ATOM   7634  O   CYS D 211    -16.827  56.422   0.622  1.00 15.29
O
ATOM   7635  CB  CYS D 211     -16.693  57.878   3.515  1.00 21.08
C
ATOM   7636  SG  CYS D 211     -16.320  57.907   5.274  1.00 27.03
S

ATOM   7637  H   CYS D 211    -15.216  55.919   2.888  1.00 17.07          H
ATOM   7638  HA  CYS D 211     -17.819  56.166   3.561  1.00 20.22
H
ATOM   7639  HB2 CYS D 211     -15.901  58.171   3.037  1.00 25.30
H
ATOM   7640  HB3 CYS D 211     -17.423  58.496   3.354  1.00 25.30
H

ATOM   7641  N   MET D 212    -18.892  56.843   1.434  1.00 17.13          N
ATOM   7642  CA  MET D 212     -19.522  56.931   0.127  1.00 20.63
C

ATOM   7643  C   MET D 212    -20.557  58.047   0.075  1.00 21.00          C
ATOM   7644  O   MET D 212    -21.345  58.230   1.007  1.00 20.37
O
ATOM   7645  CB  MET D 212     -20.182  55.597  -0.230  1.00 18.86
C
ATOM   7646  CG  MET D 212     -21.001  55.619  -1.511  1.00 20.28
C
ATOM   7647  SD  MET D 212     -21.817  54.042  -1.811  1.00 22.14
S
ATOM   7648  CE  MET D 212     -22.962  54.507  -3.108  1.00 27.72
C

ATOM   7649  H   MET D 212    -19.432  56.974   2.090  1.00 20.55          H
ATOM   7650  HA  MET D 212     -18.838  57.110  -0.538  1.00 24.76
H
ATOM   7651  HB2 MET D 212     -19.488  54.927  -0.336  1.00 22.63
H
ATOM   7652  HB3 MET D 212     -20.774  55.341   0.494  1.00 22.63
H
ATOM   7653  HG2 MET D 212     -21.684  56.305  -1.441  1.00 24.34
H
ATOM   7654  HG3 MET D 212     -20.415  55.805  -2.262  1.00 24.34
H
ATOM   7655  HE1 MET D 212     -23.477  53.728  -3.368  1.00 33.26
H
ATOM   7656  HE2 MET D 212     -23.554  55.199  -2.773  1.00 33.26
H
ATOM   7657  HE3 MET D 212     -22.459  54.841  -3.867  1.00 33.26
H

ATOM   7658  N   GLN D 213    -20.540  58.781  -1.031  1.00 16.69          N
ATOM   7659  CA  GLN D 213     -21.591  59.731  -1.354  1.00 22.03
C

ATOM   7660  C   GLN D 213    -22.309  59.236  -2.599  1.00 22.94          C


ATOM   7661  O   GLN D 213    -21.704  59.102  -3.664  1.00 20.77
O
ATOM   7662  CB  GLN D 213     -21.026  61.135  -1.587  1.00 18.19
C
ATOM   7663  CG  GLN D 213     -20.428  61.794  -0.357  1.00 25.42
C
ATOM   7664  CD  GLN D 213     -19.984  63.221  -0.629  1.00 27.60
C
ATOM   7665  OE1 GLN D 213     -19.786  63.611  -1.781  1.00 28.10
O
ATOM   7666  NE2 GLN D 213     -19.833  64.008   0.431  1.00 28.85
N

ATOM   7667  H   GLN D 213    -19.916  58.744  -1.622  1.00 20.02          H
ATOM   7668  HA  GLN D 213     -22.229  59.771  -0.624  1.00 26.43
H
ATOM   7669  HB2 GLN D 213     -20.328  61.080  -2.258  1.00 21.83
H
ATOM   7670  HB3 GLN D 213     -21.741  61.707  -1.908  1.00 21.83
H
ATOM   7671  HG2 GLN D 213     -21.095  61.815   0.348  1.00 30.50
H
ATOM   7672  HG3 GLN D 213     -19.654  61.287  -0.069  1.00 30.50
H
ATOM   7673 HE21 GLN D 213     -19.583  64.825   0.328  1.00 34.62
H
ATOM   7674 HE22 GLN D 213     -19.985  63.701   1.220  1.00 34.62
H
ATOM   7675  N   ARG D 214    -23.594  58.939  -2.457  1.00 25.52
N
ATOM   7676  CA  ARG D 214     -24.407  58.541  -3.592  1.00 32.54
C
ATOM   7677  C   ARG D 214    -24.815  59.790  -4.356  1.00 40.12
C
ATOM   7678  O   ARG D 214    -25.017  60.850  -3.763  1.00 43.97
O
ATOM   7679  CB  ARG D 214     -25.639  57.758  -3.136  1.00 30.59
C
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ATOM   1380 HD23 LEU A 179    -19.773  27.241 -44.820  1.00 24.97
H
ATOM   1381  N   THR A 180    -20.347  31.443 -46.038  1.00 21.26
N
ATOM   1382  CA  THR A 180    -20.231  32.721 -46.711  1.00 19.84
C
ATOM   1383  C   THR A 180    -19.779  32.441 -48.136  1.00 21.52
C
ATOM   1384  O   THR A 180    -18.640  32.036 -48.366  1.00 23.27
O
ATOM   1385  CB  THR A 180    -19.238  33.651 -45.993  1.00 24.67
C
ATOM   1386  OG1 THR A 180    -19.714  33.921 -44.669  1.00 25.74
O
ATOM   1387  CG2 THR A 180    -19.074  34.963 -46.744  1.00 25.66
C
ATOM   1388  H   THR A 180    -19.612  31.164 -45.691  1.00 25.51
H
ATOM   1389  HA  THR A 180    -21.098  33.155 -46.740  1.00 23.81
H
ATOM   1390  HB  THR A 180    -18.372  33.218 -45.942  1.00 29.61
H
ATOM   1391  HG1 THR A 180    -19.784  33.203 -44.237  1.00 30.89
H
ATOM   1392 HG21 THR A 180    -18.445  35.535 -46.276  1.00 30.80
H
ATOM   1393 HG22 THR A 180    -18.741  34.793 -47.639  1.00 30.80
H
ATOM   1394 HG23 THR A 180    -19.928  35.418 -46.806  1.00 30.80
H
ATOM   1395  N   ILE A 181    -20.683  32.633 -49.089  1.00 22.03
N


ATOM   1396  CA  ILE A 181    -20.372  32.385 -50.490  1.00 21.98
C
ATOM   1397  C   ILE A 181    -19.733  33.621 -51.100  1.00 25.54
C
ATOM   1398  O   ILE A 181    -20.283  34.720 -51.025  1.00 23.45
O
ATOM   1399  CB  ILE A 181    -21.623  31.998 -51.297  1.00 25.31
C
ATOM   1400  CG1 ILE A 181    -22.295  30.767 -50.684  1.00 27.58
C
ATOM   1401  CG2 ILE A 181    -21.257  31.731 -52.759  1.00 29.37
C
ATOM   1402  CD1 ILE A 181    -21.409  29.523 -50.619  1.00 25.67
C
ATOM   1403  H   ILE A 181    -21.487  32.906 -48.950  1.00 26.43
H
ATOM   1404  HA  ILE A 181    -19.736  31.655 -50.550  1.00 26.37
H
ATOM   1405  HB  ILE A 181    -22.249  32.738 -51.267  1.00 30.37
H
ATOM   1406 HG12 ILE A 181    -22.567  30.982 -49.778  1.00 33.09
H
ATOM   1407 HG13 ILE A 181    -23.076  30.544 -51.215  1.00 33.09
H
ATOM   1408 HG21 ILE A 181    -22.061  31.489 -53.246  1.00 35.24
H
ATOM   1409 HG22 ILE A 181    -20.869  32.534 -53.139  1.00 35.24
H
ATOM   1410 HG23 ILE A 181    -20.617  31.003 -52.796  1.00 35.24
H
ATOM   1411 HD11 ILE A 181    -21.913  28.797 -50.219  1.00 30.81
H
ATOM   1412 HD12 ILE A 181    -21.138  29.282 -51.519  1.00 30.81
H
ATOM   1413 HD13 ILE A 181    -20.628  29.720 -50.079  1.00 30.81
H
ATOM   1414  N   ILE A 182    -18.567  33.418 -51.706  1.00 21.72
N
ATOM   1415  CA  ILE A 182    -17.765  34.497 -52.261  1.00 20.53
C
ATOM   1416  C   ILE A 182    -17.654  34.340 -53.767  1.00 23.40
C
ATOM   1417  O   ILE A 182    -17.226  33.296 -54.256  1.00 22.37
O
ATOM   1418  CB  ILE A 182    -16.346  34.515 -51.649  1.00 20.38
C
ATOM   1419  CG1 ILE A 182    -16.430  34.684 -50.132  1.00 20.79
C
ATOM   1420  CG2 ILE A 182    -15.494  35.626 -52.271  1.00 21.86
C
ATOM   1421  CD1 ILE A 182    -15.132  34.434 -49.414  1.00 22.03
C
ATOM   1422  H   ILE A 182    -18.211  32.641 -51.808  1.00 26.06
H
ATOM   1423  HA  ILE A 182    -18.192  35.347 -52.072  1.00 24.63
H
ATOM   1424  HB  ILE A 182    -15.922  33.664 -51.838  1.00 24.45
H
ATOM   1425 HG12 ILE A 182    -16.706  35.593 -49.934  1.00 24.95
H
ATOM   1426 HG13 ILE A 182    -17.085  34.059 -49.784  1.00 24.95
H
ATOM   1427 HG21 ILE A 182    -14.613  35.611 -51.867  1.00 26.24
H
ATOM   1428 HG22 ILE A 182    -15.424  35.472 -53.226  1.00 26.24
H
ATOM   1429 HG23 ILE A 182    -15.921  36.481 -52.104  1.00 26.24
H
ATOM   1430 HD11 ILE A 182    -15.260  34.561 -48.462  1.00 26.43
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ATOM   7680  CG  ARG D 214    -26.467  57.167  -4.271  1.00 32.12
C
ATOM   7681  CD  ARG D 214    -25.894  55.846  -4.775  1.00 28.20
C
ATOM   7682  NE  ARG D 214    -26.798  55.208  -5.732  1.00 27.38
N
ATOM   7683  CZ  ARG D 214    -26.767  55.390  -7.050  1.00 28.78
C
ATOM   7684  NH1 ARG D 214    -25.862  56.189  -7.606  1.00 27.43
N1+
ATOM   7685  NH2 ARG D 214    -27.649  54.766  -7.819  1.00 26.83
N
ATOM   7686  H   ARG D 214    -24.019  58.961  -1.710  1.00 30.63
H
ATOM   7687  HA  ARG D 214    -23.885  57.976  -4.183  1.00 39.04
H
ATOM   7688  HB2 ARG D 214    -25.349  57.025  -2.571  1.00 36.70
H
ATOM   7689  HB3 ARG D 214    -26.215  58.352  -2.630  1.00 36.70
H
ATOM   7690  HG2 ARG D 214    -27.369  57.004  -3.954  1.00 38.54
H
ATOM   7691  HG3 ARG D 214    -26.481  57.793  -5.012  1.00 38.54
H
ATOM   7692  HD2 ARG D 214    -25.047  56.011  -5.220  1.00 33.84
H
ATOM   7693  HD3 ARG D 214    -25.768  55.243  -4.026  1.00 33.84
H
ATOM   7694  HE  ARG D 214    -27.395  54.674  -5.418  1.00 32.85
H
ATOM   7695 HH11 ARG D 214    -25.290  56.599  -7.113  1.00 32.91
H


ATOM   7696 HH12 ARG D 214    -25.851  56.297  -8.459  1.00 32.91
H
ATOM   7697 HH21 ARG D 214    -28.235  54.245  -7.466  1.00 32.19
H
ATOM   7698 HH22 ARG D 214    -27.629  54.875  -8.672  1.00 32.19
H

ATOM   7699  N   THR D 215    -24.923  59.656  -5.672  1.00 49.40           N
ATOM   7700  CA  THR D 215    -25.345  60.749  -6.538  1.00 47.09
C

ATOM   7701  C   THR D 215    -26.665  61.379  -6.091  1.00 38.12           C
ATOM   7702  O   THR D 215    -27.251  62.193  -6.808  1.00 43.45
O
ATOM   7703  CB  THR D 215    -25.504  60.261  -7.984  1.00 43.89
C
ATOM   7704  OG1 THR D 215    -24.958  58.940  -8.113  1.00 51.06
O
ATOM   7705  CG2 THR D 215    -24.794  61.194  -8.917  1.00 44.94
C

ATOM   7706  H   THR D 215    -24.753  58.927  -6.095  1.00 59.28           H
ATOM   7707  HA  THR D 215    -24.664  61.440  -6.528  1.00 56.50
H
ATOM   7708  HB  THR D 215    -26.445  60.247  -8.220  1.00 52.66
H
ATOM   7709  HG1 THR D 215    -25.043  58.670  -8.903  1.00 61.28
H
ATOM   7710 HG21 THR D 215    -25.168  62.086  -8.841  1.00 53.93
H
ATOM   7711 HG22 THR D 215    -23.850  61.228  -8.697  1.00 53.93
H
ATOM   7712 HG23 THR D 215    -24.893  60.887  -9.832  1.00 53.93
H

TER    7713      THR D 215

ATOM   7714  N   GLY E   0     -1.565  40.227 -65.921  1.00 24.87           N

ATOM   7715  CA  GLY E   0     -1.695  39.502 -64.623  1.00 25.57           C

ATOM   7716  C   GLY E   0     -2.109  40.445 -63.512  1.00 23.21           C

ATOM   7717  O   GLY E   0     -2.318  41.635 -63.745  1.00 21.52           O

ATOM   7718  H1  GLY E   0     -2.226  39.984 -66.465  1.00 29.85           H

ATOM   7719  H2  GLY E   0     -1.608  41.105 -65.776  1.00 29.85           H

ATOM   7720  H3  GLY E   0     -0.783  40.027 -66.296  1.00 29.85           H

ATOM   7721  HA2 GLY E   0     -2.363  38.803 -64.704  1.00 30.68           H

ATOM   7722  HA3 GLY E   0     -0.846  39.096 -64.388  1.00 30.68           H

ATOM   7723  N   HIS E   1     -2.229  39.916 -62.300  1.00 20.53           N

ATOM   7724  CA  HIS E   1     -2.640  40.720 -61.155  1.00 19.68           C

ATOM   7725  C   HIS E   1     -1.777  40.422 -59.946  1.00 18.24           C

ATOM   7726  O   HIS E   1     -1.189  39.348 -59.847  1.00 15.98           O

ATOM   7727  CB  HIS E   1     -4.111  40.469 -60.821  1.00 19.17           C

ATOM   7728  CG  HIS E   1     -5.048  40.824 -61.931  1.00 22.06           C

ATOM   7729  ND1 HIS E   1     -5.356  42.128 -62.255  1.00 23.79           N
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ATOM   1430 HD11 ILE A 182    -15.269  34.561 -48.462  1.00 26.43
H


ATOM   1431 HD12 ILE A 182    -14.845  33.524 -49.589  1.00 26.43
H
ATOM   1432 HD13 ILE A 182    -14.466  35.060 -49.740  1.00 26.43
H
ATOM   1433  N   GLU A 183    -18.035  35.379 -54.500  1.00 21.68
N
ATOM   1434  CA  GLU A 183    -17.855  35.391 -55.943  1.00 27.56
C
ATOM   1435  C   GLU A 183    -16.373  35.527 -56.271  1.00 29.48
C
ATOM   1436  O   GLU A 183    -15.667  36.337 -55.670  1.00 31.01
O
ATOM   1437  CB  GLU A 183    -18.648  36.533 -56.582  1.00 39.38
C
ATOM   1438  CG  GLU A 183    -20.154  36.416 -56.407  1.00 45.85
C
ATOM   1439  CD  GLU A 183    -20.911  37.550 -57.074  1.00 71.49
C
ATOM   1440  OE1 GLU A 183    -20.297  38.607 -57.336  1.00 65.31
O
ATOM   1441  OE2 GLU A 183    -22.120  37.382 -57.340  1.00 84.35
O1-
ATOM   1442  H   GLU A 183    -18.402  36.090 -54.184  1.00 26.02
H
ATOM   1443  HA  GLU A 183    -18.174  34.553 -56.314  1.00 33.07
H
ATOM   1444  HB2 GLU A 183    -18.368  37.370 -56.180  1.00 47.25
H
ATOM   1445  HB3 GLU A 183    -18.461  36.548 -57.534  1.00 47.25
H
ATOM   1446  HG2 GLU A 183    -20.454  35.582 -56.802  1.00 55.02
H
ATOM   1447  HG3 GLU A 183    -20.364  36.430 -55.461  1.00 55.02
H
ATOM   1448  N   MET A 184    -15.908  34.723 -57.219  1.00 27.36
N
ATOM   1449  CA  MET A 184    -14.520  34.765 -57.655  1.00 30.39
C
ATOM   1450  C   MET A 184    -14.461  34.514 -59.154  1.00 36.58
C
ATOM   1451  O   MET A 184    -14.269  35.441 -59.942  1.00 34.99
O
ATOM   1452  CB  MET A 184    -13.684  33.732 -56.895  1.00 28.20
C
ATOM   1453  CG  MET A 184    -12.200  33.780 -57.213  1.00 26.40
C
ATOM   1454  SD  MET A 184    -11.300  32.412 -56.469  1.00 27.32
S
ATOM   1455  CE  MET A 184    -11.827  31.057 -57.524  1.00 31.27
C
ATOM   1456  H   MET A 184    -16.384  34.136 -57.631  1.00 32.83
H
ATOM   1457  HA  MET A 184    -14.155  35.644 -57.466  1.00 36.47
H
ATOM   1458  HB2 MET A 184    -13.788  33.887 -55.943  1.00 33.85
H
ATOM   1459  HB3 MET A 184    -14.006  32.845 -57.120  1.00 33.85
H
ATOM   1460  HG2 MET A 184    -12.080  33.732 -58.175  1.00 31.68
H
ATOM   1461  HG3 MET A 184    -11.828  34.607 -56.871  1.00 31.68
H
ATOM   1462  HE1 MET A 184    -11.402  30.239 -57.223  1.00 37.53
H
ATOM   1463  HE2 MET A 184    -12.791  30.969 -57.468  1.00 37.53
H
ATOM   1464  HE3 MET A 184    -11.565  31.248 -58.439  1.00 37.53
H
ATOM   1465  N   GLN A 185    -14.639  33.253 -59.535  1.00 34.02
N


ATOM   1466  CA  GLN A 185    -14.708  32.865 -60.935  1.00 39.99
C
ATOM   1467  C   GLN A 185    -16.136  32.439 -61.257  1.00 36.81
C
ATOM   1468  O   GLN A 185    -16.749  31.687 -60.498  1.00 32.57
O
ATOM   1469  CB  GLN A 185    -13.724  31.732 -61.230  1.00 31.78
C
ATOM   1470  CG  GLN A 185    -13.525  31.454 -62.708  1.00 37.09
C
ATOM   1471  CD  GLN A 185    -12.853  32.606 -63.427  1.00 49.35
C
ATOM   1472  OE1 GLN A 185    -11.834  33.129 -62.972  1.00 44.78
O
ATOM   1473  NE2 GLN A 185    -13.427  33.014 -64.554  1.00 50.69
N
ATOM   1474  H   GLN A 185    -14.723  32.593 -58.990  1.00 40.83
H
ATOM   1475  HA  GLN A 185    -14.480  33.624 -61.494  1.00 47.99
H
ATOM   1476  HB2 GLN A 185    -12.860  31.964 -60.855  1.00 38.14
H
ATOM   1477  HB3 GLN A 185    -14.053  30.918 -60.818  1.00 38.14
H
ATOM   1478  HG2 GLN A 185    -12.966  30.668 -62.810  1.00 44.51
H
ATOM   1479  HG3 GLN A 185    -14.390  31.304 -63.121  1.00 44.51
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ATOM   7730  CD2 HIS E   1     -5.744  40.047 -62.794  1.00 22.57           C


ATOM   7731  CE1 HIS E   1     -6.202  42.139 -63.270  1.00 22.50           C

ATOM   7732  NE2 HIS E   1     -6.454  40.889 -63.614  1.00 22.56           N

ATOM   7733  H   HIS E   1     -2.078  39.090 -62.113  1.00 24.63           H

ATOM   7734  HA  HIS E   1     -2.537  41.660 -61.374  1.00 23.61           H

ATOM   7735  HB2 HIS E   1     -4.231  39.528 -60.622  1.00 23.00           H

ATOM   7736  HB3 HIS E   1     -4.352  41.003 -60.047  1.00 23.00           H

ATOM   7737  HD1 HIS E   1     -5.045  42.826 -61.859  1.00 28.55           H

ATOM   7738  HD2 HIS E   1     -5.743  39.118 -62.823  1.00 27.08           H

ATOM   7739  HE1 HIS E   1     -6.559  42.897 -63.672  1.00 27.00           H

ATOM   7740  HE2 HIS E   1     -6.977  40.642 -64.251  1.00 27.08           H

ATOM   7741  N   LYS E   2     -1.704  41.383 -59.031  1.00 18.21           N

ATOM   7742  CA  LYS E   2     -0.948  41.206 -57.804  1.00 17.86           C

ATOM   7743  C   LYS E   2     -1.636  41.890 -56.629  1.00 19.00           C

ATOM   7744  O   LYS E   2     -2.239  42.957 -56.769  1.00 19.28           O

ATOM   7745  CB  LYS E   2      0.478  41.736 -57.970  1.00 23.19           C

ATOM   7746  CG  LYS E   2      0.564  43.187 -58.389  1.00 27.11           C

ATOM   7747  CD  LYS E   2      1.980  43.554 -58.803  1.00 34.68           C

ATOM   7748  CE  LYS E   2      2.079  45.021 -59.188  1.00 38.27           C
ATOM   7749  NZ  LYS E   2      3.461  45.403 -59.589  1.00 38.97
N1+

ATOM   7750  H   LYS E   2     -2.086  42.150 -59.100  1.00 21.85           H

ATOM   7751  HA  LYS E   2     -0.891  40.259 -57.605  1.00 21.44           H

ATOM   7752  HB2 LYS E   2      0.943  41.647 -57.123  1.00 27.83           H

ATOM   7753  HB3 LYS E   2      0.929  41.208 -58.647  1.00 27.83           H

ATOM   7754  HG2 LYS E   2     -0.024  43.338 -59.145  1.00 32.53           H

ATOM   7755  HG3 LYS E   2      0.307  43.752 -57.644  1.00 32.53           H

ATOM   7756  HD2 LYS E   2      2.584  43.392 -58.061  1.00 41.61           H

ATOM   7757  HD3 LYS E   2      2.239  43.020 -59.570  1.00 41.61           H

ATOM   7758  HE2 LYS E   2      1.489  45.194 -59.937  1.00 45.93           H

ATOM   7759  HE3 LYS E   2      1.824  45.567 -58.428  1.00 45.93           H

ATOM   7760  HZ1 LYS E   2      4.024  45.259 -58.915  1.00 46.77           H

ATOM   7761  HZ2 LYS E   2      3.719  44.919 -60.290  1.00 46.77           H

ATOM   7762  HZ3 LYS E   2      3.487  46.265 -59.808  1.00 46.77           H

ATOM   7763  N   LEU E   3     -1.558  41.235 -55.477  1.00 15.59           N

ATOM   7764  CA  LEU E   3     -2.079  41.766 -54.229  1.00 13.41           C

ATOM   7765  C   LEU E   3     -0.905  41.903 -53.273  1.00 13.12           C


ATOM   7766  O   LEU E   3     -0.228  40.922 -52.981  1.00 12.97           O

ATOM   7767  CB  LEU E   3     -3.160  40.847 -53.661  1.00 14.06           C

ATOM   7768  CG  LEU E   3     -3.893  41.275 -52.390  1.00 12.36           C

ATOM   7769  CD1 LEU E   3     -4.662  42.573 -52.590  1.00 15.83           C

ATOM   7770  CD2 LEU E   3     -4.825  40.167 -51.968  1.00 11.74           C

ATOM   7771  H   LEU E   3     -1.197  40.458 -55.394  1.00 18.71           H

ATOM   7772  HA  LEU E   3     -2.463  42.644 -54.380  1.00 16.10           H

ATOM   7773  HB2 LEU E   3     -3.835  40.727 -54.346  1.00 16.87           H

ATOM   7774  HB3 LEU E   3     -2.748  39.990 -53.471  1.00 16.87           H

ATOM   7775  HG  LEU E   3     -3.246  41.413 -51.681  1.00 14.83           H
ATOM   7776 HD11 LEU E   3     -5.110  42.805 -51.761  1.00 18.99
H
ATOM   7777 HD12 LEU E   3     -4.039  43.274 -52.837  1.00 18.99
H
ATOM   7778 HD13 LEU E   3     -5.315  42.447 -53.296  1.00 18.99
H
ATOM   7779 HD21 LEU E   3     -5.291  40.437 -51.162  1.00 14.08
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H
ATOM  1480 HE21 GLN A 185    -13.084  33.665 -64.999  1.00 60.83
H
ATOM  1481 HE22 GLN A 185    -14.141  32.629 -64.837  1.00 60.83
H
ATOM  1482  N   LYS A 186    -16.669  32.933 -62.370  1.00 41.91
N
ATOM  1483  CA  LYS A 186    -18.026  32.585 -62.779  1.00 44.77
C
ATOM  1484  C   LYS A 186    -18.149  31.085 -63.028  1.00 32.82
C
ATOM  1485  O   LYS A 186    -17.492  30.537 -63.913  1.00 41.23
O
ATOM  1486  CB  LYS A 186    -18.427  33.361 -64.033  1.00 55.29
C
ATOM  1487  CG  LYS A 186    -18.429  34.868 -63.851  1.00 69.71
C
ATOM  1488  CD  LYS A 186    -18.935  35.578 -65.096  1.00 87.98
C
ATOM  1489  CE  LYS A 186    -18.822  37.087 -64.961  1.00 90.78
C
ATOM  1490  NZ  LYS A 186    -17.407  37.529 -64.823  1.00 89.35
N1+
ATOM  1491  H   LYS A 186    -16.266  33.470 -62.907  1.00 50.30
H
ATOM  1492  HA  LYS A 186    -18.642  32.823 -62.068  1.00 53.72
H
ATOM  1493  HB2 LYS A 186    -17.802  33.150 -64.744  1.00 66.35
H
ATOM  1494  HB3 LYS A 186    -19.323  33.093 -64.293  1.00 66.35
H
ATOM  1495  HG2 LYS A 186    -19.012  35.100 -63.110  1.00 83.65
H
ATOM  1496  HG3 LYS A 186    -17.525  35.171 -63.674  1.00 83.65
H
ATOM  1497  HD2 LYS A 186    -18.406  35.301 -65.860  1.00105.57
H
ATOM  1498  HD3 LYS A 186    -19.869  35.354 -65.235  1.00105.57
H
ATOM  1499  HE2 LYS A 186    -19.194  37.507 -65.753  1.00108.94
H
ATOM  1500  HE3 LYS A 186    -19.307  37.374 -64.172  1.00108.94
H


ATOM  1501  HZ1 LYS A 186    -16.940  37.281 -65.540  1.00107.22
H
ATOM  1502  HZ2 LYS A 186    -17.371  38.415 -64.747  1.00107.22
H
ATOM  1503  HZ3 LYS A 186    -17.043  37.160 -64.100  1.00107.22
H
ATOM  1504  N   GLY A 187    -18.991  30.427 -62.239  1.00 31.79
N
ATOM  1505  CA  GLY A 187    -19.178  28.993 -62.350  1.00 33.62
C
ATOM  1506  C   GLY A 187    -20.338  28.512 -61.506  1.00 28.83
C
ATOM  1507  O   GLY A 187    -20.967  29.303 -60.803  1.00 31.67
O
ATOM  1508  H   GLY A 187    -19.468  30.795 -61.626  1.00 38.15
H
ATOM  1509  HA2 GLY A 187    -19.350  28.758 -63.276  1.00 40.35
H
ATOM  1510  HA3 GLY A 187    -18.373  28.536 -62.060  1.00 40.35
H
ATOM  1511  N   ASP A 188    -20.613  27.211 -61.571  1.00 26.78
N
ATOM  1512  CA  ASP A 188    -21.741  26.613 -60.860  1.00 29.71
C
ATOM  1513  C   ASP A 188    -21.302  25.691 -59.721  1.00 27.78
C
ATOM  1514  O   ASP A 188    -22.110  24.929 -59.185  1.00 26.36
O
ATOM  1515  CB  ASP A 188    -22.617  25.840 -61.843  1.00 34.87
C
ATOM  1516  CG  ASP A 188    -23.227  26.735 -62.901  1.00 39.70
C
ATOM  1517  OD1 ASP A 188    -23.676  27.848 -62.551  1.00 38.40
O
ATOM  1518  OD2 ASP A 188    -23.248  26.332 -64.083  1.00 40.40
O1-
ATOM  1519  H   ASP A 188    -20.154  26.645 -62.028  1.00 32.14
H
ATOM  1520  HA  ASP A 188    -22.280  27.322 -60.476  1.00 35.65
H
ATOM  1521  HB2 ASP A 188    -22.077  25.170 -62.291  1.00 41.85
H
ATOM  1522  HB3 ASP A 188    -23.340  25.413 -61.357  1.00 41.85
H
ATOM  1523  N   CYS A 189    -20.027  25.772 -59.349  1.00 25.17
N
ATOM  1524  CA  CYS A 189    -19.485  24.978 -58.248  1.00 21.30
C
ATOM  1525  C   CYS A 189    -18.739  25.877 -57.264  1.00 22.52
C
ATOM  1526  O   CYS A 189    -18.363  27.001 -57.605  1.00 24.18
O
ATOM  1527  CB  CYS A 189    -18.546  23.887 -58.776  1.00 24.76
C
ATOM  1528  SG  CYS A 189    -19.310  22.735 -59.952  1.00 29.58
S
ATOM  1529  H   CYS A 189    -19.448  26.286 -59.723  1.00 30.21
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H
ATOM  7780 HD22 LEU E   3     -5.462  40.003 -52.680  1.00 14.08
H
ATOM  7781 HD23 LEU E   3     -4.305  39.366 -51.798  1.00 14.08
H

ATOM  7782  N   ALA E   4     -0.654  43.124 -52.813  1.00 14.08           N

ATOM  7783  CA  ALA E   4      0.497  43.406 -51.961  1.00 13.44           C

ATOM  7784  C   ALA E   4      0.060  43.927 -50.597  1.00 17.16           C

ATOM  7785  O   ALA E   4     -0.878  44.720 -50.492  1.00 16.57           O

ATOM  7786  CB  ALA E   4      1.416  44.405 -52.632  1.00 18.34           C

ATOM  7787  H   ALA E   4     -1.140  43.813 -52.981  1.00 16.90           H

ATOM  7788  HA  ALA E   4      0.995  42.586 -51.822  1.00 16.13           H

ATOM  7789  HB1 ALA E   4      2.172  44.578 -52.050  1.00 22.01           H

ATOM  7790  HB2 ALA E   4      1.723  44.035 -53.474  1.00 22.01           H

ATOM  7791  HB3 ALA E   4      0.925  45.227 -52.791  1.00 22.01           H

ATOM  7792  N   PHE E   5      0.753  43.463 -49.563  1.00 15.63           N

ATOM  7793  CA  PHE E   5      0.549  43.919 -48.195  1.00 13.64           C

ATOM  7794  C   PHE E   5      1.836  44.553 -47.690  1.00 14.46           C

ATOM  7795  O   PHE E   5      2.882  43.911 -47.705  1.00 13.48           O

ATOM  7796  CB  PHE E   5      0.153  42.757 -47.285  1.00 12.69           C

ATOM  7797  CG  PHE E   5     -1.145  42.107 -47.655  1.00 12.18           C
ATOM  7798  CD1 PHE E   5     -1.202  41.174 -48.674  1.00 13.36
C
ATOM  7799  CD2 PHE E   5     -2.305  42.415 -46.970  1.00 13.02
C
ATOM  7800  CE1 PHE E   5     -2.394  40.571 -49.012  1.00 16.36
C


ATOM  7801  CE2 PHE E   5     -3.500  41.813 -47.302  1.00 13.36
C

ATOM  7802  CZ  PHE E   5     -3.545  40.890 -48.324  1.00 16.42           C

ATOM  7803  H   PHE E   5      1.366  42.864 -49.633  1.00 18.75           H

ATOM  7804  HA  PHE E   5     -0.156  44.585 -48.174  1.00 16.37           H

ATOM  7805  HB2 PHE E   5      0.845  42.079 -47.327  1.00 15.23           H

ATOM  7806  HB3 PHE E   5      0.070  43.087 -46.377  1.00 15.23           H
ATOM  7807  HD1 PHE E   5     -0.429  40.956 -49.142  1.00 16.03
H
ATOM  7808  HD2 PHE E   5     -2.280  43.038 -46.280  1.00 15.63
H
ATOM  7809  HE1 PHE E   5     -2.422  39.947 -49.701  1.00 19.63
H
ATOM  7810  HE2 PHE E   5     -4.276  42.030 -46.837  1.00 16.03
H

ATOM  7811  HZ  PHE E   5     -4.350  40.483 -48.550  1.00 19.70           H

ATOM  7812  N   ASN E   6      1.761  45.806 -47.252  1.00 14.65           N

ATOM  7813  CA  ASN E   6      2.928  46.501 -46.714  1.00 15.88           C

ATOM  7814  C   ASN E   6      2.745  46.820 -45.232  1.00 16.33           C

ATOM  7815  O   ASN E   6      2.007  47.736 -44.871  1.00 15.03           O

ATOM  7816  CB  ASN E   6      3.201  47.786 -47.499  1.00 19.07           C

ATOM  7817  CG  ASN E   6      4.557  48.391 -47.170  1.00 26.15           C
ATOM  7818  OD1 ASN E   6      4.646  49.449 -46.550  1.00 33.75
O
ATOM  7819  ND2 ASN E   6      5.622  47.706 -47.572  1.00 23.45
N

ATOM  7820  H   ASN E   6      1.042  46.279 -47.255  1.00 17.58           H

ATOM  7821  HA  ASN E   6      3.704  45.926 -46.802  1.00 19.05           H

ATOM  7822  HB2 ASN E   6      3.181  47.588 -48.448  1.00 22.89           H

ATOM  7823  HB3 ASN E   6      2.519  48.441 -47.282  1.00 22.89           H
ATOM  7824 HD21 ASN E   6      6.412  48.005 -47.411  1.00 28.14
H
ATOM  7825 HD22 ASN E   6      5.522  46.963 -47.994  1.00 28.14
H

ATOM  7826  N   PHE E   7      3.411  46.041 -44.385  1.00 13.46           N

ATOM  7827  CA  PHE E   7      3.355  46.228 -42.942  1.00 16.36           C

ATOM  7828  C   PHE E   7      4.478  47.139 -42.488  1.00 15.66           C
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H
ATOM  1530  HA  CYS A 189    -20.214  24.548 -57.774  1.00 25.56
H
ATOM  1531  HB2 CYS A 189    -17.799  24.312 -59.224  1.00 29.72
H
ATOM  1532  HB3 CYS A 189    -18.222  23.367 -58.024  1.00 29.72
H
ATOM  1533  N   ALA A 190   -18.520  25.374 -56.053  1.00 21.28
N
ATOM  1534  CA  ALA A 190    -17.838  26.140 -55.015  1.00 21.57
C
ATOM  1535  C   ALA A 190   -16.767  25.316 -54.311  1.00 18.66
C


ATOM  1536  O   ALA A 190   -16.936  24.118 -54.073  1.00 17.27
O
ATOM  1537  CB  ALA A 190    -18.838  26.661 -54.007  1.00 20.73
C
ATOM  1538  H   ALA A 190   -18.759  24.585 -55.805  1.00 25.54
H
ATOM  1539  HA  ALA A 190    -17.403  26.904 -55.425  1.00 25.89
H
ATOM  1540  HB1 ALA A 190    -18.366  27.166 -53.327  1.00 24.88
H
ATOM  1541  HB2 ALA A 190    -19.476  27.232 -54.462  1.00 24.88
H
ATOM  1542  HB3 ALA A 190    -19.298  25.909 -53.602  1.00 24.88
H
ATOM  1543  N   LEU A 191   -15.664  25.981 -53.984  1.00 20.48
N
ATOM  1544  CA  LEU A 191    -14.578  25.382 -53.216  1.00 18.02
C
ATOM  1545  C   LEU A 191   -14.722  25.748 -51.745  1.00 17.63
C
ATOM  1546  O   LEU A 191   -14.852  26.927 -51.421  1.00 16.65
O
ATOM  1547  CB  LEU A 191    -13.226  25.869 -53.737  1.00 15.13
C
ATOM  1548  CG  LEU A 191    -12.856  25.493 -55.171  1.00 21.15
C
ATOM  1549  CD1 LEU A 191    -11.760  26.409 -55.687  1.00 23.95
C
ATOM  1550  CD2 LEU A 191    -12.414  24.040 -55.236  1.00 19.16
C
ATOM  1551  H   LEU A 191   -15.518  26.800 -54.200  1.00 24.57
H
ATOM  1552  HA  LEU A 191    -14.613  24.416 -53.300  1.00 21.63
H
ATOM  1553  HB2 LEU A 191    -13.213  26.837 -53.683  1.00 18.15
H
ATOM  1554  HB3 LEU A 191    -12.533  25.509 -53.160  1.00 18.15
H
ATOM  1555  HG  LEU A 191    -13.634  25.600 -55.741  1.00 25.38
H
ATOM  1556 HD11 LEU A 191    -11.540  26.155 -56.597  1.00 28.74
H
ATOM  1557 HD12 LEU A 191    -12.079  27.324 -55.667  1.00 28.74
H
ATOM  1558 HD13 LEU A 191    -10.979  26.317 -55.119  1.00 28.74
H
ATOM  1559 HD21 LEU A 191    -12.183  23.821 -56.153  1.00 22.99
H
ATOM  1560 HD22 LEU A 191    -11.641  23.919 -54.663  1.00 22.99
H
ATOM  1561 HD23 LEU A 191    -13.142  23.475 -54.934  1.00 22.99
H
ATOM  1562  N   TYR A 192   -14.703  24.757 -50.855  1.00 15.23
N
ATOM  1563  CA  TYR A 192    -14.718  25.056 -49.430  1.00 14.68
C
ATOM  1564  C   TYR A 192   -13.365  25.597 -48.980  1.00 17.40
C
ATOM  1565  O   TYR A 192   -12.324  25.129 -49.427  1.00 12.57
O
ATOM  1566  CB  TYR A 192    -15.055  23.831 -48.568  1.00 16.60
C
ATOM  1567  CG  TYR A 192    -14.916  24.199 -47.115  1.00 16.87
C
ATOM  1568  CD1 TYR A 192    -15.948  24.847 -46.450  1.00 14.23
C
ATOM  1569  CD2 TYR A 192    -13.724  23.981 -46.428  1.00 17.91
C
ATOM  1570  CE1 TYR A 192    -15.817  25.235 -45.140  1.00 15.45
C


ATOM  1571  CE2 TYR A 192    -13.584  24.368 -45.111  1.00 16.81
C
ATOM  1572  CZ  TYR A 192    -14.637  24.997 -44.473  1.00 17.95
C
ATOM  1573  OH  TYR A 192    -14.514  25.401 -43.164  1.00 18.94
O
ATOM  1574  H   TYR A 192   -14.683  23.919 -51.048  1.00 18.28
H
ATOM  1575  HA  TYR A 192    -15.386  25.737 -49.257  1.00 17.62
H
ATOM  1576  HB2 TYR A 192    -15.970  23.556 -48.734  1.00 19.92
H
ATOM  1577  HB3 TYR A 192    -14.437  23.110 -48.768  1.00 19.92
H
ATOM  1578  HD1 TYR A 192    -16.745  25.017 -46.898  1.00 17.07
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ATOM  7829  O   PHE E  7     5.634  46.909 -42.829  1.00 14.02         O

ATOM  7830  CB  PHE E  7     3.464  44.888 -42.217  1.00 14.45         C

ATOM  7831  CG  PHE E  7     2.371  43.929 -42.549  1.00 13.89         C
ATOM  7832  CD1 PHE E  7     2.434  43.159 -43.700  1.00 13.75
C
ATOM  7833  CD2 PHE E  7     1.285  43.779 -41.705  1.00 13.24
C

ATOM  7834  CE1 PHE E  7     1.425  42.267 -44.007  1.00 13.98         C

ATOM  7835  CE2 PHE E  7     0.270  42.887 -42.009  1.00 16.30         C


ATOM  7836  CZ  PHE E  7     0.342  42.131 -43.161  1.00 16.68         C

ATOM  7837  H   PHE E  7     3.912  45.386 -44.628  1.00 16.16         H

ATOM  7838  HA  PHE E  7     2.509  46.639 -42.702  1.00 19.63         H

ATOM  7839  HB2 PHE E  7     4.307  44.472 -42.456  1.00 17.33         H

ATOM  7840  HB3 PHE E  7     3.437  45.048 -41.260  1.00 17.33         H
ATOM  7841  HD1 PHE E  7     3.160  43.248 -44.274  1.00 16.50
H
ATOM  7842  HD2 PHE E  7     1.232  44.289 -40.928  1.00 15.89
H

ATOM  7843  HE1 PHE E  7     1.474  41.757 -44.784  1.00 16.77         H
ATOM  7844  HE2 PHE E  7    -0.457  42.796 -41.437  1.00 19.56
H

ATOM  7845  HZ  PHE E  7    -0.337  41.530 -43.367  1.00 20.02         H

ATOM  7846  N   ASN E  8     4.139  48.165 -41.715  1.00 18.72         N

ATOM  7847  CA  ASN E  8     5.147  49.064 -41.166  1.00 17.71         C

ATOM  7848  C   ASN E  8     4.955  49.290 -39.675  1.00 18.89         C

ATOM  7849  O   ASN E  8     3.850  49.591 -39.218  1.00 16.16         O

ATOM  7850  CB  ASN E  8     5.124  50.406 -41.893  1.00 17.97         C

ATOM  7851  CG  ASN E  8     6.231  51.331 -41.433  1.00 21.21         C
ATOM  7852  OD1 ASN E  8     7.411  51.033 -41.604  1.00 24.65
O
ATOM  7853  ND2 ASN E  8     5.856  52.462 -40.850  1.00 23.34
N

ATOM  7854  H   ASN E  8     3.332  48.362 -41.493  1.00 22.47         H

ATOM  7855  HA  ASN E  8     6.023  48.669 -41.297  1.00 21.25         H

ATOM  7856  HB2 ASN E  8     5.236  50.253 -42.845  1.00 21.57         H

ATOM  7857  HB3 ASN E  8     4.275  50.844 -41.724  1.00 21.57         H
ATOM  7858 HD21 ASN E  8     6.449  53.019 -40.572  1.00 28.01
H
ATOM  7859 HD22 ASN E  8     5.020  52.638 -40.751  1.00 28.01
H

ATOM  7860  N   LEU E  9     6.043  49.124 -38.928  1.00 15.50         N

ATOM  7861  CA  LEU E  9     6.083  49.460 -37.513  1.00 16.76         C

ATOM  7862  C   LEU E  9     7.182  50.492 -37.294  1.00 19.62         C

ATOM  7863  O   LEU E  9     8.365  50.183 -37.428  1.00 18.29         O

ATOM  7864  CB  LEU E  9     6.330  48.214 -36.656  1.00 17.53         C

ATOM  7865  CG  LEU E  9     6.418  48.451 -35.145  1.00 16.67         C

ATOM  7866  CD1 LEU E  9     5.120  49.012 -34.599  1.00 22.09         C

ATOM  7867  CD2 LEU E  9     6.781  47.164 -34.417  1.00 17.22         C

ATOM  7868  H   LEU E  9     6.786  48.811 -39.228  1.00 18.60         H

ATOM  7869  HA  LEU E  9     5.236  49.851 -37.249  1.00 20.12         H

ATOM  7870  HB2 LEU E  9     5.605  47.589 -36.809  1.00 21.03         H


ATOM  7871  HB3 LEU E  9     7.167  47.812 -36.935  1.00 21.03         H

ATOM  7872  HG  LEU E  9     7.119  49.099 -34.970  1.00 20.00         H
ATOM  7873 HD11 LEU E  9     5.213  49.149 -33.644  1.00 26.51
H
ATOM  7874 HD12 LEU E  9     4.933  49.857 -35.038  1.00 26.51
H
ATOM  7875 HD13 LEU E  9     4.405  48.381 -34.776  1.00 26.51
H
ATOM  7876 HD21 LEU E  9     6.830  47.343 -33.465  1.00 20.67
H
ATOM  7877 HD22 LEU E  9     6.098  46.498 -34.594  1.00 20.67
H
ATOM  7878 HD23 LEU E  9     7.641  46.851 -34.740  1.00 20.67
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H
ATOM   1579  HD2 TYR A 192     -13.015  23.564 -46.861  1.00 21.49
H
ATOM   1580  HE1 TYR A 192     -16.521  25.660 -44.706  1.00 18.54
H
ATOM   1581  HE2 TYR A 192     -12.788  24.210 -44.657  1.00 20.17
H
ATOM   1582  HH  TYR A 192     -13.753  25.200 -42.872  1.00 22.72
H
ATOM   1583  N   ALA A 193     -13.392  26.573 -48.078  1.00 14.04
N
ATOM   1584  CA  ALA A 193     -12.184  27.021 -47.395  1.00 14.46
C
ATOM   1585  C   ALA A 193     -12.528  27.614 -46.037  1.00 14.85
C
ATOM   1586  O   ALA A 193     -13.669  28.005 -45.784  1.00 16.32
O
ATOM   1587  CB  ALA A 193     -11.440  28.029 -48.233  1.00 16.01
C
ATOM   1588  H   ALA A 193     -14.103  26.995 -47.843  1.00 16.85
H
ATOM   1589  HA  ALA A 193     -11.600  26.260 -47.251  1.00 17.35
H
ATOM   1590  HB1 ALA A 193     -10.644  28.309 -47.756  1.00 19.22
H
ATOM   1591  HB2 ALA A 193     -11.194  27.617 -49.076  1.00 19.22
H
ATOM   1592  HB3 ALA A 193     -12.017  28.792 -48.393  1.00 19.22
H
ATOM   1593  N   SER A 194     -11.534  27.675 -45.162  1.00 13.15
N
ATOM   1594  CA  SER A 194     -11.726  28.278 -43.857  1.00 12.99
C
ATOM   1595  C   SER A 194     -11.964  29.777 -44.025  1.00 15.13
C
ATOM   1596  O   SER A 194     -11.387  30.378 -44.930  1.00 16.35
O
ATOM   1597  CB  SER A 194     -10.507  28.029 -42.963  1.00 15.47
C
ATOM   1598  OG  SER A 194     -10.547  28.856 -41.815  1.00 15.91
O
ATOM   1599  H   SER A 194     -10.741  27.374 -45.301  1.00 15.78
H
ATOM   1600  HA  SER A 194     -12.505  27.888 -43.431  1.00 15.59
H
ATOM   1601  HB2 SER A 194     -10.506  27.100 -42.684  1.00 18.57
H
ATOM   1602  HB3 SER A 194      -9.701  28.226 -43.466  1.00 18.57
H
ATOM   1603  HG  SER A 194      -9.875  28.710 -41.333  1.00 19.09
H
ATOM   1604  N   SER A 195     -12.803  30.394 -43.191  1.00 13.88
N
ATOM   1605  CA  SER A 195     -13.586  29.735 -42.148  1.00 14.38
C

ATOM   1606  C   SER A 195     -15.056  29.686 -42.571  1.00 18.17
C
ATOM   1607  O   SER A 195     -15.731  30.717 -42.606  1.00 15.70
O
ATOM   1608  CB  SER A 195     -13.442  30.477 -40.821  1.00 15.67
C
ATOM   1609  OG  SER A 195     -14.164  29.810 -39.798  1.00 20.71
O
ATOM   1610  H   SER A 195     -12.941  31.242 -43.215  1.00 16.65
H
ATOM   1611  HA  SER A 195     -13.268  28.826 -42.029  1.00 17.26
H
ATOM   1612  HB2 SER A 195     -12.503  30.510 -40.577  1.00 18.81
H
ATOM   1613  HB3 SER A 195     -13.791  31.376 -40.922  1.00 18.81
H
ATOM   1614  HG  SER A 195     -14.080  30.224 -39.071  1.00 24.86
H
ATOM   1615  N   PHE A 196     -15.542  28.492 -42.898  1.00 14.12
N
ATOM   1616  CA  PHE A 196     -16.912  28.314 -43.376  1.00 16.50
C
ATOM   1617  C   PHE A 196     -17.212  29.262 -44.530  1.00 16.82
C
ATOM   1618  O   PHE A 196     -18.205  29.992 -44.522  1.00 15.43
O
ATOM   1619  CB  PHE A 196     -17.909  28.514 -42.233  1.00 19.48
C
ATOM   1620  CG  PHE A 196     -17.900  27.392 -41.233  1.00 20.88
C
ATOM   1621  CD1 PHE A 196     -17.045  27.420 -40.146  1.00 19.36
C
ATOM   1622  CD2 PHE A 196     -18.734  26.300 -41.395  1.00 21.00
C
ATOM   1623  CE1 PHE A 196     -17.028  26.381 -39.233  1.00 22.54
C
ATOM   1624  CE2 PHE A 196     -18.722  25.259 -40.489  1.00 24.48
C
ATOM   1625  CZ  PHE A 196     -17.868  25.297 -39.409  1.00 23.71
C
ATOM   1626  H   PHE A 196     -15.093  27.760 -42.851  1.00 16.94
H
ATOM   1627  HA  PHE A 196     -17.014  27.407 -43.703  1.00 19.80
H
ATOM   1628  HB2 PHE A 196     -17.689  29.334 -41.763  1.00 23.38
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ATOM   7879  N   GLU E  10       6.781  51.720 -36.979  1.00 18.79           N
ATOM   7880  CA  GLU E  10       7.726  52.814 -36.766  1.00 25.42           C
ATOM   7881  C   GLU E  10       7.809  53.176 -35.290  1.00 25.51           C
ATOM   7882  O   GLU E  10       6.822  53.608 -34.700  1.00 24.74           O
ATOM   7883  CB  GLU E  10       7.320  54.046 -37.582  1.00 23.36           C
ATOM   7884  CG  GLU E  10       8.326  55.197 -37.512  1.00 31.78
C
ATOM   7885  CD  GLU E  10       7.883  56.420 -38.300  1.00 32.30
C
ATOM   7886  OE1 GLU E  10       6.687  56.775 -38.234  1.00 36.09
O
ATOM   7887  OE2 GLU E  10       8.732  57.026 -38.988  1.00 36.34
O1-
ATOM   7888  H   GLU E  10       5.958  51.949 -36.880  1.00 22.55           H
ATOM   7889  HA  GLU E  10       8.608  52.534 -37.059  1.00 30.51           H
ATOM   7890  HB2 GLU E  10       7.230  53.788 -38.512  1.00 28.04
H
ATOM   7891  HB3 GLU E  10       6.471  54.375 -37.248  1.00 28.04
H
ATOM   7892  HG2 GLU E  10       8.438  55.482 -36.586  1.00 38.14
H
ATOM   7893  HG3 GLU E  10       9.174  54.897 -37.876  1.00 38.14
H
ATOM   7894  N   ILE E  11       8.988  52.981 -34.703  1.00 28.61           N
ATOM   7895  CA  ILE E  11       9.253  53.384 -33.326  1.00 25.78           C
ATOM   7896  C   ILE E  11      10.184  54.588 -33.321  1.00 24.72           C
ATOM   7897  O   ILE E  11      11.369  54.450 -33.528  1.00 24.06           O
ATOM   7898  CB  ILE E  11       9.891  52.248 -32.498  1.00 31.17           C
ATOM   7899  CG1 ILE E  11       9.015  50.995 -32.536  1.00 30.05           C
ATOM   7900  CG2 ILE E  11      10.114  52.692 -31.056  1.00 30.83
C
ATOM   7901  CD1 ILE E  11       9.421  50.004 -33.599  1.00 30.44           C
ATOM   7902  H   ILE E  11       9.662  52.612 -35.089  1.00 34.34           H
ATOM   7903  HA  ILE E  11       8.420  53.640 -32.900  1.00 30.94           H
ATOM   7904  HB  ILE E  11      10.752  52.031 -32.888  1.00 37.40           H
ATOM   7905 HG12 ILE E  11       9.070  50.548 -31.677  1.00 36.06
H

ATOM   7906 HG13 ILE E  11       8.098  51.259 -32.712  1.00 36.06
H
ATOM   7907 HG21 ILE E  11      10.515  51.962 -30.560  1.00 37.00
H
ATOM   7908 HG22 ILE E  11      10.706  53.461 -31.051  1.00 37.00
H
ATOM   7909 HG23 ILE E  11       9.259  52.930 -30.664  1.00 37.00
H
ATOM   7910 HD11 ILE E  11       8.824  49.240 -33.563  1.00 36.53
H
ATOM   7911 HD12 ILE E  11       9.361  50.431 -34.468  1.00 36.53
H
ATOM   7912 HD13 ILE E  11      10.334  49.719 -33.432  1.00 36.53
H
ATOM   7913  N   ASN E  12       9.610  55.765 -33.095  1.00 26.17           N
ATOM   7914  CA  ASN E  12      10.364  57.010 -33.023  1.00 30.19
C
ATOM   7915  C   ASN E  12      10.274  57.565 -31.611  1.00 33.21           C
ATOM   7916  O   ASN E  12       9.309  58.238 -31.259  1.00 28.03           O
ATOM   7917  CB  ASN E  12       9.830  58.023 -34.042  1.00 28.09           C
ATOM   7918  CG  ASN E  12      10.710  59.256 -34.166  1.00 34.34
C
ATOM   7919  OD1 ASN E  12      11.388  59.657 -33.218  1.00 28.23
O
ATOM   7920  ND2 ASN E  12      10.701  59.869 -35.347  1.00 37.26
N
ATOM   7921  H   ASN E  12       8.765  55.869 -32.977  1.00 31.41           H
ATOM   7922  HA  ASN E  12      11.297  56.834 -33.225  1.00 36.22
H
ATOM   7923  HB2 ASN E  12       9.784  57.599 -34.914  1.00 33.71
H
ATOM   7924  HB3 ASN E  12       8.947  58.312 -33.766  1.00 33.71
H
ATOM   7925 HD21 ASN E  12      11.181  60.571 -35.471  1.00 44.71
H
ATOM   7926 HD22 ASN E  12      10.214  59.562 -35.986  1.00 44.71
H
ATOM   7927  N   GLY E  13      11.280  57.273 -30.797  1.00 33.39           N
ATOM   7928  CA  GLY E  13      11.269  57.704 -29.414  1.00 37.75
```

```
H
ATOM   1629  HB3 PHE A 196    -18.803  28.576 -42.603  1.00 23.38
H
ATOM   1630  HD1 PHE A 196    -16.476  28.146 -40.027  1.00 23.23
H
ATOM   1631  HD2 PHE A 196    -19.310  26.267 -42.125  1.00 25.20
H
ATOM   1632  HE1 PHE A 196    -16.451  26.410 -38.504  1.00 27.05
H
ATOM   1633  HE2 PHE A 196    -19.290  24.532 -40.608  1.00 29.38
H
ATOM   1634  HZ  PHE A 196    -17.862  24.598 -38.795  1.00 28.45
H
ATOM   1635  N   LYS A 197   -16.328  29.240 -45.519  1.00 12.88
N
ATOM   1636  CA  LYS A 197    -16.488  30.028 -46.726  1.00 14.65
C
ATOM   1637  C   LYS A 197   -16.602  29.102 -47.924  1.00 20.06
C
ATOM   1638  O   LYS A 197   -16.201  27.937 -47.864  1.00 15.47
O
ATOM   1639  CB  LYS A 197    -15.316  30.995 -46.902  1.00 17.78
C
ATOM   1640  CG  LYS A 197    -15.280  32.100 -45.858  1.00 18.13
C


ATOM   1641  CD  LYS A 197    -14.046  32.976 -45.998  1.00 21.25
C
ATOM   1642  CE  LYS A 197    -14.128  34.170 -45.061  1.00 21.78
C
ATOM   1643  NZ  LYS A 197    -12.877  34.972 -45.042  1.00 22.18
N1+
ATOM   1644  H   LYS A 197   -15.612  28.764 -45.511  1.00 15.45
H
ATOM   1645  HA  LYS A 197    -17.305  30.547 -46.664  1.00 17.58
H
ATOM   1646  HB2 LYS A 197    -14.486  30.497 -46.837  1.00 21.34
H
ATOM   1647  HB3 LYS A 197    -15.382  31.413 -47.775  1.00 21.34
H
ATOM   1648  HG2 LYS A 197    -16.063  32.662 -45.962  1.00 21.75
H
ATOM   1649  HG3 LYS A 197    -15.269  31.702 -44.973  1.00 21.75
H
ATOM   1650  HD2 LYS A 197    -13.257  32.461 -45.770  1.00 25.49
H
ATOM   1651  HD3 LYS A 197    -13.985  33.305 -46.908  1.00 25.49
H
ATOM   1652  HE2 LYS A 197    -14.851  34.749 -45.349  1.00 26.13
H
ATOM   1653  HE3 LYS A 197    -14.295  33.854 -44.159  1.00 26.13
H
ATOM   1654  HZ1 LYS A 197    -12.703  35.282 -45.858  1.00 26.61
H
ATOM   1655  HZ2 LYS A 197    -12.965  35.659 -44.484  1.00 26.61
H
ATOM   1656  HZ3 LYS A 197    -12.196  34.466 -44.774  1.00 26.61
H
ATOM   1657  N   GLY A 198   -17.172  29.632 -49.001  1.00 21.19
N
ATOM   1658  CA  GLY A 198    -17.291  28.916 -50.256  1.00 20.02
C
ATOM   1659  C   GLY A 198   -16.977  29.862 -51.394  1.00 18.77
C
ATOM   1660  O   GLY A 198   -17.644  30.880 -51.561  1.00 21.65
O
ATOM   1661  H   GLY A 198   -17.505  30.424 -49.026  1.00 25.43
H
ATOM   1662  HA2 GLY A 198    -16.667  28.173 -50.278  1.00 24.02
H
ATOM   1663  HA3 GLY A 198    -18.193  28.577 -50.364  1.00 24.02
H
ATOM   1664  N   TYR A 199   -15.942  29.535 -52.160  1.00 17.44
N
ATOM   1665  CA  TYR A 199    -15.521  30.351 -53.289  1.00 16.54
C
ATOM   1666  C   TYR A 199   -16.048  29.768 -54.591  1.00 23.54
C
ATOM   1667  O   TYR A 199   -15.735  28.630 -54.944  1.00 19.00
O
ATOM   1668  CB  TYR A 199    -13.997  30.446 -53.349  1.00 17.44
C
ATOM   1669  CG  TYR A 199    -13.376  31.238 -52.222  1.00 14.05
C
ATOM   1670  CD1 TYR A 199    -13.236  30.689 -50.958  1.00 15.06
C
ATOM   1671  CD2 TYR A 199    -12.912  32.529 -52.432  1.00 17.40
C
ATOM   1672  CE1 TYR A 199    -12.663  31.410 -49.926  1.00 17.88
C
ATOM   1673  CE2 TYR A 199    -12.332  33.255 -51.409  1.00 15.39
C
ATOM   1674  CZ  TYR A 199    -12.213  32.690 -50.156  1.00 15.83
C
ATOM   1675  OH  TYR A 199    -11.637  33.406 -49.131  1.00 18.67
O


ATOM   1676  H   TYR A 199   -15.461  28.832 -52.043  1.00 20.93
H
ATOM   1677  HA  TYR A 199    -15.878  31.247 -53.189  1.00 19.84
H
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C

ATOM   7929  C   GLY E  13     10.163  57.015 -28.639  1.00 37.43          C

ATOM   7930  O   GLY E  13     10.112  55.786 -28.582  1.00 37.21          O

ATOM   7931  H   GLY E  13     11.979  56.827 -31.024  1.00 40.07          H
ATOM   7932  HA2 GLY E  13      12.120  57.492 -28.998  1.00 45.30
H
ATOM   7933  HA3 GLY E  13      11.130  58.663 -29.371  1.00 45.30
H

ATOM   7934  N   SER E  14      9.260  57.809 -28.068  1.00 44.23          N

ATOM   7935  CA  SER E  14       8.265  57.294 -27.129  1.00 48.10          C

ATOM   7936  C   SER E  14      6.947  56.870 -27.780  1.00 45.20          C

ATOM   7937  O   SER E  14      6.185  56.108 -27.185  1.00 44.70          O

ATOM   7938  CB  SER E  14       7.978  58.343 -26.052  1.00 44.32          C
ATOM   7939  OG  SER E  14       7.497  59.546 -26.627  1.00 49.63
O

ATOM   7940  H   SER E  14      9.201  58.655 -28.209  1.00 53.08          H



ATOM   7941  HA  SER E  14       8.635  56.514 -26.686  1.00 57.72          H
ATOM   7942  HB2 SER E  14       7.309  57.995 -25.444  1.00 53.18
H
ATOM   7943  HB3 SER E  14       8.799  58.531 -25.570  1.00 53.18
H
ATOM   7944  HG  SER E  14       7.345  60.111 -26.024  1.00 59.56
H

ATOM   7945  N   ASP E  15      6.670  57.358 -28.986  1.00 47.04          N

ATOM   7946  CA  ASP E  15       5.445  56.970 -29.683  1.00 51.32          C

ATOM   7947  C   ASP E  15      5.751  55.979 -30.804  1.00 46.88          C

ATOM   7948  O   ASP E  15      6.834  55.997 -31.394  1.00 42.45          O

ATOM   7949  CB  ASP E  15       4.707  58.201 -30.229  1.00 55.08          C
ATOM   7950  CG  ASP E  15       5.515  58.970 -31.250  1.00 56.39
C
ATOM   7951  OD1 ASP E  15       6.755  58.979 -31.140  1.00 57.41
O
ATOM   7952  OD2 ASP E  15       4.907  59.575 -32.160  1.00 64.51
O1-

ATOM   7953  H   ASP E  15      7.168  57.909 -29.420  1.00 56.44          H

ATOM   7954  HA  ASP E  15       4.855  56.529 -29.052  1.00 61.58          H
ATOM   7955  HB2 ASP E  15       3.884  57.913 -30.654  1.00 66.10
H
ATOM   7956  HB3 ASP E  15       4.507  58.801 -29.493  1.00 66.10
H

ATOM   7957  N   THR E  16      4.790  55.100 -31.069  1.00 40.99          N

ATOM   7958  CA  THR E  16       4.933  54.071 -32.088  1.00 35.68          C

ATOM   7959  C   THR E  16      3.735  54.097 -33.026  1.00 38.72          C

ATOM   7960  O   THR E  16      2.618  54.422 -32.613  1.00 33.45          O

ATOM   7961  CB  THR E  16       5.068  52.671 -31.464  1.00 38.05          C
ATOM   7962  OG1 THR E  16       3.910  52.381 -30.674  1.00 48.80
O
ATOM   7963  CG2 THR E  16       6.302  52.596 -30.585  1.00 39.99
C

ATOM   7964  H   THR E  16      4.032  55.080 -30.662  1.00 49.19          H

ATOM   7965  HA  THR E  16       5.731  54.249 -32.611  1.00 42.82          H

ATOM   7966  HB  THR E  16       5.153  52.009 -32.168  1.00 45.66          H
ATOM   7967  HG1 THR E  16       3.980  51.618 -30.331  1.00 58.56
H
ATOM   7968 HG21 THR E  16       6.378  51.711 -30.196  1.00 47.99
H
ATOM   7969 HG22 THR E  16       7.095  52.779 -31.112  1.00 47.99
H
ATOM   7970 HG23 THR E  16       6.240  53.250 -29.871  1.00 47.99
H

ATOM   7971  N   HIS E  17     3.974  53.758 -34.290  1.00 31.94          N

ATOM   7972  CA  HIS E  17      2.917  53.737 -35.295  1.00 33.04          C

ATOM   7973  C   HIS E  17     2.903  52.408 -36.036  1.00 25.75          C

ATOM   7974  O   HIS E  17     3.919  51.976 -36.579  1.00 21.85          O

ATOM   7975  CB  HIS E  17      3.093  54.890 -36.284  1.00 33.14          C


ATOM   7976  CG  HIS E  17      3.093  56.242 -35.639  1.00 43.36          C
ATOM   7977  ND1 HIS E  17
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H
ATOM   1678  HB2 TYR A 199     -13.629  29.549 -53.316  1.00 20.92
H
ATOM   1679  HB3 TYR A 199     -13.745  30.872 -54.183  1.00 20.92
H
ATOM   1680  HD1 TYR A 199     -13.541  29.825 -50.798  1.00 18.08
H
ATOM   1681  HD2 TYR A 199     -12.992  32.912 -53.275  1.00 20.88
H
ATOM   1682  HE1 TYR A 199     -12.579  31.030 -49.082  1.00 21.46
H
ATOM   1683  HE2 TYR A 199     -12.029  34.120 -51.564  1.00 18.47
H
ATOM   1684  HH  TYR A 199     -11.626  32.945 -48.429  1.00 22.40
H
ATOM   1685  N   ILE A 200     -16.841  30.552 -55.309  1.00 22.64
N
ATOM   1686  CA  ILE A 200     -17.424  30.090 -56.558  1.00 23.49
C
ATOM   1687  C   ILE A 200     -16.323  29.921 -57.600  1.00 24.43
C
ATOM   1688  O   ILE A 200     -15.491  30.808 -57.790  1.00 21.73
O
ATOM   1689  CB  ILE A 200     -18.499  31.059 -57.068  1.00 24.34
C
ATOM   1690  CG1 ILE A 200     -19.571  31.263 -55.989  1.00 24.68
C
ATOM   1691  CG2 ILE A 200     -19.121  30.526 -58.354  1.00 27.39
C
ATOM   1692  CD1 ILE A 200     -20.587  32.342 -56.308  1.00 32.82
C
ATOM   1693  H   ILE A 200     -17.058  31.356 -55.094  1.00 27.17
H
ATOM   1694  HA  ILE A 200     -17.840  29.226 -56.415  1.00 28.19
H
ATOM   1695  HB  ILE A 200     -18.082  31.915 -57.257  1.00 29.21
H
ATOM   1696 HG12 ILE A 200     -20.054  30.430 -55.870  1.00 29.61
H
ATOM   1697 HG13 ILE A 200     -19.133  31.508 -55.158  1.00 29.61
H
ATOM   1698 HG21 ILE A 200     -19.797  31.151 -58.660  1.00 32.86
H
ATOM   1699 HG22 ILE A 200     -18.427  30.433 -59.025  1.00 32.86
H
ATOM   1700 HG23 ILE A 200     -19.525  29.663 -58.174  1.00 32.86
H
ATOM   1701 HD11 ILE A 200     -21.223  32.403 -55.578  1.00 39.38
H
ATOM   1702 HD12 ILE A 200     -20.125  33.188 -56.417  1.00 39.38
H
ATOM   1703 HD13 ILE A 200     -21.048  32.108 -57.129  1.00 39.38
H
ATOM   1704  N   GLU A 201     -16.330  28.769 -58.264  1.00 22.73
N
ATOM   1705  CA  GLU A 201     -15.255  28.388 -59.169  1.00 24.00
C
ATOM   1706  C   GLU A 201     -15.800  27.657 -60.392  1.00 25.50
C
ATOM   1707  O   GLU A 201     -16.887  27.076 -60.350  1.00 22.40
O
ATOM   1708  CB  GLU A 201     -14.244  27.508 -58.425  1.00 23.12
C
ATOM   1709  CG  GLU A 201     -13.104  26.959 -59.269  1.00 25.67
C
ATOM   1710  CD  GLU A 201     -12.274  28.048 -59.917  1.00 31.64
C

ATOM   1711  OE1 GLU A 201     -11.116  28.247 -59.490  1.00 34.45
O
ATOM   1712  OE2 GLU A 201     -12.777  28.700 -60.856  1.00 31.63
O1-
ATOM   1713  H   GLU A 201     -16.957  28.184 -58.206  1.00 27.27
H
ATOM   1714  HA  GLU A 201     -14.797  29.186 -59.473  1.00 28.80
H
ATOM   1715  HB2 GLU A 201     -13.849  28.032 -57.710  1.00 27.75
H
ATOM   1716  HB3 GLU A 201     -14.716  26.750 -58.047  1.00 27.75
H
ATOM   1717  HG2 GLU A 201     -12.518  26.432 -58.704  1.00 30.81
H
ATOM   1718  HG3 GLU A 201     -13.472  26.404 -59.974  1.00 30.81
H
ATOM   1719  N   ASN A 202     -15.040  27.709 -61.480  1.00 26.48
N
ATOM   1720  CA  ASN A 202     -15.344  26.948 -62.684  1.00 25.56
C
ATOM   1721  C   ASN A 202     -15.316  25.452 -62.389  1.00 24.34
C
ATOM   1722  O   ASN A 202     -14.295  24.914 -61.967  1.00 26.28
O
ATOM   1723  CB  ASN A 202     -14.343  27.294 -63.788  1.00 29.63
C
ATOM   1724  CG  ASN A 202     -14.689  26.660 -65.123  1.00 31.70
C
ATOM   1725  OD1 ASN A 202     -15.292  25.589 -65.187  1.00 30.51
O
ATOM   1726  ND2 ASN A 202     -14.297  27.323 -66.203  1.00 38.46
N
ATOM   1727  H   ASN A 202     -14.328  28.187 -61.546  1.00 31.77
H
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ATOM   7977  ND1 HIS E  17       4.224  56.601 -35.065  1.00 49.55           N

ATOM   7978  CD2 HIS E  17       2.098  57.141 -35.454  1.00 48.56           C

ATOM   7979  CE1 HIS E  17       3.926  57.989 -34.587  1.00 47.74           C

ATOM   7980  NE2 HIS E  17       2.643  58.219 -34.799  1.00 51.13           N

ATOM   7981  H   HIS E  17       4.747  53.533 -34.592  1.00 38.33           H

ATOM   7982  HA  HIS E  17       2.059  53.846 -34.855  1.00 39.65           H

ATOM   7983  HB2 HIS E  17       3.940  54.781 -36.744  1.00 39.77           H

ATOM   7984  HB3 HIS E  17       2.365  54.867 -36.924  1.00 39.77           H

ATOM   7985  HD1 HIS E  17       5.001  56.435 -35.063  1.00 59.20           H

ATOM   7986  HD2 HIS E  17       1.213  57.048 -35.722  1.00 58.27           H

ATOM   7987  HE1 HIS E  17       4.519  58.565 -34.161  1.00 57.28           H

ATOM   7988  HE2 HIS E  17       2.218  58.929 -34.565  1.00 61.35           H

ATOM   7989  N   SER E  18       1.744  51.762 -36.039  1.00 18.75           N

ATOM   7990  CA  SER E  18       1.548  50.514 -36.761  1.00 18.70           C

ATOM   7991  C   SER E  18       0.600  50.766 -37.917  1.00 22.66           C

ATOM   7992  O   SER E  18      -0.503  51.269 -37.710  1.00 22.11           O

ATOM   7993  CB  SER E  18       0.987  49.434 -35.839  1.00 21.15           C
ATOM   7994  OG  SER E  18       1.713  49.382 -34.625  1.00 25.86
O

ATOM   7995  H   SER E  18       1.042  52.032 -35.621  1.00 22.50           H

ATOM   7996  HA  SER E  18       2.396  50.207 -37.118  1.00 22.43           H
ATOM   7997  HB2 SER E  18       0.059  49.637 -35.643  1.00 25.38
H
ATOM   7998  HB3 SER E  18       1.052  48.574 -36.283  1.00 25.38
H
ATOM   7999  HG  SER E  18       1.396  48.785 -34.125  1.00 30.79
H

ATOM   8000  N   THR E  19       1.029  50.431 -39.131  1.00 16.84           N

ATOM   8001  CA  THR E  19       0.194  50.639 -40.306  1.00 18.45           C

ATOM   8002  C   THR E  19       0.315  49.485 -41.295  1.00 15.64           C

ATOM   8003  O   THR E  19       1.355  48.834 -41.386  1.00 15.74           O

ATOM   8004  CB  THR E  19       0.553  51.957 -41.024  1.00 19.60           C
ATOM   8005  OG1 THR E  19       1.853  51.848 -41.611  1.00 27.97
O
ATOM   8006  CG2 THR E  19       0.540  53.128 -40.050  1.00 25.33
C

ATOM   8007  H   THR E  19       1.798  50.084 -39.299  1.00 20.21           H
ATOM   8008  HA  THR E  19      -0.733  50.696 -40.025  1.00 22.14
H
ATOM   8009  HB  THR E  19      -0.100  52.132 -41.720  1.00 23.52
H
ATOM   8010  HG1 THR E  19       2.425  51.696 -41.015  1.00 33.57
H

ATOM   8011 HG21 THR E  19       0.766  53.948 -40.514  1.00 30.39
H
ATOM   8012 HG22 THR E  19      -0.342  53.221 -39.657  1.00 30.39
H
ATOM   8013 HG23 THR E  19       1.186  52.977 -39.342  1.00 30.39
H

ATOM   8014  N   VAL E  20      -0.767  49.227 -42.020  1.00 13.81           N

ATOM   8015  CA  VAL E  20      -0.733  48.293 -43.138  1.00 13.33           C

ATOM   8016  C   VAL E  20      -1.448  48.899 -44.341  1.00 17.42           C

ATOM   8017  O   VAL E  20      -2.502  49.514 -44.192  1.00 15.32           O

ATOM   8018  CB  VAL E  20      -1.387  46.947 -42.794  1.00 13.54           C
ATOM   8019  CG1 VAL E  20      -1.103  45.934 -43.893  1.00 12.41
C
ATOM   8020  CG2 VAL E  20      -0.887  46.429 -41.450  1.00 15.63
C

ATOM   8021  H   VAL E  20      -1.538  49.583 -41.884  1.00 16.57           H

ATOM   8022  HA  VAL E  20       0.190  48.127 -43.386  1.00 16.00           H

ATOM   8023  HB  VAL E  20      -2.348  47.066 -42.734  1.00 16.24           H
ATOM   8024 HG11 VAL E  20      -1.522  45.091 -43.660  1.00 14.89
H
ATOM   8025 HG12 VAL E  20      -1.466  46.266 -44.729  1.00 14.89
H
ATOM   8026 HG13 VAL E  20      -0.144  45.816 -43.972  1.00 14.89
H
ATOM   8027 HG21 VAL E  20      -1.316  45.580 -41.260  1.00 18.75
H
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..
ATOM 1728 HA ASN A 202 -16.234 27.180 -62.994 1.00 30.67
H
ATOM 1729 HB2 ASN A 202 -14.329 28.256 -63.910 1.00 35.55
H
ATOM 1730 HB3 ASN A 202 -13.464 26.980 -63.526 1.00 35.55
H
ATOM 1731 HD21 ASN A 202 -14.466 27.009 -66.985 1.00 46.15
H
ATOM 1732 HD22 ASN A 202 -13.873 28.067 -66.121 1.00 46.15
H
ATOM 1733 N CYS A 203 -16.440 24.785 -62.627 1.00 28.75
N
ATOM 1734 CA CYS A 203 -16.574 23.364 -62.325 1.00 25.56
C
ATOM 1735 C CYS A 203 -15.508 22.513 -63.014 1.00 26.17
C
ATOM 1736 O CYS A 203 -15.174 21.430 -62.539 1.00 23.90
O
ATOM 1737 CB CYS A 203 -17.967 22.874 -62.726 1.00 25.82
C
ATOM 1738 SG CYS A 203 -19.313 23.627 -61.778 1.00 33.04
S
ATOM 1739 H CYS A 203 -17.148 25.136 -62.966 1.00 34.50
H
ATOM 1740 HA CYS A 203 -16.479 23.238 -61.368 1.00 30.67
H
ATOM 1741 HB2 CYS A 203 -18.112 23.081 -63.663 1.00 30.99
H
ATOM 1742 HB3 CYS A 203 -18.011 21.914 -62.592 1.00 30.99
H
ATOM 1743 N SER A 204 -14.962 23.015 -64.118 1.00 26.58
N
ATOM 1744 CA SER A 204 -14.011 22.250 -64.918 1.00 28.83
C
ATOM 1745 C SER A 204 -12.568 22.426 -64.464 1.00 29.48
C

ATOM 1746 O SER A 204 -11.670 21.765 -64.980 1.00 30.84
O
ATOM 1747 CB SER A 204 -14.130 22.646 -66.391 1.00 34.76
C
ATOM 1748 OG SER A 204 -15.399 22.282 -66.905 1.00 36.78
O
ATOM 1749 H SER A 204 -15.127 23.801 -64.426 1.00 31.89
H
ATOM 1750 HA SER A 204 -14.230 21.308 -64.847 1.00 34.60
H
ATOM 1751 HB2 SER A 204 -14.020 23.607 -66.470 1.00 41.72
H
ATOM 1752 HB3 SER A 204 -13.440 22.190 -66.898 1.00 41.72
H
ATOM 1753 HG SER A 204 -15.456 22.503 -67.713 1.00 44.13
H
ATOM 1754 N THR A 205 -12.342 23.313 -63.501 1.00 30.18
N
ATOM 1755 CA THR A 205 -10.991 23.564 -63.010 1.00 31.93
C
ATOM 1756 C THR A 205 -10.595 22.490 -62.002 1.00 26.32
C
ATOM 1757 O THR A 205 -11.300 22.280 -61.017 1.00 27.11
O
ATOM 1758 CB THR A 205 -10.880 24.953 -62.354 1.00 30.33
C
ATOM 1759 OG1 THR A 205 -11.195 25.962 -63.322 1.00 32.74
O
ATOM 1760 CG2 THR A 205 -9.473 25.195 -61.822 1.00 28.31
C
ATOM 1761 H THR A 205 -12.951 23.783 -63.117 1.00 36.22
H
ATOM 1762 HA THR A 205 -10.369 23.528 -63.753 1.00 38.32
H
ATOM 1763 HB THR A 205 -11.503 25.011 -61.613 1.00 36.40
H
ATOM 1764 HG1 THR A 205 -10.660 25.917 -63.968 1.00 39.29
H
ATOM 1765 HG21 THR A 205 -9.420 26.073 -61.413 1.00 33.97
H
ATOM 1766 HG22 THR A 205 -9.250 24.524 -61.158 1.00 33.97
H
ATOM 1767 HG23 THR A 205 -8.831 25.146 -62.547 1.00 33.97
H
ATOM 1768 N PRO A 206 -9.462 21.808 -62.235 1.00 25.18
N
ATOM 1769 CA PRO A 206 -9.103 20.744 -61.290 1.00 27.92
C
ATOM 1770 C PRO A 206 -8.728 21.285 -59.913 1.00 27.31
C
ATOM 1771 O PRO A 206 -8.020 22.285 -59.806 1.00 24.19
O
ATOM 1772 CB PRO A 206 -7.918 20.051 -61.963 1.00 27.16
C
ATOM 1773 CG PRO A 206 -7.340 21.073 -62.876 1.00 35.92
C
ATOM 1774 CD PRO A 206 -8.479 21.937 -63.326 1.00 32.59
C
ATOM 1775 HA PRO A 206 -9.839 20.113 -61.199 1.00 33.50
H
ATOM 1776 HB2 PRO A 206 -7.271 19.786 -61.290 1.00 32.59
H
ATOM 1777 HB3 PRO A 206 -8.229 19.280 -62.463 1.00 32.59
H
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..
ATOM 8028 HG22 VAL E 20 0.075 46.311 -41.496 1.00 18.75
H
ATOM 8029 HG23 VAL E 20 -1.109 47.074 -40.761 1.00 18.75
H
ATOM 8030 N ASP E 21 -0.848 48.729 -45.518 1.00 15.97 N
ATOM 8031 CA ASP E 21 -1.440 49.125 -46.794 1.00 21.15 C
ATOM 8032 C ASP E 21 -1.657 47.896 -47.664 1.00 18.26 C
ATOM 8033 O ASP E 21 -0.754 47.072 -47.817 1.00 17.18 O
ATOM 8034 CB ASP E 21 -0.544 50.116 -47.543 1.00 22.93 C
ATOM 8035 CG ASP E 21 -0.289 51.386 -46.761 1.00 24.35
C
ATOM 8036 OD1 ASP E 21 -1.220 51.871 -46.088 1.00 25.88
O1-
ATOM 8037 OD2 ASP E 21 0.849 51.897 -46.822 1.00 27.99
O
ATOM 8038 H ASP E 21 -0.070 48.373 -45.604 1.00 19.17 H
ATOM 8039 HA ASP E 21 -2.300 49.546 -46.635 1.00 25.38 H
ATOM 8040 HB2 ASP E 21 0.312 49.696 -47.720 1.00 27.51
H
ATOM 8041 HB3 ASP E 21 -0.973 50.360 -48.378 1.00 27.51
H
ATOM 8042 N VAL E 22 -2.853 47.775 -48.230 1.00 15.73 N
ATOM 8043 CA VAL E 22 -3.147 46.699 -49.170 1.00 16.91 C
ATOM 8044 C VAL E 22 -3.314 47.289 -50.559 1.00 18.18 C
ATOM 8045 O VAL E 22 -4.196 48.120 -50.785 1.00 18.14 O

ATOM 8046 CB VAL E 22 -4.411 45.929 -48.787 1.00 13.15 C
ATOM 8047 CG1 VAL E 22 -4.570 44.701 -49.670 1.00 18.48
C
ATOM 8048 CG2 VAL E 22 -4.362 45.523 -47.319 1.00 14.73
C
ATOM 8049 H VAL E 22 -3.514 48.305 -48.086 1.00 18.86 H
ATOM 8050 HA VAL E 22 -2.403 46.077 -49.189 1.00 20.29 H
ATOM 8051 HB VAL E 22 -5.184 46.499 -48.919 1.00 15.79 H
ATOM 8052 HG11 VAL E 22 -5.376 44.228 -49.411 1.00 22.17
H
ATOM 8053 HG12 VAL E 22 -4.635 44.985 -50.595 1.00 22.17
H
ATOM 8054 HG13 VAL E 22 -3.797 44.127 -49.554 1.00 22.17
H
ATOM 8055 HG21 VAL E 22 -5.172 45.036 -47.099 1.00 17.68
H
ATOM 8056 HG22 VAL E 22 -3.587 44.958 -47.173 1.00 17.68
H
ATOM 8057 HG23 VAL E 22 -4.298 46.322 -46.773 1.00 17.68
H
ATOM 8058 N ASP E 23 -2.464 46.854 -51.482 1.00 15.34 N
ATOM 8059 CA ASP E 23 -2.482 47.357 -52.849 1.00 19.21 C
ATOM 8060 C ASP E 23 -2.905 46.259 -53.817 1.00 19.78 C
ATOM 8061 O ASP E 23 -2.353 45.158 -53.794 1.00 18.41 O
ATOM 8062 CB ASP E 23 -1.103 47.894 -53.253 1.00 21.71 C
ATOM 8063 CG ASP E 23 -0.614 49.015 -52.347 1.00 27.17
C
ATOM 8064 OD1 ASP E 23 -1.453 49.705 -51.735 1.00 25.29
O
ATOM 8065 OD2 ASP E 23 0.618 49.212 -52.256 1.00 37.02
O1-
ATOM 8066 H ASP E 23 -1.859 46.260 -51.339 1.00 18.40 H
ATOM 8067 HA ASP E 23 -3.122 48.083 -52.914 1.00 23.05 H
ATOM 8068 HB2 ASP E 23 -0.458 47.171 -53.209 1.00 26.06
H
ATOM 8069 HB3 ASP E 23 -1.152 48.240 -54.157 1.00 26.06
H
ATOM 8070 N LEU E 24 -3.888 46.567 -54.659 1.00 16.92 N
ATOM 8071 CA LEU E 24 -4.251 45.703 -55.777 1.00 17.78 C
ATOM 8072 C LEU E 24 -3.735 46.318 -57.072 1.00 20.26 C
ATOM 8073 O LEU E 24 -4.165 47.398 -57.462 1.00 21.27 O
ATOM 8074 CB LEU E 24 -5.768 45.506 -55.844 1.00 17.65 C
ATOM 8075 CG LEU E 24 -6.282 44.629 -56.988 1.00 20.38
C
ATOM 8076 CD1 LEU E 24 -5.743 43.211 -56.874 1.00 20.35
C
ATOM 8077 CD2 LEU E 24 -7.803 44.623 -57.009 1.00 21.16
C
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ATOM  1778  HG2 PRO A 206    -6.683  21.600 -62.396  1.00 43.11
H
ATOM  1779  HG3 PRO A 206    -6.930  20.631 -63.636  1.00 43.11
H
ATOM  1780  HD2 PRO A 206    -8.189  22.859 -63.411  1.00 39.11
H


ATOM  1781  HD3 PRO A 206    -8.850  21.602 -64.157  1.00 39.11
H
ATOM  1782  N   ASN A 207   -9.223  20.624 -58.873  1.00 24.26
N
ATOM  1783  CA  ASN A 207    -8.923  20.983 -57.492  1.00 25.76
C
ATOM  1784  C   ASN A 207   -8.955  19.741 -56.616  1.00 23.33
C
ATOM  1785  O   ASN A 207   -9.560  18.734 -56.988  1.00 20.60
O
ATOM  1786  CB  ASN A 207    -9.927  22.010 -56.957  1.00 23.82
C
ATOM  1787  CG  ASN A 207    -9.620  23.423 -57.405  1.00 27.43
C
ATOM  1788  OD1 ASN A 207    -8.771  24.097 -56.822  1.00 28.42
O
ATOM  1789  ND2 ASN A 207   -10.327  23.889 -58.430  1.00 23.94
N
ATOM  1790  H   ASN A 207   -9.749  19.947 -58.944  1.00 29.12
H
ATOM  1791  HA  ASN A 207    -8.034  21.369 -57.444  1.00 30.91
H
ATOM  1792  HB2 ASN A 207   -10.813  21.780 -57.276  1.00 28.58
H
ATOM  1793  HB3 ASN A 207    -9.909  21.993 -55.987  1.00 28.58
H
ATOM  1794 HD21 ASN A 207    -10.189  24.687 -58.721  1.00 28.73
H
ATOM  1795 HD22 ASN A 207    -10.923  23.393 -58.803  1.00 28.73
H
ATOM  1796  N   THR A 208   -8.312  19.815 -55.454  1.00 22.57
N
ATOM  1797  CA  THR A 208    -8.444  18.773 -54.443  1.00 19.78
C
ATOM  1798  C   THR A 208   -9.888  18.768 -53.954  1.00 16.39
C
ATOM  1799  O   THR A 208  -10.620  19.723 -54.195  1.00 15.26
O
ATOM  1800  CB  THR A 208    -7.479  18.998 -53.260  1.00 20.25
C
ATOM  1801  OG1 THR A 208    -7.743  20.271 -52.655  1.00 17.10
O
ATOM  1802  CG2 THR A 208    -6.032  18.957 -53.738  1.00 20.83
C
ATOM  1803  H   THR A 208   -7.792  20.461 -55.227  1.00 27.08
H
ATOM  1804  HA  THR A 208    -8.249  17.909 -54.840  1.00 23.73
H
ATOM  1805  HB  THR A 208    -7.605  18.296 -52.603  1.00 24.30
H
ATOM  1806  HG1 THR A 208    -7.219  20.397 -52.010  1.00 20.52
H
ATOM  1807 HG21 THR A 208     -5.432  19.099 -52.989  1.00 24.99
H
ATOM  1808 HG22 THR A 208     -5.839  18.094 -54.137  1.00 24.99
H
ATOM  1809 HG23 THR A 208     -5.881  19.650 -54.399  1.00 24.99
H
ATOM  1810  N   TYR A 209  -10.303  17.702 -53.277  1.00 16.05
N
ATOM  1811  CA  TYR A 209   -11.692  17.583 -52.843  1.00 17.55
C
ATOM  1812  C   TYR A 209  -11.836  16.812 -51.533  1.00 16.31
C
ATOM  1813  O   TYR A 209  -10.928  16.090 -51.112  1.00 16.24
O
ATOM  1814  CB  TYR A 209   -12.534  16.920 -53.941  1.00 17.25
C
ATOM  1815  CG  TYR A 209   -12.030  15.571 -54.393  1.00 14.62
C


ATOM  1816  CD1 TYR A 209   -10.964  15.467 -55.276  1.00 19.20
C
ATOM  1817  CD2 TYR A 209   -12.633  14.401 -53.955  1.00 18.23
C
ATOM  1818  CE1 TYR A 209   -10.499  14.234 -55.695  1.00 22.13
C
ATOM  1819  CE2 TYR A 209   -12.175  13.160 -54.372  1.00 21.56
C
ATOM  1820  CZ  TYR A 209   -11.107  13.085 -55.243  1.00 22.08
C
ATOM  1821  OH  TYR A 209   -10.644  11.857 -55.664  1.00 21.65
O
ATOM  1822  H   TYR A 209   -9.804  17.037 -53.057  1.00 19.26
H
ATOM  1823  HA  TYR A 209   -12.048  18.474 -52.698  1.00 21.06
H
ATOM  1824  HB2 TYR A 209   -13.437  16.800 -53.608  1.00 20.70
H
ATOM  1825  HB3 TYR A 209   -12.547  17.504 -54.716  1.00 20.70
H
ATOM  1826  HD1 TYR A 209   -10.548  16.240 -55.582  1.00 23.04
H
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ATOM  8078  H   LEU E  24   -4.365  47.280 -54.603  1.00 20.30       H

ATOM  8079  HA  LEU E  24    -3.835  44.834 -55.662  1.00 21.34       H
ATOM  8080  HB2 LEU E  24    -6.060  45.098 -55.014  1.00 21.18
H


ATOM  8081  HB3 LEU E  24    -6.184  46.377 -55.938  1.00 21.18
H
ATOM  8082  HG  LEU E  24    -5.973  44.999 -57.831  1.00 24.45
H
ATOM  8083 HD11 LEU E  24    -6.087  42.683 -57.612  1.00 24.42
H
ATOM  8084 HD12 LEU E  24    -4.774  43.237 -56.909  1.00 24.42
H
ATOM  8085 HD13 LEU E  24    -6.034  42.830 -56.031  1.00 24.42
H
ATOM  8086 HD21 LEU E  24    -8.106  44.062 -57.740  1.00 25.39
H
ATOM  8087 HD22 LEU E  24    -8.128  44.271 -56.165  1.00 25.39
H
ATOM  8088 HD23 LEU E  24    -8.120  45.531 -57.134  1.00 25.39
H

ATOM  8089  N   ASP E  25   -2.807  45.630 -57.729  1.00 19.76       N

ATOM  8090  CA  ASP E  25    -2.193  46.137 -58.953  1.00 22.73       C

ATOM  8091  C   ASP E  25   -1.618  47.542 -58.756  1.00 27.17       C

ATOM  8092  O   ASP E  25   -1.913  48.462 -59.520  1.00 23.98       O

ATOM  8093  CB  ASP E  25   -3.211  46.124 -60.095  1.00 21.06       C
ATOM  8094  CG  ASP E  25    -3.666  44.718 -60.449  1.00 22.08
C
ATOM  8095  OD1 ASP E  25    -2.862  43.783 -60.271  1.00 20.88
O
ATOM  8096  OD2 ASP E  25    -4.820  44.541 -60.895  1.00 23.06
O1-

ATOM  8097  H   ASP E  25   -2.513  44.860 -57.485  1.00 23.71       H

ATOM  8098  HA  ASP E  25   -1.462  45.550 -59.201  1.00 27.28       H
ATOM  8099  HB2 ASP E  25    -3.992  46.636 -59.830  1.00 25.27
H
ATOM  8100  HB3 ASP E  25    -2.807  46.518 -60.884  1.00 25.27
H

ATOM  8101  N   ASP E  26   -0.796  47.691 -57.720  1.00 25.96       N

ATOM  8102  CA  ASP E  26    -0.129  48.958 -57.415  1.00 32.50       C

ATOM  8103  C   ASP E  26   -1.125  50.097 -57.208  1.00 32.04       C

ATOM  8104  O   ASP E  26   -0.835  51.257 -57.508  1.00 30.72       O

ATOM  8105  CB  ASP E  26    0.862  49.324 -58.527  1.00 34.94       C
ATOM  8106  CG  ASP E  26    2.007  48.334 -58.635  1.00 43.04
C
ATOM  8107  OD1 ASP E  26     2.488  47.863 -57.580  1.00 38.49
O
ATOM  8108  OD2 ASP E  26     2.426  48.024 -59.773  1.00 45.93
O1-

ATOM  8109  H   ASP E  26   -0.603  47.061 -57.168  1.00 31.15       H

ATOM  8110  HA  ASP E  26    0.375  48.854 -56.593  1.00 39.00       H
ATOM  8111  HB2 ASP E  26     0.394  49.337 -59.377  1.00 41.93
H
ATOM  8112  HB3 ASP E  26     1.237  50.199 -58.341  1.00 41.93
H

ATOM  8113  N   SER E  27   -2.300  49.749 -56.696  1.00 27.41       N
ATOM  8114  CA  SER E  27    -3.304  50.730 -56.305  1.00 26.12
C

ATOM  8115  C   SER E  27   -3.839  50.370 -54.923  1.00 25.00       C



ATOM  8116  O   SER E  27   -4.302  49.252 -54.707  1.00 22.30       O
ATOM  8117  CB  SER E  27    -4.438  50.781 -57.328  1.00 27.19
C
ATOM  8118  OG  SER E  27    -5.564  51.464 -56.803  1.00 35.60
O

ATOM  8119  H   SER E  27   -2.544  48.935 -56.562  1.00 32.89       H
ATOM  8120  HA  SER E  27    -2.895  51.608 -56.257  1.00 31.34
H
ATOM  8121  HB2 SER E  27    -4.128  51.247 -58.120  1.00 32.63
H
ATOM  8122  HB3 SER E  27    -4.697  49.874 -57.556  1.00 32.63
H
ATOM  8123  HG  SER E  27    -6.179  51.484 -57.375  1.00 42.72
H

ATOM  8124  N   GLN E  28   -3.763  51.311 -53.985  1.00 20.78       N
ATOM  8125  CA  GLN E  28    -4.183  51.043 -52.614  1.00 21.26
C

ATOM  8126  C   GLN E  28   -5.695  50.879 -52.532  1.00 20.87       C
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ATOM   1827  HD2 TYR A 209    -13.351  14.449 -53.366  1.00 21.87
H
ATOM   1828  HE1 TYR A 209     -9.780  14.182 -56.283  1.00 26.56
H
ATOM   1829  HE2 TYR A 209    -12.585  12.383 -54.067  1.00 25.87
H
ATOM   1830  HH  TYR A 209     -9.994  11.959 -56.187  1.00 25.99
H
ATOM   1831  N   ILE A 210   -12.986  16.991 -50.892  1.00 14.44
N
ATOM   1832  CA  ILE A 210    -13.276  16.355 -49.617  1.00 13.02
C
ATOM   1833  C   ILE A 210   -14.502  15.475 -49.750  1.00 14.98
C
ATOM   1834  O   ILE A 210   -15.563  15.937 -50.175  1.00 15.19
O
ATOM   1835  CB  ILE A 210    -13.520  17.394 -48.506  1.00 15.09
C
ATOM   1836  CG1 ILE A 210    -12.293  18.294 -48.337  1.00 18.45
C
ATOM   1837  CG2 ILE A 210    -13.860  16.695 -47.190  1.00 15.58
C
ATOM   1838  CD1 ILE A 210    -12.516  19.483 -47.404  1.00 16.93
C
ATOM   1839  H   ILE A 210   -13.625  17.487 -51.184  1.00 17.32
H
ATOM   1840  HA  ILE A 210    -12.526  15.798 -49.356  1.00 15.62
H
ATOM   1841  HB  ILE A 210    -14.274  17.948 -48.763  1.00 18.10
H
ATOM   1842 HG12 ILE A 210    -11.566  17.764 -47.974  1.00 22.14
H
ATOM   1843 HG13 ILE A 210    -12.042  18.643 -49.207  1.00 22.14
H
ATOM   1844 HG21 ILE A 210    -14.010  17.366 -46.506  1.00 18.70
H
ATOM   1845 HG22 ILE A 210    -14.662  16.164 -47.313  1.00 18.70
H
ATOM   1846 HG23 ILE A 210    -13.119  16.123 -46.936  1.00 18.70
H
ATOM   1847 HD11 ILE A 210    -11.697  20.000 -47.351  1.00 20.32
H
ATOM   1848 HD12 ILE A 210    -13.232  20.033 -47.758  1.00 20.32
H
ATOM   1849 HD13 ILE A 210    -12.756  19.153 -46.524  1.00 20.32
H
ATOM   1850  N   CYS A 211    -14.352  14.207 -49.383  1.00 13.79
N


ATOM   1851  CA  CYS A 211    -15.472  13.276 -49.363  1.00 18.54
C
ATOM   1852  C   CYS A 211   -15.996  13.147 -47.940  1.00 18.83
C
ATOM   1853  O   CYS A 211   -15.243  13.306 -46.976  1.00 15.68
O
ATOM   1854  CB  CYS A 211    -15.057  11.909 -49.912  1.00 19.87
C
ATOM   1855  SG  CYS A 211    -14.655  11.923 -51.673  1.00 23.90
S
ATOM   1856  H   CYS A 211   -13.604  13.859 -49.139  1.00 16.55
H
ATOM   1857  HA  CYS A 211    -16.186  13.623 -49.920  1.00 22.25
H
ATOM   1858  HB2 CYS A 211    -14.272  11.605 -49.431  1.00 23.84
H
ATOM   1859  HB3 CYS A 211    -15.787  11.284 -49.779  1.00 23.84
H
ATOM   1860  N   MET A 212   -17.290  12.865 -47.821  1.00 16.73
N
ATOM   1861  CA  MET A 212    -17.952  12.779 -46.527  1.00 19.25
C
ATOM   1862  C   MET A 212   -19.005  11.671 -46.513  1.00 21.41
C
ATOM   1863  O   MET A 212   -19.713  11.464 -47.500  1.00 24.33
O
ATOM   1864  CB  MET A 212    -18.598  14.124 -46.181  1.00 15.50
C
ATOM   1865  CG  MET A 212    -19.443  14.128 -44.912  1.00 19.16
C
ATOM   1866  SD  MET A 212    -20.263  15.719 -44.644  1.00 21.71
S
ATOM   1867  CE  MET A 212    -21.410  15.313 -43.333  1.00 26.47
C
ATOM   1868  H   MET A 212   -17.813  12.717 -48.487  1.00 20.08
H
ATOM   1869  HA  MET A 212    -17.286  12.586 -45.848  1.00 23.10
H
ATOM   1870  HB2 MET A 212    -17.896  14.783 -46.066  1.00 18.61
H
ATOM   1871  HB3 MET A 212    -19.174  14.388 -46.916  1.00 18.61
H
ATOM   1872  HG2 MET A 212    -20.127  13.444 -44.983  1.00 22.99
H
ATOM   1873  HG3 MET A 212    -18.871  13.951 -44.148  1.00 22.99
H
ATOM   1874  HE1 MET A 212    -21.917  16.107 -43.101  1.00 31.76
H
ATOM   1875  HE2 MET A 212    -22.009  14.616 -43.643  1.00 31.76
H
ATOM   1876  HE3 MET A 212    -20.910  15.002 -42.562  1.00 31.76
H
ATOM   1877  N   GLN A 213    -19.090  10.960 -45.385  1.00 18.51

ATOM  8127  O   GLN E  28     -6.443  51.709 -53.055  1.00 18.20           O
ATOM  8128  CB  GLN E  28      -3.725  52.167 -51.683  1.00 22.63
C
ATOM  8129  CG  GLN E  28      -3.899  51.850 -50.211  1.00 23.18
C
ATOM  8130  CD  GLN E  28      -3.629  53.049 -49.326  1.00 23.30
C
ATOM  8131  OE1 GLN E  28      -4.462  53.945 -49.208  1.00 29.76
O
ATOM  8132  NE2 GLN E  28      -2.458  53.076 -48.708  1.00 25.07
N

ATOM  8133  H   GLN E  28     -3.472  52.109 -54.117  1.00 24.94           H
ATOM  8134  HA  GLN E  28      -3.774  50.217 -52.313  1.00 25.51
H
ATOM  8135  HB2 GLN E  28      -2.784  52.339 -51.840  1.00 27.15
H
ATOM  8136  HB3 GLN E  28      -4.242  52.964 -51.878  1.00 27.15
H
ATOM  8137  HG2 GLN E  28      -4.812  51.561 -50.054  1.00 27.82
H
ATOM  8138  HG3 GLN E  28      -3.279  51.147 -49.962  1.00 27.82
H
ATOM  8139 HE21 GLN E  28      -2.257  53.736 -48.194  1.00 30.08
H
ATOM  8140 HE22 GLN E  28      -1.897  52.433 -48.820  1.00 30.08
H

ATOM  8141  N   ILE E  29     -6.137  49.807 -51.873  1.00 16.99           N

ATOM  8142  CA  ILE E  29      -7.560  49.506 -51.751  1.00 18.10           C

ATOM  8143  C   ILE E  29     -8.009  49.446 -50.291  1.00 17.82           C

ATOM  8144  O   ILE E  29     -9.179  49.671 -49.990  1.00 16.96           O

ATOM  8145  CB  ILE E  29      -7.919  48.170 -52.445  1.00 17.51           C

ATOM  8146  CG1 ILE E  29       -7.158  46.996 -51.819  1.00 18.43            C

ATOM  8147  CG2 ILE E  29       -7.625  48.259 -53.938  1.00 21.63            C

ATOM  8148  CD1 ILE E  29       -7.710  45.630 -52.204  1.00 14.47            C

ATOM  8149  H   ILE E  29     -5.626  49.235 -51.484  1.00 20.39           H

ATOM  8150  HA  ILE E  29      -8.065  50.211 -52.186  1.00 21.72           H


ATOM  8151  HB  ILE E  29     -8.869  48.012 -52.331  1.00 21.02           H
ATOM  8152 HG12 ILE E  29      -6.233  47.034 -52.108  1.00 22.12
H
ATOM  8153 HG13 ILE E  29      -7.204  47.074 -50.853  1.00 22.12
H
ATOM  8154 HG21 ILE E  29      -7.855  47.415 -54.356  1.00 25.95
H
ATOM  8155 HG22 ILE E  29      -8.155  48.974 -54.322  1.00 25.95
H
ATOM  8156 HG23 ILE E  29      -6.681  48.443 -54.063  1.00 25.95
H
ATOM  8157 HD11 ILE E  29      -7.179  44.943 -51.771  1.00 17.36
H
ATOM  8158 HD12 ILE E  29      -8.632  45.570 -51.911  1.00 17.36
H
ATOM  8159 HD13 ILE E  29      -7.660  45.530 -53.167  1.00 17.36
H

ATOM  8160  N   ILE E  30     -7.077  49.137 -49.395  1.00 16.02           N

ATOM  8161  CA  ILE E  30      -7.363  49.058 -47.965  1.00 15.82           C

ATOM  8162  C   ILE E  30     -6.210  49.679 -47.184  1.00 16.69           C

ATOM  8163  O   ILE E  30     -5.058  49.618 -47.614  1.00 18.17           O

ATOM  8164  CB  ILE E  30      -7.569  47.595 -47.501  1.00 16.57           C

ATOM  8165  CG1 ILE E  30       -8.733  46.939 -48.247  1.00 15.95            C

ATOM  8166  CG2 ILE E  30       -7.827  47.525 -46.004  1.00 17.26            C

ATOM  8167  CD1 ILE E  30       -8.751  45.428 -48.111  1.00 16.72            C

ATOM  8168  H   ILE E  30     -6.258  48.966 -49.593  1.00 19.23           H

ATOM  8169  HA  ILE E  30      -8.170  49.558 -47.769  1.00 18.99           H

ATOM  8170  HB  ILE E  30     -6.761  47.096 -47.696  1.00 19.88           H
ATOM  8171 HG12 ILE E  30      -9.568  47.280 -47.890  1.00 19.14
H
ATOM  8172 HG13 ILE E  30      -8.664  47.153 -49.190  1.00 19.14
H
ATOM  8173 HG21 ILE E  30      -7.952  46.598 -45.749  1.00 20.72
H
ATOM  8174 HG22 ILE E  30      -7.065  47.899 -45.535  1.00 20.72
H
ATOM  8175 HG23 ILE E  30      -8.626  48.036 -45.798  1.00 20.72
H
ATOM  8176 HD11 ILE E  30      -9.509  45.076 -48.603  1.00 20.06
H
ATOM  8177 HD12 ILE E  30      -7.925  45.060 -49.473  1.00 20.06
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ATOM  1877  N   GLN A 213    -19.090  10.969 -45.385  1.00 18.51
N
ATOM  1878  CA  GLN A 213    -20.142  9.985 -45.123  1.00 26.68
C
ATOM  1879  C   GLN A 213    -20.849  10.345 -43.823  1.00 25.55
C
ATOM  1880  O   GLN A 213    -20.203  10.470 -42.781  1.00 22.83
O
ATOM  1881  CB  GLN A 213    -19.567  8.571 -45.017  1.00 26.14
C
ATOM  1882  CG  GLN A 213    -19.588  7.762 -46.297  1.00 36.07
C
ATOM  1883  CD  GLN A 213    -19.101  6.337 -46.080  1.00 35.95
C
ATOM  1884  OE1 GLN A 213    -19.049  5.856 -44.949  1.00 38.02
O
ATOM  1885  NE2 GLN A 213    -18.738  5.658 -47.164  1.00 33.49
N


ATOM  1886  H   GLN A 213    -18.531  11.047 -44.735  1.00 22.21
H
ATOM  1887  HA  GLN A 213    -20.790  10.003 -45.844  1.00 32.01
H
ATOM  1888  HB2 GLN A 213    -18.643  8.636 -44.729  1.00 31.37
H
ATOM  1889  HB3 GLN A 213    -20.079  8.081 -44.354  1.00 31.37
H
ATOM  1890  HG2 GLN A 213    -20.497  7.722 -46.634  1.00 43.28
H
ATOM  1891  HG3 GLN A 213    -19.008  8.184 -46.950  1.00 43.28
H
ATOM  1892 HE21 GLN A 213    -18.786  6.028 -47.939  1.00 40.19
H
ATOM  1893 HE22 GLN A 213    -18.456  4.849 -47.090  1.00 40.19
H
ATOM  1894  N   ARG A 214    -22.169  10.497 -43.875  1.00 30.78
N
ATOM  1895  CA  ARG A 214    -22.922  10.975 -42.717  1.00 39.00
C
ATOM  1896  C   ARG A 214    -23.600  9.833 -41.967  1.00 50.04
C
ATOM  1897  O   ARG A 214    -23.446  9.709 -40.749  1.00 47.20
O
ATOM  1898  CB  ARG A 214    -23.958  12.010 -43.156  1.00 48.11
C
ATOM  1899  CG  ARG A 214    -24.524  12.838 -42.013  1.00 41.27
C
ATOM  1900  CD  ARG A 214    -24.916  14.231 -42.480  1.00 41.95
C
ATOM  1901  NE  ARG A 214    -25.794  14.187 -43.648  1.00 45.75
N
ATOM  1902  CZ  ARG A 214    -26.622  15.164 -44.006  1.00 46.72
C
ATOM  1903  NH1 ARG A 214    -26.706  16.278 -43.285  1.00 46.09
N
ATOM  1904  NH2 ARG A 214    -27.378  15.022 -45.084  1.00 46.67
N
ATOM  1905  H   ARG A 214    -22.653  10.331 -44.566  1.00 36.93
H
ATOM  1906  HA  ARG A 214    -22.310  11.410 -42.104  1.00 46.80
H
ATOM  1907  HB2 ARG A 214    -23.543  12.619 -43.786  1.00 57.73
H
ATOM  1908  HB3 ARG A 214    -24.698  11.550 -43.582  1.00 57.73
H
ATOM  1909  HG2 ARG A 214    -25.315  12.401 -41.661  1.00 49.52
H
ATOM  1910  HG3 ARG A 214    -23.852  12.928 -41.319  1.00 49.52
H
ATOM  1911  HD2 ARG A 214    -25.387  14.686 -41.765  1.00 50.35
H
ATOM  1912  HD3 ARG A 214    -24.116  14.723 -42.721  1.00 50.35
H
ATOM  1913  HE  ARG A 214    -25.774  13.480 -44.137  1.00 54.90
H
ATOM  1914 HH11 ARG A 214    -26.219  16.374 -42.584  1.00 55.31
H
ATOM  1915 HH12 ARG A 214    -27.246  16.904 -43.523  1.00 55.31
H
ATOM  1916 HH21 ARG A 214    -27.328  14.302 -45.553  1.00 56.01
H
ATOM  1917 HH22 ARG A 214    -27.916  15.651 -45.318  1.00 56.01
H
ATOM  1918  N   THR A 215    -24.349  9.007 -42.691  1.00 58.90
N
ATOM  1919  CA  THR A 215    -24.978  7.827 -42.103  1.00 68.61
C
ATOM  1920  C   THR A 215    -25.559  6.955 -43.210  1.00 64.97
C


ATOM  1921  O   THR A 215    -26.049  7.466 -44.216  1.00 62.09
O
ATOM  1922  CB  THR A 215    -26.083  8.217 -41.083  1.00 70.62
C
ATOM  1923  OG1 THR A 215    -25.689  7.809 -39.767  1.00 63.52
O
ATOM  1924  CG2 THR A 215    -27.433  7.574 -41.417  1.00 62.01
C
ATOM  1925  H   THR A 215    -24.510  9.108 -43.530  1.00 70.68
H
ATOM  1926  HA  THR A 215    -24.304  7.310 -41.635  1.00 82.33

ATOM  8177 HD12 ILE E  30     -7.925  45.069 -48.473  1.00 20.06
H
ATOM  8178 HD13 ILE E  30     -8.829  45.196 -47.172  1.00 20.06
H

ATOM  8179  N   THR E  31     -6.519  50.278 -46.039  1.00 16.82           N
ATOM  8180  CA  THR E  31     -5.482  50.768 -45.141  1.00 15.25
C

ATOM  8181  C   THR E  31     -5.893  50.529 -43.693  1.00 15.57           C

ATOM  8182  O   THR E  31     -7.079  50.454 -43.371  1.00 17.03           O
ATOM  8183  CB  THR E  31     -5.179  52.269 -45.372  1.00 20.77
C
ATOM  8184  OG1 THR E  31     -3.995  52.640 -44.653  1.00 24.59
O
ATOM  8185  CG2 THR E  31     -6.341  53.143 -44.936  1.00 22.38
C



ATOM  8186  H   THR E  31     -7.322  50.414 -45.761  1.00 20.18           H
ATOM  8187  HA  THR E  31     -4.665  50.271 -45.304  1.00 18.30
H
ATOM  8188  HB  THR E  31     -5.032  52.418 -46.320  1.00 24.93
H
ATOM  8189  HG1 THR E  31     -3.342  52.184 -44.919  1.00 29.51
H
ATOM  8190 HG21 THR E  31     -6.130  54.077 -45.090  1.00 26.85
H
ATOM  8191 HG22 THR E  31     -7.137  52.913 -45.441  1.00 26.85
H
ATOM  8192 HG23 THR E  31     -6.518  53.012 -43.991  1.00 26.85
H

ATOM  8193  N   PHE E  32     -4.890  50.416 -42.831  1.00 15.94           N
ATOM  8194  CA  PHE E  32     -5.070  50.053 -41.431  1.00 16.83
C

ATOM  8195  C   PHE E  32     -4.106  50.905 -40.613  1.00 18.16           C

ATOM  8196  O   PHE E  32     -2.923  50.965 -40.937  1.00 14.88           O
ATOM  8197  CB  PHE E  32     -4.811  48.553 -41.239  1.00 12.85
C
ATOM  8198  CG  PHE E  32     -4.831  48.096 -39.805  1.00 15.97
C
ATOM  8199  CD1 PHE E  32     -6.027  47.872 -39.151  1.00 15.86
C
ATOM  8200  CD2 PHE E  32     -3.646  47.864 -39.121  1.00 17.02
C
ATOM  8201  CE1 PHE E  32     -6.045  47.442 -37.834  1.00 20.56
C
ATOM  8202  CE2 PHE E  32     -3.658  47.430 -37.807  1.00 16.71
C

ATOM  8203  CZ  PHE E  32     -4.858  47.220 -37.163  1.00 21.71            C

ATOM  8204  H   PHE E  32     -4.067  50.549 -43.042  1.00 19.12           H
ATOM  8205  HA  PHE E  32     -5.978  50.252 -41.154  1.00 20.19
H
ATOM  8206  HB2 PHE E  32     -5.494  48.056 -41.716  1.00 15.42
H
ATOM  8207  HB3 PHE E  32     -3.937  48.339 -41.603  1.00 15.42
H
ATOM  8208  HD1 PHE E  32     -6.829  48.021 -39.597  1.00 19.03
H
ATOM  8209  HD2 PHE E  32     -2.834  48.004 -39.551  1.00 20.42
H
ATOM  8210  HE1 PHE E  32     -6.857  47.300 -37.402  1.00 24.68
H
ATOM  8211  HE2 PHE E  32     -2.856  47.284 -37.358  1.00 20.05
H

ATOM  8212  HZ  PHE E  32     -4.868  46.931 -36.279  1.00 26.05            H

ATOM  8213  N   ASP E  33     -4.611  51.580 -39.580  1.00 21.77           N

ATOM  8214  CA  ASP E  33     -3.809  52.557 -38.833  1.00 24.90            C

ATOM  8215  C   ASP E  33     -3.354  52.053 -37.464  1.00 26.03           C

ATOM  8216  O   ASP E  33     -2.901  52.838 -36.628  1.00 24.42           O

ATOM  8217  CB  ASP E  33     -4.596  53.866 -38.656  1.00 23.77            C
ATOM  8218  CG  ASP E  33     -5.878  53.692 -37.849  1.00 27.99
C
ATOM  8219  OD1 ASP E  33     -6.013  52.697 -37.102  1.00 26.15
O
ATOM  8220  OD2 ASP E  33     -6.762  54.571 -37.959  1.00 30.81
O1-


ATOM  8221  H   ASP E  33     -5.415  51.492 -39.290  1.00 26.13           H

ATOM  8222  HA  ASP E  33     -3.013  52.761 -39.348  1.00 29.88            H
ATOM  8223  HB2 ASP E  33     -4.036  54.509 -38.194  1.00 28.52
H
ATOM  8224  HB3 ASP E  33     -4.838  54.207 -39.531  1.00 28.52
H

ATOM  8225  N   GLY E  34     -3.480  50.750 -37.238  1.00 21.69           N
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H
ATOM  1927 HB  THR A 215    -26.198  9.180 -41.094  1.00 84.75
H
ATOM  1928 HG1 THR A 215    -26.283  8.018 -39.211  1.00 76.23
H
ATOM  1929 HG21 THR A 215    -27.350  6.608 -41.411  1.00 74.41
H
ATOM  1930 HG22 THR A 215    -28.097  7.839 -40.761  1.00 74.41
H
ATOM  1931 HG23 THR A 215    -27.727  7.860 -42.296  1.00 74.41
H
TER   1932      THR A 215
ATOM  1933 N   SER B  94    -17.256 -1.068 -39.057  1.00 38.91
N
ATOM  1934 CA  SER B  94    -16.499 -1.068 -37.812  1.00 42.58
C
ATOM  1935 C   SER B  94    -16.281  0.359 -37.313  1.00 42.15
C
ATOM  1936 O   SER B  94    -16.626  1.322 -37.999  1.00 37.44
O
ATOM  1937 CB  SER B  94    -15.156 -1.775 -37.999  1.00 45.61
C
ATOM  1938 OG  SER B  94    -14.385 -1.141 -39.004  1.00 54.06
O
ATOM  1939 HA  SER B  94    -17.001 -1.549 -37.136  1.00 51.10
H
ATOM  1940 HB2 SER B  94    -14.667 -1.748 -37.162  1.00 54.73
H
ATOM  1941 HB3 SER B  94    -15.318 -2.695 -38.259  1.00 54.73
H
ATOM  1942 HG  SER B  94    -14.237 -0.342 -38.791  1.00 64.88
H
ATOM  1943 N   TYR B  95    -15.698  0.478 -36.122  1.00 37.34
N
ATOM  1944 CA  TYR B  95    -15.564  1.760 -35.437  1.00 35.53
C
ATOM  1945 C   TYR B  95    -14.114  2.137 -35.164  1.00 36.30
C
ATOM  1946 O   TYR B  95    -13.233  1.279 -35.095  1.00 36.50
O
ATOM  1947 CB  TYR B  95    -16.332  1.732 -34.113  1.00 34.25
C
ATOM  1948 CG  TYR B  95    -17.832  1.686 -34.273  1.00 32.06
C
ATOM  1949 CD1 TYR B  95    -18.476  0.505 -34.615  1.00 35.96
C
ATOM  1950 CD2 TYR B  95    -18.604  2.822 -34.078  1.00 33.01
C
ATOM  1951 CE1 TYR B  95    -19.848  0.458 -34.761  1.00 34.20
C
ATOM  1952 CE2 TYR B  95    -19.976  2.784 -34.220  1.00 40.01
C
ATOM  1953 CZ  TYR B  95    -20.593  1.601 -34.563  1.00 39.11
C
ATOM  1954 OH  TYR B  95    -21.960  1.564 -34.706  1.00 42.00
O
ATOM  1955 H   TYR B  95    -15.367 -0.183 -35.682  1.00 44.80
H


ATOM  1956 HA  TYR B  95    -15.953  2.454 -35.992  1.00 42.63
H
ATOM  1957 HB2 TYR B  95    -16.063  0.945 -33.614  1.00 41.11
H
ATOM  1958 HB3 TYR B  95    -16.113  2.531 -33.608  1.00 41.11
H
ATOM  1959 HD1 TYR B  95    -17.975 -0.267 -34.749  1.00 43.16
H
ATOM  1960 HD2 TYR B  95    -18.191  3.622 -33.847  1.00 39.62
H
ATOM  1961 HE1 TYR B  95    -20.267 -0.339 -34.991  1.00 41.04
H
ATOM  1962 HE2 TYR B  95    -20.482  3.554 -34.088  1.00 48.01
H
ATOM  1963 HH  TYR B  95    -22.285  2.324 -34.558  1.00 50.40
H
ATOM  1964 N   CYS B  96    -13.888  3.438 -35.010  1.00 30.02
N
ATOM  1965 CA  CYS B  96    -12.593  3.973 -34.613  1.00 34.28
C
ATOM  1966 C   CYS B  96    -12.642  4.321 -33.129  1.00 32.78
C
ATOM  1967 O   CYS B  96    -13.603  4.937 -32.669  1.00 31.30
O
ATOM  1968 CB  CYS B  96    -12.247  5.206 -35.453  1.00 31.86
C
ATOM  1969 SG  CYS B  96    -10.576  5.848 -35.221  1.00 33.72
S
ATOM  1970 H   CYS B  96    -14.485  4.044 -35.133  1.00 36.02
H
ATOM  1971 HA  CYS B  96    -11.907  3.302 -34.752  1.00 41.13
H
ATOM  1972 HB2 CYS B  96    -12.345  4.977 -36.391  1.00 38.23
H
ATOM  1973 HB3 CYS B  96    -12.867  5.917 -35.227  1.00 38.23
H
ATOM  1974 N   GLY B  97    -11.618  3.918 -32.381  1.00 33.09
N
ATOM  1975 CA  GLY B  97    -11.554  4.204 -30.957  1.00 31.22
C
ATOM  1976 C   GLY B  97    -11.135  2.998 -30.132  1.00 35.55
C

ATOM  8226 CA  GLY E  34     -3.124 50.158 -35.963  1.00 25.18           C

ATOM  8227 C   GLY E  34     -4.353 49.841 -35.137  1.00 24.85           C

ATOM  8228 O   GLY E  34     -4.330 48.938 -34.301  1.00 24.27           O

ATOM  8229 H   GLY E  34     -3.772 50.184 -37.816  1.00 26.03           H
ATOM  8230 HA2 GLY E  34     -2.629 49.338 -36.111  1.00 30.22
H
ATOM  8231 HA3 GLY E  34     -2.564 50.773 -35.463  1.00 30.22
H
ATOM  8232 N   LYS E  35     -5.429 50.583 -35.381  1.00 24.67           N

ATOM  8233 CA  LYS E  35     -6.686 50.404 -34.661  1.00 27.22           C

ATOM  8234 C   LYS E  35     -7.814 50.034 -35.616  1.00 26.78           C

ATOM  8235 O   LYS E  35     -8.439 48.984 -35.477  1.00 29.19           O

ATOM  8236 CB  LYS E  35     -7.049 51.681 -33.898  1.00 30.19           C

ATOM  8237 CG  LYS E  35     -8.397 51.631 -33.184  1.00 33.78           C

ATOM  8238 CD  LYS E  35     -8.744 52.972 -32.557  1.00 33.80           C
ATOM  8239 CE  LYS E  35    -10.123 52.940 -31.915  1.00 41.60
C
ATOM  8240 NZ  LYS E  35    -10.580 54.294 -31.489  1.00 39.39
N1+

ATOM  8241 H   LYS E  35     -5.456 51.209 -35.970  1.00 29.61           H

ATOM  8242 HA  LYS E  35     -6.585 49.685 -34.018  1.00 32.67           H
ATOM  8243 HB2 LYS E  35     -6.367 51.847 -33.228  1.00 36.23
H
ATOM  8244 HB3 LYS E  35     -7.076 52.421 -34.525  1.00 36.23
H
ATOM  8245 HG2 LYS E  35     -9.090 51.406 -33.824  1.00 40.53
H
ATOM  8246 HG3 LYS E  35     -8.362 50.966 -32.479  1.00 40.53
H
ATOM  8247 HD2 LYS E  35     -8.093 53.184 -31.870  1.00 40.56
H
ATOM  8248 HD3 LYS E  35     -8.744 53.657 -33.244  1.00 40.56
H
ATOM  8249 HE2 LYS E  35    -10.763 52.594 -32.555  1.00 49.92
H
ATOM  8250 HE3 LYS E  35    -10.094 52.371 -31.130  1.00 49.92
H
ATOM  8251 HZ1 LYS E  35    -10.621 54.837 -32.193  1.00 47.26
H
ATOM  8252 HZ2 LYS E  35    -11.387 54.240 -31.118  1.00 47.26
H
ATOM  8253 HZ3 LYS E  35    -10.011 54.634 -30.895  1.00 47.26
H

ATOM  8254 N   ASP E  36     -8.070 50.912 -36.581  1.00 26.84           N

ATOM  8255 CA  ASP E  36     -9.188 50.744 -37.498  1.00 25.99           C


ATOM  8256 C   ASP E  36     -8.724 50.409 -38.907  1.00 22.89           C

ATOM  8257 O   ASP E  36     -7.639 50.805 -39.332  1.00 21.76           O
ATOM  8258 CB  ASP E  36    -10.043 52.011 -37.524  1.00 31.28
C
ATOM  8259 CG  ASP E  36    -10.676 52.313 -36.178  1.00 34.69
C
ATOM  8260 OD1 ASP E  36    -11.667 51.640 -35.823  1.00 35.73
O
ATOM  8261 OD2 ASP E  36    -10.185 53.223 -35.478  1.00 37.15
O1-

ATOM  8262 H   ASP E  36     -7.604 51.621 -36.726  1.00 32.21           H

ATOM  8263 HA  ASP E  36     -9.744 50.014 -37.185  1.00 31.19           H
ATOM  8264 HB2 ASP E  36     -9.485 52.766 -37.769  1.00 37.54
H
ATOM  8265 HB3 ASP E  36    -10.756 51.900 -38.173  1.00 37.54
H

ATOM  8266 N   ILE E  37     -9.559 49.663 -39.619  1.00 20.05           N

ATOM  8267 CA  ILE E  37     -9.321 49.351 -41.018  1.00 19.38           C

ATOM  8268 C   ILE E  37    -10.347 50.116 -41.835  1.00 18.03           C

ATOM  8269 O   ILE E  37    -11.438 50.406 -41.347  1.00 16.80           O

ATOM  8270 CB  ILE E  37     -9.424 47.836 -41.289  1.00 17.86           C

ATOM  8271 CG1 ILE E  37     -8.817 47.486 -42.648  1.00 17.25           C
ATOM  8272 CG2 ILE E  37    -10.872 47.365 -41.198  1.00 20.70
C

ATOM  8273 CD1 ILE E  37     -8.468 46.019 -42.783  1.00 17.20           C

ATOM  8274 H   ILE E  37    -10.283 49.319 -39.307  1.00 24.06           H

ATOM  8275 HA  ILE E  37     -8.435 49.652 -41.273  1.00 23.26           H

ATOM  8276 HB  ILE E  37     -8.915 47.374 -40.605  1.00 21.43           H
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ATOM   1977  O   GLY B  97    -10.551   2.054 -30.663  1.00 39.96
O
ATOM   1978  H   GLY B  97    -10.944   3.474 -32.680  1.00 39.71
H
ATOM   1979  HA2 GLY B  97    -10.917   4.918 -30.800  1.00 37.46
H
ATOM   1980  HA3 GLY B  97    -12.426   4.497 -30.648  1.00 37.46
H
ATOM   1981  N   PRO B  98    -11.429   3.019 -28.821  1.00 38.20
N
ATOM   1982  CA  PRO B  98    -12.139   4.096 -28.120  1.00 36.03
C
ATOM   1983  C   PRO B  98    -11.312   5.373 -27.973  1.00 35.11
C
ATOM   1984  O   PRO B  98    -10.086   5.318 -27.863  1.00 34.34
O
ATOM   1985  CB  PRO B  98    -12.439   3.480 -26.749  1.00 43.03
C
ATOM   1986  CG  PRO B  98    -11.379   2.466 -26.551  1.00 44.90
C
ATOM   1987  CD  PRO B  98    -11.075   1.914 -27.912  1.00 43.35
C
ATOM   1988  HA  PRO B  98    -12.973   4.301 -28.570  1.00 43.23
H
ATOM   1989  HB2 PRO B  98    -12.392   4.165 -26.065  1.00 51.64
H
ATOM   1990  HB3 PRO B  98    -13.315   3.064 -26.761  1.00 51.64
H


ATOM   1991  HG2 PRO B  98    -10.593   2.888 -26.172  1.00 53.88
H
ATOM   1992  HG3 PRO B  98    -11.706   1.765 -25.965  1.00 53.88
H
ATOM   1993  HD2 PRO B  98    -10.131   1.703 -27.988  1.00 52.02
H
ATOM   1994  HD3 PRO B  98    -11.628   1.138 -28.093  1.00 52.02
H
ATOM   1995  N   CYS B  99    -11.999   6.510 -27.991  1.00 28.31
N
ATOM   1996  CA  CYS B  99    -11.382   7.814 -27.782  1.00 31.04
C
ATOM   1997  C   CYS B  99    -12.176   8.587 -26.750  1.00 29.57
C
ATOM   1998  O   CYS B  99    -13.297   8.207 -26.419  1.00 34.43
O
ATOM   1999  CB  CYS B  99    -11.330   8.620 -29.080  1.00 22.49
C
ATOM   2000  SG  CYS B  99    -10.222   7.973 -30.330  1.00 25.81
S
ATOM   2001  H   CYS B  99    -12.847   6.552 -28.127  1.00 33.97
H
ATOM   2002  HA  CYS B  99    -10.477   7.697 -27.453  1.00 37.25
H
ATOM   2003  HB2 CYS B  99    -12.220   8.645 -29.464  1.00 26.99
H
ATOM   2004  HB3 CYS B  99    -11.040   9.522 -28.872  1.00 26.99
H
ATOM   2005  N   PRO B 100    -11.599   9.682 -26.237  1.00 32.75
N
ATOM   2006  CA  PRO B 100    -12.421  10.607 -25.458  1.00 27.02
C
ATOM   2007  C   PRO B 100    -13.576  11.111 -26.308  1.00 29.55
C
ATOM   2008  O   PRO B 100    -13.455  11.152 -27.535  1.00 23.90
O
ATOM   2009  CB  PRO B 100    -11.450  11.733 -25.099  1.00 26.53
C
ATOM   2010  CG  PRO B 100    -10.094  11.101 -25.168  1.00 24.03
C
ATOM   2011  CD  PRO B 100    -10.181  10.084 -26.262  1.00 29.20
C
ATOM   2012  HA  PRO B 100    -12.756  10.184 -24.652  1.00 32.42
H
ATOM   2013  HB2 PRO B 100    -11.528  12.452 -25.745  1.00 31.83
H
ATOM   2014  HB3 PRO B 100    -11.635  12.053 -24.202  1.00 31.83
H
ATOM   2015  HG2 PRO B 100     -9.431  11.776 -25.381  1.00 28.84
H
ATOM   2016  HG3 PRO B 100     -9.890  10.676 -24.321  1.00 28.84
H
ATOM   2017  HD2 PRO B 100     -9.957  10.486 -27.116  1.00 35.04
H
ATOM   2018  HD3 PRO B 100     -9.610   9.325 -26.064  1.00 35.04
H
ATOM   2019  N   LYS B 101    -14.678  11.479 -25.668  1.00 32.78
N
ATOM   2020  CA  LYS B 101    -15.875  11.896 -26.387  1.00 39.36
C
ATOM   2021  C   LYS B 101    -15.597  13.072 -27.325  1.00 32.37
C
ATOM   2022  O   LYS B 101    -14.877  14.005 -26.970  1.00 30.08
O
ATOM   2023  CB  LYS B 101    -16.984  12.266 -25.396  1.00 44.44
C
ATOM   2024  CG  LYS B 101    -18.332  12.570 -26.041  1.00 61.82
C
ATOM   2025  CD  LYS B 101    -18.865  11.378 -26.824  1.00 74.76
C
ATOM   8277  HG12 ILE E  37     -9.455  47.707 -43.344  1.00 20.70
H
ATOM   8278  HG13 ILE E  37     -8.002  47.999 -42.770  1.00 20.70
H
ATOM   8279  HG21 ILE E  37    -10.905  46.411 -41.372  1.00 24.84
H
ATOM   8280  HG22 ILE E  37    -11.209  47.550 -40.307  1.00 24.84
H
ATOM   8281  HG23 ILE E  37    -11.401  47.841 -41.858  1.00 24.84
H
ATOM   8282  HD11 ILE E  37     -8.090  45.864 -43.663  1.00 20.64
H
ATOM   8283  HD12 ILE E  37     -7.823  45.784 -42.099  1.00 20.64
H
ATOM   8284  HD13 ILE E  37     -9.275  45.492 -42.673  1.00 20.64
H
ATOM   8285  N   ARG E  38    -10.007  50.450 -43.072  1.00 17.17
N
ATOM   8286  CA  ARG E  38    -10.945  51.180 -43.913  1.00 18.63
C
ATOM   8287  C   ARG E  38    -10.678  50.981 -45.400  1.00 15.53
C

ATOM   8288  O   ARG E  38     -9.529  50.822 -45.817  1.00 13.55           O
ATOM   8289  CB  ARG E  38    -10.905  52.672 -43.576  1.00 21.12
C
ATOM   8290  CG  ARG E  38     -9.612  53.367 -43.935  1.00 24.59
C


ATOM   8291  CD  ARG E  38     -9.632  54.826 -43.497  1.00 34.01
C
ATOM   8292  NE  ARG E  38     -8.473  55.561 -44.000  1.00 36.68
N
ATOM   8293  CZ  ARG E  38     -8.437  56.219 -45.156  1.00 39.43
C
ATOM   8294  NH1 ARG E  38     -9.501  56.252 -45.953  1.00 38.87
N1+
ATOM   8295  NH2 ARG E  38     -7.330  56.851 -45.519  1.00 39.19
N

ATOM   8296  H   ARG E  38     -9.253  50.270 -43.444  1.00 20.60           H
ATOM   8297  HA  ARG E  38    -11.842  50.859 -43.729  1.00 22.36
H
ATOM   8298  HB2 ARG E  38    -11.621  53.117 -44.056  1.00 25.34
H
ATOM   8299  HB3 ARG E  38    -11.040  52.777 -42.621  1.00 25.34
H
ATOM   8300  HG2 ARG E  38     -8.874  52.925 -43.487  1.00 29.50
H
ATOM   8301  HG3 ARG E  38     -9.488  53.339 -44.896  1.00 29.50
H
ATOM   8302  HD2 ARG E  38    -10.433  55.252 -43.841  1.00 40.81
H
ATOM   8303  HD3 ARG E  38     -9.621  54.869 -42.528  1.00 40.81
H
ATOM   8304  HE  ARG E  38     -7.764  55.568 -43.514  1.00 44.02
H
ATOM   8305  HH11 ARG E  38    -10.222  55.844 -45.724  1.00 46.64
H
ATOM   8306  HH12 ARG E  38     -9.467  56.681 -46.698  1.00 46.64
H
ATOM   8307  HH21 ARG E  38     -6.639  56.834 -45.008  1.00 47.03
H
ATOM   8308  HH22 ARG E  38     -7.304  57.279 -46.264  1.00 47.03
H
ATOM   8309  N   PRO E  39    -11.746  50.991 -46.210  1.00 16.34
N
ATOM   8310  CA  PRO E  39    -11.558  50.928 -47.660  1.00 17.96
C
ATOM   8311  C   PRO E  39    -11.021  52.249 -48.203  1.00 17.79
C
ATOM   8312  O   PRO E  39    -11.322  53.300 -47.639  1.00 17.56
O
ATOM   8313  CB  PRO E  39    -12.968  50.636 -48.183  1.00 16.77
C
ATOM   8314  CG  PRO E  39    -13.872  51.230 -47.161  1.00 25.13
C
ATOM   8315  CD  PRO E  39    -13.172  51.069 -45.840  1.00 16.34
C
ATOM   8316  HA  PRO E  39    -10.961  50.203 -47.900  1.00 21.55
H
ATOM   8317  HB2 PRO E  39    -13.095  51.063 -49.045  1.00 20.12
H
ATOM   8318  HB3 PRO E  39    -13.103  49.678 -48.249  1.00 20.12
H
ATOM   8319  HG2 PRO E  39    -14.013  52.169 -47.360  1.00 30.16
H
ATOM   8320  HG3 PRO E  39    -14.716  50.753 -47.159  1.00 30.16
H
ATOM   8321  HD2 PRO E  39    -13.332  51.842 -45.276  1.00 19.60
H
ATOM   8322  HD3 PRO E  39    -13.453  50.249 -45.406  1.00 19.60
H

ATOM   8323  N   THR E  40    -10.224  52.189 -49.267  1.00 16.36           N
ATOM   8324  CA  THR E  40     -9.672  53.389 -49.895  1.00 18.13
C

ATOM   8325  C   THR E  40     -9.954  53.377 -51.393  1.00 18.97           C
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ATOM  2026  CE  LYS B 101    -20.227  11.667 -27.429  1.00100.45
C
ATOM  2027  NZ  LYS B 101    -20.686  10.552 -28.301  1.00117.51
N1+
ATOM  2028  H   LYS B 101   -14.760  11.497 -24.812  1.00 39.34
H
ATOM  2029  HA  LYS B 101    -16.192  11.153 -26.926  1.00 47.24
H
ATOM  2030  HB2 LYS B 101    -17.111  11.525 -24.782  1.00 53.33
H
ATOM  2031  HB3 LYS B 101    -16.709  13.054 -24.903  1.00 53.33
H
ATOM  2032  HG2 LYS B 101    -18.975  12.790 -25.348  1.00 74.18
H
ATOM  2033  HG3 LYS B 101    -18.232  13.315 -26.654  1.00 74.18
H
ATOM  2034  HD2 LYS B 101    -18.251  11.169 -27.546  1.00 89.71
H
ATOM  2035  HD3 LYS B 101    -18.953  10.617 -26.228  1.00 89.71
H
ATOM  2036  HE2 LYS B 101    -20.876  11.782 -26.716  1.00120.53
H
ATOM  2037  HE3 LYS B 101    -20.174  12.472 -27.967  1.00120.53
H
ATOM  2038  HZ1 LYS B 101    -21.485  10.743 -28.644  1.00141.01
H
ATOM  2039  HZ2 LYS B 101    -20.108  10.429 -28.967  1.00141.01
H
ATOM  2040  HZ3 LYS B 101    -20.747   9.800 -27.828  1.00141.01
H
ATOM  2041  N   ASN B 102   -16.163  12.996 -28.527  1.00 30.16
N
ATOM  2042  CA  ASN B 102    -16.115  14.077 -29.514  1.00 31.24
C
ATOM  2043  C   ASN B 102   -14.712  14.442 -30.002  1.00 27.87
C
ATOM  2044  O   ASN B 102   -14.519  15.491 -30.613  1.00 26.23
O
ATOM  2045  CB  ASN B 102    -16.798  15.329 -28.954  1.00 34.75
C
ATOM  2046  CG  ASN B 102    -18.292  15.143 -28.774  1.00 42.54
C
ATOM  2047  OD1 ASN B 102    -18.922  14.366 -29.491  1.00 45.19
O
ATOM  2048  ND2 ASN B 102    -18.866  15.857 -27.814  1.00 46.35
N
ATOM  2049  H   ASN B 102   -16.596  12.306 -28.804  1.00 36.19
H
ATOM  2050  HA  ASN B 102    -16.623  13.797 -30.292  1.00 37.49
H
ATOM  2051  HB2 ASN B 102    -16.414  15.538 -28.088  1.00 41.70
H
ATOM  2052  HB3 ASN B 102    -16.659  16.067 -29.567  1.00 41.70
H
ATOM  2053 HD21 ASN B 102    -19.712  15.786 -27.673  1.00 55.63
H
ATOM  2054 HD22 ASN B 102    -18.394  16.391 -27.333  1.00 55.63
H
ATOM  2055  N   TRP B 103   -13.737  13.577 -29.751  1.00 23.28
N
ATOM  2056  CA  TRP B 103    -12.410  13.762 -30.328  1.00 23.16
C
ATOM  2057  C   TRP B 103   -12.392  13.237 -31.763  1.00 23.53
C
ATOM  2058  O   TRP B 103   -13.233  12.419 -32.140  1.00 22.63
O
ATOM  2059  CB  TRP B 103    -11.343  13.049 -29.491  1.00 21.69
C
ATOM  2060  CG  TRP B 103    -10.963  13.783 -28.236  1.00 23.99
C


ATOM  2061  CD1 TRP B 103    -11.760  14.599 -27.485  1.00 23.75
C
ATOM  2062  CD2 TRP B 103     -9.679  13.777 -27.595  1.00 20.75
C
ATOM  2063  NE1 TRP B 103    -11.054  15.094 -26.413  1.00 20.78
N
ATOM  2064  CE2 TRP B 103     -9.775  14.606 -26.459  1.00 20.29
C
ATOM  2065  CE3 TRP B 103     -8.461  13.150 -27.871  1.00 21.26
C
ATOM  2066  CZ2 TRP B 103     -8.699  14.823 -25.600  1.00 21.46
C
ATOM  2067  CZ3 TRP B 103     -7.394  13.365 -27.015  1.00 25.01
C
ATOM  2068  CH2 TRP B 103     -7.521  14.195 -25.893  1.00 17.81
C
ATOM  2069  H   TRP B 103   -13.815  12.881 -29.253  1.00 27.94
H
ATOM  2070  HA  TRP B 103   -12.198  14.708 -30.348  1.00 27.79
H
ATOM  2071  HB2 TRP B 103    -11.680  12.176 -29.233  1.00 26.03
H
ATOM  2072  HB3 TRP B 103    -10.542  12.946 -30.028  1.00 26.03
H
ATOM  2073  HD1 TRP B 103    -12.652  14.789 -27.670  1.00 28.50
H
ATOM  2074  HE1 TRP B 103    -11.365  15.626 -25.813  1.00 24.94
H
ATOM  2075  HE3 TRP B 103     -8.370  12.597 -28.613  1.00 25.51
H
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ATOM  8326  O   THR E  40    -9.306  54.076 -52.169  1.00 26.46          O
ATOM  8327  CB  THR E  40    -8.149  53.511 -49.662  1.00 19.81
C
ATOM  8328  OG1 THR E  40     -7.473  52.405 -50.272  1.00 21.82
O
ATOM  8329  CG2 THR E  40     -7.832  53.535 -48.171  1.00 20.16
C

ATOM  8330  H   THR E  40    -9.985  51.456 -49.649  1.00 19.64          H
ATOM  8331  HA  THR E  40   -10.098  54.172 -49.514  1.00 21.76
H
ATOM  8332  HB  THR E  40    -7.829  54.338 -50.055  1.00 23.77
H
ATOM  8333  HG1 THR E  40     -7.623  52.397 -51.098  1.00 26.18
H
ATOM  8334 HG21 THR E  40     -6.874  53.611 -48.037  1.00 24.19
H
ATOM  8335 HG22 THR E  40     -8.270  54.292 -47.752  1.00 24.19
H
ATOM  8336 HG23 THR E  40     -8.145  52.718 -47.752  1.00 24.19
H

ATOM  8337  N   ILE E  41   -10.930  52.569 -51.783  1.00 21.52          N

ATOM  8338  CA  ILE E  41    -11.361  52.471 -53.166  1.00 21.60          C

ATOM  8339  C   ILE E  41   -12.865  52.188 -53.133  1.00 21.26          C

ATOM  8340  O   ILE E  41   -13.332  51.475 -52.245  1.00 20.35          O

ATOM  8341  CB  ILE E  41    -10.587  51.364 -53.925  1.00 22.21          C
ATOM  8342  CG1 ILE E  41    -10.776  51.488 -55.437  1.00 27.01
C
ATOM  8343  CG2 ILE E  41    -11.002  49.983 -53.443  1.00 22.35
C
ATOM  8344  CD1 ILE E  41    -10.107  52.705 -56.037  1.00 23.85
C

ATOM  8345  H   ILE E  41   -11.368  52.055 -51.251  1.00 25.82          H

ATOM  8346  HA  ILE E  41    -11.214  53.318 -53.616  1.00 25.92          H

ATOM  8347  HB  ILE E  41    -9.642  51.476 -53.733  1.00 26.65          H
ATOM  8348 HG12 ILE E  41    -10.401  50.702 -55.865  1.00 32.41
H
ATOM  8349 HG13 ILE E  41    -11.725  51.546 -55.630  1.00 32.41
H
ATOM  8350 HG21 ILE E  41    -10.501  49.313 -53.936  1.00 26.82
H
ATOM  8351 HG22 ILE E  41    -10.811  49.908 -52.495  1.00 26.82
H
ATOM  8352 HG23 ILE E  41    -11.952  49.867 -53.600  1.00 26.82
H
ATOM  8353 HD11 ILE E  41    -10.271  52.716 -56.993  1.00 28.62
H
ATOM  8354 HD12 ILE E  41    -10.479  53.503 -55.629  1.00 28.62
H
ATOM  8355 HD13 ILE E  41     -9.154  52.659 -55.864  1.00 28.62
H
ATOM  8356  N   PRO E  42   -13.636  52.768 -54.072  1.00 23.49
N
ATOM  8357  CA  PRO E  42   -15.093  52.589 -54.005  1.00 24.92
C
ATOM  8358  C   PRO E  42   -15.578  51.136 -53.948  1.00 23.20
C
ATOM  8359  O   PRO E  42   -16.532  50.858 -53.219  1.00 22.70
O
ATOM  8360  CB  PRO E  42   -15.575  53.260 -55.294  1.00 31.54
C


ATOM  8361  CG  PRO E  42   -14.576  54.332 -55.538  1.00 29.15
C
ATOM  8362  CD  PRO E  42   -13.256  53.771 -55.086  1.00 24.13
C
ATOM  8363  HA  PRO E  42   -15.451  53.072 -53.245  1.00 29.90
H
ATOM  8364  HB2 PRO E  42    -15.577  52.617 -56.020  1.00 37.85
H
ATOM  8365  HB3 PRO E  42    -16.460  53.635 -55.159  1.00 37.85
H
ATOM  8366  HG2 PRO E  42    -14.551  54.544 -56.484  1.00 34.98
H
ATOM  8367  HG3 PRO E  42    -14.809  55.118 -55.019  1.00 34.98
H
ATOM  8368  HD2 PRO E  42    -12.799  53.346 -55.828  1.00 28.96
H
ATOM  8369  HD3 PRO E  42    -12.713  54.468 -54.685  1.00 28.96
H

ATOM  8370  N   PHE E  43   -14.949  50.224 -54.683  1.00 22.14          N
ATOM  8371  CA  PHE E  43    -15.479  48.865 -54.768  1.00 22.57
C

ATOM  8372  C   PHE E  43   -15.282  48.081 -53.469  1.00 19.70          C
ATOM  8373  O   PHE E  43   -15.809  46.981 -53.327  1.00 22.95
O
ATOM  8374  CB  PHE E  43    -14.863  48.109 -55.963  1.00 22.95
C
ATOM  8375  CG  PHE E  43    -13.453  47.620 -55.747  1.00 22.38
C
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ATOM  2076 HZ2 TRP B 103     -6.781  15.575 -24.654  1.00 25.75
H
ATOM  2077 HZ3 TRP B 103     -6.578  12.953 -27.188  1.00 30.01
H
ATOM  2078 HH2 TRP B 103     -6.787  14.323 -25.336  1.00 21.37
H
ATOM  2079 N   ILE B 104    -11.452  13.725 -32.566  1.00 17.20
N
ATOM  2080 CA  ILE B 104    -11.198  13.133 -33.873  1.00 21.24
C
ATOM  2081 C   ILE B 104    -10.616  11.753 -33.647  1.00 24.16
C
ATOM  2082 O   ILE B 104     -9.835  11.559 -32.719  1.00 23.98
O
ATOM  2083 CB  ILE B 104    -10.215  13.966 -34.726  1.00 21.34
C
ATOM  2084 CG1 ILE B 104    -10.796  15.348 -35.026  1.00 22.32
C
ATOM  2085 CG2 ILE B 104     -9.876  13.230 -36.033  1.00 24.29
C
ATOM  2086 CD1 ILE B 104     -9.849  16.253 -35.781  1.00 28.99
C
ATOM  2087 H   ILE B 104    -10.949  14.396 -32.377  1.00 20.64
H
ATOM  2088 HA  ILE B 104    -12.032  13.044 -34.359  1.00 25.48
H
ATOM  2089 HB  ILE B 104     -9.395  14.083 -34.221  1.00 25.61
H
ATOM  2090 HG12 ILE B 104   -11.597  15.241 -35.564  1.00 26.78
H
ATOM  2091 HG13 ILE B 104   -11.018  15.783 -34.188  1.00 26.78
H
ATOM  2092 HG21 ILE B 104    -9.259  13.772 -36.550  1.00 29.15
H
ATOM  2093 HG22 ILE B 104    -9.467  12.377 -35.818  1.00 29.15
H
ATOM  2094 HG23 ILE B 104   -10.693  13.088 -36.536  1.00 29.15
H
ATOM  2095 HD11 ILE B 104   -10.283  17.107 -35.934  1.00 34.79
H


ATOM  2096 HD12 ILE B 104    -9.046  16.381 -35.252  1.00 34.79
H
ATOM  2097 HD13 ILE B 104    -9.624  15.839 -36.628  1.00 34.79
H
ATOM  2098 N   CYS B 105    -11.001  10.800 -34.489  1.00 22.22
N
ATOM  2099 CA  CYS B 105    -10.421   9.462 -34.455  1.00 24.13
C
ATOM  2100 C   CYS B 105     -9.930   9.120 -35.853  1.00 25.68
C
ATOM  2101 O   CYS B 105    -10.660   9.288 -36.830  1.00 25.12
O
ATOM  2102 CB  CYS B 105    -11.440   8.433 -33.962  1.00 25.61
C
ATOM  2103 SG  CYS B 105    -10.702   6.857 -33.461  1.00 33.63
S
ATOM  2104 H   CYS B 105    -11.602  10.904 -35.096  1.00 26.67
H
ATOM  2105 HA  CYS B 105     -9.661   9.455 -33.852  1.00 28.95
H
ATOM  2106 HB2 CYS B 105    -11.908   8.799 -33.195  1.00 30.73
H
ATOM  2107 HB3 CYS B 105    -12.071   8.251 -34.676  1.00 30.73
H
ATOM  2108 N   TYR B 106     -8.689   8.653 -35.949  1.00 22.66
N
ATOM  2109 CA  TYR B 106     -8.061   8.421 -37.245  1.00 21.90
C
ATOM  2110 C   TYR B 106     -6.840   7.512 -37.140  1.00 29.80
C
ATOM  2111 O   TYR B 106     -5.832   7.876 -36.531  1.00 19.08
O
ATOM  2112 CB  TYR B 106     -7.656   9.754 -37.874  1.00 22.79
C
ATOM  2113 CG  TYR B 106     -7.090   9.639 -39.271  1.00 21.75
C
ATOM  2114 CD1 TYR B 106     -7.886   9.228 -40.333  1.00 23.00
C
ATOM  2115 CD2 TYR B 106     -5.766   9.961 -39.532  1.00 22.30
C
ATOM  2116 CE1 TYR B 106     -7.375   9.131 -41.614  1.00 22.33
C
ATOM  2117 CE2 TYR B 106     -5.247   9.871 -40.811  1.00 23.29
C
ATOM  2118 CZ  TYR B 106     -6.056   9.455 -41.846  1.00 24.28
C
ATOM  2119 OH  TYR B 106     -5.543   9.363 -43.116  1.00 28.23
O
ATOM  2120 H   TYR B 106     -8.188   8.462 -35.277  1.00 27.19
H
ATOM  2121 HA  TYR B 106     -8.703   7.995 -37.834  1.00 26.28
H
ATOM  2122 HB2 TYR B 106     -8.438  10.326 -37.919  1.00 27.35
H
ATOM  2123 HB3 TYR B 106     -6.980  10.168 -37.315  1.00 27.35
H
ATOM  2124 HD1 TYR B 106     -8.777   9.010 -40.179  1.00 27.60
H
ATOM  2125 HD2 TYR B 106     -5.218  10.244 -38.836  1.00 26.77
H
ATOM  2126 HE1 TYR B 106     -7.919   8.852 -42.315  1.00 26.80
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ATOM  8376 CD1 PHE E  43    -13.205  46.454 -55.040  1.00 20.54
C
ATOM  8377 CD2 PHE E  43    -12.382  48.296 -56.303  1.00 22.45
C
ATOM  8378 CE1 PHE E  43    -11.912  45.996 -54.859  1.00 21.86
C
ATOM  8379 CE2 PHE E  43    -11.085  47.839 -56.127  1.00 25.06
C
ATOM  8380 CZ  PHE E  43    -10.852  46.686 -55.403  1.00 20.17
C

ATOM  8381 H   PHE E  43   -14.228  50.361 -55.133  1.00 26.57           H
ATOM  8382 HA  PHE E  43    -16.434  48.922 -54.926  1.00 27.09
H
ATOM  8383 HB2 PHE E  43    -15.415  47.335 -56.156  1.00 27.54
H
ATOM  8384 HB3 PHE E  43    -14.854  48.702 -56.731  1.00 27.54
H
ATOM  8385 HD1 PHE E  43    -13.913  45.984 -54.667  1.00 24.65
H
ATOM  8386 HD2 PHE E  43    -12.532  49.074 -56.789  1.00 26.94
H
ATOM  8387 HE1 PHE E  43    -11.759  45.218 -54.372  1.00 26.23
H
ATOM  8388 HE2 PHE E  43    -10.372  48.309 -56.496  1.00 30.07
H

ATOM  8389 HZ  PHE E  43     -9.983  46.378 -55.283  1.00 24.21           H

ATOM  8390 N   MET E  44   -14.556  48.657 -52.513  1.00 23.05           N
ATOM  8391 CA  MET E  44    -14.353  48.017 -51.212  1.00 21.06
C

ATOM  8392 C   MET E  44   -15.333  48.520 -50.151  1.00 22.24           C
ATOM  8393 O   MET E  44   -15.417  47.962 -49.059  1.00 19.63
O
ATOM  8394 CB  MET E  44    -12.917  48.239 -50.730  1.00 19.76
C
ATOM  8395 CG  MET E  44    -11.878  47.391 -51.456  1.00 21.55
C


ATOM  8396 SD  MET E  44    -12.224  45.620 -51.414  1.00 21.18
S
ATOM  8397 CE  MET E  44    -12.382  45.323 -49.660  1.00 17.95
C

ATOM  8398 H   MET E  44   -14.167  49.420 -52.592  1.00 27.65           H
ATOM  8399 HA  MET E  44    -14.480  47.061 -51.318  1.00 25.27
H
ATOM  8400 HB2 MET E  44    -12.685  49.171 -50.866  1.00 23.72
H
ATOM  8401 HB3 MET E  44    -12.869  48.023 -49.786  1.00 23.72
H
ATOM  8402 HG2 MET E  44    -11.846  47.665 -52.386  1.00 25.86
H
ATOM  8403 HG3 MET E  44    -11.013  47.534 -51.041  1.00 25.86
H
ATOM  8404 HE1 MET E  44    -12.572  44.383 -49.515  1.00 21.55
H
ATOM  8405 HE2 MET E  44    -11.550  45.564 -49.223  1.00 21.55
H
ATOM  8406 HE3 MET E  44    -13.107  45.865 -49.312  1.00 21.55
H

ATOM  8407 N   ILE E  45   -16.073  49.575 -50.467  1.00 27.83           N

ATOM  8408 CA  ILE E  45   -17.051  50.108 -49.527  1.00 22.95           C

ATOM  8409 C   ILE E  45   -18.164  49.096 -49.288  1.00 21.71           C

ATOM  8410 O   ILE E  45   -18.742  48.560 -50.231  1.00 21.43           O

ATOM  8411 CB  ILE E  45   -17.634  51.442 -50.029  1.00 24.78           C
ATOM  8412 CG1 ILE E  45    -16.560  52.530 -49.916  1.00 25.65
C
ATOM  8413 CG2 ILE E  45    -18.877  51.838 -49.221  1.00 32.38
C
ATOM  8414 CD1 ILE E  45    -16.940  53.868 -50.511  1.00 38.64
C

ATOM  8415 H   ILE E  45   -16.029  49.999 -51.214  1.00 33.40           H

ATOM  8416 HA  ILE E  45   -16.612  50.275 -48.678  1.00 27.54           H

ATOM  8417 HB  ILE E  45   -17.884  51.344 -50.961  1.00 29.73           H
ATOM  8418 HG12 ILE E  45   -16.363  52.672 -48.977  1.00 30.78
H
ATOM  8419 HG13 ILE E  45   -15.761  52.223 -50.372  1.00 30.78
H
ATOM  8420 HG21 ILE E  45   -19.219  52.680 -49.561  1.00 38.86
H
ATOM  8421 HG22 ILE E  45   -19.549  51.145 -49.316  1.00 38.86
H
ATOM  8422 HG23 ILE E  45   -18.630  51.934 -48.288  1.00 38.86
H
ATOM  8423 HD11 ILE E  45   -16.202  54.487 -50.392  1.00 46.36
H
ATOM  8424 HD12 ILE E  45   -17.125  53.752 -51.456  1.00 46.36
H
ATOM  8425 HD13 ILE E  45   -17.729  54.203 -50.057  1.00 46.36
H
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H
ATOM  2127  HE2 TYR B 106    -4.357  10.087 -40.970  1.00 27.94
H
ATOM  2128  HH  TYR B 106    -4.733   9.588 -43.115  1.00 33.88
H
ATOM  2129  N   LYS B 107   -6.944   6.335 -37.750  1.00 26.75
N
ATOM  2130  CA  LYS B 107    -5.852   5.367 -37.787  1.00 26.22
C


ATOM  2131  C   LYS B 107   -5.272   5.107 -36.397  1.00 26.74
C
ATOM  2132  O   LYS B 107   -4.095   5.360 -36.145  1.00 26.52
O
ATOM  2133  CB  LYS B 107    -4.763   5.846 -38.749  1.00 24.14
C
ATOM  2134  CG  LYS B 107    -5.256   5.963 -40.189  1.00 25.22
C
ATOM  2135  CD  LYS B 107    -4.169   6.410 -41.147  1.00 30.82
C
ATOM  2136  CE  LYS B 107    -4.650   6.327 -42.592  1.00 28.59
C
ATOM  2137  NZ  LYS B 107    -3.633   6.838 -43.557  1.00 32.24
N1+
ATOM  2138  H   LYS B 107   -7.653   6.068 -38.157  1.00 32.10
H
ATOM  2139  HA  LYS B 107    -6.195   4.525 -38.126  1.00 31.46
H
ATOM  2140  HB2 LYS B 107    -4.453   6.721 -38.466  1.00 28.97
H
ATOM  2141  HB3 LYS B 107    -4.027   5.214 -38.734  1.00 28.97
H
ATOM  2142  HG2 LYS B 107    -5.578   5.097 -40.483  1.00 30.27
H
ATOM  2143  HG3 LYS B 107    -5.974   6.614 -40.224  1.00 30.27
H
ATOM  2144  HD2 LYS B 107    -3.930   7.331 -40.957  1.00 36.98
H
ATOM  2145  HD3 LYS B 107    -3.395   5.834 -41.049  1.00 36.98
H
ATOM  2146  HE2 LYS B 107    -4.836   5.401 -42.812  1.00 34.30
H
ATOM  2147  HE3 LYS B 107    -5.453   6.861 -42.690  1.00 34.30
H
ATOM  2148  HZ1 LYS B 107    -3.448   7.690 -43.381  1.00 38.69
H
ATOM  2149  HZ2 LYS B 107    -2.885   6.360 -43.491  1.00 38.69
H
ATOM  2150  HZ3 LYS B 107    -3.944   6.775 -44.388  1.00 38.69
H
ATOM  2151  N   ASN B 108   -6.125   4.609 -35.505  1.00 28.96
N
ATOM  2152  CA  ASN B 108    -5.729   4.193 -34.160  1.00 35.20
C
ATOM  2153  C   ASN B 108   -5.175   5.334 -33.306  1.00 33.16
C
ATOM  2154  O   ASN B 108   -4.472   5.094 -32.324  1.00 35.70
O
ATOM  2155  CB  ASN B 108    -4.701   3.058 -34.243  1.00 34.00
C
ATOM  2156  CG  ASN B 108    -5.251   1.820 -34.927  1.00 38.47
C
ATOM  2157  OD1 ASN B 108    -6.448   1.540 -34.861  1.00 40.72
O
ATOM  2158  ND2 ASN B 108    -4.377   1.071 -35.589  1.00 50.98
N
ATOM  2159  H   ASN B 108   -6.964   4.500 -35.660  1.00 34.75
H
ATOM  2160  HA  ASN B 108    -6.512   3.844 -33.705  1.00 42.24
H
ATOM  2161  HB2 ASN B 108    -3.932   3.364 -34.749  1.00 40.80
H
ATOM  2162  HB3 ASN B 108    -4.430   2.810 -33.345  1.00 40.80
H
ATOM  2163 HD21 ASN B 108    -4.640   0.359 -35.993  1.00 61.17
H
ATOM  2164 HD22 ASN B 108    -3.548   1.298 -35.613  1.00 61.17
H
ATOM  2165  N   ASN B 109   -5.499   6.570 -33.679  1.00 26.48
N


ATOM  2166  CA  ASN B 109    -5.125   7.739 -32.888  1.00 25.08
C
ATOM  2167  C   ASN B 109   -6.311   8.665 -32.655  1.00 23.92
C
ATOM  2168  O   ASN B 109   -7.165   8.828 -33.526  1.00 25.78
O
ATOM  2169  CB  ASN B 109    -3.994   8.508 -33.571  1.00 25.68
C
ATOM  2170  CG  ASN B 109    -2.706   7.718 -33.624  1.00 28.52
C
ATOM  2171  OD1 ASN B 109    -2.107   7.550 -34.686  1.00 29.25
O
ATOM  2172  ND2 ASN B 109    -2.278   7.221 -32.474  1.00 28.60
N
ATOM  2173  H   ASN B 109   -5.940   6.759 -34.393  1.00 31.78
H
ATOM  2174  HA  ASN B 109    -4.804   7.442 -32.022  1.00 30.10
H
ATOM  2175  HB2 ASN B 109    -4.257   8.715 -34.482  1.00 30.82
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ATOM  8426  N   GLY E  46   -18.445  48.832 -48.015  1.00 19.01           N
ATOM  8427  CA  GLY E  46    -19.499  47.909 -47.638  1.00 26.57
C

ATOM  8428  C   GLY E  46   -19.056  46.457 -47.589  1.00 28.55           C

ATOM  8429  O   GLY E  46   -19.844  45.577 -47.242  1.00 27.44           O

ATOM  8430  H   GLY E  46   -18.032  49.181 -47.346  1.00 22.81           H


ATOM  8431  HA2 GLY E  46    -19.837  48.152 -46.762  1.00 31.88
H
ATOM  8432  HA3 GLY E  46    -20.228  47.981 -48.274  1.00 31.88
H

ATOM  8433  N   ASP E  47   -17.800  46.196 -47.936  1.00 25.13           N
ATOM  8434  CA  ASP E  47    -17.279  44.834 -47.895  1.00 20.13
C

ATOM  8435  C   ASP E  47   -17.364  44.271 -46.477  1.00 19.36           C

ATOM  8436  O   ASP E  47   -16.968  44.931 -45.520  1.00 23.09           O
ATOM  8437  CB  ASP E  47    -15.838  44.793 -48.394  1.00 23.01
C
ATOM  8438  CG  ASP E  47    -15.165  43.465 -48.107  1.00 25.88
C
ATOM  8439  OD1 ASP E  47    -15.541  42.456 -48.738  1.00 25.43
O
ATOM  8440  OD2 ASP E  47    -14.260  43.431 -47.248  1.00 29.08
O1-

ATOM  8441  H   ASP E  47   -17.231  46.786 -48.198  1.00 30.15           H
ATOM  8442  HA  ASP E  47    -17.816  44.271 -48.475  1.00 24.15
H
ATOM  8443  HB2 ASP E  47    -15.831  44.933 -49.354  1.00 27.62
H
ATOM  8444  HB3 ASP E  47    -15.329  45.490 -47.952  1.00 27.62
H

ATOM  8445  N   GLU E  48   -17.891  43.056 -46.351  1.00 16.14           N
ATOM  8446  CA  GLU E  48    -18.090  42.431 -45.044  1.00 21.48
C

ATOM  8447  C   GLU E  48   -17.292  41.133 -44.913  1.00 17.74           C
ATOM  8448  O   GLU E  48   -17.473  40.382 -43.958  1.00 20.31
O
ATOM  8449  CB  GLU E  48    -19.587  42.164 -44.805  1.00 22.20
C
ATOM  8450  CG  GLU E  48    -20.255  41.340 -45.897  1.00 25.85
C
ATOM  8451  CD  GLU E  48    -21.750  41.133 -45.672  1.00 29.32
C
ATOM  8452  OE1 GLU E  48    -22.447  40.770 -46.643  1.00 34.96
O
ATOM  8453  OE2 GLU E  48    -22.226  41.325 -44.535  1.00 26.64
O1-

ATOM  8454  H   GLU E  48   -18.143  42.568 -47.012  1.00 19.37           H
ATOM  8455  HA  GLU E  48    -17.783  43.040 -44.354  1.00 25.77
H
ATOM  8456  HB2 GLU E  48    -19.688  41.684 -43.969  1.00 26.64
H
ATOM  8457  HB3 GLU E  48    -20.050  43.015 -44.753  1.00 26.64
H
ATOM  8458  HG2 GLU E  48    -20.141  41.793 -46.747  1.00 31.02
H
ATOM  8459  HG3 GLU E  48    -19.836  40.466 -45.931  1.00 31.02
H

ATOM  8460  N   ILE E  49  -16.399  40.887 -45.867  1.00 20.94          N

ATOM  8461  CA  ILE E  49   -15.620  39.649 -45.906  1.00 18.17           C

ATOM  8462  C   ILE E  49  -14.134  39.889 -45.647  1.00 17.63          C

ATOM  8463  O   ILE E  49  -13.544  39.294 -44.747  1.00 20.44          O

ATOM  8464  CB  ILE E  49   -15.778  38.951 -47.266  1.00 21.61           C
ATOM  8465  CG1 ILE E  49    -17.244  38.564 -47.486  1.00 23.02
C


ATOM  8466  CG2 ILE E  49    -14.893  37.713 -47.346  1.00 20.19
C
ATOM  8467  CD1 ILE E  49    -17.580  38.261 -48.922  1.00 30.12
C

ATOM  8468  H   ILE E  49  -16.222  41.428 -46.512  1.00 25.13          H

ATOM  8469  HA  ILE E  49   -15.950  39.048 -45.220  1.00 21.81           H

ATOM  8470  HB  ILE E  49   -15.512  39.569 -47.965  1.00 25.94           H
ATOM  8471 HG12 ILE E  49    -17.442  37.773 -46.961  1.00 27.63
H
ATOM  8472 HG13 ILE E  49    -17.808  39.299 -47.198  1.00 27.63
H
ATOM  8473 HG21 ILE E  49    -15.014  37.295 -48.213  1.00 24.23
H
ATOM  8474 HG22 ILE E  49    -13.967  37.979 -47.233  1.00 24.23
H
ATOM  8475 HG23 ILE E  49    -15.149  37.096 -46.643  1.00 24.23
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H
ATOM  2176  HB3 ASN B 109     -3.825   9.326 -33.079  1.00 30.82
H
ATOM  2177 HD21 ASN B 109     -1.551   6.763 -32.448  1.00 34.32
H
ATOM  2178 HD22 ASN B 109     -2.728   7.355 -31.753  1.00 34.32
H
ATOM  2179  N   CYS B 110    -6.355   9.262 -31.467  1.00 21.75
N
ATOM  2180  CA  CYS B 110    -7.381  10.236 -31.115  1.00 19.96
C
ATOM  2181  C   CYS B 110    -6.754  11.621 -31.065  1.00 20.85
C
ATOM  2182  O   CYS B 110    -5.632  11.768 -30.591  1.00 18.06
O
ATOM  2183  CB  CYS B 110    -8.015   9.899 -29.766  1.00 23.36
C
ATOM  2184  SG  CYS B 110    -8.365   8.144 -29.523  1.00 28.07
S
ATOM  2185  H   CYS B 110    -5.789   9.116 -30.836  1.00 26.10
H
ATOM  2186  HA  CYS B 110    -8.076  10.235 -31.792  1.00 23.95
H
ATOM  2187  HB2 CYS B 110    -7.411  10.180 -29.061  1.00 28.03
H
ATOM  2188  HB3 CYS B 110    -8.854  10.380 -29.689  1.00 28.03
H
ATOM  2189  N   TYR B 111    -7.475  12.626 -31.554  1.00 18.22
N
ATOM  2190  CA  TYR B 111    -6.973  13.997 -31.572  1.00 16.26
C
ATOM  2191  C   TYR B 111    -8.020  14.998 -31.110  1.00 18.87
C
ATOM  2192  O   TYR B 111    -9.212  14.830 -31.370  1.00 17.84
O
ATOM  2193  CB  TYR B 111    -6.517  14.392 -32.977  1.00 16.69
C
ATOM  2194  CG  TYR B 111    -5.434  13.532 -33.571  1.00 17.24
C
ATOM  2195  CD1 TYR B 111    -4.095  13.773 -33.292  1.00 20.23
C
ATOM  2196  CD2 TYR B 111    -5.747  12.493 -34.436  1.00 19.87
C
ATOM  2197  CE1 TYR B 111    -3.102  12.992 -33.843  1.00 17.86
C
ATOM  2198  CE2 TYR B 111    -4.763  11.710 -34.994  1.00 19.29
C
ATOM  2199  CZ  TYR B 111    -3.443  11.962 -34.696  1.00 19.83
C
ATOM  2200  OH  TYR B 111    -2.463  11.177 -35.251  1.00 21.43
O


ATOM  2201  H   TYR B 111    -8.264  12.539 -31.884  1.00 21.87
H
ATOM  2202  HA  TYR B 111    -6.209  14.064 -30.977  1.00 19.51
H
ATOM  2203  HB2 TYR B 111    -7.282  14.349 -33.571  1.00 20.03
H
ATOM  2204  HB3 TYR B 111    -6.181  15.302 -32.947  1.00 20.03
H
ATOM  2205  HD1 TYR B 111    -3.865  14.467 -32.717  1.00 24.28
H
ATOM  2206  HD2 TYR B 111    -6.638  12.321 -34.639  1.00 23.85
H
ATOM  2207  HE1 TYR B 111    -2.210  13.160 -33.644  1.00 21.44
H
ATOM  2208  HE2 TYR B 111    -4.988  11.013 -35.568  1.00 23.14
H
ATOM  2209  HH  TYR B 111    -2.809  10.593 -35.746  1.00 25.72
H
ATOM  2210  N   GLN B 112    -7.573  16.055 -30.444  1.00 16.37
N
ATOM  2211  CA  GLN B 112    -8.440  17.199 -30.183  1.00 18.53
C
ATOM  2212  C   GLN B 112    -7.660  18.496 -30.315  1.00 18.90
C
ATOM  2213  O   GLN B 112    -6.506  18.591 -29.890  1.00 13.32
O
ATOM  2214  CB  GLN B 112    -9.083  17.104 -28.798  1.00 18.31
C
ATOM  2215  CG  GLN B 112   -10.016  18.266 -28.458  1.00 20.42
C
ATOM  2216  CD  GLN B 112   -11.205  18.373 -29.402  1.00 22.22
C
ATOM  2217  OE1 GLN B 112   -11.057  18.710 -30.575  1.00 23.60
O
ATOM  2218  NE2 GLN B 112   -12.395  18.088 -28.886  1.00 27.09
N
ATOM  2219  H   GLN B 112    -6.775  16.136 -30.133  1.00 19.65
H
ATOM  2220  HA  GLN B 112    -9.152  17.210 -30.842  1.00 22.24
H
ATOM  2221  HB2 GLN B 112    -9.601  16.285 -28.751  1.00 21.98
H
ATOM  2222  HB3 GLN B 112    -8.380  17.085 -28.130  1.00 21.98
H
ATOM  2223  HG2 GLN B 112   -10.359  18.142 -27.559  1.00 24.51
H
ATOM  2224  HG3 GLN B 112    -9.517  19.096 -28.511  1.00 24.51
H
ATOM  2225 HE21 GLN B 112   -13.099  18.134 -29.378  1.00 32.51
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H
ATOM  8476 HD11 ILE E  49   -18.519  38.026 -48.983  1.00 36.14
H
ATOM  8477 HD12 ILE E  49   -17.400  39.047 -49.461  1.00 36.14
H
ATOM  8478 HD13 ILE E  49   -17.033  37.519 -49.224  1.00 36.14
H

ATOM  8479  N   PHE E  50  -13.528  40.757 -46.443  1.00 14.54           N
ATOM  8480  CA  PHE E  50   -12.085  40.946 -46.383  1.00 17.11
C

ATOM  8481  C   PHE E  50  -11.662  41.946 -45.309  1.00 16.26           C
ATOM  8482  O   PHE E  50  -10.690  41.706 -44.593  1.00 13.97
O
ATOM  8483  CB  PHE E  50   -11.576  41.369 -47.758  1.00 15.93
C
ATOM  8484  CG  PHE E  50   -11.833  40.337 -48.816  1.00 17.08
C
ATOM  8485  CD1 PHE E  50   -10.955  39.286 -49.001  1.00 17.90
C
ATOM  8486  CD2 PHE E  50   -12.980  40.391 -49.591  1.00 20.60
C
ATOM  8487  CE1 PHE E  50   -11.200  38.319 -49.958  1.00 19.37
C
ATOM  8488  CE2 PHE E  50   -13.230  39.428 -50.552  1.00 20.80
C
ATOM  8489  CZ  PHE E  50   -12.342  38.391 -50.733  1.00 20.26
C

ATOM  8490  H   PHE E  50  -13.927  41.248 -47.026  1.00 17.44           H
ATOM  8491  HA  PHE E  50   -11.672  40.095 -46.167  1.00 20.53
H
ATOM  8492  HB2 PHE E  50   -12.024  42.187 -48.023  1.00 19.11
H
ATOM  8493  HB3 PHE E  50   -10.618  41.515 -47.709  1.00 19.11
H
ATOM  8494  HD1 PHE E  50   -10.186  39.232 -48.480  1.00 21.48
H
ATOM  8495  HD2 PHE E  50   -13.584  41.088 -49.472  1.00 24.72
H
ATOM  8496  HE1 PHE E  50   -10.598  37.621 -50.081  1.00 23.24
H
ATOM  8497  HE2 PHE E  50   -13.999  39.479 -51.073  1.00 24.96
H
ATOM  8498  HZ  PHE E  50   -12.507  37.744 -51.381  1.00 24.31
H

ATOM  8499  N   LEU E  51  -12.392  43.050 -45.180  1.00 16.41           N
ATOM  8500  CA  LEU E  51   -12.055  44.057 -44.177  1.00 16.35
C


ATOM  8501  C   LEU E  51  -12.009  43.470 -42.757  1.00 15.68           C

ATOM  8502  O   LEU E  51  -11.023  43.665 -42.044  1.00 14.16           O
ATOM  8503  CB  LEU E  51   -13.045  45.228 -44.226  1.00 17.16
C
ATOM  8504  CG  LEU E  51   -13.007  46.120 -45.473  1.00 18.54
C
ATOM  8505  CD1 LEU E  51   -14.064  47.212 -45.365  1.00 24.77
C
ATOM  8506  CD2 LEU E  51   -11.630  46.737 -45.699  1.00 22.00
C

ATOM  8507  H   LEU E  51  -13.082  43.240 -45.657  1.00 19.69           H
ATOM  8508  HA  LEU E  51   -11.174  44.410 -44.377  1.00 19.62
H
ATOM  8509  HB2 LEU E  51   -13.943  44.866 -44.161  1.00 20.59
H
ATOM  8510  HB3 LEU E  51   -12.875  45.799 -43.461  1.00 20.59
H
ATOM  8511  HG  LEU E  51   -13.219  45.579 -46.250  1.00 22.25
H
ATOM  8512 HD11 LEU E  51   -14.027  47.767 -46.160  1.00 29.72
H
ATOM  8513 HD12 LEU E  51   -14.938  46.799 -45.290  1.00 29.72
H
ATOM  8514 HD13 LEU E  51   -13.883  47.749 -44.578  1.00 29.72
H
ATOM  8515 HD21 LEU E  51   -11.659  47.289 -46.496  1.00 26.40
H
ATOM  8516 HD22 LEU E  51   -11.398  47.278 -44.929  1.00 26.40
H
ATOM  8517 HD23 LEU E  51   -10.981  46.025 -45.812  1.00 26.40
H
ATOM  8518  N   PRO E  52   -13.065  42.750 -42.337  1.00 15.67
N
ATOM  8519  CA  PRO E  52   -13.023  42.226 -40.962  1.00 16.66
C
ATOM  8520  C   PRO E  52   -11.952  41.159 -40.777  1.00 15.48
C
ATOM  8521  O   PRO E  52   -11.369  41.065 -39.700  1.00 15.44
O
ATOM  8522  CB  PRO E  52   -14.425  41.638 -40.758  1.00 19.47
C
ATOM  8523  CG  PRO E  52   -14.947  41.399 -42.123  1.00 23.22
C
ATOM  8524  CD  PRO E  52   -14.344  42.450 -43.001  1.00 19.17
C
ATOM  8525  HA  PRO E  52   -12.878  42.946 -40.328  1.00 19.99
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H
ATOM  2226 HE22 GLN B 112   -12.462  17.858 -28.060  1.00 32.51
H
ATOM  2227  N   PHE B 113    -8.309  19.484 -30.923  1.00 17.31
N
ATOM  2228  CA  PHE B 113    -7.731  20.801 -31.141  1.00 18.02
C
ATOM  2229  C   PHE B 113    -8.352  21.798 -30.178  1.00 19.91
C
ATOM  2230  O   PHE B 113    -9.508  22.181 -30.346  1.00 25.64
O
ATOM  2231  CB  PHE B 113    -7.961  21.259 -32.583  1.00 16.63
C
ATOM  2232  CG  PHE B 113    -7.265  20.414 -33.612  1.00 20.32
C
ATOM  2233  CD1 PHE B 113    -7.730  19.144 -33.920  1.00 23.50
C
ATOM  2234  CD2 PHE B 113    -6.158  20.898 -34.285  1.00 20.35
C
ATOM  2235  CE1 PHE B 113    -7.092  18.371 -34.870  1.00 25.58
C


ATOM  2236  CE2 PHE B 113    -5.515  20.128 -35.235  1.00 24.89
C
ATOM  2237  CZ  PHE B 113    -5.984  18.863 -35.529  1.00 28.96
C
ATOM  2238  H   PHE B 113    -9.110  19.410 -31.227  1.00 20.77
H
ATOM  2239  HA  PHE B 113    -6.775  20.767 -30.977  1.00 21.62
H
ATOM  2240  HB2 PHE B 113    -8.913  21.230 -32.770  1.00 19.95
H
ATOM  2241  HB3 PHE B 113    -7.636  22.168 -32.677  1.00 19.95
H
ATOM  2242  HD1 PHE B 113    -8.475  18.807 -33.478  1.00 28.20
H
ATOM  2243  HD2 PHE B 113    -5.837  21.749 -34.090  1.00 24.42
H
ATOM  2244  HE1 PHE B 113    -7.410  17.519 -35.066  1.00 30.70
H
ATOM  2245  HE2 PHE B 113    -4.769  20.463 -35.678  1.00 29.86
H
ATOM  2246  HZ  PHE B 113    -5.554  18.344 -36.170  1.00 34.75
H
ATOM  2247  N   PHE B 114    -7.589  22.215 -29.173  1.00 18.14
N
ATOM  2248  CA  PHE B 114    -8.090  23.146 -28.167  1.00 16.48
C
ATOM  2249  C   PHE B 114    -7.775  24.587 -28.554  1.00 19.56
C
ATOM  2250  O   PHE B 114    -6.611  24.962 -28.675  1.00 18.71
O
ATOM  2251  CB  PHE B 114    -7.496  22.821 -26.799  1.00 19.55
C
ATOM  2252  CG  PHE B 114    -7.961  21.508 -26.237  1.00 21.13
C
ATOM  2253  CD1 PHE B 114    -7.233  20.352 -26.450  1.00 21.85
C
ATOM  2254  CD2 PHE B 114    -9.132  21.429 -25.501  1.00 27.16
C
ATOM  2255  CE1 PHE B 114    -7.658  19.140 -25.935  1.00 21.25
C
ATOM  2256  CE2 PHE B 114    -9.564  20.218 -24.984  1.00 27.33
C
ATOM  2257  CZ  PHE B 114    -8.824  19.074 -25.202  1.00 22.66
C
ATOM  2258  H   PHE B 114    -6.773  21.972 -29.050  1.00 21.76
H
ATOM  2259  HA  PHE B 114    -9.054  23.056 -28.105  1.00 19.78
H
ATOM  2260  HB2 PHE B 114    -6.530  22.785 -26.878  1.00 23.47
H
ATOM  2261  HB3 PHE B 114    -7.750  23.518 -26.174  1.00 23.47
H
ATOM  2262  HD1 PHE B 114    -6.445  20.391 -26.942  1.00 26.22
H
ATOM  2263  HD2 PHE B 114    -9.633  22.198 -25.351  1.00 32.60
H
ATOM  2264  HE1 PHE B 114    -7.158  18.370 -26.084  1.00 25.50
H
ATOM  2265  HE2 PHE B 114   -10.351  20.176 -24.490  1.00 32.79
H
ATOM  2266  HZ  PHE B 114    -9.111  18.260 -24.856  1.00 27.20
H
ATOM  2267  N   ASP B 115    -8.820  25.391 -28.738  1.00 19.34
N
ATOM  2268  CA  ASP B 115    -8.666  26.759 -29.234  1.00 22.18
C
ATOM  2269  C   ASP B 115    -8.421  27.778 -28.121  1.00 22.24
C
ATOM  2270  O   ASP B 115    -8.374  28.983 -28.375  1.00 23.21
O


ATOM  2271  CB  ASP B 115    -9.896  27.172 -30.053  1.00 28.95
C
ATOM  2272  CG  ASP B 115   -11.204  26.959 -29.310  1.00 30.69
C
ATOM  2273  OD1 ASP B 115   -11.201  26.953 -28.060  1.00 36.27
O
ATOM  2274  OD2 ASP B 115   -12.244  26.800 -29.985  1.00 43.50
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H
ATOM  8526  HB2 PRO E  52   -14.362  40.806 -40.264  1.00 23.36
H
ATOM  8527  HB3 PRO E  52   -14.982  42.277 -40.285  1.00 23.36
H
ATOM  8528  HG2 PRO E  52   -14.680  40.515 -42.421  1.00 27.86
H
ATOM  8529  HG3 PRO E  52   -15.914  41.477 -42.117  1.00 27.86
H
ATOM  8530  HD2 PRO E  52   -14.189  42.099 -43.892  1.00 23.00
H
ATOM  8531  HD3 PRO E  52   -14.908  43.239 -43.021  1.00 23.00
H

ATOM  8532  N   PHE E  53   -11.697  40.378 -41.822  1.00 13.56           N
ATOM  8533  CA  PHE E  53   -10.656  39.358 -41.790  1.00 17.24
C

ATOM  8534  C   PHE E  53    -9.283  40.010 -41.632  1.00 14.01           C

ATOM  8535  O   PHE E  53    -8.506  39.630 -40.757  1.00 13.44           O


ATOM  8536  CB  PHE E  53   -10.709  38.506 -43.064  1.00 16.33
C
ATOM  8537  CG  PHE E  53    -9.659  37.431 -43.128  1.00 15.12
C
ATOM  8538  CD1 PHE E  53    -9.837  36.229 -42.465  1.00 17.88
C
ATOM  8539  CD2 PHE E  53    -8.505  37.614 -43.867  1.00 12.71
C
ATOM  8540  CE1 PHE E  53    -8.878  35.234 -42.530  1.00 14.56
C
ATOM  8541  CE2 PHE E  53    -7.540  36.622 -43.934  1.00 14.02
C

ATOM  8542  CZ  PHE E  53    -7.729  35.432 -43.263  1.00 13.27           C

ATOM  8543  H   PHE E  53   -12.120  40.419 -42.570  1.00 16.27           H
ATOM  8544  HA  PHE E  53   -10.804  38.775 -41.030  1.00 20.68
H
ATOM  8545  HB2 PHE E  53   -11.577  38.076 -43.115  1.00 19.60
H
ATOM  8546  HB3 PHE E  53   -10.585  39.086 -43.832  1.00 19.60
H
ATOM  8547  HD1 PHE E  53   -10.611  36.089 -41.967  1.00 21.46
H
ATOM  8548  HD2 PHE E  53    -8.372  38.416 -44.320  1.00 15.25
H
ATOM  8549  HE1 PHE E  53    -9.008  34.433 -42.076  1.00 17.48
H
ATOM  8550  HE2 PHE E  53    -6.766  36.759 -44.431  1.00 16.83
H

ATOM  8551  HZ  PHE E  53    -7.083  34.764 -43.307  1.00 15.93           H

ATOM  8552  N   TYR E  54    -8.997  41.002 -42.470  1.00 12.77           N

ATOM  8553  CA  TYR E  54    -7.711  41.685 -42.426  1.00 13.18           C

ATOM  8554  C   TYR E  54    -7.531  42.456 -41.122  1.00 14.10           C

ATOM  8555  O   TYR E  54    -6.416  42.550 -40.606  1.00 12.95           O

ATOM  8556  CB  TYR E  54    -7.557  42.641 -43.614  1.00 13.17           C
ATOM  8557  CG  TYR E  54    -7.431  41.959 -44.968  1.00 15.46
C
ATOM  8558  CD1 TYR E  54    -6.845  40.702 -45.094  1.00 12.49
C
ATOM  8559  CD2 TYR E  54    -7.897  42.581 -46.121  1.00 14.64
C
ATOM  8560  CE1 TYR E  54    -6.735  40.083 -46.336  1.00 15.66
C
ATOM  8561  CE2 TYR E  54    -7.789  41.974 -47.361  1.00 14.01
C

ATOM  8562  CZ  TYR E  54    -7.212  40.726 -47.462  1.00 13.86           C
ATOM  8563  OH  TYR E  54    -7.117  40.130 -48.694  1.00 15.59
O

ATOM  8564  H   TYR E  54    -9.532  41.298 -43.074  1.00 15.33           H

ATOM  8565  HA  TYR E  54    -7.003  41.024 -42.481  1.00 15.81           H
ATOM  8566  HB2 TYR E  54    -8.335  43.219 -43.649  1.00 15.80
H
ATOM  8567  HB3 TYR E  54    -6.759  43.176 -43.480  1.00 15.80
H
ATOM  8568  HD1 TYR E  54    -6.526  40.267 -44.336  1.00 14.99
H
ATOM  8569  HD2 TYR E  54    -8.290  43.421 -46.058  1.00 17.56
H
ATOM  8570  HE1 TYR E  54    -6.345  39.241 -46.407  1.00 18.79
H


ATOM  8571  HE2 TYR E  54    -8.111  42.403 -48.120  1.00 16.81
H
ATOM  8572  HH  TYR E  54    -7.445  40.632 -49.283  1.00 18.71
H

ATOM  8573  N   LYS E  55    -8.612  43.018 -40.592  1.00 11.71           N
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O1-
ATOM  2275  H   ASP B 115     -9.636  25.167 -28.582  1.00 23.21
H
ATOM  2276  HA  ASP B 115     -7.898  26.786 -29.826  1.00 26.62
H
ATOM  2277  HB2 ASP B 115     -9.827  28.115 -30.272  1.00 34.74
H
ATOM  2278  HB3 ASP B 115     -9.925  26.645 -30.866  1.00 34.74
H
ATOM  2279  N   GLU B 116     -8.267  27.295 -26.892  1.00 21.76
N
ATOM  2280  CA  GLU B 116     -7.861  28.151 -25.782  1.00 25.37
C
ATOM  2281  C   GLU B 116     -6.344  28.309 -25.771  1.00 26.04
C
ATOM  2282  O   GLU B 116     -5.610  27.323 -25.778  1.00 26.31
O
ATOM  2283  CB  GLU B 116     -8.340  27.578 -24.447  1.00 30.28
C
ATOM  2284  CG  GLU B 116     -9.811  27.839 -24.153  1.00 43.86
C
ATOM  2285  CD  GLU B 116    -10.256  27.250 -22.827  1.00 59.80
C
ATOM  2286  OE1 GLU B 116     -9.383  26.828 -22.037  1.00 55.77
O
ATOM  2287  OE2 GLU B 116    -11.480  27.208 -22.576  1.00 69.76
O1-
ATOM  2288  H   GLU B 116     -8.391  26.473 -26.674  1.00 26.11
H
ATOM  2289  HA  GLU B 116     -8.256  29.029 -25.895  1.00 30.45
H
ATOM  2290  HB2 GLU B 116     -8.205  26.618 -24.453  1.00 36.34
H
ATOM  2291  HB3 GLU B 116     -7.820  27.978 -23.732  1.00 36.34
H
ATOM  2292  HG2 GLU B 116     -9.963  28.796 -24.123  1.00 52.63
H
ATOM  2293  HG3 GLU B 116    -10.349  27.439 -24.855  1.00 52.63
H
ATOM  2294  N   SER B 117     -5.878  29.551 -25.757  1.00 24.25
N
ATOM  2295  CA  SER B 117     -4.446  29.825 -25.766  1.00 24.22
C
ATOM  2296  C   SER B 117     -3.832  29.548 -24.401  1.00 24.91
C
ATOM  2297  O   SER B 117     -4.271  30.095 -23.390  1.00 25.88
O
ATOM  2298  CB  SER B 117     -4.179  31.275 -26.178  1.00 25.72
C
ATOM  2299  OG  SER B 117     -4.568  31.501 -27.519  1.00 35.43
O
ATOM  2300  H   SER B 117     -6.371  30.256 -25.743  1.00 29.10
H
ATOM  2301  HA  SER B 117     -4.017  29.244 -26.413  1.00 29.07
H
ATOM  2302  HB2 SER B 117     -4.687  31.865 -25.599  1.00 30.86
H
ATOM  2303  HB3 SER B 117     -3.231  31.458 -26.089  1.00 30.86
H
ATOM  2304  HG  SER B 117     -4.416  32.299 -27.731  1.00 42.52
H
ATOM  2305  N   LYS B 118     -2.815  28.692 -24.384  1.00 17.66
N


ATOM  2306  CA  LYS B 118     -2.093  28.355 -23.163  1.00 23.06
C
ATOM  2307  C   LYS B 118     -0.612  28.252 -23.478  1.00 21.34
C
ATOM  2308  O   LYS B 118     -0.238  27.982 -24.623  1.00 18.83
O
ATOM  2309  CB  LYS B 118     -2.597  27.035 -22.571  1.00 22.84
C
ATOM  2310  CG  LYS B 118     -4.060  27.046 -22.162  1.00 24.02
C
ATOM  2311  CD  LYS B 118     -4.473  25.704 -21.567  1.00 26.42
C
ATOM  2312  CE  LYS B 118     -5.958  25.669 -21.232  1.00 32.25
C
ATOM  2313  NZ  LYS B 118     -6.343  26.770 -20.307  1.00 35.19
N1+
ATOM  2314  H   LYS B 118     -2.518  28.286 -25.082  1.00 21.19
H
ATOM  2315  HA  LYS B 118     -2.222  29.057 -22.506  1.00 27.68
H
ATOM  2316  HB2 LYS B 118     -2.481  26.335 -23.231  1.00 27.41
H
ATOM  2317  HB3 LYS B 118     -2.072  26.830 -21.781  1.00 27.41
H
ATOM  2318  HG2 LYS B 118     -4.202  27.733 -21.492  1.00 28.83
H
ATOM  2319  HG3 LYS B 118     -4.611  27.216 -22.942  1.00 28.83
H
ATOM  2320  HD2 LYS B 118     -4.290  25.000 -22.209  1.00 31.70
H
ATOM  2321  HD3 LYS B 118     -3.974  25.550 -20.749  1.00 31.70
H
ATOM  2322  HE2 LYS B 118     -6.471  25.767 -22.049  1.00 38.70
H
ATOM  2323  HE3 LYS B 118     -6.168  24.825 -20.803  1.00 38.70
H
ATOM  2324  HZ1 LYS B 118     -5.888  26.700 -19.545  1.00 42.23
H
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ATOM  8574  CA  LYS E  55     -8.514  43.757 -39.335  1.00 15.22           C

ATOM  8575  C   LYS E  55     -7.955  42.845 -38.248  1.00 13.95           C

ATOM  8576  O   LYS E  55     -7.113  43.257 -37.454  1.00 16.50           O

ATOM  8577  CB  LYS E  55     -9.871  44.321 -38.913  1.00 16.70           C

ATOM  8578  CG  LYS E  55     -9.803  45.205 -37.669  1.00 20.44           C
ATOM  8579  CD  LYS E  55    -11.158  45.809 -37.335  1.00 27.75
C
ATOM  8580  CE  LYS E  55    -11.074  46.749 -36.141  1.00 30.79
C
ATOM  8581  NZ  LYS E  55    -12.385  47.406 -35.858  1.00 31.93
N1+

ATOM  8582  H   LYS E  55     -9.401  42.989 -40.931  1.00 14.05           H

ATOM  8583  HA  LYS E  55     -7.902  44.500 -39.451  1.00 18.27           H
ATOM  8584  HB2 LYS E  55    -10.227  44.857 -39.639  1.00 20.04
H
ATOM  8585  HB3 LYS E  55    -10.471  43.584 -38.722  1.00 20.04
H
ATOM  8586  HG2 LYS E  55     -9.515  44.671 -36.912  1.00 24.53
H
ATOM  8587  HG3 LYS E  55     -9.178  45.930 -37.825  1.00 24.53
H
ATOM  8588  HD2 LYS E  55    -11.479  46.315 -38.098  1.00 33.29
H
ATOM  8589  HD3 LYS E  55    -11.780  45.098 -37.118  1.00 33.29
H
ATOM  8590  HE2 LYS E  55    -10.812  46.244 -35.355  1.00 36.95
H
ATOM  8591  HE3 LYS E  55    -10.421  47.443 -36.326  1.00 36.95
H
ATOM  8592  HZ1 LYS E  55    -12.308  47.949 -35.157  1.00 38.32
H
ATOM  8593  HZ2 LYS E  55    -12.645  47.881 -36.565  1.00 38.32
H
ATOM  8594  HZ3 LYS E  55    -13.001  46.790 -35.681  1.00 38.32
H

ATOM  8595  N   ASN E  56     -8.406  41.596 -38.236  1.00 12.27           N
ATOM  8596  CA  ASN E  56     -7.924  40.627 -37.264  1.00 13.08
C

ATOM  8597  C   ASN E  56     -6.491  40.185 -37.546  1.00 15.68           C

ATOM  8598  O   ASN E  56     -5.659  40.159 -36.642  1.00 13.45           O
ATOM  8599  CB  ASN E  56     -8.843  39.404 -37.234  1.00 20.81
C
ATOM  8600  CG  ASN E  56    -10.166  39.686 -36.549  1.00 25.65
C
ATOM  8601  OD1 ASN E  56    -10.228  40.453 -35.587  1.00 32.51
O
ATOM  8602  ND2 ASN E  56    -11.234  39.066 -37.040  1.00 27.48
N

ATOM  8603  H   ASN E  56     -8.993  41.285 -38.782  1.00 14.72           H
ATOM  8604  HA  ASN E  56     -7.941  41.032 -36.383  1.00 15.70
H
ATOM  8605  HB2 ASN E  56     -9.029  39.126 -38.145  1.00 24.97
H


ATOM  8606  HB3 ASN E  56     -8.402  38.687 -36.752  1.00 24.97
H
ATOM  8607 HD21 ASN E  56    -12.007  39.194 -36.685  1.00 32.98
H
ATOM  8608 HD22 ASN E  56    -11.152  38.536 -37.712  1.00 32.98
H

ATOM  8609  N   VAL E  57     -6.209  39.830 -38.795  1.00 12.98           N

ATOM  8610  CA  VAL E  57     -4.869  39.403 -39.172  1.00 11.78           C

ATOM  8611  C   VAL E  57     -3.849  40.512 -38.932  1.00 10.70           C

ATOM  8612  O   VAL E  57     -2.742  40.250 -38.470  1.00 12.79           O

ATOM  8613  CB  VAL E  57     -4.811  38.970 -40.651  1.00 15.00           C
ATOM  8614  CG1 VAL E  57     -3.373  38.701 -41.085  1.00 13.02
C
ATOM  8615  CG2 VAL E  57     -5.665  37.734 -40.867  1.00 11.75
C

ATOM  8616  H   VAL E  57     -6.776  39.828 -39.441  1.00 15.57           H

ATOM  8617  HA  VAL E  57     -4.616  38.641 -38.627  1.00 14.14           H

ATOM  8618  HB  VAL E  57     -5.166  39.682 -41.205  1.00 18.00           H
ATOM  8619 HG11 VAL E  57     -3.369  38.432 -42.016  1.00 15.62
H
ATOM  8620 HG12 VAL E  57     -2.853  39.513 -40.972  1.00 15.62
H
ATOM  8621 HG13 VAL E  57     -3.004  37.993 -40.533  1.00 15.62
H
ATOM  8622 HG21 VAL E  57     -5.617  37.476 -41.801  1.00 14.10
H
ATOM  8623 HG22 VAL E  57     -5.327  37.016 -40.308  1.00 14.10
H
ATOM  8624 HG23 VAL E  57     -6.582  37.938 -40.626  1.00 14.10
H
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ATOM  2325 HZ2 LYS B 118    -6.164 27.557 -20.680  1.00 42.23
H
ATOM  2326 HZ3 LYS B 118    -7.214 26.726 -20.129  1.00 42.23
H
ATOM  2327 N   ASN B 119    0.236 28.473 -22.478  1.00 16.27
N
ATOM  2328 CA  ASN B 119     1.659 28.241 -22.668  1.00 20.30
C
ATOM  2329 C   ASN B 119    1.878 26.738 -22.763  1.00 16.48
C
ATOM  2330 O   ASN B 119    0.946 25.951 -22.569  1.00 17.62
O
ATOM  2331 CB  ASN B 119     2.499 28.869 -21.542  1.00 19.64
C
ATOM  2332 CG  ASN B 119     2.262 28.228 -20.183  1.00 20.65
C
ATOM  2333 OD1 ASN B 119     2.498 27.035 -19.986  1.00 17.21
O
ATOM  2334 ND2 ASN B 119     1.823 29.036 -19.224  1.00 20.04
N
ATOM  2335 H   ASN B 119    0.016 28.753 -21.695  1.00 19.52
H
ATOM  2336 HA  ASN B 119     1.936 28.639 -23.508  1.00 24.36
H
ATOM  2337 HB2 ASN B 119     3.439 28.769 -21.759  1.00 23.57
H
ATOM  2338 HB3 ASN B 119     2.275 29.810 -21.471  1.00 23.57
H
ATOM  2339 HD21 ASN B 119     1.673 28.726 -18.436  1.00 24.05
H
ATOM  2340 HD22 ASN B 119     1.691 29.869 -19.391  1.00 24.05
H


ATOM  2341 N   TRP B 120    3.102 26.333 -23.067  1.00 15.24
N
ATOM  2342 CA  TRP B 120     3.362 24.930 -23.348  1.00 16.04
C
ATOM  2343 C   TRP B 120    3.052 24.039 -22.148  1.00 19.13
C
ATOM  2344 O   TRP B 120    2.588 22.909 -22.313  1.00 15.63
O
ATOM  2345 CB  TRP B 120     4.813 24.733 -23.779  1.00 16.87
C
ATOM  2346 CG  TRP B 120     5.085 23.340 -24.242  1.00 15.71
C
ATOM  2347 CD1 TRP B 120     5.006 22.874 -25.520  1.00 15.03
C
ATOM  2348 CD2 TRP B 120     5.465 22.226 -23.431  1.00 19.26
C
ATOM  2349 NE1 TRP B 120     5.318 21.540 -25.558  1.00 16.56
N
ATOM  2350 CE2 TRP B 120     5.604 21.116 -24.288  1.00 19.91
C
ATOM  2351 CE3 TRP B 120     5.703 22.059 -22.064  1.00 20.14
C
ATOM  2352 CZ2 TRP B 120     5.972 19.856 -23.823  1.00 20.45
C
ATOM  2353 CZ3 TRP B 120     6.068 20.807 -21.604  1.00 24.00
C
ATOM  2354 CH2 TRP B 120     6.199 19.721 -22.482  1.00 20.10
C
ATOM  2355 H   TRP B 120    3.792 26.844 -23.117  1.00 18.29
H
ATOM  2356 HA  TRP B 120     2.793 24.648 -24.082  1.00 19.25
H
ATOM  2357 HB2 TRP B 120     5.012 25.338 -24.510  1.00 20.25
H
ATOM  2358 HB3 TRP B 120     5.395 24.918 -23.025  1.00 20.25
H
ATOM  2359 HD1 TRP B 120     4.775 23.387 -26.261  1.00 18.03
H
ATOM  2360 HE1 TRP B 120     5.332 21.049 -26.264  1.00 19.88
H
ATOM  2361 HE3 TRP B 120     5.618 22.775 -21.476  1.00 24.16
H
ATOM  2362 HZ2 TRP B 120     6.060 19.134 -24.403  1.00 24.54
H
ATOM  2363 HZ3 TRP B 120     6.230 20.683 -20.697  1.00 28.80
H
ATOM  2364 HH2 TRP B 120     6.446 18.891 -22.144  1.00 24.12
H
ATOM  2365 N   TYR B 121    3.297 24.553 -20.946  1.00 20.90
N
ATOM  2366 CA  TYR B 121     3.179 23.750 -19.733  1.00 19.53
C
ATOM  2367 C   TYR B 121    1.735 23.563 -19.268  1.00 17.33
C
ATOM  2368 O   TYR B 121    1.386 22.498 -18.763  1.00 20.12
O
ATOM  2369 CB  TYR B 121     4.006 24.375 -18.612  1.00 20.76
C
ATOM  2370 CG  TYR B 121     5.479 24.438 -18.945  1.00 27.57
C
ATOM  2371 CD1 TYR B 121     6.266 23.294 -18.909  1.00 26.72
C
ATOM  2372 CD2 TYR B 121     6.077 25.635 -19.312  1.00 22.00
C
ATOM  2373 CE1 TYR B 121     7.607 23.343 -19.222  1.00 27.02
C
ATOM  2374 CE2 TYR B 121     7.416 25.693 -19.623  1.00 29.21
C
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ATOM  8625 N   PHE E  58   -4.216 41.746 -39.259  1.00 12.71        N
ATOM  8626 CA  PHE E  58    -3.288 42.862 -39.119  1.00 12.91
C

ATOM  8627 C   PHE E  58   -3.030 43.177 -37.645  1.00 15.14        C

ATOM  8628 O   PHE E  58   -1.881 43.346 -37.236  1.00 12.36        O
ATOM  8629 CB  PHE E  58    -3.814 44.103 -39.851  1.00 10.07
C
ATOM  8630 CG  PHE E  58    -3.890 43.946 -41.352  1.00 13.18
C
ATOM  8631 CD1 PHE E  58    -3.394 42.810 -41.982  1.00 13.27
C
ATOM  8632 CD2 PHE E  58    -4.463 44.938 -42.135  1.00 15.09
C
ATOM  8633 CE1 PHE E  58    -3.470 42.667 -43.360  1.00 14.15
C
ATOM  8634 CE2 PHE E  58    -4.542 44.799 -43.518  1.00 14.94
C

ATOM  8635 CZ  PHE E  58    -4.045 43.664 -44.127  1.00 15.54         C

ATOM  8636 H   PHE E  58   -4.991 41.964 -39.561  1.00 15.25        H
ATOM  8637 HA  PHE E  58    -2.441 42.616 -39.523  1.00 15.49
H
ATOM  8638 HB2 PHE E  58    -4.708 44.300 -39.529  1.00 12.09
H
ATOM  8639 HB3 PHE E  58    -3.226 44.850 -39.662  1.00 12.09
H
ATOM  8640 HD1 PHE E  58    -3.008 42.135 -41.471  1.00 15.93
H


ATOM  8641 HD2 PHE E  58    -4.801 45.703 -41.731  1.00 18.11
H
ATOM  8642 HE1 PHE E  58    -3.134 41.902 -43.768  1.00 16.98
H
ATOM  8643 HE2 PHE E  58    -4.928 45.471 -44.032  1.00 17.92
H

ATOM  8644 HZ  PHE E  58    -4.095 43.571 -45.051  1.00 18.65         H

ATOM  8645 N   SER E  59   -4.088 43.250 -36.844  1.00 12.44        N
ATOM  8646 CA  SER E  59    -3.935 43.540 -35.418  1.00 15.47
C

ATOM  8647 C   SER E  59   -3.058 42.488 -34.743  1.00 15.91        C

ATOM  8648 O   SER E  59   -2.148 42.820 -33.978  1.00 14.84        O
ATOM  8649 CB  SER E  59    -5.299 43.608 -34.727  1.00 19.05
C
ATOM  8650 OG  SER E  59    -6.086 44.656 -35.260  1.00 26.66
O

ATOM  8651 H   SER E  59   -4.902 43.137 -37.098  1.00 14.93        H
ATOM  8652 HA  SER E  59    -3.503 44.402 -35.315  1.00 18.56
H
ATOM  8653 HB2 SER E  59    -5.763 42.766 -34.860  1.00 22.86
H
ATOM  8654 HB3 SER E  59    -5.165 43.766 -33.779  1.00 22.86
H
ATOM  8655 HG  SER E  59    -6.211 44.532 -36.082  1.00 31.99
H

ATOM  8656 N   GLU E  60   -3.325 41.221 -35.046  1.00 14.24        N
ATOM  8657 CA  GLU E  60    -2.553 40.120 -34.483  1.00 16.08
C

ATOM  8658 C   GLU E  60   -1.097 40.145 -34.956  1.00 14.22        C

ATOM  8659 O   GLU E  60   -0.192 39.806 -34.197  1.00 18.48        O
ATOM  8660 CB  GLU E  60    -3.198 38.780 -34.844  1.00 19.87
C
ATOM  8661 CG  GLU E  60    -4.571 38.559 -34.219  1.00 27.96
C
ATOM  8662 CD  GLU E  60    -4.514 38.305 -32.722  1.00 41.64
C
ATOM  8663 OE1 GLU E  60    -3.399 38.165 -32.175  1.00 41.26
O
ATOM  8664 OE2 GLU E  60    -5.592 38.243 -32.090  1.00 50.70
O1-

ATOM  8665 H   GLU E  60   -3.952 40.972 -35.579  1.00 17.09        H
ATOM  8666 HA  GLU E  60    -2.553 40.199 -33.517  1.00 19.30
H
ATOM  8667 HB2 GLU E  60    -3.302 38.734 -35.808  1.00 23.84
H
ATOM  8668 HB3 GLU E  60    -2.618 38.064 -34.543  1.00 23.84
H
ATOM  8669 HG2 GLU E  60    -5.114 39.348 -34.367  1.00 33.56
H
ATOM  8670 HG3 GLU E  60    -4.986 37.788 -34.637  1.00 33.56
H

ATOM  8671 N   PHE E  61   -0.873 40.545 -36.206  1.00 15.60        N

ATOM  8672 CA  PHE E  61    0.484 40.651 -36.745  1.00 14.83         C

ATOM  8673 C   PHE E  61    1.364 41.506 -35.841  1.00 13.77        C

ATOM  8674 O   PHE E  61    2.510 41.154 -35.556  1.00 15.86        O
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ATOM  2375  CZ  TYR B 121      8.175  24.544 -19.578  1.00 30.61
C


ATOM  2376  OH  TYR B 121      9.511  24.599 -19.891  1.00 42.90
O
ATOM  2377  H   TYR B 121     3.533  25.368 -20.805  1.00 25.08
H
ATOM  2378  HA  TYR B 121      3.545  22.869 -19.911  1.00 23.43
H
ATOM  2379  HB2 TYR B 121      3.694  25.280 -18.455  1.00 24.91
H
ATOM  2380  HB3 TYR B 121      3.902  23.843 -17.807  1.00 24.91
H
ATOM  2381  HD1 TYR B 121      5.882  22.481 -18.670  1.00 32.06
H
ATOM  2382  HD2 TYR B 121      5.565  26.411 -19.344  1.00 26.41
H
ATOM  2383  HE1 TYR B 121      8.124  22.570 -19.192  1.00 32.42
H
ATOM  2384  HE2 TYR B 121      7.805  26.502 -19.866  1.00 35.05
H
ATOM  2385  HH  TYR B 121      9.728  25.386 -20.088  1.00 51.48
H
ATOM  2386  N   GLU B 122     0.899  24.586 -19.418  1.00 19.17
N
ATOM  2387  CA  GLU B 122     -0.514  24.422 -19.074  1.00 20.84
C
ATOM  2388  C   GLU B 122    -1.187  23.598 -20.161  1.00 20.40
C
ATOM  2389  O   GLU B 122    -2.164  22.904 -19.895  1.00 23.74
O
ATOM  2390  CB  GLU B 122     -1.240  25.765 -18.887  1.00 25.11
C
ATOM  2391  CG  GLU B 122     -0.550  26.974 -19.475  1.00 30.11
C
ATOM  2392  CD  GLU B 122     -1.378  28.248 -19.377  1.00 32.89
C
ATOM  2393  OE1 GLU B 122     -2.424  28.235 -18.687  1.00 36.08
O
ATOM  2394  OE2 GLU B 122     -0.975  29.264 -19.988  1.00 26.01
O1-
ATOM  2395  H   GLU B 122     1.114  25.366 -19.709  1.00 23.01
H
ATOM  2396  HA  GLU B 122     -0.580  23.929 -18.241  1.00 25.00
H
ATOM  2397  HB2 GLU B 122     -2.114  25.699 -19.303  1.00 30.13
H
ATOM  2398  HB3 GLU B 122     -1.346  25.925 -17.937  1.00 30.13
H
ATOM  2399  HG2 GLU B 122      0.283  27.123 -19.000  1.00 36.13
H
ATOM  2400  HG3 GLU B 122     -0.369  26.807 -20.414  1.00 36.13
H
ATOM  2401  N   SER B 123    -0.657  23.676 -21.382  1.00 17.88
N
ATOM  2402  CA  SER B 123     -1.132  22.838 -22.477  1.00 18.47
C
ATOM  2403  C   SER B 123    -0.844  21.374 -22.160  1.00 17.37
C
ATOM  2404  O   SER B 123    -1.706  20.515 -22.321  1.00 17.15
O
ATOM  2405  CB  SER B 123     -0.472  23.230 -23.805  1.00 17.79
C
ATOM  2406  OG  SER B 123     -0.916  24.501 -24.251  1.00 16.72
O
ATOM  2407  H   SER B 123    -0.019  24.209 -21.600  1.00 21.45
H
ATOM  2408  HA  SER B 123     -2.091  22.946 -22.571  1.00 22.17
H
ATOM  2409  HB2 SER B 123      0.490  23.261 -23.680  1.00 21.34
H
ATOM  2410  HB3 SER B 123     -0.697  22.567 -24.475  1.00 21.34
H


ATOM  2411  HG  SER B 123     -0.727  25.088 -23.681  1.00 20.06
H
ATOM  2412  N   GLN B 124     0.376  21.105 -21.709  1.00 17.12
N
ATOM  2413  CA  GLN B 124      0.765  19.765 -21.286  1.00 19.26
C
ATOM  2414  C   GLN B 124    -0.119  19.251 -20.156  1.00 17.95
C
ATOM  2415  O   GLN B 124    -0.516  18.086 -20.153  1.00 18.47
O
ATOM  2416  CB  GLN B 124      2.225  19.751 -20.831  1.00 19.97
C
ATOM  2417  CG  GLN B 124      2.631  18.463 -20.125  1.00 20.40
C
ATOM  2418  CD  GLN B 124      4.098  18.437 -19.763  1.00 25.03
C
ATOM  2419  OE1 GLN B 124      4.522  19.090 -18.811  1.00 29.00
O
ATOM  2420  NE2 GLN B 124      4.884  17.686 -20.523  1.00 22.34
N
ATOM  2421  H   GLN B 124     1.004  21.688 -21.639  1.00 20.54
H
ATOM  2422  HA  GLN B 124      0.678  19.158 -22.037  1.00 23.11
H
ATOM  2423  HB2 GLN B 124      2.797  19.856 -21.607  1.00 23.97
H
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ATOM  8675  CB  PHE E  61     0.466  41.242 -38.161  1.00 13.27        C


ATOM  8676  CG  PHE E  61      1.838  41.467 -38.745  1.00 10.38
C
ATOM  8677  CD1 PHE E  61      2.456  40.482 -39.495  1.00 10.57
C
ATOM  8678  CD2 PHE E  61      2.506  42.668 -38.548  1.00 12.22
C
ATOM  8679  CE1 PHE E  61      3.722  40.689 -40.033  1.00 13.44
C
ATOM  8680  CE2 PHE E  61      3.764  42.881 -39.087  1.00 12.04
C

ATOM  8681  CZ  PHE E  61     4.372  41.889 -39.825  1.00 12.36        C

ATOM  8682  H   PHE E  61    -1.491  40.762 -36.764  1.00 18.72        H

ATOM  8683  HA  PHE E  61     0.875  39.764 -36.795  1.00 17.79        H
ATOM  8684  HB2 PHE E  61     -0.010  40.634 -38.748  1.00 15.92
H
ATOM  8685  HB3 PHE E  61      0.011  42.099 -38.136  1.00 15.92
H
ATOM  8686  HD1 PHE E  61      2.022  39.671 -39.635  1.00 12.69
H
ATOM  8687  HD2 PHE E  61      2.102  43.341 -38.049  1.00 14.66
H
ATOM  8688  HE1 PHE E  61      4.129  40.019 -40.534  1.00 16.13
H
ATOM  8689  HE2 PHE E  61      4.201  43.689 -38.944  1.00 14.45
H

ATOM  8690  HZ  PHE E  61     5.217  42.029 -40.187  1.00 14.83        H

ATOM  8691  N   PHE E  62    0.821  42.630 -35.385  1.00 13.88        N

ATOM  8692  CA  PHE E  62     1.579  43.544 -34.541  1.00 15.96        C

ATOM  8693  C   PHE E  62    1.603  43.105 -33.079  1.00 14.71        C

ATOM  8694  O   PHE E  62    2.630  43.211 -32.414  1.00 11.05        O

ATOM  8695  CB  PHE E  62     1.008  44.956 -34.649  1.00 16.31        C
ATOM  8696  CG  PHE E  62     1.245  45.598 -35.986  1.00 16.94
C
ATOM  8697  CD1 PHE E  62      2.509  46.039 -36.340  1.00 16.08
C
ATOM  8698  CD2 PHE E  62      0.207  45.758 -36.888  1.00 13.45
C
ATOM  8699  CE1 PHE E  62      2.734  46.631 -37.569  1.00 16.16
C
ATOM  8700  CE2 PHE E  62      0.424  46.349 -38.117  1.00 15.64
C

ATOM  8701  CZ  PHE E  62     1.691  46.784 -38.459  1.00 17.68        C

ATOM  8702  H   PHE E  62    0.017  42.886 -35.551  1.00 16.66        H

ATOM  8703  HA  PHE E  62     2.496  43.571 -34.856  1.00 19.16        H
ATOM  8704  HB2 PHE E  62      0.049  44.918 -34.503  1.00 19.58
H
ATOM  8705  HB3 PHE E  62      1.422  45.515 -33.973  1.00 19.58
H
ATOM  8706  HD1 PHE E  62      3.214  45.937 -35.743  1.00 19.30
H
ATOM  8707  HD2 PHE E  62     -0.647  45.467 -36.663  1.00 16.15
H
ATOM  8708  HE1 PHE E  62      3.587  46.923 -37.795  1.00 19.39
H
ATOM  8709  HE2 PHE E  62     -0.281  46.451 -38.715  1.00 18.77
H

ATOM  8710  HZ  PHE E  62     1.839  47.182 -39.287  1.00 21.21        H


ATOM  8711  N   SER E  63    0.479  42.603 -32.580  1.00 14.62        N

ATOM  8712  CA  SER E  63     0.375  42.269 -31.163  1.00 17.58        C

ATOM  8713  C   SER E  63    1.149  40.993 -30.833  1.00 18.25        C

ATOM  8714  O   SER E  63    1.469  40.744 -29.675  1.00 15.30        O
ATOM  8715  CB  SER E  63    -1.092  42.124 -30.749  1.00 21.93
C
ATOM  8716  OG  SER E  63     -1.698  41.011 -31.375  1.00 26.07
O

ATOM  8717  H   SER E  63   -0.233  42.446 -33.036  1.00 17.54        H

ATOM  8718  HA  SER E  63     0.760  42.992 -30.643  1.00 21.09        H
ATOM  8719  HB2 SER E  63     -1.136  42.007 -29.787  1.00 26.31
H
ATOM  8720  HB3 SER E  63     -1.571  42.928 -31.006  1.00 26.31
H
ATOM  8721  HG  SER E  63     -2.501  40.948 -31.136  1.00 31.29
H

ATOM  8722  N   LEU E  64    1.453  40.196 -31.854  1.00 15.25        N

ATOM  8723  CA  LEU E  64     2.259  38.989 -31.684  1.00 16.15        C
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ATOM  2424 HB3 GLN B 124     2.369  20.485 -20.214  1.00 23.97
H
ATOM  2425 HG2 GLN B 124     2.118  18.376 -19.307  1.00 24.48
H
ATOM  2426 HG3 GLN B 124     2.452  17.711 -20.711  1.00 24.48
H
ATOM  2427 HE21 GLN B 124    5.726  17.639 -20.356  1.00 26.81
H
ATOM  2428 HE22 GLN B 124    4.551  17.246 -21.183  1.00 26.81
H
ATOM  2429 N   ALA B 125    -0.397  20.118 -19.186  1.00 19.16
N
ATOM  2430 CA  ALA B 125    -1.234  19.754 -18.050  1.00 21.66
C
ATOM  2431 C   ALA B 125    -2.650  19.437 -18.513  1.00 22.92
C
ATOM  2432 O   ALA B 125    -3.292  18.528 -17.996  1.00 22.29
O
ATOM  2433 CB  ALA B 125    -1.251  20.873 -17.021  1.00 21.65
C
ATOM  2434 H   ALA B 125    -0.111  20.928 -19.164  1.00 23.00
H
ATOM  2435 HA  ALA B 125    -0.870  18.961 -17.627  1.00 26.00
H
ATOM  2436 HB1 ALA B 125    -1.813  20.609 -16.276  1.00 25.98
H
ATOM  2437 HB2 ALA B 125    -0.345  21.032 -16.712  1.00 25.98
H
ATOM  2438 HB3 ALA B 125    -1.605  21.676 -17.434  1.00 25.98
H
ATOM  2439 N   SER B 126    -3.129  20.199 -19.491  1.00 19.48
N
ATOM  2440 CA  SER B 126    -4.467  20.008 -20.035  1.00 22.96
C
ATOM  2441 C   SER B 126    -4.622  18.638 -20.696  1.00 24.30
C
ATOM  2442 O   SER B 126    -5.617  17.945 -20.474  1.00 23.17
O
ATOM  2443 CB  SER B 126    -4.790  21.113 -21.042  1.00 21.51
C
ATOM  2444 OG  SER B 126    -6.033  20.874 -21.679  1.00 26.37
O
ATOM  2445 H   SER B 126    -2.692  20.841 -19.861  1.00 23.37
H

ATOM  2446 HA  SER B 126    -5.111  20.065 -19.311  1.00 27.56
H
ATOM  2447 HB2 SER B 126    -4.833  21.962 -20.575  1.00 25.81
H
ATOM  2448 HB3 SER B 126    -4.091  21.140 -21.714  1.00 25.81
H
ATOM  2449 HG  SER B 126    -6.197  21.488 -22.228  1.00 31.64
H
ATOM  2450 N   CYS B 127    -3.646  18.251 -21.511  1.00 19.38
N
ATOM  2451 CA  CYS B 127    -3.696  16.956 -22.182  1.00 17.72
C
ATOM  2452 C   CYS B 127    -3.596  15.833 -21.158  1.00 23.86
C
ATOM  2453 O   CYS B 127    -4.292  14.824 -21.262  1.00 24.87
O
ATOM  2454 CB  CYS B 127    -2.574  16.829 -23.215  1.00 16.67
C
ATOM  2455 SG  CYS B 127    -2.664  18.028 -24.573  1.00 18.01
S
ATOM  2456 H   CYS B 127    -2.946  18.717 -21.692  1.00 23.26
H
ATOM  2457 HA  CYS B 127    -4.544  16.869 -22.644  1.00 21.26
H
ATOM  2458 HB2 CYS B 127    -1.724  16.956 -22.766  1.00 20.01
H
ATOM  2459 HB3 CYS B 127    -2.610  15.941 -23.603  1.00 20.01
H
ATOM  2460 N   MET B 128    -2.728  16.014 -20.169  1.00 21.99
N
ATOM  2461 CA  MET B 128    -2.562  15.018 -19.119  1.00 30.30
C
ATOM  2462 C   MET B 128    -3.878  14.767 -18.387  1.00 27.68
C
ATOM  2463 O   MET B 128    -4.281  13.620 -18.166  1.00 33.94
O
ATOM  2464 CB  MET B 128    -1.491  15.452 -18.115  1.00 27.20
C
ATOM  2465 CG  MET B 128    -1.259  14.418 -17.019  1.00 33.45
C
ATOM  2466 SD  MET B 128    -0.009  14.851 -15.796  1.00 47.54
S
ATOM  2467 CE  MET B 128    -0.094  13.355 -14.801  1.00 39.77
C
ATOM  2468 H   MET B 128    -2.224  16.706 -20.083  1.00 26.39
H
ATOM  2469 HA  MET B 128    -2.267  14.187 -19.523  1.00 36.36
H
ATOM  2470 HB2 MET B 128    -0.652  15.585 -18.584  1.00 32.64
H
ATOM  2471 HB3 MET B 128    -1.770  16.279 -17.692  1.00 32.64
H
ATOM  2472 HG2 MET B 128    -2.094  14.281 -16.545  1.00 40.14
H
ATOM  2473 HG3 MET B 128    -0.983  13.587 -17.435  1.00 40.14
H
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ATOM  8724 C   LEU E  64     3.760  39.284 -31.762  1.00 18.76      C
ATOM  8725 O   LEU E  64     4.583  38.437 -31.411  1.00 13.28      O
ATOM  8726 CB  LEU E  64     1.895  37.948 -32.745  1.00 18.37      C
ATOM  8727 CG  LEU E  64     0.535  37.263 -32.813  1.00 26.98      C
ATOM  8728 CD1 LEU E  64     0.210  36.496 -33.888  1.00 24.22
C
ATOM  8729 CD2 LEU E  64     0.517  36.335 -31.413  1.00 22.89
C
ATOM  8730 H   LEU E  64     1.201  40.334 -32.665  1.00 18.30      H
ATOM  8731 HA  LEU E  64     2.074  38.606 -30.813  1.00 19.38      H
ATOM  8732 HB2 LEU E  64     1.912  38.384 -33.612  1.00 22.05
H
ATOM  8733 HB3 LEU E  64     2.569  37.251 -32.725  1.00 22.05
H
ATOM  8734 HG  LEU E  64    -0.150  37.938 -32.483  1.00 32.37
H
ATOM  8735 HD11 LEU E 64    -0.655  36.069 -33.787  1.00 29.07
H
ATOM  8736 HD12 LEU E 64     0.187  37.118 -34.633  1.00 29.07
H
ATOM  8737 HD13 LEU E 64     0.895  35.827 -34.037  1.00 29.07
H
ATOM  8738 HD21 LEU E 64    -0.355  35.915 -31.353  1.00 27.46
H
ATOM  8739 HD22 LEU E 64     1.203  35.660 -31.526  1.00 27.46
H
ATOM  8740 HD23 LEU E 64     0.691  36.853 -30.611  1.00 27.46
H
ATOM  8741 N   PHE E  65     4.118  40.475 -32.233  1.00 16.54      N
ATOM  8742 CA  PHE E  65     5.526  40.845 -32.337  1.00 16.39      C
ATOM  8743 C   PHE E  65     6.045  41.265 -30.970  1.00 18.01      C
ATOM  8744 O   PHE E  65     5.574  42.242 -30.391  1.00 17.22      O
ATOM  8745 CB  PHE E  65     5.726  41.971 -33.354  1.00 14.80      C

ATOM  8746 CG  PHE E  65     7.166  42.375 -33.535  1.00 14.42
C
ATOM  8747 CD1 PHE E  65     8.128  41.434 -33.870  1.00 16.17
C
ATOM  8748 CD2 PHE E  65     7.554  43.693 -33.380  1.00 15.24
C
ATOM  8749 CE1 PHE E  65     9.454  41.805 -34.040  1.00 14.97
C
ATOM  8750 CE2 PHE E  65     8.876  44.070 -33.549  1.00 14.62
C
ATOM  8751 CZ  PHE E  65     9.824  43.127 -33.876  1.00 16.09      C
ATOM  8752 H   PHE E  65     3.569  41.082 -32.497  1.00 19.85      H
ATOM  8753 HA  PHE E  65     6.038  40.075 -32.632  1.00 19.67      H
ATOM  8754 HB2 PHE E  65     5.390  41.678 -34.216  1.00 17.76
H
ATOM  8755 HB3 PHE E  65     5.234  42.752 -33.057  1.00 17.76
H
ATOM  8756 HD1 PHE E  65     7.883  40.544 -33.979  1.00 19.41
H
ATOM  8757 HD2 PHE E  65     6.919  44.335 -33.157  1.00 18.29
H
ATOM  8758 HE1 PHE E  65    10.092  41.166 -34.262  1.00 17.96
H
ATOM  8759 HE2 PHE E  65     9.124  44.959 -33.439  1.00 17.55
H
ATOM  8760 HZ  PHE E  65    10.712  43.379 -33.991  1.00 19.31
H
ATOM  8761 N   ARG E  66     7.018  40.520 -30.459  1.00 18.88      N
ATOM  8762 CA  ARG E  66     7.536  40.756 -29.118  1.00 20.69
C
ATOM  8763 C   ARG E  66     8.694  41.748 -29.143  1.00 18.93      C
ATOM  8764 O   ARG E  66     9.834  41.401 -28.836  1.00 16.41      O
ATOM  8765 CB  ARG E  66     7.968  39.434 -28.484  1.00 25.21
C
ATOM  8766 CG  ARG E  66     6.879  38.373 -28.539  1.00 29.70
C
ATOM  8767 CD  ARG E  66     7.008  37.358 -27.421  1.00 35.51
C
ATOM  8768 NE  ARG E  66     8.129  36.441 -27.606  1.00 45.62
N
ATOM  8769 CZ  ARG E  66     8.038  35.247 -28.185  1.00 49.30
C
ATOM  8770 NH1 ARG E  66     6.876  34.804 -28.652  1.00 48.42
N1+
ATOM  8771 NH2 ARG E  66     9.117  34.488 -28.298  1.00 50.83
N
ATOM  8772 H   ARG E  66     7.397  39.868 -30.872  1.00 22.66      H
ATOM  8773 HA  ARG E  66     6.831  41.134 -28.570  1.00 24.83
H
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ATOM  2474  HE1 MET B 128     -0.994  13.260 -14.451  1.00 47.73
H
ATOM  2475  HE2 MET B 128      0.126  12.593 -15.359  1.00 47.73
H
ATOM  2476  HE3 MET B 128      0.540  13.426 -14.071  1.00 47.73
H
ATOM  2477  N   SER B 129     -4.573  15.842 -18.029  1.00 29.26
N
ATOM  2478  CA  SER B 129     -5.795  15.737 -17.233  1.00 32.80
C
ATOM  2479  C   SER B 129     -6.901  14.984 -17.968  1.00 29.82
C
ATOM  2480  O   SER B 129     -7.932  14.658 -17.381  1.00 30.42
O


ATOM  2481  CB  SER B 129     -6.296  17.127 -16.839  1.00 32.72
C
ATOM  2482  OG  SER B 129     -6.872  17.799 -17.945  1.00 38.37
O
ATOM  2483  H   SER B 129     -4.358  16.649 -18.235  1.00 35.11
H
ATOM  2484  HA  SER B 129     -5.596  15.250 -16.418  1.00 39.36
H
ATOM  2485  HB2 SER B 129     -6.966  17.034 -16.144  1.00 39.26
H
ATOM  2486  HB3 SER B 129     -5.548  17.649 -16.509  1.00 39.26
H
ATOM  2487  HG  SER B 129     -6.302  17.888 -18.556  1.00 46.05
H
ATOM  2488  N   GLN B 130     -6.682  14.717 -19.251  1.00 32.61
N
ATOM  2489  CA  GLN B 130     -7.630  13.962 -20.059  1.00 32.51
C
ATOM  2490  C   GLN B 130     -7.007  12.648 -20.517  1.00 30.71
C
ATOM  2491  O   GLN B 130     -7.402  12.083 -21.536  1.00 31.54
O
ATOM  2492  CB  GLN B 130     -8.082  14.801 -21.255  1.00 34.47
C
ATOM  2493  CG  GLN B 130     -8.648  16.155 -20.845  1.00 35.04
C
ATOM  2494  CD  GLN B 130     -8.999  17.038 -22.023  1.00 35.73
C
ATOM  2495  OE1 GLN B 130     -9.762  16.647 -22.906  1.00 32.33
O
ATOM  2496  NE2 GLN B 130     -8.442  18.245 -22.040  1.00 42.10
N
ATOM  2497  H   GLN B 130     -5.981  14.966 -19.681  1.00 39.14
H
ATOM  2498  HA  GLN B 130     -8.411  13.755 -19.523  1.00 39.01
H
ATOM  2499  HB2 GLN B 130     -7.322  14.957 -21.837  1.00 41.37
H
ATOM  2500  HB3 GLN B 130     -8.774  14.319 -21.735  1.00 41.37
H
ATOM  2501  HG2 GLN B 130     -9.456  16.015 -20.327  1.00 42.05
H
ATOM  2502  HG3 GLN B 130     -7.988  16.622 -20.309  1.00 42.05
H
ATOM  2503 HE21 GLN B 130     -8.608  18.786 -22.687  1.00 50.53
H
ATOM  2504 HE22 GLN B 130     -7.915  18.484 -21.404  1.00 50.53
H
ATOM  2505  N   ASN B 131     -6.032  12.168 -19.750  1.00 31.89
N
ATOM  2506  CA  ASN B 131     -5.372  10.896 -20.028  1.00 35.86
C
ATOM  2507  C   ASN B 131     -4.770  10.869 -21.431  1.00 35.32
C
ATOM  2508  O   ASN B 131     -4.818   9.852 -22.125  1.00 31.56
O
ATOM  2509  CB  ASN B 131     -6.358   9.740 -19.852  1.00 44.38
C
ATOM  2510  CG  ASN B 131     -5.665   8.403 -19.679  1.00 65.46
C
ATOM  2511  OD1 ASN B 131     -5.153   8.093 -18.604  1.00 82.44
O
ATOM  2512  ND2 ASN B 131     -5.648   7.603 -20.737  1.00 73.37
N
ATOM  2513  H   ASN B 131     -5.730  12.567 -19.050  1.00 38.26
H
ATOM  2514  HA  ASN B 131     -4.650  10.772 -19.392  1.00 43.03
H
ATOM  2515  HB2 ASN B 131     -6.899   9.903 -19.063  1.00 53.26
H


ATOM  2516  HB3 ASN B 131     -6.925   9.685 -20.638  1.00 53.26
H
ATOM  2517 HD21 ASN B 131     -5.267   6.833 -20.689  1.00 88.04
H
ATOM  2518 HD22 ASN B 131     -6.019   7.853 -21.472  1.00 88.04
H
ATOM  2519  N   ALA B 132     -4.206  12.001 -21.838  1.00 25.52
N
ATOM  2520  CA  ALA B 132     -3.593  12.132 -23.153  1.00 27.44
C
ATOM  2521  C   ALA B 132     -2.264  12.868 -23.050  1.00 26.46
C
ATOM  2522  O   ALA B 132     -1.802  13.178 -21.954  1.00 24.84
O
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```
ATOM  8774  HB2 ARG E  66      8.743  39.094 -28.958  1.00 30.25
H
ATOM  8775  HB3 ARG E  66      8.190  39.588 -27.552  1.00 30.25
H
ATOM  8776  HG2 ARG E  66      6.013  38.803 -28.458  1.00 35.64
H
ATOM  8777  HG3 ARG E  66      6.939  37.901 -29.384  1.00 35.64
H
ATOM  8778  HD2 ARG E  66      7.142  37.828 -26.583  1.00 42.61
H
ATOM  8779  HD3 ARG E  66      6.195  36.831 -27.378  1.00 42.61
H
ATOM  8780  HE  ARG E  66      8.901  36.691 -27.322  1.00 54.74
H


ATOM  8781 HH11 ARG E  66      6.170  35.290 -28.581  1.00 58.11
H
ATOM  8782 HH12 ARG E  66      6.829  34.030 -29.025  1.00 58.11
H
ATOM  8783 HH21 ARG E  66      9.873  34.768 -27.999  1.00 60.99
H
ATOM  8784 HH22 ARG E  66      9.062  33.716 -28.674  1.00 60.99
H

ATOM  8785  N   ARG E  67      8.380  42.984 -29.513  1.00 18.67           N
ATOM  8786  CA  ARG E  67      9.361  44.059 -29.578  1.00 20.20
C

ATOM  8787  C   ARG E  67     10.020  44.281 -28.218  1.00 21.69           C

ATOM  8788  O   ARG E  67      9.332  44.366 -27.204  1.00 17.08           O
ATOM  8789  CB  ARG E  67      8.685  45.349 -30.057  1.00 21.97
C
ATOM  8790  CG  ARG E  67      9.601  46.559 -30.135  1.00 27.90
C
ATOM  8791  CD  ARG E  67      8.884  47.772 -30.720  1.00 40.95
C
ATOM  8792  NE  ARG E  67      8.218  48.579 -29.698  1.00 59.70
N
ATOM  8793  CZ  ARG E  67      6.960  48.412 -29.296  1.00 72.67
C
ATOM  8794  NH1 ARG E  67      6.199  47.460 -29.821  1.00 75.12
N1+
ATOM  8795  NH2 ARG E  67      6.457  49.206 -28.360  1.00 72.00
N

ATOM  8796  H   ARG E  67      7.587  43.230 -29.736  1.00 22.41           H
ATOM  8797  HA  ARG E  67     10.053  43.823 -30.216  1.00 24.24
H
ATOM  8798  HB2 ARG E  67      8.323  45.197 -30.944  1.00 26.37
H
ATOM  8799  HB3 ARG E  67      7.964  45.566 -29.444  1.00 26.37
H
ATOM  8800  HG2 ARG E  67      9.906  46.787 -29.243  1.00 33.48
H
ATOM  8801  HG3 ARG E  67     10.358  46.350 -30.705  1.00 33.48
H
ATOM  8802  HD2 ARG E  67      9.532  48.335 -31.172  1.00 49.14
H
ATOM  8803  HD3 ARG E  67      8.211  47.468 -31.349  1.00 49.14
H
ATOM  8804  HE  ARG E  67      8.673  49.208 -29.328  1.00 71.64
H
ATOM  8805 HH11 ARG E  67      6.518  46.941 -30.429  1.00 90.15
H
ATOM  8806 HH12 ARG E  67      5.388  47.361 -29.554  1.00 90.15
H
ATOM  8807 HH21 ARG E  67      6.944  49.825 -28.014  1.00 86.40
H
ATOM  8808 HH22 ARG E  67      5.645  49.101 -28.097  1.00 86.40
H

ATOM  8809  N   VAL E  68     11.348  44.362 -28.193  1.00 22.03           N
ATOM  8810  CA  VAL E  68     12.059  44.659 -26.953  1.00 20.34
C

ATOM  8811  C   VAL E  68     12.343  46.156 -26.894  1.00 22.74           C

ATOM  8812  O   VAL E  68     12.682  46.762 -27.912  1.00 25.42           O
ATOM  8813  CB  VAL E  68     13.384  43.867 -26.823  1.00 27.96
C
ATOM  8814  CG1 VAL E  68     13.108  42.374 -26.817  1.00 30.54
C
ATOM  8815  CG2 VAL E  68     14.361  44.220 -27.936  1.00 28.18
C


ATOM  8816  H   VAL E  68     11.858  44.250 -28.877  1.00 26.44           H
ATOM  8817  HA  VAL E  68     11.494  44.428 -26.199  1.00 24.41
H
ATOM  8818  HB  VAL E  68     13.803  44.095 -25.978  1.00 33.55
H
ATOM  8819 HG11 VAL E  68     13.950  41.899 -26.735  1.00 36.65
H
ATOM  8820 HG12 VAL E  68     12.534  42.163 -26.064  1.00 36.65
H
ATOM  8821 HG13 VAL E  68     12.670  42.131 -27.647  1.00 36.65
H
ATOM  8822 HG21 VAL E  68     15.174  43.705 -27.818  1.00 33.82
H
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ATOM  2523  CB  ALA B 132     -4.533  12.680 -24.100  1.00 24.26
C
ATOM  2524  H   ALA B 132     -4.166  12.717 -21.364  1.00 30.62
H
ATOM  2525  HA  ALA B 132     -3.422  11.248 -23.515  1.00 32.93
H
ATOM  2526  HB1 ALA B 132     -4.107  12.937 -24.969  1.00 29.14
H
ATOM  2527  HB2 ALA B 132     -5.356  12.353 -24.179  1.00 29.14
H
ATOM  2528  HB3 ALA B 132     -4.719  13.742 -23.743  1.00 29.14
H
ATOM  2529  N   SER B 133     -1.657  13.137 -24.201  1.00 21.19
N
ATOM  2530  CA  SER B 133     -0.426  13.913 -24.270  1.00 20.84
C
ATOM  2531  C   SER B 133     -0.540  14.942 -25.383  1.00 21.20
C
ATOM  2532  O   SER B 133     -1.480  14.903 -26.177  1.00 19.82
O
ATOM  2533  CB  SER B 133      0.776  13.001 -24.514  1.00 26.77
C
ATOM  2534  OG  SER B 133      0.841  11.979 -23.535  1.00 32.82
O
ATOM  2535  H   SER B 133     -1.944  12.875 -24.968  1.00 25.43
H
ATOM  2536  HA  SER B 133     -0.292  14.381 -23.431  1.00 25.01
H
ATOM  2537  HB2 SER B 133      0.691  12.594 -25.390  1.00 32.13
H
ATOM  2538  HB3 SER B 133      1.588  13.530 -24.472  1.00 32.13
H
ATOM  2539  HG  SER B 133      0.914  12.318 -22.770  1.00 39.39
H
ATOM  2540  N   LEU B 134      0.404  15.873 -25.431  1.00 18.46
N
ATOM  2541  CA  LEU B 134      0.479  16.796 -26.550  1.00 18.04
C
ATOM  2542  C   LEU B 134      0.794  15.995 -27.806  1.00 21.00
C
ATOM  2543  O   LEU B 134      1.303  14.877 -27.723  1.00 18.42
O
ATOM  2544  CB  LEU B 134      1.540  17.869 -26.311  1.00 20.17
C
ATOM  2545  CG  LEU B 134      1.167  18.973 -25.319  1.00 19.25
C
ATOM  2546  CD1 LEU B 134      2.400  19.780 -24.937  1.00 19.48
C
ATOM  2547  CD2 LEU B 134      0.096  19.889 -25.898  1.00 16.17
C
ATOM  2548  H   LEU B 134      1.010  15.990 -24.831  1.00 22.15
H
ATOM  2549  HA  LEU B 134     -0.379  17.231 -26.669  1.00 21.65
H
ATOM  2550  HB2 LEU B 134      2.341  17.437 -25.976  1.00 24.20
H


ATOM  2551  HB3 LEU B 134      1.736  18.298 -27.159  1.00 24.20
H
ATOM  2552  HG  LEU B 134      0.812  18.567 -24.513  1.00 23.10
H
ATOM  2553 HD11 LEU B 134      2.142  20.472 -24.308  1.00 23.37
H
ATOM  2554 HD12 LEU B 134      3.050  19.187 -24.528  1.00 23.37
H
ATOM  2555 HD13 LEU B 134      2.775  20.181 -25.736  1.00 23.37
H
ATOM  2556 HD21 LEU B 134     -0.117  20.576 -25.247  1.00 19.40
H
ATOM  2557 HD22 LEU B 134      0.435  20.297 -26.710  1.00 19.40
H
ATOM  2558 HD23 LEU B 134     -0.695  19.363 -26.097  1.00 19.40
H
ATOM  2559  N   LEU B 135      0.486  16.570 -28.963  1.00 15.70
N
ATOM  2560  CA  LEU B 135      0.693  15.894 -30.236  1.00 15.71
C
ATOM  2561  C   LEU B 135      2.099  15.320 -30.370  1.00 16.68
C
ATOM  2562  O   LEU B 135      3.084  16.020 -30.142  1.00 15.25
O
ATOM  2563  CB  LEU B 135      0.430  16.862 -31.388  1.00 13.32
C
ATOM  2564  CG  LEU B 135      0.715  16.342 -32.793  1.00 13.52
C
ATOM  2565  CD1 LEU B 135     -0.220  15.193 -33.142  1.00 16.61
C
ATOM  2566  CD2 LEU B 135      0.582  17.468 -33.796  1.00 13.74
C
ATOM  2567  H   LEU B 135      0.152  17.359 -29.037  1.00 18.84
H
ATOM  2568  HA  LEU B 135      0.062  15.161 -30.310  1.00 18.85
H
ATOM  2569  HB2 LEU B 135     -0.505  17.120 -31.360  1.00 15.99
H
ATOM  2570  HB3 LEU B 135      0.983  17.648 -31.255  1.00 15.99
H
ATOM  2571  HG  LEU B 135      1.626  16.011 -32.831  1.00 16.22
H
ATOM  2572 HD11 LEU B 135     -0.017  14.882 -34.038  1.00 19.93
H
ATOM  2573 HD12 LEU B 135     -0.087  14.474 -32.504  1.00 19.93
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ATOM  8823 HG22 VAL E  68     13.954  44.006 -26.791  1.00 33.82
H
ATOM  8824 HG23 VAL E  68     14.560  45.169 -27.891  1.00 33.82
H

ATOM  8825  N   PRO E  69    12.187  46.769 -25.710  1.00 21.06           N
ATOM  8826  CA  PRO E  69     12.539  48.190 -25.618  1.00 24.69
C

ATOM  8827  C   PRO E  69    14.021  48.401 -25.907  1.00 22.26           C
ATOM  8828  O   PRO E  69    14.823  47.522 -25.593  1.00 19.66
O
ATOM  8829  CB  PRO E  69     12.198  48.553 -24.168  1.00 20.34
C
ATOM  8830  CG  PRO E  69     11.276  47.473 -23.698  1.00 22.90
C
ATOM  8831  CD  PRO E  69     11.689  46.241 -24.428  1.00 24.19
C
ATOM  8832  HA  PRO E  69     12.002  48.721 -26.227  1.00 29.63
H
ATOM  8833  HB2 PRO E  69     13.009  48.566 -23.636  1.00 24.40
H
ATOM  8834  HB3 PRO E  69     11.756  49.416 -24.142  1.00 24.40
H
ATOM  8835  HG2 PRO E  69     11.377  47.353 -22.741  1.00 27.48
H
ATOM  8836  HG3 PRO E  69     10.361  47.709 -23.918  1.00 27.48
H
ATOM  8837  HD2 PRO E  69     12.400  45.786 -23.949  1.00 29.03
H
ATOM  8838  HD3 PRO E  69     10.926  45.661 -24.573  1.00 29.03
H

ATOM  8839  N   THR E  70    14.370  49.538 -26.499  1.00 24.37           N
ATOM  8840  CA  THR E  70     15.756  49.821 -26.866  1.00 29.94
C

ATOM  8841  C   THR E  70    16.152  51.237 -26.484  1.00 29.58           C

ATOM  8842  O   THR E  70    15.305  52.123 -26.385  1.00 29.43           O
ATOM  8843  CB  THR E  70     15.997  49.653 -28.383  1.00 31.13
C
ATOM  8844  OG1 THR E  70     15.358  50.722 -29.092  1.00 33.21
O
ATOM  8845  CG2 THR E  70     15.456  48.325 -28.879  1.00 33.64
C

ATOM  8846  H   THR E  70    13.820  50.168 -26.701  1.00 29.24           H
ATOM  8847  HA  THR E  70     16.341  49.205 -26.396  1.00 35.92
H
ATOM  8848  HB  THR E  70     16.951  49.677 -28.560  1.00 37.36
H
ATOM  8849  HG1 THR E  70     15.486  50.636 -29.918  1.00 39.85
H
ATOM  8850 HG21 THR E  70      15.615  48.237 -29.832  1.00 40.36
H


ATOM  8851 HG22 THR E  70      15.895  47.594 -28.417  1.00 40.36
H
ATOM  8852 HG23 THR E  70      14.501  48.274 -28.713  1.00 40.36
H

ATOM  8853  N   SER E  71    17.447  51.439 -26.274  1.00 28.05           N
ATOM  8854  CA  SER E  71     17.991  52.775 -26.086  1.00 33.59
C

ATOM  8855  C   SER E  71    18.133  53.456 -27.445  1.00 32.14           C

ATOM  8856  O   SER E  71    18.290  54.673 -27.528  1.00 34.41           O
ATOM  8857  CB  SER E  71     19.339  52.713 -25.369  1.00 30.01
C
ATOM  8858  OG  SER E  71     20.249  51.897 -26.084  1.00 38.73
O

ATOM  8859  H   SER E  71    18.036  50.813 -26.236  1.00 33.66           H
ATOM  8860  HA  SER E  71     17.379  53.298 -25.543  1.00 40.31
H
ATOM  8861  HB2 SER E  71     19.703  53.610 -25.303  1.00 36.01
H
ATOM  8862  HB3 SER E  71     19.209  52.342 -24.483  1.00 36.01
H
ATOM  8863  HG  SER E  71     20.986  51.869 -25.682  1.00 46.48
H

ATOM  8864  N   THR E  72    18.084  52.655 -28.507  1.00 29.50           N
ATOM  8865  CA  THR E  72     18.097  53.166 -29.873  1.00 29.84
C

ATOM  8866  C   THR E  72    16.844  54.008 -30.118  1.00 28.11           C

ATOM  8867  O   THR E  72    15.733  53.480 -30.080  1.00 28.11           O
ATOM  8868  CB  THR E  72     18.157  52.014 -30.900  1.00 32.89
C
ATOM  8869  OG1 THR E  72     19.282  51.168 -30.614  1.00 37.51
O
ATOM  8870  CG2 THR E  72     18.275  52.554 -32.320  1.00 35.87
C

ATOM  8871  H   THR E  72    18.043  51.797 -28.459  1.00 35.40           H
ATOM  8872  HA  THR E  72     18.875  53.730 -30.000  1.00 35.81
H
ATOM  8873  HB  THR E  72     17.342  51.491 -30.841  1.00 39.47
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H
ATOM  2574 HD13 LEU B 135    -1.136  15.508 -33.099  1.00 19.93
H
ATOM  2575 HD21 LEU B 135     0.765  17.123 -34.684  1.00 16.49
H
ATOM  2576 HD22 LEU B 135    -0.321  17.820 -33.758  1.00 16.49
H
ATOM  2577 HD23 LEU B 135     1.219  18.165 -33.574  1.00 16.49
H
ATOM  2578  N   LYS B 136    2.178  14.042 -30.735  1.00 16.35
N
ATOM  2579  CA  LYS B 136     3.437  13.426 -31.139  1.00 16.55
C
ATOM  2580  C   LYS B 136    3.381  13.084 -32.624  1.00 17.63
C
ATOM  2581  O   LYS B 136    2.532  12.309 -33.055  1.00 21.03
O
ATOM  2582  CB  LYS B 136     3.728  12.163 -30.323  1.00 19.40
C
ATOM  2583  CG  LYS B 136     4.973  11.413 -30.793  1.00 19.92
C
ATOM  2584  CD  LYS B 136     5.200  10.114 -30.027  1.00 27.62
C
ATOM  2585  CE  LYS B 136     6.484   9.429 -30.494  1.00 26.76
C


ATOM  2586  NZ  LYS B 136     6.768   8.164 -29.765  1.00 29.82
N1+
ATOM  2587  H   LYS B 136    1.507  13.505 -30.757  1.00 19.62
H
ATOM  2588  HA  LYS B 136     4.162  14.054 -30.998  1.00 19.86
H
ATOM  2589  HB2 LYS B 136     3.863  12.413 -29.395  1.00 23.28
H
ATOM  2590  HB3 LYS B 136     2.972  11.560 -30.396  1.00 23.28
H
ATOM  2591  HG2 LYS B 136     4.875  11.194 -31.733  1.00 23.90
H
ATOM  2592  HG3 LYS B 136     5.751  11.978 -30.663  1.00 23.90
H
ATOM  2593  HD2 LYS B 136     5.283  10.307 -29.080  1.00 33.15
H
ATOM  2594  HD3 LYS B 136     4.457   9.511 -30.186  1.00 33.15
H
ATOM  2595  HE2 LYS B 136     6.403   9.219 -31.437  1.00 32.11
H
ATOM  2596  HE3 LYS B 136     7.231  10.031 -30.351  1.00 32.11
H
ATOM  2597  HZ1 LYS B 136     6.101   7.588 -29.885  1.00 35.78
H
ATOM  2598  HZ2 LYS B 136     7.522   7.802 -30.069  1.00 35.78
H
ATOM  2599  HZ3 LYS B 136     6.856   8.328 -28.895  1.00 35.78
H
ATOM  2600  N   VAL B 137    4.281  13.676 -33.401  1.00 17.20
N
ATOM  2601  CA  VAL B 137     4.399  13.367 -34.822  1.00 17.92
C
ATOM  2602  C   VAL B 137    5.388  12.221 -34.998  1.00 22.09
C
ATOM  2603  O   VAL B 137    6.556  12.346 -34.630  1.00 20.93
O
ATOM  2604  CB  VAL B 137     4.868  14.590 -35.643  1.00 23.08
C
ATOM  2605  CG1 VAL B 137     5.015  14.234 -37.124  1.00 22.11
C
ATOM  2606  CG2 VAL B 137     3.896  15.744 -35.477  1.00 15.93
C
ATOM  2607  H   VAL B 137    4.842  14.268 -33.126  1.00 20.64
H
ATOM  2608  HA  VAL B 137     3.537  13.082 -35.162  1.00 21.51
H
ATOM  2609  HB  VAL B 137     5.734  14.878 -35.316  1.00 27.69
H
ATOM  2610 HG11 VAL B 137     5.309  15.020 -37.610  1.00 26.53
H
ATOM  2611 HG12 VAL B 137     5.670  13.525 -37.214  1.00 26.53
H
ATOM  2612 HG13 VAL B 137     4.156  13.937 -37.464  1.00 26.53
H
ATOM  2613 HG21 VAL B 137     4.210  16.499 -36.000  1.00 19.12
H
ATOM  2614 HG22 VAL B 137     3.021  15.467 -35.789  1.00 19.12
H
ATOM  2615 HG23 VAL B 137     3.852  15.987 -34.539  1.00 19.12
H
ATOM  2616  N   TYR B 138    4.915  11.113 -35.563  1.00 20.52
N
ATOM  2617  CA  TYR B 138     5.748   9.928 -35.754  1.00 25.30
C
ATOM  2618  C   TYR B 138    5.614   9.342 -37.163  1.00 26.25
C
ATOM  2619  O   TYR B 138    6.481   8.587 -37.601  1.00 27.44
O
ATOM  2620  CB  TYR B 138     5.393   8.861 -34.713  1.00 26.97
C


ATOM  2621  CG  TYR B 138     4.047   8.217 -34.940  1.00 23.68
C
ATOM  2622  CD1 TYR B 138     2.886   8.797 -34.451  1.00 23.08
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H
ATOM  8874  HG1 THR E  72    19.318  50.540 -31.171  1.00 45.01
H
ATOM  8875 HG21 THR E  72    18.312  51.820 -32.952  1.00 43.05
H
ATOM  8876 HG22 THR E  72    17.507  53.110 -32.527  1.00 43.05
H
ATOM  8877 HG23 THR E  72    19.082  53.086 -32.406  1.00 43.05
H

ATOM  8878  N   PRO E  73   17.014  55.318 -30.378  1.00 33.46           N
ATOM  8879  CA  PRO E  73    15.854  56.220 -30.408  1.00 32.41
C

ATOM  8880  C   PRO E  73   14.911  56.022 -31.595  1.00 26.60           C
ATOM  8881  O   PRO E  73   13.739  56.379 -31.482  1.00 30.39
O
ATOM  8882  CB  PRO E  73    16.497  57.609 -30.470  1.00 29.80
C
ATOM  8883  CG  PRO E  73    17.797  57.390 -31.135  1.00 29.20
C
ATOM  8884  CD  PRO E  73    18.267  56.028 -30.697  1.00 34.72
C
ATOM  8885  HA  PRO E  73    15.349  56.141 -29.584  1.00 38.89
H


ATOM  8886  HB2 PRO E  73    15.939  58.206 -30.993  1.00 35.76
H
ATOM  8887  HB3 PRO E  73    16.623  57.953 -29.572  1.00 35.76
H
ATOM  8888  HG2 PRO E  73    17.677  57.415 -32.097  1.00 35.04
H
ATOM  8889  HG3 PRO E  73    18.425  58.073 -30.852  1.00 35.04
H
ATOM  8890  HD2 PRO E  73    18.732  55.582 -31.422  1.00 41.67
H
ATOM  8891  HD3 PRO E  73    18.824  56.101 -29.907  1.00 41.67
H

ATOM  8892  N   TYR E  74   15.402  55.472 -32.703  1.00 27.41           N
ATOM  8893  CA  TYR E  74    14.567  55.297 -33.890  1.00 22.57
C

ATOM  8894  C   TYR E  74   14.741  53.922 -34.522  1.00 23.86           C

ATOM  8895  O   TYR E  74   15.859  53.493 -34.810  1.00 23.15           O
ATOM  8896  CB  TYR E  74    14.878  56.382 -34.925  1.00 23.62
C
ATOM  8897  CG  TYR E  74    13.905  56.415 -36.084  1.00 23.55
C
ATOM  8898  CD1 TYR E  74    14.120  55.645 -37.221  1.00 21.50
C
ATOM  8899  CD2 TYR E  74    12.770  57.211 -36.038  1.00 23.88
C
ATOM  8900  CE1 TYR E  74    13.232  55.673 -38.283  1.00 25.17
C
ATOM  8901  CE2 TYR E  74    11.875  57.244 -37.094  1.00 27.31
C
ATOM  8902  CZ  TYR E  74    12.112  56.473 -38.214  1.00 25.37
C
ATOM  8903  OH  TYR E  74    11.224  56.503 -39.265  1.00 28.87
O

ATOM  8904  H   TYR E  74   16.211  55.193 -32.794  1.00 32.90           H
ATOM  8905  HA  TYR E  74    13.636  55.390 -33.633  1.00 27.09
H
ATOM  8906  HB2 TYR E  74    14.849  57.247 -34.489  1.00 28.34
H
ATOM  8907  HB3 TYR E  74    15.765  56.225 -35.286  1.00 28.34
H
ATOM  8908  HD1 TYR E  74    14.875  55.105 -37.271  1.00 25.80
H
ATOM  8909  HD2 TYR E  74    12.608  57.732 -35.286  1.00 28.65
H
ATOM  8910  HE1 TYR E  74    13.390  55.153 -39.038  1.00 30.20
H
ATOM  8911  HE2 TYR E  74    11.119  57.784 -37.050  1.00 32.77
H
ATOM  8912  HH  TYR E  74    10.592  57.028 -39.092  1.00 34.65
H

ATOM  8913  N   GLU E  75   13.616  53.243 -34.736  1.00 23.34           N
ATOM  8914  CA  GLU E  75    13.590  51.973 -35.452  1.00 22.00
C

ATOM  8915  C   GLU E  75   12.361  51.911 -36.345  1.00 22.18           C

ATOM  8916  O   GLU E  75   11.232  52.031 -35.868  1.00 22.80           O
ATOM  8917  CB  GLU E  75    13.585  50.783 -34.486  1.00 22.49
C
ATOM  8918  CG  GLU E  75    14.930  50.477 -33.863  1.00 25.87
C
ATOM  8919  CD  GLU E  75    15.016  49.060 -33.322  1.00 31.04
C
ATOM  8920  OE1 GLU E  75    14.083  48.630 -32.606  1.00 23.10
O


ATOM  8921  OE2 GLU E  75    16.021  48.375 -33.619  1.00 30.63
O1-
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C
ATOM   2623  CD2 TYR B 138      3.938   7.028 -35.650  1.00 27.12
C
ATOM   2624  CE1 TYR B 138      1.654   8.212 -34.661  1.00 25.34
C
ATOM   2625  CE2 TYR B 138      2.709   6.437 -35.867  1.00 26.65
C
ATOM   2626  CZ  TYR B 138      1.572   7.033 -35.371  1.00 28.22
C
ATOM   2627  OH  TYR B 138      0.347   6.447 -35.581  1.00 30.35
O
ATOM   2628  H   TYR B 138      4.108  11.021 -35.847  1.00 24.63
H
ATOM   2629  HA  TYR B 138      6.676  10.175 -35.623  1.00 30.36
H
ATOM   2630  HB2 TYR B 138      6.066   8.163 -34.740  1.00 32.36
H
ATOM   2631  HB3 TYR B 138      5.381   9.273 -33.835  1.00 32.36
H
ATOM   2632  HD1 TYR B 138      2.939   9.593 -33.974  1.00 27.70
H
ATOM   2633  HD2 TYR B 138      4.705   6.626 -35.988  1.00 32.54
H
ATOM   2634  HE1 TYR B 138      0.883   8.612 -34.327  1.00 30.41
H
ATOM   2635  HE2 TYR B 138      2.650   5.641 -36.344  1.00 31.98
H
ATOM   2636  HH  TYR B 138     -0.257   6.909 -35.225  1.00 36.42
H
ATOM   2637  N   SER B 139      4.538   9.689 -37.870  1.00 26.36
N
ATOM   2638  CA  SER B 139      4.288   9.139 -39.207  1.00 27.55
C
ATOM   2639  C   SER B 139      3.526  10.099 -40.119  1.00 23.78
C
ATOM   2640  O   SER B 139      2.379  10.447 -39.841  1.00 22.07
O
ATOM   2641  CB  SER B 139      3.507   7.826 -39.099  1.00 25.84
C
ATOM   2642  OG  SER B 139      3.173   7.324 -40.386  1.00 25.64
O
ATOM   2643  H   SER B 139      3.936  10.241 -37.600  1.00 31.64
H
ATOM   2644  HA  SER B 139      5.140   8.944 -39.628  1.00 33.05
H
ATOM   2645  HB2 SER B 139      4.054   7.171 -38.638  1.00 31.01
H
ATOM   2646  HB3 SER B 139      2.690   7.985 -38.601  1.00 31.01
H
ATOM   2647  HG  SER B 139      3.872   7.181 -40.829  1.00 30.77
H
ATOM   2648  N   LYS B 140      4.161  10.507 -41.215  1.00 23.74
N
ATOM   2649  CA  LYS B 140      3.520  11.383 -42.190  1.00 25.13
C
ATOM   2650  C   LYS B 140      2.262  10.751 -42.772  1.00 27.27
C
ATOM   2651  O   LYS B 140      1.310  11.446 -43.124  1.00 23.60
O
ATOM   2652  CB  LYS B 140      4.479  11.725 -43.332  1.00 33.45
C
ATOM   2653  CG  LYS B 140      5.508  12.792 -43.013  1.00 30.77
C
ATOM   2654  CD  LYS B 140      6.309  13.145 -44.257  1.00 35.69
C
ATOM   2655  CE  LYS B 140      7.517  13.999 -43.925  1.00 38.62
C


ATOM   2656  NZ  LYS B 140      7.166  15.412 -43.646  1.00 40.07
N1+
ATOM   2657  H   LYS B 140      4.968  10.290 -41.417  1.00 28.48
H
ATOM   2658  HA  LYS B 140      3.265  12.211 -41.753  1.00 30.15
H
ATOM   2659  HB2 LYS B 140      4.961  10.921 -43.581  1.00 40.14
H
ATOM   2660  HB3 LYS B 140      3.959  12.039 -44.088  1.00 40.14
H
ATOM   2661  HG2 LYS B 140      5.058  13.592 -42.699  1.00 36.92
H
ATOM   2662  HG3 LYS B 140      6.119  12.460 -42.337  1.00 36.92
H
ATOM   2663  HD2 LYS B 140      6.621  12.329 -44.678  1.00 42.82
H
ATOM   2664  HD3 LYS B 140      5.745  13.643 -44.869  1.00 42.82
H
ATOM   2665  HE2 LYS B 140      7.953  13.637 -43.138  1.00 46.34
H
ATOM   2666  HE3 LYS B 140      8.129  13.985 -44.678  1.00 46.34
H
ATOM   2667  HZ1 LYS B 140      7.902  15.876 -43.456  1.00 48.08
H
ATOM   2668  HZ2 LYS B 140      6.771  15.773 -44.357  1.00 48.08
H
ATOM   2669  HZ3 LYS B 140      6.610  15.455 -42.952  1.00 48.08
H
ATOM   2670  N   GLU B 141      2.267   9.427 -42.874  1.00 25.00
N
ATOM   2671  CA  GLU B 141      1.193   8.708 -43.544  1.00 27.84
C
ATOM   2672  C   GLU B 141      0.014   8.489 -42.607  1.00 25.06
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ATOM   8922  H   GLU E  75     12.841  53.503 -34.469  1.00 28.00           H
ATOM   8923  HA  GLU E  75     14.378  51.906 -36.013  1.00 26.40
H
ATOM   8924  HB2 GLU E  75     12.962  50.971 -33.766  1.00 26.99
H
ATOM   8925  HB3 GLU E  75     13.297  49.993 -34.970  1.00 26.99
H
ATOM   8926  HG2 GLU E  75     15.621  50.584 -34.535  1.00 31.05
H
ATOM   8927  HG3 GLU E  75     15.084  51.090 -33.127  1.00 31.05
H

ATOM   8928  N   ASP E  76     12.598  51.733 -37.641  1.00 18.47           N
ATOM   8929  CA  ASP E  76     11.532  51.564 -38.616  1.00 21.95
C

ATOM   8930  C   ASP E  76     11.628  50.178 -39.234  1.00 16.59           C

ATOM   8931  O   ASP E  76     12.632  49.831 -39.851  1.00 16.66           O
ATOM   8932  CB  ASP E  76     11.610  52.637 -39.701  1.00 19.62
C
ATOM   8933  CG  ASP E  76     10.424  52.599 -40.638  1.00 25.99
C
ATOM   8934  OD1 ASP E  76      9.322  53.005 -40.215  1.00 30.46
O
ATOM   8935  OD2 ASP E  76     10.590  52.164 -41.797  1.00 34.44
O1-

ATOM   8936  H   ASP E  76     13.386  51.706 -37.984  1.00 22.16           H
ATOM   8937  HA  ASP E  76     10.674  51.641 -38.171  1.00 26.34
H
ATOM   8938  HB2 ASP E  76     11.634  53.511 -39.282  1.00 23.54
H
ATOM   8939  HB3 ASP E  76     12.413  52.498 -40.227  1.00 23.54
H

ATOM   8940  N   LEU E  77     10.574  49.392 -39.056  1.00 15.41           N
ATOM   8941  CA  LEU E  77     10.537  48.025 -39.553  1.00 16.17
C

ATOM   8942  C   LEU E  77      9.455  47.893 -40.609  1.00 15.56           C

ATOM   8943  O   LEU E  77      8.319  48.306 -40.388  1.00 17.25           O
ATOM   8944  CB  LEU E  77     10.286  47.048 -38.405  1.00 15.28
C
ATOM   8945  CG  LEU E  77     11.389  46.987 -37.350  1.00 16.96
C
ATOM   8946  CD1 LEU E  77     10.879  46.320 -36.093  1.00 21.16
C
ATOM   8947  CD2 LEU E  77     12.592  46.234 -37.902  1.00 19.76
C

ATOM   8948  H   LEU E  77      9.858  49.631 -38.643  1.00 18.50           H
ATOM   8949  HA  LEU E  77     11.390  47.807 -39.960  1.00 19.40
H
ATOM   8950  HB2 LEU E  77      9.466  47.305 -37.955  1.00 18.34
H
ATOM   8951  HB3 LEU E  77     10.188  46.157 -38.775  1.00 18.34
H
ATOM   8952  HG  LEU E  77     11.669  47.888 -37.126  1.00 20.35
H
ATOM   8953 HD11 LEU E  77     11.594  46.292 -35.438  1.00 25.39
H
ATOM   8954 HD12 LEU E  77     10.131  46.831 -35.746  1.00 25.39
H
ATOM   8955 HD13 LEU E  77     10.593  45.418 -36.309  1.00 25.39
H


ATOM   8956 HD21 LEU E  77     13.284  46.203 -37.223  1.00 23.72
H
ATOM   8957 HD22 LEU E  77     12.319  45.333 -38.138  1.00 23.72
H
ATOM   8958 HD23 LEU E  77     12.921  46.697 -38.689  1.00 23.72
H

ATOM   8959  N   THR E  78      9.813  47.329 -41.759  1.00 14.27           N

ATOM   8960  CA  THR E  78      8.840  47.089 -42.818  1.00 14.26           C

ATOM   8961  C   THR E  78      8.861  45.634 -43.248  1.00 14.87           C

ATOM   8962  O   THR E  78      9.922  45.020 -43.355  1.00 12.85           O

ATOM   8963  CB  THR E  78      9.100  47.973 -44.050  1.00 15.27           C
ATOM   8964  OG1 THR E  78      9.102  49.353 -43.665  1.00 19.62
O
ATOM   8965  CG2 THR E  78      8.035  47.754 -45.113  1.00 15.91
C

ATOM   8966  H   THR E  78     10.612  47.075 -41.950  1.00 17.12           H

ATOM   8967  HA  THR E  78      7.952  47.292 -42.484  1.00 17.11           H

ATOM   8968  HB  THR E  78      9.962  47.746 -44.431  1.00 18.32           H
ATOM   8969  HG1 THR E  78      9.704  49.491 -43.096  1.00 23.54
H
ATOM   8970 HG21 THR E  78      8.213  48.317 -45.882  1.00 19.09
H
ATOM   8971 HG22 THR E  78      8.035  46.826 -45.396  1.00 19.09
H
ATOM   8972 HG23 THR E  78      7.160  47.974 -44.757  1.00 19.09
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C
ATOM  2673  O   GLU B 141    -1.123   8.813 -42.942  1.00 27.37
O
ATOM  2674  CB  GLU B 141     1.700   7.367 -44.078  1.00 34.11
C
ATOM  2675  CG  GLU B 141     2.769   7.490 -45.160  1.00 36.43
C
ATOM  2676  CD  GLU B 141     4.098   8.026 -44.638  1.00 46.40
C
ATOM  2677  OE1 GLU B 141     4.499   7.656 -43.512  1.00 42.36
O
ATOM  2678  OE2 GLU B 141     4.740   8.824 -45.356  1.00 49.27
O1-
ATOM  2679  H   GLU B 141     2.886   8.919 -42.561  1.00 30.00
H
ATOM  2680  HA  GLU B 141     0.883   9.233 -44.298  1.00 33.41
H
ATOM  2681  HB2 GLU B 141     2.082   6.864 -43.342  1.00 40.93
H
ATOM  2682  HB3 GLU B 141     0.952   6.879 -44.455  1.00 40.93
H
ATOM  2683  HG2 GLU B 141     2.932   6.613 -45.543  1.00 43.71
H
ATOM  2684  HG3 GLU B 141     2.452   8.097 -45.847  1.00 43.71
H
ATOM  2685  N   ASP B 142     0.290   7.943 -41.429  1.00 28.26
N
ATOM  2686  CA  ASP B 142    -0.758   7.684 -40.452  1.00 24.57
C
ATOM  2687  C   ASP B 142    -1.332   8.975 -39.892  1.00 20.54
C
ATOM  2688  O   ASP B 142    -2.446   8.987 -39.375  1.00 22.29
O
ATOM  2689  CB  ASP B 142    -0.226   6.820 -39.310  1.00 25.59
C
ATOM  2690  CG  ASP B 142     0.030   5.390 -39.737  1.00 31.43
C


ATOM  2691  OD1 ASP B 142    -0.408   5.011 -40.844  1.00 33.75
O
ATOM  2692  OD2 ASP B 142     0.658   4.641 -38.960  1.00 36.61
O1-
ATOM  2693  H   ASP B 142     1.077   7.713 -41.171  1.00 33.91
H
ATOM  2694  HA  ASP B 142    -1.479   7.199 -40.884  1.00 29.48
H
ATOM  2695  HB2 ASP B 142     0.612   7.194 -38.994  1.00 30.71
H
ATOM  2696  HB3 ASP B 142    -0.877   6.807 -38.592  1.00 30.71
H
ATOM  2697  N   GLN B 143    -0.567  10.057 -39.996  1.00 21.57
N
ATOM  2698  CA  GLN B 143    -1.007  11.352 -39.489  1.00 22.32
C
ATOM  2699  C   GLN B 143    -1.076  12.372 -40.617  1.00 21.14
C
ATOM  2700  O   GLN B 143    -0.821  13.555 -40.412  1.00 19.64
O
ATOM  2701  CB  GLN B 143    -0.069  11.831 -38.383  1.00 16.49
C
ATOM  2702  CG  GLN B 143     0.132  10.792 -37.295  1.00 21.19
C
ATOM  2703  CD  GLN B 143     1.050  11.269 -36.196  1.00 21.57
C
ATOM  2704  OE1 GLN B 143     2.263  11.355 -36.384  1.00 19.08
O
ATOM  2705  NE2 GLN B 143     0.478  11.581 -35.039  1.00 19.58
N
ATOM  2706  H   GLN B 143     0.213  10.068 -40.356  1.00 25.88
H
ATOM  2707  HA  GLN B 143    -1.896  11.260 -39.112  1.00 26.78
H
ATOM  2708  HB2 GLN B 143     0.798  12.032 -38.769  1.00 19.78
H
ATOM  2709  HB3 GLN B 143    -0.443  12.626 -37.974  1.00 19.78
H
ATOM  2710  HG2 GLN B 143    -0.727  10.581 -36.897  1.00 25.43
H
ATOM  2711  HG3 GLN B 143     0.521   9.995 -37.686  1.00 25.43
H
ATOM  2712 HE21 GLN B 143     0.960  11.858 -34.382  1.00 23.50
H
ATOM  2713 HE22 GLN B 143    -0.374  11.507 -34.946  1.00 23.50
H
ATOM  2714  N   ASP B 144    -1.441  11.906 -41.808  1.00 23.98
N
ATOM  2715  CA  ASP B 144    -1.449  12.764 -42.986  1.00 24.23
C
ATOM  2716  C   ASP B 144    -2.493  13.879 -42.881  1.00 22.36
C
ATOM  2717  O   ASP B 144    -2.389  14.881 -43.582  1.00 21.23
O
ATOM  2718  CB  ASP B 144    -1.678  11.933 -44.256  1.00 28.70
C
ATOM  2719  CG  ASP B 144    -2.948  11.106 -44.203  1.00 27.60
C
ATOM  2720  OD1 ASP B 144    -3.543  10.979 -43.113  1.00 24.37
O
ATOM  2721  OD2 ASP B 144    -3.344  10.567 -45.258  1.00 40.47
O1-
ATOM  2722  H   ASP B 144    -1.689  11.096 -41.960  1.00 28.78
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H

ATOM  8973  N   TYR E  79     7.670  45.095 -43.484  1.00 13.27           N

ATOM  8974  CA  TYR E  79     7.514  43.775 -44.072  1.00 14.20           C

ATOM  8975  C   TYR E  79     6.573  43.872 -45.256  1.00 14.36           C

ATOM  8976  O   TYR E  79     5.421  44.279 -45.111  1.00 13.68           O

ATOM  8977  CB  TYR E  79     6.982  42.777 -43.049  1.00 13.72           C
ATOM  8978  CG  TYR E  79     6.699  41.404 -43.618  1.00 14.03
C
ATOM  8979  CD1 TYR E  79     7.700  40.665 -44.239  1.00 15.69
C
ATOM  8980  CD2 TYR E  79     5.438  40.835 -43.512  1.00 13.78
C
ATOM  8981  CE1 TYR E  79     7.447  39.401 -44.750  1.00 15.27
C
ATOM  8982  CE2 TYR E  79     5.177  39.579 -44.016  1.00 12.76
C

ATOM  8983  CZ  TYR E  79     6.182  38.865 -44.635  1.00 15.58           C
ATOM  8984  OH  TYR E  79     5.914  37.609 -45.136  1.00 14.38
O

ATOM  8985  H   TYR E  79     6.924  45.484 -43.308  1.00 15.93           H

ATOM  8986  HA  TYR E  79     8.375  43.460 -44.390  1.00 17.04           H
ATOM  8987  HB2 TYR E  79     7.638  42.675 -42.342  1.00 16.47
H
ATOM  8988  HB3 TYR E  79     6.153  43.120 -42.681  1.00 16.47
H
ATOM  8989  HD1 TYR E  79     8.553  41.027 -44.317  1.00 18.83
H
ATOM  8990  HD2 TYR E  79     4.756  41.311 -43.096  1.00 16.54
H


ATOM  8991  HE1 TYR E  79     8.124  38.920 -45.167  1.00 18.32
H
ATOM  8992  HE2 TYR E  79     4.325  39.215 -43.940  1.00 15.31
H

ATOM  8993  HH  TYR E  79     6.606  37.285 -45.484  1.00 17.25           H

ATOM  8994  N   PHE E  80     7.078  43.501 -46.426  1.00 13.15           N

ATOM  8995  CA  PHE E  80     6.317  43.575 -47.664  1.00 14.24           C

ATOM  8996  C   PHE E  80     6.024  42.162 -48.125  1.00 16.30           C

ATOM  8997  O   PHE E  80     6.934  41.349 -48.213  1.00 15.43           O

ATOM  8998  CB  PHE E  80     7.102  44.352 -48.722  1.00 17.01           C
ATOM  8999  CG  PHE E  80     6.447  44.383 -50.071  1.00 19.40
C
ATOM  9000  CD1 PHE E  80     5.421  45.272 -50.337  1.00 18.32
C
ATOM  9001  CD2 PHE E  80     6.877  43.541 -51.084  1.00 19.37
C
ATOM  9002  CE1 PHE E  80     4.824  45.310 -51.585  1.00 23.34
C
ATOM  9003  CE2 PHE E  80     6.285  43.574 -52.334  1.00 18.06
C

ATOM  9004  CZ  PHE E  80     5.259  44.459 -52.585  1.00 18.37           C

ATOM  9005  H   PHE E  80     7.876  43.197 -46.529  1.00 15.78           H

ATOM  9006  HA  PHE E  80     5.476  44.031 -47.504  1.00 17.09           H
ATOM  9007  HB2 PHE E  80     7.206  45.269 -48.422  1.00 20.41
H
ATOM  9008  HB3 PHE E  80     7.975  43.941 -48.827  1.00 20.41
H
ATOM  9009  HD1 PHE E  80     5.125  45.846 -49.668  1.00 21.98
H
ATOM  9010  HD2 PHE E  80     7.569  42.942 -50.920  1.00 23.25
H
ATOM  9011  HE1 PHE E  80     4.131  45.908 -51.751  1.00 28.00
H
ATOM  9012  HE2 PHE E  80     6.579  43.000 -53.004  1.00 21.67
H

ATOM  9013  HZ  PHE E  80     4.858  44.482 -53.424  1.00 22.04           H

ATOM  9014  N   TYR E  81     4.751  41.864 -48.376  1.00 13.87           N

ATOM  9015  CA  TYR E  81     4.354  40.551 -48.870  1.00 15.55           C

ATOM  9016  C   TYR E  81     3.404  40.698 -50.049  1.00 17.93           C

ATOM  9017  O   TYR E  81     2.378  41.378 -49.952  1.00 14.45           O

ATOM  9018  CB  TYR E  81     3.696  39.715 -47.768  1.00 13.17           C
ATOM  9019  CG  TYR E  81     3.300  38.345 -48.261  1.00 15.78
C
ATOM  9020  CD1 TYR E  81     4.237  37.324 -48.352  1.00 19.61
C
ATOM  9021  CD2 TYR E  81     1.998  38.077 -48.663  1.00 18.88
C
ATOM  9022  CE1 TYR E  81     3.887  36.072 -48.816  1.00 19.41
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ATOM  2723  HA  ASP B 144    -0.579  13.185 -43.065  1.00 29.08
H
ATOM  2724  HB2 ASP B 144    -1.742  12.532 -45.016  1.00 34.44
H
ATOM  2725  HB3 ASP B 144    -0.930  11.326 -44.374  1.00 34.44
H


ATOM  2726  N   LEU B 145   -3.477  13.728 -41.996  1.00 19.04
N
ATOM  2727  CA  LEU B 145    -4.471  14.785 -41.804  1.00 22.41
C
ATOM  2728  C   LEU B 145   -3.812  16.062 -41.284  1.00 23.21
C
ATOM  2729  O   LEU B 145   -4.353  17.157 -41.440  1.00 16.02
O
ATOM  2730  CB  LEU B 145    -5.590  14.338 -40.849  1.00 23.82
C
ATOM  2731  CG  LEU B 145    -5.318  14.061 -39.362  1.00 27.11
C
ATOM  2732  CD1 LEU B 145    -5.111  15.321 -38.530  1.00 36.24
C
ATOM  2733  CD2 LEU B 145    -6.485  13.274 -38.783  1.00 26.90
C
ATOM  2734  H   LEU B 145   -3.591  13.034 -41.501  1.00 22.85
H
ATOM  2735  HA  LEU B 145    -4.878  14.990 -42.661  1.00 26.90
H
ATOM  2736  HB2 LEU B 145    -6.276  15.024 -40.873  1.00 28.59
H
ATOM  2737  HB3 LEU B 145    -5.962  13.519 -41.211  1.00 28.59
H
ATOM  2738  HG  LEU B 145    -4.520  13.515 -39.283  1.00 32.54
H
ATOM  2739 HD11 LEU B 145     -4.946  15.068 -37.609  1.00 43.49
H
ATOM  2740 HD12 LEU B 145     -4.349  15.809 -38.881  1.00 43.49
H
ATOM  2741 HD13 LEU B 145     -5.909  15.870 -38.585  1.00 43.49
H
ATOM  2742 HD21 LEU B 145     -6.571  12.437 -39.266  1.00 32.28
H
ATOM  2743 HD22 LEU B 145     -6.313  13.100 -37.845  1.00 32.28
H
ATOM  2744 HD23 LEU B 145     -7.296  13.797 -38.880  1.00 32.28
H
ATOM  2745  N   LEU B 146   -2.641  15.917 -40.669  1.00 18.69
N
ATOM  2746  CA  LEU B 146    -1.906  17.067 -40.147  1.00 20.59
C
ATOM  2747  C   LEU B 146   -1.461  18.011 -41.261  1.00 22.13
C
ATOM  2748  O   LEU B 146   -1.050  19.139 -40.994  1.00 20.52
O
ATOM  2749  CB  LEU B 146    -0.687  16.603 -39.346  1.00 17.78
C
ATOM  2750  CG  LEU B 146    -0.968  15.902 -38.018  1.00 17.50
C
ATOM  2751  CD1 LEU B 146     0.325  15.414 -37.395  1.00 17.27
C
ATOM  2752  CD2 LEU B 146    -1.696  16.837 -37.055  1.00 20.64
C
ATOM  2753  H   LEU B 146   -2.250  15.162 -40.542  1.00 22.42
H
ATOM  2754  HA  LEU B 146    -2.485  17.564 -39.548  1.00 24.71
H
ATOM  2755  HB2 LEU B 146    -0.181  15.984 -39.896  1.00 21.34
H
ATOM  2756  HB3 LEU B 146    -0.140  17.380 -39.151  1.00 21.34
H
ATOM  2757  HG  LEU B 146    -1.536  15.132 -38.178  1.00 21.00
H
ATOM  2758 HD11 LEU B 146      0.123  14.973 -36.555  1.00 20.72
H
ATOM  2759 HD12 LEU B 146      0.751  14.789 -38.003  1.00 20.72
H
ATOM  2760 HD13 LEU B 146      0.907  16.174 -37.239  1.00 20.72
H


ATOM  2761 HD21 LEU B 146     -1.861  16.367 -36.223  1.00 24.77
H
ATOM  2762 HD22 LEU B 146     -1.142  17.615 -36.892  1.00 24.77
H
ATOM  2763 HD23 LEU B 146     -2.538  17.108 -37.455  1.00 24.77
H
ATOM  2764  N   LYS B 147   -1.546  17.549 -42.505  1.00 18.08
N
ATOM  2765  CA  LYS B 147    -1.162  18.363 -43.656  1.00 21.55
C
ATOM  2766  C   LYS B 147   -2.100  19.543 -43.918  1.00 18.51
C
ATOM  2767  O   LYS B 147   -1.684  20.547 -44.493  1.00 21.96
O
ATOM  2768  CB  LYS B 147    -1.098  17.501 -44.915  1.00 21.16
C
ATOM  2769  CG  LYS B 147     0.074  16.547 -44.957  1.00 30.69
C
ATOM  2770  CD  LYS B 147     0.195  15.878 -46.321  1.00 36.31
C
ATOM  2771  CE  LYS B 147    -0.442  14.498 -46.326  1.00 47.69
C
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ATOM  9023  CE2 TYR E  81     1.640  36.827 -49.130  1.00 17.69
C

ATOM  9024  CZ  TYR E  81    2.586  35.829 -49.203  1.00 17.85        C
ATOM  9025  OH  TYR E  81     2.237  34.580 -49.670  1.00 17.84
O



ATOM  9026  H   TYR E  81   4.095  42.409 -48.267  1.00 16.64       H

ATOM  9027  HA  TYR E  81    5.143  40.076 -49.177  1.00 18.66        H
ATOM  9028  HB2 TYR E  81     4.322  39.604 -47.036  1.00 15.81
H
ATOM  9029  HB3 TYR E  81     2.897  40.169 -47.459  1.00 15.81
H
ATOM  9030  HD1 TYR E  81     5.115  37.485 -48.092  1.00 23.54
H
ATOM  9031  HD2 TYR E  81     1.357  38.749 -48.615  1.00 22.66
H
ATOM  9032  HE1 TYR E  81     4.525  35.397 -48.868  1.00 23.29
H
ATOM  9033  HE2 TYR E  81     0.763  36.660 -49.392  1.00 21.22
H

ATOM  9034  HH  TYR E  81     1.421  34.566 -49.870  1.00 21.41        H

ATOM  9035  N   GLU E  82    3.755  40.055 -51.159  1.00 15.98       N

ATOM  9036  CA  GLU E  82     3.003  40.184 -52.399  1.00 14.65        C

ATOM  9037  C   GLU E  82    2.789  38.829 -53.047  1.00 14.84       C

ATOM  9038  O   GLU E  82    3.732  38.055 -53.188  1.00 17.94       O

ATOM  9039  CB  GLU E  82     3.737  41.109 -53.373  1.00 18.04        C
ATOM  9040  CG  GLU E  82     3.018  41.338 -54.689  1.00 16.30
C
ATOM  9041  CD  GLU E  82     3.879  42.074 -55.695  1.00 22.72
C
ATOM  9042  OE1 GLU E  82      4.616  41.397 -56.440  1.00 20.02
O
ATOM  9043  OE2 GLU E  82      3.824  43.322 -55.736  1.00 20.27
O1-

ATOM  9044  H   GLU E  82    4.434  39.531 -51.219  1.00 19.17       H

ATOM  9045  HA  GLU E  82     2.134  40.571 -52.208  1.00 17.57        H
ATOM  9046  HB2 GLU E  82      3.857  41.974 -52.949  1.00 21.64
H
ATOM  9047  HB3 GLU E  82      4.604  40.722 -53.575  1.00 21.64
H
ATOM  9048  HG2 GLU E  82      2.774  40.481 -55.071  1.00 19.56
H
ATOM  9049  HG3 GLU E  82      2.223  41.870 -54.527  1.00 19.56
H

ATOM  9050  N   CYS E  83    1.547  38.545 -53.433  1.00 15.34       N

ATOM  9051  CA  CYS E  83     1.264  37.378 -54.257  1.00 12.96        C

ATOM  9052  C   CYS E  83    0.843  37.867 -55.639  1.00 19.15       C

ATOM  9053  O   CYS E  83    0.264  38.947 -55.785  1.00 15.77       O

ATOM  9054  CB  CYS E  83     0.197  36.477 -53.621  1.00 16.84        C
ATOM  9055  SG  CYS E  83    -1.483  37.137 -53.496  1.00 23.13
S

ATOM  9056  H   CYS E  83    0.854  39.012 -53.230  1.00 18.41       H

ATOM  9057  HA  CYS E  83     2.076  36.857 -54.357  1.00 15.56        H
ATOM  9058  HB2 CYS E  83      0.144  35.661 -54.142  1.00 20.21
H
ATOM  9059  HB3 CYS E  83      0.486  36.260 -52.720  1.00 20.21
H

ATOM  9060  N   ASP E  84    1.163  37.066 -56.648  1.00 17.04       N



ATOM  9061  CA  ASP E  84     0.974  37.441 -58.041  1.00 17.78        C

ATOM  9062  C   ASP E  84    0.295  36.299 -58.783  1.00 19.08       C

ATOM  9063  O   ASP E  84    0.770  35.164 -58.744  1.00 16.97       O

ATOM  9064  CB  ASP E  84     2.325  37.778 -58.678  1.00 20.88        C
ATOM  9065  CG  ASP E  84     2.208  38.205 -60.131  1.00 25.61
C
ATOM  9066  OD1 ASP E  84      1.845  37.363 -60.982  1.00 20.93
O
ATOM  9067  OD2 ASP E  84      2.505  39.382 -60.423  1.00 20.27
O1-

ATOM  9068  H   ASP E  84    1.500  36.281 -56.547  1.00 20.45       H

ATOM  9069  HA  ASP E  84     0.405  38.224 -58.092  1.00 21.34        H
ATOM  9070  HB2 ASP E  84      2.734  38.506 -58.184  1.00 25.05
H
ATOM  9071  HB3 ASP E  84      2.895  36.993 -58.642  1.00 25.05
H
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ATOM   2772  NZ  LYS B 147     -0.373  13.845 -47.665  1.00 54.63
N1+
ATOM   2773  H   LYS B 147    -1.824  16.762 -42.711  1.00 21.70
H
ATOM   2774  HA  LYS B 147     -0.275  18.723 -43.499  1.00 25.85
H
ATOM   2775  HB2 LYS B 147     -1.910  16.973 -44.972  1.00 25.39
H
ATOM   2776  HB3 LYS B 147     -1.032  18.084 -45.688  1.00 25.39
H
ATOM   2777  HG2 LYS B 147      0.893  17.037 -44.784  1.00 36.83
H
ATOM   2778  HG3 LYS B 147     -0.052  15.855 -44.289  1.00 36.83
H
ATOM   2779  HD2 LYS B 147     -0.255  16.423 -46.986  1.00 43.57
H
ATOM   2780  HD3 LYS B 147      1.134  15.780 -46.547  1.00 43.57
H
ATOM   2781  HE2 LYS B 147      0.023  13.931 -45.691  1.00 57.23
H
ATOM   2782  HE3 LYS B 147     -1.376  14.579 -46.078  1.00 57.23
H
ATOM   2783  HZ1 LYS B 147      0.476  13.753 -47.915  1.00 65.55
H
ATOM   2784  HZ2 LYS B 147     -0.754  13.042 -47.632  1.00 65.55
H
ATOM   2785  HZ3 LYS B 147     -0.799  14.343 -48.268  1.00 65.55
H
ATOM   2786  N   LEU B 148    -3.362  19.420 -43.518  1.00 18.78
N
ATOM   2787  CA  LEU B 148     -4.353  20.450 -43.829  1.00 22.97
C
ATOM   2788  C   LEU B 148    -4.868  21.167 -42.585  1.00 14.82
C
ATOM   2789  O   LEU B 148    -6.011  21.617 -42.541  1.00 14.64
O
ATOM   2790  CB  LEU B 148     -5.517  19.832 -44.607  1.00 26.00
C
ATOM   2791  CG  LEU B 148     -5.160  19.380 -46.029  1.00 31.59
C
ATOM   2792  CD1 LEU B 148     -6.356  18.716 -46.679  1.00 33.85
C
ATOM   2793  CD2 LEU B 148     -4.670  20.547 -46.891  1.00 31.17
C
ATOM   2794  H   LEU B 148    -3.670  18.755 -43.068  1.00 22.53
H
ATOM   2795  HA  LEU B 148     -3.939  21.115 -44.401  1.00 27.56
H


ATOM   2796  HB2 LEU B 148     -5.837  19.055 -44.123  1.00 31.20
H
ATOM   2797  HB3 LEU B 148     -6.228  20.489 -44.677  1.00 31.20
H
ATOM   2798  HG  LEU B 148    -4.446  18.725 -45.980  1.00 37.91
H
ATOM   2799 HD11 LEU B 148     -6.113  18.437 -47.575  1.00 40.61
H
ATOM   2800 HD12 LEU B 148     -6.614  17.944 -46.150  1.00 40.61
H
ATOM   2801 HD13 LEU B 148     -7.088  19.351 -46.716  1.00 40.61
H
ATOM   2802 HD21 LEU B 148     -3.878  20.931 -46.481  1.00 37.40
H
ATOM   2803 HD22 LEU B 148     -4.456  20.216 -47.778  1.00 37.40
H
ATOM   2804 HD23 LEU B 148     -5.371  21.215 -46.946  1.00 37.40
H
ATOM   2805  N   VAL B 149    -4.000  21.295 -41.587  1.00 21.37
N
ATOM   2806  CA  VAL B 149     -4.324  22.025 -40.365  1.00 16.00
C
ATOM   2807  C   VAL B 149    -3.814  23.459 -40.465  1.00 15.16
C
ATOM   2808  O   VAL B 149    -2.619  23.685 -40.651  1.00 17.77
O
ATOM   2809  CB  VAL B 149     -3.708  21.343 -39.130  1.00 15.06
C
ATOM   2810  CG1 VAL B 149     -4.064  22.100 -37.853  1.00 19.91
C
ATOM   2811  CG2 VAL B 149     -4.179  19.899 -39.037  1.00 22.08
C
ATOM   2812  H   VAL B 149    -3.206  20.964 -41.594  1.00 25.65
H
ATOM   2813  HA  VAL B 149     -5.287  22.050 -40.252  1.00 19.19
H
ATOM   2814  HB  VAL B 149     -2.742  21.340 -39.219  1.00 18.07
H
ATOM   2815 HG11 VAL B 149      -3.662  21.646 -37.096  1.00 23.89
H
ATOM   2816 HG12 VAL B 149      -3.721  23.005 -37.917  1.00 23.89
H
ATOM   2817 HG13 VAL B 149      -5.028  22.118 -37.755  1.00 23.89
H
ATOM   2818 HG21 VAL B 149      -3.781  19.488 -38.254  1.00 26.49
H
ATOM   2819 HG22 VAL B 149      -5.146  19.886 -38.963  1.00 26.49
H
ATOM   2820 HG23 VAL B 149      -3.902  19.425 -39.837  1.00 26.49
H
ATOM   2821  N   LYS B 150    -4.723  24.422 -40.354  1.00 13.81
N
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ATOM   9072  N   TYR E  85    -0.824  36.598 -59.437  1.00 18.50        N

ATOM   9073  CA  TYR E  85     -1.525  35.609 -60.252  1.00 19.06        C

ATOM   9074  C   TYR E  85    -1.499  36.041 -61.713  1.00 20.41        C

ATOM   9075  O   TYR E  85    -2.219  36.955 -62.124  1.00 20.32        O

ATOM   9076  CB  TYR E  85     -2.960  35.422 -59.768  1.00 18.28        C
ATOM   9077  CG  TYR E  85     -3.596  34.138 -60.246  1.00 18.94
C
ATOM   9078  CD1 TYR E  85      -3.038  32.910 -59.929  1.00 19.95
C
ATOM   9079  CD2 TYR E  85      -4.760  34.154 -61.002  1.00 23.18
C
ATOM   9080  CE1 TYR E  85      -3.613  31.733 -60.354  1.00 20.65
C
ATOM   9081  CE2 TYR E  85      -5.345  32.979 -61.430  1.00 25.96
C

ATOM   9082  CZ  TYR E  85    -4.767  31.772 -61.099  1.00 23.05        C
ATOM   9083  OH  TYR E  85     -5.337  30.594 -61.524  1.00 26.20
O

ATOM   9084  H   TYR E  85    -1.201  37.371 -59.426  1.00 22.20        H

ATOM   9085  HA  TYR E  85     -1.068  34.757 -60.180  1.00 22.87        H
ATOM   9086  HB2 TYR E  85      -2.965  35.412 -58.798  1.00 21.94
H
ATOM   9087  HB3 TYR E  85      -3.499  36.160 -60.093  1.00 21.94
H
ATOM   9088  HD1 TYR E  85      -2.259  32.880 -59.422  1.00 23.94
H
ATOM   9089  HD2 TYR E  85      -5.152  34.968 -61.222  1.00 27.82
H
ATOM   9090  HE1 TYR E  85      -3.226  30.917 -60.134  1.00 24.78
H
ATOM   9091  HE2 TYR E  85      -6.124  33.002 -61.937  1.00 31.15
H
ATOM   9092  HH  TYR E  85     -6.033  30.755 -61.966  1.00 31.44
H

ATOM   9093  N   THR E  86    -0.648  35.368 -62.481  1.00 21.39        N
ATOM   9094  CA  THR E  86     -0.390  35.705 -63.874  1.00 20.93
C

ATOM   9095  C   THR E  86    -0.293  34.414 -64.674  1.00 21.34        C


ATOM   9096  O   THR E  86     0.496  33.532 -64.334  1.00 19.84        O

ATOM   9097  CB  THR E  86      0.921  36.515 -64.029  1.00 22.67        C
ATOM   9098  OG1 THR E  86      0.862  37.696 -63.217  1.00 24.63
O
ATOM   9099  CG2 THR E  86      1.149  36.917 -65.478  1.00 23.65
C

ATOM   9100  H   THR E  86    -0.196  34.690 -62.206  1.00 25.66        H
ATOM   9101  HA  THR E  86     -1.125  36.233 -64.223  1.00 25.12
H

ATOM   9102  HB  THR E  86      1.670  35.969 -63.744  1.00 27.20        H
ATOM   9103  HG1 THR E  86      0.765  37.485 -62.410  1.00 29.56
H
ATOM   9104 HG21 THR E  86      1.973  37.423 -65.555  1.00 28.38
H
ATOM   9105 HG22 THR E  86      1.212  36.126 -66.035  1.00 28.38
H
ATOM   9106 HG23 THR E  86      0.412  37.466 -65.790  1.00 28.38
H

ATOM   9107  N   ASP E  87    -1.096  34.300 -65.727  1.00 22.89        N

ATOM   9108  CA  ASP E  87     -1.097  33.101 -66.563  1.00 23.19        C

ATOM   9109  C   ASP E  87    -1.404  31.876 -65.703  1.00 26.71        C

ATOM   9110  O   ASP E  87    -0.771  30.830 -65.835  1.00 23.26        O

ATOM   9111  CB  ASP E  87      0.252  32.946 -67.275  1.00 25.03        C
ATOM   9112  CG  ASP E  87      0.247  31.838 -68.316  1.00 28.16
C
ATOM   9113  OD1 ASP E  87     -0.798  31.626 -68.965  1.00 24.41
O
ATOM   9114  OD2 ASP E  87      1.295  31.180 -68.478  1.00 26.54
O1-

ATOM   9115  H   ASP E  87    -1.653  34.904 -65.981  1.00 27.47        H

ATOM   9116  HA  ASP E  87     -1.789  33.181 -67.237  1.00 27.83        H
ATOM   9117  HB2 ASP E  87      0.469  33.778 -67.725  1.00 30.03
H
ATOM   9118  HB3 ASP E  87      0.934  32.737 -66.618  1.00 30.03
H

ATOM   9119  N   ASN E  88    -2.372  32.032 -64.803  1.00 29.28        N
ATOM   9120  CA  ASN E  88     -2.802  30.961 -63.906  1.00 25.51
C

ATOM   9121  C   ASN E  88    -1.681  30.405 -63.031  1.00 23.64        C
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ATOM  2822  CA  LYS B 150    -4.346  25.833 -40.340  1.00 15.89
C
ATOM  2823  C   LYS B 150   -3.784  26.238 -38.987  1.00 14.81
C
ATOM  2824  O   LYS B 150   -3.953  25.531 -37.996  1.00 17.84
O
ATOM  2825  CB  LYS B 150    -5.542  26.729 -40.663  1.00 19.83
C
ATOM  2826  CG  LYS B 150    -5.939  26.780 -42.121  1.00 18.05
C
ATOM  2827  CD  LYS B 150    -6.947  27.893 -42.372  1.00 16.00
C
ATOM  2828  CE  LYS B 150    -6.287  29.264 -42.452  1.00 20.31
C
ATOM  2829  NZ  LYS B 150    -5.422  29.408 -43.661  1.00 20.83
N1+
ATOM  2830  H   LYS B 150   -5.569  24.285 -40.285  1.00 16.58
H


ATOM  2831  HA  LYS B 150    -3.663  25.986 -41.011  1.00 19.07
H
ATOM  2832  HB2 LYS B 150    -6.310  26.409 -40.163  1.00 23.79
H
ATOM  2833  HB3 LYS B 150    -5.331  27.634 -40.386  1.00 23.79
H
ATOM  2834  HG2 LYS B 150    -5.153  26.952 -42.662  1.00 21.66
H
ATOM  2835  HG3 LYS B 150    -6.346  25.937 -42.373  1.00 21.66
H
ATOM  2836  HD2 LYS B 150    -7.400  27.728 -43.214  1.00 19.21
H
ATOM  2837  HD3 LYS B 150    -7.589  27.910 -41.645  1.00 19.21
H
ATOM  2838  HE2 LYS B 150    -6.976  29.946 -42.491  1.00 24.37
H
ATOM  2839  HE3 LYS B 150    -5.732  29.395 -41.667  1.00 24.37
H
ATOM  2840  HZ1 LYS B 150    -5.053  30.217 -43.676  1.00 25.00
H
ATOM  2841  HZ2 LYS B 150    -4.776  28.796 -43.647  1.00 25.00
H
ATOM  2842  HZ3 LYS B 150    -5.908  29.297 -44.398  1.00 25.00
H
ATOM  2843  N   SER B 151   -3.129  27.394 -38.963  1.00 16.36
N
ATOM  2844  CA  SER B 151    -2.654  28.008 -37.729  1.00 15.93
C
ATOM  2845  C   SER B 151   -1.536  27.201 -37.075  1.00 14.66
C
ATOM  2846  O   SER B 151   -1.004  26.253 -37.656  1.00 15.81
O
ATOM  2847  CB  SER B 151    -3.817  28.195 -36.746  1.00 16.71
C
ATOM  2848  OG  SER B 151    -3.442  29.042 -35.672  1.00 18.88
O
ATOM  2849  H   SER B 151   -2.944  27.853 -39.666  1.00 19.63
H
ATOM  2850  HA  SER B 151    -2.300  28.887 -37.937  1.00 19.12
H
ATOM  2851  HB2 SER B 151    -4.566  28.593 -37.215  1.00 20.05
H
ATOM  2852  HB3 SER B 151    -4.071  27.329 -36.390  1.00 20.05
H
ATOM  2853  HG  SER B 151    -4.087  29.136 -35.142  1.00 22.66
H
ATOM  2854  N   TYR B 152   -1.184  27.604 -35.862  1.00 13.42
N
ATOM  2855  CA  TYR B 152    -0.041  27.051 -35.150  1.00 12.43
C
ATOM  2856  C   TYR B 152   -0.498  26.485 -33.816  1.00 12.59
C
ATOM  2857  O   TYR B 152   -1.349  27.075 -33.152  1.00 14.90
O
ATOM  2858  CB  TYR B 152     1.015  28.128 -34.925  1.00 11.01
C
ATOM  2859  CG  TYR B 152     1.401  28.904 -36.165  1.00 14.74
C
ATOM  2860  CD1 TYR B 152     1.697  28.254 -37.356  1.00 14.53
C
ATOM  2861  CD2 TYR B 152     1.476  30.291 -36.140  1.00 16.11
C
ATOM  2862  CE1 TYR B 152     2.063  28.964 -38.488  1.00 19.24
C
ATOM  2863  CE2 TYR B 152     1.837  31.011 -37.265  1.00 13.65
C
ATOM  2864  CZ  TYR B 152     2.132  30.343 -38.436  1.00 18.79
C
ATOM  2865  OH  TYR B 152     2.492  31.058 -39.558  1.00 16.60
O


ATOM  2866  H   TYR B 152   -1.602  28.212 -35.420  1.00 16.10
H
ATOM  2867  HA  TYR B 152     0.353  26.334 -35.672  1.00 14.92
H
ATOM  2868  HB2 TYR B 152     0.676  28.764 -34.276  1.00 13.21
H
ATOM  2869  HB3 TYR B 152     1.818  27.708 -34.581  1.00 13.21
H
ATOM  2870  HD1 TYR B 152     1.656  27.325 -37.393  1.00 17.43
H
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ATOM  9122  O   ASN E  88   -1.812  29.322 -62.465  1.00 24.76        O
ATOM  9123  CB  ASN E  88    -3.430  29.821 -64.709  1.00 29.13
C
ATOM  9124  CG  ASN E  88    -4.619  30.277 -65.532  1.00 35.20
C
ATOM  9125  OD1 ASN E  88    -4.620  30.161 -66.757  1.00 40.38
O
ATOM  9126  ND2 ASN E  88    -5.637  30.804 -64.860  1.00 37.30
N

ATOM  9127  H   ASN E  88   -2.804  32.767 -64.690  1.00 35.13        H
ATOM  9128  HA  ASN E  88    -3.486  31.313 -63.314  1.00 30.61
H
ATOM  9129  HB2 ASN E  88    -2.766  29.457 -65.316  1.00 34.96
H
ATOM  9130  HB3 ASN E  88    -3.735  29.133 -64.097  1.00 34.96
H


ATOM  9131 HD21 ASN E  88    -6.335  31.078 -65.282  1.00 44.76
H
ATOM  9132 HD22 ASN E  88    -5.599  30.871 -64.004  1.00 44.76
H

ATOM  9133  N   LYS E  89   -0.585  31.150 -62.920  1.00 20.99        N

ATOM  9134  CA  LYS E  89    0.543  30.745 -62.087  1.00 22.61        C

ATOM  9135  C   LYS E  89   0.681  31.653 -60.868  1.00 18.77        C

ATOM  9136  O   LYS E  89   0.632  32.882 -60.978  1.00 17.15        O

ATOM  9137  CB  LYS E  89    1.835  30.748 -62.902  1.00 24.56        C

ATOM  9138  CG  LYS E  89    1.924  29.593 -63.887  1.00 35.41        C

ATOM  9139  CD  LYS E  89    3.119  29.732 -64.818  1.00 45.55        C

ATOM  9140  CE  LYS E  89    3.242  28.527 -65.737  1.00 46.80        C
ATOM  9141  NZ  LYS E  89    1.975  28.255 -66.473  1.00 49.89
N1+

ATOM  9142  H   LYS E  89   -0.469  31.902 -63.320  1.00 25.19        H

ATOM  9143  HA  LYS E  89    0.391  29.841 -61.770  1.00 27.14        H
ATOM  9144  HB2 LYS E  89    1.888  31.575 -63.406  1.00 29.48
H
ATOM  9145  HB3 LYS E  89    2.590  30.682 -62.296  1.00 29.48
H
ATOM  9146  HG2 LYS E  89    2.018  28.762 -63.396  1.00 42.50
H
ATOM  9147  HG3 LYS E  89    1.120  29.573 -64.428  1.00 42.50
H
ATOM  9148  HD2 LYS E  89    3.008  30.524 -65.367  1.00 54.66
H
ATOM  9149  HD3 LYS E  89    3.930  29.799 -64.291  1.00 54.66
H
ATOM  9150  HE2 LYS E  89    3.941  28.695 -66.389  1.00 56.16
H
ATOM  9151  HE3 LYS E  89    3.459  27.744 -65.207  1.00 56.16
H
ATOM  9152  HZ1 LYS E  89    1.755  28.959 -66.971  1.00 59.87
H
ATOM  9153  HZ2 LYS E  89    2.077  27.546 -67.001  1.00 59.87
H
ATOM  9154  HZ3 LYS E  89    1.317  28.093 -65.895  1.00 59.87
H

ATOM  9155  N   SER E  90   0.843  31.024 -59.709  1.00 16.33        N

ATOM  9156  CA  SER E  90    0.971  31.729 -58.442  1.00 17.73        C

ATOM  9157  C   SER E  90   2.439  31.908 -58.084  1.00 18.63        C

ATOM  9158  O   SER E  90   3.171  30.928 -57.975  1.00 17.42        O

ATOM  9159  CB  SER E  90   0.257  30.961 -57.328  1.00 17.54        C
ATOM  9160  OG  SER E  90   -1.103  30.730 -57.645  1.00 20.05
O

ATOM  9161  H   SER E  90   0.883  30.169 -59.631  1.00 19.60        H

ATOM  9162  HA  SER E  90    0.565  32.607 -58.518  1.00 21.27        H
ATOM  9163  HB2 SER E  90    0.699  30.107 -57.203  1.00 21.05
H
ATOM  9164  HB3 SER E  90    0.305  31.479 -56.509  1.00 21.05
H
ATOM  9165  HG  SER E  90   -1.501  31.461 -57.755  1.00 24.06
H


ATOM  9166  N   THR E  91    2.864  33.157 -57.912  1.00 17.55        N

ATOM  9167  CA  THR E  91    4.222  33.455 -57.473  1.00 14.99        C

ATOM  9168  C   THR E  91    4.178  34.462 -56.329  1.00 20.38        C

ATOM  9169  O   THR E  91    3.207  35.208 -56.177  1.00 19.44        O

ATOM  9170  CB  THR E  91    5.096  34.001 -58.621  1.00 18.36        C
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ATOM   2871  HD2 TYR B 152     1.283  30.744 -35.351  1.00 19.33
H
ATOM   2872  HE1 TYR B 152     2.259  28.516 -39.278  1.00 23.09
H
ATOM   2873  HE2 TYR B 152     1.884  31.939 -37.231  1.00 16.38
H
ATOM   2874  HH  TYR B 152     2.493  31.880 -39.386  1.00 19.92
H
ATOM   2875  N   HIS B 153    0.066  25.347 -33.423  1.00 12.19
N
ATOM   2876  CA  HIS B 153    -0.389  24.651 -32.228  1.00 14.36
C
ATOM   2877  C   HIS B 153    0.758  23.957 -31.495  1.00 13.41
C
ATOM   2878  O   HIS B 153    1.626  23.342 -32.118  1.00 12.89
O
ATOM   2879  CB  HIS B 153    -1.464  23.627 -32.601  1.00 15.15
C
ATOM   2880  CG  HIS B 153    -2.473  24.146 -33.578  1.00 14.40
C
ATOM   2881  ND1 HIS B 153    -3.664  24.719 -33.187  1.00 12.28
N
ATOM   2882  CD2 HIS B 153    -2.459  24.195 -34.932  1.00 15.15
C
ATOM   2883  CE1 HIS B 153    -4.344  25.088 -34.257  1.00 14.83
C
ATOM   2884  NE2 HIS B 153    -3.635  24.783 -35.329  1.00 14.05
N
ATOM   2885  H   HIS B 153    0.714  24.958 -33.833  1.00 14.63
H
ATOM   2886  HA  HIS B 153    -0.787  25.294 -31.621  1.00 17.23
H
ATOM   2887  HB2 HIS B 153    -1.035  22.854 -32.999  1.00 18.18
H
ATOM   2888  HB3 HIS B 153    -1.937  23.364 -31.796  1.00 18.18
H
ATOM   2889  HD1 HIS B 153    -3.926  24.816 -32.373  1.00 14.73
H
ATOM   2890  HD2 HIS B 153    -1.781  23.885 -35.488  1.00 18.18
H
ATOM   2891  HE1 HIS B 153    -5.180  25.496 -34.257  1.00 17.79
H
ATOM   2892  HE2 HIS B 153    -3.871  24.928 -36.143  1.00 16.86
H
ATOM   2893  N   TRP B 154    0.757  24.065 -30.169  1.00 14.83
N
ATOM   2894  CA  TRP B 154     1.722  23.341 -29.353  1.00 15.59
C
ATOM   2895  C   TRP B 154    1.638  21.838 -29.612  1.00 15.56
C
ATOM   2896  O   TRP B 154    0.546  21.257 -29.644  1.00 12.57
O
ATOM   2897  CB  TRP B 154     1.497  23.599 -27.860  1.00 17.58
C
ATOM   2898  CG  TRP B 154     1.962  24.933 -27.340  1.00 16.06
C
ATOM   2899  CD1 TRP B 154     1.230  25.821 -26.606  1.00 18.33
C
ATOM   2900  CD2 TRP B 154     3.265  25.515 -27.489  1.00 12.92
C


ATOM   2901  NE1 TRP B 154     1.993  26.922 -26.293  1.00 15.98
N
ATOM   2902  CE2 TRP B 154     3.244  26.760 -26.825  1.00 16.75
C
ATOM   2903  CE3 TRP B 154     4.441  25.112 -28.125  1.00 14.07
C
ATOM   2904  CZ2 TRP B 154     4.357  27.600 -26.777  1.00 16.96
C
ATOM   2905  CZ3 TRP B 154     5.543  25.946 -28.075  1.00 13.07
C
ATOM   2906  CH2 TRP B 154     5.493  27.176 -27.407  1.00 16.27
C
ATOM   2907  H   TRP B 154    0.208  24.551 -29.720  1.00 17.80
H
ATOM   2908  HA  TRP B 154    2.617  23.638 -29.580  1.00 18.71
H
ATOM   2909  HB2 TRP B 154     0.546  23.535 -27.681  1.00 21.10
H
ATOM   2910  HB3 TRP B 154     1.966  22.914 -27.359  1.00 21.10
H
ATOM   2911  HD1 TRP B 154     0.345  25.698 -26.350  1.00 22.00
H
ATOM   2912  HE1 TRP B 154     1.726  27.602 -25.839  1.00 19.17
H
ATOM   2913  HE3 TRP B 154     4.484  24.295 -28.568  1.00 16.88
H
ATOM   2914  HZ2 TRP B 154     4.325  28.418 -26.337  1.00 20.35
H
ATOM   2915  HZ3 TRP B 154     6.332  25.686 -28.493  1.00 15.69
H
ATOM   2916  HH2 TRP B 154     6.249  27.717 -27.393  1.00 19.52
H
ATOM   2917  N   MET B 155    2.802  21.229 -29.810  1.00  9.94
N
ATOM   2918  CA  MET B 155     2.946  19.779 -29.802  1.00 14.74
C
ATOM   2919  C   MET B 155    3.944  19.396 -28.711  1.00 16.06
C
ATOM   2920  O   MET B 155    4.555  20.265 -28.092  1.00 15.26
O
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ATOM   9171  OG1 THR E  91     4.482  35.159 -59.191  1.00 17.75
O
ATOM   9172  CG2 THR E  91     5.280  32.946 -59.702  1.00 21.31
C

ATOM   9173  H   THR E  91    2.379  33.855 -58.045  1.00 21.06        H

ATOM   9174  HA  THR E  91     4.634  32.641 -57.142  1.00 17.98        H

ATOM   9175  HB  THR E  91    5.971  34.239 -58.274  1.00 22.03        H
ATOM   9176  HG1 THR E  91     4.394  35.756 -58.607  1.00 21.30
H
ATOM   9177 HG21 THR E  91     5.830  33.299 -60.419  1.00 25.58
H
ATOM   9178 HG22 THR E  91     5.712  32.161 -59.329  1.00 25.58
H
ATOM   9179 HG23 THR E  91     4.417  32.689 -60.064  1.00 25.58
H

ATOM   9180  N   PHE E  92    5.232  34.465 -55.523  1.00 17.07        N

ATOM   9181  CA  PHE E  92     5.250  35.231 -54.287  1.00 19.25        C

ATOM   9182  C   PHE E  92    6.563  35.971 -54.119  1.00 24.03        C

ATOM   9183  O   PHE E  92    7.601  35.561 -54.641  1.00 20.37        O

ATOM   9184  CB  PHE E  92    5.015  34.308 -53.091  1.00 18.30        C
ATOM   9185  CG  PHE E  92     3.758  33.502 -53.192  1.00 20.97
C
ATOM   9186  CD1 PHE E  92     2.557  34.006 -52.722  1.00 19.39
C
ATOM   9187  CD2 PHE E  92     3.773  32.244 -53.771  1.00 24.13
C
ATOM   9188  CE1 PHE E  92     1.397  33.266 -52.819  1.00 18.89
C
ATOM   9189  CE2 PHE E  92     2.616  31.498 -53.871  1.00 17.65
C

ATOM   9190  CZ  PHE E  92     1.426  32.010 -53.395  1.00 24.23        C

ATOM   9191  H   PHE E  92    5.957  34.027 -55.672  1.00 20.48        H

ATOM   9192  HA  PHE E  92    4.535  35.885 -54.308  1.00 23.10        H
ATOM   9193  HB2 PHE E  92     5.760  33.690 -53.022  1.00 21.96
H
ATOM   9194  HB3 PHE E  92     4.959  34.846 -52.287  1.00 21.96
H
ATOM   9195  HD1 PHE E  92     2.533  34.850 -52.333  1.00 23.27
H
ATOM   9196  HD2 PHE E  92     4.573  31.895 -54.092  1.00 28.95
H
ATOM   9197  HE1 PHE E  92     0.596  33.612 -52.498  1.00 22.66
H
ATOM   9198  HE2 PHE E  92     2.638  30.653 -54.259  1.00 21.19
H

ATOM   9199  HZ  PHE E  92     0.644  31.510 -53.461  1.00 29.08        H

ATOM   9200  N   ASP E  93    6.497  37.065 -53.374  1.00 20.31        N


ATOM   9201  CA  ASP E  93     7.647  37.915 -53.135  1.00 22.87        C

ATOM   9202  C   ASP E  93    7.507  38.528 -51.752  1.00 21.59        C

ATOM   9203  O   ASP E  93    6.409  38.918 -51.354  1.00 20.77        O

ATOM   9204  CB  ASP E  93     7.743  39.002 -54.211  1.00 24.57        C
ATOM   9205  CG  ASP E  93     8.998  39.840 -54.085  1.00 32.86
C
ATOM   9206  OD1 ASP E  93     9.991  39.332 -53.526  1.00 32.28
O1-
ATOM   9207  OD2 ASP E  93     8.994  41.002 -54.550  1.00 30.92
O

ATOM   9208  H   ASP E  93    5.779  37.340 -52.989  1.00 24.37        H

ATOM   9209  HA  ASP E  93     8.458  37.382 -53.158  1.00 27.44        H
ATOM   9210  HB2 ASP E  93     7.748  38.582 -55.085  1.00 29.48
H
ATOM   9211  HB3 ASP E  93     6.978  39.594 -54.131  1.00 29.48
H

ATOM   9212  N   GLN E  94    8.601  38.592 -51.005  1.00 21.93        N

ATOM   9213  CA  GLN E  94     8.567  39.269 -49.718  1.00 21.60        C

ATOM   9214  C   GLN E  94    9.897  39.936 -49.420  1.00 25.96        C

ATOM   9215  O   GLN E  94   10.960  39.425 -49.778  1.00 22.95        O

ATOM   9216  CB  GLN E  94     8.184  38.298 -48.590  1.00 18.61        C
ATOM   9217  CG  GLN E  94     9.153  37.149 -48.353  1.00 22.48
C
ATOM   9218  CD  GLN E  94     8.735  36.253 -47.190  1.00 31.39
C
ATOM   9219  OE1 GLN E  94     7.596  36.309 -46.716  1.00 22.85
O
ATOM   9220  NE2 GLN E  94     9.662  35.422 -46.724  1.00 33.95
N
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ATOM  2921  CB  MET B 155      3.401  19.261 -31.167  1.00 14.63
C
ATOM  2922  CG  MET B 155      4.639  19.948 -31.731  1.00 14.92
C
ATOM  2923  SD  MET B 155      5.043  19.295 -33.366  1.00 14.73
S
ATOM  2924  CE  MET B 155      6.245  20.481 -33.946  1.00 14.31
C
ATOM  2925  H   MET B 155      3.541  21.645 -29.955  1.00 11.93
H
ATOM  2926  HA  MET B 155      2.086  19.377 -29.600  1.00 17.69
H
ATOM  2927  HB2 MET B 155      3.601  18.315 -31.088  1.00 17.56
H
ATOM  2928  HB3 MET B 155      2.680  19.389 -31.803  1.00 17.56
H
ATOM  2929  HG2 MET B 155      4.470  20.900 -31.814  1.00 17.90
H
ATOM  2930  HG3 MET B 155      5.393  19.789 -31.142  1.00 17.90
H
ATOM  2931  HE1 MET B 155      6.539  20.224 -34.834  1.00 17.17
H
ATOM  2932  HE2 MET B 155      5.834  21.359 -33.973  1.00 17.17
H
ATOM  2933  HE3 MET B 155      7.000  20.487 -33.337  1.00 17.17
H
ATOM  2934  N   GLY B 156      4.118  18.098 -28.488  1.00 18.14
N
ATOM  2935  CA  GLY B 156      4.866  17.615 -27.341  1.00 17.15
C


ATOM  2936  C   GLY B 156      6.372  17.566 -27.518  1.00 20.32
C
ATOM  2937  O   GLY B 156      7.040  16.765 -26.871  1.00 22.44
O
ATOM  2938  H   GLY B 156      3.809  17.474 -28.993  1.00 19.37
H
ATOM  2939  HA2 GLY B 156      4.674  18.186 -26.580  1.00 20.58
H
ATOM  2940  HA3 GLY B 156      4.563  16.719 -27.125  1.00 20.58
H
ATOM  2941  N   LEU B 157      6.907  18.425 -28.379  1.00 19.69
N
ATOM  2942  CA  LEU B 157      8.338  18.436 -28.667  1.00 18.90
C
ATOM  2943  C   LEU B 157      9.056  19.485 -27.826  1.00 26.50
C
ATOM  2944  O   LEU B 157      8.641  20.647 -27.784  1.00 20.35
O
ATOM  2945  CB  LEU B 157      8.575  18.704 -30.151  1.00 21.54
C
ATOM  2946  CG  LEU B 157      9.956  18.345 -30.698  1.00 24.32
C
ATOM  2947  CD1 LEU B 157     10.180  16.839 -30.673  1.00 23.00
C
ATOM  2948  CD2 LEU B 157     10.107  18.882 -32.106  1.00 21.66
C
ATOM  2949  H   LEU B 157      6.459  19.017 -28.813  1.00 23.63
H
ATOM  2950  HA  LEU B 157      8.713  17.567 -28.453  1.00 22.67
H
ATOM  2951  HB2 LEU B 157      7.924  18.195 -30.659  1.00 25.85
H
ATOM  2952  HB3 LEU B 157      8.440  19.651 -30.313  1.00 25.85
H
ATOM  2953  HG  LEU B 157     10.635  18.760 -30.143  1.00 29.18
H
ATOM  2954 HD11 LEU B 157     11.063  16.646 -31.026  1.00 27.60
H
ATOM  2955 HD12 LEU B 157     10.114  16.526 -29.757  1.00 27.60
H
ATOM  2956 HD13 LEU B 157      9.504  16.411 -31.220  1.00 27.60
H
ATOM  2957 HD21 LEU B 157     10.986  18.647 -32.441  1.00 25.99
H
ATOM  2958 HD22 LEU B 157      9.422  18.488 -32.669  1.00 25.99
H
ATOM  2959 HD23 LEU B 157     10.006  19.847 -32.088  1.00 25.99
H
ATOM  2960  N   VAL B 158     10.131  19.072 -27.160  1.00 22.65
N
ATOM  2961  CA  VAL B 158     10.884  19.968 -26.289  1.00 21.67
C
ATOM  2962  C   VAL B 158     12.384  19.821 -26.504  1.00 23.85
C
ATOM  2963  O   VAL B 158     12.879  18.732 -26.798  1.00 21.21
O
ATOM  2964  CB  VAL B 158     10.560  19.711 -24.804  1.00 27.43
C
ATOM  2965  CG1 VAL B 158      9.115  20.099 -24.502  1.00 26.57
C
ATOM  2966  CG2 VAL B 158     10.814  18.253 -24.446  1.00 29.47
C
ATOM  2967  H   VAL B 158     10.447  18.273 -27.197  1.00 27.18
H
ATOM  2968  HA  VAL B 158     10.641  20.885 -26.494  1.00 26.01
H
ATOM  2969  HB  VAL B 158     11.139  20.261 -24.254  1.00 32.92
H
ATOM  2970 HG11 VAL B 158      8.933  19.929 -23.565  1.00 31.88
H

ATOM  9221  H   GLN E  94      9.365  38.258 -51.217  1.00 26.32           H
ATOM  9222  HA  GLN E  94      7.890  39.963 -49.750  1.00 25.92           H
ATOM  9223  HB2 GLN E  94      8.120  38.800 -47.762  1.00 22.33
H
ATOM  9224  HB3 GLN E  94      7.320  37.910 -48.799  1.00 22.33
H
ATOM  9225  HG2 GLN E  94      9.197  36.603 -49.153  1.00 26.97
H
ATOM  9226  HG3 GLN E  94     10.030  37.513 -48.151  1.00 26.97
H
ATOM  9227 HE21 GLN E  94      9.478  34.895 -46.070  1.00 40.74
H
ATOM  9228 HE22 GLN E  94     10.446  35.411 -47.078  1.00 40.74
H

ATOM  9229  N   ASP E  95      9.812  41.095 -48.774  1.00 19.56           N
ATOM  9230  CA  ASP E  95     10.979  41.896 -48.435  1.00 23.21
C

ATOM  9231  C   ASP E  95     10.903  42.330 -46.983  1.00 20.85           C

ATOM  9232  O   ASP E  95      9.814  42.501 -46.431  1.00 16.26           O
ATOM  9233  CB  ASP E  95     11.077  43.129 -49.338  1.00 22.27
C
ATOM  9234  CG  ASP E  95     11.333  42.774 -50.787  1.00 29.57
C
ATOM  9235  OD1 ASP E  95     12.132  41.848 -51.043  1.00 35.45
O


ATOM  9236  OD2 ASP E  95     10.733  43.425 -51.668  1.00 31.38
O1-

ATOM  9237  H   ASP E  95      9.070  41.446 -48.517  1.00 23.47           H
ATOM  9238  HA  ASP E  95     11.781  41.364 -48.554  1.00 27.85
H
ATOM  9239  HB2 ASP E  95     10.242  43.621 -49.293  1.00 26.72
H
ATOM  9240  HB3 ASP E  95     11.808  43.687 -49.032  1.00 26.72
H

ATOM  9241  N   TYR E  96     12.072  42.504 -46.380  1.00 15.26           N
ATOM  9242  CA  TYR E  96     12.200  43.027 -45.028  1.00 16.09
C

ATOM  9243  C   TYR E  96     13.083  44.268 -45.060  1.00 18.85           C

ATOM  9244  O   TYR E  96     14.186  44.218 -45.609  1.00 18.14           O
ATOM  9245  CB  TYR E  96     12.814  41.990 -44.091  1.00 17.29
C
ATOM  9246  CG  TYR E  96     12.171  40.625 -44.131  1.00 19.72
C
ATOM  9247  CD1 TYR E  96     12.520  39.700 -45.108  1.00 19.79
C
ATOM  9248  CD2 TYR E  96     11.234  40.250 -43.177  1.00 18.62
C
ATOM  9249  CE1 TYR E  96     11.944  38.446 -45.140  1.00 22.85
C
ATOM  9250  CE2 TYR E  96     10.652  38.999 -43.201  1.00 20.70
C
ATOM  9251  CZ  TYR E  96     11.012  38.099 -44.185  1.00 20.85
C
ATOM  9252  OH  TYR E  96     10.437  36.849 -44.213  1.00 24.95
O

ATOM  9253  H   TYR E  96     12.828  42.319 -46.746  1.00 18.31           H
ATOM  9254  HA  TYR E  96     11.326  43.275 -44.688  1.00 19.31
H
ATOM  9255  HB2 TYR E  96     13.749  41.879 -44.325  1.00 20.75
H
ATOM  9256  HB3 TYR E  96     12.745  42.318 -43.181  1.00 20.75
H
ATOM  9257  HD1 TYR E  96     13.149  39.930 -45.753  1.00 23.75
H
ATOM  9258  HD2 TYR E  96     10.992  40.855 -42.513  1.00 22.34
H
ATOM  9259  HE1 TYR E  96     12.184  37.838 -45.801  1.00 27.42
H
ATOM  9260  HE2 TYR E  96     10.024  38.762 -42.558  1.00 24.84
H

ATOM  9261  HH  TYR E  96      9.891  36.770 -43.580  1.00 29.94           H

ATOM  9262  N   LEU E  97     12.606  45.365 -44.474  1.00 14.66           N
ATOM  9263  CA  LEU E  97     13.385  46.602 -44.404  1.00 20.71
C

ATOM  9264  C   LEU E  97     13.605  47.025 -42.961  1.00 17.15           C

ATOM  9265  O   LEU E  97     12.681  46.998 -42.143  1.00 15.93           O
ATOM  9266  CB  LEU E  97     12.698  47.752 -45.151  1.00 18.74
C
ATOM  9267  CG  LEU E  97     12.170  47.515 -46.563  1.00 24.83
C
ATOM  9268  CD1 LEU E  97     11.391  48.729 -47.041  1.00 31.08
C
ATOM  9269  CD2 LEU E  97     13.316  47.219 -47.496  1.00 24.75
C

ATOM  9270  H   LEU E  97     11.831  45.420 -44.106  1.00 17.60           H
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ATOM   2971 HG12 VAL B 158     8.995  21.041 -24.698  1.00 31.88
H
ATOM   2972 HG13 VAL B 158     8.524  19.567 -25.056  1.00 31.88
H
ATOM   2973 HG21 VAL B 158    10.602  18.117 -23.509  1.00 35.36
H
ATOM   2974 HG22 VAL B 158    10.249  17.689 -24.998  1.00 35.36
H
ATOM   2975 HG23 VAL B 158    11.747  18.046 -24.608  1.00 35.36
H
ATOM   2976  N   HIS B 159    13.096  20.933 -26.357  1.00 22.33
N
ATOM   2977  CA  HIS B 159    14.541  20.959 -26.523  1.00 29.47
C
ATOM   2978  C   HIS B 159    15.215  20.956 -25.158  1.00 41.69
C
ATOM   2979  O   HIS B 159    14.926  21.802 -24.315  1.00 37.55
O
ATOM   2980  CB  HIS B 159    14.961  22.189 -27.327  1.00 33.99
C
ATOM   2981  CG  HIS B 159    16.430  22.259 -27.601  1.00 41.87
C
ATOM   2982  ND1 HIS B 159    17.272  23.120 -26.929  1.00 45.71
N
ATOM   2983  CD2 HIS B 159    17.207  21.576 -28.474  1.00 42.10
C
ATOM   2984  CE1 HIS B 159    18.505  22.962 -27.377  1.00 52.16
C
ATOM   2985  NE2 HIS B 159    18.492  22.032 -28.314  1.00 50.26
N
ATOM   2986  H   HIS B 159    12.757  21.698 -26.158  1.00 26.80
H
ATOM   2987  HA  HIS B 159    14.824  20.167 -27.006  1.00 35.36
H
ATOM   2988  HB2 HIS B 159    14.501  22.177 -28.180  1.00 40.79
H
ATOM   2989  HB3 HIS B 159    14.714  22.985 -26.831  1.00 40.79
H
ATOM   2990  HD1 HIS B 159    17.033  23.672 -26.315  1.00 54.85
H
ATOM   2991  HD2 HIS B 159    16.923  20.920 -29.070  1.00 50.52
H
ATOM   2992  HE1 HIS B 159    19.255  23.428 -27.083  1.00 62.60
H
ATOM   2993  HE2 HIS B 159    19.178  21.757 -28.754  1.00 60.31
H
ATOM   2994  N   ILE B 160    16.102  19.991 -24.944  1.00 47.95
N
ATOM   2995  CA  ILE B 160    16.840  19.885 -23.692  1.00 58.27
C
ATOM   2996  C   ILE B 160    18.248  20.455 -23.880  1.00 66.09
C
ATOM   2997  O   ILE B 160    19.148  19.743 -24.324  1.00 70.94
O
ATOM   2998  CB  ILE B 160    16.936  18.419 -23.208  1.00 63.95
C
ATOM   2999  CG1 ILE B 160    15.588  17.704 -23.348  1.00 56.29
C
ATOM   3000  CG2 ILE B 160    17.414  18.368 -21.768  1.00 67.71
C
ATOM   3001  CD1 ILE B 160    14.461  18.326 -22.545  1.00 48.29
C
ATOM   3002  H   ILE B 160    16.295  19.377 -25.514  1.00 57.54
H
ATOM   3003  HA  ILE B 160    16.389  20.404 -23.007  1.00 69.92
H
ATOM   3004  HB  ILE B 160    17.585  17.958 -23.761  1.00 76.73
H
ATOM   3005 HG12 ILE B 160    15.326  17.717 -24.282  1.00 67.54
H


ATOM   3006 HG13 ILE B 160    15.690  16.787 -23.050  1.00 67.54
H
ATOM   3007 HG21 ILE B 160    17.467  17.442 -21.486  1.00 81.25
H
ATOM   3008 HG22 ILE B 160    18.290  18.782 -21.712  1.00 81.25
H
ATOM   3009 HG23 ILE B 160    16.784  18.849 -21.209  1.00 81.25
H
ATOM   3010 HD11 ILE B 160    13.650  17.815 -22.691  1.00 57.95
H
ATOM   3011 HD12 ILE B 160    14.698  18.311 -21.605  1.00 57.95
H
ATOM   3012 HD13 ILE B 160    14.332  19.242 -22.839  1.00 57.95
H
ATOM   3013  N   PRO B 161    18.448  21.748 -23.558  1.00 69.70
N
ATOM   3014  CA  PRO B 161    19.784  22.316 -23.778  1.00 73.07
C
ATOM   3015  C   PRO B 161    20.833  21.764 -22.813  1.00 80.56
C
ATOM   3016  O   PRO B 161    20.862  22.147 -21.644  1.00 84.37
O
ATOM   3017  CB  PRO B 161    19.570  23.817 -23.556  1.00 69.03
C
ATOM   3018  CG  PRO B 161    18.392  23.902 -22.659  1.00 63.55
C
ATOM   3019  CD  PRO B 161    17.503  22.758 -23.048  1.00 60.94
C
ATOM   3020  HA  PRO B 161    20.072  22.162 -24.692  1.00 87.68
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ATOM   9271  HA  LEU E  97    14.253  46.453 -44.811  1.00 24.85
H
ATOM   9272  HB2 LEU E  97    11.942  48.039 -44.617  1.00 22.48
H
ATOM   9273  HB3 LEU E  97    13.334  48.482 -45.212  1.00 22.48
H
ATOM   9274  HG  LEU E  97    11.574  46.750 -46.559  1.00 29.80
H
ATOM   9275 HD11 LEU E  97    11.064  48.560 -47.938  1.00 37.30
H
ATOM   9276 HD12 LEU E  97    10.645  48.881 -46.440  1.00 37.30
H
ATOM   9277 HD13 LEU E  97    11.979  49.500 -47.043  1.00 37.30
H
ATOM   9278 HD21 LEU E  97    12.965  47.071 -48.388  1.00 29.70
H
ATOM   9279 HD22 LEU E  97    13.923  47.976 -47.500  1.00 29.70
H
ATOM   9280 HD23 LEU E  97    13.778  46.425 -47.186  1.00 29.70
H

ATOM   9281  N   TYR E  98    14.840  47.417 -42.665  1.00 15.72           N
ATOM   9282  CA  TYR E  98    15.182  48.046 -41.401  1.00 18.67
C

ATOM   9283  C   TYR E  98    15.675  49.456 -41.704  1.00 22.10           C

ATOM   9284  O   TYR E  98    16.701  49.630 -42.363  1.00 18.15           O
ATOM   9285  CB  TYR E  98    16.247  47.242 -40.655  1.00 19.19
C
ATOM   9286  CG  TYR E  98    16.571  47.797 -39.287  1.00 23.54
C
ATOM   9287  CD1 TYR E  98    17.573  48.742 -39.119  1.00 25.80
C
ATOM   9288  CD2 TYR E  98    15.864  47.387 -38.165  1.00 22.25
C
ATOM   9289  CE1 TYR E  98    17.866  49.257 -37.872  1.00 24.47
C
ATOM   9290  CE2 TYR E  98    16.153  47.895 -36.913  1.00 22.72
C
ATOM   9291  CZ  TYR E  98    17.154  48.829 -36.774  1.00 26.85
C
ATOM   9292  OH  TYR E  98    17.446  49.337 -35.533  1.00 29.33
O

ATOM   9293  H   TYR E  98    15.511  47.325 -43.196  1.00 18.86           H
ATOM   9294  HA  TYR E  98    14.392  48.107 -40.843  1.00 22.40
H
ATOM   9295  HB2 TYR E  98    15.930  46.333 -40.540  1.00 23.03
H
ATOM   9296  HB3 TYR E  98    17.064  47.243 -41.177  1.00 23.03
H
ATOM   9297  HD1 TYR E  98    18.056  49.032 -39.859  1.00 30.96
H
ATOM   9298  HD2 TYR E  98    15.187  46.755 -38.256  1.00 26.70
H
ATOM   9299  HE1 TYR E  98    18.543  49.887 -37.774  1.00 29.36
H
ATOM   9300  HE2 TYR E  98    15.674  47.609 -36.169  1.00 27.26
H
ATOM   9301  HH  TYR E  98    16.941  48.995 -34.956  1.00 35.20
H

ATOM   9302  N   ASN E  99    14.934  50.454 -41.232  1.00 19.00           N
ATOM   9303  CA  ASN E  99    15.201  51.846 -41.579  1.00 17.34
C

ATOM   9304  C   ASN E  99    15.317  52.027 -43.095  1.00 24.69           C

ATOM   9305  O   ASN E  99    16.193  52.735 -43.589  1.00 20.15           O


ATOM   9306  CB  ASN E  99    16.465  52.334 -40.868  1.00 18.40
C
ATOM   9307  CG  ASN E  99    16.290  52.391 -39.355  1.00 18.42
C
ATOM   9308  OD1 ASN E  99    15.170  52.483 -38.856  1.00 19.63
O
ATOM   9309  ND2 ASN E  99    17.393  52.334 -38.623  1.00 23.08
N

ATOM   9310  H   ASN E  99    14.263  50.350 -40.704  1.00 22.81           H
ATOM   9311  HA  ASN E  99    14.460  52.391 -41.272  1.00 20.80
H
ATOM   9312  HB2 ASN E  99    17.195  51.726 -41.064  1.00 22.08
H
ATOM   9313  HB3 ASN E  99    16.681  53.226 -41.180  1.00 22.08
H
ATOM   9314 HD21 ASN E  99    17.342  52.363 -37.765  1.00 27.69
H
ATOM   9315 HD22 ASN E  99    18.161  52.269 -39.006  1.00 27.69
H
ATOM   9316  N   GLY E 100    14.419  51.373 -43.825  1.00 19.11
N
ATOM   9317  CA  GLY E 100    14.309  51.561 -45.260  1.00 22.08
C
ATOM   9318  C   GLY E 100    15.283  50.739 -46.080  1.00 25.95
C
ATOM   9319  O   GLY E 100    15.210  50.742 -47.308  1.00 24.82
O
ATOM   9320  H   GLY E 100    13.856  50.807 -43.505  1.00 22.93
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H
ATOM  3021  HB2 PRO B 161    20.354  24.200 -23.132  1.00 82.83
H
ATOM  3022  HB3 PRO B 161    19.390  24.251 -24.404  1.00 82.83
H
ATOM  3023  HG2 PRO B 161    18.678  23.814 -21.737  1.00 76.25
H
ATOM  3024  HG3 PRO B 161    17.939  24.749 -22.798  1.00 76.25
H
ATOM  3025  HD2 PRO B 161    17.031  22.417 -22.272  1.00 73.12
H
ATOM  3026  HD3 PRO B 161    16.888  23.029 -23.748  1.00 73.12
H
ATOM  3027  N   THR B 162   21.679  20.880 -23.334  1.00 82.80
N
ATOM  3028  CA  THR B 162    22.732  20.185 -22.591  1.00 89.98
C
ATOM  3029  C   THR B 162   23.165  19.019 -23.470  1.00 91.72
C
ATOM  3030  O   THR B 162   24.340  18.653 -23.513  1.00 95.85
O
ATOM  3031  CB  THR B 162    22.284  19.660 -21.201  1.00 95.35
C
ATOM  3032  OG1 THR B 162    23.364  18.945 -20.585  1.00 96.68
O
ATOM  3033  CG2 THR B 162    21.080  18.741 -21.324  1.00 98.91
C
ATOM  3034  H   THR B 162   21.661  20.654 -24.164  1.00 99.36
H
ATOM  3035  HA  THR B 162    23.490  20.778 -22.468  1.00107.98
H
ATOM  3036  HB  THR B 162    22.037  20.412 -20.640  1.00114.42
H
ATOM  3037  HG1 THR B 162    23.588  18.294 -21.066  1.00116.01
H
ATOM  3038 HG21 THR B 162    20.815  18.424 -20.446  1.00118.69
H
ATOM  3039 HG22 THR B 162    20.337  19.220 -21.724  1.00118.69
H
ATOM  3040 HG23 THR B 162    21.301  17.979 -21.881  1.00118.69
H
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H
ATOM  9321  HA2 GLY E 100    13.410  51.329 -45.541  1.00 26.49
H
ATOM  9322  HA3 GLY E 100    14.457  52.497 -45.467  1.00 26.49
H
ATOM  9323  N   GLU E 101   16.189  50.032 -45.410  1.00 23.34
N
ATOM  9324  CA  GLU E 101    17.208  49.242 -46.095  1.00 21.40
C
ATOM  9325  C   GLU E 101   16.874  47.756 -46.068  1.00 25.31
C
ATOM  9326  O   GLU E 101   16.667  47.178 -44.996  1.00 20.68
O
ATOM  9327  CB  GLU E 101    18.576  49.483 -45.457  1.00 28.51
C
ATOM  9328  CG  GLU E 101    19.701  48.678 -46.079  1.00 36.34
C
ATOM  9329  CD  GLU E 101    21.060  49.064 -45.529  1.00 50.28
C
ATOM  9330  OE1 GLU E 101    21.512  50.198 -45.804  1.00 53.61
O
ATOM  9331  OE2 GLU E 101    21.673  48.237 -44.819  1.00 56.44
O1-
ATOM  9332  H   GLU E 101   16.236  49.993 -44.552  1.00 28.01
H
ATOM  9333  HA  GLU E 101    17.255  49.522 -47.022  1.00 25.68
H
ATOM  9334  HB2 GLU E 101    18.800  50.422 -45.548  1.00 34.21
H
ATOM  9335  HB3 GLU E 101    18.528  49.247 -44.518  1.00 34.21
H
ATOM  9336  HG2 GLU E 101    19.558  47.737 -45.893  1.00 43.61
H
ATOM  9337  HG3 GLU E 101    19.709  48.831 -47.037  1.00 43.61
H
ATOM  9338  N   GLU E 102   16.828  47.141 -47.248  1.00 19.84
N
ATOM  9339  CA  GLU E 102    16.530  45.717 -47.360  1.00 21.48
C
ATOM  9340  C   GLU E 102   17.575  44.873 -46.653  1.00 22.97
C
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ATOM  3041  N   ASN B 163   22.186  18.447 -24.166  1.00 91.10
N
ATOM  3042  CA  ASN B 163    22.418  17.423 -25.177  1.00 91.71
C
ATOM  3043  C   ASN B 163   22.143  17.982 -26.573  1.00 82.79
C
ATOM  3044  O   ASN B 163   22.538  17.393 -27.580  1.00 78.88
O
ATOM  3045  CB  ASN B 163    21.543  16.190 -24.907  1.00 94.16
C
ATOM  3046  CG  ASN B 163    20.053  16.513 -24.865  1.00 93.87
C
ATOM  3047  OD1 ASN B 163    19.539  17.272 -25.687  1.00 91.61
O
ATOM  3048  ND2 ASN B 163    19.353  15.925 -23.900  1.00 94.10
N
ATOM  3049  H   ASN B 163   21.354  18.643 -24.066  1.00109.32
H
ATOM  3050  HA  ASN B 163    23.347  17.147 -25.141  1.00110.05
H
ATOM  3051  HB2 ASN B 163    21.688  15.540 -25.612  1.00112.99
H
ATOM  3052  HB3 ASN B 163    21.791  15.810 -24.050  1.00112.99
H
ATOM  3053 HD21 ASN B 163    18.509  16.073 -23.831  1.00112.92
H
ATOM  3054 HD22 ASN B 163    19.744  15.398 -23.345  1.00112.92
H
ATOM  3055  N   GLY B 164   21.463  19.124 -26.622  1.00 81.60
N
ATOM  3056  CA  GLY B 164    21.145  19.781 -27.877  1.00 76.23
C
ATOM  3057  C   GLY B 164   20.312  18.905 -28.793  1.00 73.18
C
ATOM  3058  O   GLY B 164   20.669  18.689 -29.951  1.00 76.11
O
ATOM  3059  H   GLY B 164   21.172  19.542 -25.929  1.00 97.92
H
ATOM  3060  HA2 GLY B 164    20.652  20.597 -27.700  1.00 91.48
H
ATOM  3061  HA3 GLY B 164    21.967  20.012 -28.338  1.00 91.48
H
ATOM  3062  N   SER B 165   19.200  18.399 -28.269  1.00 64.95
N
ATOM  3063  CA  SER B 165    18.326  17.518 -29.031  1.00 57.43
C
ATOM  3064  C   SER B 165   16.861  17.810 -28.744  1.00 45.57
C
ATOM  3065  O   SER B 165   16.511  18.287 -27.663  1.00 44.26
O
ATOM  3066  CB  SER B 165    18.635  16.056 -28.711  1.00 62.72
C
ATOM  3067  OG  SER B 165    18.321  15.754 -27.362  1.00 67.74
O
ATOM  3068  H   SER B 165   18.928  18.554 -27.468  1.00 77.94
H
ATOM  3069  HA  SER B 165    18.481  17.659 -29.978  1.00 68.91
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ATOM  9341  O   GLU E 102   18.764  45.180 -46.681  1.00 23.40
O
ATOM  9342  CB  GLU E 102    16.447  45.279 -48.826  1.00 28.87
C
ATOM  9343  CG  GLU E 102    15.053  45.320 -49.420  1.00 34.38
C
ATOM  9344  CD  GLU E 102    14.891  44.382 -50.604  1.00 39.93
C
ATOM  9345  OE1 GLU E 102    14.841  43.150 -50.386  1.00 41.37
O
ATOM  9346  OE2 GLU E 102    14.807  44.875 -51.749  1.00 49.33
O1-
ATOM  9347  H   GLU E 102   16.968  47.529 -48.003  1.00 23.81
H
ATOM  9348  HA  GLU E 102    15.671  45.541 -46.945  1.00 25.78
H
ATOM  9349  HB2 GLU E 102    17.009  45.865 -49.357  1.00 34.65
H
ATOM  9350  HB3 GLU E 102    16.769  44.367 -48.896  1.00 34.65
H
ATOM  9351  HG2 GLU E 102    14.413  45.059 -48.740  1.00 41.25
H
ATOM  9352  HG3 GLU E 102    14.866  46.222 -49.724  1.00 41.25
H
ATOM  9353  N   TYR E 103   17.121  43.797 -46.025  1.00 21.26
N
ATOM  9354  CA  TYR E 103    18.031  42.827 -45.444  1.00 20.13
C
ATOM  9355  C   TYR E 103   17.377  41.454 -45.470  1.00 20.08
C
ATOM  9356  O   TYR E 103   16.155  41.338 -45.607  1.00 18.12
O
ATOM  9357  CB  TYR E 103    18.430  43.236 -44.021  1.00 21.72
C
ATOM  9358  CG  TYR E 103    17.330  43.173 -42.978  1.00 21.02
C
ATOM  9359  CD1 TYR E 103    16.273  44.078 -42.985  1.00 21.46
C
ATOM  9360  CD2 TYR E 103    17.374  42.232 -41.961  1.00 19.71
C
ATOM  9361  CE1 TYR E 103    15.279  44.024 -42.020  1.00 14.20
C
ATOM  9362  CE2 TYR E 103    16.388  42.171 -40.994  1.00 15.96
C
ATOM  9363  CZ  TYR E 103    15.344  43.065 -41.029  1.00 14.97
C
ATOM  9364  OH  TYR E 103    14.370  43.002 -40.059  1.00 13.45
O
ATOM  9365  H   TYR E 103   16.289  43.607 -45.923  1.00 25.51
H
ATOM  9366  HA  TYR E 103    18.837  42.786 -45.982  1.00 24.15
H
ATOM  9367  HB2 TYR E 103    19.144  42.651 -43.724  1.00 26.06
H
ATOM  9368  HB3 TYR E 103    18.752  44.151 -44.046  1.00 26.06
H
ATOM  9369  HD1 TYR E 103    16.226  44.722 -43.654  1.00 25.75
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H
ATOM  3070  HB2 SER B 165     18.106  15.488 -29.292  1.00 75.26
H
ATOM  3071  HB3 SER B 165     19.580  15.894 -28.859  1.00 75.26
H
ATOM  3072  HG  SER B 165     17.505  15.890 -27.219  1.00 81.29
H
ATOM  3073  N   TRP B 166    16.012  17.515 -29.723  1.00 40.98
N
ATOM  3074  CA  TRP B 166     14.569  17.656 -29.572  1.00 34.55
C
ATOM  3075  C   TRP B 166    13.945  16.298 -29.288  1.00 31.08
C


ATOM  3076  O   TRP B 166    14.212  15.330 -29.999  1.00 34.34
O
ATOM  3077  CB  TRP B 166     13.953  18.265 -30.830  1.00 30.13
C
ATOM  3078  CG  TRP B 166     14.302  19.703 -31.041  1.00 30.81
C
ATOM  3079  CD1 TRP B 166     15.354  20.196 -31.756  1.00 36.26
C
ATOM  3080  CD2 TRP B 166     13.591  20.841 -30.538  1.00 28.21
C
ATOM  3081  NE1 TRP B 166     15.344  21.569 -31.726  1.00 34.03
N
ATOM  3082  CE2 TRP B 166     14.272  21.990 -30.984  1.00 27.63
C
ATOM  3083  CE3 TRP B 166     12.446  20.999 -29.751  1.00 23.82
C
ATOM  3084  CZ2 TRP B 166     13.846  23.280 -30.671  1.00 27.91
C
ATOM  3085  CZ3 TRP B 166     12.024  22.281 -29.440  1.00 24.12
C
ATOM  3086  CH2 TRP B 166     12.722  23.405 -29.901  1.00 25.08
C
ATOM  3087  H   TRP B 166    16.252  17.226 -30.496  1.00 49.18
H
ATOM  3088  HA  TRP B 166     14.379  18.243 -28.824  1.00 41.46
H
ATOM  3089  HB2 TRP B 166     14.265  17.769 -31.603  1.00 36.16
H
ATOM  3090  HB3 TRP B 166     12.987  18.201 -30.767  1.00 36.16
H
ATOM  3091  HD1 TRP B 166     15.987  19.677 -32.198  1.00 43.51
H
ATOM  3092  HE1 TRP B 166     15.918  22.081 -32.111  1.00 40.83
H
ATOM  3093  HE3 TRP B 166     11.977  20.257 -29.442  1.00 28.59
H
ATOM  3094  HZ2 TRP B 166     14.308  24.028 -30.975  1.00 33.49
H
ATOM  3095  HZ3 TRP B 166     11.263  22.398 -28.918  1.00 28.94
H
ATOM  3096  HH2 TRP B 166     12.416  24.254 -29.676  1.00 30.10
H
ATOM  3097  N   GLN B 167    13.119  16.225 -28.250  1.00 27.39
N
ATOM  3098  CA  GLN B 167     12.485  14.965 -27.879  1.00 30.85
C
ATOM  3099  C   GLN B 167    11.020  15.147 -27.492  1.00 26.83
C
ATOM  3100  O   GLN B 167    10.604  16.219 -27.048  1.00 24.25
O
ATOM  3101  CB  GLN B 167     13.248  14.306 -26.729  1.00 31.47
C
ATOM  3102  CG  GLN B 167     13.319  15.142 -25.462  1.00 39.54
C
ATOM  3103  CD  GLN B 167     13.995  14.409 -24.315  1.00 47.76
C
ATOM  3104  OE1 GLN B 167     13.559  14.498 -23.168  1.00 47.44
O
ATOM  3105  NE2 GLN B 167     15.066  13.683 -24.618  1.00 48.92
N
ATOM  3106  H   GLN B 167    12.910  16.889 -27.745  1.00 32.87
H
ATOM  3107  HA  GLN B 167     12.517  14.364 -28.639  1.00 37.02
H
ATOM  3108  HB2 GLN B 167     12.811  13.469 -26.505  1.00 37.76
H
ATOM  3109  HB3 GLN B 167     14.157  14.132 -27.018  1.00 37.76
H
ATOM  3110  HG2 GLN B 167     13.827  15.949 -25.644  1.00 47.45
H


ATOM  3111  HG3 GLN B 167     12.419  15.371 -25.183  1.00 47.45
H
ATOM  3112 HE21 GLN B 167     15.482  13.251 -24.002  1.00 58.70
H
ATOM  3113 HE22 GLN B 167     15.344  13.645 -25.431  1.00 58.70
H
ATOM  3114  N   TRP B 168    10.249  14.079 -27.668  1.00 23.01
N
ATOM  3115  CA  TRP B 168     8.838  14.077 -27.318  1.00 26.18
C
ATOM  3116  C   TRP B 168     8.659  13.855 -25.826  1.00 24.45
C
ATOM  3117  O   TRP B 168     9.611  13.512 -25.128  1.00 28.38
O
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H
ATOM  9370  HD2 TYR E 103     18.076  41.623 -41.935  1.00 23.65
H
ATOM  9371  HE1 TYR E 103     14.573  44.630 -42.040  1.00 17.04
H
ATOM  9372  HE2 TYR E 103     16.430  41.528 -40.324  1.00 19.15
H
ATOM  9373  HH  TYR E 103     14.536  42.375 -39.526  1.00 16.14
H
ATOM  9374  N   THR E 104    18.199  40.415 -45.378  1.00 18.46
N
ATOM  9375  CA  THR E 104     17.706  39.043 -45.423  1.00 21.91
C


ATOM  9376  C   THR E 104    18.453  38.129 -44.461  1.00 20.34
C
ATOM  9377  O   THR E 104    18.024  37.003 -44.211  1.00 22.09
O
ATOM  9378  CB  THR E 104     17.830  38.452 -46.844  1.00 22.12
C
ATOM  9379  OG1 THR E 104     19.214  38.270 -47.169  1.00 23.24
O
ATOM  9380  CG2 THR E 104     17.185  39.369 -47.872  1.00 25.29
C
ATOM  9381  H   THR E 104    19.052  40.478 -45.288  1.00 22.15
H
ATOM  9382  HA  THR E 104     16.768  39.037 -45.176  1.00 26.30
H
ATOM  9383  HB  THR E 104     17.377  37.595 -46.875  1.00 26.55
H
ATOM  9384  HG1 THR E 104     19.287  37.948 -47.941  1.00 27.89
H
ATOM  9385 HG21 THR E 104     17.271  38.985 -48.758  1.00 30.35
H
ATOM  9386 HG22 THR E 104     16.244  39.485 -47.668  1.00 30.35
H
ATOM  9387 HG23 THR E 104     17.620  40.236 -47.860  1.00 30.35
H

ATOM  9388  N   VAL E 105    19.570  38.612 -43.925  1.00 23.32           N
ATOM  9389  CA  VAL E 105     20.446  37.784 -43.105  1.00 21.10
C

ATOM  9390  C   VAL E 105    20.199  37.994 -41.613  1.00 24.91           C
ATOM  9391  O   VAL E 105    20.247  39.116 -41.110  1.00 23.61
O
ATOM  9392  CB  VAL E 105     21.928  38.072 -43.414  1.00 26.35
C
ATOM  9393  CG1 VAL E 105     22.838  37.197 -42.560  1.00 25.25
C
ATOM  9394  CG2 VAL E 105     22.214  37.842 -44.892  1.00 28.02
C

ATOM  9395  H   VAL E 105    19.844  39.421 -44.023  1.00 27.98           H
ATOM  9396  HA  VAL E 105     20.275  36.850 -43.307  1.00 25.32
H
ATOM  9397  HB  VAL E 105     22.121  39.000 -43.210  1.00 31.62
H
ATOM  9398 HG11 VAL E 105     23.762  37.400 -42.775  1.00 30.30
H
ATOM  9399 HG12 VAL E 105     22.667  37.385 -41.624  1.00 30.30
H
ATOM  9400 HG13 VAL E 105     22.649  36.265 -42.751  1.00 30.30
H
ATOM  9401 HG21 VAL E 105     23.150  38.028 -45.064  1.00 33.63
H
ATOM  9402 HG22 VAL E 105     22.014  36.918 -45.111  1.00 33.63
H
ATOM  9403 HG23 VAL E 105     21.655  38.435 -45.417  1.00 33.63
H

ATOM  9404  N   LYS E 106    19.944  36.892 -40.916  1.00 28.46           N
ATOM  9405  CA  LYS E 106     19.775  36.896 -39.469  1.00 32.57
C

ATOM  9406  C   LYS E 106    21.133  36.835 -38.787  1.00 31.99           C
ATOM  9407  O   LYS E 106    21.998  36.062 -39.198  1.00 30.22
O
ATOM  9408  CB  LYS E 106     18.914  35.706 -39.033  1.00 33.52
C
ATOM  9409  CG  LYS E 106     18.726  35.569 -37.528  1.00 37.03
C
ATOM  9410  CD  LYS E 106     18.189  34.196 -37.165  1.00 45.30
C


ATOM  9411  CE  LYS E 106     17.955  34.067 -35.665  1.00 57.12
C
ATOM  9412  NZ  LYS E 106     19.210  34.241 -34.879  1.00 54.38
N1+

ATOM  9413  H   LYS E 106    19.862  36.112 -41.269  1.00 34.15           H
ATOM  9414  HA  LYS E 106     19.330  37.714 -39.198  1.00 39.08
H
ATOM  9415  HB2 LYS E 106     18.035  35.799 -39.431  1.00 40.22
H
ATOM  9416  HB3 LYS E 106     19.331  34.890 -39.351  1.00 40.22
H
ATOM  9417  HG2 LYS E 106     19.581  35.689 -37.086  1.00 44.43
H
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ATOM   3118  CB  TRP B 168       8.100  13.000 -28.108  1.00 25.30
C
ATOM   3119  CG  TRP B 168       8.224  13.197 -29.577  1.00 26.32
C
ATOM   3120  CD1 TRP B 168       8.994  12.476 -30.439  1.00 25.09
C
ATOM   3121  CD2 TRP B 168       7.571  14.198 -30.361  1.00 22.02
C
ATOM   3122  NE1 TRP B 168       8.856  12.963 -31.716  1.00 23.33
N
ATOM   3123  CE2 TRP B 168       7.985  14.020 -31.694  1.00 23.22
C
ATOM   3124  CE3 TRP B 168       6.670  15.228 -30.064  1.00 25.48
C
ATOM   3125  CZ2 TRP B 168       7.532  14.832 -32.731  1.00 20.73
C
ATOM   3126  CZ3 TRP B 168       6.220  16.029 -31.093  1.00 20.54
C
ATOM   3127  CH2 TRP B 168       6.653  15.829 -32.410  1.00 19.21
C
ATOM   3128  H   TRP B 168      10.527  13.334 -27.995  1.00 27.61
H
ATOM   3129  HA  TRP B 168       8.452  14.937 -27.544  1.00 31.42
H
ATOM   3130  HB2 TRP B 168       8.473  12.133 -27.888  1.00 30.36
H
ATOM   3131  HB3 TRP B 168       7.158  13.027 -27.879  1.00 30.36
H
ATOM   3132  HD1 TRP B 168       9.534  11.758 -30.198  1.00 30.11
H
ATOM   3133  HE1 TRP B 168       9.250  12.653 -32.415  1.00 28.00
H
ATOM   3134  HE3 TRP B 168       6.379  15.367 -29.192  1.00 30.57
H
ATOM   3135  HZ2 TRP B 168       7.815  14.701 -33.607  1.00 24.88
H
ATOM   3136  HZ3 TRP B 168       5.622  16.717 -30.909  1.00 24.65
H
ATOM   3137  HH2 TRP B 168       6.332  16.385 -33.082  1.00 23.05
H
ATOM   3138  N   GLU B 169       7.440  14.052 -25.341  1.00 23.03
N
ATOM   3139  CA  GLU B 169       7.144  13.867 -23.922  1.00 27.07
C
ATOM   3140  C   GLU B 169       7.491  12.466 -23.430  1.00 28.35
C
ATOM   3141  O   GLU B 169       7.865  12.291 -22.271  1.00 29.75
O
ATOM   3142  CB  GLU B 169       5.670  14.146 -23.646  1.00 26.09
C
ATOM   3143  CG  GLU B 169       5.303  15.611 -23.690  1.00 25.97
C
ATOM   3144  CD  GLU B 169       3.812  15.826 -23.565  1.00 24.50
C
ATOM   3145  OE1 GLU B 169       3.374  16.389 -22.542  1.00 25.81
O


ATOM   3146  OE2 GLU B 169       3.078  15.423 -24.491  1.00 26.86
O1-
ATOM   3147  H   GLU B 169       6.762  14.294 -25.812  1.00 27.63
H
ATOM   3148  HA  GLU B 169       7.669  14.501 -23.408  1.00 32.48
H
ATOM   3149  HB2 GLU B 169       5.135  13.687 -24.312  1.00 31.30
H
ATOM   3150  HB3 GLU B 169       5.450  13.813 -22.762  1.00 31.30
H
ATOM   3151  HG2 GLU B 169       5.737  16.071 -22.954  1.00 31.17
H
ATOM   3152  HG3 GLU B 169       5.593  15.987 -24.536  1.00 31.17
H
ATOM   3153  N   ASP B 170       7.365  11.472 -24.307  1.00 30.20
N
ATOM   3154  CA  ASP B 170       7.651  10.088 -23.935  1.00 31.21
C
ATOM   3155  C   ASP B 170       9.145   9.779 -24.005  1.00 30.44
C
ATOM   3156  O   ASP B 170       9.549   8.620 -23.930  1.00 33.82
O
ATOM   3157  CB  ASP B 170       6.872   9.111 -24.827  1.00 31.14
C
ATOM   3158  CG  ASP B 170       7.274   9.188 -26.297  1.00 28.80
C
ATOM   3159  OD1 ASP B 170       8.297   9.822 -26.629  1.00 28.18
O
ATOM   3160  OD2 ASP B 170       6.557   8.594 -27.131  1.00 33.86
O1-
ATOM   3161  H   ASP B 170       7.116  11.573 -25.124  1.00 36.24
H
ATOM   3162  HA  ASP B 170       7.363   9.946 -23.020  1.00 37.45
H
ATOM   3163  HB2 ASP B 170       7.036   8.206 -24.520  1.00 37.37
H
ATOM   3164  HB3 ASP B 170       5.926   9.315 -24.766  1.00 37.37
H
ATOM   3165  N   GLY B 171       9.959  10.816 -24.173  1.00 28.28
N
ATOM   3166  CA  GLY B 171      11.402  10.665 -24.161  1.00 30.98
C
ATOM   3167  C   GLY B 171      11.999  10.269 -25.498  1.00 29.68
C
ATOM   3168  O   GLY B 171      13.213  10.362 -25.688  1.00 36.65
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ATOM   9418  HG3 LYS E 106      18.092  36.236 -37.222  1.00 44.43
H
ATOM   9419  HD2 LYS E 106      17.343  34.054 -37.618  1.00 54.35
H
ATOM   9420  HD3 LYS E 106      18.831  33.520 -37.432  1.00 54.35
H
ATOM   9421  HE2 LYS E 106      17.325  34.748 -35.382  1.00 68.55
H
ATOM   9422  HE3 LYS E 106      17.600  33.184 -35.475  1.00 68.55
H
ATOM   9423  HZ1 LYS E 106      19.805  33.622 -35.116  1.00 65.26
H
ATOM   9424  HZ2 LYS E 106      19.554  35.047 -35.031  1.00 65.26
H
ATOM   9425  HZ3 LYS E 106      19.038  34.159 -34.010  1.00 65.26
H
ATOM   9426  N   THR E 107      21.315  37.652 -37.752  1.00 30.36
N
ATOM   9427  CA  THR E 107      22.519  37.598 -36.926  1.00 39.31
C
ATOM   9428  C   THR E 107      22.178  36.947 -35.588  1.00 41.69
C
ATOM   9429  O   THR E 107      21.024  36.604 -35.336  1.00 35.99
O
ATOM   9430  CB  THR E 107      23.125  38.998 -36.691  1.00 36.74
C
ATOM   9431  OG1 THR E 107      22.180  39.833 -36.013  1.00 34.87
O
ATOM   9432  CG2 THR E 107      23.513  39.643 -38.017  1.00 37.13
C
ATOM   9433  H   THR E 107      20.751  38.253 -37.505  1.00 36.43
H
ATOM   9434  HA  THR E 107      23.185  37.050 -37.369  1.00 47.17
H
ATOM   9435  HB  THR E 107      23.925  38.913 -36.149  1.00 44.09
H
ATOM   9436  HG1 THR E 107      22.509  40.595 -35.885  1.00 41.85
H
ATOM   9437 HG21 THR E 107      23.893  40.521 -37.860  1.00 44.55
H
ATOM   9438 HG22 THR E 107      24.169  39.093 -38.474  1.00 44.55
H
ATOM   9439 HG23 THR E 107      22.730  39.735 -38.582  1.00 44.55
H
ATOM   9440  N   GLN E 108      23.180  36.784 -34.731  1.00 41.22
N
ATOM   9441  CA  GLN E 108      23.017  36.001 -33.511  1.00 51.91
C
ATOM   9442  C   GLN E 108      22.373  36.798 -32.379  1.00 44.49
C
ATOM   9443  O   GLN E 108      21.587  36.256 -31.602  1.00 43.27
O
ATOM   9444  CB  GLN E 108      24.372  35.461 -33.049  1.00 68.26
C
ATOM   9445  CG  GLN E 108      24.287  34.140 -32.303  1.00 83.56
C


ATOM   9446  CD  GLN E 108      23.781  33.007 -33.179  1.00 91.50
C
ATOM   9447  OE1 GLN E 108      23.967  33.017 -34.397  1.00 89.80
O
ATOM   9448  NE2 GLN E 108      23.130  32.028 -32.563  1.00 95.77
N
ATOM   9449  H   GLN E 108      23.966  37.116 -34.833  1.00 49.46
H
ATOM   9450  HA  GLN E 108      22.444  35.241 -33.701  1.00 62.30
H
ATOM   9451  HB2 GLN E 108      24.936  35.327 -33.827  1.00 81.91
H
ATOM   9452  HB3 GLN E 108      24.781  36.111 -32.456  1.00 81.91
H
ATOM   9453  HG2 GLN E 108      25.171  33.900 -31.982  1.00100.27
H
ATOM   9454  HG3 GLN E 108      23.677  34.238 -31.555  1.00100.27
H
ATOM   9455 HE21 GLN E 108      22.823  31.364 -33.016  1.00114.92
H
ATOM   9456 HE22 GLN E 108      23.014  32.058 -31.711  1.00114.92
H
ATOM   9457  N   GLU E 109      22.717  38.078 -32.288  1.00 45.66
N
ATOM   9458  CA  GLU E 109      22.231  38.935 -31.207  1.00 42.78
C
ATOM   9459  C   GLU E 109      20.706  39.053 -31.196  1.00 40.26
C
ATOM   9460  O   GLU E 109      20.050  38.976 -32.238  1.00 31.16
O
ATOM   9461  CB  GLU E 109      22.860  40.332 -31.304  1.00 42.62
C
ATOM   9462  CG  GLU E 109      22.975  40.884 -32.724  1.00 52.37
C
ATOM   9463  CD  GLU E 109      23.398  42.343 -32.764  1.00 59.49
C
ATOM   9464  OE1 GLU E 109      23.528  42.964 -31.686  1.00 62.06
O
ATOM   9465  OE2 GLU E 109      23.602  42.868 -33.881  1.00 51.48
O1-
ATOM   9466  H   GLU E 109      23.234  38.481 -32.845  1.00 54.80
H
ATOM   9467  HA  GLU E 109      22.502  38.548 -30.359  1.00 51.33
H
ATOM   9468  HB2 GLU E 109      22.317  40.952 -30.791  1.00 51.15
```

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O
ATOM  3169 H   GLY B 171     9.693 11.625 -24.296  1.00 33.93
H
ATOM  3170 HA2 GLY B 171     11.806 11.503 -23.887  1.00 37.17
H
ATOM  3171 HA3 GLY B 171     11.644  9.987 -23.511  1.00 37.17
H
ATOM  3172 N   SER B 172    11.159  9.829 -26.428  1.00 28.25
N
ATOM  3173 CA  SER B 172     11.644  9.397 -27.733  1.00 32.36
C
ATOM  3174 C   SER B 172    12.201  10.584 -28.513  1.00 30.64
C
ATOM  3175 O   SER B 172    11.694  11.699 -28.417  1.00 29.69
O
ATOM  3176 CB  SER B 172     10.531   8.712 -28.527  1.00 30.14
C
ATOM  3177 OG  SER B 172      9.494   9.620 -28.857  1.00 32.10
O
ATOM  3178 H   SER B 172    10.307   9.770 -26.329  1.00 33.90
H
ATOM  3179 HA  SER B 172     12.362   8.757 -27.607  1.00 38.83
H
ATOM  3180 HB2 SER B 172     10.906   8.353 -29.346  1.00 36.17
H


ATOM  3181 HB3 SER B 172     10.160   7.994 -27.991  1.00 36.17
H
ATOM  3182 HG  SER B 172      9.158   9.939 -28.157  1.00 38.52
H
ATOM  3183 N   ILE B 173    13.257  10.336 -29.274  1.00 33.34
N
ATOM  3184 CA  ILE B 173     13.897  11.382 -30.055  1.00 36.79
C
ATOM  3185 C   ILE B 173    13.052  11.692 -31.284  1.00 34.73
C
ATOM  3186 O   ILE B 173    12.329  10.831 -31.782  1.00 35.37
O
ATOM  3187 CB  ILE B 173     15.328  10.966 -30.480  1.00 41.45
C
ATOM  3188 CG1 ILE B 173     16.111  12.158 -31.044  1.00 45.90
C
ATOM  3189 CG2 ILE B 173     15.285   9.821 -31.487  1.00 41.81
C
ATOM  3190 CD1 ILE B 173     16.543  13.160 -29.995  1.00 47.62
C
ATOM  3191 H   ILE B 173    13.625   9.563 -29.357  1.00 40.01
H
ATOM  3192 HA  ILE B 173     13.961  12.187 -29.518  1.00 44.15
H
ATOM  3193 HB  ILE B 173    15.794  10.650 -29.690  1.00 49.74
H
ATOM  3194 HG12 ILE B 173     16.910  11.826 -31.483  1.00 55.09
H
ATOM  3195 HG13 ILE B 173     15.553  12.623 -31.686  1.00 55.09
H
ATOM  3196 HG21 ILE B 173     16.193   9.584 -31.734  1.00 50.17
H
ATOM  3197 HG22 ILE B 173     14.843   9.060 -31.081  1.00 50.17
H
ATOM  3198 HG23 ILE B 173     14.794  10.110 -32.272  1.00 50.17
H
ATOM  3199 HD11 ILE B 173     17.029  13.879 -30.428  1.00 57.15
H
ATOM  3200 HD12 ILE B 173     15.755  13.513 -29.553  1.00 57.15
H
ATOM  3201 HD13 ILE B 173     17.114  12.715 -29.350  1.00 57.15
H
ATOM  3202 N   LEU B 174    13.137  12.929 -31.760  1.00 35.60
N
ATOM  3203 CA  LEU B 174     12.474  13.322 -32.997  1.00 31.48
C
ATOM  3204 C   LEU B 174    13.053  12.550 -34.174  1.00 35.42
C
ATOM  3205 O   LEU B 174    14.217  12.734 -34.531  1.00 33.32
O
ATOM  3206 CB  LEU B 174     12.623  14.826 -33.230  1.00 26.55
C
ATOM  3207 CG  LEU B 174     12.246  15.348 -34.619  1.00 31.49
C
ATOM  3208 CD1 LEU B 174     10.787  15.050 -34.937  1.00 27.57
C
ATOM  3209 CD2 LEU B 174     12.528  16.840 -34.714  1.00 29.29
C
ATOM  3210 H   LEU B 174    13.576  13.564 -31.382  1.00 42.72
H
ATOM  3211 HA  LEU B 174     11.528  13.116 -32.933  1.00 37.78
H
ATOM  3212 HB2 LEU B 174     12.063  15.289 -32.588  1.00 31.86
H
ATOM  3213 HB3 LEU B 174     13.551  15.065 -33.077  1.00 31.86
H
ATOM  3214 HG  LEU B 174     12.793  14.899 -35.282  1.00 37.79
H
ATOM  3215 HD11 LEU B 174     10.581  15.392 -35.821  1.00 33.08
H


ATOM  3216 HD12 LEU B 174     10.649  14.090 -34.913  1.00 33.08
H
ATOM  3217 HD13 LEU B 174     10.225  15.482 -34.275  1.00 33.08
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H
ATOM  9469 HB3 GLU E 109     23.754  40.296 -30.929  1.00 51.15
H
ATOM  9470 HG2 GLU E 109     23.638  40.367 -33.209  1.00 62.84
H
ATOM  9471 HG3 GLU E 109     22.113  40.810 -33.161  1.00 62.84
H

ATOM  9472 N   ALA E 110    20.150  39.233 -30.001  1.00 41.90           N
ATOM  9473 CA  ALA E 110     18.712  39.410 -29.837  1.00 33.67
C

ATOM  9474 C   ALA E 110    18.339  40.867 -30.069  1.00 35.94           C
ATOM  9475 O   ALA E 110    18.587  41.730 -29.225  1.00 34.30
O
ATOM  9476 CB  ALA E 110     18.270  38.958 -28.455  1.00 41.21
C

ATOM  9477 H   ALA E 110    20.590  39.258 -29.263  1.00 50.29           H
ATOM  9478 HA  ALA E 110     18.247  38.869 -30.495  1.00 40.41
H
ATOM  9479 HB1 ALA E 110     17.312  39.086 -28.372  1.00 49.45
H
ATOM  9480 HB2 ALA E 110     18.490  38.020 -28.344  1.00 49.45
H


ATOM  9481 HB3 ALA E 110     18.734  39.488 -27.787  1.00 49.45
H
ATOM  9482 N   THR E 111    17.745  41.129 -31.226  1.00 23.46
N
ATOM  9483 CA  THR E 111     17.372  42.476 -31.620  1.00 23.33
C
ATOM  9484 C   THR E 111    15.999  42.480 -32.272  1.00 19.12
C
ATOM  9485 O   THR E 111    15.517  41.447 -32.737  1.00 17.50
O
ATOM  9486 CB  THR E 111     18.375  43.062 -32.609  1.00 21.03
C
ATOM  9487 OG1 THR E 111     18.395  42.245 -33.786  1.00 19.06
O
ATOM  9488 CG2 THR E 111     19.769  43.117 -31.995  1.00 30.25
C
ATOM  9489 H   THR E 111    17.546  40.530 -31.811  1.00 28.16
H
ATOM  9490 HA  THR E 111     17.342  43.047 -30.837  1.00 28.00
H
ATOM  9491 HB  THR E 111     18.107  43.963 -32.846  1.00 25.24
H
ATOM  9492 HG1 THR E 111     18.944  42.555 -34.341  1.00 22.88
H
ATOM  9493 HG21 THR E 111     20.397  43.491 -32.633  1.00 36.30
H
ATOM  9494 HG22 THR E 111     19.759  43.673 -31.200  1.00 36.30
H
ATOM  9495 HG23 THR E 111     20.060  42.225 -31.753  1.00 36.30
H
ATOM  9496 N   ASN E 112    15.383  43.653 -32.322  1.00 18.03
N
ATOM  9497 CA  ASN E 112     14.118  43.813 -33.014  1.00 18.86
C
ATOM  9498 C   ASN E 112    14.283  43.492 -34.496  1.00 18.90
C
ATOM  9499 O   ASN E 112    13.396  42.909 -35.116  1.00 15.74
O
ATOM  9500 CB  ASN E 112     13.581  45.231 -32.820  1.00 19.71
C
ATOM  9501 CG  ASN E 112     13.143  45.494 -31.389  1.00 24.98
C
ATOM  9502 OD1 ASN E 112     12.646  44.597 -30.710  1.00 22.68
O
ATOM  9503 ND2 ASN E 112     13.331  46.723 -30.923  1.00 22.07
N
ATOM  9504 H   ASN E 112    15.680  44.375 -31.960  1.00 21.63
H
ATOM  9505 HA  ASN E 112     13.472  43.192 -32.642  1.00 22.63
H
ATOM  9506 HB2 ASN E 112     14.278  45.867 -33.044  1.00 23.65
H
ATOM  9507 HB3 ASN E 112     12.813  45.361 -33.399  1.00 23.65
H
ATOM  9508 HD21 ASN E 112     13.098  46.918 -30.118  1.00 26.49
H
ATOM  9509 HD22 ASN E 112     13.684  47.325 -31.426  1.00 26.49
H

ATOM  9510 N   LYS E 113    15.439  43.854 -35.047  1.00 16.41           N
ATOM  9511 CA  LYS E 113     15.739  43.600 -36.451  1.00 15.65
C

ATOM  9512 C   LYS E 113    15.712  42.103 -36.766  1.00 16.82           C
ATOM  9513 O   LYS E 113    15.106  41.673 -37.751  1.00 16.67
O
ATOM  9514 CB  LYS E 113     17.102  44.193 -36.806  1.00 20.54
C
ATOM  9515 CG  LYS E 113     17.454  44.125 -38.276  1.00 20.47
C


ATOM  9516 CD  LYS E 113     18.816  44.753 -38.539  1.00 22.73
C
ATOM  9517 CE  LYS E 113     19.154  44.754 -40.019  1.00 24.48
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H
ATOM  3218 HD21 LEU B 174    12.283  17.151 -35.599  1.00 35.15
H
ATOM  3219 HD22 LEU B 174    12.004  17.303 -34.043  1.00 35.15
H
ATOM  3220 HD23 LEU B 174    13.474  16.992 -34.560  1.00 35.15
H
ATOM  3221  N   SER B 175    12.242  11.686 -34.776  1.00 36.01
N
ATOM  3222  CA  SER B 175    12.703  10.894 -35.911  1.00 38.08
C
ATOM  3223  C   SER B 175    12.978  11.796 -37.114  1.00 39.53
C
ATOM  3224  O   SER B 175    12.257  12.771 -37.345  1.00 35.10
O
ATOM  3225  CB  SER B 175    11.679   9.818 -36.277  1.00 34.05
C
ATOM  3226  OG  SER B 175    11.435   8.952 -35.181  1.00 46.41
O
ATOM  3227  H   SER B 175    11.426  11.540 -34.548  1.00 43.22
H
ATOM  3228  HA  SER B 175    13.532  10.451 -35.672  1.00 45.70
H
ATOM  3229  HB2 SER B 175    10.847  10.248 -36.530  1.00 40.86
H
ATOM  3230  HB3 SER B 175    12.022   9.297 -37.020  1.00 40.86
H
ATOM  3231  HG  SER B 175    10.872   8.368 -35.397  1.00 55.69
H
ATOM  3232  N   PRO B 176    14.024  11.475 -37.890  1.00 37.56
N
ATOM  3233  CA  PRO B 176    14.394  12.331 -39.020  1.00 40.19
C
ATOM  3234  C   PRO B 176    13.366  12.306 -40.148  1.00 39.31
C
ATOM  3235  O   PRO B 176    12.536  11.398 -40.204  1.00 39.37
O
ATOM  3236  CB  PRO B 176    15.725  11.738 -39.482  1.00 42.21
C
ATOM  3237  CG  PRO B 176    15.663  10.317 -39.076  1.00 48.89
C
ATOM  3238  CD  PRO B 176    14.882  10.281 -37.799  1.00 40.78
C
ATOM  3239  HA  PRO B 176    14.530  13.245 -38.724  1.00 48.23
H
ATOM  3240  HB2 PRO B 176    15.803  11.818 -40.446  1.00 50.65
H
ATOM  3241  HB3 PRO B 176    16.459  12.192 -39.038  1.00 50.65
H
ATOM  3242  HG2 PRO B 176    15.212   9.803 -39.764  1.00 58.67
H
ATOM  3243  HG3 PRO B 176    16.562   9.981 -38.934  1.00 58.67
H
ATOM  3244  HD2 PRO B 176    14.341   9.477 -37.757  1.00 48.94
H
ATOM  3245  HD3 PRO B 176    15.478  10.350 -37.037  1.00 48.94
H
ATOM  3246  N   ASN B 177    13.423  13.307 -41.022  1.00 32.05
N
ATOM  3247  CA  ASN B 177    12.551  13.372 -42.192  1.00 37.49
C
ATOM  3248  C   ASN B 177    11.058  13.384 -41.853  1.00 32.07
C
ATOM  3249  O   ASN B 177    10.227  13.073 -42.704  1.00 32.22
O
ATOM  3250  CB  ASN B 177    12.853  12.200 -43.134  1.00 43.25
C
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C
ATOM  9518  NZ  LYS E 113    20.513  45.300 -40.281  1.00 26.06
N1+

ATOM  9519  H   LYS E 113    16.072  44.253 -34.623  1.00 19.69           H
ATOM  9520  HA  LYS E 113    15.069  44.035 -37.002  1.00 18.78
H
ATOM  9521  HB2 LYS E 113    17.112  45.127 -36.544  1.00 24.65
H
ATOM  9522  HB3 LYS E 113    17.787  43.710 -36.317  1.00 24.65
H
ATOM  9523  HG2 LYS E 113    17.486  43.197 -38.557  1.00 24.56
H
ATOM  9524  HG3 LYS E 113    16.789  44.611 -38.789  1.00 24.56
H
ATOM  9525  HD2 LYS E 113    18.809  45.672 -38.228  1.00 27.28
H
ATOM  9526  HD3 LYS E 113    19.497  44.246 -38.071  1.00 27.28
H
ATOM  9527  HE2 LYS E 113    19.125  43.844 -40.352  1.00 29.38
H
ATOM  9528  HE3 LYS E 113    18.511  45.305 -40.492  1.00 29.38
H
ATOM  9529  HZ1 LYS E 113    20.565  46.139 -39.988  1.00 31.27
H
ATOM  9530  HZ2 LYS E 113    21.124  44.808 -39.861  1.00 31.27
H
ATOM  9531  HZ3 LYS E 113    20.682  45.288 -41.155  1.00 31.27
H
ATOM  9532  N   ASN E 114    16.360  41.307 -35.924  1.00 14.24
N
ATOM  9533  CA  ASN E 114    16.389  39.862 -36.127  1.00 15.14
C
ATOM  9534  C   ASN E 114    15.036  39.200 -35.892  1.00 13.48
C
ATOM  9535  O   ASN E 114    14.623  38.335 -36.663  1.00 14.71
O
ATOM  9536  CB  ASN E 114    17.440  39.224 -35.217  1.00 20.17
C
ATOM  9537  CG  ASN E 114    18.851  39.385 -35.758  1.00 27.46
C
ATOM  9538  OD1 ASN E 114    19.069  39.370 -36.971  1.00 22.82
O
ATOM  9539  ND2 ASN E 114    19.815  39.537 -34.858  1.00 24.63
N
ATOM  9540  H   ASN E 114    16.790  41.576 -35.230  1.00 17.09
H
ATOM  9541  HA  ASN E 114    16.648  39.684 -37.045  1.00 18.17
H
ATOM  9542  HB2 ASN E 114    17.402  39.647 -34.345  1.00 24.21
H
ATOM  9543  HB3 ASN E 114    17.255  38.276 -35.136  1.00 24.21
H
ATOM  9544 HD21 ASN E 114    20.631  39.631 -35.114  1.00 29.56
H
ATOM  9545 HD22 ASN E 114    19.624  39.540 -34.019  1.00 29.56
H
ATOM  9546  N   MET E 115    14.350  39.596 -34.827  1.00 14.19
N
ATOM  9547  CA  MET E 115    13.049  39.018 -34.518  1.00 15.83
C
ATOM  9548  C   MET E 115    12.046  39.333 -35.625  1.00 15.36
C
ATOM  9549  O   MET E 115    11.231  38.490 -36.006  1.00 14.90
O
ATOM  9550  CB  MET E 115    12.536  39.543 -33.179  1.00 17.26
C
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ATOM  3251  CG  ASN B 177    14.279  12.223 -43.656  1.00 42.46
C
ATOM  3252  OD1 ASN B 177    14.599  12.972 -44.579  1.00 48.73
O
ATOM  3253  ND2 ASN B 177    15.140  11.398 -43.072  1.00 42.22
N
ATOM  3254  H   ASN B 177    13.967  13.970 -40.959  1.00 38.46
H
ATOM  3255  HA  ASN B 177    12.746  14.191 -42.674  1.00 44.99
H
ATOM  3256  HB2 ASN B 177    12.722  11.367 -42.655  1.00 51.90
H
ATOM  3257  HB3 ASN B 177    12.253  12.243 -43.895  1.00 51.90
H
ATOM  3258 HD21 ASN B 177    15.959  11.376 -43.334  1.00 50.66
H
ATOM  3259 HD22 ASN B 177    14.879  10.886 -42.432  1.00 50.66
H
ATOM  3260  N   LEU B 178    10.722  13.744 -40.615  1.00 29.94
N
ATOM  3261  CA  LEU B 178     9.326  13.905 -40.208  1.00 27.52
C
ATOM  3262  C   LEU B 178     8.926  15.373 -40.174  1.00 28.55
C
ATOM  3263  O   LEU B 178     7.933  15.769 -40.785  1.00 28.18
O
ATOM  3264  CB  LEU B 178     9.082  13.284 -38.831  1.00 25.65
C
ATOM  3265  CG  LEU B 178     8.632  11.822 -38.770  1.00 29.25
C
ATOM  3266  CD1 LEU B 178     8.419  11.427 -37.326  1.00 30.04
C
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ATOM  9551  CG  MET E 115    11.267  38.858 -32.708  1.00 23.77
C
ATOM  9552  SD  MET E 115    10.596  39.578 -31.197  1.00 35.74
S
ATOM  9553  CE  MET E 115    11.976  39.355 -30.071  1.00 45.72
C
ATOM  9554  H   MET E 115    14.614  40.195 -34.270  1.00 17.03
H
ATOM  9555  HA  MET E 115    13.142  38.056 -34.444  1.00 19.00
H
ATOM  9556  HB2 MET E 115    13.218  39.402 -32.505  1.00 20.71
H
ATOM  9557  HB3 MET E 115    12.348  40.491 -33.265  1.00 20.71
H
ATOM  9558  HG2 MET E 115    10.592  38.933 -33.400  1.00 28.52
H
ATOM  9559  HG3 MET E 115    11.460  37.923 -32.533  1.00 28.52
H
ATOM  9560  HE1 MET E 115    11.735  39.711 -29.202  1.00 54.87
H
ATOM  9561  HE2 MET E 115    12.173  38.408 -29.998  1.00 54.87
H
ATOM  9562  HE3 MET E 115    12.748  39.828 -30.420  1.00 54.87
H
ATOM  9563  N   TRP E 116    12.109  40.558 -36.130  1.00 12.48
N
ATOM  9564  CA  TRP E 116    11.240  40.990 -37.216  1.00 15.47
C
ATOM  9565  C   TRP E 116    11.452  40.113 -38.447  1.00 14.04
C
ATOM  9566  O   TRP E 116    10.498  39.712 -39.112  1.00 11.48
O
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ATOM   3267  CD2 LEU B 178      7.356  11.576 -39.570  1.00 30.40
C
ATOM   3268  H   LEU B 178     11.289  13.902 -39.987  1.00 35.93
H
ATOM   3269  HA  LEU B 178      8.755  13.452 -40.848  1.00 33.02
H
ATOM   3270  HB2 LEU B 178      9.907  13.346 -38.326  1.00 30.78
H
ATOM   3271  HB3 LEU B 178      8.398  13.808 -38.385  1.00 30.78
H
ATOM   3272  HG  LEU B 178      9.331  11.259 -39.137  1.00 35.10
H
ATOM   3273 HD11 LEU B 178      8.134  10.500 -37.292  1.00 36.05
H
ATOM   3274 HD12 LEU B 178      9.253  11.535 -36.844  1.00 36.05
H
ATOM   3275 HD13 LEU B 178      7.736  11.998 -36.940  1.00 36.05
H
ATOM   3276 HD21 LEU B 178      7.115  10.640 -39.499  1.00 36.49
H
ATOM   3277 HD22 LEU B 178      6.646  12.129 -39.209  1.00 36.49
H
ATOM   3278 HD23 LEU B 178      7.517  11.808 -40.498  1.00 36.49
H
ATOM   3279  N   LEU B 179      9.706  16.171 -39.449  1.00 24.55
N
ATOM   3280  CA  LEU B 179      9.420  17.591 -39.277  1.00 21.87
C
ATOM   3281  C   LEU B 179     10.570  18.473 -39.737  1.00 24.32
C
ATOM   3282  O   LEU B 179     11.735  18.189 -39.457  1.00 23.82
O
ATOM   3283  CB  LEU B 179      9.114  17.896 -37.810  1.00 23.91
C
ATOM   3284  CG  LEU B 179      7.814  17.348 -37.224  1.00 22.72
C
ATOM   3285  CD1 LEU B 179      7.760  17.633 -35.726  1.00 20.68
C


ATOM   3286  CD2 LEU B 179      6.602  17.946 -37.927  1.00 23.32
C
ATOM   3287  H   LEU B 179     10.416  15.909 -39.041  1.00 29.47
H
ATOM   3288  HA  LEU B 179      8.637  17.821 -39.802  1.00 26.24
H
ATOM   3289  HB2 LEU B 179      9.839  17.539 -37.273  1.00 28.70
H
ATOM   3290  HB3 LEU B 179      9.088  18.860 -37.705  1.00 28.70
H
ATOM   3291  HG  LEU B 179      7.791  16.387 -37.349  1.00 27.27
H
ATOM   3292 HD11 LEU B 179      6.931  17.280 -35.368  1.00 24.81
H
ATOM   3293 HD12 LEU B 179      8.516  17.203 -35.296  1.00 24.81
H
ATOM   3294 HD13 LEU B 179      7.800  18.592 -35.586  1.00 24.81
H
ATOM   3295 HD21 LEU B 179      5.795  17.579 -37.533  1.00 27.98
H
ATOM   3296 HD22 LEU B 179      6.616  18.910 -37.816  1.00 27.98
H
ATOM   3297 HD23 LEU B 179      6.642  17.721 -38.870  1.00 27.98
H
ATOM   3298  N   THR B 180     10.228  19.547 -40.441  1.00 21.44
N
ATOM   3299  CA  THR B 180     11.169  20.621 -40.726  1.00 24.48
C
ATOM   3300  C   THR B 180     11.150  21.596 -39.556  1.00 24.18
C
ATOM   3301  O   THR B 180     10.148  22.277 -39.330  1.00 20.49
O
ATOM   3302  CB  THR B 180     10.814  21.367 -42.029  1.00 26.75
C
ATOM   3303  OG1 THR B 180     10.749  20.439 -43.119  1.00 26.99
O
ATOM   3304  CG2 THR B 180     11.848  22.444 -42.342  1.00 29.06
C
ATOM   3305  H   THR B 180      9.444  19.678 -40.769  1.00 25.72
H
ATOM   3306  HA  THR B 180     12.063  20.256 -40.812  1.00 29.38
H
ATOM   3307  HB  THR B 180      9.951  21.798 -41.926  1.00 32.10
H
ATOM   3308  HG1 THR B 180     10.161  19.858 -42.966  1.00 32.39
H
ATOM   3309 HG21 THR B 180     11.611  22.903 -43.163  1.00 34.88
H
ATOM   3310 HG22 THR B 180     11.883  23.090 -41.619  1.00 34.88
H
ATOM   3311 HG23 THR B 180     12.724  22.041 -42.448  1.00 34.88
H
ATOM   3312  N   ILE B 181     12.246  21.645 -38.804  1.00 23.05
N
ATOM   3313  CA  ILE B 181     12.353  22.540 -37.656  1.00 22.09
C
ATOM   3314  C   ILE B 181     12.910  23.895 -38.081  1.00 26.12
C
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ATOM   9567  CB  TRP E 116     11.515  42.458 -37.544  1.00 12.64
C
ATOM   9568  CG  TRP E 116     10.633  43.043 -38.607  1.00 12.35
C
ATOM   9569  CD1 TRP E 116     10.933  43.189 -39.929  1.00 12.04
C
ATOM   9570  CD2 TRP E 116      9.312  43.572 -38.435  1.00 14.43
C
ATOM   9571  NE1 TRP E 116      9.883  43.779 -40.593  1.00 14.64
N
ATOM   9572  CE2 TRP E 116      8.874  44.021 -39.699  1.00 13.81
C
ATOM   9573  CE3 TRP E 116      8.459  43.711 -37.336  1.00 11.41
C
ATOM   9574  CZ2 TRP E 116      7.624  44.603 -39.892  1.00 14.26
C
ATOM   9575  CZ3 TRP E 116      7.216  44.288 -37.531  1.00 15.87
C
ATOM   9576  CH2 TRP E 116      6.811  44.726 -38.799  1.00 14.11
C
ATOM   9577  H   TRP E 116     12.653  41.165 -35.857  1.00 14.98
H
ATOM   9578  HA  TRP E 116     10.314  40.907 -36.938  1.00 18.56
H
ATOM   9579  HB2 TRP E 116     11.390  42.983 -36.738  1.00 15.17
H
ATOM   9580  HB3 TRP E 116     12.432  42.540 -37.847  1.00 15.17
H
ATOM   9581  HD1 TRP E 116     11.734  42.930 -40.324  1.00 14.44
H
ATOM   9582  HE1 TRP E 116      9.862  43.961 -41.433  1.00 17.57
H
ATOM   9583  HE3 TRP E 116      8.723  43.427 -36.491  1.00 13.69
H
ATOM   9584  HZ2 TRP E 116      7.351  44.891 -40.733  1.00 17.11
H
ATOM   9585  HZ3 TRP E 116      6.639  44.385 -36.808  1.00 19.05
H


ATOM   9586  HH2 TRP E 116      5.967  45.105 -38.901  1.00 16.94
H
ATOM   9587  N   LEU E 117     12.714  39.810 -38.725  1.00 13.03
N
ATOM   9588  CA  LEU E 117     13.093  39.003 -39.878  1.00 13.36
C
ATOM   9589  C   LEU E 117     12.619  37.564 -39.748  1.00 15.88
C
ATOM   9590  O   LEU E 117     12.149  36.968 -40.719  1.00 15.15
O
ATOM   9591  CB  LEU E 117     14.618  39.027 -40.063  1.00 13.94
C
ATOM   9592  CG  LEU E 117     15.204  38.145 -41.175  1.00 15.98
C
ATOM   9593  CD1 LEU E 117     14.745  38.606 -42.552  1.00 16.70
C
ATOM   9594  CD2 LEU E 117     16.725  38.130 -41.103  1.00 24.05
C
ATOM   9595  H   LEU E 117     13.384  40.067 -38.251  1.00 15.63
H
ATOM   9596  HA  LEU E 117     12.688  39.381 -40.674  1.00 16.03
H
ATOM   9597  HB2 LEU E 117     14.884  39.940 -40.254  1.00 16.73
H
ATOM   9598  HB3 LEU E 117     15.027  38.744 -39.230  1.00 16.73
H
ATOM   9599  HG  LEU E 117     14.892  37.235 -41.048  1.00 19.17
H
ATOM   9600 HD11 LEU E 117     15.135  38.026 -43.225  1.00 20.03
H
ATOM   9601 HD12 LEU E 117     13.777  38.559 -42.594  1.00 20.03
H
ATOM   9602 HD13 LEU E 117     15.039  39.520 -42.693  1.00 20.03
H
ATOM   9603 HD21 LEU E 117     17.069  37.567 -41.814  1.00 28.86
H
ATOM   9604 HD22 LEU E 117     17.055  39.036 -41.209  1.00 28.86
H
ATOM   9605 HD23 LEU E 117     16.997  37.777 -40.241  1.00 28.86
H
ATOM   9606  N   THR E 118     12.748  37.002 -38.552  1.00 11.16
N
ATOM   9607  CA  THR E 118     12.450  35.592 -38.362  1.00 15.63
C
ATOM   9608  C   THR E 118     10.994  35.308 -37.997  1.00 15.23
C
ATOM   9609  O   THR E 118     10.612  34.141 -37.919  1.00 16.44
O
ATOM   9610  CB  THR E 118     13.340  34.974 -37.268  1.00 17.43
C
ATOM   9611  OG1 THR E 118     13.079  35.606 -36.008  1.00 19.94
O
ATOM   9612  CG2 THR E 118     14.807  35.139 -37.623  1.00 21.12
C
ATOM   9613  H   THR E 118     13.004  37.412 -37.840  1.00 13.39
H
ATOM   9614  HA  THR E 118     12.639  35.124 -39.190  1.00 18.76
H
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ATOM   3315  O   ILE B 181      13.964  23.972 -38.711  1.00 23.50
O
ATOM   3316  CB  ILE B 181      13.251  21.948 -36.557  1.00 23.97
C
ATOM   3317  CG1 ILE B 181      12.745  20.565 -36.131  1.00 23.66
C
ATOM   3318  CG2 ILE B 181      13.312  22.885 -35.356  1.00 22.95
C
ATOM   3319  CD1 ILE B 181      11.326  20.552 -35.592  1.00 28.66
C
ATOM   3320  H   ILE B 181      12.947  21.167 -38.940  1.00 27.67
H


ATOM   3321  HA  ILE B 181      11.470  22.681 -37.281  1.00 26.51
H
ATOM   3322  HB  ILE B 181      14.147  21.849 -36.914  1.00 28.77
H
ATOM   3323 HG12 ILE B 181      12.773  19.974 -36.899  1.00 28.39
H
ATOM   3324 HG13 ILE B 181      13.327  20.223 -35.434  1.00 28.39
H
ATOM   3325 HG21 ILE B 181      13.883  22.492 -34.677  1.00 27.55
H
ATOM   3326 HG22 ILE B 181      13.676  23.738 -35.640  1.00 27.55
H
ATOM   3327 HG23 ILE B 181      12.416  23.008 -35.005  1.00 27.55
H
ATOM   3328 HD11 ILE B 181      11.089  19.643 -35.348  1.00 34.39
H
ATOM   3329 HD12 ILE B 181      11.279  21.126 -34.812  1.00 34.39
H
ATOM   3330 HD13 ILE B 181      10.724  20.877 -36.279  1.00 34.39
H
ATOM   3331  N   ILE B 182      12.203  24.958 -37.706  1.00 23.73
N
ATOM   3332  CA  ILE B 182      12.514  26.304 -38.171  1.00 20.26
C
ATOM   3333  C   ILE B 182      12.680  27.254 -36.992  1.00 23.35
C
ATOM   3334  O   ILE B 182      11.782  27.378 -36.163  1.00 18.77
O
ATOM   3335  CB  ILE B 182      11.400  26.838 -39.101  1.00 21.54
C
ATOM   3336  CG1 ILE B 182      11.154  25.858 -40.255  1.00 22.95
C
ATOM   3337  CG2 ILE B 182      11.751  28.230 -39.631  1.00 20.67
C
ATOM   3338  CD1 ILE B 182       9.889  26.137 -41.035  1.00 27.62
C
ATOM   3339  H   ILE B 182      11.528  24.923 -37.174  1.00 28.48
H
ATOM   3340  HA  ILE B 182      13.346  26.287 -38.669  1.00 24.31
H
ATOM   3341  HB  ILE B 182      10.582  26.908 -38.585  1.00 25.85
H
ATOM   3342 HG12 ILE B 182      11.900  25.909 -40.873  1.00 27.54
H
ATOM   3343 HG13 ILE B 182      11.087  24.960 -39.894  1.00 27.54
H
ATOM   3344 HG21 ILE B 182      11.036  28.537 -40.210  1.00 24.80
H
ATOM   3345 HG22 ILE B 182      11.854  28.836 -38.881  1.00 24.80
H
ATOM   3346 HG23 ILE B 182      12.581  28.177 -40.130  1.00 24.80
H
ATOM   3347 HD11 ILE B 182       9.803  25.480 -41.743  1.00 33.14
H
ATOM   3348 HD12 ILE B 182       9.129  26.078 -40.435  1.00 33.14
H
ATOM   3349 HD13 ILE B 182       9.942  27.028 -41.415  1.00 33.14
H
ATOM   3350  N   GLU B 183      13.821  27.934 -36.916  1.00 24.54
N
ATOM   3351  CA  GLU B 183      14.022  28.911 -35.854  1.00 27.28
C
ATOM   3352  C   GLU B 183      13.140  30.122 -36.128  1.00 29.16
C
ATOM   3353  O   GLU B 183      13.045  30.599 -37.260  1.00 34.53
O
ATOM   3354  CB  GLU B 183      15.494  29.314 -35.730  1.00 36.17
C
ATOM   3355  CG  GLU B 183      16.063  30.065 -36.915  1.00 45.13
C


ATOM   3356  CD  GLU B 183      17.553  30.328 -36.767  1.00 52.61
C
ATOM   3357  OE1 GLU B 183      18.036  30.396 -35.616  1.00 55.37
O
ATOM   3358  OE2 GLU B 183      18.243  30.456 -37.800  1.00 57.38
O1-
ATOM   3359  H   GLU B 183      14.482  27.851 -37.459  1.00 29.44
H
ATOM   3360  HA  GLU B 183      13.745  28.522 -35.010  1.00 32.74
H
ATOM   3361  HB2 GLU B 183      15.592  29.882 -34.950  1.00 43.40
H
ATOM   3362  HB3 GLU B 183      16.024  28.510 -35.613  1.00 43.40
H
ATOM   3363  HG2 GLU B 183      15.927  29.540 -37.719  1.00 54.15
H
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ATOM   9615  HB  THR E 118      13.149  34.026 -37.197  1.00 20.92
H
ATOM   9616  HG1 THR E 118      12.273  35.500 -35.795  1.00 23.93
H
ATOM   9617 HG21 THR E 118      15.362  34.748 -36.930  1.00 25.34
H
ATOM   9618 HG22 THR E 118      14.996  34.697 -38.465  1.00 25.34
H
ATOM   9619 HG23 THR E 118      15.024  36.081 -37.707  1.00 25.34
H
ATOM   9620  N   THR E 119      10.183  36.346 -37.781  1.00 13.58
N


ATOM   9621  CA  THR E 119       8.800  36.131 -37.326  1.00 12.81
C

ATOM   9622  C   THR E 119       7.709  36.798 -38.158  1.00 15.49           C

ATOM   9623  O   THR E 119       6.530  36.502 -37.968  1.00 14.16           O
ATOM   9624  CB  THR E 119       8.595  36.627 -35.875  1.00 12.82
C
ATOM   9625  OG1 THR E 119       8.665  38.059 -35.835  1.00 12.89
O
ATOM   9626  CG2 THR E 119       9.626  36.020 -34.943  1.00 17.46
C
ATOM   9627  H   THR E 119      10.401  37.171 -37.886  1.00 16.30
H
ATOM   9628  HA  THR E 119       8.624  35.177 -37.333  1.00 15.37
H
ATOM   9629  HB  THR E 119       7.717  36.348 -35.570  1.00 15.38
H
ATOM   9630  HG1 THR E 119       9.416  38.318 -36.110  1.00 15.47
H
ATOM   9631 HG21 THR E 119       9.484  36.341 -34.038  1.00 20.95
H
ATOM   9632 HG22 THR E 119       9.551  35.053 -34.950  1.00 20.95
H
ATOM   9633 HG23 THR E 119      10.518  36.270 -35.229  1.00 20.95
H

ATOM   9634  N   SER E 120       8.075  37.705 -39.056  1.00 11.68           N
ATOM   9635  CA  SER E 120       7.067  38.444 -39.814  1.00 15.43
C

ATOM   9636  C   SER E 120       6.196  37.531 -40.684  1.00 12.04           C

ATOM   9637  O   SER E 120       4.966  37.593 -40.619  1.00 10.68           O
ATOM   9638  CB  SER E 120       7.737  39.510 -40.682  1.00 14.31
C
ATOM   9639  OG  SER E 120       8.074  40.644 -39.901  1.00 13.97
O

ATOM   9640  H   SER E 120       8.888  37.911 -39.244  1.00 14.01           H
ATOM   9641  HA  SER E 120       6.482  38.899 -39.189  1.00 18.51
H
ATOM   9642  HB2 SER E 120       8.546  39.140 -41.070  1.00 17.18
H
ATOM   9643  HB3 SER E 120       7.124  39.778 -41.384  1.00 17.18
H
ATOM   9644  HG  SER E 120       8.604  40.424 -39.288  1.00 16.76
H

ATOM   9645  N   GLU E 121       6.827  36.691 -41.502  1.00 13.53           N
ATOM   9646  CA  GLU E 121       6.080  35.770 -42.357  1.00 16.10
C

ATOM   9647  C   GLU E 121       5.202  34.861 -41.501  1.00 14.09           C

ATOM   9648  O   GLU E 121       4.025  34.658 -41.788  1.00 14.66           O
ATOM   9649  CB  GLU E 121       7.030  34.933 -43.222  1.00 18.39
C
ATOM   9650  CG  GLU E 121       6.315  34.029 -44.220  1.00 17.83
C
ATOM   9651  CD  GLU E 121       7.270  33.236 -45.097  1.00 26.57
C
ATOM   9652  OE1 GLU E 121       8.499  33.395 -44.946  1.00 29.79
O
ATOM   9653  OE2 GLU E 121       6.786  32.450 -45.940  1.00 28.08
O1-

ATOM   9654  H   GLU E 121       7.681  36.635 -41.580  1.00 16.24           H
ATOM   9655  HA  GLU E 121       5.503  36.279 -42.947  1.00 19.32
H


ATOM   9656  HB2 GLU E 121       7.606  35.532 -43.723  1.00 22.07
H
ATOM   9657  HB3 GLU E 121       7.566  34.370 -42.642  1.00 22.07
H
ATOM   9658  HG2 GLU E 121       5.761  33.399 -43.734  1.00 21.40
H
ATOM   9659  HG3 GLU E 121       5.762  34.576 -44.800  1.00 21.40
H

ATOM   9660  N   PHE E 122       5.798  34.331 -40.439  1.00 13.77           N
ATOM   9661  CA  PHE E 122       5.101  33.510 -39.458  1.00 14.62
C

ATOM   9662  C   PHE E 122       3.851  34.212 -38.924  1.00 14.41           C

ATOM   9663  O   PHE E 122       2.760  33.641 -38.928  1.00 13.91           O
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ATOM   3364  HG3 GLU B 183     15.612  30.920 -36.995  1.00 54.15
H
ATOM   3365  N   MET B 184    12.478  30.594 -35.080  1.00 29.01
N
ATOM   3366  CA  MET B 184     11.478  31.648 -35.192  1.00 25.24
C
ATOM   3367  C   MET B 184    11.643  32.571 -33.986  1.00 34.39
C
ATOM   3368  O   MET B 184    11.916  33.764 -34.133  1.00 34.16
O
ATOM   3369  CB  MET B 184     10.075  31.032 -35.263  1.00 25.23
C
ATOM   3370  CG  MET B 184      8.947  31.974 -35.675  1.00 22.62
C
ATOM   3371  SD  MET B 184      8.098  32.757 -34.293  1.00 34.48
S
ATOM   3372  CE  MET B 184      7.450  31.341 -33.400  1.00 28.01
C
ATOM   3373  H   MET B 184    12.592  30.314 -34.275  1.00 34.81
H
ATOM   3374  HA  MET B 184     11.631  32.152 -36.006  1.00 30.28
H
ATOM   3375  HB2 MET B 184     10.093  30.305 -35.905  1.00 30.28
H
ATOM   3376  HB3 MET B 184      9.852  30.681 -34.386  1.00 30.28
H
ATOM   3377  HG2 MET B 184      9.317  32.677 -36.231  1.00 27.15
H
ATOM   3378  HG3 MET B 184      8.289  31.470 -36.179  1.00 27.15
H
ATOM   3379  HE1 MET B 184      6.964  31.655 -32.621  1.00 33.61
H
ATOM   3380  HE2 MET B 184      6.855  30.845 -33.984  1.00 33.61
H
ATOM   3381  HE3 MET B 184      8.189  30.777 -33.124  1.00 33.61
H
ATOM   3382  N   GLN B 185    11.505  31.998 -32.794  1.00 32.90
N
ATOM   3383  CA  GLN B 185     11.808  32.696 -31.549  1.00 32.39
C
ATOM   3384  C   GLN B 185    12.769  31.850 -30.723  1.00 34.72
C
ATOM   3385  O   GLN B 185    12.721  30.619 -30.769  1.00 28.22
O
ATOM   3386  CB  GLN B 185     10.531  32.976 -30.754  1.00 29.62
C
ATOM   3387  CG  GLN B 185      9.601  34.000 -31.390  1.00 33.22
C
ATOM   3388  CD  GLN B 185      9.964  35.435 -31.046  1.00 40.19
C
ATOM   3389  OE1 GLN B 185     11.094  35.730 -30.652  1.00 41.44
O
ATOM   3390  NE2 GLN B 185      8.997  36.337 -31.186  1.00 34.22
N


ATOM   3391  H   GLN B 185    11.232  31.190 -32.679  1.00 39.48
H
ATOM   3392  HA  GLN B 185     12.237  33.542 -31.749  1.00 38.87
H
ATOM   3393  HB2 GLN B 185     10.036  32.148 -30.659  1.00 35.55
H
ATOM   3394  HB3 GLN B 185     10.779  33.310 -29.877  1.00 35.55
H
ATOM   3395  HG2 GLN B 185      9.641  33.905 -32.355  1.00 39.87
H
ATOM   3396  HG3 GLN B 185      8.696  33.839 -31.080  1.00 39.87
H
ATOM   3397 HE21 GLN B 185      9.150  37.164 -31.007  1.00 41.06
H
ATOM   3398 HE22 GLN B 185      8.218  36.094 -31.461  1.00 41.06
H
ATOM   3399  N   LYS B 186    13.654  32.506 -29.980  1.00 34.85
N
ATOM   3400  CA  LYS B 186     14.542  31.796 -29.071  1.00 34.85
C
ATOM   3401  C   LYS B 186    13.694  31.086 -28.016  1.00 28.04
C
ATOM   3402  O   LYS B 186    12.924  31.726 -27.301  1.00 27.27
O
ATOM   3403  CB  LYS B 186     15.533  32.763 -28.418  1.00 43.85
C
ATOM   3404  CG  LYS B 186     16.859  32.136 -28.014  1.00 64.98
C
ATOM   3405  CD  LYS B 186     17.666  31.694 -29.229  1.00 85.87
C
ATOM   3406  CE  LYS B 186     19.083  31.299 -28.845  1.00104.79
C
ATOM   3407  NZ  LYS B 186     19.756  30.516 -29.918  1.00110.38
N1+
ATOM   3408  H   LYS B 186    13.758  33.359 -29.984  1.00 41.82
H
ATOM   3409  HA  LYS B 186     15.043  31.127 -29.563  1.00 41.82
H
ATOM   3410  HB2 LYS B 186     15.725  33.478 -29.044  1.00 52.62
H
ATOM   3411  HB3 LYS B 186     15.125  33.130 -27.618  1.00 52.62
H
ATOM   3412  HG2 LYS B 186     17.383  32.788 -27.523  1.00 77.98
H
ATOM   3413  HG3 LYS B 186     16.690  31.357 -27.462  1.00 77.98
H
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ATOM   9664  CB  PHE E 122     6.072  33.171 -38.319  1.00 16.68
C
ATOM   9665  CG  PHE E 122     5.445  32.476 -37.144  1.00 16.24
C
ATOM   9666  CD1 PHE E 122     5.386  31.093 -37.091  1.00 19.07
C
ATOM   9667  CD2 PHE E 122     4.959  33.204 -36.070  1.00 17.52
C
ATOM   9668  CE1 PHE E 122     4.830  30.451 -36.003  1.00 20.81
C
ATOM   9669  CE2 PHE E 122     4.398  32.568 -34.980  1.00 21.23
C
ATOM   9670  CZ  PHE E 122    4.337  31.189 -34.944  1.00 22.10
C

ATOM   9671  H   PHE E 122    6.633  34.438 -40.261  1.00 16.53           H
ATOM   9672  HA  PHE E 122    4.825  32.680 -39.877  1.00 17.54
H
ATOM   9673  HB2 PHE E 122     6.766  32.589 -38.667  1.00 20.02
H
ATOM   9674  HB3 PHE E 122     6.469  33.994 -37.995  1.00 20.02
H
ATOM   9675  HD1 PHE E 122     5.717  30.591 -37.801  1.00 22.89
H
ATOM   9676  HD2 PHE E 122     4.998  34.133 -36.089  1.00 21.02
H
ATOM   9677  HE1 PHE E 122     4.787  29.522 -35.983  1.00 24.98
H
ATOM   9678  HE2 PHE E 122     4.067  33.068 -34.268  1.00 25.48
H
ATOM   9679  HZ  PHE E 122    3.959  30.758 -34.211  1.00 26.52
H

ATOM   9680  N   ARG E 123    4.008  35.459 -38.491  1.00  9.96           N
ATOM   9681  CA  ARG E 123     2.915  36.190 -37.862  1.00 12.21
C

ATOM   9682  C   ARG E 123    1.821  36.555 -38.871  1.00 13.20           C
ATOM   9683  O   ARG E 123    0.660  36.720 -38.501  1.00 16.26
O
ATOM   9684  CB  ARG E 123     3.461  37.442 -37.164  1.00 13.63
C
ATOM   9685  CG  ARG E 123     4.080  37.153 -35.797  1.00 14.82
C
ATOM   9686  CD  ARG E 123     5.182  38.138 -35.440  1.00 19.31
C
ATOM   9687  NE  ARG E 123     4.809  39.485 -35.833  1.00 25.00
N
ATOM   9688  CZ  ARG E 123     5.551  40.304 -36.569  1.00 13.96
C
ATOM   9689  NH1 ARG E 123     6.763  39.963 -36.994  1.00 17.77
N1+
ATOM   9690  NH2 ARG E 123     5.076  41.500 -36.857  1.00 20.81
N


ATOM   9691  H   ARG E 123    4.741  35.905 -38.551  1.00 11.95           H
ATOM   9692  HA  ARG E 123     2.513  35.625 -37.183  1.00 14.65
H
ATOM   9693  HB2 ARG E 123     4.147  37.839 -37.724  1.00 16.36
H
ATOM   9694  HB3 ARG E 123     2.735  38.072 -37.035  1.00 16.36
H
ATOM   9695  HG2 ARG E 123     3.391  37.212 -35.117  1.00 17.78
H
ATOM   9696  HG3 ARG E 123     4.464  36.262 -35.805  1.00 17.78
H
ATOM   9697  HD2 ARG E 123     5.326  38.127 -34.481  1.00 23.17
H
ATOM   9698  HD3 ARG E 123     5.996  37.896 -35.908  1.00 23.17
H
ATOM   9699  HE  ARG E 123    4.045  39.776 -35.567  1.00 30.00
H
ATOM   9700 HH11 ARG E 123     7.080  39.165 -36.811  1.00 21.33
H
ATOM   9701 HH12 ARG E 123     7.225  40.516 -37.464  1.00 21.33
H
ATOM   9702 HH21 ARG E 123     4.296  41.732 -36.579  1.00 24.98
H
ATOM   9703 HH22 ARG E 123     5.547  42.049 -37.323  1.00 24.98
H

ATOM   9704  N   LEU E 124    2.184  36.657 -40.146  1.00 11.77           N
ATOM   9705  CA  LEU E 124     1.207  36.917 -41.200  1.00 12.92
C

ATOM   9706  C   LEU E 124    0.445  35.654 -41.598  1.00 14.87           C

ATOM   9707  O   LEU E 124   -0.771  35.691 -41.805  1.00 14.46           O
ATOM   9708  CB  LEU E 124     1.890  37.508 -42.437  1.00 14.80
C
ATOM   9709  CG  LEU E 124     1.021  37.592 -43.700  1.00 11.83
C
ATOM   9710  CD1 LEU E 124    -0.216  38.439 -43.460  1.00 15.58
C
ATOM   9711  CD2 LEU E 124     1.822  38.135 -44.871  1.00 14.19
C

ATOM   9712  H   LEU E 124    2.993  36.579 -40.429  1.00 14.12           H
ATOM   9713  HA  LEU E 124     0.561  37.565 -40.877  1.00 15.50
H
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ATOM  3414  HD2 LYS B 186     17.236  30.925 -29.635  1.00103.05
H
ATOM  3415  HD3 LYS B 186     17.716  32.425 -29.864  1.00103.05
H
ATOM  3416  HE2 LYS B 186     19.604  32.101 -28.684  1.00125.75
H
ATOM  3417  HE3 LYS B 186     19.055  30.753 -28.044  1.00125.75
H
ATOM  3418  HZ1 LYS B 186     19.799  30.999 -30.664  1.00132.46
H
ATOM  3419  HZ2 LYS B 186     20.581  30.301 -29.664  1.00132.46
H
ATOM  3420  HZ3 LYS B 186     19.300  29.770 -30.081  1.00132.46
H
ATOM  3421  N   GLY B 187    13.816  29.765 -27.932  1.00 25.29
N
ATOM  3422  CA  GLY B 187     13.002  28.997 -27.007  1.00 25.76
C
ATOM  3423  C   GLY B 187    13.264  27.506 -27.086  1.00 23.48
C
ATOM  3424  O   GLY B 187    14.020  27.050 -27.944  1.00 19.67
O
ATOM  3425  H   GLY B 187    14.362  29.294 -28.400  1.00 30.35
H


ATOM  3426  HA2 GLY B 187     13.181  29.291 -26.101  1.00 30.91
H
ATOM  3427  HA3 GLY B 187     12.064  29.152 -27.200  1.00 30.91
H
ATOM  3428  N   ASP B 188    12.629  26.752 -26.190  1.00 17.61
N
ATOM  3429  CA  ASP B 188     12.873  25.316 -26.064  1.00 20.10
C
ATOM  3430  C   ASP B 188    11.623  24.472 -26.317  1.00 17.87
C
ATOM  3431  O   ASP B 188    11.587  23.291 -25.973  1.00 18.91
O
ATOM  3432  CB  ASP B 188     13.420  25.000 -24.673  1.00 22.84
C
ATOM  3433  CG  ASP B 188     14.737  25.686 -24.393  1.00 27.00
C
ATOM  3434  OD1 ASP B 188     15.629  25.638 -25.265  1.00 28.51
O
ATOM  3435  OD2 ASP B 188     14.877  26.274 -23.300  1.00 29.60
O1-
ATOM  3436  H   ASP B 188    12.044  27.053 -25.637  1.00 21.13
H
ATOM  3437  HA  ASP B 188     13.544  25.055 -26.714  1.00 24.12
H
ATOM  3438  HB2 ASP B 188     12.780  25.296 -24.007  1.00 27.41
H
ATOM  3439  HB3 ASP B 188     13.559  24.043 -24.598  1.00 27.41
H
ATOM  3440  N   CYS B 189    10.597  25.079 -26.901  1.00 15.55
N
ATOM  3441  CA  CYS B 189     9.399  24.344 -27.293  1.00 18.29
C
ATOM  3442  C   CYS B 189     9.129  24.575 -28.777  1.00 18.34
C
ATOM  3443  O   CYS B 189     9.771  25.421 -29.403  1.00 16.24
O
ATOM  3444  CB  CYS B 189      8.202  24.763 -26.437  1.00 21.42
C
ATOM  3445  SG  CYS B 189      8.369  24.310 -24.685  1.00 19.88
S
ATOM  3446  H   CYS B 189    10.568  25.919 -27.083  1.00 18.66
H
ATOM  3447  HA  CYS B 189      9.549  23.395 -27.158  1.00 21.95
H
ATOM  3448  HB2 CYS B 189      8.103  25.726 -26.487  1.00 25.71
H
ATOM  3449  HB3 CYS B 189      7.404  24.331 -26.781  1.00 25.71
H
ATOM  3450  N   ALA B 190     8.195  23.813 -29.337  1.00 17.84
N
ATOM  3451  CA  ALA B 190      7.935  23.856 -30.773  1.00 16.98
C
ATOM  3452  C   ALA B 190     6.443  23.850 -31.098  1.00 13.84
C
ATOM  3453  O   ALA B 190     5.680  23.040 -30.566  1.00 13.74
O
ATOM  3454  CB  ALA B 190      8.622  22.686 -31.461  1.00 18.20
C
ATOM  3455  H   ALA B 190     7.697  23.260 -28.907  1.00 21.40
H
ATOM  3456  HA  ALA B 190      8.312  24.674 -31.133  1.00 20.37
H
ATOM  3457  HB1 ALA B 190      8.440  22.729 -32.413  1.00 21.84
H
ATOM  3458  HB2 ALA B 190      9.577  22.744 -31.303  1.00 21.84
H
ATOM  3459  HB3 ALA B 190      8.275  21.858 -31.094  1.00 21.84
H
ATOM  3460  N   LEU B 191     6.047  24.763 -31.982  1.00 11.45
N


ATOM  3461  CA  LEU B 191      4.680  24.829 -32.492  1.00 14.13
C
ATOM  3462  C   LEU B 191     4.554  23.994 -33.749  1.00 16.78
C
ATOM  3463  O   LEU B 191     5.395  24.100 -34.642  1.00 15.41
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ATOM  9714  HB2 LEU E 124      2.182  36.408 -42.225  1.00 17.76
H
ATOM  9715  HB3 LEU E 124      2.661  36.961 -42.652  1.00 17.76
H
ATOM  9716  HG  LEU E 124     0.725  36.698 -43.934  1.00 14.19
H
ATOM  9717 HD11 LEU E 124     -0.740  38.470 -44.276  1.00 18.69
H
ATOM  9718 HD12 LEU E 124     -0.738  38.040 -42.746  1.00 18.69
H
ATOM  9719 HD13 LEU E 124      0.059  39.335 -43.209  1.00 18.69
H
ATOM  9720 HD21 LEU E 124      1.250  38.177 -45.652  1.00 17.03
H
ATOM  9721 HD22 LEU E 124      2.144  39.022 -44.648  1.00 17.03
H
ATOM  9722 HD23 LEU E 124      2.572  37.544 -45.041  1.00 17.03
H

ATOM  9723  N   LYS E 125     1.158  34.538 -41.705  1.00 13.01           N
ATOM  9724  CA  LYS E 125     0.593  33.347 -42.336  1.00 15.82
C

ATOM  9725  C   LYS E 125    -0.148  32.421 -41.379  1.00 17.64           C



ATOM  9726  O   LYS E 125    -0.543  31.320 -41.758  1.00 13.71           O
ATOM  9727  CB  LYS E 125      1.698  32.572 -43.050  1.00 13.96
C
ATOM  9728  CG  LYS E 125      2.202  33.285 -44.298  1.00 20.01
C
ATOM  9729  CD  LYS E 125      3.130  32.408 -45.114  1.00 23.78
C
ATOM  9730  CE  LYS E 125      3.436  33.035 -46.467  1.00 22.29
C
ATOM  9731  NZ  LYS E 125      4.222  32.110 -47.321  1.00 26.85
N1+

ATOM  9732  H   LYS E 125     1.965  34.443 -41.424  1.00 15.61           H
ATOM  9733  HA  LYS E 125    -0.043  33.633 -43.010  1.00 18.98
H
ATOM  9734  HB2 LYS E 125      2.448  32.461 -42.444  1.00 16.76
H
ATOM  9735  HB3 LYS E 125      1.355  31.705 -43.317  1.00 16.76
H
ATOM  9736  HG2 LYS E 125      1.446  33.526 -44.855  1.00 24.01
H
ATOM  9737  HG3 LYS E 125      2.691  34.080 -44.035  1.00 24.01
H
ATOM  9738  HD2 LYS E 125      3.965  32.292 -44.635  1.00 28.53
H
ATOM  9739  HD3 LYS E 125      2.707  31.548 -45.265  1.00 28.53
H
ATOM  9740  HE2 LYS E 125      2.604  33.238 -46.922  1.00 26.74
H
ATOM  9741  HE3 LYS E 125      3.955  33.844 -46.335  1.00 26.74
H
ATOM  9742  HZ1 LYS E 125      4.392  32.492 -48.106  1.00 32.22
H
ATOM  9743  HZ2 LYS E 125      4.993  31.910 -46.923  1.00 32.22
H
ATOM  9744  HZ3 LYS E 125      3.764  31.359 -47.457  1.00 32.22
H

ATOM  9745  N   LYS E 126    -0.352  32.867 -40.145  1.00 15.49           N
ATOM  9746  CA  LYS E 126    -1.062  32.056 -39.168  1.00 14.17
C

ATOM  9747  C   LYS E 126    -2.423  31.628 -39.718  1.00 14.30           C

ATOM  9748  O   LYS E 126    -2.765  30.447 -39.682  1.00 14.19           O
ATOM  9749  CB  LYS E 126    -1.230  32.826 -37.862  1.00 13.34
C
ATOM  9750  CG  LYS E 126     -1.750  31.990 -36.705  1.00 16.84
C
ATOM  9751  CD  LYS E 126     -1.636  32.761 -35.400  1.00 20.30
C
ATOM  9752  CE  LYS E 126    -2.149  31.960 -34.218  1.00 23.97
C
ATOM  9753  NZ  LYS E 126    -1.883  32.674 -32.933  1.00 26.21
N1+

ATOM  9754  H   LYS E 126    -0.091  33.632 -39.851  1.00 18.59           H
ATOM  9755  HA  LYS E 126    -0.546  31.257 -38.983  1.00 17.00
H
ATOM  9756  HB2 LYS E 126     -0.368  33.187 -37.601  1.00 16.00
H
ATOM  9757  HB3 LYS E 126     -1.858  33.551 -38.007  1.00 16.00
H
ATOM  9758  HG2 LYS E 126     -2.684  31.775 -36.855  1.00 20.21
H
ATOM  9759  HG3 LYS E 126     -1.223  31.179 -36.630  1.00 20.21
H
ATOM  9760  HD2 LYS E 126     -0.704  32.977 -35.238  1.00 24.36
H


ATOM  9761  HD3 LYS E 126     -2.161  33.575 -35.464  1.00 24.36
H
ATOM  9762  HE2 LYS E 126     -3.106  31.835 -34.305  1.00 28.76
H
ATOM  9763  HE3 LYS E 126     -1.697  31.103 -34.190  1.00 28.76
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O
ATOM  3464  CB  LEU B 191     4.288  26.269 -32.817  1.00 12.09
C
ATOM  3465  CG  LEU B 191     4.165  27.255 -31.659  1.00 14.17
C
ATOM  3466  CD1 LEU B 191     4.052  28.666 -32.203  1.00 14.01
C
ATOM  3467  CD2 LEU B 191     2.958  26.915 -30.798  1.00 16.56
C
ATOM  3468  H   LEU B 191    6.564  25.368 -32.309  1.00 13.74
H
ATOM  3469  HA  LEU B 191     4.066  24.482 -31.825  1.00 16.96
H
ATOM  3470  HB2 LEU B 191     4.953  26.629 -33.424  1.00 14.51
H
ATOM  3471  HB3 LEU B 191     3.428  26.250 -33.264  1.00 14.51
H
ATOM  3472  HG  LEU B 191     4.959  27.203 -31.105  1.00 17.01
H
ATOM  3473 HD11 LEU B 191     3.974  29.285 -31.461  1.00 16.81
H
ATOM  3474 HD12 LEU B 191     4.847  28.868 -32.721  1.00 16.81
H
ATOM  3475 HD13 LEU B 191     3.265  28.724 -32.768  1.00 16.81
H
ATOM  3476 HD21 LEU B 191     2.900  27.553 -30.070  1.00 19.87
H
ATOM  3477 HD22 LEU B 191     2.158  26.962 -31.345  1.00 19.87
H
ATOM  3478 HD23 LEU B 191     3.065  26.018 -30.445  1.00 19.87
H
ATOM  3479  N   TYR B 192    3.513  23.172 -33.834  1.00 16.15
N
ATOM  3480  CA  TYR B 192     3.244  22.485 -35.084  1.00 12.87
C
ATOM  3481  C   TYR B 192    2.607  23.440 -36.076  1.00 18.63
C
ATOM  3482  O   TYR B 192    1.704  24.209 -35.732  1.00 14.22
O
ATOM  3483  CB  TYR B 192     2.322  21.279 -34.921  1.00 17.45
C
ATOM  3484  CG  TYR B 192     2.041  20.673 -36.280  1.00 18.09
C
ATOM  3485  CD1 TYR B 192     2.958  19.818 -36.876  1.00 18.30
C
ATOM  3486  CD2 TYR B 192     0.901  21.013 -36.997  1.00 15.77
C
ATOM  3487  CE1 TYR B 192     2.731  19.287 -38.131  1.00 17.41
C
ATOM  3488  CE2 TYR B 192     0.666  20.487 -38.257  1.00 19.17
C
ATOM  3489  CZ  TYR B 192     1.586  19.625 -38.819  1.00 19.87
C
ATOM  3490  OH  TYR B 192     1.361  19.098 -40.072  1.00 20.58
O
ATOM  3491  H   TYR B 192    2.962  22.999 -33.197  1.00 19.37
H
ATOM  3492  HA  TYR B 192     4.082  22.174 -35.461  1.00 15.44
H
ATOM  3493  HB2 TYR B 192     2.753  20.611 -34.366  1.00 20.94
H
ATOM  3494  HB3 TYR B 192     1.482  21.561 -34.527  1.00 20.94
H
ATOM  3495  HD1 TYR B 192     3.734  19.589 -36.417  1.00 21.96
H


ATOM  3496  HD2 TYR B 192     0.281  21.595 -36.621  1.00 18.92
H
ATOM  3497  HE1 TYR B 192     3.351  18.706 -38.512  1.00 20.89
H
ATOM  3498  HE2 TYR B 192    -0.107  20.714 -38.722  1.00 23.00
H
ATOM  3499  HH  TYR B 192     0.633  19.384 -40.377  1.00 24.69
H
ATOM  3500  N   ALA B 193    3.077  23.360 -37.315  1.00 12.79
N
ATOM  3501  CA  ALA B 193     2.483  24.079 -38.431  1.00 15.94
C
ATOM  3502  C   ALA B 193    2.550  23.173 -39.650  1.00 18.77
C
ATOM  3503  O   ALA B 193    3.498  22.402 -39.801  1.00 16.34
O
ATOM  3504  CB  ALA B 193     3.211  25.385 -38.685  1.00 17.09
C
ATOM  3505  H   ALA B 193    3.756  22.883 -37.538  1.00 15.35
H
ATOM  3506  HA  ALA B 193     1.553  24.274 -38.238  1.00 19.13
H
ATOM  3507  HB1 ALA B 193     2.792  25.839 -39.433  1.00 20.50
H
ATOM  3508  HB2 ALA B 193     3.156  25.937 -37.890  1.00 20.50
H
ATOM  3509  HB3 ALA B 193     4.139  25.194 -38.892  1.00 20.50
H
ATOM  3510  N   SER B 194    1.543  23.243 -40.509  1.00 15.79
N
ATOM  3511  CA  SER B 194     1.535  22.414 -41.708  1.00 21.22
C
ATOM  3512  C   SER B 194    2.354  23.092 -42.803  1.00 20.82
C
ATOM  3513  O   SER B 194    2.449  24.317 -42.813  1.00 23.78
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H
ATOM  9764  HZ1 LYS E 126    -1.008  32.800 -32.830  1.00 31.45
H
ATOM  9765  HZ2 LYS E 126    -2.290  33.466 -32.935  1.00 31.45
H
ATOM  9766  HZ3 LYS E 126    -2.188  32.193 -32.249  1.00 31.45
H

ATOM  9767  N   TRP E 127   -3.177  32.587 -40.254  1.00 13.47         N
ATOM  9768  CA  TRP E 127    -4.497  32.314 -40.828  1.00 13.36
C

ATOM  9769  C   TRP E 127   -4.575  32.682 -42.311  1.00 14.64         C

ATOM  9770  O   TRP E 127   -5.632  32.557 -42.929  1.00 13.48         O
ATOM  9771  CB  TRP E 127    -5.573  33.078 -40.053  1.00 13.26
C
ATOM  9772  CG  TRP E 127    -5.758  32.580 -38.653  1.00 16.00
C
ATOM  9773  CD1 TRP E 127    -5.306  33.163 -37.508  1.00 16.46
C
ATOM  9774  CD2 TRP E 127    -6.437  31.386 -38.256  1.00 14.01
C
ATOM  9775  NE1 TRP E 127    -5.666  32.408 -36.419  1.00 20.27
N
ATOM  9776  CE2 TRP E 127    -6.365  31.312 -36.851  1.00 19.93
C
ATOM  9777  CE3 TRP E 127    -7.108  30.374 -38.951  1.00 20.52
C
ATOM  9778  CZ2 TRP E 127    -6.931  30.266 -36.129  1.00 17.91
C
ATOM  9779  CZ3 TRP E 127    -7.672  29.339 -38.232  1.00 22.57
C
ATOM  9780  CH2 TRP E 127    -7.579  29.291 -36.835  1.00 25.03
C

ATOM  9781  H   TRP E 127   -2.944  33.413 -40.298  1.00 16.16         H
ATOM  9782  HA  TRP E 127    -4.686  31.367 -40.745  1.00 16.03
H
ATOM  9783  HB2 TRP E 127    -5.322  34.014 -40.006  1.00 15.92
H
ATOM  9784  HB3 TRP E 127    -6.420  32.986 -40.517  1.00 15.92
H
ATOM  9785  HD1 TRP E 127    -4.823  33.957 -37.470  1.00 19.75
H
ATOM  9786  HE1 TRP E 127    -5.484  32.594 -35.599  1.00 24.32
H
ATOM  9787  HE3 TRP E 127    -7.174  30.400 -39.878  1.00 24.62
H
ATOM  9788  HZ2 TRP E 127    -6.873  30.232 -35.201  1.00 21.50
H
ATOM  9789  HZ3 TRP E 127    -8.119  28.660 -38.684  1.00 27.09
H
ATOM  9790  HH2 TRP E 127    -7.969  28.581 -36.378  1.00 30.03
H

ATOM  9791  N   PHE E 128   -3.452  33.118 -42.876  1.00 13.43         N
ATOM  9792  CA  PHE E 128    -3.425  33.694 -44.221  1.00 12.84
C

ATOM  9793  C   PHE E 128   -2.168  33.275 -44.986  1.00 14.69         C
ATOM  9794  O   PHE E 128   -1.174  33.999 -44.999  1.00 14.50
O
ATOM  9795  CB  PHE E 128    -3.509  35.223 -44.122  1.00 15.03
C


ATOM  9796  CG  PHE E 128    -3.640  35.922 -45.446  1.00 15.62
C
ATOM  9797  CD1 PHE E 128    -4.757  35.729 -46.242  1.00 14.48
C
ATOM  9798  CD2 PHE E 128    -2.660  36.800 -45.879  1.00 17.09
C
ATOM  9799  CE1 PHE E 128    -4.884  36.381 -47.456  1.00 14.50
C
ATOM  9800  CE2 PHE E 128    -2.780  37.454 -47.092  1.00 18.86
C
ATOM  9801  CZ  PHE E 128    -3.895  37.245 -47.881  1.00 19.29
C

ATOM  9802  H   PHE E 128   -2.680  33.091 -42.497  1.00 16.11         H
ATOM  9803  HA  PHE E 128    -4.198  33.381 -44.717  1.00 15.40
H
ATOM  9804  HB2 PHE E 128    -4.283  35.457 -43.587  1.00 18.04
H
ATOM  9805  HB3 PHE E 128    -2.703  35.551 -43.694  1.00 18.04
H
ATOM  9806  HD1 PHE E 128    -5.426  35.147 -45.961  1.00 17.38
H
ATOM  9807  HD2 PHE E 128    -1.906  36.942 -45.353  1.00 20.50
H
ATOM  9808  HE1 PHE E 128    -5.636  36.239 -47.985  1.00 17.40
H
ATOM  9809  HE2 PHE E 128    -2.112  38.036 -47.376  1.00 22.63
H
ATOM  9810  HZ  PHE E 128    -3.979  37.684 -48.696  1.00 23.15
H

ATOM  9811  N   ASP E 129   -2.214  32.108 -45.627  1.00 14.98         N
ATOM  9812  CA  ASP E 129    -1.055  31.599 -46.357  1.00 14.76
C
```

```
O
ATOM 3514 CB SER B 194 0.109 22.172 -42.191 1.00 20.14
C
ATOM 3515 OG SER B 194 -0.410 23.338 -42.795 1.00 26.86
O
ATOM 3516 H SER B 194 0.859 23.757 -40.424 1.00 18.95
H
ATOM 3517 HA SER B 194 1.941 21.555 -41.509 1.00 25.47
H
ATOM 3518 HB2 SER B 194 0.113 21.453 -42.842 1.00 24.17
H
ATOM 3519 HB3 SER B 194 -0.446 21.933 -41.433 1.00 24.17
H
ATOM 3520 HG SER B 194 -0.416 23.970 -42.241 1.00 32.23
H
ATOM 3521 N SER B 195 2.948 22.328 -43.720 1.00 22.26
N
ATOM 3522 CA SER B 195 2.901 20.869 -43.738 1.00 19.41
C
ATOM 3523 C SER B 195 4.097 20.267 -42.993 1.00 26.14
C
ATOM 3524 O SER B 195 5.234 20.349 -43.461 1.00 25.77
O
ATOM 3525 CB SER B 195 2.879 20.368 -45.182 1.00 28.07
C
ATOM 3526 OG SER B 195 2.594 18.984 -45.234 1.00 34.28
O
ATOM 3527 H SER B 195 3.406 22.652 -44.372 1.00 26.71
H
ATOM 3528 HA SER B 195 2.089 20.571 -43.300 1.00 23.30
H
ATOM 3529 HB2 SER B 195 2.194 20.849 -45.672 1.00 33.69
H
ATOM 3530 HB3 SER B 195 3.747 20.527 -45.584 1.00 33.69
H

ATOM 3531 HG SER B 195 3.180 18.555 -44.813 1.00 41.13
H
ATOM 3532 N PHE B 196 3.832 19.674 -41.832 1.00 24.04
N
ATOM 3533 CA PHE B 196 4.858 19.000 -41.029 1.00 22.02
C
ATOM 3534 C PHE B 196 6.070 19.879 -40.731 1.00 23.97
C
ATOM 3535 O PHE B 196 7.214 19.502 -40.988 1.00 20.66
O
ATOM 3536 CB PHE B 196 5.297 17.709 -41.724 1.00 24.00
C
ATOM 3537 CG PHE B 196 4.251 16.638 -41.695 1.00 22.78
C
ATOM 3538 CD1 PHE B 196 4.128 15.806 -40.596 1.00 23.64
C
ATOM 3539 CD2 PHE B 196 3.373 16.477 -42.751 1.00 28.16
C
ATOM 3540 CE1 PHE B 196 3.156 14.827 -40.556 1.00 24.03
C
ATOM 3541 CE2 PHE B 196 2.399 15.500 -42.716 1.00 29.08
C
ATOM 3542 CZ PHE B 196 2.288 14.675 -41.617 1.00 25.46
C
ATOM 3543 H PHE B 196 3.048 19.646 -41.479 1.00 28.84
H
ATOM 3544 HA PHE B 196 4.465 18.752 -40.178 1.00 26.42
H
ATOM 3545 HB2 PHE B 196 5.499 17.904 -42.652 1.00 28.80
H
ATOM 3546 HB3 PHE B 196 6.088 17.366 -41.279 1.00 28.80
H
ATOM 3547 HD1 PHE B 196 4.709 15.907 -39.877 1.00 28.37
H
ATOM 3548 HD2 PHE B 196 3.440 17.033 -43.493 1.00 33.80
H
ATOM 3549 HE1 PHE B 196 3.086 14.271 -39.814 1.00 28.83
H
ATOM 3550 HE2 PHE B 196 1.817 15.398 -43.434 1.00 34.90
H
ATOM 3551 HZ PHE B 196 1.635 14.013 -41.594 1.00 30.55
H
ATOM 3552 N LYS B 197 5.795 21.056 -40.182 1.00 23.08
N
ATOM 3553 CA LYS B 197 6.829 21.970 -39.726 1.00 20.49
C
ATOM 3554 C LYS B 197 6.749 22.119 -38.220 1.00 18.79
C
ATOM 3555 O LYS B 197 5.683 21.951 -37.624 1.00 16.31
O
ATOM 3556 CB LYS B 197 6.681 23.346 -40.376 1.00 23.24
C
ATOM 3557 CG LYS B 197 6.695 23.349 -41.889 1.00 26.94
C
ATOM 3558 CD LYS B 197 6.409 24.749 -42.412 1.00 35.07
C
ATOM 3559 CE LYS B 197 6.323 24.784 -43.924 1.00 45.32
C
ATOM 3560 NZ LYS B 197 6.012 26.155 -44.422 1.00 56.39
N1+
ATOM 3561 H LYS B 197 4.998 21.354 -40.061 1.00 27.70
H
ATOM 3562 HA LYS B 197 7.702 21.613 -39.955 1.00 24.58
H
ATOM 3563 HB2 LYS B 197 5.838 23.731 -40.092 1.00 27.89
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ATOM 9813 C ASP E 129 -1.064 32.076 -47.809 1.00 17.71 C
ATOM 9814 O ASP E 129 -1.931 32.851 -48.215 1.00 15.50 O
ATOM 9815 CB ASP E 129 -0.998 30.064 -46.290 1.00 14.79
C
ATOM 9816 CG ASP E 129 -2.224 29.383 -46.902 1.00 19.45
C
ATOM 9817 OD1 ASP E 129 -2.824 29.921 -47.858 1.00 14.89
O
ATOM 9818 OD2 ASP E 129 -2.571 28.277 -46.430 1.00 17.87
O1-

ATOM 9819 H ASP E 129 -2.903 31.593 -45.653 1.00 17.98 H
ATOM 9820 HA ASP E 129 -0.250 31.942 -45.939 1.00 17.72
H
ATOM 9821 HB2 ASP E 129 -0.215 29.757 -46.773 1.00 17.74
H
ATOM 9822 HB3 ASP E 129 -0.940 29.792 -45.361 1.00 17.74
H

ATOM 9823 N GLY E 130 -0.093 31.611 -48.587 1.00 15.51 N
ATOM 9824 CA GLY E 130 0.049 32.047 -49.964 1.00 15.30
C

ATOM 9825 C GLY E 130 -1.162 31.724 -50.821 1.00 17.27 C

ATOM 9826 O GLY E 130 -1.603 32.546 -51.628 1.00 13.78 O

ATOM 9827 H GLY E 130 0.499 31.040 -48.337 1.00 18.61 H
ATOM 9828 HA2 GLY E 130 0.188 33.007 -49.984 1.00 18.37
H
ATOM 9829 HA3 GLY E 130 0.824 31.618 -50.358 1.00 18.37
H

ATOM 9830 N GLU E 131 -1.702 30.522 -50.651 1.00 11.94 N


ATOM 9831 CA GLU E 131 -2.873 30.109 -51.409 1.00 16.34
C

ATOM 9832 C GLU E 131 -4.066 31.011 -51.092 1.00 17.14 C
ATOM 9833 O GLU E 131 -4.838 31.359 -51.984 1.00 15.64
O
ATOM 9834 CB GLU E 131 -3.210 28.648 -51.121 1.00 18.79
C
ATOM 9835 CG GLU E 131 -4.237 28.065 -52.074 1.00 25.42
C
ATOM 9836 CD GLU E 131 -4.437 26.574 -51.886 1.00 25.71
C
ATOM 9837 OE1 GLU E 131 -3.919 26.017 -50.892 1.00 23.82
O
ATOM 9838 OE2 GLU E 131 -5.110 25.960 -52.743 1.00 28.51
O1-

ATOM 9839 H GLU E 131 -1.409 29.929 -50.101 1.00 14.32 H
ATOM 9840 HA GLU E 131 -2.680 30.190 -52.357 1.00 19.61
H
ATOM 9841 HB2 GLU E 131 -2.401 28.118 -51.195 1.00 22.54
H
ATOM 9842 HB3 GLU E 131 -3.567 28.580 -50.221 1.00 22.54
H
ATOM 9843 HG2 GLU E 131 -5.090 28.503 -51.925 1.00 30.51
H
ATOM 9844 HG3 GLU E 131 -3.942 28.215 -52.986 1.00 30.51
H

ATOM 9845 N ASP E 132 -4.207 31.390 -49.824 1.00 14.43 N
ATOM 9846 CA ASP E 132 -5.244 32.334 -49.421 1.00 16.97
C

ATOM 9847 C ASP E 132 -5.081 33.673 -50.140 1.00 15.70 C

ATOM 9848 O ASP E 132 -6.053 34.244 -50.630 1.00 13.91 O
ATOM 9849 CB ASP E 132 -5.220 32.562 -47.904 1.00 15.21
C
ATOM 9850 CG ASP E 132 -5.483 31.294 -47.113 1.00 17.73
C
ATOM 9851 OD1 ASP E 132 -6.201 30.405 -47.621 1.00 16.20
O
ATOM 9852 OD2 ASP E 132 -4.974 31.192 -45.972 1.00 15.44
O1-

ATOM 9853 H ASP E 132 -3.713 31.114 -49.176 1.00 17.31 H
ATOM 9854 HA ASP E 132 -6.112 31.971 -49.656 1.00 20.37
H
ATOM 9855 HB2 ASP E 132 -4.346 32.898 -47.649 1.00 18.25
H
ATOM 9856 HB3 ASP E 132 -5.905 33.208 -47.671 1.00 18.25
H

ATOM 9857 N CYS E 133 -3.849 34.168 -50.198 1.00 12.86 N
ATOM 9858 CA CYS E 133 -3.571 35.454 -50.826 1.00 12.73
C

ATOM 9859 C CYS E 133 -3.981 35.443 -52.295 1.00 14.86 C
ATOM 9860 O CYS E 133 -4.539 36.417 -52.798 1.00 15.23
O
ATOM 9861 CB CYS E 133 -2.086 35.805 -50.691 1.00 21.39
C
ATOM 9862 SG CYS E 133 -1.610 37.374 -51.458 1.00 23.37
S
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H
ATOM   3564  HB3 LYS B 197      7.412  23.908 -40.077  1.00 27.89
H
ATOM   3565  HG2 LYS B 197      7.570  23.074 -42.205  1.00 32.33
H


ATOM   3566  HG3 LYS B 197      6.009  22.749 -42.221  1.00 32.33
H
ATOM   3567  HD2 LYS B 197      5.561  25.056 -42.054  1.00 42.09
H
ATOM   3568  HD3 LYS B 197      7.123  25.345 -42.135  1.00 42.09
H
ATOM   3569  HE2 LYS B 197      7.175  24.510 -44.299  1.00 54.39
H
ATOM   3570  HE3 LYS B 197      5.619  24.186 -44.218  1.00 54.39
H
ATOM   3571  HZ1 LYS B 197      5.967  26.152 -45.311  1.00 67.66
H
ATOM   3572  HZ2 LYS B 197      5.231  26.428 -44.094  1.00 67.66
H
ATOM   3573  HZ3 LYS B 197      6.648  26.723 -44.167  1.00 67.66
H
ATOM   3574  N   GLY B 198     7.886  22.439 -37.617  1.00 17.88
N
ATOM   3575  CA  GLY B 198      7.954  22.804 -36.219  1.00 15.29
C
ATOM   3576  C   GLY B 198     8.632  24.154 -36.088  1.00 16.13
C
ATOM   3577  O   GLY B 198     9.783  24.311 -36.488  1.00 18.89
O
ATOM   3578  H   GLY B 198     8.650  22.452 -38.012  1.00 21.46
H
ATOM   3579  HA2 GLY B 198      7.061  22.860 -35.845  1.00 18.34
H
ATOM   3580  HA3 GLY B 198      8.465  22.143 -35.726  1.00 18.34
H
ATOM   3581  N   TYR B 199     7.914  25.136 -35.554  1.00 16.00
N
ATOM   3582  CA  TYR B 199      8.489  26.452 -35.299  1.00 17.75
C
ATOM   3583  C   TYR B 199     8.943  26.544 -33.849  1.00 19.24
C
ATOM   3584  O   TYR B 199     8.155  26.330 -32.932  1.00 16.43
O
ATOM   3585  CB  TYR B 199      7.481  27.562 -35.600  1.00 15.65
C
ATOM   3586  CG  TYR B 199      7.254  27.819 -37.072  1.00 15.66
C
ATOM   3587  CD1 TYR B 199      8.128  28.612 -37.801  1.00 17.35
C
ATOM   3588  CD2 TYR B 199      6.151  27.285 -37.728  1.00 22.19
C
ATOM   3589  CE1 TYR B 199      7.918  28.856 -39.150  1.00 24.18
C
ATOM   3590  CE2 TYR B 199      5.931  27.523 -39.074  1.00 19.74
C
ATOM   3591  CZ  TYR B 199      6.817  28.308 -39.780  1.00 27.19
C
ATOM   3592  OH  TYR B 199      6.600  28.545 -41.117  1.00 25.40
O
ATOM   3593  H   TYR B 199     7.087  25.065 -35.329  1.00 19.20
H
ATOM   3594  HA  TYR B 199      9.262  26.580 -35.869  1.00 21.30
H
ATOM   3595  HB2 TYR B 199      6.628  27.321 -35.208  1.00 18.77
H
ATOM   3596  HB3 TYR B 199      7.801  28.387 -35.204  1.00 18.77
H
ATOM   3597  HD1 TYR B 199      8.871  28.981 -37.380  1.00 20.82
H
ATOM   3598  HD2 TYR B 199      5.552  26.754 -37.255  1.00 26.63
H
ATOM   3599  HE1 TYR B 199      8.515  29.386 -39.628  1.00 29.02
H
ATOM   3600  HE2 TYR B 199      5.191  27.155 -39.499  1.00 23.69
H


ATOM   3601  HH  TYR B 199      7.209  29.034 -41.425  1.00 30.48
H
ATOM   3602  N   ILE B 200    10.218  26.861 -33.648  1.00 18.78
N
ATOM   3603  CA  ILE B 200     10.764  27.005 -32.305  1.00 20.57
C
ATOM   3604  C   ILE B 200    10.151  28.240 -31.654  1.00 22.09
C
ATOM   3605  O   ILE B 200    10.139  29.323 -32.242  1.00 21.41
O
ATOM   3606  CB  ILE B 200     12.305  27.118 -32.322  1.00 22.56
C
ATOM   3607  CG1 ILE B 200     12.914  25.902 -33.023  1.00 23.09
C
ATOM   3608  CG2 ILE B 200     12.850  27.236 -30.901  1.00 23.03
C
ATOM   3609  CD1 ILE B 200     14.406  26.001 -33.258  1.00 28.91
C
ATOM   3610  H   ILE B 200    10.789  26.998 -34.276  1.00 22.53
H
ATOM   3611  HA  ILE B 200     10.522  26.229 -31.775  1.00 24.68
H
ATOM   3612  HB  ILE B 200     12.551  27.916 -32.816  1.00 27.07
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ATOM   9863  H   CYS E 133     -3.153  33.776 -49.880  1.00 15.43         H
ATOM   9864  HA  CYS E 133     -4.084  36.143 -50.376  1.00 15.28
H
ATOM   9865  HB2 CYS E 133      -1.864  35.860 -49.749  1.00 25.67
H


ATOM   9866  HB3 CYS E 133      -1.562  35.103 -51.109  1.00 25.67
H

ATOM   9867  N   ILE E 134    -3.718  34.331 -52.974  1.00 13.95         N

ATOM   9868  CA  ILE E 134     -4.075  34.191 -54.382  1.00 13.37          C

ATOM   9869  C   ILE E 134    -5.593  34.152 -54.551  1.00 14.47         C

ATOM   9870  O   ILE E 134    -6.141  34.750 -55.476  1.00 12.81         O

ATOM   9871  CB  ILE E 134     -3.457  32.910 -54.996  1.00 18.31          C
ATOM   9872  CG1 ILE E 134     -1.924  32.990 -54.988  1.00 13.13
C
ATOM   9873  CG2 ILE E 134     -3.982  32.670 -56.416  1.00 19.91
C
ATOM   9874  CD1 ILE E 134     -1.336  34.002 -55.955  1.00 13.23
C

ATOM   9875  H   ILE E 134    -3.332  33.639 -52.641  1.00 16.74         H

ATOM   9876  HA  ILE E 134     -3.735  34.955 -54.873  1.00 16.04          H

ATOM   9877  HB  ILE E 134    -3.721  32.156 -54.447  1.00 21.97          H
ATOM   9878 HG12 ILE E 134     -1.632  33.232 -54.096  1.00 15.76
H
ATOM   9879 HG13 ILE E 134     -1.568  32.118 -55.222  1.00 15.76
H
ATOM   9880 HG21 ILE E 134     -3.576  31.863 -56.770  1.00 23.89
H
ATOM   9881 HG22 ILE E 134     -4.946  32.569 -56.382  1.00 23.89
H
ATOM   9882 HG23 ILE E 134     -3.748  33.430 -56.971  1.00 23.89
H
ATOM   9883 HD11 ILE E 134     -0.369  33.983 -55.881  1.00 15.87
H
ATOM   9884 HD12 ILE E 134     -1.604  33.769 -56.858  1.00 15.87
H
ATOM   9885 HD13 ILE E 134     -1.668  34.885 -55.728  1.00 15.87
H

ATOM   9886  N   MET E 135    -6.274  33.436 -53.663  1.00 14.36          N
ATOM   9887  CA  MET E 135     -7.724  33.324 -53.753  1.00 16.92
C

ATOM   9888  C   MET E 135    -8.391  34.654 -53.402  1.00 16.18          C
ATOM   9889  O   MET E 135    -9.399  35.025 -54.011  1.00 14.50
O
ATOM   9890  CB  MET E 135     -8.230  32.199 -52.849  1.00 17.85
C
ATOM   9891  CG  MET E 135     -7.779  30.819 -53.309  1.00 16.72
C
ATOM   9892  SD  MET E 135     -8.442  30.370 -54.924  1.00 24.82
S
ATOM   9893  CE  MET E 135    -10.125  29.954 -54.479  1.00 72.84
C

ATOM   9894  H   MET E 135    -5.923  33.010 -53.003  1.00 17.23          H
ATOM   9895  HA  MET E 135     -7.959  33.093 -54.666  1.00 20.30
H
ATOM   9896  HB2 MET E 135      -7.892  32.341 -51.951  1.00 21.42
H
ATOM   9897  HB3 MET E 135      -9.200  32.211 -52.844  1.00 21.42
H
ATOM   9898  HG2 MET E 135      -6.811  30.806 -53.368  1.00 20.06
H
ATOM   9899  HG3 MET E 135      -8.080  30.158 -52.666  1.00 20.06
H
ATOM   9900  HE1 MET E 135     -10.606  29.688 -55.278  1.00 87.41
H


ATOM   9901  HE2 MET E 135     -10.111  29.222 -53.842  1.00 87.41
H
ATOM   9902  HE3 MET E 135     -10.548  30.731 -54.081  1.00 87.41
H

ATOM   9903  N   HIS E 136    -7.832  35.373 -52.432  1.00 11.58         N

ATOM   9904  CA  HIS E 136     -8.310  36.721 -52.129  1.00 14.06          C

ATOM   9905  C   HIS E 136    -8.086  37.640 -53.325  1.00 14.28         C

ATOM   9906  O   HIS E 136    -8.963  38.424 -53.693  1.00 17.87         O

ATOM   9907  CB  HIS E 136     -7.610  37.302 -50.899  1.00 12.00          C
ATOM   9908  CG  HIS E 136     -8.065  36.709 -49.603  1.00 16.23
C
ATOM   9909  ND1 HIS E 136     -8.066  37.421 -48.422  1.00 14.57
N
ATOM   9910  CD2 HIS E 136     -8.528  35.474 -49.298  1.00 14.11
C
ATOM   9911  CE1 HIS E 136     -8.511  36.650 -47.447  1.00 19.48
C
ATOM   9912  NE2 HIS E 136     -8.798  35.463 -47.952  1.00 16.55
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H
ATOM   3613 HG12 ILE B 200     12.753  25.116 -32.478  1.00 27.71
H
ATOM   3614 HG13 ILE B 200     12.486  25.794 -33.887  1.00 27.71
H
ATOM   3615 HG21 ILE B 200     13.816  27.306 -30.939  1.00 27.64
H
ATOM   3616 HG22 ILE B 200     12.476  28.029 -30.485  1.00 27.64
H
ATOM   3617 HG23 ILE B 200     12.594  26.447 -30.399  1.00 27.64
H
ATOM   3618 HD11 ILE B 200     14.709  25.194 -33.704  1.00 34.69
H
ATOM   3619 HD12 ILE B 200     14.587  26.775 -33.814  1.00 34.69
H
ATOM   3620 HD13 ILE B 200     14.854  26.095 -32.403  1.00 34.69
H
ATOM   3621  N   GLU B 201      9.629  28.066 -30.445  1.00 18.17
N
ATOM   3622  CA  GLU B 201      8.939  29.143 -29.751  1.00 18.13
C
ATOM   3623  C   GLU B 201      9.234  29.096 -28.260  1.00 19.85
C
ATOM   3624  O   GLU B 201      9.528  28.034 -27.703  1.00 17.15
O
ATOM   3625  CB  GLU B 201      7.428  29.050 -30.006  1.00 16.42
C
ATOM   3626  CG  GLU B 201      6.564  30.052 -29.239  1.00 24.81
C
ATOM   3627  CD  GLU B 201      6.879  31.502 -29.577  1.00 29.39
C
ATOM   3628  OE1 GLU B 201      7.969  31.986 -29.202  1.00 28.55
O
ATOM   3629  OE2 GLU B 201      6.028  32.161 -30.213  1.00 33.83
O1-
ATOM   3630  H   GLU B 201      9.663  27.329 -30.003  1.00 21.80
H
ATOM   3631  HA  GLU B 201      9.251  29.994 -30.094  1.00 21.75
H
ATOM   3632  HB2 GLU B 201      7.268  29.193 -30.952  1.00 19.70
H
ATOM   3633  HB3 GLU B 201      7.130  28.161 -29.759  1.00 19.70
H
ATOM   3634  HG2 GLU B 201      5.632  29.892 -29.453  1.00 29.77
H
ATOM   3635  HG3 GLU B 201      6.710  29.929 -28.288  1.00 29.77
H
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N

ATOM   9913  H   HIS E 136     -7.180  35.107 -51.939  1.00 13.89           H

ATOM   9914  HA  HIS E 136     -9.262  36.688 -51.948  1.00 16.87           H
ATOM   9915  HB2 HIS E 136     -6.656  37.142 -50.979  1.00 14.40
H
ATOM   9916  HB3 HIS E 136     -7.780  38.256 -50.865  1.00 14.40
H
ATOM   9917  HD1 HIS E 136     -7.815  38.239 -48.334  1.00 17.48
H
ATOM   9918  HD2 HIS E 136     -8.642  34.765 -49.890  1.00 16.93
H
ATOM   9919  HE1 HIS E 136     -8.606  36.900 -46.556  1.00 23.37
H
ATOM   9920  HE2 HIS E 136     -9.106  34.793 -47.509  1.00 19.86
H

ATOM   9921  N   LEU E 137     -6.903  37.539 -53.922  1.00 13.80           N
ATOM   9922  CA  LEU E 137     -6.548  38.344 -55.086  1.00 14.11
C

ATOM   9923  C   LEU E 137     -7.567  38.163 -56.209  1.00 14.94           C

ATOM   9924  O   LEU E 137     -8.077  39.134 -56.758  1.00 16.40           O
ATOM   9925  CB  LEU E 137     -5.142  37.980 -55.573  1.00 13.09
C
ATOM   9926  CG  LEU E 137     -4.711  38.506 -56.945  1.00 15.68
C
ATOM   9927  CD1 LEU E 137     -4.834  40.023 -57.025  1.00 19.57
C
ATOM   9928  CD2 LEU E 137     -3.285  38.070 -57.252  1.00 16.15
C

ATOM   9929  H   LEU E 137     -6.280  37.003 -53.668  1.00 16.56           H
ATOM   9930  HA  LEU E 137     -6.545  39.281 -54.833  1.00 16.93
H
ATOM   9931  HB2 LEU E 137     -4.504  38.317 -54.925  1.00 15.71
H
ATOM   9932  HB3 LEU E 137     -5.079  37.012 -55.607  1.00 15.71
H
ATOM   9933  HG  LEU E 137     -5.290  38.125 -57.623  1.00 18.82
H
ATOM   9934 HD11 LEU E 137     -4.553  40.316 -57.906  1.00 23.48
H
ATOM   9935 HD12 LEU E 137     -5.759  40.272 -56.873  1.00 23.48
H
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ATOM   3636  N   ASN B 202      9.168  30.260 -27.625  1.00 21.76
N
ATOM   3637  CA  ASN B 202      9.292  30.361 -26.179  1.00 22.40
C
ATOM   3638  C   ASN B 202      8.163  29.592 -25.495  1.00 18.61
C
ATOM   3639  O   ASN B 202      6.984  29.863 -25.726  1.00 17.60
O
ATOM   3640  CB  ASN B 202      9.284  31.831 -25.750  1.00 25.89
C
ATOM   3641  CG  ASN B 202      9.627  32.019 -24.284  1.00 30.35
C
ATOM   3642  OD1 ASN B 202      9.134  31.298 -23.417  1.00 28.07
O
ATOM   3643  ND2 ASN B 202     10.484  32.995 -24.002  1.00 32.66
N
ATOM   3644  H   ASN B 202      9.049  31.017 -28.017  1.00 26.11
H
ATOM   3645  HA  ASN B 202     10.135  29.969 -25.904  1.00 26.88
H
ATOM   3646  HB2 ASN B 202      9.938  32.317 -26.276  1.00 31.07
H
ATOM   3647  HB3 ASN B 202      8.399  32.199 -25.900  1.00 31.07
H
ATOM   3648 HD21 ASN B 202     10.713  33.144 -23.187  1.00 39.19
H
ATOM   3649 HD22 ASN B 202     10.810  33.477 -24.635  1.00 39.19
H
ATOM   3650  N   CYS B 203      8.541  28.633 -24.654  1.00 15.24
N
ATOM   3651  CA  CYS B 203      7.584  27.779 -23.962  1.00 18.87
C
ATOM   3652  C   CYS B 203      6.517  28.573 -23.207  1.00 18.33
C
ATOM   3653  O   CYS B 203      5.426  28.065 -22.954  1.00 20.66
O
ATOM   3654  CB  CYS B 203      8.322  26.852 -22.989  1.00 18.37
C
ATOM   3655  SG  CYS B 203      9.514  25.728 -23.774  1.00 24.48
S
ATOM   3656  H   CYS B 203      9.361  28.456 -24.465  1.00 18.29
H
ATOM   3657  HA  CYS B 203      7.132  27.223 -24.615  1.00 22.64
H
ATOM   3658  HB2 CYS B 203      8.809  27.397 -22.351  1.00 22.04
H
ATOM   3659  HB3 CYS B 203      7.668  26.309 -22.522  1.00 22.04
H
ATOM   3660  N   SER B 204      6.830  29.819 -22.859  1.00 17.86
N
ATOM   3661  CA  SER B 204      5.916  30.656 -22.087  1.00 22.50
C
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ATOM   9936 HD13 LEU E 137     -4.267  40.422 -56.346  1.00 23.48
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ATOM   9937 HD21 LEU E 137     -3.031  38.412 -58.123  1.00 19.37
H
ATOM   9938 HD22 LEU E 137     -2.693  38.425 -56.570  1.00 19.37
H
ATOM   9939 HD23 LEU E 137     -3.245  37.100 -57.252  1.00 19.37
H
ATOM   9940  N   ARG E 138     -7.872  36.915 -56.536  1.00 15.03
N
ATOM   9941  CA  ARG E 138     -8.821  36.624 -57.599  1.00 17.21
C
ATOM   9942  C   ARG E 138    -10.223  37.129 -57.242  1.00 18.67
C
ATOM   9943  O   ARG E 138    -10.941  37.654 -58.093  1.00 17.07
O
ATOM   9944  CB  ARG E 138     -8.835  35.121 -57.883  1.00 17.26
C
ATOM   9945  CG  ARG E 138     -7.536  34.621 -58.502  1.00 18.09
C
ATOM   9946  CD  ARG E 138     -7.529  33.110 -58.664  1.00 22.76
C
ATOM   9947  NE  ARG E 138     -8.525  32.659 -59.628  1.00 25.06
N
ATOM   9948  CZ  ARG E 138     -8.955  31.407 -59.728  1.00 30.07
C
ATOM   9949  NH1 ARG E 138     -8.479  30.470 -58.918  1.00 28.66
N1+
ATOM   9950  NH2 ARG E 138     -9.870  31.092 -60.635  1.00 31.23
N
ATOM   9951  H   ARG E 138     -7.542  36.217 -56.156  1.00 18.04
H
ATOM   9952  HA  ARG E 138     -8.537  37.078 -58.408  1.00 20.66
H
ATOM   9953  HB2 ARG E 138     -8.973  34.644 -57.050  1.00 20.72
H
ATOM   9954  HB3 ARG E 138     -9.556  34.924 -58.501  1.00 20.72
H
ATOM   9955  HG2 ARG E 138     -7.426  35.020 -59.380  1.00 21.70
H
ATOM   9956  HG3 ARG E 138     -6.794  34.867 -57.928  1.00 21.70
H
ATOM   9957  HD2 ARG E 138     -6.655  32.828 -58.978  1.00 27.31
H
ATOM   9958  HD3 ARG E 138     -7.727  32.698 -57.809  1.00 27.31
H
ATOM   9959  HE  ARG E 138     -8.856  33.242 -60.167  1.00 30.07
H
ATOM   9960 HH11 ARG E 138     -7.888  30.673 -58.328  1.00 34.40
H
ATOM   9961 HH12 ARG E 138     -8.761  29.661 -58.985  1.00 34.40
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ATOM   3662  C   SER B 204      4.864  31.354 -22.948  1.00 20.68
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ATOM   3663  O   SER B 204      3.937  31.963 -22.420  1.00 22.63
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ATOM   3664  CB  SER B 204      6.703  31.710 -21.302  1.00 20.13
C
ATOM   3665  OG  SER B 204      7.470  31.104 -20.279  1.00 22.97
O
ATOM   3666  H   SER B 204      7.571  30.206 -23.061  1.00 21.43
H
ATOM   3667  HA  SER B 204      5.449  30.098 -21.446  1.00 27.00
H
ATOM   3668  HB2 SER B 204      7.298  32.177 -21.909  1.00 24.15
H
ATOM   3669  HB3 SER B 204      6.080  32.335 -20.901  1.00 24.15
H
ATOM   3670  HG  SER B 204      7.898  31.690 -19.855  1.00 27.57
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ATOM   3671  N   THR B 205      5.005  31.270 -24.267  1.00 18.95
N
ATOM   3672  CA  THR B 205      4.096  31.964 -25.178  1.00 19.15
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ATOM   3673  C   THR B 205      2.756  31.236 -25.307  1.00 18.16
C
ATOM   3674  O   THR B 205      2.722  30.073 -25.709  1.00 16.01
O
ATOM   3675  CB  THR B 205      4.704  32.103 -26.585  1.00 25.38
C
ATOM   3676  OG1 THR B 205      6.060  32.554 -26.487  1.00 28.77
O
ATOM   3677  CG2 THR B 205      3.896  33.092 -27.420  1.00 24.93
C
ATOM   3678  H   THR B 205      5.621  30.817 -24.661  1.00 22.74
H
ATOM   3679  HA  THR B 205      3.924  32.855 -24.835  1.00 22.99
H
ATOM   3680  HB  THR B 205      4.684  31.241 -27.030  1.00 30.45
H
ATOM   3681  HG1 THR B 205      6.087  33.300 -26.103  1.00 34.52
H
ATOM   3682 HG21 THR B 205      4.286  33.174 -28.305  1.00 29.92
H
ATOM   3683 HG22 THR B 205      2.981  32.784 -27.506  1.00 29.92
H
ATOM   3684 HG23 THR B 205      3.897  33.964 -26.994  1.00 29.92
H
ATOM   3685  N   PRO B 206      1.645  31.917 -24.977  1.00 18.00
N
ATOM   3686  CA  PRO B 206      0.350  31.248 -25.140  1.00 17.87
C
ATOM   3687  C   PRO B 206      0.050  30.892 -26.593  1.00 20.20
C
ATOM   3688  O   PRO B 206      0.187  31.737 -27.477  1.00 14.53
O
ATOM   3689  CB  PRO B 206     -0.655  32.286 -24.621  1.00 22.87
C
ATOM   3690  CG  PRO B 206      0.134  33.198 -23.763  1.00 22.22
C
ATOM   3691  CD  PRO B 206      1.494  33.257 -24.382  1.00 21.86
C
ATOM   3692  HA  PRO B 206      0.306  30.450 -24.591  1.00 21.45
H
ATOM   3693  HB2 PRO B 206     -1.042  32.767 -25.369  1.00 27.45
H
ATOM   3694  HB3 PRO B 206     -1.345  31.841 -24.104  1.00 27.45
H
ATOM   3695  HG2 PRO B 206     -0.277  34.077 -23.758  1.00 26.66
H
ATOM   3696  HG3 PRO B 206      0.183  32.839 -22.864  1.00 26.66
H
ATOM   3697  HD2 PRO B 206      1.525  33.939 -25.071  1.00 26.23
H
ATOM   3698  HD3 PRO B 206      2.171  33.404 -23.703  1.00 26.23
H
ATOM   3699  N   ASN B 207     -0.342  29.644 -26.829  1.00 19.17
N
ATOM   3700  CA  ASN B 207     -0.792  29.207 -28.146  1.00 16.49
C
ATOM   3701  C   ASN B 207     -1.897  28.165 -28.010  1.00 19.54
C
ATOM   3702  O   ASN B 207     -2.061  27.557 -26.950  1.00 15.66
O
ATOM   3703  CB  ASN B 207      0.371  28.628 -28.961  1.00 19.53
C
ATOM   3704  CG  ASN B 207      1.225  29.702 -29.620  1.00 16.92
C
ATOM   3705  OD1 ASN B 207      0.877  30.221 -30.681  1.00 16.98
O


ATOM   3706  ND2 ASN B 207      2.356  30.023 -29.002  1.00 17.66
N
ATOM   3707  H   ASN B 207     -0.356  29.022 -26.235  1.00 23.00
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ATOM   3708  HA  ASN B 207     -1.151  29.968 -28.629  1.00 19.79
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ATOM   9962 HH21 ARG E 138    -10.180  31.697 -61.161  1.00 37.48
H
ATOM   9963 HH22 ARG E 138    -10.149  30.281 -60.700  1.00 37.48
H
ATOM   9964  N   SER E 139    -10.603  36.994 -55.978  1.00 16.32
N
ATOM   9965  CA  SER E 139    -11.907  37.474 -55.534  1.00 16.34
C
ATOM   9966  C   SER E 139    -11.968  39.002 -55.579  1.00 17.91
C
ATOM   9967  O   SER E 139    -13.011  39.582 -55.889  1.00 16.73
O
ATOM   9968  CB  SER E 139    -12.210  36.973 -54.121  1.00 15.40
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ATOM   9969  OG  SER E 139    -12.117  35.559 -54.052  1.00 15.94
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ATOM   9970  H   SER E 139    -10.129  36.630 -55.359  1.00 19.59
H


ATOM   9971  HA  SER E 139    -12.590  37.128 -56.129  1.00 19.61
H
ATOM   9972  HB2 SER E 139    -11.569  37.361 -53.504  1.00 18.47
H
ATOM   9973  HB3 SER E 139    -13.109  37.242 -53.877  1.00 18.47
H
ATOM   9974  HG  SER E 139    -12.668  35.209 -54.582  1.00 19.13
H
ATOM   9975  N   LEU E 140    -10.851  39.657 -55.274  1.00 16.92
N
ATOM   9976  CA  LEU E 140    -10.813  41.119 -55.262  1.00 16.54
C
ATOM   9977  C   LEU E 140    -10.772  41.679 -56.680  1.00 16.09
C
ATOM   9978  O   LEU E 140    -11.345  42.734 -56.953  1.00 20.02
O
ATOM   9979  CB  LEU E 140     -9.612  41.620 -54.459  1.00 14.74
C
ATOM   9980  CG  LEU E 140     -9.696  41.416 -52.944  1.00 13.44
C
ATOM   9981  CD1 LEU E 140     -8.341  41.666 -52.303  1.00 16.07
C
ATOM   9982  CD2 LEU E 140    -10.762  42.310 -52.316  1.00 17.46
C
ATOM   9983  H   LEU E 140    -10.105  39.281 -55.070  1.00 20.30
H
ATOM   9984  HA  LEU E 140    -11.617  41.450 -54.834  1.00 19.85
H
ATOM   9985  HB2 LEU E 140     -8.820  41.157 -54.771  1.00 17.68
H
ATOM   9986  HB3 LEU E 140     -9.514  42.572 -54.618  1.00 17.68
H
ATOM   9987  HG  LEU E 140     -9.941  40.494 -52.766  1.00 16.13
H
ATOM   9988 HD11 LEU E 140     -8.415  41.532 -51.346  1.00 19.28
H
ATOM   9989 HD12 LEU E 140     -7.696  41.045 -52.676  1.00 19.28
H
ATOM   9990 HD13 LEU E 140     -8.068  42.578 -52.490  1.00 19.28
H
ATOM   9991 HD21 LEU E 140    -10.784  42.151 -51.359  1.00 20.95
H
ATOM   9992 HD22 LEU E 140    -10.540  43.238 -52.493  1.00 20.95
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ATOM   9993 HD23 LEU E 140    -11.624  42.096 -52.707  1.00 20.95
H
ATOM   9994  N   VAL E 141    -10.099  40.975 -57.583  1.00 19.49
N
ATOM   9995  CA  VAL E 141    -10.106  41.360 -58.987  1.00 19.08
C
ATOM   9996  C   VAL E 141    -11.545  41.319 -59.499  1.00 21.59
C
ATOM   9997  O   VAL E 141    -11.956  42.169 -60.284  1.00 25.99
O
ATOM   9998  CB  VAL E 141     -9.200  40.441 -59.836  1.00 19.66
C
ATOM   9999  CG1 VAL E 141     -9.450  40.649 -61.326  1.00 22.61
C
ATOM  10000  CG2 VAL E 141     -7.733  40.702 -59.517  1.00 18.87
C
ATOM  10001  H   VAL E 141     -9.633  40.274 -57.409  1.00 23.39
H
ATOM  10002  HA  VAL E 141     -9.779  42.270 -59.071  1.00 22.90
H
ATOM  10003  HB  VAL E 141     -9.396  39.515 -59.623  1.00 23.59
H
ATOM  10004 HG11 VAL E 141     -8.868  40.059 -61.829  1.00 27.13
H
ATOM  10005 HG12 VAL E 141    -10.378  40.445 -61.522  1.00 27.13
H


ATOM  10006 HG13 VAL E 141     -9.260  41.573 -61.551  1.00 27.13
H
ATOM  10007 HG21 VAL E 141     -7.183  40.116 -60.059  1.00 22.64
H
ATOM  10008 HG22 VAL E 141     -7.528  41.629 -59.717  1.00 22.64
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ATOM  3709  HB2 ASN B 207     0.943  28.111 -28.372  1.00 23.43
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ATOM  3710  HB3 ASN B 207     0.014  28.058 -29.660  1.00 23.43
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ATOM  3711 HD21 ASN B 207     2.872  30.625 -29.336  1.00 21.19
H
ATOM  3712 HD22 ASN B 207     2.572  29.630 -28.268  1.00 21.19
H
ATOM  3713  N   THR B 208    -2.662  27.961 -29.077  1.00 16.41
N
ATOM  3714  CA  THR B 208    -3.612  26.859 -29.105  1.00 14.55
C
ATOM  3715  C   THR B 208    -2.801  25.564 -29.139  1.00 16.01
C
ATOM  3716  O   THR B 208    -1.589  25.596 -29.359  1.00 12.88
O
ATOM  3717  CB  THR B 208    -4.568  26.951 -30.307  1.00 14.56
C
ATOM  3718  OG1 THR B 208    -3.821  27.017 -31.528  1.00 15.04
O
ATOM  3719  CG2 THR B 208    -5.450  28.186 -30.187  1.00 15.59
C
ATOM  3720  H   THR B 208    -2.650  28.442 -29.790  1.00 19.70
H
ATOM  3721  HA  THR B 208    -4.140  26.868 -28.292  1.00 17.46
H
ATOM  3722  HB  THR B 208    -5.141  26.168 -30.322  1.00 17.48
H
ATOM  3723  HG1 THR B 208    -4.345  27.067 -32.183  1.00 18.05
H
ATOM  3724 HG21 THR B 208    -6.051  28.239 -30.947  1.00 18.71
H
ATOM  3725 HG22 THR B 208    -5.975  28.140 -29.372  1.00 18.71
H
ATOM  3726 HG23 THR B 208    -4.900  28.984 -30.164  1.00 18.71
H
ATOM  3727  N   TYR B 209    -3.446  24.429 -28.895  1.00 13.50
N
ATOM  3728  CA  TYR B 209    -2.703  23.175 -28.800  1.00 13.00
C
ATOM  3729  C   TYR B 209    -3.513  21.958 -29.226  1.00 14.49
C
ATOM  3730  O   TYR B 209    -4.744  21.996 -29.295  1.00 11.51
O
ATOM  3731  CB  TYR B 209    -2.187  22.983 -27.371  1.00 14.00
C
ATOM  3732  CG  TYR B 209    -3.260  22.967 -26.303  1.00 13.42
C
ATOM  3733  CD1 TYR B 209    -3.864  24.146 -25.876  1.00 15.48
C
ATOM  3734  CD2 TYR B 209    -3.650  21.777 -25.703  1.00 14.21
C
ATOM  3735  CE1 TYR B 209    -4.840  24.134 -24.894  1.00 19.28
C
ATOM  3736  CE2 TYR B 209    -4.619  21.755 -24.720  1.00 19.66
C
ATOM  3737  CZ  TYR B 209    -5.211  22.935 -24.319  1.00 20.66
C
ATOM  3738  OH  TYR B 209    -6.178  22.907 -23.343  1.00 19.94
O
ATOM  3739  H   TYR B 209    -4.295  24.355 -28.783  1.00 16.20
H
ATOM  3740  HA  TYR B 209    -1.931  23.231 -29.385  1.00 15.60
H

ATOM  3741  HB2 TYR B 209    -1.714  22.137 -27.325  1.00 16.80
H
ATOM  3742  HB3 TYR B 209    -1.577  23.708 -27.163  1.00 16.80
H
ATOM  3743  HD1 TYR B 209    -3.615  24.954 -26.263  1.00 18.58
H
ATOM  3744  HD2 TYR B 209    -3.253  20.979 -25.971  1.00 17.06
H
ATOM  3745  HE1 TYR B 209    -5.240  24.928 -24.621  1.00 23.13
H
ATOM  3746  HE2 TYR B 209    -4.874  20.949 -24.333  1.00 23.60
H
ATOM  3747  HH  TYR B 209    -6.458  23.684 -23.193  1.00 23.92
H
ATOM  3748  N   ILE B 210    -2.782  20.885 -29.516  1.00 14.80
N
ATOM  3749  CA  ILE B 210    -3.348  19.627 -29.975  1.00 18.21
C
ATOM  3750  C   ILE B 210    -3.006  18.514 -28.994  1.00 15.01
C
ATOM  3751  O   ILE B 210    -1.834  18.276 -28.705  1.00 15.25
O
ATOM  3752  CB  ILE B 210    -2.818  19.246 -31.373  1.00 15.54
C
ATOM  3753  CG1 ILE B 210    -3.110  20.366 -32.375  1.00 15.83
C
ATOM  3754  CG2 ILE B 210    -3.438  17.936 -31.837  1.00 14.28
C
ATOM  3755  CD1 ILE B 210    -2.421  20.193 -33.707  1.00 18.37
C
ATOM  3756  H   ILE B 210    -1.924  20.865 -29.452  1.00 17.76
H
ATOM  3757  HA  ILE B 210    -4.314  19.706 -30.024  1.00 21.85
H
```

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ATOM 10009 HG23 VAL E 141    -7.579  40.525 -58.578  1.00 22.64
H
ATOM 10010  N   ARG E 142   -12.307  40.335 -59.033  1.00 19.07
N
ATOM 10011  CA  ARG E 142   -13.704  40.192 -59.429  1.00 24.24
C
ATOM 10012  C   ARG E 142   -14.533  41.405 -59.009  1.00 26.35
C
ATOM 10013  O   ARG E 142   -15.269  41.966 -59.821  1.00 28.20
O
ATOM 10014  CB  ARG E 142   -14.294  38.913 -58.832  1.00 25.76
C
ATOM 10015  CG  ARG E 142   -15.783  38.721 -59.070  1.00 36.68
C
ATOM 10016  CD  ARG E 142   -16.117  38.625 -60.548  1.00 44.40
C
ATOM 10017  NE  ARG E 142   -17.545  38.399 -60.761  1.00 54.59
N
ATOM 10018  CZ  ARG E 142   -18.135  37.208 -60.717  1.00 59.95
C
ATOM 10019  NH1 ARG E 142   -17.425  36.115 -60.469  1.00 56.87
N1+
ATOM 10020  NH2 ARG E 142   -19.440  37.109 -60.921  1.00 68.51
N
ATOM 10021  H   ARG E 142   -12.037  39.733 -58.483  1.00 22.89
H
ATOM 10022  HA  ARG E 142   -13.751  40.119 -60.395  1.00 29.09
H
ATOM 10023  HB2 ARG E 142   -13.835  38.151 -59.219  1.00 30.91
H
ATOM 10024  HB3 ARG E 142   -14.150  38.925 -57.872  1.00 30.91
H
ATOM 10025  HG2 ARG E 142   -16.071  37.900 -58.641  1.00 44.02
H
ATOM 10026  HG3 ARG E 142   -16.265  39.478 -58.700  1.00 44.02
H
ATOM 10027  HD2 ARG E 142   -15.872  39.455 -60.986  1.00 53.28
H
ATOM 10028  HD3 ARG E 142   -15.631  37.882 -60.939  1.00 53.28
H
ATOM 10029  HE  ARG E 142   -18.038  39.084 -60.927  1.00 65.51
H
ATOM 10030 HH11 ARG E 142   -16.578  36.173 -60.334  1.00 68.25
H
ATOM 10031 HH12 ARG E 142   -17.813  35.347 -60.442  1.00 68.25
H
ATOM 10032 HH21 ARG E 142   -19.905  37.814 -61.084  1.00 82.22
H
ATOM 10033 HH22 ARG E 142   -19.822  36.339 -60.894  1.00 82.22
H
ATOM 10034  N   LYS E 143   -14.416  41.805 -57.745  1.00 23.88
N
ATOM 10035  CA  LYS E 143   -15.118  42.986 -57.251  1.00 28.82
C
ATOM 10036  C   LYS E 143   -14.736  44.212 -58.065  1.00 28.57
C
ATOM 10037  O   LYS E 143   -15.592  44.986 -58.488  1.00 31.07
O
ATOM 10038  CB  LYS E 143   -14.800  43.246 -55.778  1.00 23.54
C
ATOM 10039  CG  LYS E 143   -15.219  42.147 -54.829  1.00 28.69
C
ATOM 10040  CD  LYS E 143   -15.096  42.597 -53.378  1.00 28.36
C

ATOM 10041  CE  LYS E 143   -16.233  43.528 -52.982  1.00 35.13
C
ATOM 10042  NZ  LYS E 143   -16.120  43.988 -51.571  1.00 39.13
N1+
ATOM 10043  H   LYS E 143   -13.935  41.408 -57.152  1.00 28.66
H
ATOM 10044  HA  LYS E 143   -16.074  42.849 -57.337  1.00 34.59
H
ATOM 10045  HB2 LYS E 143   -13.842  43.363 -55.685  1.00 28.25
H
ATOM 10046  HB3 LYS E 143   -15.255  44.057 -55.503  1.00 28.25
H
ATOM 10047  HG2 LYS E 143   -16.144  41.911 -54.998  1.00 34.42
H
ATOM 10048  HG3 LYS E 143   -14.645  41.375 -54.959  1.00 34.42
H
ATOM 10049  HD2 LYS E 143   -15.124  41.819 -52.799  1.00 34.03
H
ATOM 10050  HD3 LYS E 143   -14.259  43.072 -53.261  1.00 34.03
H
ATOM 10051  HE2 LYS E 143   -16.218  44.309 -53.557  1.00 42.15
H
ATOM 10052  HE3 LYS E 143   -17.076  43.059 -53.080  1.00 42.15
H
ATOM 10053  HZ1 LYS E 143   -16.137  43.289 -51.021  1.00 46.95
H
ATOM 10054  HZ2 LYS E 143   -15.355  44.429 -51.455  1.00 46.95
H
ATOM 10055  HZ3 LYS E 143   -16.798  44.529 -51.372  1.00 46.95
H
ATOM 10056  N   MET E 144   -13.436  44.376 -58.272  1.00 25.28
N
ATOM 10057  CA  MET E 144   -12.900  45.547 -58.948  1.00 27.97
C
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ATOM   3758  HB  ILE B 210    -1.857  19.127 -31.315  1.00 18.65
H
ATOM   3759 HG12 ILE B 210    -4.066  20.397 -32.538  1.00 18.99
H
ATOM   3760 HG13 ILE B 210    -2.814  21.208 -31.996  1.00 18.99
H
ATOM   3761 HG21 ILE B 210    -3.090  17.718 -32.716  1.00 17.13
H
ATOM   3762 HG22 ILE B 210    -3.207  17.237 -31.207  1.00 17.13
H
ATOM   3763 HG23 ILE B 210    -4.401  18.041 -31.879  1.00 17.13
H
ATOM   3764 HD11 ILE B 210    -2.655  20.938 -34.282  1.00 22.04
H
ATOM   3765 HD12 ILE B 210    -1.461  20.172 -33.565  1.00 22.04
H
ATOM   3766 HD13 ILE B 210    -2.714  19.360 -34.108  1.00 22.04
H
ATOM   3767  N   CYS B 211    -4.031  17.845 -28.478  1.00 13.03
N
ATOM   3768  CA  CYS B 211    -3.838  16.677 -27.628  1.00 16.24
C
ATOM   3769  C   CYS B 211    -3.968  15.420 -28.469  1.00 20.33
C
ATOM   3770  O   CYS B 211    -4.712  15.394 -29.452  1.00 17.44
O
ATOM   3771  CB  CYS B 211    -4.848  16.651 -26.479  1.00 22.87
C
ATOM   3772  SG  CYS B 211    -4.586  17.937 -25.240  1.00 32.56
S
ATOM   3773  H   CYS B 211    -4.856  18.049 -28.607  1.00 15.64
H
ATOM   3774  HA  CYS B 211    -2.945  16.699 -27.249  1.00 19.49
H
ATOM   3775  HB2 CYS B 211    -5.739  16.770 -26.844  1.00 27.44
H

ATOM   3776  HB3 CYS B 211    -4.789  15.793 -26.031  1.00 27.44
H
ATOM   3777  N   MET B 212    -3.236  14.385 -28.075  1.00 20.62
N
ATOM   3778  CA  MET B 212    -3.224  13.123 -28.796  1.00 19.04
C
ATOM   3779  C   MET B 212    -3.266  11.958 -27.822  1.00 24.41
C
ATOM   3780  O   MET B 212    -2.621  11.994 -26.773  1.00 20.80
O
ATOM   3781  CB  MET B 212    -1.982  13.025 -29.676  1.00 22.84
C
ATOM   3782  CG  MET B 212    -1.792  11.672 -30.333  1.00 22.92
C
ATOM   3783  SD  MET B 212    -0.403  11.689 -31.475  1.00 24.54
S
ATOM   3784  CE  MET B 212    -0.348   9.970 -31.974  1.00 31.53
C
ATOM   3785  H   MET B 212    -2.729  14.391 -27.380  1.00 24.74
H
ATOM   3786  HA  MET B 212    -4.003  13.081 -29.372  1.00 22.85
H
ATOM   3787  HB2 MET B 212    -2.047  13.688 -30.381  1.00 27.41
H
ATOM   3788  HB3 MET B 212    -1.199  13.201 -29.131  1.00 27.41
H
ATOM   3789  HG2 MET B 212    -1.616  11.006 -29.650  1.00 27.50
H
ATOM   3790  HG3 MET B 212    -2.592  11.441 -30.830  1.00 27.50
H
ATOM   3791  HE1 MET B 212     0.378   9.849 -32.605  1.00 37.83
H
ATOM   3792  HE2 MET B 212    -0.200   9.419 -31.189  1.00 37.83
H
ATOM   3793  HE3 MET B 212    -1.192   9.735 -32.390  1.00 37.83
H
ATOM   3794  N   GLN B 213    -4.031  10.931 -28.178  1.00 22.35
N
ATOM   3795  CA  GLN B 213    -4.116   9.713 -27.386  1.00 24.56
C
ATOM   3796  C   GLN B 213    -4.148   8.501 -28.309  1.00 31.59
C
ATOM   3797  O   GLN B 213    -5.071   8.346 -29.111  1.00 28.14
O
ATOM   3798  CB  GLN B 213    -5.357   9.735 -26.493  1.00 27.78
C
ATOM   3799  CG  GLN B 213    -5.480   8.534 -25.565  1.00 30.43
C
ATOM   3800  CD  GLN B 213    -6.836   8.462 -24.893  1.00 33.92
C
ATOM   3801  OE1 GLN B 213    -7.736   7.766 -25.363  1.00 34.06
O
ATOM   3802  NE2 GLN B 213    -6.991   9.185 -23.788  1.00 30.76
N
ATOM   3803  H   GLN B 213    -4.519  10.917 -28.886  1.00 26.82
H
ATOM   3804  HA  GLN B 213    -3.333   9.644 -26.818  1.00 29.47
H
ATOM   3805  HB2 GLN B 213    -5.329  10.533 -25.941  1.00 33.34
H
```

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ATOM  10058  C   MET E 144   -13.406  45.645 -60.384  1.00 35.15
C
ATOM  10059  O   MET E 144   -13.712  46.735 -60.871  1.00 34.51
O
ATOM  10060  CB  MET E 144   -11.370  45.506 -58.919  1.00 25.24
C
ATOM  10061  CG  MET E 144   -10.688  46.653 -59.650  1.00 29.40
C
ATOM  10062  SD  MET E 144   -10.298  46.242 -61.360  1.00 42.62
S
ATOM  10063  CE  MET E 144    -9.018  45.007 -61.143  1.00 35.57
C
ATOM  10064  H   MET E 144   -12.835  43.813 -58.026  1.00 30.34
H
ATOM  10065  HA  MET E 144   -13.182  46.340 -58.465  1.00 33.56
H
ATOM  10066  HB2 MET E 144   -11.078  45.533 -57.994  1.00 30.28
H
ATOM  10067  HB3 MET E 144   -11.076  44.679 -59.330  1.00 30.28
H
ATOM  10068  HG2 MET E 144   -11.278  47.423 -59.653  1.00 35.29
H
ATOM  10069  HG3 MET E 144    -9.859  46.870 -59.196  1.00 35.29
H
ATOM  10070  HE1 MET E 144    -8.721  44.703 -62.015  1.00 42.68
H
ATOM  10071  HE2 MET E 144    -8.276  45.403 -60.660  1.00 42.68
H
ATOM  10072  HE3 MET E 144    -9.381  44.262 -60.639  1.00 42.68
H
ATOM  10073  N   GLU E 145   -13.501  44.505 -61.059  1.00 31.93
N
ATOM  10074  CA  GLU E 145   -13.949  44.488 -62.446  1.00 31.71
C
ATOM  10075  C   GLU E 145   -15.462  44.676 -62.551  1.00 30.25
C

ATOM  10076  O   GLU E 145   -15.959  45.154 -63.568  1.00 33.30
O
ATOM  10077  CB  GLU E 145   -13.522  43.186 -63.125  1.00 33.36
C
ATOM  10078  CG  GLU E 145   -12.021  43.118 -63.401  1.00 35.77
C
ATOM  10079  CD  GLU E 145   -11.606  41.844 -64.115  1.00 37.01
C
ATOM  10080  OE1 GLU E 145   -12.430  40.908 -64.196  1.00 36.72
O
ATOM  10081  OE2 GLU E 145   -10.454  41.782 -64.598  1.00 37.94
O1-
ATOM  10082  H   GLU E 145   -13.313  43.729 -60.738  1.00 38.32
H
ATOM  10083  HA  GLU E 145   -13.526  45.222 -62.919  1.00 38.05
H
ATOM  10084  HB2 GLU E 145   -13.754  42.440 -62.550  1.00 40.04
H
ATOM  10085  HB3 GLU E 145   -13.986  43.107 -63.973  1.00 40.04
H
ATOM  10086  HG2 GLU E 145   -11.769  43.869 -63.960  1.00 42.93
H
ATOM  10087  HG3 GLU E 145   -11.544  43.157 -62.558  1.00 42.93
H
ATOM  10088  N   ASP E 146   -16.188  44.314 -61.498  1.00 33.13
N
ATOM  10089  CA  ASP E 146   -17.638  44.488 -61.473  1.00 33.34
C
ATOM  10090  C   ASP E 146   -18.047  45.808 -60.815  1.00 39.24
C
ATOM  10091  O   ASP E 146   -19.225  46.021 -60.525  1.00 45.17
O
ATOM  10092  CB  ASP E 146   -18.306  43.323 -60.738  1.00 33.65
C
ATOM  10093  CG  ASP E 146   -18.110  41.998 -61.444  1.00 38.71
C
ATOM  10094  OD1 ASP E 146   -17.633  42.000 -62.600  1.00 44.37
O
ATOM  10095  OD2 ASP E 146   -18.444  40.953 -60.846  1.00 37.49
O1-
ATOM  10096  H   ASP E 146   -15.864  43.964 -60.782  1.00 39.75
H
ATOM  10097  HA  ASP E 146   -17.969  44.495 -62.385  1.00 40.00
H
ATOM  10098  HB2 ASP E 146   -17.924  43.249 -59.850  1.00 40.39
H
ATOM  10099  HB3 ASP E 146   -19.259  43.492 -60.677  1.00 40.39
H
ATOM  10100  N   SER E 147   -17.081  46.693 -60.585  1.00 36.27
N
ATOM  10101  CA  SER E 147   -17.357  47.964 -59.919  1.00 39.56
C
ATOM  10102  C   SER E 147   -18.193  48.896 -60.799  1.00 40.84
C
ATOM  10103  O   SER E 147   -17.812  49.204 -61.926  1.00 41.91
O
ATOM  10104  CB  SER E 147   -16.049  48.657 -59.528  1.00 40.67
C
ATOM  10105  OG  SER E 147   -16.299  49.901 -58.895  1.00 39.95
O
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ATOM   3806  HB3 GLN B 213    -6.145   9.755 -27.057  1.00 33.54
H
ATOM   3807  HG2 GLN B 213    -5.356   7.722 -26.080  1.00 36.51
H
ATOM   3808  HG3 GLN B 213    -4.803   8.597 -24.873  1.00 36.51
H
ATOM   3809 HE21 GLN B 213    -7.742   9.177 -23.371  1.00 36.91
H
ATOM   3810 HE22 GLN B 213    -6.339   9.661 -23.491  1.00 36.91
H


ATOM   3811  N   ARG B 214    -3.137   7.645 -28.192  1.00 26.52
N
ATOM   3812  CA  ARG B 214    -3.047   6.450 -29.023  1.00 33.12
C
ATOM   3813  C   ARG B 214    -4.103   5.415 -28.633  1.00 37.91
C
ATOM   3814  O   ARG B 214    -4.624   5.431 -27.514  1.00 34.52
O
ATOM   3815  CB  ARG B 214    -1.646   5.838 -28.929  1.00 42.25
C
ATOM   3816  CG  ARG B 214    -0.556   6.668 -29.617  1.00 42.31
C
ATOM   3817  CD  ARG B 214     0.652   5.824 -30.026  1.00 42.80
C
ATOM   3818  NE  ARG B 214     0.268   4.633 -30.787  1.00 51.67
N
ATOM   3819  CZ  ARG B 214     0.147   4.575 -32.112  1.00 45.75
C
ATOM   3820  NH1 ARG B 214     0.385   5.640 -32.865  1.00 40.29
N
ATOM   3821  NH2 ARG B 214    -0.212   3.438 -32.692  1.00 44.70
N
ATOM   3822  H   ARG B 214    -2.488   7.735 -27.635  1.00 31.82
H
ATOM   3823  HA  ARG B 214    -3.201   6.699 -29.947  1.00 39.74
H
ATOM   3824  HB2 ARG B 214    -1.405   5.751 -27.993  1.00 50.70
H
ATOM   3825  HB3 ARG B 214    -1.659   4.963 -29.347  1.00 50.70
H
ATOM   3826  HG2 ARG B 214    -0.924   7.074 -30.417  1.00 50.77
H
ATOM   3827  HG3 ARG B 214    -0.248   7.356 -29.006  1.00 50.77
H
ATOM   3828  HD2 ARG B 214     1.240   6.360 -30.582  1.00 51.36
H
ATOM   3829  HD3 ARG B 214     1.122   5.534 -29.228  1.00 51.36
H
ATOM   3830  HE  ARG B 214     0.108   3.914 -30.343  1.00 62.00
H
ATOM   3831 HH11 ARG B 214     0.617   6.382 -32.498  1.00 48.35
H
ATOM   3832 HH12 ARG B 214     0.304   5.589 -33.719  1.00 48.35
H
ATOM   3833 HH21 ARG B 214    -0.367   2.741 -32.213  1.00 53.64
H
ATOM   3834 HH22 ARG B 214    -0.289   3.397 -33.548  1.00 53.64
H
ATOM   3835  N   THR B 215    -4.411   4.526 -29.575  1.00 42.55
N
ATOM   3836  CA  THR B 215    -5.441   3.504 -29.396  1.00 47.95
C
ATOM   3837  C   THR B 215    -6.789   4.141 -29.072  1.00 47.59
C
ATOM   3838  O   THR B 215    -7.690   4.169 -29.914  1.00 48.20
O
ATOM   3839  CB  THR B 215    -5.061   2.502 -28.283  1.00 45.58
C
ATOM   3840  OG1 THR B 215    -3.858   1.816 -28.651  1.00 50.86
O
ATOM   3841  CG2 THR B 215    -6.166   1.475 -28.071  1.00 55.86
C
ATOM   3842  H   THR B 215    -4.028   4.494 -30.344  1.00 51.06
H
ATOM   3843  HA  THR B 215    -5.537   3.008 -30.223  1.00 57.54
H
ATOM   3844  HB  THR B 215    -4.920   2.980 -27.451  1.00 54.70
H
ATOM   3845  HG1 THR B 215    -3.645   1.269 -28.050  1.00 61.03
H


ATOM   3846 HG21 THR B 215    -5.911   0.855 -27.370  1.00 67.03
H
ATOM   3847 HG22 THR B 215    -6.988   1.922 -27.814  1.00 67.03
H
ATOM   3848 HG23 THR B 215    -6.320   0.980 -28.891  1.00 67.03
H

TER    3849      THR B 215
ATOM   3850  N   GLU C  93   -21.096  71.394  -8.126  1.00 57.72
N
ATOM   3851  CA  GLU C  93   -19.991  72.179  -7.586  1.00 64.40
C
ATOM   3852  C   GLU C  93   -18.719  71.951  -8.396  1.00 60.46
C
ATOM   3853  O   GLU C  93   -18.309  72.806  -9.183  1.00 62.51
O
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ATOM  10106  H   SER E 147   -16.257  46.582 -60.805  1.00 43.52
H
ATOM  10107  HA  SER E 147   -17.859  47.792 -59.107  1.00 47.47
H
ATOM  10108  HB2 SER E 147   -15.561  48.084 -58.916  1.00 48.80
H
ATOM  10109  HB3 SER E 147   -15.523  48.811 -60.329  1.00 48.80
H
ATOM  10110  HG  SER E 147   -15.573  50.269 -58.687  1.00 47.94
H


ATOM  10111  N   LYS E 148   -19.326  49.349 -60.270  1.00 44.08
N
ATOM  10112  CA  LYS E 148   -20.219  50.241 -61.006  1.00 49.92
C
ATOM  10113  C   LYS E 148   -19.658  51.658 -61.121  1.00 48.76
C
ATOM  10114  O   LYS E 148   -20.209  52.494 -61.838  1.00 51.47
O
ATOM  10115  CB  LYS E 148   -21.595  50.281 -60.339  1.00 47.47
C
ATOM  10116  CG  LYS E 148   -22.494  49.113 -60.710  1.00 50.15
C
ATOM  10117  CD  LYS E 148   -23.784  49.125 -59.908  1.00 47.36
C
ATOM  10118  CE  LYS E 148   -24.808  48.165 -60.488  1.00 50.24
C
ATOM  10119  NZ  LYS E 148   -24.266  46.787 -60.642  1.00 51.53
N1+
ATOM  10120  H   LYS E 148   -19.603  49.153 -59.479  1.00 52.90
H
ATOM  10121  HA  LYS E 148   -20.335  49.894 -61.905  1.00 59.91
H
ATOM  10122  HB2 LYS E 148   -21.476  50.269 -59.376  1.00 56.96
H
ATOM  10123  HB3 LYS E 148   -22.047  51.098 -60.604  1.00 56.96
H
ATOM  10124  HG2 LYS E 148   -22.721  49.170 -61.651  1.00 60.18
H
ATOM  10125  HG3 LYS E 148   -22.029  48.282 -60.526  1.00 60.18
H
ATOM  10126  HD2 LYS E 148   -23.596  48.855 -58.995  1.00 56.83
H
ATOM  10127  HD3 LYS E 148   -24.162  50.018 -59.922  1.00 56.83
H
ATOM  10128  HE2 LYS E 148   -25.575  48.123 -59.896  1.00 60.29
H
ATOM  10129  HE3 LYS E 148   -25.079  48.481 -61.364  1.00 60.29
H
ATOM  10130  HZ1 LYS E 148   -24.890  46.252 -60.983  1.00 61.84
H
ATOM  10131  HZ2 LYS E 148   -23.562  46.796 -61.187  1.00 61.84
H
ATOM  10132  HZ3 LYS E 148   -24.014  46.470 -59.850  1.00 61.84
H
ATOM  10133  N   ARG E 149   -18.566  51.925 -60.411  1.00 53.83
N
ATOM  10134  CA  ARG E 149   -17.911  53.229 -60.464  1.00 58.71
C
ATOM  10135  C   ARG E 149   -17.092  53.366 -61.747  1.00 57.83
C
ATOM  10136  O   ARG E 149   -17.518  54.015 -62.704  1.00 57.91
O
ATOM  10137  CB  ARG E 149   -17.015  53.422 -59.237  1.00 55.33
C
ATOM  10138  CG  ARG E 149   -16.391  54.807 -59.099  1.00 52.08
C
ATOM  10139  CD  ARG E 149   -17.379  55.834 -58.558  1.00 50.40
C
ATOM  10140  NE  ARG E 149   -16.679  56.984 -57.985  1.00 49.43
N
ATOM  10141  CZ  ARG E 149   -16.619  57.279 -56.687  1.00 45.97
C
ATOM  10142  NH1 ARG E 149   -17.237  56.531 -55.780  1.00 36.16
N1+
ATOM  10143  NH2 ARG E 149   -15.943  58.348 -56.292  1.00 50.80
N
ATOM  10144  H   ARG E 149   -18.180  51.363 -59.887  1.00 64.60
H
ATOM  10145  HA  ARG E 149   -18.586  53.925 -60.460  1.00 70.45
H


ATOM  10146  HB2 ARG E 149   -17.545  53.260 -58.441  1.00 66.39
H
ATOM  10147  HB3 ARG E 149   -16.291  52.779 -59.281  1.00 66.39
H
ATOM  10148  HG2 ARG E 149   -15.641  54.757 -58.486  1.00 62.50
H
ATOM  10149  HG3 ARG E 149   -16.091  55.108 -59.971  1.00 62.50
H
ATOM  10150  HD2 ARG E 149   -17.944  56.150 -59.280  1.00 60.48
H
ATOM  10151  HD3 ARG E 149   -17.917  55.427 -57.861  1.00 60.48
H
ATOM  10152  HE  ARG E 149   -16.273  57.511 -58.530  1.00 59.32
H
ATOM  10153 HH11 ARG E 149   -17.678  55.834 -56.025  1.00 43.39
H
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ATOM   3854  CB  GLU C  93    -19.747  71.824  -6.115  1.00 58.36
C
ATOM   3855  CG  GLU C  93    -18.795  72.760  -5.383  1.00 58.10
C
ATOM   3856  CD  GLU C  93    -19.458  74.063  -4.971  1.00 61.87
C
ATOM   3857  OE1 GLU C  93    -20.558  74.362  -5.481  1.00 60.81
O
ATOM   3858  OE2 GLU C  93    -18.885  74.786  -4.129  1.00 60.23
O1-
ATOM   3859  HA  GLU C  93    -20.216  73.122  -7.636  1.00 77.28
H
ATOM   3860  HB2 GLU C  93    -20.596  71.844  -5.647  1.00 70.03
H
ATOM   3861  HB3 GLU C  93    -19.371  70.930  -6.071  1.00 70.03
H
ATOM   3862  HG2 GLU C  93    -18.474  72.320  -4.580  1.00 69.72
H
ATOM   3863  HG3 GLU C  93    -18.050  72.973  -5.966  1.00 69.72
H
ATOM   3864  N   SER C  94    -18.107  70.787  -8.197  1.00 55.28
N
ATOM   3865  CA  SER C  94    -16.857  70.437  -8.856  1.00 48.47
C
ATOM   3866  C   SER C  94    -16.938  69.038  -9.447  1.00 42.81
C
ATOM   3867  O   SER C  94    -17.428  68.105  -8.805  1.00 35.00
O
ATOM   3868  CB  SER C  94    -15.690  70.525  -7.872  1.00 51.57
C
ATOM   3869  OG  SER C  94    -15.518  71.852  -7.409  1.00 59.31
O
ATOM   3870  H   SER C  94    -18.404  70.172  -7.673  1.00 66.34
H
ATOM   3871  HA  SER C  94    -16.691  71.062  -9.579  1.00 58.16
H
ATOM   3872  HB2 SER C  94    -15.872  69.947  -7.115  1.00 61.88
H
ATOM   3873  HB3 SER C  94    -14.878  70.239  -8.320  1.00 61.88
H
ATOM   3874  HG  SER C  94    -14.875  71.887  -6.870  1.00 71.18
H
ATOM   3875  N   TYR C  95    -16.457  68.908 -10.678  1.00 41.19
N
ATOM   3876  CA  TYR C  95    -16.444  67.634 -11.379  1.00 38.72
C
ATOM   3877  C   TYR C  95    -15.019  67.168 -11.629  1.00 38.41
C
ATOM   3878  O   TYR C  95    -14.099  67.975 -11.764  1.00 32.89
O
ATOM   3879  CB  TYR C  95    -17.190  67.743 -12.708  1.00 37.08
C
ATOM   3880  CG  TYR C  95    -18.693  67.809 -12.573  1.00 37.60
C


ATOM   3881  CD1 TYR C  95    -19.338  69.017 -12.344  1.00 41.89
C
ATOM   3882  CD2 TYR C  95    -19.469  66.663 -12.685  1.00 34.68
C
ATOM   3883  CE1 TYR C  95    -20.712  69.080 -12.226  1.00 39.87
C
ATOM   3884  CE2 TYR C  95    -20.842  66.716 -12.569  1.00 36.52
C
ATOM   3885  CZ  TYR C  95    -21.459  67.926 -12.340  1.00 40.73
C
ATOM   3886  OH  TYR C  95    -22.829  67.980 -12.225  1.00 41.72
O
ATOM   3887  H   TYR C  95    -16.127  69.557 -11.136  1.00 49.43
H
ATOM   3888  HA  TYR C  95    -16.890  66.966 -10.835  1.00 46.47
H
ATOM   3889  HB2 TYR C  95    -16.899  68.549 -13.162  1.00 44.49
H
ATOM   3890  HB3 TYR C  95    -16.976  66.967 -13.249  1.00 44.49
H
ATOM   3891  HD1 TYR C  95    -18.837  69.797 -12.267  1.00 50.27
H
ATOM   3892  HD2 TYR C  95    -19.055  65.845 -12.840  1.00 41.62
H
ATOM   3893  HE1 TYR C  95    -21.132  69.895 -12.072  1.00 47.85
H
ATOM   3894  HE2 TYR C  95    -21.348  65.940 -12.645  1.00 43.82
H
ATOM   3895  HH  TYR C  95    -23.074  68.771 -12.087  1.00 50.06
H
ATOM   3896  N   CYS C  96    -14.853  65.853 -11.684  1.00 35.27
N
ATOM   3897  CA  CYS C  96    -13.590  65.246 -12.064  1.00 33.31
C
ATOM   3898  C   CYS C  96    -13.632  64.911 -13.550  1.00 27.94
C
ATOM   3899  O   CYS C  96    -14.616  64.360 -14.036  1.00 24.96
O
ATOM   3900  CB  CYS C  96    -13.329  63.990 -11.232  1.00 32.47
C
ATOM   3901  SG  CYS C  96    -11.682  63.299 -11.433  1.00 36.22
S
ATOM   3902  H   CYS C  96    -15.470  65.283 -11.503  1.00 42.33
H
ATOM   3903  HA  CYS C  96    -12.867  65.874 -11.909  1.00 39.98
H
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ATOM  10154 HH12 ARG E 149    -17.191  56.739 -54.947  1.00 43.39
H
ATOM  10155 HH21 ARG E 149    -15.543  58.842 -56.871  1.00 60.96
H
ATOM  10156 HH22 ARG E 149    -15.906  58.549 -55.457  1.00 60.96
H

TER   10157      ARG E 149

ATOM  10158  N   GLY F   0     -3.228  29.760  20.619  1.00 29.41           N

ATOM  10159  CA  GLY F   0     -3.768  30.515  19.453  1.00 26.44           C

ATOM  10160  C   GLY F   0     -4.157  29.577  18.329  1.00 26.73           C

ATOM  10161  O   GLY F   0     -4.379  28.388  18.561  1.00 25.80           O

ATOM  10162  H1  GLY F   0     -3.701  29.959  21.346  1.00 35.29           H

ATOM  10163  H2  GLY F   0     -3.283  28.886  20.459  1.00 35.29           H

ATOM  10164  H3  GLY F   0     -2.376  29.984  20.750  1.00 35.29           H
ATOM  10165  HA2 GLY F   0     -4.551  31.019  19.723  1.00 31.73
H
ATOM  10166  HA3 GLY F   0     -3.097  31.133  19.124  1.00 31.73
H

ATOM  10167  N   HIS F   1     -4.237  30.106  17.110  1.00 21.94           N

ATOM  10168  CA  HIS F   1     -4.640  29.302  15.960  1.00 20.81           C

ATOM  10169  C   HIS F   1     -3.752  29.565  14.754  1.00 20.41           C

ATOM  10170  O   HIS F   1     -3.175  30.643  14.618  1.00 18.02           O

ATOM  10171  CB  HIS F   1     -6.099  29.577  15.600  1.00 19.93           C

ATOM  10172  CG  HIS F   1     -7.065  29.227  16.687  1.00 24.76           C

ATOM  10173  ND1 HIS F   1     -7.406  27.926  16.989  1.00 25.09           N

ATOM  10174  CD2 HIS F   1     -7.762  30.008  17.546  1.00 26.11           C

ATOM  10175  CE1 HIS F   1     -8.273  27.921  17.986  1.00 27.35           C

ATOM  10176  NE2 HIS F   1     -8.505  29.171  18.343  1.00 27.19           N

ATOM  10177  H   HIS F   1     -4.063  30.927  16.923  1.00 26.33           H

ATOM  10178  HA  HIS F   1     -4.561  28.363  16.190  1.00 24.97           H

ATOM  10179  HB2 HIS F   1     -6.200  30.522  15.405  1.00 23.91           H

ATOM  10180  HB3 HIS F   1     -6.331  29.053  14.817  1.00 23.91           H



ATOM  10181  HD1 HIS F   1     -7.103  27.227  16.590  1.00 30.10           H

ATOM  10182  HD2 HIS F   1     -7.742  30.937  17.589  1.00 31.34           H

ATOM  10183  HE1 HIS F   1     -8.654  27.166  18.372  1.00 32.82           H

ATOM  10184  HE2 HIS F   1     -9.036  29.421  18.972  1.00 32.63           H

ATOM  10185  N   LYS F   2     -3.635  28.568  13.884  1.00 17.59           N

ATOM  10186  CA  LYS F   2     -2.874  28.734  12.658  1.00 18.28           C

ATOM  10187  C   LYS F   2     -3.516  27.985  11.498  1.00 19.46           C

ATOM  10188  O   LYS F   2     -4.114  26.920  11.668  1.00 15.97           O

ATOM  10189  CB  LYS F   2     -1.424  28.284  12.858  1.00 21.88           C

ATOM  10190  CG  LYS F   2     -1.243  26.852  13.311  1.00 29.22           C

ATOM  10191  CD  LYS F   2      0.205  26.606  13.713  1.00 30.79           C

ATOM  10192  CE  LYS F   2      0.429  25.175  14.167  1.00 40.64           C
ATOM  10193  NZ  LYS F   2      1.839  24.947  14.592  1.00 46.99
N1+

ATOM  10194  H   LYS F   2     -3.985  27.788  13.982  1.00 21.11           H

ATOM  10195  HA  LYS F   2     -2.861  29.676  12.428  1.00 21.93           H
ATOM  10196  HB2 LYS F   2     -0.953  28.385  12.017  1.00 26.26
H
ATOM  10197  HB3 LYS F   2     -1.015  28.855  13.528  1.00 26.26
H
ATOM  10198  HG2 LYS F   2     -1.810  26.681  14.079  1.00 35.07
H
ATOM  10199  HG3 LYS F   2     -1.467  26.252  12.583  1.00 35.07
H
ATOM  10200  HD2 LYS F   2      0.781  26.775  12.951  1.00 36.94
H
ATOM  10201  HD3 LYS F   2      0.438  27.196  14.446  1.00 36.94
H
ATOM  10202  HE2 LYS F   2     -0.150  24.985  14.921  1.00 48.77
H

ATOM  10203  HE3 LYS F   2      0.233  24.573  13.433  1.00 48.77           H
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ATOM  3904  HB2 CYS C  96    -13.445  64.208 -10.294  1.00 38.96
H
ATOM  3905  HB3 CYS C  96    -13.969  63.307 -11.490  1.00 38.96
H
ATOM  3906  N   GLY C  97   -12.573  65.259 -14.272  1.00 28.67
N
ATOM  3907  CA  GLY C  97    -12.490  64.946 -15.687  1.00 31.01
C
ATOM  3908  C   GLY C  97   -12.065  66.130 -16.535  1.00 33.85
C
ATOM  3909  O   GLY C  97   -11.450  67.067 -16.028  1.00 35.84
O
ATOM  3910  H   GLY C  97   -11.888  65.677 -13.962  1.00 34.40
H
ATOM  3911  HA2 GLY C  97    -11.849  64.230 -15.820  1.00 37.22
H
ATOM  3912  HA3 GLY C  97    -13.357  64.643 -16.000  1.00 37.22
H
ATOM  3913  N   PRO C  98   -12.391  66.097 -17.837  1.00 33.61
N
ATOM  3914  CA  PRO C  98    -13.165  65.036 -18.492  1.00 34.25
C
ATOM  3915  C   PRO C  98   -12.428  63.695 -18.552  1.00 32.91
C

ATOM  3916  O   PRO C  98   -11.200  63.661 -18.522  1.00 33.58
O
ATOM  3917  CB  PRO C  98    -13.400  65.596 -19.897  1.00 43.48
C
ATOM  3918  CG  PRO C  98    -12.285  66.542 -20.119  1.00 44.16
C
ATOM  3919  CD  PRO C  98    -11.991  67.149 -18.785  1.00 39.32
C
ATOM  3920  HA  PRO C  98    -14.019  64.916 -18.046  1.00 41.10
H
ATOM  3921  HB2 PRO C  98    -13.374  64.875 -20.546  1.00 52.18
H
ATOM  3922  HB3 PRO C  98    -14.253  66.056 -19.928  1.00 52.18
H
ATOM  3923  HG2 PRO C  98    -11.512  66.060 -20.452  1.00 52.99
H
ATOM  3924  HG3 PRO C  98    -12.560  67.225 -20.751  1.00 52.99
H
ATOM  3925  HD2 PRO C  98    -11.043  67.337 -18.701  1.00 47.19
H
ATOM  3926  HD3 PRO C  98    -12.526  67.946 -18.651  1.00 47.19
H
ATOM  3927  N   CYS C  99   -13.195  62.610 -18.619  1.00 29.92
N
ATOM  3928  CA  CYS C  99    -12.656  61.259 -18.747  1.00 30.84
C
ATOM  3929  C   CYS C  99   -13.492  60.459 -19.732  1.00 33.78
C
ATOM  3930  O   CYS C  99   -14.602  60.863 -20.076  1.00 29.20
O
ATOM  3931  CB  CYS C  99    -12.646  60.535 -17.400  1.00 24.67
C
ATOM  3932  SG  CYS C  99    -11.422  61.121 -16.229  1.00 27.04
S
ATOM  3933  H   CYS C  99   -14.054  62.632 -18.593  1.00 35.90
H
ATOM  3934  HA  CYS C  99    -11.746  61.303 -19.079  1.00 37.01
H
ATOM  3935  HB2 CYS C  99    -13.518  60.639 -16.987  1.00 29.60
H
ATOM  3936  HB3 CYS C  99    -12.473  59.593 -17.557  1.00 29.60
H
ATOM  3937  N   PRO C 100    -12.963  59.314 -20.190  1.00 30.07
N
ATOM  3938  CA  PRO C 100    -13.800  58.399 -20.968  1.00 29.87
C
ATOM  3939  C   PRO C 100    -14.997  57.928 -20.148  1.00 33.56
C
ATOM  3940  O   PRO C 100    -14.919  57.895 -18.917  1.00 26.53
O
ATOM  3941  CB  PRO C 100    -12.852  57.239 -21.291  1.00 30.74
C
ATOM  3942  CG  PRO C 100    -11.483  57.830 -21.199  1.00 29.98
C
ATOM  3943  CD  PRO C 100    -11.566  58.853 -20.110  1.00 28.76
C
ATOM  3944  HA  PRO C 100    -14.102  58.818 -21.789  1.00 35.84
H
ATOM  3945  HB2 PRO C 100    -12.965  56.531 -20.638  1.00 36.89
H
ATOM  3946  HB3 PRO C 100    -13.026  56.912 -22.188  1.00 36.89
H
ATOM  3947  HG2 PRO C 100    -10.843  57.138 -20.971  1.00 35.98
H
ATOM  3948  HG3 PRO C 100    -11.251  58.248 -22.043  1.00 35.98
H
ATOM  3949  HD2 PRO C 100    -11.393  58.444 -19.247  1.00 34.51
H
ATOM  3950  HD3 PRO C 100    -10.956  59.586 -20.286  1.00 34.51
H

ATOM  3951  N   LYS C 101   -16.086  57.579 -20.825  1.00 31.45
N
ATOM  3952  CA  LYS C 101    -17.315  57.171 -20.154  1.00 38.12
C
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ATOM  10204  HZ1 LYS F   2     2.043  25.487  15.270  1.00 56.39        H

ATOM  10205  HZ2 LYS F   2     1.944  24.103  14.854  1.00 56.39        H

ATOM  10206  HZ3 LYS F   2     2.391  25.111  13.914  1.00 56.39        H

ATOM  10207  N   LEU F   3   -3.404  28.589  10.321  1.00 18.68       N

ATOM  10208  CA  LEU F   3    -3.925  28.030   9.086  1.00 17.42       C

ATOM  10209  C   LEU F   3   -2.752  27.857   8.134  1.00 16.58      C

ATOM  10210  O   LEU F   3   -2.066  28.828   7.807  1.00 15.05      O

ATOM  10211  CB  LEU F   3    -4.995  28.945   8.485  1.00 15.28       C

ATOM  10212  CG  LEU F   3    -5.747  28.440   7.256  1.00 18.11       C

ATOM  10213  CD1 LEU F   3     -6.670  27.286   7.622  1.00 17.93       C

ATOM  10214  CD2 LEU F   3     -6.527  29.581   6.615  1.00 15.66       C

ATOM  10215  H   LEU F   3   -3.016  29.349  10.212  1.00 22.41       H


ATOM  10216  HA  LEU F   3    -4.319  27.160   9.258  1.00 20.90       H

ATOM  10217  HB2 LEU F   3     -5.657  29.121   9.171  1.00 18.34       H

ATOM  10218  HB3 LEU F   3     -4.568  29.779   8.234  1.00 18.34       H

ATOM  10219  HG  LEU F   3    -5.105  28.115   6.606  1.00 21.73       H
ATOM  10220 HD11 LEU F   3     -7.134  26.987   6.824  1.00 21.52
H
ATOM  10221 HD12 LEU F   3     -6.139  26.561   7.987  1.00 21.52
H
ATOM  10222 HD13 LEU F   3     -7.312  27.592   8.282  1.00 21.52
H
ATOM  10223 HD21 LEU F   3     -6.998  29.243   5.837  1.00 18.80
H
ATOM  10224 HD22 LEU F   3     -7.162  29.931   7.260  1.00 18.80
H
ATOM  10225 HD23 LEU F   3     -5.906  30.278   6.349  1.00 18.80
H

ATOM  10226  N   ALA F   4   -2.520  26.620   7.706  1.00 17.17       N

ATOM  10227  CA  ALA F   4    -1.347  26.278   6.911  1.00 13.80       C

ATOM  10228  C   ALA F   4   -1.737  25.668   5.570  1.00 18.72      C

ATOM  10229  O   ALA F   4   -2.616  24.807   5.492  1.00 15.41      O

ATOM  10230  CB  ALA F   4    -0.455  25.321   7.681  1.00 16.99       C

ATOM  10231  H   ALA F   4   -3.037  25.951   7.865  1.00 20.60      H

ATOM  10232  HA  ALA F   4    -0.839  27.085   6.736  1.00 16.56       H

ATOM  10233  HB1 ALA F   4     0.319  25.105   7.138  1.00 20.38       H

ATOM  10234  HB2 ALA F   4    -0.172  25.747   8.506  1.00 20.38       H

ATOM  10235  HB3 ALA F   4    -0.955  24.514   7.880  1.00 20.38       H

ATOM  10236  N   PHE F   5   -1.065  26.132   4.522  1.00 14.07       N

ATOM  10237  CA  PHE F   5    -1.247  25.619   3.171  1.00 15.88       C

ATOM  10238  C   PHE F   5    0.038  24.967   2.696  1.00 17.08      C

ATOM  10239  O   PHE F   5    1.085  25.610   2.658  1.00 19.17      O

ATOM  10240  CB  PHE F   5    -1.642  26.742   2.213  1.00 11.34       C

ATOM  10241  CG  PHE F   5    -2.919  27.422   2.580  1.00 10.85       C

ATOM  10242  CD1 PHE F   5     -2.940  28.405   3.554  1.00 13.28       C

ATOM  10243  CD2 PHE F   5     -4.100  27.084   1.953  1.00 12.14       C

ATOM  10244  CE1 PHE F   5     -4.120  29.036   3.893  1.00 13.84       C

ATOM  10245  CE2 PHE F   5     -5.280  27.712   2.288  1.00 11.37       C

ATOM  10246  CZ  PHE F   5    -5.291  28.686   3.258  1.00 14.78       C

ATOM  10247  H   PHE F   5   -0.481  26.761   4.571  1.00 16.89      H

ATOM  10248  HA  PHE F   5    -1.951  24.952   3.169  1.00 19.06       H

ATOM  10249  HB2 PHE F   5     -0.940  27.411   2.209  1.00 13.61       H

ATOM  10250  HB3 PHE F   5     -1.749  26.371   1.323  1.00 13.61       H


ATOM  10251  HD1 PHE F   5     -2.151  28.643   3.984  1.00 15.93       H

ATOM  10252  HD2 PHE F   5     -4.100  26.425   1.296  1.00 14.56       H
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ATOM  3953 C   LYS C 101   -17.066 56.015 -19.182 1.00 30.89
C
ATOM  3954 O   LYS C 101   -16.410 55.034 -19.529 1.00 28.71
O
ATOM  3955 CB  LYS C 101   -18.373 56.768 -21.188 1.00 43.70
C
ATOM  3956 CG  LYS C 101   -19.776 56.557 -20.620 1.00 55.10
C
ATOM  3957 CD  LYS C 101   -20.514 57.877 -20.423 1.00 71.07
C
ATOM  3958 CE  LYS C 101   -21.918 57.662 -19.866 1.00 83.53
C
ATOM  3959 NZ  LYS C 101   -22.935 57.438 -20.932 1.00 96.55
N1+
ATOM  3960 H   LYS C 101   -16.139 57.570 -21.684 1.00 37.74
H
ATOM  3961 HA  LYS C 101   -17.662 57.921 -19.645 1.00 45.75
H
ATOM  3962 HB2 LYS C 101   -18.431 57.465 -21.860 1.00 52.44
H
ATOM  3963 HB3 LYS C 101   -18.098 55.936 -21.605 1.00 52.44
H
ATOM  3964 HG2 LYS C 101   -20.291 56.011 -21.235 1.00 66.13
H
ATOM  3965 HG3 LYS C 101   -19.708 56.117 -19.758 1.00 66.13
H
ATOM  3966 HD2 LYS C 101   -20.020 58.428 -19.797 1.00 85.28
H
ATOM  3967 HD3 LYS C 101   -20.593 58.329 -21.278 1.00 85.28
H
ATOM  3968 HE2 LYS C 101   -21.912 56.882 -19.288 1.00100.24
H
ATOM  3969 HE3 LYS C 101   -22.180 58.447 -19.360 1.00100.24
H
ATOM  3970 HZ1 LYS C 101   -23.738 57.318 -20.567 1.00115.86
H
ATOM  3971 HZ2 LYS C 101   -22.967 58.143 -21.474 1.00115.86
H
ATOM  3972 HZ3 LYS C 101   -22.723 56.717 -21.409 1.00115.86
H
ATOM  3973 N   ASN C 102   -17.578 56.160 -17.962 1.00 29.40
N
ATOM  3974 CA  ASN C 102   -17.566 55.095 -16.957 1.00 21.26
C
ATOM  3975 C   ASN C 102   -16.171 54.670 -16.501 1.00 23.13
C
ATOM  3976 O   ASN C 102   -15.980 53.538 -16.052 1.00 23.84
O
ATOM  3977 CB  ASN C 102   -18.317 53.871 -17.484 1.00 26.84
C
ATOM  3978 CG  ASN C 102   -19.758 54.178 -17.827 1.00 37.50
C
ATOM  3979 OD1 ASN C 102   -20.390 55.027 -17.198 1.00 35.99
O
ATOM  3980 ND2 ASN C 102   -20.288 53.491 -18.833 1.00 39.34
N
ATOM  3981 H   ASN C 102   -17.948 56.885 -17.684 1.00 35.28
H
ATOM  3982 HA  ASN C 102   -18.042 55.411 -16.173 1.00 25.51
H
ATOM  3983 HB2 ASN C 102   -17.878 53.551 -18.287 1.00 32.21
H
ATOM  3984 HB3 ASN C 102   -18.311 53.179 -16.804 1.00 32.21
H
ATOM  3985 HD21 ASN C 102   -21.104 53.630 -19.066 1.00 47.21
H


ATOM  3986 HD22 ASN C 102   -19.814 52.907 -19.251 1.00 47.21
H
ATOM  3987 N   TRP C 103   -15.202 55.573 -16.611 1.00 20.50
N
ATOM  3988 CA  TRP C 103   -13.880 55.343 -16.034 1.00 23.43
C
ATOM  3989 C   TRP C 103   -13.826 55.907 -14.620 1.00 21.27
C
ATOM  3990 O   TRP C 103   -14.659 56.727 -14.239 1.00 23.07
O
ATOM  3991 CB  TRP C 103   -12.785 55.984 -16.889 1.00 21.36
C
ATOM  3992 CG  TRP C 103   -12.438 55.213 -18.124 1.00 22.71
C
ATOM  3993 CD1 TRP C 103   -13.270 54.420 -18.857 1.00 24.15
C
ATOM  3994 CD2 TRP C 103   -11.158 55.158 -18.771 1.00 19.27
C
ATOM  3995 NE1 TRP C 103   -12.591 53.880 -19.923 1.00 20.72
N
ATOM  3996 CE2 TRP C 103   -11.293 54.317 -19.891 1.00 20.30
C
ATOM  3997 CE3 TRP C 103    -9.914 55.737 -18.508 1.00 20.40
C
ATOM  3998 CZ2 TRP C 103   -10.230 54.042 -20.751 1.00 24.78
C
ATOM  3999 CZ3 TRP C 103    -8.862 55.465 -19.360 1.00 20.79
C
ATOM  4000 CH2 TRP C 103    -9.026 54.624 -20.468 1.00 22.99
C
ATOM  4001 H   TRP C 103   -15.284 56.328 -17.014 1.00 24.60
H
ATOM  4002 HA  TRP C 103   -13.712 54.389 -15.989 1.00 28.12
H
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ATOM  10253 HE1 PHE F   5    -4.124 29.695   4.549 1.00 16.61           H

ATOM  10254 HE2 PHE F   5    -6.070 27.475   1.859 1.00 13.65           H

ATOM  10255 HZ  PHE F   5    -6.087 29.109   3.484 1.00 17.73           H

ATOM  10256 N   ASN F   6    -0.047 23.691   2.336 1.00 16.88           N

ATOM  10257 CA  ASN F   6     1.106 22.963   1.838 1.00 14.07           C

ATOM  10258 C   ASN F   6     0.919 22.591   0.376 1.00 16.67           C

ATOM  10259 O   ASN F   6     0.153 21.682   0.056 1.00 16.36           O

ATOM  10260 CB  ASN F   6     1.348 21.713   2.679 1.00 20.64           C

ATOM  10261 CG  ASN F   6     2.626 21.000   2.300 1.00 26.49           C
ATOM  10262 OD1 ASN F   6     2.607 20.029   1.548 1.00 33.61
O

ATOM  10263 ND2 ASN F   6     3.748 21.486   2.814 1.00 26.66           N

ATOM  10264 H   ASN F   6    -0.768 23.223   2.373 1.00 20.26           H

ATOM  10265 HA  ASN F   6     1.892 23.528   1.906 1.00 16.89           H

ATOM  10266 HB2 ASN F   6     1.411 21.966   3.613 1.00 24.77           H

ATOM  10267 HB3 ASN F   6     0.611 21.096   2.550 1.00 24.77           H
ATOM  10268 HD21 ASN F   6     4.502 21.116   2.629 1.00 32.00
H
ATOM  10269 HD22 ASN F   6     3.722 22.171   3.333 1.00 32.00
H

ATOM  10270 N   PHE F   7     1.618 23.318  -0.497 1.00 14.97           N

ATOM  10271 CA  PHE F   7     1.580 23.101  -1.939 1.00 12.47           C

ATOM  10272 C   PHE F   7     2.716 22.190  -2.376 1.00 15.61           C

ATOM  10273 O   PHE F   7     3.871 22.427  -2.029 1.00 16.76           O

ATOM  10274 CB  PHE F   7     1.695 24.426  -2.696 1.00 12.90           C

ATOM  10275 CG  PHE F   7     0.586 25.391  -2.415 1.00 12.41           C

ATOM  10276 CD1 PHE F   7     0.627 26.208  -1.299 1.00 15.02           C
ATOM  10277 CD2 PHE F   7    -0.491 25.494  -3.277 1.00 13.17
C

ATOM  10278 CE1 PHE F   7    -0.392 27.108  -1.041 1.00 14.33           C

ATOM  10279 CE2 PHE F   7    -1.516 26.392  -3.023 1.00 15.79           C

ATOM  10280 CZ  PHE F   7    -1.463 27.200  -1.902 1.00 14.48           C

ATOM  10281 H   PHE F   7     2.138 23.963  -0.267 1.00 17.96           H

ATOM  10282 HA  PHE F   7     0.739 22.681  -2.180 1.00 14.96           H

ATOM  10283 HB2 PHE F   7     2.529 24.855  -2.448 1.00 15.48           H

ATOM  10284 HB3 PHE F   7     1.692 24.242  -3.649 1.00 15.48           H

ATOM  10285 HD1 PHE F   7     1.348 26.150  -0.714 1.00 18.02           H


ATOM  10286 HD2 PHE F   7    -0.530 24.953  -4.032 1.00 15.81
H

ATOM  10287 HE1 PHE F   7    -0.355 27.649  -0.285 1.00 17.19           H

ATOM  10288 HE2 PHE F   7    -2.238 26.452  -3.607 1.00 18.95           H

ATOM  10289 HZ  PHE F   7    -2.150 27.803  -1.729 1.00 17.38           H

ATOM  10290 N   ASN F   8     2.390 21.165  -3.153 1.00 17.16           N

ATOM  10291 CA  ASN F   8     3.399 20.249  -3.662 1.00 18.00           C

ATOM  10292 C   ASN F   8     3.214 19.985  -5.147 1.00 19.06           C

ATOM  10293 O   ASN F   8     2.111 19.667  -5.601 1.00 19.50           O

ATOM  10294 CB  ASN F   8     3.363 18.931  -2.891 1.00 21.59           C

ATOM  10295 CG  ASN F   8     4.399 17.940  -3.386 1.00 25.54           C
ATOM  10296 OD1 ASN F   8     4.066 16.957  -4.047 1.00 28.38
O

ATOM  10297 ND2 ASN F   8     5.664 18.203  -3.080 1.00 27.01           N

ATOM  10298 H   ASN F   8     1.588 20.978  -3.400 1.00 20.60           H

ATOM  10299 HA  ASN F   8     4.275 20.645  -3.536 1.00 21.60           H

ATOM  10300 HB2 ASN F   8     3.540 19.108  -1.953 1.00 25.91           H

ATOM  10301 HB3 ASN F   8     2.487 18.527  -2.993 1.00 25.91           H
ATOM  10302 HD21 ASN F   8     6.288 17.671  -3.338 1.00 32.41
H
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ATOM   4003  HB2 TRP C 103     -13.082  56.855 -17.165  1.00 25.64
H
ATOM   4004  HB3 TRP C 103     -11.979  56.063 -16.355  1.00 25.64
H
ATOM   4005  HD1 TRP C 103     -14.169  54.273 -18.669  1.00 28.98
H
ATOM   4006  HE1 TRP C 103     -12.926  53.352 -20.514  1.00 24.87
H
ATOM   4007  HE3 TRP C 103      -9.797  56.298 -17.776  1.00 24.47
H
ATOM   4008  HZ2 TRP C 103     -10.336  53.482 -21.486  1.00 29.74
H
ATOM   4009  HZ3 TRP C 103      -8.030  55.848 -19.196  1.00 24.95
H
ATOM   4010  HH2 TRP C 103      -8.299  54.458 -21.025  1.00 27.58
H
ATOM   4011  N   ILE C 104    -12.852  55.455 -13.838  1.00 21.47
N
ATOM   4012  CA  ILE C 104     -12.562  56.076 -12.552  1.00 22.27
C
ATOM   4013  C   ILE C 104    -11.920  57.428 -12.799  1.00 20.16
C
ATOM   4014  O   ILE C 104    -11.097  57.559 -13.694  1.00 20.40
O
ATOM   4015  CB  ILE C 104     -11.618  55.218 -11.691  1.00 20.98
C
ATOM   4016  CG1 ILE C 104     -12.318  53.922 -11.276  1.00 23.82
C
ATOM   4017  CG2 ILE C 104     -11.151  56.005 -10.452  1.00 22.89
C
ATOM   4018  CD1 ILE C 104     -11.469  53.000 -10.418  1.00 32.17
C
ATOM   4019  H   ILE C 104    -12.343  54.789 -14.030  1.00 25.76
H
ATOM   4020  HA  ILE C 104     -13.389  56.212 -12.062  1.00 26.72
H


ATOM   4021  HB  ILE C 104     -10.839  54.991 -12.222  1.00 25.18
H
ATOM   4022 HG12 ILE C 104     -13.114  54.147 -10.769  1.00 28.58
H
ATOM   4023 HG13 ILE C 104     -12.567  53.433 -12.076  1.00 28.58
H
ATOM   4024 HG21 ILE C 104     -10.559  55.444  -9.927  1.00 27.46
H
ATOM   4025 HG22 ILE C 104     -10.681  56.802 -10.744  1.00 27.46
H
ATOM   4026 HG23 ILE C 104     -11.927  56.252  -9.925  1.00 27.46
H
ATOM   4027 HD11 ILE C 104     -11.984  52.208 -10.201  1.00 38.61
H
ATOM   4028 HD12 ILE C 104     -10.673  52.752 -10.915  1.00 38.61
H
ATOM   4029 HD13 ILE C 104     -11.220  53.467  -9.605  1.00 38.61
H
ATOM   4030  N   CYS C 105    -12.291  58.426 -12.005  1.00 18.50
N
ATOM   4031  CA  CYS C 105     -11.642  59.730 -12.068  1.00 21.47
C
ATOM   4032  C   CYS C 105    -11.168  60.124 -10.673  1.00 24.11
C
ATOM   4033  O   CYS C 105    -11.949  60.137  -9.720  1.00 22.75
O
ATOM   4034  CB  CYS C 105     -12.592  60.783 -12.641  1.00 24.61
C
ATOM   4035  SG  CYS C 105     -11.757  62.290 -13.195  1.00 30.83
S
ATOM   4036  H   CYS C 105    -12.918  58.373 -11.418  1.00 22.20
H
ATOM   4037  HA  CYS C 105     -10.867  59.673 -12.648  1.00 25.76
H
ATOM   4038  HB2 CYS C 105     -13.056  60.403 -13.404  1.00 29.53
H
ATOM   4039  HB3 CYS C 105     -13.232  61.032 -11.957  1.00 29.53
H
ATOM   4040  N   TYR C 106     -9.880  60.430 -10.556  1.00 20.57
N
ATOM   4041  CA  TYR C 106     -9.279  60.704  -9.259  1.00 19.53
C
ATOM   4042  C   TYR C 106     -8.063  61.607  -9.395  1.00 24.23
C
ATOM   4043  O   TYR C 106     -7.074  61.243 -10.036  1.00 18.60
O
ATOM   4044  CB  TYR C 106     -8.885  59.394  -8.580  1.00 18.96
C
ATOM   4045  CG  TYR C 106     -8.336  59.537  -7.183  1.00 17.51
C
ATOM   4046  CD1 TYR C 106     -9.161  59.887  -6.128  1.00 20.97
C
ATOM   4047  CD2 TYR C 106     -6.995  59.293  -6.912  1.00 20.26
C
ATOM   4048  CE1 TYR C 106     -8.669  60.006  -4.846  1.00 22.20
C
ATOM   4049  CE2 TYR C 106     -6.494  59.405  -5.629  1.00 20.01
C
ATOM   4050  CZ  TYR C 106     -7.339  59.764  -4.599  1.00 22.79
C
ATOM   4051  OH  TYR C 106     -6.864  59.881  -3.313  1.00 24.09
O
ATOM   4052  H   TYR C 106     -9.332  60.486 -11.217  1.00 24.68
H
ATOM   4053  HA  TYR C 106     -9.928  61.153  -8.696  1.00 23.44
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ATOM  10303 HD22 ASN F   8      5.859  18.906  -2.624  1.00 32.41
H

ATOM  10304  N   LEU F   9     4.302  20.141  -5.894  1.00 17.68          N

ATOM  10305  CA  LEU F   9      4.342  19.779  -7.306  1.00 18.16          C

ATOM  10306  C   LEU F   9     5.423  18.732  -7.510  1.00 19.22          C

ATOM  10307  O   LEU F   9     6.607  19.007  -7.327  1.00 16.70          O

ATOM  10308  CB  LEU F   9      4.610  21.001  -8.190  1.00 12.54          C

ATOM  10309  CG  LEU F   9      4.756  20.712  -9.690  1.00 15.42          C
ATOM  10310  CD1 LEU F   9      3.456  20.192 -10.273  1.00 21.54
C
ATOM  10311  CD2 LEU F   9      5.212  21.955 -10.437  1.00 17.32
C

ATOM  10312  H   LEU F   9     5.044  20.461  -5.600  1.00 21.21          H

ATOM  10313  HA  LEU F   9      3.490  19.395  -7.564  1.00 21.79          H

ATOM  10314  HB2 LEU F   9      3.874  21.624  -8.084  1.00 15.05          H

ATOM  10315  HB3 LEU F   9      5.434  21.419  -7.893  1.00 15.05          H

ATOM  10316  HG  LEU F   9     5.431  20.027  -9.813  1.00 18.50          H
ATOM  10317 HD11 LEU F   9      3.581  20.020 -11.219  1.00 25.85
H
ATOM  10318 HD12 LEU F   9      3.211  19.372  -9.816  1.00 25.85
H
ATOM  10319 HD13 LEU F   9      2.764  20.860 -10.146  1.00 25.85
H
ATOM  10320 HD21 LEU F   9      5.295  21.744 -11.380  1.00 20.79
H


ATOM  10321 HD22 LEU F   9      4.554  22.657 -10.312  1.00 20.79
H
ATOM  10322 HD23 LEU F   9      6.070  22.238 -10.084  1.00 20.79
H

ATOM  10323  N   GLU F  10     4.995  17.529  -7.874  1.00 21.49          N

ATOM  10324  CA  GLU F  10      5.898  16.421  -8.146  1.00 23.67          C

ATOM  10325  C   GLU F  10     6.031  16.251  -9.654  1.00 24.38          C

ATOM  10326  O   GLU F  10     5.045  15.994 -10.343  1.00 21.67          O

ATOM  10327  CB  GLU F  10      5.380  15.135  -7.494  1.00 28.50          C
ATOM  10328  CG  GLU F  10      6.252  13.911  -7.718  1.00 39.90
C

ATOM  10329  CD  GLU F  10      5.703  12.675  -7.023  1.00 46.88          C
ATOM  10330  OE1 GLU F  10      5.964  11.553  -7.505  1.00 53.49
O
ATOM  10331  OE2 GLU F  10      5.010  12.825  -5.994  1.00 53.38
O1-

ATOM  10332  H   GLU F  10     4.165  17.326  -7.973  1.00 25.79          H

ATOM  10333  HA  GLU F  10      6.775  16.620  -7.780  1.00 28.41          H
ATOM  10334  HB2 GLU F  10      5.316  15.279  -6.537  1.00 34.20
H
ATOM  10335  HB3 GLU F  10      4.501  14.939  -7.854  1.00 34.20
H
ATOM  10336  HG2 GLU F  10      6.301  13.726  -8.668  1.00 47.88
H
ATOM  10337  HG3 GLU F  10      7.139  14.085  -7.366  1.00 47.88
H

ATOM  10338  N   ILE F  11     7.251  16.419 -10.156  1.00 23.21          N

ATOM  10339  CA  ILE F  11      7.533  16.310 -11.584  1.00 25.02          C

ATOM  10340  C   ILE F  11     8.327  15.040 -11.859  1.00 29.40          C

ATOM  10341  O   ILE F  11     9.479  14.924 -11.444  1.00 28.51          O

ATOM  10342  CB  ILE F  11      8.328  17.527 -12.103  1.00 22.20          C
ATOM  10343  CG1 ILE F  11      7.615  18.831 -11.736  1.00 24.16
C
ATOM  10344  CG2 ILE F  11      8.526  17.429 -13.613  1.00 24.02
C

ATOM  10345  CD1 ILE F  11      8.442  20.071 -11.975  1.00 25.01          C

ATOM  10346  H   ILE F  11     7.945  16.600  -9.681  1.00 27.85          H

ATOM  10347  HA  ILE F  11      6.697  16.260 -12.073  1.00 30.03          H

ATOM  10348  HB  ILE F  11      9.200  17.526 -11.679  1.00 26.63          H
ATOM  10349 HG12 ILE F  11      6.808  18.906 -12.270  1.00 28.99
H
ATOM  10350 HG13 ILE F  11      7.384  18.806 -10.794  1.00 28.99
H
ATOM  10351 HG21 ILE F  11      9.027  18.203 -13.916  1.00 28.83
H
ATOM  10352 HG22 ILE F  11      9.016  16.617 -13.815  1.00 28.83
H
ATOM  10353 HG23 ILE F  11      7.657  17.408 -14.044  1.00 28.83
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H
ATOM   4054  HB2 TYR C 106     -9.670  58.826  -8.529  1.00 22.75
H
ATOM   4055  HB3 TYR C 106     -8.205  58.960  -9.119  1.00 22.75
H


ATOM   4056  HD1 TYR C 106    -10.062  60.051  -6.288  1.00 25.17
H
ATOM   4057  HD2 TYR C 106     -6.425  59.049  -7.606  1.00 24.31
H
ATOM   4058  HE1 TYR C 106     -9.237  60.246  -4.149  1.00 26.64
H
ATOM   4059  HE2 TYR C 106     -5.594  59.243  -5.461  1.00 24.02
H
ATOM   4060  HH  TYR C 106     -6.042  59.709  -3.293  1.00 28.90
H
ATOM   4061  N   LYS C 107    -8.157  62.784  -8.783  1.00 23.77
N
ATOM   4062  CA  LYS C 107     -7.070  63.754  -8.756  1.00 22.66
C
ATOM   4063  C   LYS C 107    -6.482  63.992 -10.144  1.00 26.25
C
ATOM   4064  O   LYS C 107    -5.304  63.722 -10.384  1.00 25.69
O
ATOM   4065  CB  LYS C 107     -5.982  63.288  -7.786  1.00 23.70
C
ATOM   4066  CG  LYS C 107     -6.453  63.225  -6.341  1.00 25.76
C
ATOM   4067  CD  LYS C 107     -5.337  62.830  -5.392  1.00 24.07
C
ATOM   4068  CE  LYS C 107     -5.787  62.932  -3.946  1.00 25.09
C
ATOM   4069  NZ  LYS C 107     -4.764  62.412  -3.002  1.00 28.21
N1+
ATOM   4070  H   LYS C 107    -8.860  63.049  -8.365  1.00 28.53
H
ATOM   4071  HA  LYS C 107     -7.415  64.600  -8.431  1.00 27.19
H
ATOM   4072  HB2 LYS C 107     -5.690  62.399  -8.043  1.00 28.45
H
ATOM   4073  HB3 LYS C 107     -5.236  63.906  -7.830  1.00 28.45
H
ATOM   4074  HG2 LYS C 107     -6.780  64.099  -6.076  1.00 30.91
H
ATOM   4075  HG3 LYS C 107     -7.161  62.567  -6.266  1.00 30.91
H
ATOM   4076  HD2 LYS C 107     -5.077  61.911  -5.566  1.00 28.88
H
ATOM   4077  HD3 LYS C 107     -4.581  63.424  -5.519  1.00 28.88
H
ATOM   4078  HE2 LYS C 107     -5.952  63.863  -3.729  1.00 30.11
H
ATOM   4079  HE3 LYS C 107     -6.599  62.414  -3.828  1.00 30.11
H
ATOM   4080  HZ1 LYS C 107     -4.009  62.875  -3.086  1.00 33.85
H
ATOM   4081  HZ2 LYS C 107     -5.058  62.486  -2.165  1.00 33.85
H
ATOM   4082  HZ3 LYS C 107     -4.598  61.555  -3.175  1.00 33.85
H
ATOM   4083  N   ASN C 108    -7.324  64.477 -11.052  1.00 24.30
N
ATOM   4084  CA  ASN C 108     -6.908  64.862 -12.399  1.00 29.43
C
ATOM   4085  C   ASN C 108    -6.390  63.700 -13.248  1.00 29.94
C
ATOM   4086  O   ASN C 108    -5.692  63.920 -14.238  1.00 30.74
O
ATOM   4087  CB  ASN C 108     -5.834  65.950 -12.322  1.00 37.42
C
ATOM   4088  CG  ASN C 108     -6.243  67.111 -11.434  1.00 39.33
C
ATOM   4089  OD1 ASN C 108     -7.357  67.623 -11.536  1.00 36.77
O
ATOM   4090  ND2 ASN C 108     -5.341  67.526 -10.549  1.00 38.25
N


ATOM   4091  H   ASN C 108    -8.163  64.595 -10.908  1.00 29.16
H
ATOM   4092  HA  ASN C 108     -7.674  65.239 -12.859  1.00 35.31
H
ATOM   4093  HB2 ASN C 108     -5.020  65.566 -11.959  1.00 44.91
H
ATOM   4094  HB3 ASN C 108     -5.670  66.296 -13.213  1.00 44.91
H
ATOM   4095 HD21 ASN C 108     -5.525  68.181 -10.023  1.00 45.91
H
ATOM   4096 HD22 ASN C 108     -4.574  67.140 -10.503  1.00 45.91
H
ATOM   4097  N   ASN C 109    -6.729  62.472 -12.863  1.00 22.35
N
ATOM   4098  CA  ASN C 109     -6.364  61.294 -13.650  1.00 21.33
C
ATOM   4099  C   ASN C 109    -7.542  60.352 -13.846  1.00 21.79
C
ATOM   4100  O   ASN C 109    -8.331  60.125 -12.924  1.00 20.85
O
ATOM   4101  CB  ASN C 109     -5.211  60.538 -12.986  1.00 24.32
C
ATOM   4102  CG  ASN C 109     -3.921  61.337 -12.968  1.00 22.95
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H
ATOM  10354 HD11 ILE F  11      7.923  20.850 -11.720  1.00 30.01
H
ATOM  10355 HD12 ILE F  11      9.248  20.020 -11.438  1.00 30.01
H


ATOM  10356 HD13 ILE F  11      8.672  20.120 -12.916  1.00 30.01
H

ATOM  10357  N   ASN F  12     7.703  14.090 -12.549  1.00 32.32          N
ATOM  10358  CA  ASN F  12      8.372  12.856 -12.939  1.00 39.08
C

ATOM  10359  C   ASN F  12     8.394  12.742 -14.461  1.00 41.01          C

ATOM  10360  O   ASN F  12     7.444  12.261 -15.081  1.00 32.24          O
ATOM  10361  CB  ASN F  12      7.683  11.646 -12.306  1.00 42.36
C
ATOM  10362  CG  ASN F  12      8.618  10.462 -12.149  1.00 49.52
C
ATOM  10363  OD1 ASN F  12      9.445  10.190 -13.019  1.00 51.85
O
ATOM  10364  ND2 ASN F  12      8.501   9.760 -11.027  1.00 49.58
N

ATOM  10365  H   ASN F  12     6.884  14.138 -12.805  1.00 38.78          H
ATOM  10366  HA  ASN F  12      9.289  12.879 -12.625  1.00 46.89
H
ATOM  10367  HB2 ASN F  12      7.358  11.891 -11.426  1.00 50.83
H
ATOM  10368  HB3 ASN F  12      6.943  11.372 -12.870  1.00 50.83
H
ATOM  10369 HD21 ASN F  12      9.008   9.079 -10.891  1.00 59.50
H
ATOM  10370 HD22 ASN F  12      7.918   9.986 -10.437  1.00 59.50
H

ATOM  10371  N   GLY F  13     9.490  13.206 -15.057  1.00 43.87          N
ATOM  10372  CA  GLY F  13      9.594  13.288 -16.500  1.00 37.61
C

ATOM  10373  C   GLY F  13     8.548  14.247 -17.031  1.00 34.27          C

ATOM  10374  O   GLY F  13     8.500  15.409 -16.628  1.00 38.41          O
ATOM  10375  H   GLY F  13    10.190  13.479 -14.639  1.00 52.65
H
ATOM  10376  HA2 GLY F  13     10.474  13.609 -16.752  1.00 45.13
H
ATOM  10377  HA3 GLY F  13      9.451  12.414 -16.895  1.00 45.13
H

ATOM  10378  N   SER F  14     7.700  13.754 -17.927  1.00 32.43          N
ATOM  10379  CA  SER F  14      6.603  14.550 -18.467  1.00 38.16
C

ATOM  10380  C   SER F  14     5.368  14.442 -17.574  1.00 38.46          C

ATOM  10381  O   SER F  14     4.368  15.130 -17.790  1.00 34.82          O
ATOM  10382  CB  SER F  14      6.270  14.101 -19.894  1.00 40.70
C
ATOM  10383  OG  SER F  14      5.954  12.720 -19.938  1.00 40.46
O

ATOM  10384  H   SER F  14     7.739  12.955 -18.242  1.00 38.92          H
ATOM  10385  HA  SER F  14      6.872  15.481 -18.499  1.00 45.79
H
ATOM  10386  HB2 SER F  14      5.508  14.609 -20.213  1.00 48.84
H
ATOM  10387  HB3 SER F  14      7.038  14.266 -20.462  1.00 48.84
H
ATOM  10388  HG  SER F  14      5.288  12.562 -19.450  1.00 48.55
H

ATOM  10389  N   ASP F  15     5.451  13.578 -16.567  1.00 36.67          N
ATOM  10390  CA  ASP F  15      4.350  13.349 -15.640  1.00 37.21
C



ATOM  10391  C   ASP F  15     4.410  14.336 -14.473  1.00 36.51          C

ATOM  10392  O   ASP F  15     5.475  14.545 -13.888  1.00 27.52          O
ATOM  10393  CB  ASP F  15      4.402  11.911 -15.119  1.00 43.65
C
ATOM  10394  CG  ASP F  15      3.030  11.302 -14.934  1.00 50.64
C
ATOM  10395  OD1 ASP F  15      2.191  11.418 -15.853  1.00 56.62
O
ATOM  10396  OD2 ASP F  15      2.794  10.697 -13.868  1.00 55.33
O1-

ATOM  10397  H   ASP F  15     6.148  13.103 -16.398  1.00 44.00          H
ATOM  10398  HA  ASP F  15      3.508  13.476 -16.105  1.00 44.65
H
ATOM  10399  HB2 ASP F  15      4.890  11.363 -15.754  1.00 52.39
H
ATOM  10400  HB3 ASP F  15      4.852  11.903 -14.260  1.00 52.39
H

ATOM  10401  N   THR F  16     3.269  14.937 -14.138  1.00 29.26          N
ATOM  10402  CA  THR F  16      3.188  15.852 -13.000  1.00 30.25
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C
ATOM  4103  OD1 ASN C 109     -3.364  61.656 -14.015  1.00 30.85
O
ATOM  4104  ND2 ASN C 109     -3.434  61.653 -11.775  1.00 23.23
N
ATOM  4105  H   ASN C 109    -7.173  62.292 -12.148  1.00 26.82
H
ATOM  4106  HA  ASN C 109     -6.065  61.583 -14.526  1.00 25.60
H
ATOM  4107  HB2 ASN C 109     -5.452  60.336 -12.068  1.00 29.18
H
ATOM  4108  HB3 ASN C 109     -5.049  59.716 -13.475  1.00 29.18
H
ATOM  4109 HD21 ASN C 109     -2.705  62.105 -11.713  1.00 27.87
H
ATOM  4110 HD22 ASN C 109     -3.848  61.405 -11.062  1.00 27.87
H
ATOM  4111  N   CYS C 110    -7.646  59.804 -15.053  1.00 16.78
N
ATOM  4112  CA  CYS C 110     -8.675  58.825 -15.382  1.00 19.50
C
ATOM  4113  C   CYS C 110    -8.083  57.420 -15.392  1.00 18.25
C
ATOM  4114  O   CYS C 110    -6.991  57.210 -15.923  1.00 16.64
O
ATOM  4115  CB  CYS C 110     -9.296  59.131 -16.745  1.00 22.08
C
ATOM  4116  SG  CYS C 110     -9.588  60.882 -17.059  1.00 25.44
S
ATOM  4117  H   CYS C 110    -7.122  59.987 -15.710  1.00 20.14
H
ATOM  4118  HA  CYS C 110     -9.376  58.857 -14.712  1.00 23.40
H
ATOM  4119  HB2 CYS C 110     -8.700  58.804 -17.438  1.00 26.50
H
ATOM  4120  HB3 CYS C 110    -10.150  58.675 -16.807  1.00 26.50
H
ATOM  4121  N   TYR C 111    -8.806  56.462 -14.823  1.00 16.40
N
ATOM  4122  CA  TYR C 111     -8.350  55.074 -14.793  1.00 16.58
C
ATOM  4123  C   TYR C 111    -9.442  54.103 -15.219  1.00 18.92
C
ATOM  4124  O   TYR C 111   -10.626  54.362 -15.018  1.00 17.47
O
ATOM  4125  CB  TYR C 111     -7.872  54.690 -13.391  1.00 15.45
C


ATOM  4126  CG  TYR C 111     -6.797  55.583 -12.823  1.00 14.27
C
ATOM  4127  CD1 TYR C 111     -5.456  55.321 -13.059  1.00 17.54
C
ATOM  4128  CD2 TYR C 111     -7.124  56.680 -12.039  1.00 17.77
C
ATOM  4129  CE1 TYR C 111     -4.470  56.131 -12.535  1.00 19.61
C
ATOM  4130  CE2 TYR C 111     -6.148  57.495 -11.509  1.00 15.51
C
ATOM  4131  CZ  TYR C 111     -4.822  57.216 -11.760  1.00 17.01
C
ATOM  4132  OH  TYR C 111     -3.845  58.025 -11.239  1.00 17.34
O
ATOM  4133  H   TYR C 111    -9.569  56.589 -14.446  1.00 19.67
H
ATOM  4134  HA  TYR C 111     -7.603  54.973 -15.404  1.00 19.90
H
ATOM  4135  HB2 TYR C 111     -8.630  54.723 -12.786  1.00 18.53
H
ATOM  4136  HB3 TYR C 111     -7.518  53.788 -13.421  1.00 18.53
H
ATOM  4137  HD1 TYR C 111     -5.218  54.589 -13.580  1.00 21.04
H
ATOM  4138  HD2 TYR C 111     -8.019  56.868 -11.868  1.00 21.32
H
ATOM  4139  HE1 TYR C 111     -3.574  55.945 -12.703  1.00 23.53
H
ATOM  4140  HE2 TYR C 111     -6.382  58.229 -10.987  1.00 18.62
H
ATOM  4141  HH  TYR C 111     -4.194  58.643 -10.790  1.00 20.81
H
ATOM  4142  N   GLN C 112    -9.035  52.978 -15.797  1.00 18.21
N
ATOM  4143  CA  GLN C 112     -9.954  51.869 -16.025  1.00 19.09
C
ATOM  4144  C   GLN C 112    -9.246  50.536 -15.845  1.00 17.43
C
ATOM  4145  O   GLN C 112    -8.135  50.330 -16.337  1.00 15.67
O
ATOM  4146  CB  GLN C 112   -10.578  51.946 -17.416  1.00 21.52
C
ATOM  4147  CG  GLN C 112   -11.604  50.841 -17.706  1.00 22.47
C
ATOM  4148  CD  GLN C 112   -12.794  50.862 -16.753  1.00 23.56
C
ATOM  4149  OE1 GLN C 112    -12.685  50.483 -15.585  1.00 22.27
O
ATOM  4150  NE2 GLN C 112    -13.941  51.302 -17.256  1.00 30.82
N
ATOM  4151  H   GLN C 112    -8.231  52.831 -16.067  1.00 21.85
H
ATOM  4152  HA  GLN C 112   -10.671  51.917 -15.373  1.00 22.91
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C

ATOM  10403  C   THR F  16     1.993  15.543 -12.102  1.00 31.07          C

ATOM  10404  O   THR F  16     0.939  15.126 -12.576  1.00 34.24          O
ATOM  10405  CB  THR F  16      3.080  17.323 -13.451  1.00 27.23
C
ATOM  10406  OG1 THR F  16      1.821  17.538 -14.099  1.00 33.36
O
ATOM  10407  CG2 THR F  16      4.217  17.692 -14.394  1.00 29.69
C

ATOM  10408  H   THR F  16     2.525  14.831 -14.556  1.00 35.11          H
ATOM  10409  HA  THR F  16      3.993  15.762 -12.467  1.00 36.30
H
ATOM  10410  HB  THR F  16      3.137  17.898 -12.672  1.00 32.67
H
ATOM  10411  HG1 THR F  16      1.758  18.338 -14.346  1.00 40.03
H
ATOM  10412 HG21 THR F  16      4.134  18.619 -14.667  1.00 35.62
H
ATOM  10413 HG22 THR F  16      5.070  17.570 -13.948  1.00 35.62
H
ATOM  10414 HG23 THR F  16      4.190  17.128 -15.183  1.00 35.62
H

ATOM  10415  N   HIS F  17     2.176  15.746 -10.799  1.00 27.94          N

ATOM  10416  CA  HIS F  17     1.086  15.654  -9.832  1.00 28.47          C

ATOM  10417  C   HIS F  17     1.094  16.890  -8.941  1.00 23.00          C

ATOM  10418  O   HIS F  17     2.112  17.220  -8.337  1.00 21.84          O

ATOM  10419  CB  HIS F  17     1.207  14.388  -8.985  1.00 30.82          C

ATOM  10420  CG  HIS F  17     1.084  13.122  -9.773  1.00 44.45          C
ATOM  10421  ND1 HIS F  17     2.129  12.592 -10.499  1.00 46.02
N

ATOM  10422  CD2 HIS F  17     0.037  12.283  -9.954  1.00 47.05          C
ATOM  10423  CE1 HIS F  17     1.733  11.479 -11.089  1.00 48.47
C
ATOM  10424  NE2 HIS F  17     0.467  11.269 -10.775  1.00 52.45
N

ATOM  10425  H   HIS F  17     2.935  15.943 -10.446  1.00 33.53          H



ATOM  10426  HA  HIS F  17     0.239  15.625 -10.304  1.00 34.16          H

ATOM  10427  HB2 HIS F  17     2.075  14.385  -8.551  1.00 36.99          H

ATOM  10428  HB3 HIS F  17     0.505  14.391  -8.316  1.00 36.99          H
ATOM  10429  HD1 HIS F  17     2.917  12.931 -10.557  1.00 55.22
H

ATOM  10430  HD2 HIS F  17    -0.813  12.374  -9.589  1.00 56.46          H
ATOM  10431  HE1 HIS F  17     2.255  10.936 -11.635  1.00 58.17
H
ATOM  10432  HE2 HIS F  17    -0.011  10.605 -11.042  1.00 62.94
H

ATOM  10433  N   SER F  18    -0.044  17.573  -8.879  1.00 17.98          N

ATOM  10434  CA  SER F  18    -0.177  18.794  -8.094  1.00 20.45          C

ATOM  10435  C   SER F  18    -1.131  18.561  -6.932  1.00 21.00          C

ATOM  10436  O   SER F  18    -2.266  18.124  -7.135  1.00 23.24          O

ATOM  10437  CB  SER F  18    -0.679  19.942  -8.971  1.00 22.54          C
ATOM  10438  OG  SER F  18      0.180  20.143 -10.082  1.00 30.00
O

ATOM  10439  H   SER F  18    -0.765  17.345  -9.289  1.00 21.57          H

ATOM  10440  HA  SER F  18     0.689  19.041  -7.734  1.00 24.54          H
ATOM  10441  HB2 SER F  18    -1.568  19.727  -9.294  1.00 27.05
H
ATOM  10442  HB3 SER F  18    -0.706  20.754  -8.442  1.00 27.05
H
ATOM  10443  HG  SER F  18    -0.107  20.775 -10.555  1.00 36.00
H

ATOM  10444  N   THR F  19    -0.665  18.867  -5.722  1.00 17.83          N

ATOM  10445  CA  THR F  19    -1.425  18.615  -4.501  1.00 18.00          C

ATOM  10446  C   THR F  19    -1.416  19.828  -3.570  1.00 16.45          C

ATOM  10447  O   THR F  19    -0.451  20.592  -3.537  1.00 14.39          O

ATOM  10448  CB  THR F  19    -0.853  17.389  -3.744  1.00 22.55          C
ATOM  10449  OG1 THR F  19    -0.964  16.223  -4.568  1.00 32.42
O
ATOM  10450  CG2 THR F  19    -1.601  17.142  -2.441  1.00 34.29
C

ATOM  10451  H   THR F  19     0.103  19.228  -5.581  1.00 21.39          H
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H
ATOM   4153  HB2 GLN C 112    -11.030  52.799 -17.509  1.00 25.83
H
ATOM   4154  HB3 GLN C 112     -9.873  51.875 -18.079  1.00 25.83
H
ATOM   4155  HG2 GLN C 112    -11.942  50.954 -18.608  1.00 26.97
H
ATOM   4156  HG3 GLN C 112    -11.170  49.978 -17.621  1.00 26.97
H
ATOM   4157 HE21 GLN C 112    -14.643  51.335 -16.760  1.00 36.99
H
ATOM   4158 HE22 GLN C 112    -13.982  51.555 -18.077  1.00 36.99
H
ATOM   4159  N   PHE C 113    -9.911  49.643 -15.122  1.00 16.74
N
ATOM   4160  CA  PHE C 113    -9.411  48.302 -14.867  1.00 19.52
C


ATOM   4161  C   PHE C 113   -10.086  47.323 -15.811  1.00 21.23
C
ATOM   4162  O   PHE C 113   -11.263  47.011 -15.651  1.00 24.99
O
ATOM   4163  CB  PHE C 113    -9.663  47.898 -13.415  1.00 17.97
C
ATOM   4164  CG  PHE C 113    -8.873  48.695 -12.419  1.00 25.87
C
ATOM   4165  CD1 PHE C 113    -9.189  50.019 -12.163  1.00 23.02
C
ATOM   4166  CD2 PHE C 113    -7.817  48.119 -11.734  1.00 25.71
C
ATOM   4167  CE1 PHE C 113    -8.466  50.751 -11.248  1.00 25.64
C
ATOM   4168  CE2 PHE C 113    -7.091  48.849 -10.815  1.00 27.12
C
ATOM   4169  CZ  PHE C 113    -7.416  50.166 -10.572  1.00 26.16
C
ATOM   4170  H   PHE C 113   -10.675  49.797 -14.759  1.00 20.08
H
ATOM   4171  HA  PHE C 113    -8.455  48.277 -15.031  1.00 23.43
H
ATOM   4172  HB2 PHE C 113   -10.604  48.022 -13.215  1.00 21.57
H
ATOM   4173  HB3 PHE C 113    -9.423  46.964 -13.305  1.00 21.57
H
ATOM   4174  HD1 PHE C 113    -9.896  50.418 -12.615  1.00 27.62
H
ATOM   4175  HD2 PHE C 113    -7.594  47.231 -11.895  1.00 30.85
H
ATOM   4176  HE1 PHE C 113    -8.687  51.639 -11.085  1.00 30.77
H
ATOM   4177  HE2 PHE C 113    -6.382  48.452 -10.361  1.00 32.55
H
ATOM   4178  HZ  PHE C 113    -6.927  50.660  -9.953  1.00 31.39
H
ATOM   4179  N   PHE C 114    -9.339  46.858 -16.805  1.00 16.23
N
ATOM   4180  CA  PHE C 114    -9.855  45.885 -17.757  1.00 21.01
C
ATOM   4181  C   PHE C 114    -9.597  44.462 -17.277  1.00 23.07
C
ATOM   4182  O   PHE C 114    -8.447  44.064 -17.067  1.00 19.02
O
ATOM   4183  CB  PHE C 114    -9.229  46.114 -19.132  1.00 22.60
C
ATOM   4184  CG  PHE C 114    -9.646  47.407 -19.764  1.00 22.75
C
ATOM   4185  CD1 PHE C 114   -10.804  47.479 -20.517  1.00 26.86
C
ATOM   4186  CD2 PHE C 114    -8.895  48.556 -19.584  1.00 23.18
C
ATOM   4187  CE1 PHE C 114   -11.197  48.673 -21.094  1.00 30.06
C
ATOM   4188  CE2 PHE C 114    -9.283  49.751 -20.162  1.00 23.89
C
ATOM   4189  CZ  PHE C 114   -10.435  49.809 -20.914  1.00 22.95
C
ATOM   4190  H   PHE C 114    -8.525  47.092 -16.950  1.00 19.48
H
ATOM   4191  HA  PHE C 114   -10.815  46.003 -17.841  1.00 25.21
H
ATOM   4192  HB2 PHE C 114    -8.264  46.125 -19.039  1.00 27.12
H
ATOM   4193  HB3 PHE C 114    -9.496  45.393 -19.723  1.00 27.12
H
ATOM   4194  HD1 PHE C 114   -11.320  46.716 -20.642  1.00 32.23
H
ATOM   4195  HD2 PHE C 114    -8.116  48.521 -19.078  1.00 27.81
H


ATOM   4196  HE1 PHE C 114   -11.974  48.710 -21.603  1.00 36.07
H
ATOM   4197  HE2 PHE C 114    -8.769  50.517 -20.039  1.00 28.67
H
ATOM   4198  HZ  PHE C 114   -10.698  50.612 -21.303  1.00 27.54
H
ATOM   4199  N   ASP C 115   -10.676  43.702 -17.113  1.00 17.95
N
ATOM   4200  CA  ASP C 115   -10.596  42.336 -16.605  1.00 23.68
C
ATOM   4201  C   ASP C 115   -10.397  41.329 -17.734  1.00 26.50
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ATOM  10452  HA  THR F  19    -2.346  18.421  -4.735  1.00 21.60           H

ATOM  10453  HB  THR F  19     0.081  17.548  -3.535  1.00 27.06           H
ATOM  10454  HG1 THR F  19    -0.656  15.555  -4.164  1.00 38.90
H
ATOM  10455 HG21 THR F  19    -1.226  16.372  -1.985  1.00 41.15
H
ATOM  10456 HG22 THR F  19    -1.526  17.917  -1.863  1.00 41.15
H
ATOM  10457 HG23 THR F  19    -2.539  16.975  -2.624  1.00 41.15
H

ATOM  10458  N   VAL F  20    -2.497  20.001  -2.817  1.00 15.56           N

ATOM  10459  CA  VAL F  20    -2.525  20.990  -1.749  1.00 13.89           C

ATOM  10460  C   VAL F  20    -3.255  20.430  -0.534  1.00 18.50           C



ATOM  10461  O   VAL F  20    -4.337  19.854  -0.660  1.00 18.47           O

ATOM  10462  CB  VAL F  20    -3.205  22.307  -2.177  1.00 12.52           C
ATOM  10463  CG1 VAL F  20    -2.985  23.371  -1.111  1.00 15.06
C
ATOM  10464  CG2 VAL F  20    -2.673  22.791  -3.519  1.00 17.29
C

ATOM  10465  H   VAL F  20    -3.228  19.557  -2.906  1.00 18.67           H

ATOM  10466  HA  VAL F  20    -1.615  21.194  -1.484  1.00 16.67           H

ATOM  10467  HB  VAL F  20    -4.160  22.159  -2.265  1.00 15.03           H
ATOM  10468 HG11 VAL F  20    -3.417  24.193  -1.393  1.00 18.07
H
ATOM  10469 HG12 VAL F  20    -3.369  23.065  -0.275  1.00 18.07
H
ATOM  10470 HG13 VAL F  20    -2.032  23.518  -1.005  1.00 18.07
H
ATOM  10471 HG21 VAL F  20    -3.121  23.618  -3.757  1.00 20.75
H
ATOM  10472 HG22 VAL F  20    -1.718  22.941  -3.444  1.00 20.75
H
ATOM  10473 HG23 VAL F  20    -2.850  22.114  -4.191  1.00 20.75
H

ATOM  10474  N   ASP F  21    -2.642  20.603   0.634  1.00 16.80           N

ATOM  10475  CA  ASP F  21    -3.255  20.265   1.914  1.00 17.58           C

ATOM  10476  C   ASP F  21    -3.462  21.536   2.730  1.00 17.01           C

ATOM  10477  O   ASP F  21    -2.575  22.388   2.787  1.00 15.14           O

ATOM  10478  CB  ASP F  21    -2.381  19.285   2.699  1.00 20.49           C

ATOM  10479  CG  ASP F  21    -2.160  17.976   1.967  1.00 26.72           C
ATOM  10480  OD1 ASP F  21    -3.111  17.480   1.325  1.00 29.73
O
ATOM  10481  OD2 ASP F  21    -1.031  17.446   2.035  1.00 37.52
O1-

ATOM  10482  H   ASP F  21    -1.848  20.923   0.712  1.00 20.16           H

ATOM  10483  HA  ASP F  21    -4.120  19.853   1.760  1.00 21.09           H
ATOM  10484  HB2 ASP F  21    -1.514  19.690   2.856  1.00 24.59
H
ATOM  10485  HB3 ASP F  21    -2.812  19.086   3.545  1.00 24.59
H

ATOM  10486  N   VAL F  22    -4.628  21.667   3.355  1.00 14.74           N

ATOM  10487  CA  VAL F  22    -4.883  22.786   4.259  1.00 14.88           C

ATOM  10488  C   VAL F  22    -5.074  22.258   5.674  1.00 15.42           C

ATOM  10489  O   VAL F  22    -5.919  21.397   5.914  1.00 16.90           O

ATOM  10490  CB  VAL F  22    -6.116  23.601   3.839  1.00 16.70           C
ATOM  10491  CG1 VAL F  22    -6.207  24.883   4.654  1.00 16.95
C
ATOM  10492  CG2 VAL F  22    -6.058  23.927   2.351  1.00 15.61
C

ATOM  10493  H   VAL F  22    -5.288  21.121   3.274  1.00 17.68           H

ATOM  10494  HA  VAL F  22    -4.114  23.378   4.257  1.00 17.85           H

ATOM  10495  HB  VAL F  22    -6.916  23.078   4.004  1.00 20.04           H


ATOM  10496 HG11 VAL F  22    -6.991  25.380   4.373  1.00 20.34
H
ATOM  10497 HG12 VAL F  22    -6.280  24.654   5.594  1.00 20.34
H
ATOM  10498 HG13 VAL F  22    -5.408  25.411   4.503  1.00 20.34
H
ATOM  10499 HG21 VAL F  22    -6.845  24.441   2.110  1.00 18.74
H
ATOM  10500 HG22 VAL F  22    -5.257  24.445   2.172  1.00 18.74
H
ATOM  10501 HG23 VAL F  22    -6.036  23.099   1.847  1.00 18.74
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C
ATOM  4202  O   ASP C 115    -10.405  40.120 -17.503  1.00 28.70
O
ATOM  4203  CB  ASP C 115    -11.856  41.988 -15.810  1.00 32.14
C
ATOM  4204  CG  ASP C 115    -13.112  42.022 -16.662  1.00 34.91
C
ATOM  4205  OD1 ASP C 115    -13.093  42.679 -17.724  1.00 35.65
O
ATOM  4206  OD2 ASP C 115    -14.118  41.395 -16.269  1.00 44.70
O1-
ATOM  4207  H   ASP C 115    -11.477  43.958 -17.291  1.00 21.53
H
ATOM  4208  HA  ASP C 115     -9.836  42.267 -16.006  1.00 28.42
H
ATOM  4209  HB2 ASP C 115    -11.764  41.093 -15.446  1.00 38.57
H
ATOM  4210  HB3 ASP C 115    -11.964  42.629 -15.090  1.00 38.57
H
ATOM  4211  N   GLU C 116    -10.227  41.832 -18.952  1.00 22.96
N
ATOM  4212  CA  GLU C 116     -9.886  40.989 -20.091  1.00 27.29
C
ATOM  4213  C   GLU C 116     -8.406  40.646 -20.029  1.00 28.42
C
ATOM  4214  O   GLU C 116     -7.556  41.538 -20.019  1.00 29.30
O
ATOM  4215  CB  GLU C 116    -10.212  41.689 -21.415  1.00 32 71
C
ATOM  4216  CG  GLU C 116    -11.703  41.836 -21.705  1.00 41.30
C
ATOM  4217  CD  GLU C 116    -12.404  42.802 -20.764  1.00 43.24
C
ATOM  4218  OE1 GLU C 116    -11.789  43.823 -20.383  1.00 32.76
O
ATOM  4219  OE2 GLU C 116    -13.572  42.536 -20.403  1.00 49.42
O1-
ATOM  4220  H   GLU C 116    -10.304  42.667 -19.146  1.00 27.55
H
ATOM  4221  HA  GLU C 116    -10.395  40.165 -20.046  1.00 32.74
H
ATOM  4222  HB2 GLU C 116     -9.827  42.579 -21.397  1.00 39.25
H
ATOM  4223  HB3 GLU C 116     -9.820  41.178 -22.140  1.00 39.25
H
ATOM  4224  HG2 GLU C 116    -11.816  42.166 -22.610  1.00 49.56
H
ATOM  4225  HG3 GLU C 116    -12.128  40.969 -21.614  1.00 49.56
H
ATOM  4226  N   SER C 117     -8.096  39.357 -19.979  1.00 18.99
N
ATOM  4227  CA  SER C 117     -6.709  38.922 -19.893  1.00 24.06
C
ATOM  4228  C   SER C 117     -6.009  39.087 -21.240  1.00 23.72
C
ATOM  4229  O   SER C 117     -6.420  38.498 -22.238  1.00 23.97
O
ATOM  4230  CB  SER C 117     -6.636  37.470 -19.425  1.00 24.23
C


ATOM  4231  OG  SER C 117     -5.313  37.131 -19.059  1.00 33.70
O
ATOM  4232  H   SER C 117     -8.669  38.716 -19.994  1.00 22.79
H
ATOM  4233  HA  SER C 117     -6.245  39.472 -19.243  1.00 28.88
H
ATOM  4234  HB2 SER C 117     -7.216  37.356 -18.656  1.00 29.08
H
ATOM  4235  HB3 SER C 117     -6.923  36.890 -20.147  1.00 29.08
H
ATOM  4236  HG  SER C 117     -5.052  37.628 -18.434  1.00 40.44
H
ATOM  4237  N   LYS C 118     -4.950  39.895 -21.255  1.00 19.67
N
ATOM  4238  CA  LYS C 118     -4.202  40.183 -22.476  1.00 18.97
C
ATOM  4239  C   LYS C 118     -2.705  40.264 -22.190  1.00 19.32
C
ATOM  4240  O   LYS C 118     -2.304  40.608 -21.081  1.00 17.06
O
ATOM  4241  CB  LYS C 118     -4.674  41.499 -23.096  1.00 20.06
C
ATOM  4242  CG  LYS C 118     -6.039  41.439 -23.756  1.00 24.89
C
ATOM  4243  CD  LYS C 118     -6.415  42.794 -24.345  1.00 27.05
C
ATOM  4244  CE  LYS C 118     -7.689  42.712 -25.171  1.00 30.29
C
ATOM  4245  NZ  LYS C 118     -8.838  42 217 -24.367  1.00 41.79
N1+
ATOM  4246  H   LYS C 118     -4.642  40.295 -20.559  1.00 23.60
H
ATOM  4247  HA  LYS C 118     -4.351  39.472 -23.119  1.00 22.76
H
ATOM  4248  HB2 LYS C 118     -4.715  42.172 -22.399  1.00 24.07
H
ATOM  4249  HB3 LYS C 118     -4.034  41.769 -23.773  1.00 24.07
H
ATOM  4250  HG2 LYS C 118     -6.022  40.787 -24.474  1.00 29.87
H
ATOM  4251  HG3 LYS C 118     -6.706  41.196 -23.095  1.00 29.87
H
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H

ATOM  10502  N   ASP F  23     -4.271  22.776   6.598  1.00 19.93           N

ATOM  10503  CA  ASP F  23     -4.308  22.361   7.994  1.00 18.92           C

ATOM  10504  C   ASP F  23     -4.743  23.509   8.899  1.00 20.49           C

ATOM  10505  O   ASP F  23     -4.200  24.612   8.815  1.00 16.14           O

ATOM  10506  CB  ASP F  23     -2.935  21.862   8.448  1.00 23.31           C

ATOM  10507  CG  ASP F  23     -2.429  20.687   7.628  1.00 32.67           C
ATOM  10508  OD1 ASP F  23     -3.251  19.964   7.023  1.00 26.04
O
ATOM  10509  OD2 ASP F  23     -1.196  20.485   7.601  1.00 34.54
O1-

ATOM  10510  H   ASP F  23     -3.684  23.383   6.436  1.00 23.92           H

ATOM  10511  HA  ASP F  23     -4.945  21.636   8.096  1.00 22.70           H
ATOM  10512  HB2 ASP F  23     -2.293  22.584   8.363  1.00 27.97
H
ATOM  10513  HB3 ASP F  23     -2.993  21.577   9.373  1.00 27.97
H

ATOM  10514  N   LEU F  24     -5.720  23.238   9.758  1.00 17.08           N
ATOM  10515  CA  LEU F  24     -6.114  24.167  10.813  1.00 21.44
C

ATOM  10516  C   LEU F  24     -5.627  23.618  12.149  1.00 25.10           C

ATOM  10517  O   LEU F  24     -6.105  22.581  12.603  1.00 24.75           O
ATOM  10518  CB  LEU F  24     -7.631  24.360  10.835  1.00 23.19
C
ATOM  10519  CG  LEU F  24     -8.183  25.284  11.926  1.00 26.52
C
ATOM  10520  CD1 LEU F  24     -7.713  26.717  11.715  1.00 25.95
C
ATOM  10521  CD2 LEU F  24     -9.702  25.220  11.967  1.00 24.61
C

ATOM  10522  H   LEU F  24     -6.177  22.510   9.751  1.00 20.50           H
ATOM  10523  HA  LEU F  24     -5.695  25.028  10.662  1.00 25.72
H
ATOM  10524  HB2 LEU F  24     -7.903  24.729   9.980  1.00 27.83
H
ATOM  10525  HB3 LEU F  24     -8.046  23.492  10.956  1.00 27.83
H
ATOM  10526  HG  LEU F  24     -7.850  24.986  12.787  1.00 31.82
H
ATOM  10527 HD11 LEU F  24     -8.078  27.275  12.419  1.00 31.14
H
ATOM  10528 HD12 LEU F  24     -6.743  26.738  11.745  1.00 31.14
H
ATOM  10529 HD13 LEU F  24     -8.025  27.027  10.851  1.00 31.14
H
ATOM  10530 HD21 LEU F  24    -10.024  25.813  12.664  1.00 29.53
H


ATOM  10531 HD22 LEU F  24    -10.052  25.499  11.107  1.00 29.53
H
ATOM  10532 HD23 LEU F  24     -9.974  24.308  12.156  1.00 29.53
H

ATOM  10533  N   ASP F  25     -4.675  24.310  12.767  1.00 21.21           N
ATOM  10534  CA  ASP F  25     -4.059  23.837  14.002  1.00 25.53
C

ATOM  10535  C   ASP F  25     -3.507  22.423  13.815  1.00 28.79           C

ATOM  10536  O   ASP F  25     -3.845  21.506  14.564  1.00 30.42           O
ATOM  10537  CB  ASP F  25     -5.064  23.874  15.157  1.00 22.66
C
ATOM  10538  CG  ASP F  25     -5.581  25.275  15.433  1.00 25.89
C
ATOM  10539  OD1 ASP F  25     -4.835  26.240  15.169  1.00 27.08
O
ATOM  10540  OD2 ASP F  25     -6.731  25.415  15.905  1.00 28.60
O1-

ATOM  10541  H   ASP F  25     -4.366  25.063  12.489  1.00 25.45           H
ATOM  10542  HA  ASP F  25     -3.318  24.420  14.230  1.00 30.64
H
ATOM  10543  HB2 ASP F  25     -5.823  23.312  14.935  1.00 27.20
H
ATOM  10544  HB3 ASP F  25     -4.634  23.548  15.963  1.00 27.20
H

ATOM  10545  N   ASP F  26     -2.662  22.266  12.799  1.00 27.45           N
ATOM  10546  CA  ASP F  26     -2.002  20.994  12.492  1.00 36.24
C

ATOM  10547  C   ASP F  26     -2.989  19.837  12.303  1.00 34.78           C

ATOM  10548  O   ASP F  26     -2.632  18.668  12.463  1.00 43.46           O
ATOM  10549  CB  ASP F  26     -0.987  20.646  13.588  1.00 40.63
C
ATOM  10550  CG  ASP F  26      0.210  21.582  13.591  1.00 47.72
C
ATOM  10551  OD1 ASP F  26      1.038  21.493  12.657  1.00 56.36
O
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ATOM  4252 HD2 LYS C 118    -6.561  43.426 -23.624  1.00 32.46
H
ATOM  4253 HD3 LYS C 118    -5.699  43.102 -24.921  1.00 32.46
H
ATOM  4254 HE2 LYS C 118    -7.910  43.596 -25.504  1.00 36.35
H
ATOM  4255 HE3 LYS C 118    -7.550  42.100 -25.910  1.00 36.35
H
ATOM  4256 HZ1 LYS C 118    -8.661  41.403 -24.053  1.00 50.14
H
ATOM  4257 HZ2 LYS C 118    -8.988  42.765 -23.682  1.00 50.14
H
ATOM  4258 HZ3 LYS C 118    -9.569  42.179 -24.873  1.00 50.14
H
ATOM  4259 N   ASN C 119   -1.876  39.965 -23.186  1.00 16.38
N
ATOM  4260 CA  ASN C 119    -0.438  40.141 -23.016  1.00 19.02
C
ATOM  4261 C   ASN C 119   -0.135  41.640 -23.019  1.00 17.17
C
ATOM  4262 O   ASN C 119   -1.030  42.453 -23.271  1.00 15.21
O
ATOM  4263 CB  ASN C 119     0.354  39.374 -24.095  1.00 16.08
C
ATOM  4264 CG  ASN C 119     0.249  39.985 -25.491  1.00 21.42
C
ATOM  4265 OD1 ASN C 119     0.176  41.202 -25.669  1.00 20.88
O


ATOM  4266 ND2 ASN C 119     0.267  39.119 -26.500  1.00 28.85
N
ATOM  4267 H   ASN C 119   -2.115  39.664 -23.956  1.00 19.65
H
ATOM  4268 HA  ASN C 119    -0.179  39.788 -22.151  1.00 22.82
H
ATOM  4269 HB2 ASN C 119     1.291  39.363 -23.846  1.00 19.30
H
ATOM  4270 HB3 ASN C 119     0.016  38.466 -24.144  1.00 19.30
H
ATOM  4271 HD21 ASN C 119     0.211  39.402 -27.311  1.00 34.62
H
ATOM  4272 HD22 ASN C 119     0.334  38.276 -26.343  1.00 34.62
H
ATOM  4273 N   TRP C 120    1.108  42.013 -22.734  1.00 17.45
N
ATOM  4274 CA  TRP C 120     1.443  43.427 -22.571  1.00 16.39
C
ATOM  4275 C   TRP C 120    1.229  44.216 -23.861  1.00 19.16
C
ATOM  4276 O   TRP C 120    0.768  45.360 -23.822  1.00 20.05
O
ATOM  4277 CB  TRP C 120     2.888  43.592 -22.098  1.00 15.72
C
ATOM  4278 CG  TRP C 120     3.216  45.005 -21.718  1.00 18.60
C
ATOM  4279 CD1 TRP C 120     3.152  45.554 -20.470  1.00 18.56
C
ATOM  4280 CD2 TRP C 120     3.652  46.053 -22.593  1.00 18.79
C
ATOM  4281 NE1 TRP C 120     3.518  46.876 -20.514  1.00 17.94
N
ATOM  4282 CE2 TRP C 120     3.830  47.208 -21.805  1.00 20.55
C
ATOM  4283 CE3 TRP C 120     3.903  46.128 -23.966  1.00 23.33
C
ATOM  4284 CZ2 TRP C 120     4.251  48.420 -22.342  1.00 21.40
C
ATOM  4285 CZ3 TRP C 120     4.321  47.334 -24.497  1.00 19.62
C
ATOM  4286 CH2 TRP C 120     4.492  48.463 -23.687  1.00 24.59
C
ATOM  4287 H   TRP C 120    1.771  41.475 -22.631  1.00 20.94
H
ATOM  4288 HA  TRP C 120     0.864  43.807 -21.892  1.00 19.67
H
ATOM  4289 HB2 TRP C 120     3.032  43.032 -21.319  1.00 18.86
H
ATOM  4290 HB3 TRP C 120     3.487  43.327 -22.813  1.00 18.86
H
ATOM  4291 HD1 TRP C 120     2.895  45.098 -19.701  1.00 22.28
H
ATOM  4292 HE1 TRP C 120     3.550  47.408 -19.839  1.00 21.53
H
ATOM  4293 HE3 TRP C 120     3.791  45.383 -24.511  1.00 28.00
H
ATOM  4294 HZ2 TRP C 120     4.366  49.172 -21.806  1.00 25.69
H
ATOM  4295 HZ3 TRP C 120     4.493  47.396 -25.409  1.00 23.55
H
ATOM  4296 HH2 TRP C 120     4.776  49.260 -24.072  1.00 29.50
H
ATOM  4297 N   TYR C 121    1.555  43.605 -24.998  1.00 17.25
N
ATOM  4298 CA  TYR C 121     1.432  44.280 -26.289  1.00 19.29
C
ATOM  4299 C   TYR C 121   -0.035  44.502 -26.645  1.00 19.51
C
ATOM  4300 O   TYR C 121   -0.406  45.554 -27.164  1.00 22.89
O
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ATOM  10552 OD2 ASP F  26     0.328  22.403  14.526  1.00 47.17
O1-

ATOM  10553 H   ASP F  26   -2.448  22.899  12.256  1.00 32.93          H
ATOM  10554 HA  ASP F  26    -1.511  21.095  11.662  1.00 43.49
H
ATOM  10555 HB2 ASP F  26    -1.421  20.710  14.453  1.00 48.76
H
ATOM  10556 HB3 ASP F  26    -0.663  19.743  13.445  1.00 48.76
H

ATOM  10557 N   SER F  27   -4.227  20.173  11.955  1.00 32.09          N
ATOM  10558 CA  SER F  27    -5.231  19.180  11.597  1.00 34.04
C

ATOM  10559 C   SER F  27   -5.743  19.470  10.195  1.00 27.53          C

ATOM  10560 O   SER F  27   -6.229  20.565   9.922  1.00 25.46          O
ATOM  10561 CB  SER F  27    -6.386  19.183  12.596  1.00 35.84
C
ATOM  10562 OG  SER F  27    -7.408  18.294  12.181  1.00 39.50
O

ATOM  10563 H   SER F  27   -4.513  20.984  11.919  1.00 38.51          H
ATOM  10564 HA  SER F  27    -4.827  18.298  11.600  1.00 40.85
H
ATOM  10565 HB2 SER F  27    -6.055  18.903  13.463  1.00 43.01
H


ATOM  10566 HB3 SER F  27    -6.752  20.080  12.654  1.00 43.01
H
ATOM  10567 HG  SER F  27    -8.039  18.302  12.736  1.00 47.40
H

ATOM  10568 N   GLN F  28   -5.626  18.486   9.309  1.00 27.54          N

ATOM  10569 CA  GLN F  28    -6.030  18.651   7.918  1.00 23.96          C

ATOM  10570 C   GLN F  28   -7.541  18.819   7.811  1.00 23.35          C

ATOM  10571 O   GLN F  28   -8.295  18.020   8.367  1.00 23.17          O

ATOM  10572 CB  GLN F  28    -5.567  17.450   7.091  1.00 27.17          C
ATOM  10573 CG  GLN F  28    -5.639  17.658   5.595  1.00 25.49
C

ATOM  10574 CD  GLN F  28    -5.293  16.399   4.820  1.00 29.69          C
ATOM  10575 OE1 GLN F  28    -4.307  16.362   4.086  1.00 31.67
O
ATOM  10576 NE2 GLN F  28    -6.104  15.361   4.984  1.00 33.72
N

ATOM  10577 H   GLN F  28   -5.312  17.706   9.491  1.00 33.05          H

ATOM  10578 HA  GLN F  28    -5.610  19.447   7.556  1.00 28.76          H
ATOM  10579 HB2 GLN F  28    -4.644  17.254   7.317  1.00 32.60
H
ATOM  10580 HB3 GLN F  28    -6.126  16.688   7.310  1.00 32.60
H
ATOM  10581 HG2 GLN F  28    -6.540  17.922   5.355  1.00 30.58
H
ATOM  10582 HG3 GLN F  28    -5.009  18.351   5.341  1.00 30.58
H
ATOM  10583 HE21 GLN F  28    -5.950  14.625   4.566  1.00 40.46
H
ATOM  10584 HE22 GLN F  28    -6.783  15.424   5.508  1.00 40.46
H

ATOM  10585 N   ILE F  29   -7.974  19.862   7.102  1.00 18.13          N

ATOM  10586 CA  ILE F  29    -9.397  20.159   6.940  1.00 18.44          C

ATOM  10587 C   ILE F  29   -9.830  20.136   5.472  1.00 17.32          C

ATOM  10588 O   ILE F  29  -11.008  19.952   5.170  1.00 15.77          O

ATOM  10589 CB  ILE F  29    -9.757  21.539   7.544  1.00 16.85          C

ATOM  10590 CG1 ILE F  29    -8.943  22.655   6.879  1.00 18.54          C

ATOM  10591 CG2 ILE F  29    -9.505  21.533   9.044  1.00 21.09          C

ATOM  10592 CD1 ILE F  29    -9.442  24.060   7.198  1.00 16.42          C

ATOM  10593 H   ILE F  29   -7.456  20.418   6.700  1.00 21.76          H

ATOM  10594 HA  ILE F  29    -9.912  19.486   7.411  1.00 22.13          H

ATOM  10595 HB  ILE F  29  -10.699  21.708   7.389  1.00 20.22          H
ATOM  10596 HG12 ILE F  29    -8.024  22.592   7.181  1.00 22.25
H
ATOM  10597 HG13 ILE F  29    -8.982  22.538   5.917  1.00 22.25
H
ATOM  10598 HG21 ILE F  29    -9.735  22.404   9.405  1.00 25.31
H
ATOM  10599 HG22 ILE F  29  -10.056  20.848   9.454  1.00 25.31
H
ATOM  10600 HG23 ILE F  29    -8.568  21.345   9.206  1.00 25.31
H
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ATOM  4301  CB  TYR C 121      2.124  43.472 -27.392  1.00 22.07
C
ATOM  4302  CG  TYR C 121      3.470  42.922 -26.983  1.00 18.97
C
ATOM  4303  CD1 TYR C 121      4.582  43.748 -26.897  1.00 21.63
C
ATOM  4304  CD2 TYR C 121      3.627  41.577 -26.675  1.00 18.97
C
ATOM  4305  CE1 TYR C 121      5.812  43.250 -26.517  1.00 22.33
C
ATOM  4306  CE2 TYR C 121      4.853  41.070 -26.296  1.00 21.40
C
ATOM  4307  CZ  TYR C 121      5.939  41.910 -26.216  1.00 21.86
C
ATOM  4308  OH  TYR C 121      7.161  41.408 -25.840  1.00 22.74
O
ATOM  4309  H   TYR C 121      1.850  42.799 -25.049  1.00 20.71
H
ATOM  4310  HA  TYR C 121      1.863  45.148 -26.236  1.00 23.15
H
ATOM  4311  HB2 TYR C 121      1.558  42.722 -27.633  1.00 26.49
H
ATOM  4312  HB3 TYR C 121      2.259  44.044 -28.163  1.00 26.49
H
ATOM  4313  HD1 TYR C 121      4.496  44.652 -27.097  1.00 25.95
H
ATOM  4314  HD2 TYR C 121      2.893  41.008 -26.726  1.00 22.76
H
ATOM  4315  HE1 TYR C 121      6.550  43.815 -26.464  1.00 26.80
H
ATOM  4316  HE2 TYR C 121      4.944  40.167 -26.092  1.00 25.68
H
ATOM  4317  HH  TYR C 121      7.734  42.021 -25.835  1.00 27.29
H
ATOM  4318  N   GLU C 122     -0.864  43.503 -26.363  1.00 19.03
N
ATOM  4319  CA  GLU C 122     -2.296  43.606 -26.607  1.00 20.24
C
ATOM  4320  C   GLU C 122     -2.911  44.657 -25.688  1.00 22.15
C
ATOM  4321  O   GLU C 122     -3.781  45.424 -26.098  1.00 21.67
O
ATOM  4322  CB  GLU C 122     -2.969  42.249 -26.399  1.00 23.32
C
ATOM  4323  CG  GLU C 122     -2.577  41.198 -27.442  1.00 28.93
C
ATOM  4324  CD  GLU C 122     -3.051  39.794 -27.089  1.00 31.55
C
ATOM  4325  OE1 GLU C 122     -3.184  39.484 -25.884  1.00 26.49
O
ATOM  4326  OE2 GLU C 122     -3.289  38.996 -28.023  1.00 36.30
O1-
ATOM  4327  H   GLU C 122     -0.619  42.750 -26.028  1.00 22.84
H
ATOM  4328  HA  GLU C 122     -2.445  43.881 -27.525  1.00 24.29
H
ATOM  4329  HB2 GLU C 122     -2.720  41.907 -25.526  1.00 27.98
H
ATOM  4330  HB3 GLU C 122     -3.931  42.366 -26.444  1.00 27.98
H
ATOM  4331  HG2 GLU C 122     -2.970  41.440 -28.295  1.00 34.71
H
ATOM  4332  HG3 GLU C 122     -1.610  41.176 -27.517  1.00 34.71
H
ATOM  4333  N   SER C 123     -2.442  44.696 -24.446  1.00 20.16
N
ATOM  4334  CA  SER C 123     -2.934  45.664 -23.473  1.00 21.59
C
ATOM  4335  C   SER C 123     -2.539  47.085 -23.865  1.00 20.70
C


ATOM  4336  O   SER C 123     -3.328  48.019 -23.717  1.00 19.90
O
ATOM  4337  CB  SER C 123     -2.405  45.335 -22.080  1.00 19.87
C
ATOM  4338  OG  SER C 123     -2.871  44.070 -21.655  1.00 17.57
O
ATOM  4339  H   SER C 123     -1.836  44.169 -24.140  1.00 24.19
H
ATOM  4340  HA  SER C 123     -3.903  45.619 -23.445  1.00 25.91
H
ATOM  4341  HB2 SER C 123     -1.436  45.323 -22.105  1.00 23.85
H
ATOM  4342  HB3 SER C 123     -2.713  46.011 -21.457  1.00 23.85
H
ATOM  4343  HG  SER C 123     -2.612  43.475 -22.188  1.00 21.09
H
ATOM  4344  N   GLN C 124     -1.318  47.244 -24.366  1.00 24.47
N
ATOM  4345  CA  GLN C 124     -0.843  48.550 -24.805  1.00 22.72
C
ATOM  4346  C   GLN C 124     -1.706  49.080 -25.946  1.00 24.57
C
ATOM  4347  O   GLN C 124     -2.072  50.256 -25.962  1.00 20.57
O
ATOM  4348  CB  GLN C 124      0.619  48.478 -25.256  1.00 26.56
C
ATOM  4349  CG  GLN C 124      1.218  49.843 -25.591  1.00 36.95
C
ATOM  4350  CD  GLN C 124      2.420  49.764 -26.513  1.00 46.63
C
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ATOM  10601 HD11 ILE F  29     -8.879  24.705   6.742  1.00 19.71           H
ATOM  10602 HD12 ILE F  29    -10.358  24.147   6.891  1.00 19.71
H

ATOM  10603 HD13 ILE F  29     -9.399  24.201   8.156  1.00 19.71           H

ATOM  10604  N   ILE F  30     -8.874  20.338   4.571  1.00 18.05           N

ATOM  10605  CA  ILE F  30     -9.146  20.395   3.137  1.00 16.43           C

ATOM  10606  C   ILE F  30     -7.997  19.753   2.372  1.00 17.64           C

ATOM  10607  O   ILE F  30     -6.847  19.815   2.805  1.00 16.22           O

ATOM  10608  CB  ILE F  30     -9.324  21.855   2.635  1.00 16.66           C
ATOM  10609  CG1 ILE F  30    -10.499  22.548   3.327  1.00 19.53
C

ATOM  10610  CG2 ILE F  30     -9.533  21.893   1.120  1.00 17.34           C

ATOM  10611  CD1 ILE F  30    -10.513  24.061   3.112  1.00 22.20           C

ATOM  10612  H   ILE F  30     -8.044  20.446   4.768  1.00 21.66           H

ATOM  10613  HA  ILE F  30     -9.959  19.902   2.943  1.00 19.72           H

ATOM  10614  HB  ILE F  30     -8.515  22.348   2.842  1.00 20.00           H
ATOM  10615 HG12 ILE F  30    -11.329  22.189   2.974  1.00 23.44
H
ATOM  10616 HG13 ILE F  30    -10.445  22.382   4.281  1.00 23.44
H
ATOM  10617 HG21 ILE F  30     -9.641  22.816   0.840  1.00 20.81
H
ATOM  10618 HG22 ILE F  30     -8.759  21.503   0.685  1.00 20.81
H
ATOM  10619 HG23 ILE F  30    -10.329  21.385   0.899  1.00 20.81
H
ATOM  10620 HD11 ILE F  30    -11.278  24.438   3.574  1.00 26.64
H

ATOM  10621 HD12 ILE F  30     -9.692  24.437   3.468  1.00 26.64           H
ATOM  10622 HD13 ILE F  30    -10.576  24.244   2.161  1.00 26.64
H

ATOM  10623  N   THR F  31     -8.312  19.148   1.231  1.00 18.54           N

ATOM  10624  CA  THR F  31     -7.291  18.625   0.330  1.00 18.58           C

ATOM  10625  C   THR F  31     -7.672  18.886  -1.126  1.00 20.44           C

ATOM  10626  O   THR F  31     -8.849  19.000  -1.466  1.00 19.16           O

ATOM  10627  CB  THR F  31     -7.064  17.111   0.539  1.00 20.21           C
ATOM  10628  OG1 THR F  31     -5.973  16.673  -0.278  1.00 30.33
O
ATOM  10629  CG2 THR F  31     -8.309  16.315   0.191  1.00 26.70
C

ATOM  10630  H   THR F  31     -9.117  19.028   0.954  1.00 22.25           H

ATOM  10631  HA  THR F  31     -6.453  19.080   0.507  1.00 22.30           H

ATOM  10632  HB  THR F  31     -6.850  16.947   1.471  1.00 24.26           H
ATOM  10633  HG1 THR F  31     -5.273  17.088  -0.070  1.00 36.39
H
ATOM  10634 HG21 THR F  31     -8.147  15.369   0.328  1.00 32.04
H
ATOM  10635 HG22 THR F  31     -9.048  16.594   0.753  1.00 32.04
H


ATOM  10636 HG23 THR F  31     -8.547  16.463  -0.738  1.00 32.04
H

ATOM  10637  N   PHE F  32     -6.655  18.973  -1.976  1.00 19.67           N

ATOM  10638  CA  PHE F  32     -6.820  19.291  -3.391  1.00 18.78           C

ATOM  10639  C   PHE F  32     -5.886  18.375  -4.181  1.00 19.20           C

ATOM  10640  O   PHE F  32     -4.713  18.254  -3.833  1.00 16.31           O

ATOM  10641  CB  PHE F  32     -6.511  20.772  -3.633  1.00 15.72           C
ATOM  10642  CG  PHE F  32     -6.536  21.186  -5.076  1.00 18.98
C
ATOM  10643  CD1 PHE F  32     -7.727  21.534  -5.696  1.00 19.61
C
ATOM  10644  CD2 PHE F  32     -5.362  21.262  -5.804  1.00 16.15
C
ATOM  10645  CE1 PHE F  32     -7.745  21.928  -7.026  1.00 20.12
C
ATOM  10646  CE2 PHE F  32     -5.374  21.660  -7.130  1.00 17.52
C

ATOM  10647  CZ  PHE F  32     -6.568  21.992  -7.741  1.00 20.04           C

ATOM  10648  H   PHE F  32     -5.835  18.848  -1.750  1.00 23.60           H

ATOM  10649  HA  PHE F  32     -7.734  19.114  -3.663  1.00 22.53           H
ATOM  10650  HB2 PHE F  32     -7.168  21.307  -3.162  1.00 18.87
H
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ATOM  4351  OE1 GLN C 124     2.512  48.882 -27.367  1.00 51.66
O
ATOM  4352  NE2 GLN C 124     3.351  50.695 -26.344  1.00 54.16
N
ATOM  4353  H   GLN C 124    -0.745  46.610 -24.462  1.00 29.36
H
ATOM  4354  HA  GLN C 124    -0.901  49.176 -24.066  1.00 27.27
H
ATOM  4355  HB2 GLN C 124     1.148  48.087 -24.543  1.00 31.87
H
ATOM  4356  HB3 GLN C 124     0.675  47.925 -26.050  1.00 31.87
H
ATOM  4357  HG2 GLN C 124     0.542  50.384 -26.029  1.00 44.35
H
ATOM  4358  HG3 GLN C 124     1.501  50.272 -24.769  1.00 44.35
H
ATOM  4359 HE21 GLN C 124     4.053  50.696 -26.840  1.00 64.99
H
ATOM  4360 HE22 GLN C 124     3.253  51.297 -25.737  1.00 64.99
H
ATOM  4361  N   ALA C 125    -2.013  48.209 -26.905  1.00 22.47
N
ATOM  4362  CA  ALA C 125    -2.833  48.589 -28.053  1.00 26.65
C
ATOM  4363  C   ALA C 125    -4.243  48.953 -27.612  1.00 27.08
C
ATOM  4364  O   ALA C 125    -4.863  49.867 -28.162  1.00 28.57
O
ATOM  4365  CB  ALA C 125    -2.877  47.464 -29.074  1.00 20.86
C
ATOM  4366  H   ALA C 125    -1.758  47.388 -26.914  1.00 26.96
H
ATOM  4367  HA  ALA C 125    -2.440  49.368 -28.479  1.00 31.98
H
ATOM  4368  HB1 ALA C 125    -3.426  47.741 -29.825  1.00 25.03
H
ATOM  4369  HB2 ALA C 125    -1.974  47.276 -29.375  1.00 25.03
H
ATOM  4370  HB3 ALA C 125    -3.258  46.676 -28.658  1.00 25.03
H


ATOM  4371  N   SER C 126    -4.747  48.225 -26.622  1.00 19.59
N
ATOM  4372  CA  SER C 126    -6.082  48.473 -26.088  1.00 26.30
C
ATOM  4373  C   SER C 126    -6.193  49.891 -25.531  1.00 26.98
C
ATOM  4374  O   SER C 126    -7.138  50.616 -25.844  1.00 26.20
O
ATOM  4375  CB  SER C 126    -6.419  47.449 -25.003  1.00 24.52
C
ATOM  4376  OG  SER C 126    -7.657  47.745 -24.384  1.00 25.71
O
ATOM  4377  H   SER C 126    -4.333  47.575 -26.239  1.00 23.51
H
ATOM  4378  HA  SER C 126    -6.731  48.379 -26.802  1.00 31.56
H
ATOM  4379  HB2 SER C 126    -6.472  46.569 -25.407  1.00 29.43
H
ATOM  4380  HB3 SER C 126    -5.720  47.462 -24.330  1.00 29.43
H
ATOM  4381  HG  SER C 126    -7.826  47.174 -23.792  1.00 30.85
H
ATOM  4382  N   CYS C 127    -5.218  50.285 -24.717  1.00 24.31
N
ATOM  4383  CA  CYS C 127    -5.209  51.616 -24.121  1.00 23.85
C
ATOM  4384  C   CYS C 127    -5.053  52.705 -25.182  1.00 28.40
C
ATOM  4385  O   CYS C 127    -5.731  53.734 -25.127  1.00 25.10
O
ATOM  4386  CB  CYS C 127    -4.088  51.731 -23.086  1.00 21.86
C
ATOM  4387  SG  CYS C 127    -4.254  50.602 -21.682  1.00 18.33
S
ATOM  4388  H   CYS C 127    -4.548  49.796 -24.493  1.00 29.17
H
ATOM  4389  HA  CYS C 127    -6.053  51.762 -23.665  1.00 28.62
H
ATOM  4390  HB2 CYS C 127    -3.243  51.539 -23.521  1.00 26.23
H
ATOM  4391  HB3 CYS C 127    -4.079  52.636 -22.737  1.00 26.23
H
ATOM  4392  N   MET C 128    -4.159  52.476 -26.142  1.00 24.31
N
ATOM  4393  CA  MET C 128    -3.917  53.445 -27.210  1.00 28.72
C
ATOM  4394  C   MET C 128    -5.173  53.665 -28.049  1.00 28.90
C
ATOM  4395  O   MET C 128    -5.436  54.776 -28.504  1.00 34.94
O
ATOM  4396  CB  MET C 128    -2.770  52.985 -28.114  1.00 29.76
C
ATOM  4397  CG  MET C 128    -1.377  53.258 -27.565  1.00 41.22
C
ATOM  4398  SD  MET C 128    -0.084  53.092 -28.823  1.00 57.79
S
ATOM  4399  CE  MET C 128    -0.259  51.366 -29.269  1.00 79.41
C
ATOM  4400  H   MET C 128    -3.679  51.765 -26.199  1.00 29.18
H
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ATOM  10651  HB3 PHE F  32    -5.625  20.964  -3.288  1.00 18.87
H
ATOM  10652  HD1 PHE F  32    -8.523  21.492  -5.217  1.00 23.54
H
ATOM  10653  HD2 PHE F  32    -4.555  21.039  -5.399  1.00 19.38
H
ATOM  10654  HE1 PHE F  32    -8.550  22.153  -7.433  1.00 24.14
H
ATOM  10655  HE2 PHE F  32    -4.579  21.699  -7.611  1.00 21.02
H

ATOM  10656  HZ  PHE F  32    -6.578  22.257  -8.632  1.00 24.04          H

ATOM  10657  N   ASP F  33    -6.405  17.714  -5.216  1.00 19.97          N

ATOM  10658  CA  ASP F  33    -5.646  16.676  -5.927  1.00 21.68          C

ATOM  10659  C   ASP F  33    -5.216  17.090  -7.332  1.00 27.22          C

ATOM  10660  O   ASP F  33    -4.852  16.243  -8.152  1.00 29.98          O

ATOM  10661  CB  ASP F  33    -6.465  15.379  -6.003  1.00 24.51          C
ATOM  10662  CG  ASP F  33    -7.686  15.488  -6.923  1.00 28.43
C
ATOM  10663  OD1 ASP F  33    -7.945  16.569  -7.497  1.00 23.84
O
ATOM  10664  OD2 ASP F  33    -8.402  14.475  -7.060  1.00 25.95
O1-

ATOM  10665  H   ASP F  33    -7.196  17.846  -5.528  1.00 23.96          H

ATOM  10666  HA  ASP F  33    -4.841  16.483  -5.421  1.00 26.01          H
ATOM  10667  HB2 ASP F  33    -5.899  14.669  -6.343  1.00 29.41
H
ATOM  10668  HB3 ASP F  33    -6.781  15.154  -5.114  1.00 29.41
H

ATOM  10669  N   GLY F  34    -5.262  18.390  -7.604  1.00 24.60          N

ATOM  10670  CA  GLY F  34    -4.859  18.922  -8.894  1.00 23.43          C



ATOM  10671  C   GLY F  34    -6.046  19.347  -9.735  1.00 23.46          C

ATOM  10672  O   GLY F  34    -5.911  20.193 -10.618  1.00 27.08          O

ATOM  10673  H   GLY F  34    -5.527  18.991  -7.048  1.00 29.52          H
ATOM  10674  HA2 GLY F  34    -4.284  19.692  -8.762  1.00 28.12
H
ATOM  10675  HA3 GLY F  34    -4.362  18.246  -9.382  1.00 28.12
H

ATOM  10676  N   LYS F  35    -7.206  18.754  -9.457  1.00 24.09          N
ATOM  10677  CA  LYS F  35    -8.438  19.056 -10.187  1.00 31.50
C

ATOM  10678  C   LYS F  35    -9.588  19.327  -9.223  1.00 23.95          C

ATOM  10679  O   LYS F  35   -10.257  20.354  -9.316  1.00 24.63          O
ATOM  10680  CB  LYS F  35    -8.813  17.902 -11.122  1.00 36.85
C
ATOM  10681  CG  LYS F  35    -9.995  18.210 -12.039  1.00 53.02
C
ATOM  10682  CD  LYS F  35   -10.999  17.062 -12.114  1.00 67.53
C
ATOM  10683  CE  LYS F  35   -10.483  15.894 -12.943  1.00 93.83
C
ATOM  10684  NZ  LYS F  35    -9.481  15.062 -12.222  1.00102.55
N1+

ATOM  10685  H   LYS F  35    -7.308  18.164  -8.840  1.00 28.91          H
ATOM  10686  HA  LYS F  35    -8.302  19.851 -10.726  1.00 37.80
H
ATOM  10687  HB2 LYS F  35    -8.049  17.693 -11.683  1.00 44.22
H
ATOM  10688  HB3 LYS F  35    -9.048  17.128 -10.586  1.00 44.22
H
ATOM  10689  HG2 LYS F  35   -10.459  18.993 -11.704  1.00 63.63
H
ATOM  10690  HG3 LYS F  35    -9.664  18.378 -12.935  1.00 63.63
H
ATOM  10691  HD2 LYS F  35   -11.179  16.739 -11.218  1.00 81.03
H
ATOM  10692  HD3 LYS F  35   -11.818  17.383 -12.523  1.00 81.03
H
ATOM  10693  HE2 LYS F  35   -11.230  15.323 -13.181  1.00112.59
H
ATOM  10694  HE3 LYS F  35   -10.062  16.239 -13.746  1.00112.59
H
ATOM  10695  HZ1 LYS F  35    -9.843  14.724 -11.482  1.00123.06
H
ATOM  10696  HZ2 LYS F  35    -9.209  14.394 -12.743  1.00123.06
H
ATOM  10697  HZ3 LYS F  35    -8.778  15.559 -11.998  1.00123.06
H

ATOM  10698  N   ASP F  36    -9.807  18.396  -8.299  1.00 24.43          N
ATOM  10699  CA  ASP F  36   -10.926  18.476  -7.367  1.00 25.36
C

ATOM  10700  C   ASP F  36   -10.472  18.842  -5.959  1.00 23.53          C
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ATOM  4401  HA  MET C 128    -3.658  54.289 -26.810  1.00 34.46
H
ATOM  4402  HB2 MET C 128    -2.848  52.028 -28.251  1.00 35.71
H
ATOM  4403  HB3 MET C 128    -2.844  53.443 -28.966  1.00 35.71
H
ATOM  4404  HG2 MET C 128    -1.345  54.165 -27.220  1.00 49.47
H
ATOM  4405  HG3 MET C 128    -1.187  52.626 -26.854  1.00 49.47
H


ATOM  4406  HE1 MET C 128     0.395  51.149 -29.952  1.00 95.30
H
ATOM  4407  HE2 MET C 128    -0.109  50.820 -28.481  1.00 95.30
H
ATOM  4408  HE3 MET C 128    -1.155  51.218 -29.609  1.00 95.30
H
ATOM  4409  N   SER C 129   -5.945  52.601 -28.246  1.00 29.07
N
ATOM  4410  CA  SER C 129    -7.157  52.672 -29.055  1.00 32.00
C
ATOM  4411  C   SER C 129   -8.256  53.469 -28.358  1.00 36.56
C
ATOM  4412  O   SER C 129   -9.307  53.735 -28.945  1.00 32.22
O
ATOM  4413  CB  SER C 129    -7.669  51.267 -29.377  1.00 33.16
C
ATOM  4414  OG  SER C 129    -8.267  50.670 -28.237  1.00 33.58
O
ATOM  4415  H   SER C 129   -5.788  51.821 -27.920  1.00 34.88
H
ATOM  4416  HA  SER C 129    -6.952  53.115 -29.893  1.00 38.40
H
ATOM  4417  HB2 SER C 129    -8.329  51.325 -30.085  1.00 39.79
H
ATOM  4418  HB3 SER C 129    -6.922  50.718 -29.664  1.00 39.79
H
ATOM  4419  HG  SER C 129    -7.706  50.613 -27.615  1.00 40.30
H
ATOM  4420  N   GLN C 130   -8.010  53.834 -27.102  1.00 33.51
N
ATOM  4421  CA  GLN C 130    -8.946  54.642 -26.331  1.00 30.27
C
ATOM  4422  C   GLN C 130   -8.314  55.976 -25.955  1.00 26.64
C
ATOM  4423  O   GLN C 130   -8.730  56.622 -24.995  1.00 31.87
O
ATOM  4424  CB  GLN C 130    -9.393  53.881 -25.082  1.00 30.65
C
ATOM  4425  CG  GLN C 130   -10.037  52.545 -25.414  1.00 34.01
C
ATOM  4426  CD  GLN C 130   -10.477  51.776 -24.191  1.00 33.95
C
ATOM  4427  OE1 GLN C 130   -11.212  52.290 -23.347  1.00 40.96
O
ATOM  4428  NE2 GLN C 130   -10.033  50.529 -24.089  1.00 34.20
N
ATOM  4429  H   GLN C 130   -7.297  53.622 -26.670  1.00 40.22
H
ATOM  4430  HA  GLN C 130    -9.731  54.822 -26.872  1.00 36.32
H
ATOM  4431  HB2 GLN C 130    -8.620  53.711 -24.521  1.00 36.78
H
ATOM  4432  HB3 GLN C 130   -10.043  54.416 -24.601  1.00 36.78
H
ATOM  4433  HG2 GLN C 130   -10.819  52.701 -25.966  1.00 40.81
H
ATOM  4434  HG3 GLN C 130    -9.396  51.998 -25.896  1.00 40.81
H
ATOM  4435 HE21 GLN C 130   -10.254  50.047 -23.411  1.00 41.04
H
ATOM  4436 HE22 GLN C 130    -9.523  50.203 -24.700  1.00 41.04
H
ATOM  4437  N   ASN C 131   -7.312  56.382 -26.730  1.00 25.72
N
ATOM  4438  CA  ASN C 131    -6.593  57.631 -26.495  1.00 31.52
C
ATOM  4439  C   ASN C 131   -6.008  57.676 -25.091  1.00 30.51
C
ATOM  4440  O   ASN C 131   -5.996  58.719 -24.433  1.00 30.75
O


ATOM  4441  CB  ASN C 131    -7.512  58.833 -26.721  1.00 40.00
C
ATOM  4442  CG  ASN C 131    -6.739  60.121 -26.931  1.00 45.49
C
ATOM  4443  OD1 ASN C 131    -6.120  60.320 -27.975  1.00 53.22
O
ATOM  4444  ND2 ASN C 131    -6.769  61.001 -25.937  1.00 44.21
N
ATOM  4445  H   ASN C 131   -7.025  55.944 -27.412  1.00 30.86
H
ATOM  4446  HA  ASN C 131    -5.859  57.695 -27.126  1.00 37.83
H
ATOM  4447  HB2 ASN C 131    -8.053  58.675 -27.511  1.00 48.00
H
ATOM  4448  HB3 ASN C 131    -8.082  58.947 -25.945  1.00 48.00
H
ATOM  4449 HD21 ASN C 131    -6.346  61.746 -26.009  1.00 53.05
H
ATOM  4450 HD22 ASN C 131    -7.311  60.836 -25.220  1.00 53.05
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ATOM  10701  O   ASP F  36    -9.384  18.462  -5.523  1.00 20.70         O
ATOM  10702  CB  ASP F  36   -11.679  17.146  -7.340  1.00 30.39
C
ATOM  10703  CG  ASP F  36   -12.330  16.821  -8.671  1.00 38.61
C
ATOM  10704  OD1 ASP F  36    -12.966  17.723  -9.258  1.00 37.40
O
ATOM  10705  OD2 ASP F  36    -12.199  15.669  -9.134  1.00 42.12
O1-


ATOM  10706  H   ASP F  36    -9.314  17.699  -8.191  1.00 29.32         H
ATOM  10707  HA  ASP F  36   -11.541  19.162  -7.671  1.00 30.43
H
ATOM  10708  HB2 ASP F  36    -11.056  16.433  -7.128  1.00 36.46
H
ATOM  10709  HB3 ASP F  36    -12.376  17.189  -6.667  1.00 36.46
H

ATOM  10710  N   ILE F  37   -11.317  19.592  -5.262  1.00 22.26         N

ATOM  10711  CA  ILE F  37    -11.081  19.940  -3.868  1.00 19.23         C

ATOM  10712  C   ILE F  37   -12.106  19.217  -3.019  1.00 20.45         C

ATOM  10713  O   ILE F  37   -13.226  18.982  -3.467  1.00 15.18         O

ATOM  10714  CB  ILE F  37    -11.176  21.460  -3.636  1.00 19.93         C
ATOM  10715  CG1 ILE F  37    -10.676  21.821  -2.235  1.00 23.69
C
ATOM  10716  CG2 ILE F  37    -12.600  21.958  -3.851  1.00 19.45
C
ATOM  10717  CD1 ILE F  37    -10.392  23.301  -2.070  1.00 21.55
C

ATOM  10718  H   ILE F  37   -12.046  19.918  -5.581  1.00 26.71         H

ATOM  10719  HA  ILE F  37    -10.197  19.642  -3.604  1.00 23.08         H

ATOM  10720  HB  ILE F  37    -10.602  21.899  -4.283  1.00 23.92         H
ATOM  10721 HG12 ILE F  37    -11.351  21.572  -1.585  1.00 28.43
H
ATOM  10722 HG13 ILE F  37     -9.854  21.337  -2.060  1.00 28.43
H
ATOM  10723 HG21 ILE F  37    -12.625  22.916  -3.698  1.00 23.34
H
ATOM  10724 HG22 ILE F  37    -12.868  21.762  -4.762  1.00 23.34
H
ATOM  10725 HG23 ILE F  37    -13.190  21.507  -3.227  1.00 23.34
H
ATOM  10726 HD11 ILE F  37    -10.080  23.463  -1.166  1.00 25.86
H
ATOM  10727 HD12 ILE F  37     -9.710  23.564  -2.708  1.00 25.86
H
ATOM  10728 HD13 ILE F  37    -11.208  23.799  -2.233  1.00 25.86
H

ATOM  10729  N   ARG F  38   -11.738  18.858  -1.797  1.00 17.84         N
ATOM  10730  CA  ARG F  38    -12.697  18.217  -0.916  1.00 20.68
C

ATOM  10731  C   ARG F  38   -12.396  18.455   0.558  1.00 19.35         C
ATOM  10732  O   ARG F  38   -11.235  18.589   0.953  1.00 18.38
O
ATOM  10733  CB  ARG F  38    -12.754  16.714  -1.198  1.00 22.95
C
ATOM  10734  CG  ARG F  38    -11.423  16.000  -1.117  1.00 28.32
C
ATOM  10735  CD  ARG F  38    -11.562  14.534  -1.510  1.00 33.42
C
ATOM  10736  NE  ARG F  38    -10.260  13.892  -1.685  1.00 43.09
N
ATOM  10737  CZ  ARG F  38     -9.592  13.252  -0.728  1.00 44.56
C
ATOM  10738  NH1 ARG F  38    -10.092  13.147   0.498  1.00 41.53
N1+
ATOM  10739  NH2 ARG F  38     -8.414  12.710  -1.002  1.00 57.47
N

ATOM  10740  H   ARG F  38   -10.954  18.971  -1.461  1.00 21.40         H


ATOM  10741  HA  ARG F  38    -13.576  18.584  -1.098  1.00 24.81
H
ATOM  10742  HB2 ARG F  38    -13.348  16.301  -0.551  1.00 27.54
H
ATOM  10743  HB3 ARG F  38    -13.104  16.580  -2.092  1.00 27.54
H
ATOM  10744  HG2 ARG F  38    -10.795  16.421  -1.725  1.00 33.98
H
ATOM  10745  HG3 ARG F  38    -11.091  16.041  -0.207  1.00 33.98
H
ATOM  10746  HD2 ARG F  38    -12.041  14.060  -0.812  1.00 40.11
H
ATOM  10747  HD3 ARG F  38    -12.045  14.473  -2.349  1.00 40.11
H
ATOM  10748  HE  ARG F  38    -9.899  13.931  -2.465  1.00 51.71
H
ATOM  10749 HH11 ARG F  38    -10.856  13.497   0.682  1.00 49.84
H
ATOM  10750 HH12 ARG F  38     -9.651  12.730   1.107  1.00 49.84
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ATOM  4450 HD22 ASN C 131    -7.211  60.826 -25.220  1.00 53.05
H
ATOM  4451  N   ALA C 132    -5.522  56.526 -24.641  1.00 27.31
N
ATOM  4452  CA  ALA C 132    -4.952  56.397 -23.311  1.00 24.35
C
ATOM  4453  C   ALA C 132    -3.654  55.604 -23.376  1.00 22.93
C
ATOM  4454  O   ALA C 132    -3.175  55.264 -24.456  1.00 22.28
O
ATOM  4455  CB  ALA C 132    -5.946  55.724 -22.377  1.00 24.10
C
ATOM  4456  H   ALA C 132    -5.512  55.796 -25.096  1.00 32.77
H
ATOM  4457  HA  ALA C 132    -4.753  57.279 -22.960  1.00 29.22
H
ATOM  4458  HB1 ALA C 132    -5.548  55.647 -21.496  1.00 28.92
H
ATOM  4459  HB2 ALA C 132    -6.750  56.264 -22.331  1.00 28.92
H
ATOM  4460  HB3 ALA C 132    -6.157  54.843 -22.724  1.00 28.92
H
ATOM  4461  N   SER C 133    -3.086  55.317 -22.211  1.00 23.85
N
ATOM  4462  CA  SER C 133    -1.908  54.470 -22.123  1.00 19.49
C
ATOM  4463  C   SER C 133    -2.035  53.561 -20.913  1.00 19.76
C
ATOM  4464  O   SER C 133    -2.954  53.714 -20.106  1.00 21.65
O
ATOM  4465  CB  SER C 133    -0.637  55.315 -22.035  1.00 28.62
C
ATOM  4466  OG  SER C 133    -0.593  56.041 -20.822  1.00 30.86
O
ATOM  4467  H   SER C 133    -3.368  55.604 -21.451  1.00 28.62
H
ATOM  4468  HA  SER C 133    -1.851  53.916 -22.917  1.00 23.39
H
ATOM  4469  HB2 SER C 133     0.135  54.730 -22.081  1.00 34.34
H
ATOM  4470  HB3 SER C 133    -0.622  55.940 -22.777  1.00 34.34
H
ATOM  4471  HG  SER C 133    -1.256  56.554 -20.769  1.00 37.04
H
ATOM  4472  N   LEU C 134    -1.131  52.597 -20.799  1.00 15.30
N
ATOM  4473  CA  LEU C 134    -1.085  51.753 -19.618  1.00 16.31
C
ATOM  4474  C   LEU C 134    -0.722  52.605 -18.413  1.00 18.61
C
ATOM  4475  O   LEU C 134    -0.102  53.660 -18.558  1.00 17.38
O


ATOM  4476  CB  LEU C 134    -0.082  50.615 -19.800  1.00 18.05
C
ATOM  4477  CG  LEU C 134    -0.545  49.502 -20.739  1.00 18.46
C
ATOM  4478  CD1 LEU C 134     0.622  48.613 -21.151  1.00 18.54
C
ATOM  4479  CD2 LEU C 134    -1.633  48.677 -20.070  1.00 13.57
C
ATOM  4480  H   LEU C 134    -0.535  52.413 -21.391  1.00 18.36
H
ATOM  4481  HA  LEU C 134    -1.961  51.366 -19.465  1.00 19.57
H
ATOM  4482  HB2 LEU C 134     0.740  50.982 -20.162  1.00 21.66
H
ATOM  4483  HB3 LEU C 134     0.094  50.215 -18.934  1.00 21.66
H
ATOM  4484  HG  LEU C 134    -0.919  49.899 -21.541  1.00 22.15
H
ATOM  4485 HD11 LEU C 134     0.296  47.919 -21.745  1.00 22.25
H
ATOM  4486 HD12 LEU C 134     1.285  49.154 -21.608  1.00 22.25
H
ATOM  4487 HD13 LEU C 134     1.011  48.214 -20.357  1.00 22.25
H
ATOM  4488 HD21 LEU C 134    -1.916  47.976 -20.678  1.00 16.29
H
ATOM  4489 HD22 LEU C 134    -1.278  48.287 -19.256  1.00 16.29
H
ATOM  4490 HD23 LEU C 134    -2.383  49.256 -19.859  1.00 16.29
H
ATOM  4491  N   LEU C 135    -1.122  52.145 -17.232  1.00 17.61
N
ATOM  4492  CA  LEU C 135    -0.861  52.863 -15.990  1.00 16.82
C
ATOM  4493  C   LEU C 135     0.574  53.365 -15.907  1.00 17.04
C
ATOM  4494  O   LEU C 135     1.521  52.614 -16.145  1.00 17.43
O
ATOM  4495  CB  LEU C 135    -1.160  51.962 -14.792  1.00 13.74
C
ATOM  4496  CG  LEU C 135    -0.816  52.517 -13.409  1.00 13.56
C
ATOM  4497  CD1 LEU C 135    -1.668  53.736 -13.089  1.00 14.51
C
ATOM  4498  CD2 LEU C 135    -0.994  51.438 -12.348  1.00 14.41
C
ATOM  4499  H   LEU C 135    -1.553  51.409 -17.123  1.00 21.14
H
ATOM  4500  HA  LEU C 135    -1.450  53.632 -15.941  1.00 20.18
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ATOM 10750 HH12 ARG F  38    -9.651  12.730   1.107  1.00 49.84
H
ATOM 10751 HH21 ARG F  38    -8.085  12.773  -1.794  1.00 68.96
H
ATOM 10752 HH22 ARG F  38    -7.979  12.293  -0.388  1.00 68.96
H

ATOM 10753  N   PRO F  39   -13.454  18.510   1.378  1.00 18.43           N
ATOM 10754  CA  PRO F  39   -13.287  18.624   2.828  1.00 18.67
C

ATOM 10755  C   PRO F  39   -12.741  17.328   3.420  1.00 21.97           C
ATOM 10756  O   PRO F  39   -13.015  16.261   2.874  1.00 21.02
O
ATOM 10757  CB  PRO F  39   -14.706  18.905   3.320  1.00 22.75
C
ATOM 10758  CG  PRO F  39   -15.585  18.250   2.306  1.00 22.23
C
ATOM 10759  CD  PRO F  39   -14.875  18.401   0.993  1.00 22.99
C
ATOM 10760  HA  PRO F  39   -12.704  19.365   3.054  1.00 22.40
H
ATOM 10761  HB2 PRO F  39   -14.835  18.509   4.196  1.00 27.30
H
ATOM 10762  HB3 PRO F  39   -14.861  19.862   3.346  1.00 27.30
H
ATOM 10763  HG2 PRO F  39   -15.696  17.312   2.528  1.00 26.68
H
ATOM 10764  HG3 PRO F  39   -16.445  18.699   2.282  1.00 26.68
H
ATOM 10765  HD2 PRO F  39   -15.016  17.616   0.441  1.00 27.59
H
ATOM 10766  HD3 PRO F  39   -15.166  19.209   0.543  1.00 27.59
H

ATOM 10767  N   THR F  40   -11.976  17.424   4.505  1.00 17.56           N
ATOM 10768  CA  THR F  40   -11.433  16.245   5.182  1.00 19.85
C

ATOM 10769  C   THR F  40   -11.726  16.306   6.680  1.00 21.64           C

ATOM 10770  O   THR F  40   -11.068  15.646   7.482  1.00 25.05           O

ATOM 10771  CB  THR F  40    -9.914  16.121   4.970  1.00 22.38           C
ATOM 10772  OG1 THR F  40    -9.253  17.246   5.562  1.00 22.26
O
ATOM 10773  CG2 THR F  40    -9.581  16.061   3.486  1.00 26.29
C

ATOM 10774  H   THR F  40   -11.755  18.169   4.874  1.00 21.07           H
ATOM 10775  HA  THR F  40   -11.855  15.449   4.823  1.00 23.82
H


ATOM 10776  HB  THR F  40    -9.596  15.305   5.387  1.00 26.85           H
ATOM 10777  HG1 THR F  40    -8.423  17.183   5.449  1.00 26.71
H
ATOM 10778 HG21 THR F  40    -8.622  15.983   3.364  1.00 31.55
H
ATOM 10779 HG22 THR F  40   -10.014  15.294   3.080  1.00 31.55
H
ATOM 10780 HG23 THR F  40    -9.890  16.868   3.044  1.00 31.55
H

ATOM 10781  N   ILE F  41   -12.714  17.115   7.042  1.00 20.01           N

ATOM 10782  CA  ILE F  41   -13.138  17.273   8.426  1.00 20.07           C

ATOM 10783  C   ILE F  41   -14.638  17.573   8.393  1.00 21.37           C

ATOM 10784  O   ILE F  41   -15.103  18.248   7.473  1.00 19.23           O

ATOM 10785  CB  ILE F  41   -12.348  18.400   9.131  1.00 20.97           C
ATOM 10786  CG1 ILE F  41   -12.551  18.369  10.647  1.00 25.82
C
ATOM 10787  CG2 ILE F  41   -12.723  19.766   8.564  1.00 19.25
C
ATOM 10788  CD1 ILE F  41   -11.871  17.205  11.329  1.00 28.28
C

ATOM 10789  H   ILE F  41   -13.164  17.595   6.490  1.00 24.01           H

ATOM 10790  HA  ILE F  41   -12.997  16.444   8.909  1.00 24.09           H

ATOM 10791  HB  ILE F  41   -11.405  18.256   8.956  1.00 25.16           H
ATOM 10792 HG12 ILE F  41   -12.191  19.186  11.027  1.00 30.99
H
ATOM 10793 HG13 ILE F  41   -13.500  18.310  10.834  1.00 30.99
H
ATOM 10794 HG21 ILE F  41   -12.213  20.450   9.024  1.00 23.10
H
ATOM 10795 HG22 ILE F  41   -12.517  19.780   7.616  1.00 23.10
H
ATOM 10796 HG23 ILE F  41   -13.673  19.913   8.698  1.00 23.10
H
ATOM 10797 HD11 ILE F  41   -12.044  17.254  12.282  1.00 33.93
H
ATOM 10798 HD12 ILE F  41   -12.227  16.378  10.969  1.00 33.93
H
ATOM 10799 HD13 ILE F  41   -10.917  17.255  11.162  1.00 33.93
H
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H
ATOM  4501  HB2 LEU C 135    -2.109  51.762 -14.793  1.00 16.49
H
ATOM  4502  HB3 LEU C 135    -0.660  51.138 -14.901  1.00 16.49
H
ATOM  4503  HG  LEU C 135     0.114  52.793 -13.402  1.00 16.27
H
ATOM  4504 HD11 LEU C 135    -1.429  54.066 -12.209  1.00 17.41
H
ATOM  4505 HD12 LEU C 135    -1.502  54.421 -13.756  1.00 17.41
H
ATOM  4506 HD13 LEU C 135    -2.604  53.480 -13.104  1.00 17.41
H
ATOM  4507 HD21 LEU C 135    -0.772  51.810 -11.480  1.00 17.29
H
ATOM  4508 HD22 LEU C 135    -1.917  51.139 -12.354  1.00 17.29
H
ATOM  4509 HD23 LEU C 135    -0.404  50.695 -12.551  1.00 17.29
H
ATOM  4510  N   LYS C 136    0.716  54.650 -15.601  1.00 17.22
N


ATOM  4511  CA  LYS C 136     2.000  55.223 -15.224  1.00 18.54
C
ATOM  4512  C   LYS C 136    1.937  55.661 -13.766  1.00 20.47
C
ATOM  4513  O   LYS C 136    1.050  56.424 -13.383  1.00 19.64
O
ATOM  4514  CB  LYS C 136     2.365  56.409 -16.117  1.00 20.46
C
ATOM  4515  CG  LYS C 136     3.646  57.121 -15.689  1.00 23.01
C
ATOM  4516  CD  LYS C 136     3.990  58.278 -16.612  1.00 23.30
C
ATOM  4517  CE  LYS C 136     5.219  59.029 -16.123  1.00 27.96
C
ATOM  4518  NZ  LYS C 136     5.543  60.212 -16.968  1.00 28.81
N1+
ATOM  4519  H   LYS C 136    0.072  55.219 -15.605  1.00 20.67
H
ATOM  4520  HA  LYS C 136     2.692  54.549 -15.312  1.00 22.25
H
ATOM  4521  HB2 LYS C 136     2.490  56.091 -17.025  1.00 24.55
H
ATOM  4522  HB3 LYS C 136     1.642  57.055 -16.090  1.00 24.55
H
ATOM  4523  HG2 LYS C 136     3.530  57.473 -14.792  1.00 27.61
H
ATOM  4524  HG3 LYS C 136     4.382  56.490 -15.708  1.00 27.61
H
ATOM  4525  HD2 LYS C 136     4.175  57.936 -17.500  1.00 27.96
H
ATOM  4526  HD3 LYS C 136     3.245  58.899 -16.639  1.00 27.96
H
ATOM  4527  HE2 LYS C 136     5.061  59.341 -15.218  1.00 33.55
H
ATOM  4528  HE3 LYS C 136     5.983  58.431 -16.140  1.00 33.55
H
ATOM  4529  HZ1 LYS C 136     5.701  59.954 -17.805  1.00 34.57
H
ATOM  4530  HZ2 LYS C 136     4.860  60.783 -16.965  1.00 34.57
H
ATOM  4531  HZ3 LYS C 136     6.265  60.623 -16.650  1.00 34.57
H
ATOM  4532  N   VAL C 137    2.879  55.174 -12.962  1.00 17.55
N
ATOM  4533  CA  VAL C 137     2.946  55.507 -11.540  1.00 20.81
C
ATOM  4534  C   VAL C 137    3.952  56.623 -11.309  1.00 21.28
C
ATOM  4535  O   VAL C 137    5.166  56.402 -11.400  1.00 21.39
O
ATOM  4536  CB  VAL C 137     3.340  54.286 -10.685  1.00 17.34
C
ATOM  4537  CG1 VAL C 137     3.489  54.674  -9.218  1.00 17.08
C
ATOM  4538  CG2 VAL C 137     2.308  53.180 -10.832  1.00 19.83
C
ATOM  4539  H   VAL C 137    3.501  54.639 -13.221  1.00 21.06
H
ATOM  4540  HA  VAL C 137     2.075  55.816 -11.243  1.00 24.98
H
ATOM  4541  HB  VAL C 137     4.194  53.945 -10.994  1.00 20.81
H
ATOM  4542 HG11 VAL C 137     3.737  53.887  -8.708  1.00 20.50
H
ATOM  4543 HG12 VAL C 137     4.179  55.351  -9.140  1.00 20.50
H
ATOM  4544 HG13 VAL C 137     2.643  55.024  -8.897  1.00 20.50
H
ATOM  4545 HG21 VAL C 137     2.576  52.424 -10.287  1.00 23.80
H


ATOM  4546 HG22 VAL C 137     1.446  53.512 -10.537  1.00 23.80
H
ATOM  4547 HG23 VAL C 137     2.260  52.915 -11.764  1.00 23.80
H
ATOM  4548  N   TYR C 138    3.447  57.812 -10.992  1.00 20.38
N
ATOM  4549  CA  TYR C 138     4.298  58.989 -10.848  1.00 21.11
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ATOM  10800  N   PRO F  42   -15.407  17.061   9.370  1.00 22.08           N
ATOM  10801  CA  PRO F  42    -16.864  17.242   9.291  1.00 25.38
C

ATOM  10802  C   PRO F  42   -17.359  18.688   9.171  1.00 23.43           C
ATOM  10803  O   PRO F  42   -18.349  18.910   8.474  1.00 22.02
O
ATOM  10804  CB  PRO F  42    -17.353  16.627  10.603  1.00 29.94
C
ATOM  10805  CG  PRO F  42    -16.363  15.564  10.893  1.00 28.27
C
ATOM  10806  CD  PRO F  42    -15.038  16.104  10.431  1.00 25.21
C
ATOM  10807  HA  PRO F  42    -17.220  16.726   8.551  1.00 30.46
H
ATOM  10808  HB2 PRO F  42    -17.354  17.299  11.302  1.00 35.92
H
ATOM  10809  HB3 PRO F  42    -18.239  16.251  10.481  1.00 35.92
H
ATOM  10810  HG2 PRO F  42    -16.346  15.387  11.846  1.00 33.93
H


ATOM  10811  HG3 PRO F  42    -16.594  14.761  10.400  1.00 33.93
H
ATOM  10812  HD2 PRO F  42    -14.588  16.563  11.158  1.00 30.25
H
ATOM  10813  HD3 PRO F  42    -14.490  15.391  10.067  1.00 30.25
H

ATOM  10814  N   PHE F  43   -16.709  19.651   9.818  1.00 23.12           N
ATOM  10815  CA  PHE F  43    -17.256  21.005   9.831  1.00 24.79
C

ATOM  10816  C   PHE F  43   -17.066  21.713   8.486  1.00 23.64           C

ATOM  10817  O   PHE F  43   -17.626  22.787   8.262  1.00 21.80           O
ATOM  10818  CB  PHE F  43    -16.650  21.828  10.981  1.00 27.53
C
ATOM  10819  CG  PHE F  43    -15.249  22.323  10.736  1.00 22.90
C
ATOM  10820  CD1 PHE F  43    -15.021  23.465   9.986  1.00 24.94
C
ATOM  10821  CD2 PHE F  43    -14.165  21.676  11.301  1.00 25.76
C
ATOM  10822  CE1 PHE F  43    -13.736  23.932   9.777  1.00 25.31
C
ATOM  10823  CE2 PHE F  43    -12.876  22.141  11.097  1.00 25.44
C
ATOM  10824  CZ  PHE F  43    -12.663  23.270  10.336  1.00 23.75
C
ATOM  10825  H   PHE F  43   -15.970  19.552  10.246  1.00 27.75
H
ATOM  10826  HA  PHE F  43    -18.211  20.945   9.992  1.00 29.75
H
ATOM  10827  HB2 PHE F  43    -17.212  22.604  11.136  1.00 33.04
H
ATOM  10828  HB3 PHE F  43    -16.630  21.277  11.779  1.00 33.04
H
ATOM  10829  HD1 PHE F  43    -15.740  23.916   9.606  1.00 29.93
H
ATOM  10830  HD2 PHE F  43    -14.302  20.913  11.816  1.00 30.91
H
ATOM  10831  HE1 PHE F  43    -13.595  24.694   9.263  1.00 30.37
H
ATOM  10832  HE2 PHE F  43    -12.154  21.691  11.473  1.00 30.53
H
ATOM  10833  HZ  PHE F  43    -11.798  23.582  10.195  1.00 28.50
H

ATOM  10834  N   MET F  44   -16.306  21.100   7.584  1.00 22.56           N
ATOM  10835  CA  MET F  44    -16.106  21.657   6.248  1.00 22.07
C

ATOM  10836  C   MET F  44   -17.100  21.090   5.233  1.00 25.90           C

ATOM  10837  O   MET F  44   -17.186  21.573   4.099  1.00 24.02           O
ATOM  10838  CB  MET F  44    -14.672  21.401   5.776  1.00 23.53
C
ATOM  10839  CG  MET F  44    -13.629  22.258   6.480  1.00 17.23
C
ATOM  10840  SD  MET F  44    -13.962  24.032   6.367  1.00 24.19
S
ATOM  10841  CE  MET F  44    -14.044  24.258   4.597  1.00 16.78
C

ATOM  10842  H   MET F  44   -15.893  20.357   7.720  1.00 27.07           H
ATOM  10843  HA  MET F  44    -16.230  22.618   6.295  1.00 26.49
H
ATOM  10844  HB2 MET F  44    -14.451  20.471   5.940  1.00 28.24
H
ATOM  10845  HB3 MET F  44    -14.618  21.589   4.826  1.00 28.24
H


ATOM  10846  HG2 MET F  44    -13.609  22.019   7.420  1.00 20.67
H
ATOM  10847  HG3 MET F  44    -12.763  22.092   6.078  1.00 20.67
H
ATOM  10848  HE1 MET F  44    -14.222  25.193   4.407  1.00 20.13
H
ATOM  10849  HE2 MET F  44    -13.196  23.996   4.206  1.00 20.13
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C
ATOM  4550  C   TYR C 138     4.204  59.608  -9.457  1.00 24.17
C
ATOM  4551  O   TYR C 138     5.071  60.393  -9.071  1.00 24.32
O
ATOM  4552  CB  TYR C 138     3.940  60.037 -11.906  1.00 22.43
C
ATOM  4553  CG  TYR C 138     2.622  60.739 -11.663  1.00 20.09
C
ATOM  4554  CD1 TYR C 138     1.442  60.245 -12.197  1.00 21.54
C
ATOM  4555  CD2 TYR C 138     2.560  61.899 -10.899  1.00 24.15
C
ATOM  4556  CE1 TYR C 138     0.238  60.882 -11.978  1.00 23.42
C
ATOM  4557  CE2 TYR C 138     1.361  62.542 -10.673  1.00 24.55
C
ATOM  4558  CZ  TYR C 138     0.204  62.029 -11.214  1.00 24.76
C
ATOM  4559  OH  TYR C 138    -0.991  62.663 -10.994  1.00 25.68
O
ATOM  4560  H   TYR C 138     2.612  57.965 -10.855  1.00 24.46
H
ATOM  4561  HA  TYR C 138     5.221  58.726 -10.992  1.00 25.34
H
ATOM  4562  HB2 TYR C 138     4.636  60.712 -11.923  1.00 26.92
H
ATOM  4563  HB3 TYR C 138     3.887  59.600 -12.770  1.00 26.92
H
ATOM  4564  HD1 TYR C 138     1.462  59.471 -12.712  1.00 25.85
H
ATOM  4565  HD2 TYR C 138     3.341  62.246 -10.531  1.00 28.98
H
ATOM  4566  HE1 TYR C 138    -0.546  60.538 -12.342  1.00 28.11
H
ATOM  4567  HE2 TYR C 138     1.334  63.316 -10.159  1.00 29.46
H
ATOM  4568  HH  TYR C 138    -0.872  63.344 -10.517  1.00 30.82
H
ATOM  4569  N   SER C 139     3.160  59.285  -8.704  1.00 20.17
N
ATOM  4570  CA  SER C 139     2.980  59.837  -7.369  1.00 25.07
C
ATOM  4571  C   SER C 139     2.203  58.946  -6.407  1.00 22.13
C
ATOM  4572  O   SER C 139     1.051  58.586  -6.664  1.00 19.25
O
ATOM  4573  CB  SER C 139     2.267  61.184  -7.468  1.00 26.51
C
ATOM  4574  OG  SER C 139     1.938  61.868  -6.178  1.00 27.30
O
ATOM  4575  H   SER C 139     2.547  58.709  -8.939  1.00 24.21
H
ATOM  4576  HA  SER C 139     3.854  59.995  -6.980  1.00 30.08
H
ATOM  4577  HB2 SER C 139     2.854  61.821  -7.905  1.00 31.82
H
ATOM  4578  HB3 SER C 139     1.453  61.074  -7.984  1.00 31.82
H
ATOM  4579  HG  SER C 139     1.545  62.408  -6.240  1.00 32.76
H
ATOM  4580  N   LYS C 140     2.828  58.620  -5.280  1.00 15.89
N


ATOM  4581  CA  LYS C 140     2.167  57.822  -4.254  1.00 23.70
C
ATOM  4582  C   LYS C 140     0.968  58.551  -3.655  1.00 24.90
C
ATOM  4583  O   LYS C 140    -0.012  57.922  -3.258  1.00 26.09
O
ATOM  4584  CB  LYS C 140     3.150  57.456  -3.142  1.00 28.92
C
ATOM  4585  CG  LYS C 140     4.057  56.282  -3.470  1.00 29.54
C
ATOM  4586  CD  LYS C 140     4.867  55.875  -2.252  1.00 37.47
C
ATOM  4587  CE  LYS C 140     5.648  54.596  -2.489  1.00 37.64
C
ATOM  4588  NZ  LYS C 140     6.295  54.118  -1.233  1.00 49.87
N1+
ATOM  4589  H   LYS C 140     3.634  58.848  -5.085  1.00 19.07
H
ATOM  4590  HA  LYS C 140     1.847  56.998  -4.653  1.00 28.44
H
ATOM  4591  HB2 LYS C 140     3.715  58.224  -2.962  1.00 34.70
H
ATOM  4592  HB3 LYS C 140     2.646  57.226  -2.346  1.00 34.70
H
ATOM  4593  HG2 LYS C 140     3.517  55.525  -3.746  1.00 35.45
H
ATOM  4594  HG3 LYS C 140     4.671  56.536  -4.177  1.00 35.45
H
ATOM  4595  HD2 LYS C 140     5.499  56.581  -2.040  1.00 44.96
H
ATOM  4596  HD3 LYS C 140     4.267  55.729  -1.504  1.00 44.96
H
ATOM  4597  HE2 LYS C 140     5.045  53.905  -2.803  1.00 45.16
H
ATOM  4598  HE3 LYS C 140     6.343  54.762  -3.145  1.00 45.16
H
ATOM  4599  HZ1 LYS C 140     6.748  53.388  -1.391  1.00 59.85

H
ATOM 10850  HE3 MET F  44   -14.758  23.706   4.242  1.00 20.13
H

ATOM 10851  N   ILE F  45   -17.856  20.074   5.637  1.00 23.53        N

ATOM 10852  CA  ILE F  45   -18.881  19.487   4.759  1.00 23.76        C

ATOM 10853  C   ILE F  45   -19.891  20.542   4.379  1.00 24.02        C

ATOM 10854  O   ILE F  45   -20.445  21.213   5.246  1.00 22.40        O

ATOM 10855  CB  ILE F  45   -19.570  18.284   5.427  1.00 24.34        C
ATOM 10856  CG1 ILE F  45   -18.585  17.130   5.642  1.00 26.48
C
ATOM 10857  CG2 ILE F  45   -20.768  17.817   4.596  1.00 27.47
C

ATOM 10858  CD1 ILE F  45   -18.072  16.491   4.363  1.00 31.71        C

ATOM 10859  H   ILE F  45   -17.806  19.707   6.413  1.00 28.23        H

ATOM 10860  HA  ILE F  45   -18.433  19.174   3.947  1.00 28.52        H

ATOM 10861  HB  ILE F  45   -19.896  18.569   6.295  1.00 29.20        H
ATOM 10862  HG12 ILE F  45  -17.818  17.464   6.132  1.00 31.78
H
ATOM 10863  HG13 ILE F  45  -19.027  16.438   6.159  1.00 31.78
H
ATOM 10864  HG21 ILE F  45  -21.188  17.065   5.043  1.00 32.97
H
ATOM 10865  HG22 ILE F  45  -21.400  18.549   4.516  1.00 32.97
H
ATOM 10866  HG23 ILE F  45  -20.458  17.550   3.717  1.00 32.97
H
ATOM 10867  HD11 ILE F  45  -17.459  15.775   4.593  1.00 38.05
H
ATOM 10868  HD12 ILE F  45  -18.824  16.136   3.864  1.00 38.05
H
ATOM 10869  HD13 ILE F  45  -17.613  17.164   3.837  1.00 38.05
H

ATOM 10870  N   GLY F  46   -20.129  20.692   3.080  1.00 23.90        N
ATOM 10871  CA  GLY F  46   -21.162  21.585   2.590  1.00 29.90
C

ATOM 10872  C   GLY F  46   -20.766  23.050   2.590  1.00 30.07        C

ATOM 10873  O   GLY F  46   -21.596  23.918   2.325  1.00 26.85        O

ATOM 10874  H   GLY F  46   -19.699  20.201   2.459  1.00 28.68        H
ATOM 10875  HA2 GLY F  46   -21.392  21.336   1.681  1.00 35.88
H
ATOM 10876  HA3 GLY F  46   -21.954  21.487   3.141  1.00 35.88
H

ATOM 10877  N   ASP F  47   -19.503  23.332   2.889  1.00 25.37        N
ATOM 10878  CA  ASP F  47   -19.003  24.700   2.842  1.00 22.15
C

ATOM 10879  C   ASP F  47   -19.092  25.225   1.417  1.00 19.48        C

ATOM 10880  O   ASP F  47   -18.683  24.548   0.479  1.00 23.63        O


ATOM 10881  CB  ASP F  47   -17.561  24.767   3.347  1.00 24.63
C
ATOM 10882  CG  ASP F  47   -16.915  26.115   3.090  1.00 24.37
C
ATOM 10883  OD1 ASP F  47   -17.287  27.091   3.769  1.00 27.78
O
ATOM 10884  OD2 ASP F  47   -16.032  26.196   2.212  1.00 27.63
O1-

ATOM 10885  H   ASP F  47   -18.915  22.749   3.122  1.00 30.44        H
ATOM 10886  HA  ASP F  47   -19.552  25.262   3.410  1.00 26.58
H
ATOM 10887  HB2 ASP F  47   -17.553  24.607   4.304  1.00 29.56
H
ATOM 10888  HB3 ASP F  47   -17.034  24.090   2.893  1.00 29.56
H

ATOM 10889  N   GLU F  48   -19.637  26.426   1.256  1.00 18.86        N
ATOM 10890  CA  GLU F  48   -19.825  27.004  -0.074  1.00 23.59
C

ATOM 10891  C   GLU F  48   -19.089  28.332  -0.224  1.00 18.84        C

ATOM 10892  O   GLU F  48   -19.333  29.078  -1.173  1.00 23.99        O
ATOM 10893  CB  GLU F  48   -21.321  27.185  -0.365  1.00 24.87
C
ATOM 10894  CG  GLU F  48   -22.059  28.030   0.656  1.00 25.98
C
ATOM 10895  CD  GLU F  48   -23.557  28.110   0.393  1.00 27.03
C
ATOM 10896  OE1 GLU F  48   -23.975  28.028  -0.781  1.00 27.18
O
ATOM 10897  OE2 GLU F  48   -24.316  28.257   1.368  1.00 24.72
O1-

ATOM 10898  H   GLU F  48   -19.907  26.928   1.900  1.00 22.64        H
ATOM 10899  HA  GLU F  48   -19.467  26.390  -0.734  1.00 28.31
```

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H
ATOM  4600  HZ2 LYS C 140     6.857  54.736  -0.926  1.00 59.85
H
ATOM  4601  HZ3 LYS C 140     5.676  53.957  -0.614  1.00 59.85
H
ATOM  4602  N   GLU C 141     1.046  59.876  -3.593  1.00 24.55
N
ATOM  4603  CA  GLU C 141    -0.002  60.674  -2.963  1.00 26.23
C
ATOM  4604  C   GLU C 141    -1.169  60.917  -3.914  1.00 24.95
C
ATOM  4605  O   GLU C 141    -2.327  60.758  -3.534  1.00 21.89
O
ATOM  4606  CB  GLU C 141     0.559  62.010  -2.474  1.00 26.15
C
ATOM  4607  CG  GLU C 141     1.543  61.885  -1.314  1.00 34.78
C
ATOM  4608  CD  GLU C 141     2.855  61.219  -1.707  1.00 37.55
C
ATOM  4609  OE1 GLU C 141     3.227  61.278  -2.899  1.00 33.99
O
ATOM  4610  OE2 GLU C 141     3.514  60.634  -0.820  1.00 45.19
O1-
ATOM  4611  H   GLU C 141     1.698  60.339  -3.910  1.00 29.46
H
ATOM  4612  HA  GLU C 141    -0.342  60.193  -2.192  1.00 31.47
H
ATOM  4613  HB2 GLU C 141     1.022  62.442  -3.209  1.00 31.39
H
ATOM  4614  HB3 GLU C 141    -0.178  62.568  -2.178  1.00 31.39
H
ATOM  4615  HG2 GLU C 141     1.747  62.772  -0.978  1.00 41.74
H


ATOM  4616  HG3 GLU C 141     1.136  61.352  -0.613  1.00 41.74
H
ATOM  4617  N   ASP C 142    -0.867  61.296  -5.152  1.00 22.41
N
ATOM  4618  CA  ASP C 142    -1.915  61.567  -6.129  1.00 21.49
C
ATOM  4619  C   ASP C 142    -2.560  60.282  -6.633  1.00 21.91
C
ATOM  4620  O   ASP C 142    -3.686  60.300  -7.128  1.00 24.05
O
ATOM  4621  CB  ASP C 142    -1.357  62.369  -7.307  1.00 24.21
C
ATOM  4622  CG  ASP C 142    -0.908  63.760  -6.901  1.00 29.23
C
ATOM  4623  OD1 ASP C 142    -1.248  64.193  -5.776  1.00 30.52
O
ATOM  4624  OD2 ASP C 142    -0.223  64.424  -7.707  1.00 33.69
O1-
ATOM  4625  H   ASP C 142    -0.067  61.403  -5.450  1.00 26.89
H
ATOM  4626  HA  ASP C 142    -2.606  62.101  -5.707  1.00 25.79
H
ATOM  4627  HB2 ASP C 142    -0.590  61.901  -7.674  1.00 29.05
H
ATOM  4628  HB3 ASP C 142    -2.046  62.460  -7.983  1.00 29.05
H
ATOM  4629  N   GLN C 143    -1.849  59.167  -6.501  1.00 17.21
N
ATOM  4630  CA  GLN C 143    -2.357  57.882  -6.969  1.00 20.06
C
ATOM  4631  C   GLN C 143    -2.424  56.890  -5.819  1.00 19.18
C
ATOM  4632  O   GLN C 143    -2.183  55.696  -5.994  1.00 17.46
O
ATOM  4633  CB  GLN C 143    -1.479  57.342  -8.097  1.00 18.97
C
ATOM  4634  CG  GLN C 143    -1.248  58.349  -9.217  1.00 17.93
C
ATOM  4635  CD  GLN C 143    -0.285  57.837 -10.270  1.00 21.93
C
ATOM  4636  OE1 GLN C 143     0.917  57.724 -10.024  1.00 19.88
O
ATOM  4637  NE2 GLN C 143    -0.808  57.520 -11.450  1.00 17.07
N
ATOM  4638  H   GLN C 143    -1.069  59.128  -6.143  1.00 20.65
H
ATOM  4639  HA  GLN C 143    -3.255  58.002  -7.317  1.00 24.08
H
ATOM  4640  HB2 GLN C 143    -0.614  57.098  -7.732  1.00 22.76
H
ATOM  4641  HB3 GLN C 143    -1.906  56.561  -8.482  1.00 22.76
H
ATOM  4642  HG2 GLN C 143    -2.094  58.540  -9.651  1.00 21.52
H
ATOM  4643  HG3 GLN C 143    -0.877  59.162  -8.840  1.00 21.52
H
ATOM  4644 HE21 GLN C 143    -0.302  57.225 -12.079  1.00 20.49
H
ATOM  4645 HE22 GLN C 143    -1.653  57.609 -11.584  1.00 20.49
H
ATOM  4646  N   ASP C 144    -2.770  57.395  -4.639  1.00 22.78
N
ATOM  4647  CA  ASP C 144    -2.791  56.572  -3.438  1.00 23.80
C
ATOM  4648  C   ASP C 144    -3.893  55.512  -3.492  1.00 19.24
C
ATOM  4649  O   ASP C 144    -3.854  54.538  -2.740  1.00 21.24
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H
ATOM  10900  HB2 GLU F  48    -21.420  27.614  -1.229  1.00 29.84
H
ATOM  10901  HB3 GLU F  48    -21.742  26.311  -0.384  1.00 29.84
H
ATOM  10902  HG2 GLU F  48    -21.930  27.643   1.536  1.00 31.18
H
ATOM  10903  HG3 GLU F  48    -21.702  28.932   0.635  1.00 31.18
H

ATOM  10904  N   ILE F  49    -18.176  28.615   0.701  1.00 21.84       N

ATOM  10905  CA  ILE F  49    -17.393  29.848   0.657  1.00 19.58       C

ATOM  10906  C   ILE F  49    -15.911  29.570   0.422  1.00 21.99       C

ATOM  10907  O   ILE F  49    -15.314  30.091  -0.521  1.00 18.32       O

ATOM  10908  CB  ILE F  49    -17.560  30.650   1.958  1.00 22.04       C
ATOM  10909  CG1 ILE F  49    -19.021  31.077   2.119  1.00 19.68
C
ATOM  10910  CG2 ILE F  49    -16.648  31.883   1.960  1.00 22.59
C

ATOM  10911  CD1 ILE F  49    -19.377  31.490   3.521  1.00 29.80       C

ATOM  10912  H   ILE F  49    -17.990  28.106   1.369  1.00 26.21       H

ATOM  10913  HA  ILE F  49    -17.714  30.397  -0.075  1.00 23.50       H

ATOM  10914  HB  ILE F  49    -17.317  30.082   2.707  1.00 26.45       H
ATOM  10915 HG12 ILE F  49    -19.192  31.832   1.534  1.00 23.61
H


ATOM  10916 HG13 ILE F  49    -19.594  30.334   1.874  1.00 23.61
H
ATOM  10917 HG21 ILE F  49    -16.775  32.368   2.791  1.00 27.11
H
ATOM  10918 HG22 ILE F  49    -15.726  31.594   1.883  1.00 27.11
H
ATOM  10919 HG23 ILE F  49    -16.882  32.449   1.208  1.00 27.11
H
ATOM  10920 HD11 ILE F  49    -20.312  31.747   3.546  1.00 35.76
H
ATOM  10921 HD12 ILE F  49    -19.222  30.743   4.119  1.00 35.76
H
ATOM  10922 HD13 ILE F  49    -18.820  32.242   3.779  1.00 35.76
H

ATOM  10923  N   PHE F  50    -15.317  28.749   1.279  1.00 14.92       N
ATOM  10924  CA  PHE F  50    -13.876  28.544   1.238  1.00 18.72
C

ATOM  10925  C   PHE F  50    -13.449  27.474   0.235  1.00 15.47       C

ATOM  10926  O   PHE F  50    -12.438  27.643  -0.442  1.00 15.17       O
ATOM  10927  CB  PHE F  50    -13.374  28.203   2.637  1.00 14.79
C
ATOM  10928  CG  PHE F  50    -13.688  29.267   3.644  1.00 20.85
C
ATOM  10929  CD1 PHE F  50    -12.912  30.413   3.720  1.00 23.04
C
ATOM  10930  CD2 PHE F  50    -14.778  29.144   4.488  1.00 21.71
C
ATOM  10931  CE1 PHE F  50    -13.206  31.407   4.633  1.00 21.89
C
ATOM  10932  CE2 PHE F  50    -15.074  30.134   5.408  1.00 21.18
C
ATOM  10933  CZ  PHE F  50    -14.288  31.268   5.475  1.00 19.57
C

ATOM  10934  H   PHE F  50    -15.724  28.301   1.890  1.00 17.90       H
ATOM  10935  HA  PHE F  50    -13.454  29.376   0.972  1.00 22.46
H
ATOM  10936  HB2 PHE F  50    -13.794  27.379   2.930  1.00 17.74
H
ATOM  10937  HB3 PHE F  50    -12.411  28.092   2.608  1.00 17.74
H
ATOM  10938  HD1 PHE F  50    -12.181  30.512   3.153  1.00 27.65
H
ATOM  10939  HD2 PHE F  50    -15.310  28.383   4.445  1.00 26.06
H
ATOM  10940  HE1 PHE F  50    -12.674  32.169   4.681  1.00 26.27
H
ATOM  10941  HE2 PHE F  50    -15.805  30.039   5.975  1.00 25.42
H
ATOM  10942  HZ  PHE F  50    -14.486  31.934   6.094  1.00 23.49
H

ATOM  10943  N   LEU F  51    -14.215  26.389   0.130  1.00 15.59       N
ATOM  10944  CA  LEU F  51    -13.877  25.314  -0.803  1.00 16.84
C

ATOM  10945  C   LEU F  51    -13.816  25.809  -2.251  1.00 14.18       C

ATOM  10946  O   LEU F  51    -12.842  25.549  -2.949  1.00 17.50       O
ATOM  10947  CB  LEU F  51    -14.878  24.157  -0.695  1.00 16.15
C
ATOM  10948  CG  LEU F  51    -14.747  23.235   0.521  1.00 23.56
C
ATOM  10949  CD1 LEU F  51    -15.930  22.279   0.591  1.00 25.39
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ATOM  4650  CB  ASP C 144    -2.949  57.449  -2.188  1.00 24.80
C


ATOM  4651  CG  ASP C 144    -4.205  58.296  -2.215  1.00 24.61
C
ATOM  4652  OD1 ASP C 144    -4.881  58.345  -3.264  1.00 31.09
O
ATOM  4653  OD2 ASP C 144    -4.511  58.927  -1.183  1.00 34.04
O1-
ATOM  4654  H   ASP C 144   -2.998  58.214  -4.509  1.00 27.33
H
ATOM  4655  HA  ASP C 144    -1.942  56.108  -3.366  1.00 28.56
H
ATOM  4656  HB2 ASP C 144    -2.991  56.878  -1.405  1.00 29.76
H
ATOM  4657  HB3 ASP C 144    -2.188  58.046  -2.123  1.00 29.76
H
ATOM  4658  N   LEU C 145   -4.864  55.678  -4.386  1.00 18.41
N
ATOM  4659  CA  LEU C 145    -5.892  54.652  -4.544  1.00 19.62
C
ATOM  4660  C   LEU C 145   -5.274  53.321  -4.976  1.00 20.78
C
ATOM  4661  O   LEU C 145   -5.893  52.270  -4.826  1.00 14.96
O
ATOM  4662  CB  LEU C 145    -6.968  55.078  -5.553  1.00 19.66
C
ATOM  4663  CG  LEU C 145    -6.615  55.709  -6.908  1.00 27.10
C
ATOM  4664  CD1 LEU C 145    -5.336  55.184  -7.518  1.00 25.70
C
ATOM  4665  CD2 LEU C 145    -7.776  55.498  -7.879  1.00 21.56
C
ATOM  4666  H   LEU C 145   -4.950  56.360  -4.903  1.00 22.09
H
ATOM  4667  HA  LEU C 145    -6.328  54.513  -3.689  1.00 23.55
H
ATOM  4668  HB2 LEU C 145    -7.493  54.288  -5.756  1.00 23.59
H
ATOM  4669  HB3 LEU C 145    -7.540  55.718  -5.102  1.00 23.59
H
ATOM  4670  HG  LEU C 145    -6.508  56.665  -6.784  1.00 32.52
H
ATOM  4671 HD11 LEU C 145    -5.185  55.630  -8.366  1.00 30.83
H
ATOM  4672 HD12 LEU C 145    -4.600  55.366  -6.913  1.00 30.83
H
ATOM  4673 HD13 LEU C 145    -5.422  54.228  -7.657  1.00 30.83
H
ATOM  4674 HD21 LEU C 145    -7.550  55.898  -8.734  1.00 25.87
H
ATOM  4675 HD22 LEU C 145    -7.927  54.547  -7.989  1.00 25.87
H
ATOM  4676 HD23 LEU C 145    -8.571  55.920  -7.517  1.00 25.87
H
ATOM  4677  N   LEU C 146   -4.048  53.365  -5.494  1.00 16.14
N
ATOM  4678  CA  LEU C 146    -3.384  52.158  -5.983  1.00 16.03
C
ATOM  4679  C   LEU C 146   -2.981  51.231  -4.840  1.00 17.57
C
ATOM  4680  O   LEU C 146   -2.655  50.065  -5.067  1.00 16.74
O
ATOM  4681  CB  LEU C 146    -2.154  52.524  -6.821  1.00 17.95
C
ATOM  4682  CG  LEU C 146    -2.410  53.275  -8.132  1.00 15.53
C
ATOM  4683  CD1 LEU C 146    -1.089  53.618  -8.817  1.00 16.96
C
ATOM  4684  CD2 LEU C 146    -3.292  52.460  -9.064  1.00 19.12
C
ATOM  4685  H   LEU C 146   -3.579  54.081  -5.574  1.00 19.36
H


ATOM  4686  HA  LEU C 146    -3.999  51.673  -6.555  1.00 19.23
H
ATOM  4687  HB2 LEU C 146    -1.575  53.083  -6.280  1.00 21.54
H
ATOM  4688  HB3 LEU C 146    -1.688  51.704  -7.048  1.00 21.54
H
ATOM  4689  HG  LEU C 146    -2.870  54.106  -7.935  1.00 18.63
H
ATOM  4690 HD11 LEU C 146    -1.276  54.092  -9.642  1.00 20.36
H
ATOM  4691 HD12 LEU C 146    -0.564  54.179  -8.225  1.00 20.36
H
ATOM  4692 HD13 LEU C 146    -0.610  52.797  -9.007  1.00 20.36
H
ATOM  4693 HD21 LEU C 146    -3.435  52.962  -9.882  1.00 22.95
H
ATOM  4694 HD22 LEU C 146    -2.850  51.621  -9.264  1.00 22.95
H
ATOM  4695 HD23 LEU C 146    -4.142  52.291  -8.627  1.00 22.95
H
ATOM  4696  N   LYS C 147   -3.014  51.744  -3.613  1.00 19.33
N
ATOM  4697  CA  LYS C 147    -2.750  50.925  -2.433  1.00 19.87
C
ATOM  4698  C   LYS C 147   -3.839  49.877  -2.192  1.00 17.73
C
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ATOM  10950  CD2 LEU F  51    -13.442  22.452   0.490  1.00 18.07
C



ATOM  10951  H   LEU F  51   -14.931  26.251   0.585  1.00 18.71        H
ATOM  10952  HA  LEU F  51    -13.000  24.967  -0.573  1.00 20.21
H
ATOM  10953  HB2 LEU F  51    -15.772  24.533  -0.673  1.00 19.38
H
ATOM  10954  HB3 LEU F  51    -14.785  23.603  -1.485  1.00 19.38
H
ATOM  10955  HG  LEU F  51    -14.751  23.775   1.327  1.00 28.27
H
ATOM  10956 HD11 LEU F  51    -15.826  21.705   1.367  1.00 30.46
H
ATOM  10957 HD12 LEU F  51    -16.748  22.794   0.667  1.00 30.46
H
ATOM  10958 HD13 LEU F  51    -15.950  21.742  -0.217  1.00 30.46
H
ATOM  10959 HD21 LEU F  51    -13.398  21.882   1.274  1.00 21.69
H
ATOM  10960 HD22 LEU F  51    -13.418  21.911  -0.314  1.00 21.69
H
ATOM  10961 HD23 LEU F  51    -12.700  23.076   0.492  1.00 21.69
H

ATOM  10962  N   PRO F  52   -14.858  26.512  -2.718  1.00 15.74        N
ATOM  10963  CA  PRO F  52    -14.770  27.012  -4.094  1.00 16.28
C

ATOM  10964  C   PRO F  52   -13.685  28.072  -4.276  1.00 16.85        C
ATOM  10965  O   PRO F  52   -13.036  28.106  -5.322  1.00 15.38
O
ATOM  10966  CB  PRO F  52    -16.167  27.601  -4.350  1.00 19.09
C
ATOM  10967  CG  PRO F  52    -16.760  27.811  -3.003  1.00 20.50
C
ATOM  10968  CD  PRO F  52    -16.194  26.736  -2.139  1.00 20.80
C
ATOM  10969  HA  PRO F  52    -14.611  26.279  -4.710  1.00 19.54
H
ATOM  10970  HB2 PRO F  52    -16.084  28.443  -4.822  1.00 22.91
H
ATOM  10971  HB3 PRO F  52    -16.697  26.971  -4.862  1.00 22.91
H
ATOM  10972  HG2 PRO F  52    -16.507  28.686  -2.669  1.00 24.59
H
ATOM  10973  HG3 PRO F  52    -17.725  27.732  -3.057  1.00 24.59
H
ATOM  10974  HD2 PRO F  52    -16.119  27.042  -1.222  1.00 24.96
H
ATOM  10975  HD3 PRO F  52    -16.731  25.930  -2.204  1.00 24.96
H

ATOM  10976  N   PHE F  53   -13.485  28.921  -3.273  1.00 15.61        N
ATOM  10977  CA  PHE F  53    -12.478  29.970  -3.374  1.00 15.34
C

ATOM  10978  C   PHE F  53   -11.083  29.361  -3.477  1.00 14.81        C

ATOM  10979  O   PHE F  53   -10.293  29.756  -4.334  1.00 15.50        O
ATOM  10980  CB  PHE F  53    -12.555  30.922  -2.180  1.00 15.16
C
ATOM  10981  CG  PHE F  53    -11.510  32.002  -2.204  1.00 15.82
C
ATOM  10982  CD1 PHE F  53    -11.679  33.131  -2.989  1.00 15.97
C
ATOM  10983  CD2 PHE F  53    -10.356  31.885  -1.448  1.00 15.98
C
ATOM  10984  CE1 PHE F  53    -10.719  34.123  -3.016  1.00 18.86
C
ATOM  10985  CE2 PHE F  53     -9.392  32.879  -1.470  1.00 13.90
C



ATOM  10986  CZ  PHE F  53     -9.574  33.995  -2.256  1.00 13.75        C

ATOM  10987  H   PHE F  53   -13.916  28.910  -2.528  1.00 18.73        H
ATOM  10988  HA  PHE F  53    -12.640  30.486  -4.179  1.00 18.41
H
ATOM  10989  HB2 PHE F  53    -13.425  31.350  -2.176  1.00 18.19
H
ATOM  10990  HB3 PHE F  53    -12.436  30.411  -1.364  1.00 18.19
H
ATOM  10991  HD1 PHE F  53    -12.448  33.222  -3.504  1.00 19.16
H
ATOM  10992  HD2 PHE F  53    -10.229  31.133  -0.916  1.00 19.17
H
ATOM  10993  HE1 PHE F  53    -10.844  34.877  -3.546  1.00 22.64
H
ATOM  10994  HE2 PHE F  53     -8.620  32.791  -0.958  1.00 16.68
H

ATOM  10995  HZ  PHE F  53     -8.927  34.664  -2.272  1.00 16.50        H

ATOM  10996  N   TYR F  54   -10.790  28.389  -2.616  1.00 13.52        N

ATOM  10997  CA  TYR F  54     -9.500  27.707  -2.649  1.00 13.81        C

ATOM  10998  C   TYR F  54     -9.324  26.904  -3.935  1.00 13.72        C
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ATOM  4699 O   LYS C 147    -3.603  48.867  -1.526  1.00 19.26
O
ATOM  4700 CB  LYS C 147    -2.628  51.807  -1.188  1.00 23.96
C
ATOM  4701 CG  LYS C 147    -1.400  52.698  -1.163  1.00 34.05
C
ATOM  4702 CD  LYS C 147    -1.286  53.467   0.152  1.00 43.75
C
ATOM  4703 CE  LYS C 147    -2.464  54.413   0.354  1.00 52.91
C
ATOM  4704 NZ  LYS C 147    -2.213  55.423   1.423  1.00 63.31
N1+
ATOM  4705 H   LYS C 147    -3.187  52.568  -3.436  1.00 23.19
H
ATOM  4706 HA  LYS C 147    -1.908  50.459  -2.555  1.00 23.84
H
ATOM  4707 HB2 LYS C 147    -3.409  52.380  -1.136  1.00 28.75
H
ATOM  4708 HB3 LYS C 147    -2.592  51.234  -0.405  1.00 28.75
H
ATOM  4709 HG2 LYS C 147    -0.606  52.150  -1.263  1.00 40.86
H
ATOM  4710 HG3 LYS C 147    -1.458  53.341  -1.886  1.00 40.86
H
ATOM  4711 HD2 LYS C 147    -1.272  52.838   0.890  1.00 52.50
H
ATOM  4712 HD3 LYS C 147    -0.472  53.994   0.145  1.00 52.50
H
ATOM  4713 HE2 LYS C 147    -2.634  54.888  -0.474  1.00 63.49
H
ATOM  4714 HE3 LYS C 147    -3.245  53.896   0.607  1.00 63.49
H
ATOM  4715 HZ1 LYS C 147    -2.921  55.955   1.511  1.00 75.97
H
ATOM  4716 HZ2 LYS C 147    -2.060  55.014   2.198  1.00 75.97
H
ATOM  4717 HZ3 LYS C 147    -1.504  55.918   1.213  1.00 75.97
H
ATOM  4718 N   LEU C 148    -5.028  50.122  -2.732  1.00 15.82
N
ATOM  4719 CA  LEU C 148    -6.210  49.333  -2.387  1.00 18.04
C
ATOM  4720 C   LEU C 148    -6.593  48.304  -3.450  1.00 18.60
C


ATOM  4721 O   LEU C 148    -7.686  47.744  -3.405  1.00 15.31
O
ATOM  4722 CB  LEU C 148    -7.395  50.269  -2.151  1.00 23.06
C
ATOM  4723 CG  LEU C 148    -7.130  51.452  -1.217  1.00 32.15
C
ATOM  4724 CD1 LEU C 148    -8.009  52.619  -1.612  1.00 32.37
C
ATOM  4725 CD2 LEU C 148    -7.363  51.056   0.236  1.00 30.03
C
ATOM  4726 H   LEU C 148    -5.179  50.745  -3.306  1.00 18.98
H
ATOM  4727 HA  LEU C 148    -6.038  48.856  -1.560  1.00 21.65
H
ATOM  4728 HB2 LEU C 148    -7.674  50.632  -3.007  1.00 27.68
H
ATOM  4729 HB3 LEU C 148    -8.122  49.753  -1.768  1.00 27.68
H
ATOM  4730 HG  LEU C 148    -6.204  51.727  -1.308  1.00 38.58
H
ATOM  4731 HD11 LEU C 148   -7.833  53.363  -1.015  1.00 38.84
H
ATOM  4732 HD12 LEU C 148   -7.804  52.873  -2.526  1.00 38.84
H
ATOM  4733 HD13 LEU C 148   -8.939  52.351  -1.544  1.00 38.84
H
ATOM  4734 HD21 LEU C 148   -7.188  51.822   0.804  1.00 36.04
H
ATOM  4735 HD22 LEU C 148   -8.284  50.770   0.341  1.00 36.04
H
ATOM  4736 HD23 LEU C 148   -6.763  50.329   0.466  1.00 36.04
H
ATOM  4737 N   VAL C 149    -5.697  48.054  -4.398  1.00 16.71
N
ATOM  4738 CA  VAL C 149    -6.011  47.210  -5.548  1.00 14.87
C
ATOM  4739 C   VAL C 149    -5.503  45.783  -5.380  1.00 14.53
C
ATOM  4740 O   VAL C 149    -4.311  45.568  -5.166  1.00 16.23
O
ATOM  4741 CB  VAL C 149    -5.409  47.803  -6.833  1.00 18.92
C
ATOM  4742 CG1 VAL C 149    -5.723  46.926  -8.036  1.00 20.42
C
ATOM  4743 CG2 VAL C 149    -5.930  49.222  -7.054  1.00 20.99
C
ATOM  4744 H   VAL C 149    -4.894  48.363  -4.399  1.00 20.06
H
ATOM  4745 HA  VAL C 149    -6.975  47.174  -5.658  1.00 17.84
H
ATOM  4746 HB  VAL C 149    -4.445  47.849  -6.738  1.00 22.71
H
ATOM  4747 HG11 VAL C 149   -5.330  47.326  -8.828  1.00 24.51
H
ATOM  4748 HG12 VAL C 149   -5.347  46.044  -7.890  1.00 24.51
H
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ATOM 10999 O   TYR F  54    -8.222  26.831  -4.473  1.00 12.92        O

ATOM 11000 CB  TYR F  54    -9.338  26.783  -1.436  1.00 12.43        C
ATOM 11001 CG  TYR F  54    -9.215  27.502  -0.107  1.00 13.97
C
ATOM 11002 CD1 TYR F  54    -8.682  28.785  -0.029  1.00 15.04
C
ATOM 11003 CD2 TYR F  54    -9.637  26.899   1.070  1.00 14.73
C
ATOM 11004 CE1 TYR F  54    -8.575  29.442   1.182  1.00 13.01
C
ATOM 11005 CE2 TYR F  54    -9.531  27.545   2.282  1.00 13.82
C

ATOM 11006 CZ  TYR F  54    -9.002  28.814   2.333  1.00 14.13        C
ATOM 11007 OH  TYR F  54    -8.901  29.461   3.537  1.00 13.26
O

ATOM 11008 H   TYR F  54   -11.322  28.106  -2.003  1.00 16.22        H

ATOM 11009 HA  TYR F  54    -8.793  28.371  -2.614  1.00 16.57        H
ATOM 11010 HB2 TYR F  54   -10.112  26.201  -1.384  1.00 14.92
H
ATOM 11011 HB3 TYR F  54    -8.536  26.250  -1.557  1.00 14.92
H
ATOM 11012 HD1 TYR F  54    -8.395  29.208  -0.805  1.00 18.05
H
ATOM 11013 HD2 TYR F  54    -9.996  26.041   1.039  1.00 17.67
H
ATOM 11014 HE1 TYR F  54    -8.217  30.299   1.221  1.00 15.61
H
ATOM 11015 HE2 TYR F  54    -9.820  27.127   3.061  1.00 16.58
H

ATOM 11016 HH  TYR F  54    -9.194  28.970   4.152  1.00 15.91        H

ATOM 11017 N   LYS F  55   -10.403  26.303  -4.429  1.00 13.00        N
ATOM 11018 CA  LYS F  55   -10.321  25.526  -5.661  1.00 15.12
C

ATOM 11019 C   LYS F  55    -9.743  26.382  -6.786  1.00 14.25        C

ATOM 11020 O   LYS F  55    -8.873  25.934  -7.535  1.00 15.64        O


ATOM 11021 CB  LYS F  55   -11.695  24.982  -6.060  1.00 17.19
C
ATOM 11022 CG  LYS F  55   -11.638  23.938  -7.159  1.00 18.78
C
ATOM 11023 CD  LYS F  55   -13.025  23.546  -7.643  1.00 22.88
C
ATOM 11024 CE  LYS F  55   -12.935  22.564  -8.795  1.00 27.95
C
ATOM 11025 NZ  LYS F  55   -14.263  22.302  -9.406  1.00 35.34
N1+

ATOM 11026 H   LYS F  55   -11.186  26.330  -4.075  1.00 15.60        H

ATOM 11027 HA  LYS F  55    -9.727  24.772  -5.522  1.00 18.15        H
ATOM 11028 HB2 LYS F  55   -12.108  24.574  -5.283  1.00 20.62
H
ATOM 11029 HB3 LYS F  55   -12.243  25.717  -6.376  1.00 20.62
H
ATOM 11030 HG2 LYS F  55   -11.145  24.296  -7.913  1.00 22.53
H
ATOM 11031 HG3 LYS F  55   -11.200  23.142  -6.820  1.00 22.53
H
ATOM 11032 HD2 LYS F  55   -13.512  23.124  -6.918  1.00 27.45
H
ATOM 11033 HD3 LYS F  55   -13.495  24.337  -7.950  1.00 27.45
H
ATOM 11034 HE2 LYS F  55   -12.354  22.929  -9.480  1.00 33.53
H
ATOM 11035 HE3 LYS F  55   -12.581  21.722  -8.469  1.00 33.53
H
ATOM 11036 HZ1 LYS F  55   -14.180  21.724 -10.078  1.00 42.41
H
ATOM 11037 HZ2 LYS F  55   -14.816  21.961  -8.798  1.00 42.41
H
ATOM 11038 HZ3 LYS F  55   -14.609  23.060  -9.719  1.00 42.41
H

ATOM 11039 N   ASN F  56   -10.210  27.622  -6.886  1.00 12.64        N

ATOM 11040 CA  ASN F  56    -9.713  28.541  -7.906  1.00 15.26        C

ATOM 11041 C   ASN F  56    -8.293  29.017  -7.618  1.00 16.59        C

ATOM 11042 O   ASN F  56    -7.447  29.059  -8.511  1.00 15.03        O
ATOM 11043 CB  ASN F  56   -10.640  29.751  -8.028  1.00 18.33
C
ATOM 11044 CG  ASN F  56   -11.983  29.397  -8.634  1.00 28.04
C
ATOM 11045 OD1 ASN F  56   -12.091  28.463  -9.428  1.00 30.73
O
ATOM 11046 ND2 ASN F  56   -13.016  30.147  -8.264  1.00 32.03
N

ATOM 11047 H   ASN F  56   -10.815  27.957  -6.376  1.00 15.17        H

ATOM 11048 HA  ASN F  56    -9.706  28.085  -8.762  1.00 18.31        H
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ATOM  4749 HG13 VAL C 149    -6.685  46.864  -8.139  1.00 24.51
H
ATOM  4750 HG21 VAL C 149    -5.539  49.577  -7.868  1.00 25.18
H
ATOM  4751 HG22 VAL C 149    -6.896  49.194  -7.136  1.00 25.18
H
ATOM  4752 HG23 VAL C 149    -5.677  49.772  -6.297  1.00 25.18
H
ATOM  4753  N   LYS C 150   -6.408  44.816  -5.500  1.00 13.93
N
ATOM  4754  CA  LYS C 150   -6.044  43.402  -5.450  1.00 18.06
C
ATOM  4755  C   LYS C 150   -5.531  42.912  -6.797  1.00 15.46
C


ATOM  4756  O   LYS C 150   -5.715  43.570  -7.819  1.00 15.34
O
ATOM  4757  CB  LYS C 150   -7.238  42.538  -5.030  1.00 16.72
C
ATOM  4758  CG  LYS C 150   -7.584  42.607  -3.553  1.00 17.69
C
ATOM  4759  CD  LYS C 150   -8.705  41.641  -3.194  1.00 15.55
C
ATOM  4760  CE  LYS C 150   -8.218  40.202  -3.082  1.00 17.69
C
ATOM  4761  NZ  LYS C 150   -7.374  39.972  -1.871  1.00 15.20
N1+
ATOM  4762  H   LYS C 150   -7.249  44.953  -5.613  1.00 16.72
H
ATOM  4763  HA  LYS C 150   -5.338  43.279  -4.796  1.00 21.68
H
ATOM  4764  HB2 LYS C 150    -8.019  42.826  -5.528  1.00 20.06
H
ATOM  4765  HB3 LYS C 150    -7.040  41.612  -5.241  1.00 20.06
H
ATOM  4766  HG2 LYS C 150    -6.802  42.373  -3.030  1.00 21.22
H
ATOM  4767  HG3 LYS C 150    -7.877  43.506  -3.335  1.00 21.22
H
ATOM  4768  HD2 LYS C 150    -9.084  41.898  -2.339  1.00 18.65
H
ATOM  4769  HD3 LYS C 150    -9.386  41.675  -3.884  1.00 18.65
H
ATOM  4770  HE2 LYS C 150    -8.986  39.612  -3.029  1.00 21.23
H
ATOM  4771  HE3 LYS C 150    -7.686  39.987  -3.884  1.00 21.23
H
ATOM  4772  HZ1 LYS C 150    -6.656  40.498  -1.896  1.00 18.24
H
ATOM  4773  HZ2 LYS C 150    -7.841  40.156  -1.136  1.00 18.24
H
ATOM  4774  HZ3 LYS C 150    -7.110  39.123  -1.841  1.00 18.24
H
ATOM  4775  N   SER C 151   -4.903  41.742  -6.777  1.00 16.11
N
ATOM  4776  CA  SER C 151    -4.426  41.078  -7.985  1.00 17.40
C
ATOM  4777  C   SER C 151   -3.319  41.859  -8.690  1.00 14.09
C
ATOM  4778  O   SER C 151   -2.799  42.846  -8.168  1.00 16.03
O
ATOM  4779  CB  SER C 151    -5.585  40.834  -8.952  1.00 14.05
C
ATOM  4780  OG  SER C 151    -5.188  39.954  -9.988  1.00 14.91
O
ATOM  4781  H   SER C 151   -4.736  41.302  -6.057  1.00 19.33
H
ATOM  4782  HA  SER C 151    -4.063  40.213  -7.739  1.00 20.89
H
ATOM  4783  HB2 SER C 151    -6.325  40.438  -8.467  1.00 16.86
H
ATOM  4784  HB3 SER C 151    -5.856  41.679  -9.342  1.00 16.86
H
ATOM  4785  HG  SER C 151    -5.828  39.824 -10.515  1.00 17.89
H
ATOM  4786  N   TYR C 152   -2.961  41.385  -9.877  1.00 12.60
N
ATOM  4787  CA  TYR C 152    -1.828  41.905 -10.624  1.00 11.73
C
ATOM  4788  C   TYR C 152   -2.312  42.429 -11.968  1.00 17.09
C
ATOM  4789  O   TYR C 152   -3.220  41.852 -12.575  1.00 15.23
O
ATOM  4790  CB  TYR C 152    -0.770  40.814 -10.824  1.00 14.94
C


ATOM  4791  CG  TYR C 152    -0.394  40.065  -9.562  1.00 13.45
C
ATOM  4792  CD1 TYR C 152    -0.119  40.743  -8.383  1.00 17.53
C
ATOM  4793  CD2 TYR C 152    -0.317  38.678  -9.552  1.00 13.04
C
ATOM  4794  CE1 TYR C 152     0.229  40.064  -7.232  1.00 15.99
C
ATOM  4795  CE2 TYR C 152     0.031  37.989  -8.407  1.00 17.54
C
ATOM  4796  CZ  TYR C 152     0.303  38.688  -7.246  1.00 17.26
C
ATOM  4797  OH  TYR C 152     0.650  38.009  -6.097  1.00 14.46
O
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ATOM  11049  HB2 ASN F  56   -10.797  30.119  -7.144  1.00 22.00
H
ATOM  11050  HB3 ASN F  56   -10.220  30.416  -8.595  1.00 22.00
H
ATOM  11051 HD21 ASN F  56    -13.799  29.986  -8.581  1.00 38.43
H
ATOM  11052 HD22 ASN F  56    -12.901  30.792  -7.708  1.00 38.43
H

ATOM  11053  N   VAL F  57   -8.039  29.391  -6.370  1.00 12.10        N

ATOM  11054  CA  VAL F  57    -6.714  29.855  -5.972  1.00 12.15        C

ATOM  11055  C   VAL F  57   -5.674  28.762  -6.181  1.00 12.63        C



ATOM  11056  O   VAL F  57   -4.603  29.015  -6.738  1.00 16.24        O

ATOM  11057  CB  VAL F  57    -6.708  30.312  -4.500  1.00 12.42        C
ATOM  11058  CG1 VAL F  57    -5.284  30.566  -4.000  1.00 13.82
C
ATOM  11059  CG2 VAL F  57    -7.555  31.571  -4.342  1.00 13.89
C

ATOM  11060  H   VAL F  57   -8.617  29.386  -5.733  1.00 14.52        H

ATOM  11061  HA  VAL F  57    -6.467  30.615  -6.522  1.00 14.57        H

ATOM  11062  HB  VAL F  57    -7.100  29.615  -3.951  1.00 14.90        H
ATOM  11063 HG11 VAL F  57    -5.321  30.851  -3.074  1.00 16.59
H
ATOM  11064 HG12 VAL F  57    -4.772  29.745  -4.074  1.00 16.59
H
ATOM  11065 HG13 VAL F  57    -4.878  31.260  -4.544  1.00 16.59
H
ATOM  11066 HG21 VAL F  57    -7.541  31.845  -3.412  1.00 16.67
H
ATOM  11067 HG22 VAL F  57    -7.184  32.272  -4.900  1.00 16.67
H
ATOM  11068 HG23 VAL F  57    -8.464  31.375  -4.617  1.00 16.67
H

ATOM  11069  N   PHE F  58   -5.994  27.548  -5.740  1.00 12.82        N

ATOM  11070  CA  PHE F  58    -5.062  26.430  -5.830  1.00 13.09        C

ATOM  11071  C   PHE F  58   -4.801  26.058  -7.285  1.00 14.82        C

ATOM  11072  O   PHE F  58   -3.660  25.848  -7.676  1.00 12.06        O

ATOM  11073  CB  PHE F  58    -5.588  25.207  -5.070  1.00 12.73        C
ATOM  11074  CG  PHE F  58    -5.695  25.402  -3.578  1.00 12.49
C
ATOM  11075  CD1 PHE F  58    -5.281  26.581  -2.974  1.00 12.83
C
ATOM  11076  CD2 PHE F  58    -6.213  24.396  -2.777  1.00 13.83
C
ATOM  11077  CE1 PHE F  58    -5.388  26.751  -1.603  1.00 13.49
C
ATOM  11078  CE2 PHE F  58    -6.322  24.566  -1.405  1.00 16.44
C

ATOM  11079  CZ  PHE F  58    -5.906  25.747  -0.821  1.00 11.02        C

ATOM  11080  H   PHE F  58   -6.749  27.346  -5.381  1.00 15.38        H

ATOM  11081  HA  PHE F  58    -4.217  26.690  -5.431  1.00 15.71        H
ATOM  11082  HB2 PHE F  58    -6.473  24.991  -5.403  1.00 15.28
H
ATOM  11083  HB3 PHE F  58    -4.988  24.461  -5.227  1.00 15.28
H
ATOM  11084  HD1 PHE F  58    -4.931  27.267  -3.496  1.00 15.39
H
ATOM  11085  HD2 PHE F  58    -6.497  23.600  -3.166  1.00 16.60
H
ATOM  11086  HE1 PHE F  58    -5.107  27.546  -1.211  1.00 16.19
H
ATOM  11087  HE2 PHE F  58    -6.672  23.884  -0.878  1.00 19.73
H

ATOM  11088  HZ  PHE F  58    -5.975  25.862   0.099  1.00 13.22        H

ATOM  11089  N   SER F  59   -5.853  25.970  -8.089  1.00 12.82        N

ATOM  11090  CA  SER F  59    -5.685  25.598  -9.486  1.00 16.28        C



ATOM  11091  C   SER F  59   -4.855  26.649 -10.229  1.00 18.53        C

ATOM  11092  O   SER F  59   -4.011  26.307 -11.056  1.00 15.62        O
ATOM  11093  CB  SER F  59    -7.046  25.406 -10.159  1.00 19.61
C
ATOM  11094  OG  SER F  59    -7.896  26.504  -9.896  1.00 29.67
O

ATOM  11095  H   SER F  59   -6.667  26.119  -7.853  1.00 15.39        H

ATOM  11096  HA  SER F  59    -5.208  24.754  -9.532  1.00 19.54        H
ATOM  11097  HB2 SER F  59    -6.917  25.329 -11.118  1.00 23.54
H
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ATOM  4798 H   TYR C 152    -3.371  40.745 -10.280  1.00 15.12
H
ATOM  4799 HA  TYR C 152    -1.425  42.639 -10.134  1.00 14.07
H
ATOM  4800 HB2 TYR C 152    -1.110  40.166 -11.461  1.00 17.93
H
ATOM  4801 HB3 TYR C 152     0.036  41.224 -11.174  1.00 17.93
H
ATOM  4802 HD1 TYR C 152    -0.165  41.672  -8.369  1.00 21.04
H
ATOM  4803 HD2 TYR C 152    -0.496  38.205 -10.333  1.00 15.65
H
ATOM  4804 HE1 TYR C 152     0.412  40.533  -6.450  1.00 19.18
H
ATOM  4805 HE2 TYR C 152     0.080  37.060  -8.416  1.00 21.05
H
ATOM  4806 HH  TYR C 152     0.657  37.182  -6.243  1.00 17.36
H
ATOM  4807 N   HIS C 153    -1.711  43.521 -12.428  1.00 11.65
N
ATOM  4808 CA  HIS C 153    -2.185  44.203 -13.628  1.00 13.69
C
ATOM  4809 C   HIS C 153    -1.038  44.802 -14.415  1.00 13.10
C
ATOM  4810 O   HIS C 153    -0.106  45.358 -13.836  1.00 13.18
O
ATOM  4811 CB  HIS C 153    -3.182  45.302 -13.254  1.00 12.79
C
ATOM  4812 CG  HIS C 153    -4.220  44.860 -12.274  1.00 15.44
C
ATOM  4813 ND1 HIS C 153    -5.444  44.357 -12.661  1.00 13.49
N
ATOM  4814 CD2 HIS C 153    -4.210  44.830 -10.920  1.00 15.97
C
ATOM  4815 CE1 HIS C 153    -6.146  44.043 -11.587  1.00 16.56
C
ATOM  4816 NE2 HIS C 153    -5.419  44.317 -10.518  1.00 16.62
N
ATOM  4817 H   HIS C 153    -1.025  43.888 -12.063  1.00 14.22
H
ATOM  4818 HA  HIS C 153    -2.641  43.563 -14.198  1.00 16.43
H
ATOM  4819 HB2 HIS C 153    -2.697  46.043 -12.859  1.00 15.35
H
ATOM  4820 HB3 HIS C 153    -3.638  45.598 -14.057  1.00 15.35
H
ATOM  4821 HD1 HIS C 153    -5.710  44.265 -13.474  1.00 16.19
H
ATOM  4822 HD2 HIS C 153    -3.515  45.104 -10.366  1.00 19.16
H
ATOM  4823 HE1 HIS C 153    -7.005  43.687 -11.584  1.00 19.87
H
ATOM  4824 HE2 HIS C 153    -5.665  44.199  -9.702  1.00 19.95
H
ATOM  4825 N   TRP C 154    -1.104  44.682 -15.738  1.00 15.58
N


ATOM  4826 CA  TRP C 154    -0.104  45.295 -16.598  1.00 15.13
C
ATOM  4827 C   TRP C 154    -0.118  46.805 -16.411  1.00 15.13
C
ATOM  4828 O   TRP C 154    -1.175  47.430 -16.468  1.00 13.30
O
ATOM  4829 CB  TRP C 154    -0.353  44.977 -18.078  1.00 15.45
C
ATOM  4830 CG  TRP C 154     0.036  43.598 -18.543  1.00 17.21
C
ATOM  4831 CD1 TRP C 154    -0.751  42.717 -19.229  1.00 18.69
C
ATOM  4832 CD2 TRP C 154     1.310  42.957 -18.385  1.00 17.34
C
ATOM  4833 NE1 TRP C 154    -0.049  41.567 -19.506  1.00 16.22
N
ATOM  4834 CE2 TRP C 154     1.217  41.687 -18.995  1.00 17.13
C
ATOM  4835 CE3 TRP C 154     2.518  43.329 -17.783  1.00 15.92
C
ATOM  4836 CZ2 TRP C 154     2.283  40.790 -19.019  1.00 16.67
C
ATOM  4837 CZ3 TRP C 154     3.576  42.435 -17.809  1.00 13.50
C
ATOM  4838 CH2 TRP C 154     3.451  41.182 -18.422  1.00 14.99
C
ATOM  4839 H   TRP C 154    -1.718  44.251 -16.159  1.00 18.70
H
ATOM  4840 HA  TRP C 154     0.775  44.964 -16.357  1.00 18.16
H
ATOM  4841 HB2 TRP C 154    -1.301  45.083 -18.256  1.00 18.54
H
ATOM  4842 HB3 TRP C 154     0.147  45.612 -18.613  1.00 18.54
H
ATOM  4843 HD1 TRP C 154    -1.633  42.875 -19.480  1.00 22.43
H
ATOM  4844 HE1 TRP C 154    -0.357  40.881 -19.924  1.00 19.46
H
ATOM  4845 HE3 TRP C 154     2.608  44.160 -17.375  1.00 19.10
H
ATOM  4846 HZ2 TRP C 154     2.203  39.957 -19.424  1.00 20.01
H
ATOM  4847 HZ3 TRP C 154     4.383  42.671 -17.413  1.00 16.20
H
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ATOM 11098 HB3 SER F  59    -7.458  24.598  -9.815  1.00 23.54
H
ATOM 11099 HG  SER F  59    -7.551  27.212 -10.189  1.00 35.60
H

ATOM 11100 N   GLU F  60   -5.070  27.925  -9.914  1.00 17.84        N
ATOM 11101 CA  GLU F  60    -4.311  29.000 -10.554  1.00 15.88
C

ATOM 11102 C   GLU F  60   -2.856  29.027 -10.090  1.00 14.19        C

ATOM 11103 O   GLU F  60   -1.958  29.374 -10.859  1.00 16.59        O
ATOM 11104 CB  GLU F  60    -4.966  30.356 -10.286  1.00 19.52
C
ATOM 11105 CG  GLU F  60    -6.207  30.607 -11.124  1.00 26.68
C
ATOM 11106 CD  GLU F  60    -5.906  30.696 -12.609  1.00 34.90
C
ATOM 11107 OE1 GLU F  60    -5.129  31.593 -13.010  1.00 37.82
O
ATOM 11108 OE2 GLU F  60    -6.442  29.866 -13.377  1.00 35.67
O1-

ATOM 11109 H   GLU F  60   -5.646  28.194  -9.335  1.00 21.40        H
ATOM 11110 HA  GLU F  60    -4.313  28.855 -11.513  1.00 19.05
H
ATOM 11111 HB2 GLU F  60    -5.223  30.400  -9.352  1.00 23.42
H
ATOM 11112 HB3 GLU F  60    -4.326  31.058 -10.485  1.00 23.42
H
ATOM 11113 HG2 GLU F  60    -6.833  29.877 -10.988  1.00 32.02
H
ATOM 11114 HG3 GLU F  60    -6.610  31.445 -10.849  1.00 32.02
H

ATOM 11115 N   PHE F  61   -2.630  28.671  -8.829  1.00 16.80        N

ATOM 11116 CA  PHE F  61   -1.278  28.576  -8.290  1.00 13.01         C

ATOM 11117 C   PHE F  61   -0.415  27.700  -9.188  1.00 15.28        C

ATOM 11118 O   PHE F  61    0.721  28.048  -9.504  1.00 14.04        O

ATOM 11119 CB  PHE F  61   -1.302  28.013  -6.866  1.00 12.89         C
ATOM 11120 CG  PHE F  61     0.067  27.780  -6.272  1.00 11.72
C
ATOM 11121 CD1 PHE F  61     0.710  26.560  -6.430  1.00 12.06
C
ATOM 11122 CD2 PHE F  61     0.698  28.775  -5.538  1.00 12.10
C
ATOM 11123 CE1 PHE F  61     1.968  26.342  -5.878  1.00 14.29
C
ATOM 11124 CE2 PHE F  61     1.954  28.563  -4.982  1.00 12.57
C

ATOM 11125 CZ  PHE F  61     2.589  27.347  -5.152  1.00 11.10        C



ATOM 11126 H   PHE F  61   -3.247  28.479  -8.262  1.00 20.16        H

ATOM 11127 HA  PHE F  61    -0.883  29.462  -8.260  1.00 15.61        H
ATOM 11128 HB2 PHE F  61    -1.771  28.638  -6.292  1.00 15.46
H
ATOM 11129 HB3 PHE F  61    -1.768  27.162  -6.876  1.00 15.46
H
ATOM 11130 HD1 PHE F  61     0.299  25.884  -6.917  1.00 14.47
H
ATOM 11131 HD2 PHE F  61     0.277  29.596  -5.421  1.00 14.52
H
ATOM 11132 HE1 PHE F  61     2.391  25.522  -5.994  1.00 17.15
H
ATOM 11133 HE2 PHE F  61     2.368  29.240  -4.496  1.00 15.08
H

ATOM 11134 HZ  PHE F  61     3.429  27.203  -4.781  1.00 13.32        H

ATOM 11135 N   PHE F  62   -0.962  26.564  -9.605  1.00 15.38        N
ATOM 11136 CA  PHE F  62    -0.203  25.622 -10.419  1.00 14.52
C

ATOM 11137 C   PHE F  62   -0.191  26.018 -11.891  1.00 14.12        C

ATOM 11138 O   PHE F  62    0.847  25.938 -12.546  1.00 17.38        O
ATOM 11139 CB  PHE F  62    -0.762  24.209 -10.254  1.00 17.80
C
ATOM 11140 CG  PHE F  62    -0.503  23.620  -8.899  1.00 18.12
C
ATOM 11141 CD1 PHE F  62     0.767  23.192  -8.550  1.00 17.73
C
ATOM 11142 CD2 PHE F  62    -1.521  23.503  -7.972  1.00 13.87
C
ATOM 11143 CE1 PHE F  62     1.015  22.657  -7.305  1.00 14.74
C
ATOM 11144 CE2 PHE F  62    -1.279  22.972  -6.723  1.00 16.22
C

ATOM 11145 CZ  PHE F  62   -0.008  22.548  -6.389  1.00 16.45        C

ATOM 11146 H   PHE F  62   -1.767  26.316  -9.432  1.00 18.46        H
ATOM 11147 HA  PHE F  62     0.715  25.614 -10.108  1.00 17.42
H
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ATOM  4848 HH2 TRP C 154     4.179  40.603 -18.422  1.00 17.99
H
ATOM  4849 N   MET C 155    1.060  47.377 -16.184  1.00 13.13
N
ATOM  4850 CA  MET C 155     1.247  48.820 -16.244  1.00 15.17
C
ATOM  4851 C   MET C 155    2.264  49.134 -17.341  1.00 17.69
C
ATOM  4852 O   MET C 155    2.792  48.226 -17.983  1.00 15.06
O
ATOM  4853 CB  MET C 155     1.705  49.374 -14.895  1.00 13.10
C
ATOM  4854 CG  MET C 155     2.991  48.776 -14.369  1.00 12.38
C
ATOM  4855 SD  MET C 155     3.439  49.474 -12.769  1.00 15.66
S
ATOM  4856 CE  MET C 155     4.634  48.273 -12.207  1.00 16.77
C
ATOM  4857 H   MET C 155    1.776  46.943 -15.989  1.00 15.75
H
ATOM  4858 HA  MET C 155     0.402  49.239 -16.468  1.00 18.20
H
ATOM  4859 HB2 MET C 155     1.841  50.330 -14.983  1.00 15.72
H
ATOM  4860 HB3 MET C 155     1.012  49.202 -14.238  1.00 15.72
H


ATOM  4861 HG2 MET C 155     2.879  47.818 -14.262  1.00 14.86
H
ATOM  4862 HG3 MET C 155     3.710  48.962 -14.994  1.00 14.86
H
ATOM  4863 HE1 MET C 155     4.961  48.538 -11.333  1.00 20.13
H
ATOM  4864 HE2 MET C 155     4.205  47.404 -12.150  1.00 20.13
H
ATOM  4865 HE3 MET C 155     5.369  48.239 -12.839  1.00 20.13
H
ATOM  4866 N   GLY C 156    2.542  50.415 -17.549  1.00 15.94
N
ATOM  4867 CA  GLY C 156     3.297  50.843 -18.714  1.00 17.37
C
ATOM  4868 C   GLY C 156    4.802  50.829 -18.544  1.00 19.77
C
ATOM  4869 O   GLY C 156    5.513  51.512 -19.281  1.00 21.61
O
ATOM  4870 H   GLY C 156    2.304  51.057 -17.029  1.00 19.13
H
ATOM  4871 HA2 GLY C 156     3.076  50.264 -19.461  1.00 20.84
H
ATOM  4872 HA3 GLY C 156     3.031  51.746 -18.947  1.00 20.84
H
ATOM  4873 N   LEU C 157    5.289  50.047 -17.585  1.00 18.34
N
ATOM  4874 CA  LEU C 157     6.714  50.015 -17.271  1.00 17.73
C
ATOM  4875 C   LEU C 157    7.415  48.890 -18.029  1.00 18.37
C
ATOM  4876 O   LEU C 157    7.014  47.726 -17.935  1.00 16.44
O
ATOM  4877 CB  LEU C 157     6.922  49.845 -15.762  1.00 19.33
C
ATOM  4878 CG  LEU C 157     8.315  50.182 -15.225  1.00 17.68
C
ATOM  4879 CD1 LEU C 157     8.587  51.676 -15.326  1.00 18.67
C
ATOM  4880 CD2 LEU C 157     8.458  49.706 -13.788  1.00 20.64
C
ATOM  4881 H   LEU C 157    4.812  49.522 -17.099  1.00 22.01
H
ATOM  4882 HA  LEU C 157     7.117  50.856 -17.538  1.00 21.28
H
ATOM  4883 HB2 LEU C 157     6.290  50.418 -15.302  1.00 23.19
H
ATOM  4884 HB3 LEU C 157     6.742  48.919 -15.534  1.00 23.19
H
ATOM  4885 HG  LEU C 157     8.979  49.720 -15.760  1.00 21.22
H
ATOM  4886 HD11 LEU C 157     9.474  51.859 -14.979  1.00 22.41
H
ATOM  4887 HD12 LEU C 157     8.533  51.944 -16.257  1.00 22.41
H
ATOM  4888 HD13 LEU C 157     7.922  52.153 -14.805  1.00 22.41
H
ATOM  4889 HD21 LEU C 157     9.346  49.930 -13.469  1.00 24.77
H
ATOM  4890 HD22 LEU C 157     7.788  50.147 -13.242  1.00 24.77
H
ATOM  4891 HD23 LEU C 157     8.327  48.745 -13.759  1.00 24.77
H
ATOM  4892 N   VAL C 158    8.462  49.247 -18.774  1.00 19.08
N
ATOM  4893 CA  VAL C 158     9.199  48.292 -19.595  1.00 18.04
C
ATOM  4894 C   VAL C 158   10.704  48.381 -19.349  1.00 20.45
C
ATOM  4895 O   VAL C 158   11.209  49.396 -18.873  1.00 18.61
O


ATOM  4896 CB  VAL C 158     8.931  48.512 -21.093  1.00 17.89
C
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ATOM  11148 HB2 PHE F  62    -1.722  24.233 -10.389  1.00 21.36
H
ATOM  11149 HB3 PHE F  62    -0.350  23.630 -10.914  1.00 21.36
H
ATOM  11150 HD1 PHE F  62     1.461  23.267  -9.165  1.00 21.28
H
ATOM  11151 HD2 PHE F  62    -2.378  23.790  -8.191  1.00 16.64
H
ATOM  11152 HE1 PHE F  62     1.872  22.372  -7.082  1.00 17.69
H
ATOM  11153 HE2 PHE F  62    -1.972  22.897  -6.108  1.00 19.47
H

ATOM  11154 HZ  PHE F  62    0.155  22.185  -5.548  1.00 19.74         H

ATOM  11155 N   SER F  63   -1.332  26.448 -12.416  1.00 15.98         N
ATOM  11156 CA  SER F  63    -1.421  26.766 -13.841  1.00 18.60
C

ATOM  11157 C   SER F  63   -0.623  28.019 -14.201  1.00 16.33         C

ATOM  11158 O   SER F  63   -0.291  28.231 -15.362  1.00 19.99         O
ATOM  11159 CB  SER F  63    -2.885  26.932 -14.267  1.00 22.18
C
ATOM  11160 OG  SER F  63    -3.490  28.031 -13.617  1.00 24.58
O


ATOM  11161 H   SER F  63   -2.062  26.565 -11.977  1.00 19.18         H
ATOM  11162 HA  SER F  63    -1.050  26.026 -14.347  1.00 22.32
H
ATOM  11163 HB2 SER F  63    -2.918  27.076 -15.225  1.00 26.61
H
ATOM  11164 HB3 SER F  63    -3.372  26.125 -14.037  1.00 26.61
H
ATOM  11165 HG  SER F  63    -4.290  28.105 -13.863  1.00 29.50
H

ATOM  11166 N   LEU F  64   -0.302  28.840 -13.206  1.00 15.47         N
ATOM  11167 CA  LEU F  64    0.496  30.041 -13.437  1.00 15.54
C

ATOM  11168 C   LEU F  64    1.991  29.730 -13.469  1.00 18.63         C

ATOM  11169 O   LEU F  64    2.785  30.540 -13.943  1.00 13.90         O
ATOM  11170 CB  LEU F  64    0.224  31.088 -12.353  1.00 15.69
C
ATOM  11171 CG  LEU F  64    -1.059  31.911 -12.474  1.00 16.40
C
ATOM  11172 CD1 LEU F  64    -1.282  32.718 -11.207  1.00 17.92
C
ATOM  11173 CD2 LEU F  64    -0.993  32.831 -13.679  1.00 21.55
C

ATOM  11174 H   LEU F  64   -0.534  28.724 -12.386  1.00 18.57         H
ATOM  11175 HA  LEU F  64    0.250  30.424 -14.293  1.00 18.64
H
ATOM  11176 HB2 LEU F  64    0.190  30.632 -11.498  1.00 18.83
H
ATOM  11177 HB3 LEU F  64    0.964  31.715 -12.350  1.00 18.83
H
ATOM  11178 HG  LEU F  64   -1.813  31.312 -12.590  1.00 19.68
H
ATOM  11179 HD11 LEU F  64    -2.099  33.233 -11.301  1.00 21.51
H
ATOM  11180 HD12 LEU F  64    -1.359  32.110 -10.456  1.00 21.51
H
ATOM  11181 HD13 LEU F  64    -0.528  33.314 -11.076  1.00 21.51
H
ATOM  11182 HD21 LEU F  64    -1.817  33.340 -13.732  1.00 25.87
H
ATOM  11183 HD22 LEU F  64    -0.238  33.432 -13.576  1.00 25.87
H
ATOM  11184 HD23 LEU F  64    -0.882  32.295 -14.479  1.00 25.87
H

ATOM  11185 N   PHE F  65    2.371  28.568 -12.946  1.00 14.47         N
ATOM  11186 CA  PHE F  65    3.784  28.206 -12.848  1.00 14.00
C

ATOM  11187 C   PHE F  65    4.326  27.740 -14.195  1.00 19.33         C

ATOM  11188 O   PHE F  65    3.872  26.736 -14.741  1.00 18.05         O
ATOM  11189 CB  PHE F  65    3.987  27.113 -11.797  1.00 12.53
C
ATOM  11190 CG  PHE F  65    5.433  26.750 -11.565  1.00 13.60
C
ATOM  11191 CD1 PHE F  65     6.370  27.728 -11.278  1.00 13.02
C
ATOM  11192 CD2 PHE F  65     5.845  25.432 -11.616  1.00 13.09
C
ATOM  11193 CE1 PHE F  65     7.694  27.395 -11.059  1.00 15.49
C
ATOM  11194 CE2 PHE F  65     7.169  25.093 -11.392  1.00 15.62
C
ATOM  11195 CZ  PHE F  65    8.092  26.076 -11.117  1.00 16.41
C


ATOM  11196 H   PHE F  65    1.833  27.972 -12.641  1.00 17.36         H
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ATOM  4897 CG1 VAL C 158    7.446  48.311 -21.402  1.00 18.67
C
ATOM  4898 CG2 VAL C 158    9.398  49.897 -21.522  1.00 16.63
C
ATOM  4899 H   VAL C 158   8.768  50.049 -18.819  1.00 22.89
H
ATOM  4900 HA  VAL C 158    8.911  47.394 -19.369  1.00 21.65
H
ATOM  4901 HB  VAL C 158    9.433  47.857 -21.602  1.00 21.47
H
ATOM  4902 HG11 VAL C 158    7.299  48.454 -22.350  1.00 22.40
H
ATOM  4903 HG12 VAL C 158    7.194  47.405 -21.161  1.00 22.40
H
ATOM  4904 HG13 VAL C 158    6.927  48.947 -20.887  1.00 22.40
H
ATOM  4905 HG21 VAL C 158    9.218  50.011 -22.469  1.00 19.96
H
ATOM  4906 HG22 VAL C 158    8.916  50.565 -21.010  1.00 19.96
H
ATOM  4907 HG23 VAL C 158   10.350  49.975 -21.354  1.00 19.96
H
ATOM  4908 N   HIS C 159   11.405  47.314 -19.716  1.00 16.25
N
ATOM  4909 CA  HIS C 159   12.812  47.135 -19.375  1.00 21.00
C
ATOM  4910 C   HIS C 159   13.698  47.078 -20.616  1.00 21.62
C
ATOM  4911 O   HIS C 159   13.470  46.273 -21.516  1.00 19.38
O
ATOM  4912 CB  HIS C 159   12.968  45.855 -18.552  1.00 25.11
C
ATOM  4913 CG  HIS C 159   14.385  45.484 -18.249  1.00 23.93
C
ATOM  4914 ND1 HIS C 159   15.041  44.462 -18.901  1.00 30.14
N
ATOM  4915 CD2 HIS C 159   15.265  45.983 -17.348  1.00 28.59
C
ATOM  4916 CE1 HIS C 159   16.269  44.354 -18.423  1.00 30.59
C
ATOM  4917 NE2 HIS C 159   16.430  45.265 -17.479  1.00 31.14
N
ATOM  4918 H   HIS C 159   11.079  46.663 -20.174  1.00 19.50
H
ATOM  4919 HA  HIS C 159   13.104  47.882 -18.830  1.00 25.20
H
ATOM  4920 HB2 HIS C 159   12.507  45.971 -17.706  1.00 30.13
H
ATOM  4921 HB3 HIS C 159   12.570  45.119 -19.043  1.00 30.13
H
ATOM  4922 HD1 HIS C 159   14.706  43.974 -19.525  1.00 36.16
H
ATOM  4923 HD2 HIS C 159   15.112  46.683 -16.756  1.00 34.31
H
ATOM  4924 HE1 HIS C 159   16.910  43.742 -18.703  1.00 36.71
H
ATOM  4925 HE2 HIS C 159   17.147  45.390 -17.022  1.00 37.37
H
ATOM  4926 N   ILE C 160   14.703  47.947 -20.656  1.00 25.17
N
ATOM  4927 CA  ILE C 160   15.714  47.923 -21.708  1.00 25.24
C
ATOM  4928 C   ILE C 160   16.835  46.958 -21.317  1.00 32.27
C
ATOM  4929 O   ILE C 160   17.581  47.241 -20.379  1.00 31.75
O
ATOM  4930 CB  ILE C 160   16.310  49.328 -21.947  1.00 29.66
C


ATOM  4931 CG1 ILE C 160   15.219  50.296 -22.407  1.00 26.24
C
ATOM  4932 CG2 ILE C 160   17.433  49.264 -22.976  1.00 33.94
C
ATOM  4933 CD1 ILE C 160   15.673  51.741 -22.507  1.00 35.20
C
ATOM  4934 H   ILE C 160   14.822  48.571 -20.076  1.00 30.21
H
ATOM  4935 HA  ILE C 160   15.314  47.613 -22.535  1.00 30.29
H
ATOM  4936 HB  ILE C 160   16.677  49.653 -21.110  1.00 35.59
H
ATOM  4937 HG12 ILE C 160   14.910  50.022 -23.284  1.00 31.49
H
ATOM  4938 HG13 ILE C 160   14.485  50.260 -21.774  1.00 31.49
H
ATOM  4939 HG21 ILE C 160   17.790  50.156 -23.108  1.00 40.72
H
ATOM  4940 HG22 ILE C 160   18.129  48.674 -22.646  1.00 40.72
H
ATOM  4941 HG23 ILE C 160   17.077  48.923 -23.811  1.00 40.72
H
ATOM  4942 HD11 ILE C 160   14.926  52.285 -22.803  1.00 42.25
H
ATOM  4943 HD12 ILE C 160   15.974  52.038 -21.635  1.00 42.25
H
ATOM  4944 HD13 ILE C 160   16.400  51.799 -23.147  1.00 42.25
H
ATOM  4945 N   PRO C 161   16.965  45.817 -22.025  1.00 32.29
N
ATOM  4946 CA  PRO C 161   18.018  44.864 -21.642  1.00 33.49
C
ATOM  4947 C   PRO C 161   19.426  45.439 -21.793  1.00 38.43
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ATOM  11197 HA  PHE F  65    4.292  28.965 -12.573  1.00 16.60
H
ATOM  11198 HB2 PHE F  65    3.619  27.419 -10.954  1.00 15.03
H
ATOM  11199 HB3 PHE F  65    3.523  26.312 -12.087  1.00 15.03
H
ATOM  11200 HD1 PHE F  65    6.108  28.619 -11.239  1.00 15.62
H
ATOM  11201 HD2 PHE F  65    5.225  24.764 -11.803  1.00 15.71
H
ATOM  11202 HE1 PHE F  65    8.316  28.061 -10.870  1.00 18.58
H
ATOM  11203 HE2 PHE F  65    7.436  24.202 -11.434  1.00 18.74
H
ATOM  11204 HZ  PHE F  65   8.982  25.851 -10.969  1.00 19.69
H

ATOM  11205 N   ARG F  66   5.282  28.493 -14.731  1.00 15.25           N
ATOM  11206 CA  ARG F  66    5.986  28.096 -15.943  1.00 17.61
C

ATOM  11207 C   ARG F  66   7.345  27.528 -15.594  1.00 25.02           C
ATOM  11208 O   ARG F  66   8.085  28.103 -14.797  1.00 25.04
O
ATOM  11209 CB  ARG F  66    6.142  29.273 -16.894  1.00 18.04
C
ATOM  11210 CG  ARG F  66    4.896  29.554 -17.694  1.00 22.17
C
ATOM  11211 CD  ARG F  66    4.516  30.995 -17.574  1.00 24.66
C
ATOM  11212 NE  ARG F  66    5.588  31.875 -18.023  1.00 26.85
N
ATOM  11213 CZ  ARG F  66    5.720  33.140 -17.643  1.00 26.45
C
ATOM  11214 NH1 ARG F  66    4.850  33.681 -16.797  1.00 25.82
N1+
ATOM  11215 NH2 ARG F  66    6.724  33.865 -18.107  1.00 29.31
N

ATOM  11216 H   ARG F  66   5.544  29.245 -14.407  1.00 18.30           H
ATOM  11217 HA  ARG F  66    5.476  27.406 -16.396  1.00 21.13
H
ATOM  11218 HB2 ARG F  66    6.352  30.068 -16.379  1.00 21.65
H
ATOM  11219 HB3 ARG F  66    6.860  29.082 -17.517  1.00 21.65
H
ATOM  11220 HG2 ARG F  66    5.060  29.356 -18.629  1.00 26.60
H
ATOM  11221 HG3 ARG F  66    4.165  29.014 -17.356  1.00 26.60
H
ATOM  11222 HD2 ARG F  66    3.734  31.165 -18.123  1.00 29.59
H
ATOM  11223 HD3 ARG F  66    4.325  31.199 -16.646  1.00 29.59
H
ATOM  11224 HE  ARG F  66    6.139  31.571 -18.609  1.00 32.21
H
ATOM  11225 HH11 ARG F  66    4.195  33.211 -16.495  1.00 30.99
H
ATOM  11226 HH12 ARG F  66    4.940  34.500 -16.552  1.00 30.99
H
ATOM  11227 HH21 ARG F  66    7.289  33.516 -18.654  1.00 35.18
H
ATOM  11228 HH22 ARG F  66    6.814  34.684 -17.861  1.00 35.18
H

ATOM  11229 N   ARG F  67   7.660  26.395 -16.206  1.00 21.33           N
ATOM  11230 CA  ARG F  67    8.865  25.653 -15.896  1.00 25.35
C



ATOM  11231 C   ARG F  67   9.889  25.840 -17.006  1.00 30.18           C
ATOM  11232 O   ARG F  67   9.701  26.664 -17.904  1.00 29.69
O
ATOM  11233 CB  ARG F  67    8.526  24.172 -15.705  1.00 22.56
C
ATOM  11234 CG  ARG F  67    7.327  23.950 -14.797  1.00 21.84
C
ATOM  11235 CD  ARG F  67    7.287  22.543 -14.225  1.00 23.91
C
ATOM  11236 NE  ARG F  67    7.381  21.509 -15.253  1.00 27.20
N
ATOM  11237 CZ  ARG F  67    6.343  20.966 -15.883  1.00 31.04
C
ATOM  11238 NH1 ARG F  67    5.103  21.355 -15.613  1.00 27.45
N1+
ATOM  11239 NH2 ARG F  67    6.548  20.027 -16.798  1.00 29.30
N

ATOM  11240 H   ARG F  67   7.178  26.030 -16.818  1.00 25.59           H
ATOM  11241 HA  ARG F  67    9.246  25.989 -15.069  1.00 30.42
H
ATOM  11242 HB2 ARG F  67    8.324  23.781 -16.570  1.00 27.07
H
ATOM  11243 HB3 ARG F  67    9.289  23.723 -15.309  1.00 27.07
H
ATOM  11244 HG2 ARG F  67    7.370  24.575 -14.056  1.00 26.21
H
ATOM  11245 HG3 ARG F  67    6.513  24.092 -15.306  1.00 26.21
H
ATOM  11246 HD2 ARG F  67    8.034  22.429 -13.617  1.00 28.69
H
ATOM  11247 HD3 ARG F  67    6.451  22.419 -13.751  1.00 28.69
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C
ATOM  4948  O   PRO C 161     20.344  45.006 -21.093  1.00 39.19
O
ATOM  4949  CB  PRO C 161     17.810  43.692 -22.612  1.00 34.26
C
ATOM  4950  CG  PRO C 161     16.429  43.848 -23.134  1.00 31.11
C
ATOM  4951  CD  PRO C 161     16.174  45.321 -23.164  1.00 27.41
C
ATOM  4952  HA  PRO C 161     17.887  44.559 -20.731  1.00 40.18
H
ATOM  4953  HB2 PRO C 161     18.456  43.747 -23.333  1.00 41.12
H
ATOM  4954  HB3 PRO C 161     17.902  42.853 -22.134  1.00 41.12
H
ATOM  4955  HG2 PRO C 161     16.374  43.474 -24.028  1.00 37.33
H
ATOM  4956  HG3 PRO C 161     15.804  43.405 -22.539  1.00 37.33
H
ATOM  4957  HD2 PRO C 161     16.497  45.705 -23.994  1.00 32.89
H
ATOM  4958  HD3 PRO C 161     15.231  45.505 -23.028  1.00 32.89
H
ATOM  4959  N   THR C 162     19.577  46.399 -22.701  1.00 41.08
N
ATOM  4960  CA  THR C 162     20.863  47.035 -22.974  1.00 43.65
C
ATOM  4961  C   THR C 162     21.495  47.605 -21.709  1.00 48.57
C
ATOM  4962  O   THR C 162     22.589  47.196 -21 318  1.00 52.38
O
ATOM  4963  CB  THR C 162     20.704  48.164 -24.030  1.00 41.19
C
ATOM  4964  OG1 THR C 162     20.643  47.588 -25.339  1.00 51.79
O
ATOM  4965  CG2 THR C 162     21.861  49.168 -23.983  1.00 50.32
C

ATOM  4966  H   THR C 162     18.934  46.707 -23.182  1.00 49.29
H
ATOM  4967  HA  THR C 162     21.470  46.371 -23.337  1.00 52.38
H
ATOM  4968  HB  THR C 162     19.880  48.646 -23.857  1.00 49.42
H
ATOM  4969  HG1 THR C 162     19.988  47.065 -25.393  1.00 62.14
H
ATOM  4970 HG21 THR C 162     21.730  49.857 -24.653  1.00 60.38
H
ATOM  4971 HG22 THR C 162     21.904  49.584 -23.107  1.00 60.38
H
ATOM  4972 HG23 THR C 162     22.701  48.714 -24.157  1.00 60.38
H
ATOM  4973  N   ASN C 163     20.799  48.544 -21.075  1.00 46.77
N
ATOM  4974  CA  ASN C 163     21.340  49.264 -19.928  1.00 44.73
C
ATOM  4975  C   ASN C 163     20.590  48.965 -18.630  1.00 46.38
C
ATOM  4976  O   ASN C 163     20.716  49.698 -17.648  1.00 47.39
O
ATOM  4977  CB  ASN C 163     21.324  50.768 -20.213  1.00 48.30
C
ATOM  4978  CG  ASN C 163     19.972  51.258 -20.685  1.00 47.25
C
ATOM  4979  OD1 ASN C 163     18.934  50.711 -20.313  1.00 46.02
O
ATOM  4980  ND2 ASN C 163     19.978  52.292 -21.520  1.00 46.65
N
ATOM  4981  H   ASN C 163     20.003  48.784 -21.292  1.00 56.13
H
ATOM  4982  HA  ASN C 163     22.264  48.998 -19.802  1.00 53.68
H
ATOM  4983  HB2 ASN C 163     21.550  51.246 -19.399  1.00 57.96
H
ATOM  4984  HB3 ASN C 163     21.974  50.965 -20.905  1.00 57.96
H
ATOM  4985 HD21 ASN C 163     19.236  52.608 -21.817  1.00 55.98
H
ATOM  4986 HD22 ASN C 163     20.724  52.645 -21.762  1.00 55.98
H
ATOM  4987  N   GLY C 164     19.813  47.885 -18.633  1.00 43.17
N
ATOM  4988  CA  GLY C 164     19.118  47.429 -17.441  1.00 38.67
C
ATOM  4989  C   GLY C 164     18.202  48.466 -16.815  1.00 39.65
C
ATOM  4990  O   GLY C 164     17.958  48.435 -15.609  1.00 42.49
O
ATOM  4991  H   GLY C 164     19.673  47.394 -19.326  1.00 51.80
H
ATOM  4992  HA2 GLY C 164     18.584  46.651 -17.664  1.00 46.40
H
ATOM  4993  HA3 GLY C 164     19.772  47.165 -16.775  1.00 46.40
H
ATOM  4994  N   SER C 165     17.686  49.376 -17.636  1.00 34.82
N
ATOM  4995  CA  SER C 165     16.856  50.474 -17.153  1.00 32.20
C
ATOM  4996  C   SER C 165     15.364  50.169 -17.287  1.00 27.87
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H
ATOM 11248  HE  ARG F  67      8.166  21.230 -15.466  1.00 32.65
H
ATOM 11249 HH11 ARG F  67      4.962  21.962 -15.021  1.00 32.94
H
ATOM 11250 HH12 ARG F  67      4.440  20.998 -16.028  1.00 32.94
H
ATOM 11251 HH21 ARG F  67      7.349  19.771 -16.980  1.00 35.16
H
ATOM 11252 HH22 ARG F  67      5.880  19.676 -17.211  1.00 35.16
H

ATOM 11253  N   VAL F  68     10.975  25.085 -16.925  1.00 32.53           N
ATOM 11254  CA  VAL F  68     11.988  25.069 -17.970  1.00 34.51
C

ATOM 11255  C   VAL F  68     12.281  23.609 -18.307  1.00 38.41           C
ATOM 11256  O   VAL F  68     12.207  22.750 -17.429  1.00 36.57
O
ATOM 11257  CB  VAL F  68     13.276  25.800 -17.529  1.00 41.03
C
ATOM 11258  CG1 VAL F  68     13.813  25.221 -16.223  1.00 39.01
C
ATOM 11259  CG2 VAL F  68     14.334  25.746 -18.624  1.00 43.43
C

ATOM 11260  H   VAL F  68     11.152  24.564 -16.264  1.00 39.04           H
ATOM 11261  HA  VAL F  68     11.642  25.505 -18.763  1.00 41.42
H
ATOM 11262  HB  VAL F  68     13.063  26.733 -17.371  1.00 49.24
H
ATOM 11263 HG11 VAL F  68     14.619  25.699 -15.974  1.00 46.81
H
ATOM 11264 HG12 VAL F  68     13.140  25.323 -15.532  1.00 46.81
H
ATOM 11265 HG13 VAL F  68     14.014  24.280 -16.354  1.00 46.81
H

ATOM 11266 HG21 VAL F  68     15.128  26.213 -18.318  1.00 52.11
H
ATOM 11267 HG22 VAL F  68     14.547  24.819 -18.811  1.00 52.11
H
ATOM 11268 HG23 VAL F  68     13.985  26.174 -19.421  1.00 52.11
H
ATOM 11269  N   PRO F  69     12.585  23.312 -19.583  1.00 40.10
N
ATOM 11270  CA  PRO F  69     12.933  21.923 -19.904  1.00 43.70
C
ATOM 11271  C   PRO F  69     14.276  21.526 -19.307  1.00 46.21
C
ATOM 11272  O   PRO F  69     15.248  22.268 -19.453  1.00 49.34
O
ATOM 11273  CB  PRO F  69     12.994  21.915 -21.437  1.00 42.03
C
ATOM 11274  CG  PRO F  69     12.269  23.147 -21.865  1.00 44.28
C
ATOM 11275  CD  PRO F  69     12.538  24.147 -20.794  1.00 37.27
C
ATOM 11276  HA  PRO F  69     12.243  21.314 -19.599  1.00 52.45
H
ATOM 11277  HB2 PRO F  69     13.919  21.944 -21.728  1.00 50.44
H
ATOM 11278  HB3 PRO F  69     12.552  21.122 -21.777  1.00 50.44
H
ATOM 11279  HG2 PRO F  69     12.619  23.453 -22.716  1.00 53.14
H
ATOM 11280  HG3 PRO F  69     11.319  22.961 -21.930  1.00 53.14
H
ATOM 11281  HD2 PRO F  69     13.392  24.582 -20.941  1.00 44.72
H
ATOM 11282  HD3 PRO F  69     11.813  24.789 -20.737  1.00 44.72
H
ATOM 11283  N   THR F  70     14.325  20.373 -18.647  1.00 48.67
N
ATOM 11284  CA  THR F  70     15.550  19.908 -18.009  1.00 60.44
C
ATOM 11285  C   THR F  70     15.727  18.407 -18.178  1.00 59.62
C
ATOM 11286  O   THR F  70     14.758  17.671 -18.367  1.00 55.15
O
ATOM 11287  CB  THR F  70     15.565  20.240 -16.507  1.00 59.77
C
ATOM 11288  OG1 THR F  70     14.479  19.568 -15.855  1.00 58.31
O
ATOM 11289  CG2 THR F  70     15.441  21.742 -16.286  1.00 62.29
C
ATOM 11290  H   THR F  70     13.657  19.840 -18.554  1.00 58.41
H
ATOM 11291  HA  THR F  70     16.309  20.349 -18.422  1.00 72.53
H
ATOM 11292  HB  THR F  70     16.404  19.943 -16.121  1.00 71.73
H
ATOM 11293  HG1 THR F  70     14.482  19.746 -15.034  1.00 69.97
H
ATOM 11294 HG21 THR F  70     15.451  21.939 -15.336  1.00 74.75
H
ATOM 11295 HG22 THR F  70     16.182  22.201 -16.711  1.00 74.75
H
ATOM 11296 HG23 THR F  70     14.609  22.065 -16.666  1.00 74.75
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C
ATOM  4997  O   SER C 165     14.943  49.486 -18.223  1.00 25.68
O
ATOM  4998  CB  SER C 165     17.193  51.756 -17.917  1.00 38.18
C
ATOM  4999  OG  SER C 165     16.391  52.837 -17.475  1.00 43.62
O
ATOM  5000  H   SER C 165     17.803  49.378 -18.488  1.00 41.79
H


ATOM  5001  HA  SER C 165     17.048  50.625 -16.214  1.00 38.64
H
ATOM  5002  HB2 SER C 165     18.126  51.976 -17.769  1.00 45.81
H
ATOM  5003  HB3 SER C 165     17.032  51.611 -18.863  1.00 45.81
H
ATOM  5004  HG  SER C 165     16.586  53.533 -17.903  1.00 52.34
H
ATOM  5005  N   TRP C 166     14.579  50.679 -16.340  1.00 31.94
N
ATOM  5006  CA  TRP C 166     13.119  50.583 -16.387  1.00 23.07
C
ATOM  5007  C   TRP C 166     12.515  51.944 -16.699  1.00 27.85
C
ATOM  5008  O   TRP C 166     12.805  52.927 -16.018  1.00 29.97
O
ATOM  5009  CB  TRP C 166     12.561  50.059 -15.063  1.00 22.45
C
ATOM  5010  CG  TRP C 166     12.817  48.608 -14.846  1.00 20.87
C
ATOM  5011  CD1 TRP C 166     13.887  48.054 -14.214  1.00 28.32
C
ATOM  5012  CD2 TRP C 166     11.989  47.519 -15.267  1.00 20.19
C
ATOM  5013  NE1 TRP C 166     13.779  46.685 -14.212  1.00 29.81
N
ATOM  5014  CE2 TRP C 166     12.622  46.331 -14.853  1.00 21.03
C
ATOM  5015  CE3 TRP C 166     10.773  47.434 -15.951  1.00 18.26
C
ATOM  5016  CZ2 TRP C 166     12.082  45.074 -15.100  1.00 20.42
C
ATOM  5017  CZ3 TRP C 166     10.238  46.186 -16.198  1.00 19.14
C
ATOM  5018  CH2 TRP C 166     10.890  45.020 -15.772  1.00 22.75
C
ATOM  5019  H   TRP C 166     14.873  51.093 -15.646  1.00 38.33
H
ATOM  5020  HA  TRP C 166     12.861  49.968 -17.091  1.00 27.68
H
ATOM  5021  HB2 TRP C 166     12.974  50.547 -14.334  1.00 26.94
H
ATOM  5022  HB3 TRP C 166     11.601  50.197 -15.051  1.00 26.94
H
ATOM  5023  HD1 TRP C 166     14.591  48.532 -13.838  1.00 33.98
H
ATOM  5024  HE1 TRP C 166     14.345  46.139 -13.865  1.00 35.77
H
ATOM  5025  HE3 TRP C 166     10.335  48.203 -16.237  1.00 21.91
H
ATOM  5026  HZ2 TRP C 166     12.513  44.299 -14.818  1.00 24.50
H
ATOM  5027  HZ3 TRP C 166      9.429  46.117 -16.653  1.00 22.96
H
ATOM  5028  HH2 TRP C 166     10.506  44.192 -15.952  1.00 27.30
H
ATOM  5029  N   GLN C 167     11.676  52.003 -17.727  1.00 22.33
N
ATOM  5030  CA  GLN C 167     11.066  53.265 -18.126  1.00 24.92
C
ATOM  5031  C   GLN C 167      9.614  53.084 -18.554  1.00 20.54
C
ATOM  5032  O   GLN C 167      9.185  51.984 -18.912  1.00 18.82
O
ATOM  5033  CB  GLN C 167     11.872  53.904 -19.257  1.00 26.21
C
ATOM  5034  CG  GLN C 167     11.910  53.089 -20.540  1.00 31.52
C
ATOM  5035  CD  GLN C 167     12.781  53.730 -21.610  1.00 33.46
C


ATOM  5036  OE1 GLN C 167     13.768  54.399 -21.306  1.00 35.78
O
ATOM  5037  NE2 GLN C 167     12.412  53.532 -22.870  1.00 34.85
N
ATOM  5038  H   GLN C 167     11.444  51.330 -18.209  1.00 26.80
H
ATOM  5039  HA  GLN C 167     11.080  53.873 -17.370  1.00 29.90
H
ATOM  5040  HB2 GLN C 167     11.482  54.767 -19.467  1.00 31.45
H
ATOM  5041  HB3 GLN C 167     12.787  54.024 -18.958  1.00 31.45
H
ATOM  5042  HG2 GLN C 167     12.269  52.209 -20.347  1.00 37.82
H
ATOM  5043  HG3 GLN C 167     11.009  53.011 -20.892  1.00 37.82
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H
ATOM 11297  N   SER F  71     16.978  17.966 -18.107  1.00 61.53
N
ATOM 11298  CA  SER F  71     17.303  16.549 -18.178  1.00 66.52
C
ATOM 11299  C   SER F  71     16.917  15.841 -16.883  1.00 61.49
C
ATOM 11300  O   SER F  71     16.835  14.613 -16.840  1.00 59.94
O


ATOM 11301  CB  SER F  71     18.795  16.361 -18.457  1.00 70.57
C
ATOM 11302  OG  SER F  71     19.580  17.021 -17.479  1.00 74.17
O
ATOM 11303  H   SER F  71     17.665  18.476 -18.016  1.00 73.84
H
ATOM 11304  HA  SER F  71     16.805  16.144 -18.905  1.00 79.82
H
ATOM 11305  HB2 SER F  71     19.002  15.414 -18.441  1.00 84.68
H
ATOM 11306  HB3 SER F  71     19.002  16.731 -19.330  1.00 84.68
H
ATOM 11307  HG  SER F  71     20.396  16.911 -17.642  1.00 89.01
H
ATOM 11308  N   THR F  72     16.682  16.626 -15.833  1.00 62.01
N
ATOM 11309  CA  THR F  72     16.339  16.091 -14.517  1.00 54.74
C
ATOM 11310  C   THR F  72     15.134  15.150 -14.598  1.00 49.84
C
ATOM 11311  O   THR F  72     14.027  15.588 -14.906  1.00 53.35
O
ATOM 11312  CB  THR F  72     16.026  17.225 -13.522  1.00 57.21
C
ATOM 11313  OG1 THR F  72     17.057  18.220 -13.583  1.00 59.71
O
ATOM 11314  CG2 THR F  72     15.929  16.683 -12.103  1.00 49.20
C
ATOM 11315  H   THR F  72     16.715  17.485 -15.859  1.00 74.41
H
ATOM 11316  HA  THR F  72     17.093  15.587 -14.173  1.00 65.69
H
ATOM 11317  HB  THR F  72     15.176  17.629 -13.753  1.00 68.66
H
ATOM 11318  HG1 THR F  72     16.890  18.840 -13.042  1.00 71.65
H
ATOM 11319 HG21 THR F  72     15.732  17.405 -11.485  1.00 59.04
H
ATOM 11320 HG22 THR F  72     15.223  16.021 -12.049  1.00 59.04
H
ATOM 11321 HG23 THR F  72     16.769  16.270 -11.848  1.00 59.04
H
ATOM 11322  N   PRO F  73     15.345  13.851 -14.327  1.00 47.67
N
ATOM 11323  CA  PRO F  73     14.252  12.884 -14.470  1.00 42.23
C
ATOM 11324  C   PRO F  73     13.246  12.910 -13.323  1.00 44.81
C
ATOM 11325  O   PRO F  73     12.230  12.217 -13.393  1.00 43.07
O
ATOM 11326  CB  PRO F  73     14.984  11.543 -14.503  1.00 43.10
C
ATOM 11327  CG  PRO F  73     16.189  11.769 -13.668  1.00 42.60
C
ATOM 11328  CD  PRO F  73     16.597  13.199 -13.901  1.00 44.19
C
ATOM 11329  HA  PRO F  73     13.788  13.019 -15.311  1.00 50.67
H
ATOM 11330  HB2 PRO F  73     14.422  10.851 -14.121  1.00 51.72
H
ATOM 11331  HB3 PRO F  73     15.231  11.325 -15.416  1.00 51.72
H
ATOM 11332  HG2 PRO F  73     15.967  11.627 -12.734  1.00 51.12
H
ATOM 11333  HG3 PRO F  73     16.894  11.164 -13.946  1.00 51.12
H
ATOM 11334  HD2 PRO F  73     16.923  13.596 -13.078  1.00 53.02
H
ATOM 11335  HD3 PRO F  73     17.261  13.249 -14.607  1.00 53.02
H


ATOM 11336  N   TYR F  74     13.524  13.683 -12.280  1.00 43.68
N
ATOM 11337  CA  TYR F  74     12.612  13.764 -11.146  1.00 36.00
C
ATOM 11338  C   TYR F  74     12.852  15.007 -10.302  1.00 34.98
C

ATOM 11339  O   TYR F  74     13.985  15.312  -9.931  1.00 37.75           O
ATOM 11340  CB  TYR F  74     12.740  12.518 -10.271  1.00 34.00
C
ATOM 11341  CG  TYR F  74     11.779  12.501  -9.107  1.00 33.28
C
ATOM 11342  CD1 TYR F  74     10.522  11.926  -9.231  1.00 37.86
C
ATOM 11343  CD2 TYR F  74     12.124  13.064  -7.884  1.00 31.82
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ATOM  5044 HE21 GLN C 167    12.872  53.873 -23.511  1.00 41.82
H
ATOM  5045 HE22 GLN C 167    11.713  53.062 -23.044  1.00 41.82
H
ATOM  5046  N   TRP C 168    8.865  54.180 -18.504  1.00 19.48
N
ATOM  5047  CA  TRP C 168    7.471  54.186 -18.926  1.00 24.91
C
ATOM  5048  C   TRP C 168    7.401  54.322 -20.439  1.00 28.19
C
ATOM  5049  O   TRP C 168    8.390  54.684 -21.077  1.00 29.68
O
ATOM  5050  CB  TRP C 168    6.715  55.320 -18.236  1.00 22.90
C
ATOM  5051  CG  TRP C 168    6.806  55.241 -16.746  1.00 18.59
C
ATOM  5052  CD1 TRP C 168    7.589  56.003 -15.932  1.00 20.28
C
ATOM  5053  CD2 TRP C 168    6.101  54.331 -15.890  1.00 18.57
C
ATOM  5054  NE1 TRP C 168    7.410  55.631 -14.620  1.00 19.79
N
ATOM  5055  CE2 TRP C 168    6.501  54.607 -14.568  1.00 18.17
C
ATOM  5056  CE3 TRP C 168    5.168  53.313 -16.114  1.00 19.34
C
ATOM  5057  CZ2 TRP C 168    6.000  53.903 -13.474  1.00 19.51
C
ATOM  5058  CZ3 TRP C 168    4.672  52.614 -15.028  1.00 18.19
C
ATOM  5059  CH2 TRP C 168    5.090  52.912 -13.724  1.00 17.53
C
ATOM  5060  H   TRP C 168    9.146  54.943 -18.225  1.00 23.37
H
ATOM  5061  HA  TRP C 168    7.056  53.346 -18.676  1.00 29.89
H
ATOM  5062  HB2 TRP C 168    7.091  56.169 -18.516  1.00 27.48
H
ATOM  5063  HB3 TRP C 168    5.778  55.272 -18.483  1.00 27.48
H
ATOM  5064  HD1 TRP C 168    8.158  56.679 -16.222  1.00 24.34
H
ATOM  5065  HE1 TRP C 168    7.804  55.985 -13.942  1.00 23.74
H
ATOM  5066  HE3 TRP C 168    4.886  53.110 -16.977  1.00 23.20
H
ATOM  5067  HZ2 TRP C 168    6.276  54.098 -12.607  1.00 23.42
H
ATOM  5068  HZ3 TRP C 168    4.051  51.936 -15.166  1.00 21.83
H
ATOM  5069  HH2 TRP C 168    4.739  52.427 -13.013  1.00 21.04
H
ATOM  5070  N   GLU C 169    6.242  54.030 -21.020  1.00 30.70
N


ATOM  5071  CA  GLU C 169    6.122  54.022 -22.474  1.00 35.60
C
ATOM  5072  C   GLU C 169    6.155  55.434 -23.049  1.00 36.18
C
ATOM  5073  O   GLU C 169    6.337  55.608 -24.254  1.00 37.85
O
ATOM  5074  CB  GLU C 169    4.844  53.301 -22.910  1.00 39.61
C
ATOM  5075  CG  GLU C 169    3.559  53.974 -22.490  1.00 33.74
C
ATOM  5076  CD  GLU C 169    2.372  53.021 -22.532  1.00 38.01
C
ATOM  5077  OE1 GLU C 169    2.228  52.285 -23.532  1.00 37.73
O
ATOM  5078  OE2 GLU C 169    1.587  53.002 -21.562  1.00 35.40
O1-
ATOM  5079  H   GLU C 169    5.517  53.835 -20.600  1.00 36.84
H
ATOM  5080  HA  GLU C 169    6.876  53.536 -22.844  1.00 42.72
H
ATOM  5081  HB2 GLU C 169    4.840  53.240 -23.878  1.00 47.53
H
ATOM  5082  HB3 GLU C 169    4.847  52.410 -22.528  1.00 47.53
H
ATOM  5083  HG2 GLU C 169    3.653  54.299 -21.581  1.00 40.49
H
ATOM  5084  HG3 GLU C 169    3.375  54.712 -23.092  1.00 40.49
H
ATOM  5085  N   ASP C 170    5.994  56.440 -22.192  1.00 34.47
N
ATOM  5086  CA  ASP C 170    6.132  57.827 -22.629  1.00 33.57
C
ATOM  5087  C   ASP C 170    7.609  58.221 -22.703  1.00 33.88
C
ATOM  5088  O   ASP C 170    7.943  59.327 -23.127  1.00 37.21
O
ATOM  5089  CB  ASP C 170    5.363  58.777 -21.699  1.00 36.54
C
ATOM  5090  CG  ASP C 170    6.038  58.968 -20.348  1.00 37.03
C
ATOM  5091  OD1 ASP C 170    6.943  58.181 -19.995  1.00 34.20
O
ATOM  5092  OD2 ASP C 170    5.647  59.913 -19.628  1.00 37.14
O1-
ATOM  5093  H   ASP C 170    5.805  56.348 -21.358  1.00 41.35
H
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ATOM 11344  CE1 TYR F  74     9.637  11.908  -8.173  1.00 40.32
C
ATOM 11345  CE2 TYR F  74    11.245  13.051  -6.819  1.00 28.53
C
ATOM 11346  CZ  TYR F  74    10.003  12.472  -6.969  1.00 35.36
C
ATOM 11347  OH  TYR F  74     9.120  12.456  -5.915  1.00 37.99
O
ATOM 11348  H   TYR F  74    14.230  14.169 -12.204  1.00 52.42
H
ATOM 11349  HA  TYR F  74    11.702  13.801 -11.479  1.00 43.20
H
ATOM 11350  HB2 TYR F  74    12.565  11.734 -10.814  1.00 40.80
H
ATOM 11351  HB3 TYR F  74    13.641  12.477  -9.913  1.00 40.80
H
ATOM 11352  HD1 TYR F  74    10.273  11.545 -10.042  1.00 45.43
H
ATOM 11353  HD2 TYR F  74    12.961  13.455  -7.781  1.00 38.18
H
ATOM 11354  HE1 TYR F  74     8.799  11.519  -8.272  1.00 48.39
H
ATOM 11355  HE2 TYR F  74    11.489  13.431  -6.006  1.00 34.24
H

ATOM 11356  HH  TYR F  74     9.464  12.829  -5.246  1.00 45.59          H

ATOM 11357  N   GLU F  75    11.767  15.712  -9.998  1.00 32.78          N
ATOM 11358  CA  GLU F  75    11.816  16.888  -9.141  1.00 25.81
C

ATOM 11359  C   GLU F  75    10.590  16.935  -8.235  1.00 29.12          C

ATOM 11360  O   GLU F  75     9.484  16.581  -8.649  1.00 30.51          O
ATOM 11361  CB  GLU F  75    11.892  18.167  -9.974  1.00 35.92
C
ATOM 11362  CG  GLU F  75    13.193  18.358 -10.729  1.00 38.70
C
ATOM 11363  CD  GLU F  75    13.265  19.711 -11.411  1.00 41.84
C
ATOM 11364  OE1 GLU F  75    12.460  19.955 -12.333  1.00 39.49
O
ATOM 11365  OE2 GLU F  75    14.120  20.535 -11.018  1.00 43.44
O1-
ATOM 11366  H   GLU F  75    10.977  15.524 -10.282  1.00 39.33
H
ATOM 11367  HA  GLU F  75    12.607  16.843  -8.581  1.00 30.97
H
ATOM 11368  HB2 GLU F  75    11.174  18.154 -10.626  1.00 43.10
H
ATOM 11369  HB3 GLU F  75    11.781  18.928  -9.383  1.00 43.10
H
ATOM 11370  HG2 GLU F  75    13.934  18.294 -10.107  1.00 46.44
H


ATOM 11371  HG3 GLU F  75    13.269  17.672 -11.411  1.00 46.44
H

ATOM 11372  N   ASP F  76    10.798  17.370  -6.998  1.00 27.11          N

ATOM 11373  CA  ASP F  76     9.716  17.527  -6.037  1.00 25.30          C

ATOM 11374  C   ASP F  76     9.802  18.922  -5.426  1.00 18.73          C

ATOM 11375  O   ASP F  76    10.778  19.253  -4.754  1.00 19.05          O

ATOM 11376  CB  ASP F  76     9.793  16.447  -4.956  1.00 25.98          C

ATOM 11377  CG  ASP F  76     8.511  16.323  -4.158  1.00 33.41          C
ATOM 11378  OD1 ASP F  76     7.419  16.365  -4.766  1.00 28.50
O
ATOM 11379  OD2 ASP F  76     8.596  16.176  -2.919  1.00 44.45
O1-

ATOM 11380  H   ASP F  76    11.571  17.585  -6.687  1.00 32.53          H

ATOM 11381  HA  ASP F  76     8.864  17.444  -6.493  1.00 30.36          H
ATOM 11382  HB2 ASP F  76     9.969  15.591  -5.377  1.00 31.18
H
ATOM 11383  HB3 ASP F  76    10.509  16.667  -4.340  1.00 31.18
H

ATOM 11384  N   LEU F  77     8.786  19.738  -5.689  1.00 15.80          N

ATOM 11385  CA  LEU F  77     8.767  21.135  -5.256  1.00 15.34          C

ATOM 11386  C   LEU F  77     7.693  21.357  -4.206  1.00 19.57          C

ATOM 11387  O   LEU F  77     6.536  20.990  -4.414  1.00 16.25          O

ATOM 11388  CB  LEU F  77     8.520  22.055  -6.447  1.00 13.25          C

ATOM 11389  CG  LEU F  77     9.510  21.914  -7.604  1.00 18.29          C
ATOM 11390  CD1 LEU F  77     8.906  22.436  -8.889  1.00 24.51
C
ATOM 11391  CD2 LEU F  77    10.790  22.653  -7.281  1.00 21.55
C

ATOM 11392  H   LEU F  77     8.083  19.504  -6.125  1.00 18.96          H

ATOM 11393  HA  LEU F  77     9.626  21.362  -4.868  1.00 18.41          H
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ATOM  5094 HA  ASP C 170     5.756  57.914 -23.519  1.00 40.28
H
ATOM  5095 HB2 ASP C 170     5.293  59.646 -22.124  1.00 43.84
H
ATOM  5096 HB3 ASP C 170     4.477  58.414 -21.541  1.00 43.84
H
ATOM  5097 N   GLY C 171    8.484  57.311 -22.277  1.00 32.03
N
ATOM  5098 CA  GLY C 171    9.920  57.506 -22.382  1.00 35.58
C
ATOM  5099 C   GLY C 171   10.576  57.946 -21.087  1.00 32.10
C
ATOM  5100 O   GLY C 171   11.790  57.817 -20.924  1.00 32.64
O
ATOM  5101 H   GLY C 171    8.262  56.562 -21.919  1.00 38.44
H
ATOM  5102 HA2 GLY C 171    10.334  56.676 -22.664  1.00 42.69
H
ATOM  5103 HA3 GLY C 171    10.101  58.180 -23.056  1.00 42.69
H
ATOM  5104 N   SER C 172    9.777  58.463 -20.159  1.00 32.52
N
ATOM  5105 CA  SER C 172    10.301  58.957 -18.891  1.00 30.32
C


ATOM  5106 C   SER C 172   10.860  57.828 -18.032  1.00 29.58
C
ATOM  5107 O   SER C 172   10.442  56.675 -18.146  1.00 27.69
O
ATOM  5108 CB  SER C 172    9.213  59.703 -18.117  1.00 33.73
C
ATOM  5109 OG  SER C 172    8.138  58.839 -17.786  1.00 33.64
O
ATOM  5110 H   SER C 172    8.924  58.538 -20.240  1.00 39.02
H
ATOM  5111 HA  SER C 172    11.022  59.582 -19.070  1.00 36.38
H
ATOM  5112 HB2 SER C 172    9.595  60.058 -17.299  1.00 40.48
H
ATOM  5113 HB3 SER C 172    8.876  60.428 -18.666  1.00 40.48
H
ATOM  5114 HG  SER C 172    7.797  58.524 -18.486  1.00 40.37
H
ATOM  5115 N   ILE C 173   11.811  58.174 -17.170  1.00 28.71
N
ATOM  5116 CA  ILE C 173    12.416  57.214 -16.256  1.00 33.40
C
ATOM  5117 C   ILE C 173   11.462  56.904 -15.106  1.00 29.48
C
ATOM  5118 O   ILE C 173   10.612  57.725 -14.757  1.00 29.36
O
ATOM  5119 CB  ILE C 173    13.759  57.752 -15.691  1.00 31.94
C
ATOM  5120 CG1 ILE C 173    14.496  56.691 -14.868  1.00 40.78
C
ATOM  5121 CG2 ILE C 173    13.529  59.000 -14.843  1.00 39.11
C
ATOM  5122 CD1 ILE C 173    14.933  55.482 -15.661  1.00 47.43
C
ATOM  5123 H   ILE C 173   12.126  58.971 -17.095  1.00 34.45
H
ATOM  5124 HA  ILE C 173    12.596  56.388 -16.732  1.00 40.08
H
ATOM  5125 HB  ILE C 173    14.324  57.997 -16.440  1.00 38.33
H
ATOM  5126 HG12 ILE C 173    15.290  57.093 -14.482  1.00 48.94
H
ATOM  5127 HG13 ILE C 173    13.908  56.383 -14.160  1.00 48.94
H
ATOM  5128 HG21 ILE C 173    14.382  59.313 -14.504  1.00 46.93
H
ATOM  5129 HG22 ILE C 173    13.120  59.685 -15.395  1.00 46.93
H
ATOM  5130 HG23 ILE C 173    12.941  58.776 -14.105  1.00 46.93
H
ATOM  5131 HD11 ILE C 173    14.151  55.057 -16.044  1.00 56.92
H
ATOM  5132 HD12 ILE C 173    15.534  55.768 -16.366  1.00 56.92
H
ATOM  5133 HD13 ILE C 173    15.389  54.864 -15.068  1.00 56.92
H
ATOM  5134 N   LEU C 174   11.589  55.712 -14.534  1.00 25.61
N
ATOM  5135 CA  LEU C 174    10.914  55.404 -13.281  1.00 23.61
C
ATOM  5136 C   LEU C 174   11.490  56.287 -12.185  1.00 26.93
C
ATOM  5137 O   LEU C 174   12.652  56.136 -11.819  1.00 26.37
O
ATOM  5138 CB  LEU C 174    11.087  53.932 -12.917  1.00 21.37
C
ATOM  5139 CG  LEU C 174    10.642  53.521 -11.513  1.00 18.27
C
ATOM  5140 CD1 LEU C 174     9.132  53.664 -11.367  1.00 19.70
C


ATOM  5141 CD2 LEU C 174    11.086  52.100 -11.213  1.00 21.64
C
ATOM  5142 H   LEU C 174   12.059  55.066 -14.851  1.00 30.74
H

ATOM  11394 HB2 LEU F  77    7.635  21.872  -6.798  1.00 15.90
H
ATOM  11395 HB3 LEU F  77    8.562  22.974  -6.138  1.00 15.90
H

ATOM  11396 HG  LEU F  77   9.724  20.976  -7.728  1.00 21.95        H
ATOM  11397 HD11 LEU F  77    9.553  22.336  -9.605  1.00 29.41
H
ATOM  11398 HD12 LEU F  77    8.106  21.927  -9.092  1.00 29.41
H
ATOM  11399 HD13 LEU F  77    8.682  23.373  -8.775  1.00 29.41
H
ATOM  11400 HD21 LEU F  77    11.407  22.554  -8.024  1.00 25.86
H
ATOM  11401 HD22 LEU F  77    10.587  23.591  -7.143  1.00 25.86
H
ATOM  11402 HD23 LEU F  77    11.178  22.276  -6.476  1.00 25.86
H

ATOM  11403 N   THR F  78   8.072  21.965  -3.086  1.00 13.26        N

ATOM  11404 CA  THR F  78    7.124  22.221  -2.009  1.00 15.50        C

ATOM  11405 C   THR F  78   7.129  23.689  -1.608  1.00 15.27        C



ATOM  11406 O   THR F  78   8.182  24.310  -1.481  1.00 15.66        O

ATOM  11407 CB  THR F  78    7.432  21.361  -0.771  1.00 15.80        C
ATOM  11408 OG1 THR F  78    7.512  19.982  -1.150  1.00 21.65
O
ATOM  11409 CG2 THR F  78    6.354  21.526   0.287  1.00 19.77
C

ATOM  11410 H   THR F  78   8.872  22.239  -2.925  1.00 15.91        H

ATOM  11411 HA  THR F  78    6.231  21.997  -2.315  1.00 18.60        H

ATOM  11412 HB  THR F  78   8.280  21.639  -0.389  1.00 18.96        H
ATOM  11413 HG1 THR F  78    8.122  19.875  -1.718  1.00 25.98
H
ATOM  11414 HG21 THR F  78    6.562  20.978   1.060  1.00 23.73
H
ATOM  11415 HG22 THR F  78    6.299  22.454   0.563  1.00 23.73
H
ATOM  11416 HG23 THR F  78    5.494  21.252  -0.071  1.00 23.73
H

ATOM  11417 N   TYR F  79   5.934  24.232  -1.417  1.00 14.59        N

ATOM  11418 CA  TYR F  79    5.771  25.580  -0.895  1.00 14.36        C

ATOM  11419 C   TYR F  79   4.795  25.527   0.268  1.00 13.77        C

ATOM  11420 O   TYR F  79   3.654  25.085   0.126  1.00 11.30        O

ATOM  11421 CB  TYR F  79    5.286  26.537  -1.984  1.00 15.36        C

ATOM  11422 CG  TYR F  79    4.973  27.937  -1.494  1.00 12.43        C
ATOM  11423 CD1 TYR F  79    5.935  28.706  -0.856  1.00 14.93
C
ATOM  11424 CD2 TYR F  79    3.715  28.493  -1.685  1.00 15.01
C
ATOM  11425 CE1 TYR F  79    5.651  29.988  -0.417  1.00 16.52
C
ATOM  11426 CE2 TYR F  79    3.424  29.768  -1.249  1.00 12.69
C

ATOM  11427 CZ  TYR F  79    4.392  30.510  -0.614  1.00 14.82        C
ATOM  11428 OH  TYR F  79    4.099  31.784  -0.184  1.00 18.09
O

ATOM  11429 H   TYR F  79   5.191  23.833  -1.585  1.00 17.51        H

ATOM  11430 HA  TYR F  79    6.624  25.901  -0.564  1.00 17.24        H
ATOM  11431 HB2 TYR F  79    5.975  26.611  -2.663  1.00 18.43
H
ATOM  11432 HB3 TYR F  79    4.477  26.175  -2.378  1.00 18.43
H
ATOM  11433 HD1 TYR F  79    6.785  28.354  -0.721  1.00 17.91
H
ATOM  11434 HD2 TYR F  79    3.056  27.995  -2.112  1.00 18.01
H
ATOM  11435 HE1 TYR F  79    6.305  30.491   0.012  1.00 19.83
H
ATOM  11436 HE2 TYR F  79    2.575  30.124  -1.383  1.00 15.23
H

ATOM  11437 HH  TYR F  79    4.774  32.127   0.179  1.00 21.71        H

ATOM  11438 N   PHE F  80   5.280  25.957   1.426  1.00 14.96        N

ATOM  11439 CA  PHE F  80    4.514  25.945   2.660  1.00 15.84        C

ATOM  11440 C   PHE F  80   4.224  27.377   3.071  1.00 15.28        C



ATOM  11441 O   PHE F  80   5.138  28.191   3.150  1.00 15.47        O

ATOM  11442 CB  PHE F  80    5.287  25.213   3.754  1.00 20.98        C
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ATOM  5143  HA  LEU C 174     9.967  55.593 -13.366  1.00 28.33
H
ATOM  5144  HB2 LEU C 174     10.575  53.402 -13.548  1.00 25.65
H
ATOM  5145  HB3 LEU C 174     12.027  53.708 -12.998  1.00 25.65
H
ATOM  5146  HG  LEU C 174    11.061  54.109 -10.865  1.00 21.92
H
ATOM  5147 HD11 LEU C 174      8.875  53.398 -10.470  1.00 23.64
H
ATOM  5148 HD12 LEU C 174      8.886  54.590 -11.521  1.00 23.64
H
ATOM  5149 HD13 LEU C 174      8.697  53.093 -12.019  1.00 23.64
H
ATOM  5150 HD21 LEU C 174     10.794  51.860 -10.320  1.00 25.97
H
ATOM  5151 HD22 LEU C 174     10.687  51.501 -11.864  1.00 25.97
H
ATOM  5152 HD23 LEU C 174     12.053  52.054 -11.269  1.00 25.97
H
ATOM  5153  N   SER C 175   10.689  57.209 -11.661  1.00 26.24
N
ATOM  5154  CA  SER C 175    11.166  58.084 -10.595  1.00 23.83
C
ATOM  5155  C   SER C 175   11.378  57.288  -9.308  1.00 25.15
C
ATOM  5156  O   SER C 175   10.734  56.258  -9.099  1.00 21.90
O
ATOM  5157  CB  SER C 175    10.187  59.234 -10.365  1.00 27.90
C
ATOM  5158  OG  SER C 175    10.203  60.135 -11.461  1.00 34.12
O
ATOM  5159  H   SER C 175    9.875  57.348 -11.901  1.00 31.49
H
ATOM  5160  HA  SER C 175    12.019  58.464 -10.856  1.00 28.60
H
ATOM  5161  HB2 SER C 175     9.293  58.873 -10.266  1.00 33.49
H
ATOM  5162  HB3 SER C 175    10.444  59.711  -9.560  1.00 33.49
H
ATOM  5163  HG  SER C 175     9.662  60.763 -11.324  1.00 40.94
H
ATOM  5164  N   PRO C 176   12.289  57.760  -8.440  1.00 23.75
N
ATOM  5165  CA  PRO C 176    12.646  57.005  -7.232  1.00 23.82
C
ATOM  5166  C   PRO C 176   11.560  57.003  -6.157  1.00 26.93
C
ATOM  5167  O   PRO C 176   10.702  57.885  -6.138  1.00 25.00
O
ATOM  5168  CB  PRO C 176    13.901  57.729  -6.726  1.00 30.63
C
ATOM  5169  CG  PRO C 176    13.790  59.110  -7.259  1.00 34.23
C
ATOM  5170  CD  PRO C 176    13.094  58.987  -8.584  1.00 32.51
C
ATOM  5171  HA  PRO C 176    12.873  56.091  -7.461  1.00 28.59
H
ATOM  5172  HB2 PRO C 176    13.907  57.735  -5.756  1.00 36.75
H
ATOM  5173  HB3 PRO C 176    14.694  57.290  -7.073  1.00 36.75
H
ATOM  5174  HG2 PRO C 176    13.266  59.652  -6.648  1.00 41.08
H
ATOM  5175  HG3 PRO C 176    14.676  59.486  -7.374  1.00 41.08
H


ATOM  5176  HD2 PRO C 176    12.518  59.753  -8.734  1.00 39.01
H
ATOM  5177  HD3 PRO C 176    13.742  58.884  -9.298  1.00 39.01
H
ATOM  5178  N   ASN C 177   11.611  56.003  -5.280  1.00 20.91
N
ATOM  5179  CA  ASN C 177    10.723  55.914  -4.124  1.00 26.58
C
ATOM  5180  C   ASN C 177    9.249  55.841  -4.507  1.00 27.22
C
ATOM  5181  O   ASN C 177    8.392  56.360  -3.795  1.00 27.05
O
ATOM  5182  CB  ASN C 177    10.957  57.102  -3.188  1.00 28.67
C
ATOM  5183  CG  ASN C 177    12.372  57.143  -2.644  1.00 32.73
C
ATOM  5184  OD1 ASN C 177    12.886  56.139  -2.152  1.00 39.20
O
ATOM  5185  ND2 ASN C 177    13.013  58.302  -2.739  1.00 33.01
N
ATOM  5186  H   ASN C 177   12.166  55.348  -5.335  1.00 25.10
H
ATOM  5187  HA  ASN C 177    10.937  55.106  -3.632  1.00 31.90
H
ATOM  5188  HB2 ASN C 177    10.799  57.926  -3.676  1.00 34.41
H
ATOM  5189  HB3 ASN C 177    10.348  57.039  -2.436  1.00 34.41
H
ATOM  5190 HD21 ASN C 177     13.818  58.374  -2.444  1.00 39.62
H
ATOM  5191 HD22 ASN C 177     12.623  58.981  -3.095  1.00 39.62
H
ATOM  5192  N   LEU C 178   8.961  55.193  -5.631  1.00 22.55
N
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ATOM  11443  CG  PHE F  80    4.626  25.256   5.097  1.00 22.06        C
ATOM  11444  CD1 PHE F  80     3.607  24.372   5.411  1.00 22.52
C
ATOM  11445  CD2 PHE F  80     5.030  26.173   6.052  1.00 19.44
C
ATOM  11446  CE1 PHE F  80     3.000  24.406   6.653  1.00 24.51
C
ATOM  11447  CE2 PHE F  80     4.426  26.211   7.295  1.00 20.54
C

ATOM  11448  CZ  PHE F  80    3.412  25.328   7.596  1.00 20.28        C

ATOM  11449  H   PHE F  80   6.075  26.269   1.522  1.00 17.96       H

ATOM  11450  HA  PHE F  80    3.671  25.487   2.516  1.00 19.00        H
ATOM  11451  HB2 PHE F  80     5.381  24.282   3.500  1.00 25.17
H
ATOM  11452  HB3 PHE F  80     6.163  25.619   3.842  1.00 25.17
H
ATOM  11453  HD1 PHE F  80     3.327  23.749   4.780  1.00 27.02
H
ATOM  11454  HD2 PHE F  80     5.714  26.771   5.855  1.00 23.33
H
ATOM  11455  HE1 PHE F  80     2.316  23.809   6.854  1.00 29.42
H
ATOM  11456  HE2 PHE F  80     4.704  26.833   7.929  1.00 24.65
H

ATOM  11457  HZ  PHE F  80    3.005  25.353   8.432  1.00 24.33        H

ATOM  11458  N   TYR F  81   2.952  27.686   3.295  1.00 13.47       N

ATOM  11459  CA  TYR F  81    2.553  29.014   3.746  1.00 15.11        C

ATOM  11460  C   TYR F  81   1.595  28.918   4.926  1.00 17.28       C

ATOM  11461  O   TYR F  81   0.586  28.208   4.869  1.00 14.65       O

ATOM  11462  CB  TYR F  81    1.905  29.803   2.614  1.00 12.73        C

ATOM  11463  CG  TYR F  81    1.506  31.189   3.044  1.00 17.49        C
ATOM  11464  CD1 TYR F  81     2.430  32.225   3.046  1.00 16.62
C
ATOM  11465  CD2 TYR F  81     0.213  31.459   3.469  1.00 14.65
C
ATOM  11466  CE1 TYR F  81     2.073  33.496   3.451  1.00 19.10
C
ATOM  11467  CE2 TYR F  81    -0.152  32.725   3.879  1.00 18.37
C

ATOM  11468  CZ  TYR F  81    0.781  33.739   3.866  1.00 19.41        C

ATOM  11469  OH  TYR F  81    0.420  35.004   4.267  1.00 20.36        O

ATOM  11470  H   TYR F  81   2.295  27.140   3.193  1.00 16.17       H

ATOM  11471  HA  TYR F  81    3.341  29.499   4.038  1.00 18.13       H
ATOM  11472  HB2 TYR F  81     2.535  29.884   1.861  1.00 15.28
H
ATOM  11473  HB3 TYR F  81     1.107  29.337   2.318  1.00 15.28
H
ATOM  11474  HD1 TYR F  81     3.302  32.061   2.768  1.00 19.95
H
ATOM  11475  HD2 TYR F  81    -0.418  30.776   3.480  1.00 17.58
H


ATOM  11476  HE1 TYR F  81     2.700  34.182   3.444  1.00 22.92
H
ATOM  11477  HE2 TYR F  81    -1.023  32.894   4.157  1.00 22.05
H

ATOM  11478  HH  TYR F  81   -0.389  35.014   4.493  1.00 24.43        H

ATOM  11479  N   GLU F  82    1.910  29.648   5.991  1.00 15.52       N

ATOM  11480  CA  GLU F  82    1.145  29.563   7.224  1.00 15.50        C

ATOM  11481  C   GLU F  82   0.925  30.935   7.832  1.00 19.21       C

ATOM  11482  O   GLU F  82    1.858  31.731   7.929  1.00 16.31       O

ATOM  11483  CB  GLU F  82    1.865  28.661   8.228  1.00 18.78        C

ATOM  11484  CG  GLU F  82    1.115  28.456   9.537  1.00 21.18        C
ATOM  11485  CD  GLU F  82    1.954  27.739  10.577  1.00 28.40
C
ATOM  11486  OE1 GLU F  82     2.678  28.425  11.330  1.00 28.83
O
ATOM  11487  OE2 GLU F  82     1.893  26.492  10.637  1.00 29.39
O1-

ATOM  11488  H   GLU F  82   2.567  30.202   6.022  1.00 18.63       H

ATOM  11489  HA  GLU F  82    0.278  29.173   7.034  1.00 18.59        H
ATOM  11490  HB2 GLU F  82     1.996  27.789   7.824  1.00 22.54
H
ATOM  11491  HB3 GLU F  82     2.725  29.056   8.440  1.00 22.54
H
ATOM  11492  HG2 GLU F  82     0.864  29.321   9.897  1.00 25.42
H
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ATOM  5193  CA  LEU C 178     7.586  55.018  -6.087  1.00 22.76
C
ATOM  5194  C   LEU C 178     7.205  53.547  -6.144  1.00 24.97
C
ATOM  5195  O   LEU C 178     6.143  53.162  -5.657  1.00 27.82
O
ATOM  5196  CB  LEU C 178     7.390  55.657  -7.461  1.00 21.51
C
ATOM  5197  CG  LEU C 178     7.366  57.186  -7.511  1.00 24.49
C
ATOM  5198  CD1 LEU C 178     7.248  57.640  -8.953  1.00 24.38
C
ATOM  5199  CD2 LEU C 178     6.224  57.756  -6.679  1.00 22.93
C
ATOM  5200  H   LEU C 178     9.549  54.842  -6.152  1.00 27.06
H
ATOM  5201  HA  LEU C 178     6.989  55.459  -5.463  1.00 27.31
H
ATOM  5202  HB2 LEU C 178     8.113  55.363  -8.037  1.00 25.81
H
ATOM  5203  HB3 LEU C 178     6.546  55.345  -7.822  1.00 25.81
H
ATOM  5204  HG  LEU C 178     8.200  57.528  -7.154  1.00 29.39
H
ATOM  5205 HD11 LEU C 178     7.233  58.609  -8.978  1.00 29.25
H
ATOM  5206 HD12 LEU C 178     8.011  57.307  -9.451  1.00 29.25
H
ATOM  5207 HD13 LEU C 178     6.427  57.286  -9.329  1.00 29.25
H
ATOM  5208 HD21 LEU C 178     6.245  58.724  -6.738  1.00 27.52
H
ATOM  5209 HD22 LEU C 178     5.383  57.421  -7.027  1.00 27.52
H
ATOM  5210 HD23 LEU C 178     6.336  57.478  -5.757  1.00 27.52
H


ATOM  5211  N   LEU C 179     8.075  52.732  -6.735  1.00 19.58
N
ATOM  5212  CA  LEU C 179     7.821  51.303  -6.896  1.00 17.86
C
ATOM  5213  C   LEU C 179     8.977  50.444  -6.402  1.00 21.63
C
ATOM  5214  O   LEU C 179    10.147  50.751  -6.648  1.00 22.35
O
ATOM  5215  CB  LEU C 179     7.558  50.971  -8.367  1.00 21.35
C
ATOM  5216  CG  LEU C 179     6.290  51.513  -9.021  1.00 19.98
C
ATOM  5217  CD1 LEU C 179     6.291  51.174 -10.502  1.00 19.74
C
ATOM  5218  CD2 LEU C 179     5.044  50.954  -8.349  1.00 21.35
C
ATOM  5219  H   LEU C 179     8.831  52.987  -7.057  1.00 23.50
H
ATOM  5220  HA  LEU C 179     7.030  51.064  -6.388  1.00 21.44
H
ATOM  5221  HB2 LEU C 179     8.306  51.307  -8.885  1.00 25.62
H
ATOM  5222  HB3 LEU C 179     7.526  50.005  -8.451  1.00 25.62
H
ATOM  5223  HG  LEU C 179     6.274  52.479  -8.932  1.00 23.97
H
ATOM  5224 HD11 LEU C 179     5.482  51.524 -10.906  1.00 23.68
H
ATOM  5225 HD12 LEU C 179     7.070  51.578 -10.917  1.00 23.68
H
ATOM  5226 HD13 LEU C 179     6.324  50.210 -10.605  1.00 23.68
H
ATOM  5227 HD21 LEU C 179     4.259  51.318  -8.788  1.00 25.62
H
ATOM  5228 HD22 LEU C 179     5.050  49.987  -8.429  1.00 25.62
H
ATOM  5229 HD23 LEU C 179     5.049  51.209  -7.414  1.00 25.62
H
ATOM  5230  N   THR C 180     8.639  49.362  -5.708  1.00 18.15
N
ATOM  5231  CA  THR C 180     9.600  48.313  -5.406  1.00 22.56
C
ATOM  5232  C   THR C 180     9.556  47.299  -6.548  1.00 20.55
C
ATOM  5233  O   THR C 180     8.552  46.607  -6.729  1.00 17.30
O
ATOM  5234  CB  THR C 180     9.293  47.614  -4.066  1.00 21.01
C
ATOM  5235  OG1 THR C 180     9.224  48.585  -3.015  1.00 25.27
O
ATOM  5236  CG2 THR C 180    10.368  46.594  -3.730  1.00 28.16
C
ATOM  5237  H   THR C 180     7.851  49.213  -5.399  1.00 21.78
H
ATOM  5238  HA  THR C 180    10.492  48.691  -5.362  1.00 27.08
H
ATOM  5239  HB  THR C 180     8.443  47.151  -4.132  1.00 25.22
H
ATOM  5240  HG1 THR C 180     8.616  49.142  -3.178  1.00 30.32
H
ATOM  5241 HG21 THR C 180    10.163  46.163  -2.886  1.00 33.79
H
ATOM  5242 HG22 THR C 180    10.413  45.920  -4.426  1.00 33.79
H
ATOM  5243 HG23 THR C 180    11.230  47.033  -3.650  1.00 33.79
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ATOM 11493  HG3 GLU F  82     0.323  27.922   9.369  1.00 25.42
H

ATOM 11494  N   CYS F  83    -0.314  31.205   8.236  1.00 16.05           N

ATOM 11495  CA  CYS F  83    -0.618  32.408   8.996  1.00 14.60           C

ATOM 11496  C   CYS F  83    -1.077  31.989  10.386  1.00 17.53           C

ATOM 11497  O   CYS F  83    -1.688  30.932  10.562  1.00 19.01           O

ATOM 11498  CB  CYS F  83    -1.672  33.270   8.287  1.00 21.05           C

ATOM 11499  SG  CYS F  83    -3.338  32.591   8.159  1.00 20.77           S

ATOM 11500  H   CYS F  83    -0.996  30.705   8.082  1.00 19.26           H

ATOM 11501  HA  CYS F  83     0.189  32.937   9.092  1.00 17.52           H
ATOM 11502  HB2 CYS F  83    -1.742  34.112   8.763  1.00 25.26
H
ATOM 11503  HB3 CYS F  83    -1.363  33.440   7.383  1.00 25.26
H

ATOM 11504  N   ASP F  84    -0.746  32.815  11.370  1.00 13.89           N
ATOM 11505  CA  ASP F  84    -1.007  32.510  12.768  1.00 17.39
C

ATOM 11506  C   ASP F  84    -1.702  33.696  13.425  1.00 21.87           C

ATOM 11507  O   ASP F  84    -1.286  34.844  13.257  1.00 19.44           O
ATOM 11508  CB  ASP F  84     0.302  32.175  13.492  1.00 19.88
C
ATOM 11509  CG  ASP F  84     0.095  31.813  14.952  1.00 29.70
C
ATOM 11510  OD1 ASP F  84    -0.328  32.693  15.737  1.00 23.11
O


ATOM 11511  OD2 ASP F  84     0.378  30.651  15.318  1.00 31.40
O1-

ATOM 11512  H   ASP F  84    -0.361  33.574  11.250  1.00 16.67           H
ATOM 11513  HA  ASP F  84    -1.595  31.740  12.826  1.00 20.87
H
ATOM 11514  HB2 ASP F  84     0.721  31.418  13.053  1.00 23.86
H
ATOM 11515  HB3 ASP F  84     0.889  32.946  13.456  1.00 23.86
H

ATOM 11516  N   TYR F  85    -2.766  33.406  14.165  1.00 17.83           N
ATOM 11517  CA  TYR F  85    -3.500  34.426  14.897  1.00 20.90
C

ATOM 11518  C   TYR F  85    -3.523  34.050  16.370  1.00 21.48           C

ATOM 11519  O   TYR F  85    -4.217  33.118  16.776  1.00 22.77           O
ATOM 11520  CB  TYR F  85    -4.918  34.575  14.344  1.00 20.94
C
ATOM 11521  CG  TYR F  85    -5.590  35.873  14.726  1.00 19.46
C
ATOM 11522  CD1 TYR F  85    -5.044  37.093  14.351  1.00 23.95
C
ATOM 11523  CD2 TYR F  85    -6.781  35.880  15.443  1.00 24.58
C
ATOM 11524  CE1 TYR F  85    -5.652  38.284  14.690  1.00 21.09
C
ATOM 11525  CE2 TYR F  85    -7.401  37.068  15.784  1.00 25.21
C
ATOM 11526  CZ  TYR F  85    -6.831  38.266  15.402  1.00 24.37
C
ATOM 11527  OH  TYR F  85    -7.436  39.454  15.734  1.00 24.90
O

ATOM 11528  H   TYR F  85    -3.086  32.614  14.260  1.00 21.40           H
ATOM 11529  HA  TYR F  85    -3.045  35.278  14.806  1.00 25.08
H
ATOM 11530  HB2 TYR F  85    -4.881  34.535  13.375  1.00 25.13
H
ATOM 11531  HB3 TYR F  85    -5.463  33.848  14.683  1.00 25.13
H
ATOM 11532  HD1 TYR F  85    -4.248  37.108  13.870  1.00 28.73
H
ATOM 11533  HD2 TYR F  85    -7.165  35.073  15.699  1.00 29.50
H
ATOM 11534  HE1 TYR F  85    -5.272  39.093  14.434  1.00 25.31
H
ATOM 11535  HE2 TYR F  85    -8.196  37.059  16.266  1.00 30.25
H
ATOM 11536  HH  TYR F  85    -8.142  39.306  16.164  1.00 29.88
H

ATOM 11537  N   THR F  86    -2.739  34.777  17.158  1.00 20.16           N
ATOM 11538  CA  THR F  86    -2.580  34.497  18.577  1.00 23.51
C

ATOM 11539  C   THR F  86    -2.558  35.808  19.355  1.00 22.77           C

ATOM 11540  O   THR F  86    -1.775  36.704  19.040  1.00 22.32           O
ATOM 11541  CB  THR F  86    -1.280  33.708  18.847  1.00 27.41
C
ATOM 11542  OG1 THR F  86    -1.277  32.503  18.069  1.00 22.82
O
ATOM 11543  CG2 THR F  86    -1.153  33.353  20.320  1.00 24.65
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ATOM  5243 HG23 THR C 180      11.230  47.033  -5.559  1.00 33.79
H
ATOM  5244  N   ILE C 181     10.633  47.229  -7.325  1.00 19.65
N
ATOM  5245  CA  ILE C 181      10.726  46.266  -8.420  1.00 19.28
C


ATOM  5246  C   ILE C 181     11.226  44.924  -7.902  1.00 16.96
C
ATOM  5247  O   ILE C 181     12.275  44.842  -7.261  1.00 13.49
O
ATOM  5248  CB  ILE C 181      11.659  46.760  -9.540  1.00 21.11
C
ATOM  5249  CG1 ILE C 181      11.236  48.150 -10.022  1.00 18.12
C
ATOM  5250  CG2 ILE C 181      11.664  45.776 -10.704  1.00 19.77
C
ATOM  5251  CD1 ILE C 181      9.805  48.234 -10.525  1.00 25.78
C
ATOM  5252  H   ILE C 181     11.327  47.730  -7.240  1.00 23.58
H
ATOM  5253  HA  ILE C 181      9.843  46.133  -8.800  1.00 23.13
H
ATOM  5254  HB  ILE C 181     12.560  46.819  -9.185  1.00 25.33
H
ATOM  5255 HG12 ILE C 181      11.326  48.775  -9.285  1.00 21.74
H
ATOM  5256 HG13 ILE C 181      11.820  48.417 -10.749  1.00 21.74
H
ATOM  5257 HG21 ILE C 181      12.258  46.107 -11.395  1.00 23.73
H
ATOM  5258 HG22 ILE C 181      11.974  44.913 -10.386  1.00 23.73
H
ATOM  5259 HG23 ILE C 181      10.762  45.695 -11.053  1.00 23.73
H
ATOM  5260 HD11 ILE C 181       9.623  49.144 -10.808  1.00 30.93
H
ATOM  5261 HD12 ILE C 181       9.698  47.627 -11.274  1.00 30.93
H
ATOM  5262 HD13 ILE C 181       9.203  47.984  -9.807  1.00 30.93
H
ATOM  5263  N   ILE C 182     10.471  43.873  -8.193  1.00 15.47
N
ATOM  5264  CA  ILE C 182      10.754  42.552  -7.654  1.00 15.31
C
ATOM  5265  C   ILE C 182     10.921  41.530  -8.770  1.00 20.29
C
ATOM  5266  O   ILE C 182     10.081  41.426  -9.662  1.00 15.60
O
ATOM  5267  CB  ILE C 182      9.631  42.095  -6.703  1.00 19.87
C
ATOM  5268  CG1 ILE C 182      9.419  43.135  -5.596  1.00 18.35
C
ATOM  5269  CG2 ILE C 182      9.959  40.735  -6.096  1.00 17.54
C
ATOM  5270  CD1 ILE C 182      8.174  42.899  -4.758  1.00 19.47
C
ATOM  5271  H   ILE C 182     9.782  43.900  -8.707  1.00 18.56
H
ATOM  5272  HA  ILE C 182      11.582  42.586  -7.149  1.00 18.37
H
ATOM  5273  HB  ILE C 182      8.810  42.015  -7.212  1.00 23.85
H
ATOM  5274 HG12 ILE C 182      10.185  43.117  -5.001  1.00 22.02
H
ATOM  5275 HG13 ILE C 182      9.340  44.012  -6.003  1.00 22.02
H
ATOM  5276 HG21 ILE C 182      9.237  40.472  -5.504  1.00 21.04
H
ATOM  5277 HG22 ILE C 182      10.054  40.085  -6.811  1.00 21.04
H
ATOM  5278 HG23 ILE C 182      10.788  40.803  -5.598  1.00 21.04
H
ATOM  5279 HD11 ILE C 182      8.111  43.594  -4.084  1.00 23.36
H
ATOM  5280 HD12 ILE C 182      7.395  42.926  -5.335  1.00 23.36
H


ATOM  5281 HD13 ILE C 182      8.241  42.030  -4.331  1.00 23.36
H
ATOM  5282  N   GLU C 183      12.013  40.776  -8.717  1.00 17.61
N
ATOM  5283  CA  GLU C 183      12.211  39.676  -9.648  1.00 20.35
C
ATOM  5284  C   GLU C 183      11.144  38.620  -9.401  1.00 20.70
C
ATOM  5285  O   GLU C 183      10.829  38.289  -8.258  1.00 21.07
O
ATOM  5286  CB  GLU C 183      13.610  39.075  -9.500  1.00 26.30
C
ATOM  5287  CG  GLU C 183      14.730  40.031  -9.891  1.00 27.61
C
ATOM  5288  CD  GLU C 183      16.108  39.407  -9.763  1.00 38.86
C
ATOM  5289  OE1 GLU C 183      16.214  38.165  -9.858  1.00 36.41
O
ATOM  5290  OE2 GLU C 183      17.086  40.160  -9.564  1.00 42.70
O1-
ATOM  5291  H   GLU C 183      12.653  40.881  -8.152  1.00 21.14
H
ATOM  5292  HA  GLU C 183      12.114  40.002 -10.556  1.00 24.42

ATOM 11543  CG2 THR F  86     -1.155  33.333  20.320  1.00 24.65
C

ATOM 11544  H   THR F  86    -2.280  35.452  16.887  1.00 24.20           H
ATOM 11545  HA  THR F  86     -3.331  33.967  18.889  1.00 28.22
H


ATOM 11546  HB  THR F  86     -0.517  34.252  18.598  1.00 32.89
H
ATOM 11547  HG1 THR F  86      -1.322  32.690  17.251  1.00 27.38
H
ATOM 11548 HG21 THR F  86      -0.333  32.858  20.472  1.00 29.58
H
ATOM 11549 HG22 THR F  86      -1.138  34.161  20.856  1.00 29.58
H
ATOM 11550 HG23 THR F  86      -1.906  32.806  20.596  1.00 29.58
H

ATOM 11551  N   ASP F  87    -3.415  35.920  20.367  1.00 21.80           N
ATOM 11552  CA  ASP F  87     -3.493  37.140  21.166  1.00 21.76
C

ATOM 11553  C   ASP F  87    -3.709  38.351  20.255  1.00 25.94           C

ATOM 11554  O   ASP F  87    -3.058  39.382  20.404  1.00 24.45           O
ATOM 11555  CB  ASP F  87     -2.221  37.313  22.002  1.00 24.06
C
ATOM 11556  CG  ASP F  87     -2.336  38.433  23.021  1.00 25.87
C
ATOM 11557  OD1 ASP F  87      -3.451  38.663  23.533  1.00 26.46
O
ATOM 11558  OD2 ASP F  87      -1.309  39.082  23.305  1.00 27.96
O1-

ATOM 11559  H   ASP F  87    -3.962  35.304  20.612  1.00 26.15           H
ATOM 11560  HA  ASP F  87     -4.248  37.077  21.772  1.00 26.11
H
ATOM 11561  HB2 ASP F  87      -2.043  36.489  22.480  1.00 28.88
H
ATOM 11562  HB3 ASP F  87      -1.480  37.521  21.411  1.00 28.88
H

ATOM 11563  N   ASN F  88    -4.611  38.192  19.291  1.00 22.91           N
ATOM 11564  CA  ASN F  88     -4.971  39.255  18.351  1.00 24.97
C

ATOM 11565  C   ASN F  88    -3.803  39.741  17.489  1.00 23.23           C

ATOM 11566  O   ASN F  88    -3.880  40.805  16.877  1.00 24.47           O
ATOM 11567  CB  ASN F  88     -5.580  40.433  19.112  1.00 25.84
C
ATOM 11568  CG  ASN F  88     -6.788  40.027  19.930  1.00 36.58
C
ATOM 11569  OD1 ASN F  88      -6.720  39.928  21.155  1.00 44.27
O
ATOM 11570  ND2 ASN F  88      -7.905  39.783  19.253  1.00 40.67
N

ATOM 11571  H   ASN F  88    -5.040  37.459  19.157  1.00 27.49           H
ATOM 11572  HA  ASN F  88     -5.651  38.913  17.750  1.00 29.96
H
ATOM 11573  HB2 ASN F  88      -4.916  40.798  19.717  1.00 31.01
H
ATOM 11574  HB3 ASN F  88      -5.861  41.110  18.477  1.00 31.01
H
ATOM 11575 HD21 ASN F  88      -8.619  39.549  19.671  1.00 48.81
H
ATOM 11576 HD22 ASN F  88      -7.914  39.859  18.396  1.00 48.81
H

ATOM 11577  N   LYS F  89    -2.736  38.952  17.429  1.00 19.11           N
ATOM 11578  CA  LYS F  89     -1.563  39.305  16.639  1.00 23.78
C

ATOM 11579  C   LYS F  89    -1.421  38.394  15.422  1.00 22.87           C

ATOM 11580  O   LYS F  89    -1.475  37.167  15.537  1.00 22.29           O


ATOM 11581  CB  LYS F  89     -0.303  39.240  17.503  1.00 26.55
C
ATOM 11582  CG  LYS F  89     -0.226  40.350  18.549  1.00 32.53
C
ATOM 11583  CD  LYS F  89      0.900  40.113  19.546  1.00 46.00
C

ATOM 11584  CE  LYS F  89      1.075  41.298  20.484  1.00 56.99           C
ATOM 11585  NZ  LYS F  89     -0.193  41.656  21.180  1.00 56.00
N1+

ATOM 11586  H   LYS F  89    -2.667  38.200  17.840  1.00 22.93           H
ATOM 11587  HA  LYS F  89     -1.661  40.216  16.321  1.00 28.53
H
ATOM 11588  HB2 LYS F  89      -0.286  38.390  17.970  1.00 31.86
H
ATOM 11589  HB3 LYS F  89      0.475  39.318  16.930  1.00 31.86
H
ATOM 11590  HG2 LYS F  89      -0.064  41.197  18.104  1.00 39.04
H
ATOM 11591  HG3 LYS F  89      -1.062  40.384  19.040  1.00 39.04
H
ATOM 11592  HD2 LYS F  89      0.695  39.330  20.080  1.00 55.20
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H
ATOM  5293  HB2 GLU C 183     13.746  38.821  -8.574  1.00 31.56
H
ATOM  5294  HB3 GLU C 183     13.676  38.292 -10.069  1.00 31.56
H
ATOM  5295  HG2 GLU C 183     14.607  40.300 -10.815  1.00 33.13
H
ATOM  5296  HG3 GLU C 183     14.697  40.809  -9.312  1.00 33.13
H
ATOM  5297  N   MET C 184     10.573  38.109 -10.482  1.00 22.39
N
ATOM  5298  CA  MET C 184      9.533  37.098 -10.391  1.00 21.60
C
ATOM  5299  C   MET C 184      9.735  36.135 -11.546  1.00 22.55
C
ATOM  5300  O   MET C 184     10.063  34.965 -11.347  1.00 23.79
O
ATOM  5301  CB  MET C 184      8.144  37.747 -10.426  1.00 20.97
C
ATOM  5302  CG  MET C 184      6.990  36.814 -10.069  1.00 19.42
C
ATOM  5303  SD  MET C 184      6.346  35.883 -11.472  1.00 22.46
S
ATOM  5304  CE  MET C 184      5.613  37.205 -12.438  1.00 23.45
C
ATOM  5305  H   MET C 184     10.773  38.334 -11.287  1.00 26.87
H
ATOM  5306  HA  MET C 184      9.624  36.618  -9.553  1.00 25.92
H
ATOM  5307  HB2 MET C 184      8.131  38.484  -9.796  1.00 25.17
H
ATOM  5308  HB3 MET C 184      7.983  38.082 -11.322  1.00 25.17
H
ATOM  5309  HG2 MET C 184      7.298  36.177  -9.405  1.00 23.30
H
ATOM  5310  HG3 MET C 184      6.263  37.343  -9.704  1.00 23.30
H
ATOM  5311  HE1 MET C 184      5.221  36.829 -13.241  1.00 28.15
H
ATOM  5312  HE2 MET C 184      4.927  37.640 -11.907  1.00 28.15
H
ATOM  5313  HE3 MET C 184      6.304  37.843 -12.674  1.00 28.15
H
ATOM  5314  N   GLN C 185      9.571  36.648 -12.758  1.00 18.88
N
ATOM  5315  CA  GLN C 185      9.795  35.862 -13.960  1.00 24.05
C

ATOM  5316  C   GLN C 185     10.736  36.628 -14.880  1.00 25.86
C
ATOM  5317  O   GLN C 185     10.834  37.853 -14.793  1.00 24.87
O
ATOM  5318  CB  GLN C 185      8.463  35.568 -14.648  1.00 25.95
C
ATOM  5319  CG  GLN C 185      8.465  34.367 -15.561  1.00 37.07
C
ATOM  5320  CD  GLN C 185      8.666  33.057 -14.826  1.00 34.64
C
ATOM  5321  OE1 GLN C 185      9.787  32.701 -14.462  1.00 43.56
O
ATOM  5322  NE2 GLN C 185      7.578  32.330 -14.609  1.00 35.60
N
ATOM  5323  H   GLN C 185      9.327  37.459 -12.911  1.00 22.66
H
ATOM  5324  HA  GLN C 185     10.213  35.019 -13.723  1.00 28.86
H
ATOM  5325  HB2 GLN C 185      7.791  35.416 -13.966  1.00 31.14
H
ATOM  5326  HB3 GLN C 185      8.215  36.340 -15.182  1.00 31.14
H
ATOM  5327  HG2 GLN C 185      7.612  34.322 -16.022  1.00 44.49
H
ATOM  5328  HG3 GLN C 185      9.184  34.463 -16.205  1.00 44.49
H
ATOM  5329 HE21 GLN C 185      7.639  31.578 -14.196  1.00 42.72
H
ATOM  5330 HE22 GLN C 185      6.812  32.611 -14.881  1.00 42.72
H
ATOM  5331  N   LYS C 186     11.446  35.921 -15.749  1.00 25.22
N
ATOM  5332  CA  LYS C 186     12.328  36.599 -16.689  1.00 33.47
C
ATOM  5333  C   LYS C 186     11.493  37.254 -17.785  1.00 28.33
C
ATOM  5334  O   LYS C 186     10.665  36.607 -18.428  1.00 24.54
O
ATOM  5335  CB  LYS C 186     13.351  35.630 -17.283  1.00 44.39
C
ATOM  5336  CG  LYS C 186     14.454  35.205 -16.308  1.00 62.35
C
ATOM  5337  CD  LYS C 186     15.252  36.385 -15.736  1.00 70.73
C
ATOM  5338  CE  LYS C 186     15.913  37.222 -16.825  1.00 85.50
C
ATOM  5339  NZ  LYS C 186     16.696  38.358 -16.263  1.00 92.86
N1+
ATOM  5340  H   LYS C 186     11.437  35.063 -15.816  1.00 30.26
H
ATOM  5341  HA  LYS C 186     12.812  37.298 -16.222  1.00 40.16
H
ATOM  5342  HB2 LYS C 186     12.889  34.829 -17.573  1.00 53.27
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H
ATOM  11593  HD3 LYS F  89      1.732  39.982  19.064  1.00 55.20
H
ATOM  11594  HE2 LYS F  89      1.737  41.076  21.158  1.00 68.38
H
ATOM  11595  HE3 LYS F  89      1.366  42.069  19.972  1.00 68.38
H
ATOM  11596  HZ1 LYS F  89     -0.817  41.870  20.583  1.00 67.20
H
ATOM  11597  HZ2 LYS F  89     -0.479  40.965  21.663  1.00 67.20
H
ATOM  11598  HZ3 LYS F  89     -0.058  42.350  21.720  1.00 67.20
H

ATOM  11599  N   SER F  90     -1.243  39.015  14.259  1.00 20.20          N
ATOM  11600  CA  SER F  90     -1.063  38.297  13.002  1.00 20.82
C

ATOM  11601  C   SER F  90      0.418  38.076  12.691  1.00 21.90          C

ATOM  11602  O   SER F  90      1.195  39.028  12.641  1.00 19.40          O
ATOM  11603  CB  SER F  90     -1.719  39.065  11.852  1.00 22.35
C
ATOM  11604  OG  SER F  90     -3.108  39.241  12.070  1.00 20.82
O

ATOM  11605  H   SER F  90     -1.223  39.870  14.171  1.00 24.24          H
ATOM  11606  HA  SER F  90     -1.490  37.428  13.068  1.00 24.98
H
ATOM  11607  HB2 SER F  90     -1.300  39.937  11.779  1.00 26.83
H
ATOM  11608  HB3 SER F  90     -1.591  38.568  11.029  1.00 26.83
H
ATOM  11609  HG  SER F  90     -3.486  38.493  12.133  1.00 24.99
H

ATOM  11610  N   THR F  91      0.805  36.820  12.486  1.00 14.45          N
ATOM  11611  CA  THR F  91      2.164  36.504  12.056  1.00 22.20
C

ATOM  11612  C   THR F  91      2.125  35.449  10.960  1.00 21.21          C

ATOM  11613  O   THR F  91      1.136  34.728  10.808  1.00 20.13          O
ATOM  11614  CB  THR F  91      3.048  36.012  13.223  1.00 22.36
C
ATOM  11615  OG1 THR F  91      2.488  34.825  13.793  1.00 21.83
O

ATOM  11616  CG2 THR F  91      3.171  37.091  14.297  1.00 25.53
C

ATOM  11617  H   THR F  91      0.299  36.132  12.589  1.00 17.34          H
ATOM  11618  HA  THR F  91      2.571  37.304  11.688  1.00 26.63
H
ATOM  11619  HB  THR F  91      3.937  35.816  12.888  1.00 26.83
H
ATOM  11620  HG1 THR F  91      2.443  34.221  13.212  1.00 26.19
H
ATOM  11621 HG21 THR F  91      3.727  36.772  15.025  1.00 30.64
H
ATOM  11622 HG22 THR F  91      3.571  37.890  13.920  1.00 30.64
H
ATOM  11623 HG23 THR F  91      2.293  37.312  14.646  1.00 30.64
H

ATOM  11624  N   PHE F  92      3.210  35.371  10.198  1.00 18.86          N

ATOM  11625  CA  PHE F  92      3.250  34.542   9.005  1.00 17.69          C

ATOM  11626  C   PHE F  92      4.564  33.793   8.890  1.00 21.66          C

ATOM  11627  O   PHE F  92      5.582  34.199   9.449  1.00 17.52          O

ATOM  11628  CB  PHE F  92      3.034  35.404   7.762  1.00 16.77          C

ATOM  11629  CG  PHE F  92      1.834  36.297   7.852  1.00 17.86          C
ATOM  11630  CD1 PHE F  92      0.583  35.834   7.480  1.00 20.94
C
ATOM  11631  CD2 PHE F  92      1.955  37.598   8.316  1.00 19.25
C
ATOM  11632  CE1 PHE F  92     -0.527  36.654   7.567  1.00 20.21
C
ATOM  11633  CE2 PHE F  92      0.852  38.419   8.407  1.00 21.07
C

ATOM  11634  CZ  PHE F  92     -0.390  37.951   8.033  1.00 18.70          C

ATOM  11635  H   PHE F  92      3.942  35.793  10.354  1.00 22.63          H

ATOM  11636  HA  PHE F  92      2.533  33.890   9.047  1.00 21.23          H
ATOM  11637  HB2 PHE F  92      3.814  35.967   7.632  1.00 20.13
H
ATOM  11638  HB3 PHE F  92      2.915  34.823   6.994  1.00 20.13
H
ATOM  11639  HD1 PHE F  92      0.489  34.963   7.168  1.00 25.13
H
ATOM  11640  HD2 PHE F  92      2.790  37.919   8.571  1.00 23.10
H
ATOM  11641  HE1 PHE F  92     -1.363  36.335   7.314  1.00 24.25
H
ATOM  11642  HE2 PHE F  92      0.946  39.290   8.719  1.00 25.28
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H
ATOM   5343  HB3 LYS C 186     13.778  36.056 -18.044  1.00 53.27
H
ATOM   5344  HG2 LYS C 186     14.050  34.732 -15.564  1.00 74.83
H
ATOM   5345  HG3 LYS C 186     15.075  34.622 -16.771  1.00 74.83
H
ATOM   5346  HD2 LYS C 186     14.653  36.961 -15.237  1.00 84.87
H
ATOM   5347  HD3 LYS C 186     15.949  36.044 -15.154  1.00 84.87
H
ATOM   5348  HE2 LYS C 186     16.519  36.660 -17.334  1.00102.60
H
ATOM   5349  HE3 LYS C 186     15.228  37.586 -17.407  1.00102.60
H
ATOM   5350  HZ1 LYS C 186     17.069  38.826 -16.922  1.00111.43
H


ATOM   5351  HZ2 LYS C 186     16.161  38.893 -15.795  1.00111.43
H
ATOM   5352  HZ3 LYS C 186     17.337  38.050 -15.729  1.00111.43
H
ATOM   5353  N   GLY C 187    11.707  38.550 -17.977  1.00 22.70
N
ATOM   5354  CA  GLY C 187     10.938  39.312 -18.943  1.00 24.36
C
ATOM   5355  C   GLY C 187    11.284  40.784 -18.913  1.00 21.56
C
ATOM   5356  O   GLY C 187    12.096  41.226 -18.094  1.00 17.20
O
ATOM   5357  H   GLY C 187    12.298  39.013 -17.555  1.00 27.25
H
ATOM   5358  HA2 GLY C 187     11.111  38.972 -19.835  1.00 29.23
H
ATOM   5359  HA3 GLY C 187      9.991  39.213 -18.754  1.00 29.23
H
ATOM   5360  N   ASP C 188    10.659  41.544 -19.808  1.00 18.15
N
ATOM   5361  CA  ASP C 188     10.960  42.961 -19.960  1.00 17.36
C
ATOM   5362  C   ASP C 188     9.738  43.846 -19.697  1.00 19.06
C
ATOM   5363  O   ASP C 188     9.709  45.001 -20.117  1.00 15.87
O
ATOM   5364  CB  ASP C 188     11.509  43.226 -21.365  1.00 19.74
C
ATOM   5365  CG  ASP C 188     12.824  42.513 -21.618  1.00 23.22
C
ATOM   5366  OD1 ASP C 188     13.720  42.596 -20.754  1.00 19.57
O
ATOM   5367  OD2 ASP C 188     12.958  41.864 -22.675  1.00 26.62
O1-
ATOM   5368  H   ASP C 188    10.050  41.258 -20.344  1.00 21.78
H
ATOM   5369  HA  ASP C 188     11.648  43.206 -19.321  1.00 20.83
H
ATOM   5370  HB2 ASP C 188     10.866  42.914 -22.020  1.00 23.69
H
ATOM   5371  HB3 ASP C 188     11.657  44.179 -21.472  1.00 23.69
H
ATOM   5372  N   CYS C 189    8.739  43.299 -19.006  1.00 16.64
N
ATOM   5373  CA  CYS C 189     7.539  44.052 -18.630  1.00 17.86
C
ATOM   5374  C   CYS C 189    7.259  43.887 -17.138  1.00 16.95
C
ATOM   5375  O   CYS C 189    7.791  42.980 -16.504  1.00 15.25
O
ATOM   5376  CB  CYS C 189     6.326  43.596 -19.447  1.00 16.46
C
ATOM   5377  SG  CYS C 189     6.412  43.997 -21.213  1.00 19.92
S
ATOM   5378  H   CYS C 189    8.730  42.481 -18.739  1.00 19.97
H
ATOM   5379  HA  CYS C 189     7.686  44.995 -18.808  1.00 21.43
H
ATOM   5380  HB2 CYS C 189     6.245  42.632 -19.368  1.00 19.75
H
ATOM   5381  HB3 CYS C 189     5.532  44.021 -19.088  1.00 19.75
H
ATOM   5382  N   ALA C 190    6.424  44.763 -16.584  1.00 14.88
N
ATOM   5383  CA  ALA C 190     6.146  44.757 -15.149  1.00 15.16
C
ATOM   5384  C   ALA C 190    4.655  44.804 -14.854  1.00 12.33
C
ATOM   5385  O   ALA C 190    3.901  45.546 -15.487  1.00 12.28
O


ATOM   5386  CB  ALA C 190     6.845  45.927 -14.478  1.00 18.64
C
ATOM   5387  H   ALA C 190    6.003  45.373 -17.020  1.00 17.85
H
ATOM   5388  HA  ALA C 190     6.500  43.940 -14.766  1.00 18.19
H
ATOM   5389  HB1 ALA C 190     6.651  45.907 -13.528  1.00 22.37
H
ATOM   5390  HB2 ALA C 190     7.801  45.847 -14.622  1.00 22.37
H
ATOM   5391  HB3 ALA C 190     6.520  46.754 -14.866  1.00 22.37
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H

ATOM  11643  HZ  PHE F  92    -1.134  38.506   8.092  1.00 22.43           H

ATOM  11644  N   ASP F  93     4.528  32.693   8.151  1.00 18.85           N

ATOM  11645  CA  ASP F  93     5.714  31.893   7.904  1.00 19.59           C

ATOM  11646  C   ASP F  93     5.583  31.237   6.539  1.00 21.25           C

ATOM  11647  O   ASP F  93     4.484  30.852   6.130  1.00 15.85           O

ATOM  11648  CB  ASP F  93     5.887  30.841   9.000  1.00 23.31           C

ATOM  11649  CG  ASP F  93     7.131  29.997   8.810  1.00 31.07           C
ATOM  11650  OD1 ASP F  93     8.143  30.533   8.309  1.00 32.52
O1-


ATOM  11651  OD2 ASP F  93     7.093  28.797   9.164  1.00 33.33
O

ATOM  11652  H   ASP F  93     3.817  32.386   7.778  1.00 22.62           H

ATOM  11653  HA  ASP F  93     6.497  32.466   7.898  1.00 23.51           H
ATOM  11654  HB2 ASP F  93     5.955  31.288   9.859  1.00 27.98
H
ATOM  11655  HB3 ASP F  93     5.119  30.249   8.994  1.00 27.98
H

ATOM  11656  N   GLN F  94     6.695  31.128   5.825  1.00 16.48           N

ATOM  11657  CA  GLN F  94     6.698  30.390   4.575  1.00 21.95           C

ATOM  11658  C   GLN F  94     8.029  29.686   4.368  1.00 20.37           C

ATOM  11659  O   GLN F  94     9.078  30.195   4.754  1.00 17.80           O

ATOM  11660  CB  GLN F  94     6.378  31.314   3.394  1.00 16.26           C

ATOM  11661  CG  GLN F  94     7.372  32.427   3.149  1.00 21.74           C

ATOM  11662  CD  GLN F  94     7.010  33.272   1.933  1.00 28.61           C
ATOM  11663  OE1 GLN F  94     5.878  33.231   1.442  1.00 23.71
O
ATOM  11664  NE2 GLN F  94     7.976  34.041   1.440  1.00 34.71
N

ATOM  11665  H   GLN F  94     7.454  31.469   6.042  1.00 19.77           H

ATOM  11666  HA  GLN F  94     6.007  29.709   4.613  1.00 26.34           H
ATOM  11667  HB2 GLN F  94     6.337  30.777   2.587  1.00 19.52
H
ATOM  11668  HB3 GLN F  94     5.513  31.725   3.553  1.00 19.52
H
ATOM  11669  HG2 GLN F  94     7.393  33.009   3.925  1.00 26.09
H
ATOM  11670  HG3 GLN F  94     8.249  32.042   2.998  1.00 26.09
H
ATOM  11671 HE21 GLN F  94     7.823  34.537   0.754  1.00 41.66
H
ATOM  11672 HE22 GLN F  94     8.754  34.042   1.806  1.00 41.66
H

ATOM  11673  N   ASP F  95     7.961  28.494   3.780  1.00 19.52           N

ATOM  11674  CA  ASP F  95     9.139  27.680   3.502  1.00 19.57           C

ATOM  11675  C   ASP F  95     9.090  27.193   2.064  1.00 21.52           C

ATOM  11676  O   ASP F  95     8.010  27.017   1.496  1.00 17.71           O

ATOM  11677  CB  ASP F  95     9.219  26.471   4.443  1.00 24.75           C

ATOM  11678  CG  ASP F  95     9.408  26.861   5.898  1.00 36.23           C
ATOM  11679  OD1 ASP F  95    10.173  27.809   6.181  1.00 35.86
O
ATOM  11680  OD2 ASP F  95     8.792  26.202   6.762  1.00 36.50
O1-

ATOM  11681  H   ASP F  95     7.225  28.128   3.527  1.00 23.42           H

ATOM  11682  HA  ASP F  95     9.939  28.216   3.619  1.00 23.48           H
ATOM  11683  HB2 ASP F  95     8.395  25.964   4.375  1.00 29.70
H
ATOM  11684  HB3 ASP F  95     9.971  25.918   4.182  1.00 29.70
H

ATOM  11685  N   TYR F  96    10.266  26.978   1.488  1.00 17.67           N


ATOM  11686  CA  TYR F  96    10.397  26.363   0.173  1.00 17.08
C

ATOM  11687  C   TYR F  96    11.265  25.123   0.294  1.00 20.00           C

ATOM  11688  O   TYR F  96    12.344  25.188   0.880  1.00 20.02           O
ATOM  11689  CB  TYR F  96    11.028  27.329  -0.828  1.00 18.79
C
ATOM  11690  CG  TYR F  96    10.392  28.694  -0.885  1.00 16.85
C
ATOM  11691  CD1 TYR F  96    10.737  29.681   0.029  1.00 18.78
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H
ATOM  5392 N   LEU C 191    4.249 43.993 -13.882  1.00 10.76
N
ATOM  5393 CA  LEU C 191    2.888 43.985 -13.375  1.00 12.20
C
ATOM  5394 C   LEU C 191    2.805 44.849 -12.132  1.00 13.93
C
ATOM  5395 O   LEU C 191    3.653 44.741 -11.246  1.00 12.07
O
ATOM  5396 CB  LEU C 191    2.440 42.565 -13.034  1.00 11.91
C
ATOM  5397 CG  LEU C 191    2.300 41.584 -14.194  1.00 12.77
C
ATOM  5398 CD1 LEU C 191    2.254 40.162 -13.660  1.00 15.07
C
ATOM  5399 CD2 LEU C 191    1.046 41.904 -14.990  1.00 15.63
C
ATOM  5400 H   LEU C 191    4.761 43.423 -13.491  1.00 12.91
H
ATOM  5401 HA  LEU C 191    2.288 44.347 -14.046  1.00 14.65
H
ATOM  5402 HB2 LEU C 191    3.085 42.186 -12.416  1.00 14.29
H
ATOM  5403 HB3 LEU C 191    1.575 42.619 -12.599  1.00 14.29
H
ATOM  5404 HG  LEU C 191    3.066 41.667 -14.782  1.00 15.32
H
ATOM  5405 HD11 LEU C 191    2.165 39.548 -14.406  1.00 18.08
H
ATOM  5406 HD12 LEU C 191    3.076 39.980 -13.178  1.00 18.08
H
ATOM  5407 HD13 LEU C 191 1.494 40.073 -13.065  1.00 18.08    H
ATOM  5408 HD21 LEU C 191  0.969 41.274 -15.723  1.00 18.76    H
ATOM  5409 HD22 LEU C 191 0.275 41.829 -14.406  1.00 18.76    H
ATOM  5410 HD23 LEU C 191  1.114 42.808 -15.335  1.00 18.76    H
ATOM  5411 N   TYR C 192  1.786 45.698 -12.056  1.00 12.40    N
ATOM  5412 CA  TYR C 192  1.539 46.417 -10.818  1.00 15.75    C
ATOM  5413 C   TYR C 192 0.917 45.485 -9.793  1.00 13.37    C
ATOM  5414 O   TYR C 192    0.058 44.669 -10.119  1.00 12.80  O
ATOM  5415 CB  TYR C 192    0.619 47.621 -11.010  1.00 12.40  C
ATOM  5416 CG  TYR C 192    0.350 48.273  -9.679  1.00 17.77  C
ATOM  5417 CD1 TYR C 192    1.268 49.153  -9.128  1.00 19.33  C
ATOM  5418 CD2 TYR C 192   -0.786 47.958  -8.939  1.00 18.28 C
ATOM  5419 CE1 TYR C 192    1.051 49.729  -7.899  1.00 17.95 C
ATOM  5420 CE2 TYR C 192   -1.010 48.531  -7.701  1.00 20.59 C
ATOM  5421 CZ  TYR C 192   -0.085 49.416  -7.187  1.00 20.36  C
ATOM  5422 OH  TYR C 192   -0.287 49.996  -5.957  1.00 19.55  O
ATOM  5423 H   TYR C 192    1.236 45.873 -12.693  1.00 14.88 H
ATOM  5424 HA  TYR C 192    2.383 46.736 -10.463  1.00 18.89 H
ATOM  5425 HB2 TYR C 192    1.047 48.268 -11.591  1.00 14.88 H
ATOM  5426 HB3 TYR C 192   -0.226 47.329 -11.388  1.00 14.88  H
ATOM  5427 HD1 TYR C 192    2.038 49.366  -9.603  1.00 23.20 H
ATOM  5428 HD2 TYR C 192   -1.407 47.360  -9.286  1.00 21.93 H
ATOM  5429 HE1 TYR C 192 1.673 50.325  -7.548  1.00 21.53   H
ATOM  5430 HE2 TYR C 192   -1.777 48.322  -7.219  1.00 24.70 H
ATOM  5431 HH  TYR C 192   -1.011 49.725  -5.627  1.00 23.47 H
ATOM  5432 N   ALA C 193  1.363 45.625  -8.552  1.00 14.31      N
ATOM  5433 CA  ALA C 193  0.773 44.931  -7.416  1.00 14.94 C
ATOM  5434 C   ALA C 193  0.867 45.856  -6.211  1.00 17.89      C


ATOM  5435 O   ALA C 193  1.874 46.539  -6.034  1.00 18.07      O
ATOM  5436 CB  ALA C 193    1.488 43.614  -7.146  1.00 13.51 C
ATOM  5437 H   ALA C 193  2.025 46.130  -8.337  1.00 17.18      H
ATOM  5438 HA  ALA C 193  -0.162 44.747  -7.595  1.00 17.93     H
ATOM  5439 HB1 ALA C 193  1.071 43.179  -6.386  1.00 16.22    H
ATOM  5440 HB2 ALA C 193    1.416 43.050  -7.932  1.00 16.22    H
ATOM  5441 HB3 ALA C 193    2.421 43.796  -6.954  1.00 16.22    H
ATOM  5442 N   SER C 194   -0.171 45.893  -5.385  1.00 15.21 N
ATOM  5443 CA  SER C 194   -0.150 46.773  -4.220  1.00 19.46   C
ATOM  5444 C   SER C 194    0.589 46.101  -3.063  1.00 18.48  C
ATOM  5445 O   SER C 194    0.561 44.878  -2.952  1.00 20.00  O
ATOM  5446 CB  SER C 194   -1.569 47.149  -3.798  1.00 18.63    C
ATOM  5447 OG  SER C 194   -2.308 45.998  -3.450  1.00 27.89    O
ATOM  5448 H   SER C 194   -0.889 45.428  -5.472  1.00 18.26  H
ATOM  5449 HA  SER C 194    0.323 47.589  -4.447  1.00 23.36   H
ATOM  5450 HB2 SER C 194    -1.525 47.740  -3.030  1.00 22.35    H
ATOM  5451 HB3 SER C 194    -2.011 47.596  -4.537  1.00 22.35    H
ATOM  5452 HG  SER C 194   -1.935 45.600  -2.811  1.00 33.47    H
ATOM  5453 N   SER C 195   1.243 46.877  -2.197  1.00 20.90   N
ATOM  5454 CA  SER C 195    1.276 48.334  -2.265  1.00 24.71    C
ATOM  5455 C   SER C 195   2.483 48.832  -3.053  1.00 20.24    C
ATOM  5456 O   SER C 195   3.625 48.682  -2.618  1.00 19.16  O
ATOM  5457 CB  SER C 195    1.300 48.929  -0.858  1.00 22.44    C
ATOM  5458 OG  SER C 195    1.256 50.341  -0.920  1.00 28.76    O
ATOM  5459 H   SER C 195   1.694 46.564  -1.535  1.00 25.08    H
ATOM  5460 HA  SER C 195    0.474 48.648  -2.712  1.00 29.65    H
ATOM  5461 HB2 SER C 195    0.528 48.609  -0.365  1.00 26.93  H
ATOM  5462 HB3 SER C 195    2.117 48.656  -0.412  1.00 26.93 H
ATOM  5463 HG  SER C 195    1.270 50.663  -0.144  1.00 34.51    H
ATOM  5464 N   PHE C 196   2.215 49.423  -4.213  1.00 20.32  N
ATOM  5465 CA  PHE C 196    3.249 50.046  -5.035  1.00 19.27   C
ATOM  5466 C   PHE C 196   4.443 49.138  -5.290  1.00 23.51    C
ATOM  5467 O   PHE C 196   5.581 49.456  -4.933  1.00 18.74   O
ATOM  5468 CB  PHE C 196    3.708 51.345  -4.384  1.00 20.31    C
ATOM  5469 CG  PHE C 196    2.685 52.432  -4.451  1.00 21.15    C
ATOM  5470 CD1 PHE C 196    2.543 53.189  -5.599  1.00 21.62    C
ATOM  5471 CD2 PHE C 196    1.849 52.685  -3.378  1.00 27.55    C
ATOM  5472 CE1 PHE C 196    1.592 54.182  -5.673  1.00 19.96    C
ATOM  5473 CE2 PHE C 196    0.899 53.680  -3.447  1.00 23.40    C
ATOM  5474 CZ  PHE C 196   0.772 54.430  -4.595  1.00 21.78    C
ATOM  5475 H   PHE C 196   1.427 49.477  -4.553  1.00 24.38
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C
ATOM 11692 CD2 TYR F  96    9.463 29.005  -1.866  1.00 17.98
C
ATOM 11693 CE1 TYR F  96   10.164 30.932  -0.025  1.00 20.39
C
ATOM 11694 CE2 TYR F  96    8.886 30.254  -1.929  1.00 16.11
C

ATOM 11695 CZ  TYR F  96    9.239 31.214  -1.006  1.00 20.26        C
ATOM 11696 OH  TYR F  96    8.666 32.462  -1.069  1.00 22.81
O

ATOM 11697 H   TYR F  96   11.020 27.185   1.848  1.00 21.20        H

ATOM 11698 HA  TYR F  96    9.523 26.101  -0.155  1.00 20.50        H
ATOM 11699 HB2 TYR F  96    11.962 27.451  -0.593  1.00 22.55
H
ATOM 11700 HB3 TYR F  96    10.965 26.940  -1.715  1.00 22.55
H
ATOM 11701 HD1 TYR F  96    11.361 29.492   0.692  1.00 22.54
H
ATOM 11702 HD2 TYR F  96     9.223 28.358  -2.489  1.00 21.57
H
ATOM 11703 HE1 TYR F  96    10.401 31.583   0.595  1.00 24.47
H
ATOM 11704 HE2 TYR F  96     8.261 30.447  -2.590  1.00 19.33
H

ATOM 11705 HH  TYR F  96    8.124 32.497  -1.710  1.00 27.37        H

ATOM 11706 N   LEU F  97 10.806 24.001  -0.258  1.00 19.54  N
ATOM 11707 CA  LEU F  97 11.617 22.782  -0.290  1.00 21.34    C
ATOM 11708 C   LEU F  97 11.827 22.285  -1.721  1.00 21.46    C
ATOM 11709 O   LEU F  97  10.891 22.245  -2.520  1.00 15.94    O
ATOM 11710 CB  LEU F  97 10.973 21.670   0.540  1.00 21.85    C
ATOM 11711 CG  LEU F  97 10.355 22.043   1.891  1.00 24.09    C
ATOM 11712 CD1 LEU F  97  9.634 20.841   2.480  1.00 34.93    C
ATOM 11713 CD2 LEU F  97 11.413 22.551   2.856  1.00 31.03    C
ATOM 11714 H   LEU F  97  10.031 23.918  -0.621  1.00 23.45 H
ATOM 11715 HA  LEU F  97 12.488 22.973   0.091  1.00 25.61    H
ATOM 11716 HB2 LEU F  97 10.267 21.272   0.008  1.00 26.22   H
ATOM 11717 HB3 LEU F  97 11.652 21.000   0.717  1.00 26.22    H
ATOM 11718 HG  LEU F  97  9.704 22.749   1.758  1.00 28.91    H
ATOM 11719 HD11 LEU F  979.248 21.092   3.334  1.00 41.92    H
ATOM 11720 HD12 LEU F  97  8.934 20.563   1.869  1.00 41.92 H
ATOM 11721 HD13 LEU F  97 10.271 20.120   2.603  1.00 41.92  H
ATOM 11722 HD21 LEU F  97 10.989 22.777   3.699  1.00 37.24   H
ATOM 11723 HD22 LEU F  97 12.074 21.855   2.995  1.00 37.24   H
ATOM 11724 HD23 LEU F  97  11.835 23.338   2.476  1.00 37.24  H
ATOM 11725 N   TYR F  98  13.066 21.914  -2.030  1.00 21.23    N
ATOM 11726 CA  TYR F  98  13.397 21.259  -3.293  1.00 18.28  C
ATOM 11727 C   TYR F  98    13.879 19.850  -2.981  1.00 22.72 C
ATOM 11728 O   TYR F  98    14.924 19.675  -2.353  1.00 20.74 O
ATOM 11729 CB  TYR F  98  14.465 22.044  -4.058  1.00 18.19  C
ATOM 11730 CG  TYR F  98  14.779 21.475  -5.426  1.00 21.19   C
ATOM 11731 CD1 TYR F  98   13.950 21.729  -6.511  1.00 23.23 C
ATOM 11732 CD2 TYR F  98 15.905 20.689  -5.632  1.00 23.20   C
ATOM 11733 CE1 TYR F  98  14.233 21.213  -7.764  1.00 29.19   C
ATOM 11734 CE2 TYR F  98    16.196 20.170  -6.879  1.00 24.25    C


ATOM 11735 CZ  TYR F  98    15.357 20.434  -7.941  1.00 27.82  C
ATOM 11736 OH  TYR F  98    15.644 19.918  -9.183  1.00 33.31    O
ATOM 11737 H   TYR F  98   13.744 22.032  -1.515  1.00 25.47       H
ATOM 11738 HA  TYR F  98    12.603 21.199  -3.846  1.00 21.94  H
ATOM 11739 HB2 TYR F  98    14.157 22.955  -4.179  1.00 21.83    H
ATOM 11740 HB3 TYR F  98    15.286 22.041  -3.541  1.00 21.83    H
ATOM 11741 HD1 TYR F  98    13.192 22.254  -6.393  1.00 27.87  H
ATOM 11742 HD2 TYR F  98    16.473 20.508  -4.918  1.00 27.84  H
ATOM 11743 HE1 TYR F  98    13.668 21.391  -8.482  1.00 35.03   H
ATOM 11744 HE2 TYR F  98    16.953 19.644  -7.001  1.00 29.10   H
ATOM 11745 HH  TYR F  98    15.057 20.155  -9.736  1.00 39.98  H
ATOM 11746 N   ASN F  99   13.103 18.855  -3.405  1.00 20.11        N
ATOM 11747 CA  ASN F  99    13.368 17.458  -3.066  1.00 23.25   C
ATOM 11748 C   ASN F  99   13.517 17.267  -1.558  1.00 25.58        C
ATOM 11749 O   ASN F  99   14.394 16.536  -1.090  1.00 21.44        O
ATOM 11750 CB  ASN F  99    14.621 16.955  -3.789  1.00 22.66     C
ATOM 11751 CG  ASN F  99    14.430 16.862  -5.291  1.00 24.21     C
ATOM 11752 OD1 ASN F  99     13.320 16.636  -5.779  1.00 25.43      O
ATOM 11753 ND2 ASN F  99    15.517 17.028  -6.034  1.00 21.89     N
ATOM 11754 H   ASN F  99   12.407 18.965  -3.899  1.00 24.13        H
ATOM 11755 HA  ASN F  99    12.619 16.918  -3.360  1.00 27.90   H
ATOM 11756 HB2 ASN F  99    15.353 17.567  -3.617  1.00 27.19    H
ATOM 11757 HB3 ASN F  99    14.842 16.070  -3.459  1.00 27.19   H
ATOM 11758 HD21 ASN F  99    15.462 16.985  -6.891  1.00 26.27   H
ATOM 11759 HD22 ASN F  99    16.275 17.180  -5.658  1.00 26.27     H
ATOM 11760 N   GLY F 100   12.658 17.940  -0.799  1.00 20.75   N
ATOM 11761 CA  GLY F 100    12.618 17.775   0.642  1.00 27.43   C
ATOM 11762 C   GLY F 100   13.626 18.633   1.379  1.00 25.00        C
ATOM 11763 O   GLY F 100   13.587 18.729   2.607  1.00 23.15  O
ATOM 11764 H   GLY F 100   12.084 18.504  -1.103  1.00 24.90  H
ATOM 11765 HA2 GLY F 100    11.732 18.004   0.965  1.00 32.92  H
ATOM 11766 HA3 GLY F 100    12.792 16.847   0.862  1.00 32.92   H
ATOM 11767 N   GLU F 101   14.529 19.255   0.628  1.00 27.20  N
ATOM 11768 CA  GLU F 101    15.572 20.100   1.201  1.00 28.99   C
ATOM 11769 C   GLU F 101   15.137 21.559   1.206  1.00 26.31   C
ATOM 11770 O   GLU F 101   14.827 22.123   0.158  1.00 22.95     O
ATOM 11771 CB  GLU F 101    16.874 19.947   0.413  1.00 28.96    C
ATOM 11772 CG  GLU F 101    18.114 20.440   1.148  1.00 43.62  C
ATOM 11773 CD  GLU F 101    18.632 19.442   2.169  1.00 55.65    C
ATOM 11774 OE1 GLU F 101    18.669 18.230   1.862  1.00 48.87  O
ATOM 11775 OE2 GLU F 101    19.007 19.872   3.280  1.00 57.62
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H
ATOM 5476 HA PHE C 196 2.864 50.271 -5.896 1.00 23.12
H
ATOM 5477 HB2 PHE C 196 3.902 51.176 -3.448 1.00 24.38
H
ATOM 5478 HB3 PHE C 196 4.507 51.658 -4.836 1.00 24.38
H
ATOM 5479 HD1 PHE C 196 3.095 53.025 -6.329 1.00 25.94
H
ATOM 5480 HD2 PHE C 196 1.932 52.181 -2.601 1.00 33.05
H
ATOM 5481 HE1 PHE C 196 1.508 54.688 -6.448 1.00 23.95
H
ATOM 5482 HE2 PHE C 196 0.345 53.846 -2.719 1.00 28.08
H
ATOM 5483 HZ PHE C 196 0.131 55.102 -4.643 1.00 26.14
H
ATOM 5484 N LYS C 197 4.165 48.003 -5.919 1.00 18.00
N
ATOM 5485 CA LYS C 197 5.197 47.054 -6.283 1.00 21.33
C
ATOM 5486 C LYS C 197 5.092 46.769 -7.776 1.00 18.93
C
ATOM 5487 O LYS C 197 4.018 46.905 -8.367 1.00 15.60
O
ATOM 5488 CB LYS C 197 5.064 45.765 -5.474 1.00 21.85
C
ATOM 5489 CG LYS C 197 4.958 46.002 -3.977 1.00 27.27
C

ATOM 5490 CD LYS C 197 5.109 44.719 -3.183 1.00 29.38
C
ATOM 5491 CE LYS C 197 3.988 43.739 -3.459 1.00 32.12
C
ATOM 5492 NZ LYS C 197 4.083 42.540 -2.575 1.00 44.07
N1+
ATOM 5493 H LYS C 197 3.372 47.759 -6.146 1.00 21.60
H
ATOM 5494 HA LYS C 197 6.069 47.440 -6.110 1.00 25.60
H
ATOM 5495 HB2 LYS C 197 4.264 45.296 -5.759 1.00 26.23
H
ATOM 5496 HB3 LYS C 197 5.844 45.212 -5.634 1.00 26.23
H
ATOM 5497 HG2 LYS C 197 5.660 46.612 -3.702 1.00 32.72
H
ATOM 5498 HG3 LYS C 197 4.089 46.381 -3.776 1.00 32.72
H
ATOM 5499 HD2 LYS C 197 5.948 44.294 -3.422 1.00 35.26
H
ATOM 5500 HD3 LYS C 197 5.100 44.929 -2.236 1.00 35.26
H
ATOM 5501 HE2 LYS C 197 3.135 44.172 -3.295 1.00 38.55
H
ATOM 5502 HE3 LYS C 197 4.042 43.442 -4.381 1.00 38.55
H
ATOM 5503 HZ1 LYS C 197 3.416 41.977 -2.752 1.00 52.89
H
ATOM 5504 HZ2 LYS C 197 4.857 42.123 -2.710 1.00 52.89
H
ATOM 5505 HZ3 LYS C 197 4.033 42.787 -1.721 1.00 52.89
H
ATOM 5506 N GLY C 198 6.222 46.404 -8.372 1.00 13.97
N
ATOM 5507 CA GLY C 198 6.273 45.977 -9.754 1.00 12.15
C
ATOM 5508 C GLY C 198 6.935 44.618 -9.848 1.00 15.82
C
ATOM 5509 O GLY C 198 8.119 44.484 -9.540 1.00 16.91
O
ATOM 5510 H GLY C 198 6.988 46.396 -7.982 1.00 16.76
H
ATOM 5511 HA2 GLY C 198 5.375 45.916 -10.116 1.00 14.58
H
ATOM 5512 HA3 GLY C 198 6.783 46.613 -10.280 1.00 14.58
H
ATOM 5513 N TYR C 199 6.172 43.605 -10.251 1.00 14.27
N
ATOM 5514 CA TYR C 199 6.716 42.267 -10.466 1.00 14.60
C
ATOM 5515 C TYR C 199 7.146 42.099 -11.920 1.00 15.48
C
ATOM 5516 O TYR C 199 6.360 42.327 -12.829 1.00 12.77
O
ATOM 5517 CB TYR C 199 5.689 41.192 -10.101 1.00 14.93
C
ATOM 5518 CG TYR C 199 5.489 41.006 -8.615 1.00 20.52
C
ATOM 5519 CD1 TYR C 199 6.359 40.220 -7.870 1.00 15.96
C
ATOM 5520 CD2 TYR C 199 4.425 41.609 -7.956 1.00 18.27
C
ATOM 5521 CE1 TYR C 199 6.179 40.044 -6.509 1.00 18.35
C
ATOM 5522 CE2 TYR C 199 4.236 41.438 -6.596 1.00 20.42
C
ATOM 5523 CZ TYR C 199 5.116 40.654 -5.877 1.00 22.28
C
ATOM 5524 OH TYR C 199 4.931 40.486 -4.522 1.00 27.53
O
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O1-
ATOM 11776 H GLU F 101 14.560 19.203 -0.230 1.00 32.65
H
ATOM 11777 HA GLU F 101 15.737 19.828 2.117 1.00 34.79
H
ATOM 11778 HB2 GLU F 101 17.006 19.008 0.209 1.00 34.75
H
ATOM 11779 HB3 GLU F 101 16.799 20.453 -0.411 1.00 34.75
H
ATOM 11780 HG2 GLU F 101 18.819 20.603 0.503 1.00 52.34
H
ATOM 11781 HG3 GLU F 101 17.897 21.262 1.616 1.00 52.34
H
ATOM 11782 N GLU F 102 15.126 22.176 2.383 1.00 28.54
N
ATOM 11783 CA GLU F 102 14.689 23.561 2.500 1.00 25.54
C
ATOM 11784 C GLU F 102 15.733 24.512 1.927 1.00 24.67
C
ATOM 11785 O GLU F 102 16.936 24.287 2.062 1.00 21.93
O
ATOM 11786 CB GLU F 102 14.396 23.912 3.962 1.00 33.49
C
ATOM 11787 CG GLU F 102 13.833 25.312 4.156 1.00 37.89
C
ATOM 11788 CD GLU F 102 13.340 25.561 5.574 1.00 47.13
C
ATOM 11789 OE1 GLU F 102 13.153 26.742 5.939 1.00 46.84
O

ATOM 11790 OE2 GLU F 102 13.134 24.578 6.319 1.00 51.60
O1-
ATOM 11791 H GLU F 102 15.366 21.816 3.126 1.00 34.25
H
ATOM 11792 HA GLU F 102 13.869 23.677 1.995 1.00 30.65
H
ATOM 11793 HB2 GLU F 102 13.749 23.281 4.312 1.00 40.19
H
ATOM 11794 HB3 GLU F 102 15.221 23.852 4.469 1.00 40.19
H
ATOM 11795 HG2 GLU F 102 14.527 25.961 3.962 1.00 45.47
H
ATOM 11796 HG3 GLU F 102 13.084 25.437 3.553 1.00 45.47
H

ATOM 11797 N TYR F 103 15.269 25.577 1.284 1.00 19.00          N
ATOM 11798 CA TYR F 103 16.175 26.558 0.700 1.00 23.12
C

ATOM 11799 C TYR F 103 15.507 27.925 0.622 1.00 24.60          C
ATOM 11800 O TYR F 103 14.283 28.026 0.729 1.00 18.78
O
ATOM 11801 CB TYR F 103 16.632 26.099 -0.686 1.00 18.11
C
ATOM 11802 CG TYR F 103 15.564 26.151 -1.759 1.00 20.57
C
ATOM 11803 CD1 TYR F 103 14.489 25.272 -1.743 1.00 19.73
C
ATOM 11804 CD2 TYR F 103 15.647 27.066 -2.802 1.00 19.76
C
ATOM 11805 CE1 TYR F 103 13.516 25.314 -2.731 1.00 17.89
C
ATOM 11806 CE2 TYR F 103 14.681 27.117 -3.790 1.00 15.45
C
ATOM 11807 CZ TYR F 103 13.618 26.236 -3.751 1.00 18.31
C
ATOM 11808 OH TYR F 103 12.652 26.280 -4.734 1.00 17.87
O

ATOM 11809 H TYR F 103 14.435 25.755 1.172 1.00 22.80          H
ATOM 11810 HA TYR F 103 16.960 26.639 1.265 1.00 27.75
H
ATOM 11811 HB2 TYR F 103 17.364 26.667 -0.974 1.00 21.74
H
ATOM 11812 HB3 TYR F 103 16.939 25.181 -0.622 1.00 21.74
H
ATOM 11813 HD1 TYR F 103 14.417 24.650 -1.056 1.00 23.67
H
ATOM 11814 HD2 TYR F 103 16.362 27.660 -2.831 1.00 23.72
H
ATOM 11815 HE1 TYR F 103 12.798 24.722 -2.705 1.00 21.47
H
ATOM 11816 HE2 TYR F 103 14.749 27.738 -4.479 1.00 18.54
H
ATOM 11817 HH TYR F 103 12.834 26.883 -5.290 1.00 21.44
H
ATOM 11818 N THR F 104 16.319 28.969 0.452 1.00 20.25
N
ATOM 11819 CA THR F 104 15.819 30.341 0.376 1.00 19.66
C
ATOM 11820 C THR F 104 16.621 31.227 -0.581 1.00 24.00
C
ATOM 11821 O THR F 104 16.243 32.373 -0.830 1.00 25.47
O
ATOM 11822 CB THR F 104 15.834 31.022 1.762 1.00 23.07
C
ATOM 11823 OG1 THR F 104 17.182 31.117 2.235 1.00 27.80
O
ATOM 11824 CG2 THR F 104 14.996 30.230 2.763 1.00 27.54
C
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ATOM  5525  H   TYR C 199     5.329  43.667 -10.408  1.00 17.12
H
ATOM  5526  HA  TYR C 199     7.496  42.145  -9.903  1.00 17.52
H
ATOM  5527  HB2 TYR C 199     4.833  41.436 -10.486  1.00 17.92
H
ATOM  5528  HB3 TYR C 199     5.983  40.344 -10.468  1.00 17.92
H
ATOM  5529  HD1 TYR C 199     7.077  39.807  -8.293  1.00 19.15
H
ATOM  5530  HD2 TYR C 199     3.830  42.137  -8.438  1.00 21.93
H
ATOM  5531  HE1 TYR C 199     6.771  39.517  -6.024  1.00 22.01
H
ATOM  5532  HE2 TYR C 199     3.520  41.849  -6.168  1.00 24.50
H
ATOM  5533  HH  TYR C 199     4.251  40.909  -4.270  1.00 33.04
H
ATOM  5534  N   ILE C 200    8.396  41.698 -12.128  1.00 16.81
N
ATOM  5535  CA  ILE C 200     8.926  41.482 -13.471  1.00 15.74
C
ATOM  5536  C   ILE C 200    8.280  40.245 -14.100  1.00 16.52
C
ATOM  5537  O   ILE C 200    8.284  39.168 -13.505  1.00 15.20
O
ATOM  5538  CB  ILE C 200    10.460  41.318 -13.442  1.00 16.14
C
ATOM  5539  CG1 ILE C 200     11.100  42.522 -12.738  1.00 15.26
C
ATOM  5540  CG2 ILE C 200     11.010  41.152 -14.861  1.00 16.45
C
ATOM  5541  CD1 ILE C 200     12.613  42.437 -12.586  1.00 18.39
C
ATOM  5542  H   ILE C 200    8.964  41.543 -11.501  1.00 20.17
H
ATOM  5543  HA  ILE C 200     8.713  42.249 -14.025  1.00 18.88
H
ATOM  5544  HB  ILE C 200    10.673  40.519 -12.936  1.00 19.37
H
ATOM  5545 HG12 ILE C 200     10.900  43.322 -13.249  1.00 18.31
H
ATOM  5546 HG13 ILE C 200     10.719  42.600 -11.849  1.00 18.31
H
ATOM  5547 HG21 ILE C 200     11.974  41.051 -14.816  1.00 19.74
H
ATOM  5548 HG22 ILE C 200     10.613  40.363 -15.263  1.00 19.74
H
ATOM  5549 HG23 ILE C 200     10.784  41.939 -15.381  1.00 19.74
H
ATOM  5550 HD11 ILE C 200     12.930  43.234 -12.133  1.00 22.06
H
ATOM  5551 HD12 ILE C 200     12.834  41.650 -12.064  1.00 22.06
H
ATOM  5552 HD13 ILE C 200     13.016  42.374 -13.466  1.00 22.06
H
ATOM  5553  N   GLU C 201     7.728  40.405 -15.302  1.00 15.15
N
ATOM  5554  CA  GLU C 201     6.998  39.327 -15.966  1.00 17.24
C
ATOM  5555  C   GLU C 201     7.281  39.288 -17.467  1.00 21.31
C
ATOM  5556  O   GLU C 201     7.635  40.302 -18.076  1.00 15.67
O
ATOM  5557  CB  GLU C 201     5.491  39.485 -15.712  1.00 17.25
C
ATOM  5558  CG  GLU C 201     4.600  38.460 -16.405  1.00 20.61
C
ATOM  5559  CD  GLU C 201     4.918  37.025 -16.012  1.00 24.32
C
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ATOM  11825  H   THR F 104    17.174  28.907   0.378  1.00 24.30
H
ATOM  11826  HA  THR F 104     14.901  30.322   0.064  1.00 23.59
H
ATOM  11827  HB  THR F 104     15.461  31.914   1.682  1.00 27.69
H
ATOM  11828  HG1 THR F 104     17.196  31.487   2.989  1.00 33.36
H
ATOM  11829 HG21 THR F 104     15.017  30.689   3.626  1.00 33.05
H
ATOM  11830 HG22 THR F 104     14.077  30.196   2.457  1.00 33.05
H
ATOM  11831 HG23 THR F 104     15.345  29.347   2.861  1.00 33.05
H

ATOM  11832  N   VAL F 105    17.720  30.704  -1.118  1.00 21.71         N
ATOM  11833  CA  VAL F 105     18.623  31.506  -1.936  1.00 19.03
C

ATOM  11834  C   VAL F 105    18.462  31.235  -3.432  1.00 21.46         C
ATOM  11835  O   VAL F 105    18.561  30.094  -3.889  1.00 20.83
O
ATOM  11836  CB  VAL F 105     20.087  31.255  -1.536  1.00 26.65
C
ATOM  11837  CG1 VAL F 105     21.028  32.107  -2.377  1.00 28.48
C
ATOM  11838  CG2 VAL F 105     20.282  31.546  -0.051  1.00 23.67
C

ATOM  11839  H   VAL F 105    17.965  29.885  -1.023  1.00 26.06         H
ATOM  11840  HA  VAL F 105     18.430  32.445  -1.784  1.00 22.83
H
ATOM  11841  HB  VAL F 105    20.304  30.322  -1.692  1.00 31.98
H
ATOM  11842 HG11 VAL F 105     21.942  31.930  -2.105  1.00 34.18
H
ATOM  11843 HG12 VAL F 105     20.910  31.879  -3.312  1.00 34.18
H
ATOM  11844 HG13 VAL F 105     20.816  33.043  -2.236  1.00 34.18
H
ATOM  11845 HG21 VAL F 105     21.209  31.382   0.183  1.00 28.41
H
ATOM  11846 HG22 VAL F 105     20.056  32.474   0.121  1.00 28.41
H
ATOM  11847 HG23 VAL F 105     19.703  30.963   0.464  1.00 28.41
H

ATOM  11848  N   LYS F 106    18.229  32.302  -4.187  1.00 19.36         N
ATOM  11849  CA  LYS F 106     18.092  32.220  -5.634  1.00 29.10
C

ATOM  11850  C   LYS F 106    19.465  32.283  -6.295  1.00 29.24         C
ATOM  11851  O   LYS F 106    20.302  33.093  -5.904  1.00 32.55
O
ATOM  11852  CB  LYS F 106     17.203  33.358  -6.144  1.00 29.53
C
ATOM  11853  CG  LYS F 106     17.008  33.392  -7.652  1.00 35.32
C
ATOM  11854  CD  LYS F 106     16.478  34.740  -8.106  1.00 37.47
C
ATOM  11855  CE  LYS F 106     16.168  34.747  -9.600  1.00 50.78
C
ATOM  11856  NZ  LYS F 106     17.386  34.542 -10.437  1.00 52.11
N1+

ATOM  11857  H   LYS F 106    18.145  33.100  -3.877  1.00 23.23         H
ATOM  11858  HA  LYS F 106     17.676  31.377  -5.871  1.00 34.92
H
ATOM  11859  HB2 LYS F 106     16.327  33.272  -5.738  1.00 35.44
H
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ATOM   5560  OE1 GLU C 201     5.957  36.492 -16.457  1.00 24.36
O
ATOM   5561  OE2 GLU C 201     4.120  36.426 -15.262  1.00 26.94
O1-
ATOM   5562  H   GLU C 201    7.763  41.134 -15.757  1.00 18.18
H
ATOM   5563  HA  GLU C 201     7.277  38.479 -15.587  1.00 20.69
H
ATOM   5564  HB2 GLU C 201     5.330  39.412 -14.758  1.00 20.70
H
ATOM   5565  HB3 GLU C 201     5.218  40.364 -16.020  1.00 20.70
H
ATOM   5566  HG2 GLU C 201     3.676  38.637 -16.170  1.00 24.73
H
ATOM   5567  HG3 GLU C 201     4.718  38.540 -17.365  1.00 24.73
H
ATOM   5568  N   ASN C 202    7.143  38.099 -18.050  1.00 18.71
N
ATOM   5569  CA  ASN C 202     7.219  37.925 -19.497  1.00 20.17
C
ATOM   5570  C   ASN C 202    6.078  38.663 -20.179  1.00 18.49
C
ATOM   5571  O   ASN C 202    4.912  38.461 -19.844  1.00 16.77
O
ATOM   5572  CB  ASN C 202     7.176  36.435 -19.857  1.00 23.56
C
ATOM   5573  CG  ASN C 202     7.406  36.177 -21.341  1.00 23.40
C
ATOM   5574  OD1 ASN C 202     6.838  36.850 -22.202  1.00 21.30
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ATOM  11860  HB3 LYS F 106     17.602  34.203  -5.882  1.00 35.44
H
ATOM  11861  HG2 LYS F 106     17.859  33.236  -8.090  1.00 42.38
H
ATOM  11862  HG3 LYS F 106     16.367  32.710  -7.909  1.00 42.38
H
ATOM  11863  HD2 LYS F 106     15.660  34.941  -7.626  1.00 44.96
H
ATOM  11864  HD3 LYS F 106     17.145  35.422  -7.932  1.00 44.96
H
ATOM  11865  HE2 LYS F 106     15.544  34.031  -9.797  1.00 60.93
H
ATOM  11866  HE3 LYS F 106     15.779  35.603  -9.839  1.00 60.93
H
ATOM  11867  HZ1 LYS F 106     17.166  34.552 -11.300  1.00 62.53
H
ATOM  11868  HZ2 LYS F 106     17.975  35.191 -10.281  1.00 62.53
H
ATOM  11869  HZ3 LYS F 106     17.760  33.758 -10.243  1.00 62.53
H
ATOM  11870  N   THR F 107    19.691  31.424  -7.287  1.00 31.35
N
ATOM  11871  CA  THR F 107     20.912  31.469  -8.090  1.00 36.12
C
ATOM  11872  C   THR F 107    20.608  32.090  -9.449  1.00 43.02
C
ATOM  11873  O   THR F 107    19.463  32.429  -9.740  1.00 33.93
O
ATOM  11874  CB  THR F 107     21.524  30.071  -8.287  1.00 39.11
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O
ATOM  5575  ND2 ASN C 202   8.248  35.191 -21.643  1.00 23.28
N
ATOM  5576  H   ASN C 202   7.002  37.368 -17.621  1.00 22.45
H
ATOM  5577  HA  ASN C 202   8.056  38.292 -19.821  1.00 24.21
H
ATOM  5578  HB2 ASN C 202   7.869  35.971 -19.362  1.00 28.27
H
ATOM  5579  HB3 ASN C 202   6.305  36.079 -19.623  1.00 28.27
H
ATOM  5580 HD21 ASN C 202   8.413  35.004 -22.466  1.00 27.94
H
ATOM  5581 HD22 ASN C 202   8.626  34.741 -21.015  1.00 27.94
H
ATOM  5582  N   CYS C 203   6.418  39.501 -21.153  1.00 15.62
N
ATOM  5583  CA  CYS C 203   5.443  40.379 -21.787  1.00 17.19
C
ATOM  5584  C   CYS C 203   4.362  39.611 -22.551  1.00 21.25
C
ATOM  5585  O   CYS C 203   3.338  40.187 -22.922  1.00 19.77
O
ATOM  5586  CB  CYS C 203   6.159  41.353 -22.727  1.00 20.68
C
ATOM  5587  SG  CYS C 203   7.423  42.375 -21.911  1.00 23.41
S
ATOM  5588  H   CYS C 203   7.215  39.580 -21.467  1.00 18.74
H
ATOM  5589  HA  CYS C 203   5.003  40.902 -21.099  1.00 20.63
H
ATOM  5590  HB2 CYS C 203   6.596  40.846 -23.428  1.00 24.82
H
ATOM  5591  HB3 CYS C 203   5.501  41.951 -23.115  1.00 24.82
H
ATOM  5592  N   SER C 204   4.585  38.317 -22.774  1.00 16.75
N
ATOM  5593  CA  SER C 204   3.614  37.469 -23.470  1.00 19.18
C
ATOM  5594  C   SER C 204   2.544  36.908 -22.539  1.00 19.81
C


ATOM  5595  O   SER C 204   1.558  36.328 -22.991  1.00 19.37
O
ATOM  5596  CB  SER C 204   4.327  36.306 -24.161  1.00 22.12
C
ATOM  5597  OG  SER C 204   5.221  36.785 -25.144  1.00 22.09
O
ATOM  5598  H   SER C 204   5.297  37.901 -22.530  1.00 20.11
H
ATOM  5599  HA  SER C 204   3.169  37.996 -24.152  1.00 23.02
H
ATOM  5600  HB2 SER C 204   4.825  35.802 -23.499  1.00 26.54
H
ATOM  5601  HB3 SER C 204   3.666  35.737 -24.585  1.00 26.54
H
ATOM  5602  HG  SER C 204   5.799  37.281 -24.789  1.00 26.51
H
ATOM  5603  N   THR C 205   2.747  37.067 -21.237  1.00 15.82
N
ATOM  5604  CA  THR C 205   1.848  36.478 -20.254  1.00 17.27
C
ATOM  5605  C   THR C 205   0.512  37.224 -20.200  1.00 23.16
C
ATOM  5606  O   THR C 205   0.486  38.427 -19.927  1.00 18.56
O
ATOM  5607  CB  THR C 205   2.486  36.480 -18.855  1.00 20.49
C
ATOM  5608  OG1 THR C 205   3.798  35.907 -18.927  1.00 19.75
O
ATOM  5609  CG2 THR C 205   1.643  35.677 -17.877  1.00 22.93
C
ATOM  5610  H   THR C 205   3.399  37.513 -20.897  1.00 18.99
H
ATOM  5611  HA  THR C 205   1.669  35.557 -20.501  1.00 20.72
H
ATOM  5612  HB  THR C 205   2.549  37.392 -18.530  1.00 24.58
H
ATOM  5613  HG1 THR C 205   3.751  35.117 -19.208  1.00 23.70
H
ATOM  5614 HG21 THR C 205   2.055  35.686 -16.999  1.00 27.51
H
ATOM  5615 HG22 THR C 205   0.754  36.061 -17.812  1.00 27.51
H
ATOM  5616 HG23 THR C 205   1.568  34.759 -18.181  1.00 27.51
H
ATOM  5617  N   PRO C 206  -0.604  36.517 -20.459  1.00 17.76
N
ATOM  5618  CA  PRO C 206  -1.898  37.193 -20.323  1.00 19.80
C
ATOM  5619  C   PRO C 206  -2.147  37.676 -18.898  1.00 20.72
C
ATOM  5620  O   PRO C 206  -1.969  36.923 -17.940  1.00 18.27
O
ATOM  5621  CB  PRO C 206  -2.913  36.112 -20.718  1.00 22.87
C
ATOM  5622  CG  PRO C 206  -2.139  35.122 -21.513  1.00 28.25
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C
ATOM 11875  OG1 THR F 107   20.604  29.231  -8.994  1.00 41.98
O
ATOM 11876  CG2 THR F 107   21.855  29.442  -6.942  1.00 37.13
C
ATOM 11877  H   THR F 107   19.147  30.798  -7.517  1.00 37.62
H
ATOM 11878  HA  THR F 107   21.567  32.026  -7.642  1.00 43.34
H
ATOM 11879  HB  THR F 107   22.345  30.149  -8.797  1.00 46.93
H
ATOM 11880  HG1 THR F 107   20.936  28.468  -9.103  1.00 50.37
H
ATOM 11881 HG21 THR F 107   22.240  28.562  -7.073  1.00 44.55
H
ATOM 11882 HG22 THR F 107   22.491  29.997  -6.464  1.00 44.55
H
ATOM 11883 HG23 THR F 107   21.048  29.357  -6.409  1.00 44.55
H
ATOM 11884  N   GLN F 108   21.632  32.231 -10.284  1.00 47.01
N
ATOM 11885  CA  GLN F 108   21.497  32.983 -11.527  1.00 54.07
C
ATOM 11886  C   GLN F 108   20.864  32.173 -12.657  1.00 53.72
C
ATOM 11887  O   GLN F 108   20.083  32.708 -13.446  1.00 54.72
O
ATOM 11888  CB  GLN F 108   22.867  33.498 -11.976  1.00 67.40
C
ATOM 11889  CG  GLN F 108   23.526  34.461 -10.992  1.00 74.36
C
ATOM 11890  CD  GLN F 108   22.732  35.740 -10.791  1.00 78.47
C
ATOM 11891  OE1 GLN F 108   21.891  36.101 -11.615  1.00 79.85
O
ATOM 11892  NE2 GLN F 108   22.997  36.433  -9.688  1.00 78.07
N
ATOM 11893  H   GLN F 108   22.415  31.902 -10.154  1.00 56.42
H
ATOM 11894  HA  GLN F 108   20.930  33.753 -11.364  1.00 64.88
H


ATOM 11895  HB2 GLN F 108   23.462  32.741 -12.091  1.00 80.88
H
ATOM 11896  HB3 GLN F 108   22.763  33.965 -12.820  1.00 80.88
H
ATOM 11897  HG2 GLN F 108   23.610  34.022 -10.130  1.00 89.23
H
ATOM 11898  HG3 GLN F 108   24.403  34.703 -11.327  1.00 89.23
H
ATOM 11899 HE21 GLN F 108   22.575  37.165  -9.529  1.00 93.69
H
ATOM 11900 HE22 GLN F 108   23.591  36.149  -9.135  1.00 93.69
H
ATOM 11901  N   GLU F 109   21.200  30.890 -12.737  1.00 54.38
N
ATOM 11902  CA  GLU F 109   20.771  30.063 -13.861  1.00 55.52
C
ATOM 11903  C   GLU F 109   19.268  29.776 -13.827  1.00 49.42
C
ATOM 11904  O   GLU F 109   18.635  29.804 -12.770  1.00 41.41
O
ATOM 11905  CB  GLU F 109   21.559  28.746 -13.896  1.00 59.16
C
ATOM 11906  CG  GLU F 109   21.309  27.793 -12.727  1.00 62.14
C
ATOM 11907  CD  GLU F 109   22.090  28.152 -11.473  1.00 66.16
C
ATOM 11908  OE1 GLU F 109   22.681  29.252 -11.421  1.00 64.71
O
ATOM 11909  OE2 GLU F 109   22.112  27.325 -10.536  1.00 67.28
O1-
ATOM 11910  H   GLU F 109   21.676  30.474 -12.154  1.00 65.26
H
ATOM 11911  HA  GLU F 109   20.960  30.540 -14.685  1.00 66.62
H
ATOM 11912  HB2 GLU F 109   21.328  28.272 -14.711  1.00 70.99
H
ATOM 11913  HB3 GLU F 109   22.506  28.955 -13.902  1.00 70.99
H
ATOM 11914  HG2 GLU F 109   20.365  27.812 -12.505  1.00 74.57
H
ATOM 11915  HG3 GLU F 109   21.567  26.897 -12.992  1.00 74.57
H
ATOM 11916  N   ALA F 110   18.709  29.500 -15.002  1.00 43.62
N
ATOM 11917  CA  ALA F 110   17.279  29.251 -15.145  1.00 41.53
C
ATOM 11918  C   ALA F 110   16.936  27.807 -14.800  1.00 41.29
C
ATOM 11919  O   ALA F 110   17.257  26.886 -15.551  1.00 39.37
O
ATOM 11920  CB  ALA F 110   16.829  29.575 -16.559  1.00 42.06
C
ATOM 11921  H   ALA F 110   19.144  29.450 -15.742  1.00 52.34
H
ATOM 11922  HA  ALA F 110   16.795  29.829 -14.535  1.00 49.84
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C
ATOM   5623  CD  PRO C 206     -0.760  35.128 -20.926  1.00 20.21
C
ATOM   5624  HA  PRO C 206     -1.960  37.941 -20.939  1.00 23.76
H
ATOM   5625  HB2 PRO C 206     -3.278  35.700 -19.919  1.00 27.44
H
ATOM   5626  HB3 PRO C 206     -3.618  36.506 -21.255  1.00 27.44
H
ATOM   5627  HG2 PRO C 206     -2.544  34.245 -21.425  1.00 33.91
H
ATOM   5628  HG3 PRO C 206     -2.116  35.397 -22.443  1.00 33.91
H
ATOM   5629  HD2 PRO C 206     -0.707  34.511 -20.180  1.00 24.25
H

ATOM   5630  HD3 PRO C 206     -0.101  34.923 -21.608  1.00 24.25
H
ATOM   5631  N   ASN C 207     -2.542  38.936 -18.774  1.00 19.76
N
ATOM   5632  CA  ASN C 207     -2.912  39.512 -17.490  1.00 19.32
C
ATOM   5633  C   ASN C 207     -3.985  40.567 -17.689  1.00 19.48
C
ATOM   5634  O   ASN C 207     -4.119  41.121 -18.782  1.00 15.57
O
ATOM   5635  CB  ASN C 207     -1.701  40.140 -16.796  1.00 18.33
C
ATOM   5636  CG  ASN C 207     -0.820  39.120 -16.109  1.00 16.71
C
ATOM   5637  OD1 ASN C 207     -1.106  38.690 -14.991  1.00 18.99
O
ATOM   5638  ND2 ASN C 207      0.266  38.735 -16.768  1.00 18.70
N
ATOM   5639  H   ASN C 207     -2.604  39.487 -19.431  1.00 23.72
H
ATOM   5640  HA  ASN C 207     -3.268  38.816 -16.915  1.00 23.19
H
ATOM   5641  HB2 ASN C 207     -1.163  40.603 -17.457  1.00 21.99
H
ATOM   5642  HB3 ASN C 207     -2.013  40.767 -16.124  1.00 21.99
H
ATOM   5643 HD21 ASN C 207      0.799  38.157 -16.420  1.00 22.44
H
ATOM   5644 HD22 ASN C 207      0.437  39.064 -17.544  1.00 22.44
H
ATOM   5645  N   THR C 208     -4.742  40.847 -16.634  1.00 16.68
N
ATOM   5646  CA  THR C 208     -5.613  42.012 -16.630  1.00 15.95
C
ATOM   5647  C   THR C 208     -4.721  43.246 -16.681  1.00 17.24
C
ATOM   5648  O   THR C 208     -3.514  43.148 -16.471  1.00 15.69
O
ATOM   5649  CB  THR C 208     -6.522  42.041 -15.393  1.00 19.27
C
ATOM   5650  OG1 THR C 208     -5.725  42.005 -14.204  1.00 15.59
O
ATOM   5651  CG2 THR C 208     -7.471  40.844 -15.408  1.00 21.85
C
ATOM   5652  H   THR C 208     -4.770  40.380 -15.912  1.00 20.02
H
ATOM   5653  HA  THR C 208     -6.172  42.003 -17.423  1.00 19.14
H
ATOM   5654  HB  THR C 208     -7.053  42.853 -15.402  1.00 23.12
H
ATOM   5655  HG1 THR C 208     -6.220  42.021 -13.525  1.00 18.71
H
ATOM   5656 HG21 THR C 208     -8.044  40.866 -14.625  1.00 26.22
H
ATOM   5657 HG22 THR C 208     -8.025  40.869 -16.204  1.00 26.22
H
ATOM   5658 HG23 THR C 208     -6.963  40.018 -15.403  1.00 26.22
H
ATOM   5659  N   TYR C 209     -5.292  44.405 -16.979  1.00 16.72
N
ATOM   5660  CA  TYR C 209     -4.470  45.597 -17.141  1.00 13.53
C
ATOM   5661  C   TYR C 209     -5.203  46.876 -16.759  1.00 14.40
C
ATOM   5662  O   TYR C 209     -6.437  46.914 -16.687  1.00 12.53
O
ATOM   5663  CB  TYR C 209     -3.958  45.689 -18.585  1.00 14.96
C
ATOM   5664  CG  TYR C 209     -5.040  45.726 -19.649  1.00 18.50
C

ATOM   5665  CD1 TYR C 209     -5.741  44.580 -19.996  1.00 19.53
C
ATOM   5666  CD2 TYR C 209     -5.343  46.907 -20.318  1.00 14.68
C
ATOM   5667  CE1 TYR C 209     -6.723  44.609 -20.970  1.00 19.93
C
ATOM   5668  CE2 TYR C 209     -6.317  46.947 -21.291  1.00 21.82
C
ATOM   5669  CZ  TYR C 209     -7.005  45.797 -21.615  1.00 26.03
C
ATOM   5670  OH  TYR C 209     -7.976  45.843 -22.585  1.00 20.92
O
ATOM   5671  H   TYR C 209     -6.136  44.528 -17.090  1.00 20.07
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H
ATOM  11923  HB1 ALA F 110     15.877  29.403 -16.634  1.00 50.48
H
ATOM  11924  HB2 ALA F 110     17.012  30.510 -16.742  1.00 50.48
H
ATOM  11925  HB3 ALA F 110     17.317  29.014 -17.182  1.00 50.48
H
ATOM  11926  N   THR F 111     16.278  27.623 -13.659  1.00 31.19
N
ATOM  11927  CA  THR F 111     15.901  26.300 -13.185  1.00 28.12
C
ATOM  11928  C   THR F 111     14.513  26.335 -12.563  1.00 26.09
C
ATOM  11929  O   THR F 111     14.038  27.391 -12.146  1.00 23.00
O

ATOM  11930  CB  THR F 111     16.895  25.766 -12.140  1.00 31.61
C
ATOM  11931  OG1 THR F 111     16.881  26.618 -10.986  1.00 23.43
O
ATOM  11932  CG2 THR F 111     18.309  25.704 -12.718  1.00 34.93
C
ATOM  11933  H   THR F 111     16.036  28.261 -13.136  1.00 37.43
H
ATOM  11934  HA  THR F 111     15.885  25.683 -13.933  1.00 33.75
H
ATOM  11935  HB  THR F 111     16.634  24.869 -11.879  1.00 37.94
H
ATOM  11936  HG1 THR F 111     17.422  26.332 -10.411  1.00 28.12
H
ATOM  11937 HG21 THR F 111     18.925  25.366 -12.050  1.00 41.92
H
ATOM  11938 HG22 THR F 111     18.326  25.115 -13.489  1.00 41.92
H
ATOM  11939 HG23 THR F 111     18.594  26.590 -12.992  1.00 41.92
H
ATOM  11940  N   ASN F 112     13.867  25.178 -12.499  1.00 21.68
N
ATOM  11941  CA  ASN F 112     12.586  25.072 -11.820  1.00 22.81
C
ATOM  11942  C   ASN F 112     12.736  25.457 -10.350  1.00 22.60
C
ATOM  11943  O   ASN F 112     11.832  26.046  -9.758  1.00 18.34
O
ATOM  11944  CB  ASN F 112     12.023  23.655 -11.945  1.00 25.23
C
ATOM  11945  CG  ASN F 112     11.577  23.326 -13.359  1.00 30.83
C
ATOM  11946  OD1 ASN F 112     11.337  24.221 -14.171  1.00 29.96
O
ATOM  11947  ND2 ASN F 112     11.458  22.038 -13.658  1.00 31.13
N
ATOM  11948  H   ASN F 112     14.149  24.441 -12.841  1.00 26.01
H
ATOM  11949  HA  ASN F 112     11.956  25.685 -12.230  1.00 27.37
H
ATOM  11950  HB2 ASN F 112     12.709  23.019 -11.691  1.00 30.28
H
ATOM  11951  HB3 ASN F 112     11.255  23.567 -11.360  1.00 30.28
H
ATOM  11952 HD21 ASN F 112     11.209  21.801 -14.446  1.00 37.36
H
ATOM  11953 HD22 ASN F 112     11.631  21.441 -13.063  1.00 37.36
H

ATOM  11954  N   LYS F 113     13.890  25.129  -9.774  1.00 18.06           N
ATOM  11955  CA  LYS F 113     14.159  25.425  -8.374  1.00 17.23
C

ATOM  11956  C   LYS F 113     14.117  26.924  -8.124  1.00 15.57           C
ATOM  11957  O   LYS F 113     13.505  27.381  -7.160  1.00 20.36
O
ATOM  11958  CB  LYS F 113     15.518  24.858  -7.957  1.00 22.25
C
ATOM  11959  CG  LYS F 113     15.804  24.952  -6.465  1.00 19.36
C
ATOM  11960  CD  LYS F 113     17.161  24.356  -6.130  1.00 25.27
C
ATOM  11961  CE  LYS F 113     17.450  24.430  -4.645  1.00 23.84
C
ATOM  11962  NZ  LYS F 113     18.808  23.913  -4.317  1.00 30.60
N1+
ATOM  11963  H   LYS F 113     14.537  24.732 -10.178  1.00 21.67
H
ATOM  11964  HA  LYS F 113     13.477  25.009  -7.824  1.00 20.67
H

ATOM  11965  HB2 LYS F 113     15.553  23.921  -8.206  1.00 26.70
H
ATOM  11966  HB3 LYS F 113     16.215  25.346  -8.422  1.00 26.70
H
ATOM  11967  HG2 LYS F 113     15.804  25.883  -6.196  1.00 23.23
H
ATOM  11968  HG3 LYS F 113     15.125  24.459  -5.977  1.00 23.23
H
ATOM  11969  HD2 LYS F 113     17.177  23.424  -6.397  1.00 30.32
H
ATOM  11970  HD3 LYS F 113     17.852  24.851  -6.599  1.00 30.32
H
ATOM  11971  HE2 LYS F 113     17.401  25.355  -4.356  1.00 28.61
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H
ATOM  5672  HA  TYR C 209    -3.696  45.520 -16.561  1.00 16.23
H
ATOM  5673  HB2 TYR C 209    -3.432  46.500 -18.675  1.00 17.95
H
ATOM  5674  HB3 TYR C 209    -3.399  44.917 -18.764  1.00 17.95
H
ATOM  5675  HD1 TYR C 209    -5.551  43.780 -19.562  1.00 23.43
H
ATOM  5676  HD2 TYR C 209    -4.881  47.685 -20.102  1.00 17.62
H
ATOM  5677  HE1 TYR C 209    -7.187  43.834 -21.191  1.00 23.92
H
ATOM  5678  HE2 TYR C 209    -6.511  47.745 -21.727  1.00 26.18
H
ATOM  5679  HH  TYR C 209    -8.317  45.082 -22.686  1.00 25.10
H
ATOM  5680  N   ILE C 210   -4.411  47.914 -16.502  1.00 12.10
N
ATOM  5681  CA  ILE C 210    -4.920  49.213 -16.091  1.00 14.56
C
ATOM  5682  C   ILE C 210   -4.546  50.283 -17.113  1.00 16.31
C
ATOM  5683  O   ILE C 210   -3.369  50.482 -17.419  1.00 14.03
O
ATOM  5684  CB  ILE C 210    -4.370  49.618 -14.707  1.00 15.33
C
ATOM  5685  CG1 ILE C 210    -4.746  48.564 -13.661  1.00 15.55
C
ATOM  5686  CG2 ILE C 210    -4.904  50.989 -14.300  1.00 16.97
C
ATOM  5687  CD1 ILE C 210    -4.066  48.749 -12.314  1.00 17.10
C
ATOM  5688  H   ILE C 210   -3.554  47.886 -16.562  1.00 14.52
H
ATOM  5689  HA  ILE C 210    -5.887  49.174 -16.033  1.00 17.47
H
ATOM  5690  HB  ILE C 210    -3.403  49.667 -14.761  1.00 18.39
H
ATOM  5691 HG12 ILE C 210    -5.704  48.599 -13.515  1.00 18.66
H
ATOM  5692 HG13 ILE C 210    -4.498  47.689 -13.998  1.00 18.66
H
ATOM  5693 HG21 ILE C 210    -4.546  51.222 -13.429  1.00 20.36
H
ATOM  5694 HG22 ILE C 210    -4.625  51.645 -14.958  1.00 20.36
H
ATOM  5695 HG23 ILE C 210    -5.873  50.951 -14.260  1.00 20.36
H
ATOM  5696 HD11 ILE C 210    -4.357  48.045 -11.714  1.00 20.51
H
ATOM  5697 HD12 ILE C 210    -3.105  48.704 -12.437  1.00 20.51
H
ATOM  5698 HD13 ILE C 210    -4.313  49.615 -11.953  1.00 20.51
H
ATOM  5699  N   CYS C 211   -5.558  50.963 -17.639  1.00 16.07
N


ATOM  5700  CA  CYS C 211    -5.348  52.082 -18.544  1.00 16.50
C
ATOM  5701  C   CYS C 211   -5.448  53.379 -17.768  1.00 16.84
C
ATOM  5702  O   CYS C 211   -6.188  53.471 -16.787  1.00 17.47
O
ATOM  5703  CB  CYS C 211    -6.366  52.068 -19.685  1.00 24.73
C
ATOM  5704  SG  CYS C 211    -6.116  50.730 -20.874  1.00 30.48
S
ATOM  5705  H   CYS C 211   -6.386  50.791 -17.484  1.00 19.28
H
ATOM  5706  HA  CYS C 211    -4.459  52.023 -18.927  1.00 19.81
H
ATOM  5707  HB2 CYS C 211    -7.255  51.969 -19.310  1.00 29.68
H
ATOM  5708  HB3 CYS C 211    -6.305  52.908 -20.167  1.00 29.68
H
ATOM  5709  N   MET C 212   -4.706  54.380 -18.222  1.00 19.38
N
ATOM  5710  CA  MET C 212    -4.653  55.668 -17.551  1.00 17.22
C
ATOM  5711  C   MET C 212   -4.669  56.802 -18.563  1.00 21.46
C
ATOM  5712  O   MET C 212   -4.066  56.699 -19.634  1.00 19.72
O
ATOM  5713  CB  MET C 212    -3.402  55.756 -16.681  1.00 17.06
C
ATOM  5714  CG  MET C 212    -3.232  57.075 -15.955  1.00 20.46
C
ATOM  5715  SD  MET C 212    -1.732  57.072 -14.950  1.00 22.92
S
ATOM  5716  CE  MET C 212    -1.636  58.792 -14.465  1.00 27.66
C
ATOM  5717  H   MET C 212   -4.217  54.337 -18.928  1.00 23.26
H
ATOM  5718  HA  MET C 212    -5.426  55.752 -16.971  1.00 20.66
H
ATOM  5719  HB2 MET C 212    -3.439  55.054 -16.013  1.00 20.47
H
ATOM  5720  HB3 MET C 212    -2.623  55.628 -17.245  1.00 20.47
H
ATOM  5721  HG2 MET C 212    -3.164  57.793 -16.603  1.00 24.55
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H
ATOM  11972  HE3 LYS F 113    16.798  23.895  -4.166  1.00 28.61
H
ATOM  11973  HZ1 LYS F 113    18.878  23.062  -4.568  1.00 36.72
H
ATOM  11974  HZ2 LYS F 113    19.427  24.392  -4.741  1.00 36.72
H
ATOM  11975  HZ3 LYS F 113    18.951  23.968  -3.440  1.00 36.72
H
ATOM  11976  N   ASN F 114   14.770  27.687  -8.994  1.00 15.69
N
ATOM  11977  CA  ASN F 114    14.793  29.140  -8.867  1.00 19.32
C
ATOM  11978  C   ASN F 114   13.446  29.792  -9.159  1.00 20.12
C
ATOM  11979  O   ASN F 114   13.054  30.750  -8.496  1.00 17.64
O
ATOM  11980  CB  ASN F 114    15.845  29.734  -9.800  1.00 23.98
C
ATOM  11981  CG  ASN F 114    17.251  29.576  -9.266  1.00 26.05
C
ATOM  11982  OD1 ASN F 114    17.485  29.674  -8.060  1.00 23.54
O
ATOM  11983  ND2 ASN F 114    18.198  29.334 -10.163  1.00 28.63
N
ATOM  11984  H   ASN F 114   15.208  27.387  -9.670  1.00 18.83
H
ATOM  11985  HA  ASN F 114    15.041  29.369  -7.958  1.00 23.19
H
ATOM  11986  HB2 ASN F 114    15.798  29.283 -10.658  1.00 28.78
H
ATOM  11987  HB3 ASN F 114    15.671  30.681  -9.912  1.00 28.78
H
ATOM  11988 HD21 ASN F 114    19.015  29.237  -9.910  1.00 34.35
H
ATOM  11989 HD22 ASN F 114    17.996  29.275 -10.997  1.00 34.35
H
ATOM  11990  N   MET F 115   12.749  29.282 -10.164  1.00 18.73
N
ATOM  11991  CA  MET F 115    11.481  29.867 -10.572  1.00 22.34
C
ATOM  11992  C   MET F 115   10.409  29.580  -9.524  1.00 17.47
C

ATOM  11993  O   MET F 115    9.539  30.411  -9.270  1.00 19.13          O
ATOM  11994  CB  MET F 115    11.063  29.327 -11.943  1.00 24.76
C
ATOM  11995  CG  MET F 115    12.071  29.623 -13.060  1.00 34.49
C
ATOM  11996  SD  MET F 115    11.705  28.781 -14.614  1.00 53.25
S
ATOM  11997  CE  MET F 115    10.474  29.881 -15.303  1.00 35.96
C
ATOM  11998  H   MET F 115   12.988  28.598 -10.627  1.00 22.48
H
ATOM  11999  HA  MET F 115    11.591  30.827 -10.652  1.00 26.81
H


ATOM  12000  HB2 MET F 115    10.962  28.365 -11.883  1.00 29.71
H
ATOM  12001  HB3 MET F 115    10.217  29.732 -12.193  1.00 29.71
H
ATOM  12002  HG2 MET F 115    12.074  30.578 -13.234  1.00 41.38
H
ATOM  12003  HG3 MET F 115    12.952  29.340 -12.769  1.00 41.38
H
ATOM  12004  HE1 MET F 115    10.187  29.534 -16.162  1.00 43.15
H
ATOM  12005  HE2 MET F 115     9.719  29.930 -14.696  1.00 43.15
H
ATOM  12006  HE3 MET F 115    10.866  30.762 -15.416  1.00 43.15
H
ATOM  12007  N   TRP F 116   10.477  28.397  -8.921  1.00 15.95
N
ATOM  12008  CA  TRP F 116    9.571  28.024  -7.839  1.00 16.43
C

ATOM  12009  C   TRP F 116    9.757  28.966  -6.659  1.00 17.46          C

ATOM  12010  O   TRP F 116   8.794  29.369  -6.003  1.00 13.97          O
ATOM  12011  CB  TRP F 116    9.830  26.579  -7.413  1.00 17.21
C
ATOM  12012  CG  TRP F 116    8.910  26.053  -6.352  1.00 14.30
C
ATOM  12013  CD1 TRP F 116     9.177  25.930  -5.020  1.00 16.57
C
ATOM  12014  CD2 TRP F 116     7.579  25.557  -6.541  1.00 14.31
C
ATOM  12015  NE1 TRP F 116     8.094  25.392  -4.366  1.00 15.96
N
ATOM  12016  CE2 TRP F 116     7.098  25.158  -5.277  1.00 14.58
C
ATOM  12017  CE3 TRP F 116     6.746  25.414  -7.655  1.00 14.42
C
ATOM  12018  CZ2 TRP F 116     5.824  24.620  -5.099  1.00 17.85
C
ATOM  12019  CZ3 TRP F 116     5.477  24.887  -7.475  1.00 12.40
C
ATOM  12020  CH2 TRP F 116     5.031  24.492  -6.209  1.00 14.26
C
ATOM  12021  H   TRP F 116   11.046  27.785  -9.124  1.00 19.15
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H
ATOM  5722  HG3 MET C 212    -3.992  57.220 -15.369  1.00 24.55
H
ATOM  5723  HE1 MET C 212    -1.569  59.341 -15.262  1.00 33.19
H
ATOM  5724  HE2 MET C 212    -2.436  59.025 -13.968  1.00 33.19
H
ATOM  5725  HE3 MET C 212    -0.852  58.919 -13.908  1.00 33.19
H
ATOM  5726  N   GLN C 213   -5.370  57.878 -18.219  1.00 17.77
N
ATOM  5727  CA  GLN C 213    -5.404  59.079 -19.048  1.00 25.12
C
ATOM  5728  C   GLN C 213   -5.400  60.318 -18.160  1.00 26.47
C
ATOM  5729  O   GLN C 213   -6.282  60.489 -17.319  1.00 26.02
O
ATOM  5730  CB  GLN C 213    -6.639  59.080 -19.953  1.00 26.62
C
ATOM  5731  CG  GLN C 213    -6.655  60.187 -20.999  1.00 29.95
C
ATOM  5732  CD  GLN C 213    -8.002  60.315 -21.689  1.00 32.31
C
ATOM  5733  OE1 GLN C 213    -8.926  60.930 -21.157  1.00 30.11
O
ATOM  5734  NE2 GLN C 213    -8.121  59.727 -22.874  1.00 31.23
N


ATOM  5735  H   GLN C 213   -5.840  57.938 -17.502  1.00 21.33
H
ATOM  5736  HA  GLN C 213    -4.614  59.103 -19.610  1.00 30.14
H
ATOM  5737  HB2 GLN C 213    -6.682  58.232 -20.421  1.00 31.94
H
ATOM  5738  HB3 GLN C 213    -7.429  59.188 -19.400  1.00 31.94
H
ATOM  5739  HG2 GLN C 213    -6.456  61.033 -20.568  1.00 35.94
H
ATOM  5740  HG3 GLN C 213    -5.987  59.993 -21.676  1.00 35.94
H
ATOM  5741 HE21 GLN C 213    -7.455  59.302 -23.213  1.00 37.48
H
ATOM  5742 HE22 GLN C 213    -8.865  59.772 -23.304  1.00 37.48
H
ATOM  5743  N   ARG C 214   -4.398  61.171 -18.344  1.00 27.50
N
ATOM  5744  CA  ARG C 214    -4.329  62.438 -17.626  1.00 31.88
C
ATOM  5745  C   ARG C 214   -5.318  63.436 -18.229  1.00 33.93
C
ATOM  5746  O   ARG C 214   -5.446  63.533 -19.451  1.00 35.59
O
ATOM  5747  CB  ARG C 214    -2.905  62.994 -17.664  1.00 40.82
C
ATOM  5748  CG  ARG C 214    -1.878  62.073 -17.022  1.00 40.28
C
ATOM  5749  CD  ARG C 214    -0.473  62.643 -17.093  1.00 53.54
C
ATOM  5750  NE  ARG C 214    -0.373  63.945 -16.438  1.00 62.54
N
ATOM  5751  CZ  ARG C 214    -0.186  64.121 -15.133  1.00 62.56
C
ATOM  5752  NH1 ARG C 214    -0.083  63.078 -14.320  1.00 49.80
N1+
ATOM  5753  NH2 ARG C 214    -0.106  65.349 -14.635  1.00 61.54
N
ATOM  5754  H   ARG C 214   -3.741  61.038 -18.883  1.00 33.00
H
ATOM  5755  HA  ARG C 214    -4.573  62.293 -16.699  1.00 38.26
H
ATOM  5756  HB2 ARG C 214    -2.647  63.131 -18.588  1.00 48.98
H
ATOM  5757  HB3 ARG C 214    -2.886  63.839 -17.187  1.00 48.98
H
ATOM  5758  HG2 ARG C 214    -2.104  61.945 -16.088  1.00 48.33
H
ATOM  5759  HG3 ARG C 214    -1.881  61.221 -17.487  1.00 48.33
H
ATOM  5760  HD2 ARG C 214     0.140  62.035 -16.651  1.00 64.25
H
ATOM  5761  HD3 ARG C 214    -0.221  62.753 -18.024  1.00 64.25
H
ATOM  5762  HE  ARG C 214    -0.440  64.647 -16.931  1.00 75.04
H
ATOM  5763 HH11 ARG C 214    -0.133  62.279 -14.636  1.00 59.76
H
ATOM  5764 HH12 ARG C 214     0.037  63.199 -13.477  1.00 59.76
H
ATOM  5765 HH21 ARG C 214    -0.174  66.030 -15.157  1.00 73.85
H
ATOM  5766 HH22 ARG C 214     0.012  65.465 -13.791  1.00 73.85
H
ATOM  5767  N   THR C 215   -6.025  64.167 -17.372  1.00 36.74
N
ATOM  5768  CA  THR C 215    -7.027  65.127 -17.832  1.00 41.57
C
ATOM  5769  C   THR C 215   -6.376  66.389 -18.393  1.00 37.21
C


ATOM  5770  O   THR C 215   -5.421  66.913 -17.819  1.00 43.79
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H
ATOM  12022  HA  TRP F 116     8.654  28.094  -8.146  1.00 19.71
H
ATOM  12023  HB2 TRP F 116     9.735  26.007  -8.191  1.00 20.66
H
ATOM  12024  HB3 TRP F 116    10.736  26.515  -7.071  1.00 20.66
H
ATOM  12025  HD1 TRP F 116     9.977  26.174  -4.613  1.00 19.88
H
ATOM  12026  HE1 TRP F 116     8.047  25.233  -3.522  1.00 19.16
H
ATOM  12027  HE3 TRP F 116     7.037  25.670  -8.501  1.00 17.30
H
ATOM  12028  HZ2 TRP F 116     5.522  24.363  -4.257  1.00 21.42
H
ATOM  12029  HZ3 TRP F 116     4.915  24.787  -8.210  1.00 14.88
H
ATOM  12030  HH2 TRP F 116     4.174  24.144  -6.117  1.00 17.11
H

ATOM  12031  N   LEU F 117   11.014  29.315  -6.407  1.00 18.59           N
ATOM  12032  CA  LEU F 117    11.380  30.189  -5.300  1.00 17.51
C

ATOM  12033  C   LEU F 117   10.905  31.619  -5.506  1.00 16.16           C
ATOM  12034  O   LEU F 117   10.428  32.268  -4.571  1.00 15.98
O


ATOM  12035  CB  LEU F 117    12.897  30.180  -5.108  1.00 17.18
C
ATOM  12036  CG  LEU F 117    13.448  31.119  -4.034  1.00 17.88
C
ATOM  12037  CD1 LEU F 117    12.913  30.744  -2.657  1.00 21.03
C
ATOM  12038  CD2 LEU F 117    14.966  31.092  -4.048  1.00 24.18
C

ATOM  12039  H   LEU F 117   11.687  29.052  -6.874  1.00 22.30           H
ATOM  12040  HA  LEU F 117    10.973  29.853  -4.486  1.00 21.01
H
ATOM  12041  HB2 LEU F 117    13.169  29.280  -4.870  1.00 20.62
H
ATOM  12042  HB3 LEU F 117    13.311  30.430  -5.948  1.00 20.62
H
ATOM  12043  HG  LEU F 117    13.163  32.025  -4.230  1.00 21.45
H
ATOM  12044 HD11 LEU F 117    13.279  31.355  -1.999  1.00 25.23
H
ATOM  12045 HD12 LEU F 117    11.945  30.809  -2.666  1.00 25.23
H
ATOM  12046 HD13 LEU F 117    13.182  29.835  -2.450  1.00 25.23
H
ATOM  12047 HD21 LEU F 117    15.298  31.692  -3.362  1.00 29.02
H
ATOM  12048 HD22 LEU F 117    15.266  30.187  -3.871  1.00 29.02
H
ATOM  12049 HD23 LEU F 117    15.278  31.380  -4.920  1.00 29.02
H
ATOM  12050  N   THR F 118   11.042  32.121  -6.726  1.00 13.53
N
ATOM  12051  CA  THR F 118    10.730  33.519  -6.985  1.00 18.81
C

ATOM  12052  C   THR F 118    9.255  33.762  -7.325  1.00 16.55           C

ATOM  12053  O   THR F 118    8.828  34.914  -7.373  1.00 17.08           O
ATOM  12054  CB  THR F 118    11.598  34.082  -8.133  1.00 20.28
C
ATOM  12055  OG1 THR F 118    11.412  33.302  -9.320  1.00 22.13
O
ATOM  12056  CG2 THR F 118    13.070  34.063  -7.747  1.00 26.66
C
ATOM  12057  H   THR F 118   11.311  31.679  -7.414  1.00 16.23
H
ATOM  12058  HA  THR F 118    10.933  34.031  -6.187  1.00 22.57
H
ATOM  12059  HB  THR F 118    11.341  35.000  -8.309  1.00 24.34
H
ATOM  12060  HG1 THR F 118    10.606  33.323  -9.554  1.00 26.55
H
ATOM  12061 HG21 THR F 118    13.607  34.417  -8.472  1.00 31.99
H
ATOM  12062 HG22 THR F 118    13.211  34.605  -6.955  1.00 31.99
H
ATOM  12063 HG23 THR F 118    13.352  33.153  -7.561  1.00 31.99
H

ATOM  12064  N   THR F 119    8.475  32.701  -7.541  1.00 16.31           N
ATOM  12065  CA  THR F 119     7.098  32.874  -8.023  1.00 13.93
C

ATOM  12066  C   THR F 119    6.010  32.287  -7.133  1.00 15.23           C

ATOM  12067  O   THR F 119    4.835  32.608  -7.309  1.00 15.00           O
ATOM  12068  CB  THR F 119     6.908  32.252  -9.429  1.00 15.38
C
ATOM  12069  OG1 THR F 119     6.994  30.823  -9.354  1.00 15.55
O


ATOM  12070  CG2 THR F 119     7.938  32.794 -10.407  1.00 22.64
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O
ATOM  5771  CB  THR C 215    -7.992  65.528 -16.697  1.00 37.58
C
ATOM  5772  OG1 THR C 215    -7.256  66.123 -15.621  1.00 31.78
O
ATOM  5773  CG2 THR C 215    -8.750  64.313 -16.184  1.00 39.25
C
ATOM  5774  H   THR C 215    -5.945  64.125 -16.517  1.00 44.09
H
ATOM  5775  HA  THR C 215    -7.551  64.721 -18.540  1.00 49.88
H
ATOM  5776  HB  THR C 215    -8.637  66.169 -17.036  1.00 45.09
H
ATOM  5777  HG1 THR C 215    -6.693  65.577 -15.322  1.00 38.13
H
ATOM  5778 HG21 THR C 215    -9.354  64.576 -15.471  1.00 47.10
H
ATOM  5779 HG22 THR C 215    -9.266  63.916 -16.903  1.00 47.10
H
ATOM  5780 HG23 THR C 215    -8.126  63.654 -15.841  1.00 47.10
H
TER   5781      THR C 215
ATOM  5782  N   GLU D  93   -16.518  60.935 -24.144  1.00 50.72
N
ATOM  5783  CA  GLU D  93   -15.948  61.865 -23.176  1.00 55.05
C
ATOM  5784  C   GLU D  93   -17.021  62.338 -22.200  1.00 56.26
C
ATOM  5785  O   GLU D  93   -18.143  62.642 -22.604  1.00 53.30
O
ATOM  5786  CB  GLU D  93   -15.318  63.062 -23.888  1.00 63.84
C
ATOM  5787  CG  GLU D  93   -14.372  63.872 -23.016  1.00 63.90
C
ATOM  5788  CD  GLU D  93   -13.844  65.113 -23.716  1.00 77.81
C
ATOM  5789  OE1 GLU D  93   -14.545  65.642 -24.605  1.00 77.09
O
ATOM  5790  OE2 GLU D  93   -12.725  65.558 -23.379  1.00 78.31
O1-
ATOM  5791  HA  GLU D  93   -15.255  61.413 -22.669  1.00 66.06
H
ATOM  5792  HB2 GLU D  93   -14.813  62.740 -24.651  1.00 76.60
H
ATOM  5793  HB3 GLU D  93   -16.025  63.654 -24.188  1.00 76.60
H
ATOM  5794  HG2 GLU D  93   -14.844  64.157 -22.217  1.00 76.68
H
ATOM  5795  HG3 GLU D  93   -13.613  63.319 -22.773  1.00 76.68
H
ATOM  5796  N   SER D  94   -16.675  62.405 -20.918  1.00 45.44
N
ATOM  5797  CA  SER D  94   -17.646  62.768 -19.894  1.00 42.83
C
ATOM  5798  C   SER D  94   -16.982  63.218 -18.597  1.00 36.20
C
ATOM  5799  O   SER D  94   -15.871  62.800 -18.274  1.00 34.62
O
ATOM  5800  CB  SER D  94   -18.576  61.582 -19.613  1.00 47.30
C
ATOM  5801  OG  SER D  94   -19.526  61.895 -18.609  1.00 57.24
O
ATOM  5802  H   SER D  94   -15.886  62.245 -20.616  1.00 54.53
H
ATOM  5803  HA  SER D  94   -18.189  63.502 -20.221  1.00 51.40
H
ATOM  5804  HB2 SER D  94   -19.046  61.353 -20.430  1.00 56.75
H


ATOM  5805  HB3 SER D  94   -18.042  60.828 -19.317  1.00 56.75
H
ATOM  5806  HG  SER D  94   -20.025  61.234 -18.470  1.00 68.69
H
ATOM  5807  N   TYR D  95   -17.673  64.086 -17.866  1.00 33.40
N
ATOM  5808  CA  TYR D  95   -17.266  64.466 -16.520  1.00 33.91
C
ATOM  5809  C   TYR D  95   -17.891  63.519 -15.505  1.00 30.98
C
ATOM  5810  O   TYR D  95   -18.999  63.025 -15.711  1.00 31.07
O
ATOM  5811  CB  TYR D  95   -17.675  65.905 -16.213  1.00 39.04
C
ATOM  5812  CG  TYR D  95   -16.785  66.949 -16.840  1.00 41.85
C
ATOM  5813  CD1 TYR D  95   -15.603  67.336 -16.227  1.00 42.03
C
ATOM  5814  CD2 TYR D  95   -17.130  67.557 -18.040  1.00 50.41
C
ATOM  5815  CE1 TYR D  95   -14.785  68.293 -16.790  1.00 48.64
C
ATOM  5816  CE2 TYR D  95   -16.319  68.517 -18.613  1.00 52.83
C
ATOM  5817  CZ  TYR D  95   -15.147  68.881 -17.983  1.00 57.25
C
ATOM  5818  OH  TYR D  95   -14.331  69.837 -18.545  1.00 60.24
O
ATOM  5819  H   TYR D  95   -18.394  64.473 -18.132  1.00 40.08
H
ATOM  5820  HA  TYR D  95   -16.301  64.400 -16.446  1.00 40.69
H
ATOM  5821  HB2 TYR D  95   -18.576  66.050 -16.542  1.00 46.85
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C

ATOM  12071  H   THR F 119     8.712  31.883  -7.419  1.00 19.57           H
ATOM  12072  HA  THR F 119     6.924  33.825  -8.102  1.00 16.72
H
ATOM  12073  HB  THR F 119     6.029  32.495  -9.760  1.00 18.46
H
ATOM  12074  HG1 THR F 119     7.746  30.596  -9.056  1.00 18.65
H
ATOM  12075 HG21 THR F 119     7.806  32.396 -11.281  1.00 27.16
H
ATOM  12076 HG22 THR F 119     7.850  33.757 -10.482  1.00 27.16
H
ATOM  12077 HG23 THR F 119     8.833  32.582 -10.096  1.00 27.16
H

ATOM  12078  N   SER F 120     6.372  31.435  -6.184  1.00 14.66           N
ATOM  12079  CA  SER F 120     5.353  30.736  -5.405  1.00 13.72
C

ATOM  12080  C   SER F 120     4.494  31.689  -4.583  1.00 15.42           C
ATOM  12081  O   SER F 120     3.267  31.564  -4.561  1.00 14.45           O
ATOM  12082  CB  SER F 120     6.000  29.701  -4.490  1.00 13.00
C
ATOM  12083  OG  SER F 120     6.308  28.529  -5.215  1.00 13.36
O

ATOM  12084  H   SER F 120     7.183  31.245  -5.972  1.00 17.59           H
ATOM  12085  HA  SER F 120     4.766  30.264  -6.016  1.00 16.46
H
ATOM  12086  HB2 SER F 120     6.817  30.070  -4.121  1.00 15.60
H
ATOM  12087  HB3 SER F 120     5.382  29.479  -3.776  1.00 15.60
H
ATOM  12088  HG  SER F 120     6.841  28.709  -5.839  1.00 16.03
H

ATOM  12089  N   GLU F 121     5.127  32.640  -3.906  1.00 12.33           N
ATOM  12090  CA  GLU F 121     4.374  33.607  -3.114  1.00 15.40
C

ATOM  12091  C   GLU F 121     3.490  34.461  -4.020  1.00 15.41           C

ATOM  12092  O   GLU F 121     2.297  34.645  -3.758  1.00 13.55           O
ATOM  12093  CB  GLU F 121     5.317  34.491  -2.307  1.00 17.29
C
ATOM  12094  CG  GLU F 121     4.607  35.381  -1.317  1.00 19.47
C
ATOM  12095  CD  GLU F 121     5.568  36.252  -0.541  1.00 26.69
C
ATOM  12096  OE1 GLU F 121     6.760  35.884  -0.447  1.00 27.63
O
ATOM  12097  OE2 GLU F 121     5.132  37.303  -0.028  1.00 31.22
O1-

ATOM  12098  H   GLU F 121     5.980  32.748  -3.888  1.00 14.80           H
ATOM  12099  HA  GLU F 121     3.801  33.131  -2.493  1.00 18.48
H
ATOM  12100  HB2 GLU F 121     5.931  33.926  -1.813  1.00 20.74
H
ATOM  12101  HB3 GLU F 121     5.811  35.061  -2.918  1.00 20.74
H
ATOM  12102  HG2 GLU F 121     3.992  35.960  -1.794  1.00 23.37
H
ATOM  12103  HG3 GLU F 121     4.122  34.828  -0.684  1.00 23.37
H

ATOM  12104  N   PHE F 122     4.095  34.977  -5.083  1.00 13.83           N


ATOM  12105  CA  PHE F 122     3.375  35.708  -6.123  1.00 14.10
C

ATOM  12106  C   PHE F 122     2.122  34.964  -6.586  1.00 15.86           C

ATOM  12107  O   PHE F 122     1.038  35.545  -6.674  1.00 14.66           O
ATOM  12108  CB  PHE F 122     4.314  35.954  -7.308  1.00 15.83
C
ATOM  12109  CG  PHE F 122     3.651  36.569  -8.505  1.00 17.67
C
ATOM  12110  CD1 PHE F 122     3.586  37.944  -8.644  1.00 16.84
C
ATOM  12111  CD2 PHE F 122     3.124  35.770  -9.510  1.00 15.73
C
ATOM  12112  CE1 PHE F 122     2.991  38.512  -9.751  1.00 19.00
C
ATOM  12113  CE2 PHE F 122     2.525  36.331 -10.617  1.00 21.26
C
ATOM  12114  CZ  PHE F 122     2.461  37.707 -10.740  1.00 21.83
C

ATOM  12115  H   PHE F 122     4.940  34.915  -5.230  1.00 16.59           H
ATOM  12116  HA  PHE F 122     3.101  36.570  -5.772  1.00 16.92
H
ATOM  12117  HB2 PHE F 122     5.023  36.552  -7.024  1.00 19.00
H
ATOM  12118  HB3 PHE F 122     4.694  35.105  -7.585  1.00 19.00
H
ATOM  12119  HD1 PHE F 122     3.942  38.490  -7.982  1.00 20.21
H
ATOM  12120  HD2 PHE F 122     3.166  34.845  -9.430  1.00 18.87
H
ATOM  12121  HE1 PHE F 122     2.946  39.438  -9.831  1.00 22.80
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H
ATOM  5822  HB3 TYR D  95    -17.853  66.037 -15.252  1.00 46.85
H
ATOM  5823  HD1 TYR D  95    -15.356  66.941 -15.421  1.00 50.44
H
ATOM  5824  HD2 TYR D  95    -17.920  67.312 -18.465  1.00 60.50
H
ATOM  5825  HE1 TYR D  95    -13.994  68.541 -16.368  1.00 58.37
H
ATOM  5826  HE2 TYR D  95    -16.561  68.915 -19.418  1.00 63.40
H
ATOM  5827  HH  TYR D  95    -14.664  70.113 -19.265  1.00 72.28
H
ATOM  5828  N   CYS D  96   -17.171  63.269 -14.415  1.00 25.95
N
ATOM  5829  CA  CYS D  96    -17.651  62.404 -13.343  1.00 25.00
C
ATOM  5830  C   CYS D  96   -17.873  63.227 -12.080  1.00 26.60
C
ATOM  5831  O   CYS D  96   -17.011  64.017 -11.687  1.00 24.78
O
ATOM  5832  CB  CYS D  96    -16.654  61.274 -13.078  1.00 24.34
C
ATOM  5833  SG  CYS D  96    -17.220  60.018 -11.906  1.00 25.98
S
ATOM  5834  H   CYS D  96   -16.388  63.595 -14.272  1.00 31.14
H
ATOM  5835  HA  CYS D  96    -18.498  62.010 -13.603  1.00 30.00
H
ATOM  5836  HB2 CYS D  96    -16.465  60.826 -13.918  1.00 29.21
H
ATOM  5837  HB3 CYS D  96    -15.838  61.659 -12.724  1.00 29.21
H
ATOM  5838  N   GLY D  97   -19.032  63.042 -11.454  1.00 23.68
N
ATOM  5839  CA  GLY D  97    -19.358  63.738 -10.223  1.00 26.95
C


ATOM  5840  C   GLY D  97   -20.783  64.263 -10.206  1.00 29.72
C
ATOM  5841  O   GLY D  97   -21.654  63.711 -10.880  1.00 30.29
O
ATOM  5842  H   GLY D  97   -19.651  62.512 -11.730  1.00 28.42
H
ATOM  5843  HA2 GLY D  97    -19.245  63.135  -9.472  1.00 32.33
H
ATOM  5844  HA3 GLY D  97    -18.755  64.489 -10.108  1.00 32.33
H
ATOM  5845  N   PRO D  98   -21.033  65.333  -9.432  1.00 27.73
N
ATOM  5846  CA  PRO D  98    -20.059  66.060  -8.605  1.00 26.68
C
ATOM  5847  C   PRO D  98   -19.526  65.247  -7.425  1.00 25.52
C
ATOM  5848  O   PRO D  98   -20.262  64.465  -6.822  1.00 24.79
O
ATOM  5849  CB  PRO D  98    -20.855  67.272  -8.110  1.00 31.02
C
ATOM  5850  CG  PRO D  98    -22.272  66.852  -8.178  1.00 32.89
C
ATOM  5851  CD  PRO D  98    -22.370  65.945  -9.363  1.00 31.01
C
ATOM  5852  HA  PRO D  98    -19.315  66.363  -9.148  1.00 32.02
H
ATOM  5853  HB2 PRO D  98    -20.601  67.480  -7.197  1.00 37.23
H
ATOM  5854  HB3 PRO D  98    -20.692  68.030  -8.693  1.00 37.23
H
ATOM  5855  HG2 PRO D  98    -22.510  66.380  -7.366  1.00 39.46
H
ATOM  5856  HG3 PRO D  98    -22.837  67.632  -8.298  1.00 39.46
H
ATOM  5857  HD2 PRO D  98    -23.046  65.268  -9.214  1.00 37.21
H
ATOM  5858  HD3 PRO D  98    -22.550  66.456 -10.167  1.00 37.21
H
ATOM  5859  N   CYS D  99   -18.247  65.439  -7.115  1.00 22.53
N
ATOM  5860  CA  CYS D  99    -17.605  64.787  -5.978  1.00 24.42
C
ATOM  5861  C   CYS D  99   -16.595  65.739  -5.345  1.00 27.19
C
ATOM  5862  O   CYS D  99   -16.094  66.638  -6.017  1.00 26.74
O
ATOM  5863  CB  CYS D  99    -16.895  63.496  -6.407  1.00 28.73
C
ATOM  5864  SG  CYS D  99    -17.971  62.187  -7.066  1.00 27.37
S
ATOM  5865  H   CYS D  99   -17.719  65.952  -7.559  1.00 27.03
H
ATOM  5866  HA  CYS D  99    -18.275  64.563  -5.313  1.00 29.30
H
ATOM  5867  HB2 CYS D  99    -16.250  63.716  -7.097  1.00 34.48
H
ATOM  5868  HB3 CYS D  99    -16.432  63.131  -5.637  1.00 34.48
H
ATOM  5869  N   PRO D 100   -16.293  65.547  -4.051  1.00 23.29
N
ATOM  5870  CA  PRO D 100    -15.166  66.276  -3.458  1.00 27.44
C
ATOM  5871  C   PRO D 100   -13.882  66.019  -4.245  1.00 28.68
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H
ATOM  12122  HE2 PHE F 122     2.170  35.786 -11.281  1.00 25.51
H
ATOM  12123  HZ  PHE F 122    2.057  38.089 -11.485  1.00 26.20
H

ATOM  12124  N   ARG F 123    2.271  33.671  -6.857  1.00 14.87          N
ATOM  12125  CA  ARG F 123     1.135  32.875  -7.423  1.00 15.14
C

ATOM  12126  C   ARG F 123    0.102  32.529  -6.394  1.00 16.12          C
ATOM  12127  O   ARG F 123   -1.047  32.276  -6.759  1.00 15.25
O
ATOM  12128  CB  ARG F 123     1.752  31.598  -8.055  1.00 17.25
C
ATOM  12129  CG  ARG F 123     2.417  31.851  -9.407  1.00 15.66
C
ATOM  12130  CD  ARG F 123     2.949  30.582 -10.069  1.00 16.20
C
ATOM  12131  NE  ARG F 123     4.170  30.101  -9.428  1.00 17.22
N
ATOM  12132  CZ  ARG F 123     4.237  29.081  -8.574  1.00 13.04
C
ATOM  12133  NH1 ARG F 123     3.150  28.391  -8.242  1.00 11.59
N1+
ATOM  12134  NH2 ARG F 123     5.408  28.743  -8.054  1.00 13.48
N

ATOM  12135  H   ARG F 123    2.996  33.228  -6.721  1.00 17.85          H
ATOM  12136  HA  ARG F 123     0.763  33.388  -8.129  1.00 18.17
H
ATOM  12137  HB2 ARG F 123     2.418  31.220  -7.460  1.00 20.70
H
ATOM  12138  HB3 ARG F 123     1.030  30.965  -8.191  1.00 20.70
H
ATOM  12139  HG2 ARG F 123     1.767  32.250 -10.006  1.00 18.79
H


ATOM  12140  HG3 ARG F 123     3.164  32.456  -9.280  1.00 18.79
H
ATOM  12141  HD2 ARG F 123     2.278  29.884 -10.005  1.00 19.44
H
ATOM  12142  HD3 ARG F 123     3.149  30.769 -11.000  1.00 19.44
H
ATOM  12143  HE  ARG F 123    4.904  30.508  -9.617  1.00 20.67
H
ATOM  12144 HH11 ARG F 123     2.387  28.605  -8.575  1.00 13.91
H
ATOM  12145 HH12 ARG F 123     3.210  27.734  -7.691  1.00 13.91
H
ATOM  12146 HH21 ARG F 123     6.116  29.182  -8.266  1.00 16.17
H
ATOM  12147 HH22 ARG F 123     5.480  28.083  -7.505  1.00 16.17
H

ATOM  12148  N   LEU F 124    0.455  32.535  -5.113  1.00 15.08          N
ATOM  12149  CA  LEU F 124   -0.532  32.315  -4.062  1.00 16.64
C

ATOM  12150  C   LEU F 124   -1.329  33.584  -3.789  1.00 17.66          C

ATOM  12151  O   LEU F 124   -2.555  33.542  -3.651  1.00 14.64          O
ATOM  12152  CB  LEU F 124    0.137  31.848  -2.766  1.00 12.40
C
ATOM  12153  CG  LEU F 124   -0.767  31.818  -1.525  1.00 15.66
C
ATOM  12154  CD1 LEU F 124   -1.960  30.901  -1.736  1.00 18.94
C
ATOM  12155  CD2 LEU F 124    0.001  31.410  -0.273  1.00 12.65
C

ATOM  12156  H   LEU F 124    1.256  32.662  -4.827  1.00 18.10          H
ATOM  12157  HA  LEU F 124   -1.151  31.626  -4.347  1.00 19.97
H
ATOM  12158  HB2 LEU F 124     0.473  30.948  -2.903  1.00 14.88
H
ATOM  12159  HB3 LEU F 124     0.877  32.443  -2.572  1.00 14.88
H
ATOM  12160  HG  LEU F 124   -1.112  32.712  -1.376  1.00 18.80
H
ATOM  12161 HD11 LEU F 124    -2.507  30.907  -0.935  1.00 22.72
H
ATOM  12162 HD12 LEU F 124    -2.475  31.223  -2.492  1.00 22.72
H
ATOM  12163 HD13 LEU F 124    -1.639  30.003  -1.912  1.00 22.72
H
ATOM  12164 HD21 LEU F 124    -0.607  31.405   0.482  1.00 15.18
H
ATOM  12165 HD22 LEU F 124     0.373  30.524  -0.406  1.00 15.18
H
ATOM  12166 HD23 LEU F 124     0.715  32.049  -0.120  1.00 15.18
H

ATOM  12167  N   LYS F 125   -0.628  34.711  -3.714  1.00 16.52          N
ATOM  12168  CA  LYS F 125    -1.208  35.923  -3.146  1.00 13.85
C

ATOM  12169  C   LYS F 125   -1.934  36.817  -4.144  1.00 18.09          C

ATOM  12170  O   LYS F 125   -2.316  37.935  -3.802  1.00 17.06          O
ATOM  12171  CB  LYS F 125   -0.117  36.732  -2.443  1.00 16.06
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C
ATOM  5872  O   PRO D 100   -13.681  64.904  -4.730  1.00 26.75
O
ATOM  5873  CB  PRO D 100   -15.073  65.703  -2.043  1.00 29.15
C
ATOM  5874  CG  PRO D 100   -16.420  65.125  -1.767  1.00 25.98
C


ATOM  5875  CD  PRO D 100   -16.950  64.656  -3.079  1.00 24.13
C
ATOM  5876  HA  PRO D 100   -15.349  67.228  -3.420  1.00 32.93
H
ATOM  5877  HB2 PRO D 100   -14.392  65.013  -2.014  1.00 34.98
H
ATOM  5878  HB3 PRO D 100   -14.869  66.414  -1.415  1.00 34.98
H
ATOM  5879  HG2 PRO D 100   -16.333  64.382  -1.150  1.00 31.17
H
ATOM  5880  HG3 PRO D 100   -16.996  65.811  -1.394  1.00 31.17
H
ATOM  5881  HD2 PRO D 100   -16.693  63.734  -3.238  1.00 28.95
H
ATOM  5882  HD3 PRO D 100   -17.913  64.769  -3.115  1.00 28.95
H
ATOM  5883  N   LYS D 101  -13.027  67.031  -4.357  1.00 31.41
N
ATOM  5884  CA  LYS D 101   -11.915  66.997  -5.306  1.00 34.02
C
ATOM  5885  C   LYS D 101  -10.851  65.943  -4.997  1.00 34.04
C
ATOM  5886  O   LYS D 101  -10.078  65.570  -5.884  1.00 40.88
O
ATOM  5887  CB  LYS D 101   -11.254  68.377  -5.379  1.00 40.64
C
ATOM  5888  CG  LYS D 101   -12.150  69.458  -5.975  1.00 44.15
C
ATOM  5889  CD  LYS D 101   -11.383  70.749  -6.223  1.00 55.25
C
ATOM  5890  CE  LYS D 101   -12.306  71.866  -6.691  1.00 57.18
C
ATOM  5891  NZ  LYS D 101   -11.566  73.132  -6.955  1.00 56.55
N1+
ATOM  5892  H   LYS D 101  -13.069  67.753  -3.892  1.00 37.69
H
ATOM  5893  HA  LYS D 101   -12.271  66.799  -6.186  1.00 40.82
H
ATOM  5894  HB2 LYS D 101   -11.011  68.655  -4.482  1.00 48.77
H
ATOM  5895  HB3 LYS D 101   -10.459  68.314  -5.931  1.00 48.77
H
ATOM  5896  HG2 LYS D 101   -12.505  69.147  -6.823  1.00 52.98
H
ATOM  5897  HG3 LYS D 101   -12.874  69.649  -5.358  1.00 52.98
H
ATOM  5898  HD2 LYS D 101   -10.957  71.032  -5.399  1.00 66.30
H
ATOM  5899  HD3 LYS D 101   -10.716  70.598  -6.911  1.00 66.30
H
ATOM  5900  HE2 LYS D 101   -12.743  71.594  -7.513  1.00 68.62
H
ATOM  5901  HE3 LYS D 101   -12.967  72.040  -6.003  1.00 68.62
H
ATOM  5902  HZ1 LYS D 101   -12.132  73.763  -7.226  1.00 67.86
H
ATOM  5903  HZ2 LYS D 101   -11.160  73.407  -6.213  1.00 67.86
H
ATOM  5904  HZ3 LYS D 101   -10.955  73.000  -7.588  1.00 67.86
H
ATOM  5905  N   ASN D 102  -10.804  65.470  -3.755  1.00 27.12
N
ATOM  5906  CA  ASN D 102    -9.836  64.445  -3.366  1.00 27.98
C
ATOM  5907  C   ASN D 102  -10.503  63.098  -3.072  1.00 26.71
C
ATOM  5908  O   ASN D 102    -9.946  62.263  -2.360  1.00 25.40
O
ATOM  5909  CB  ASN D 102    -9.026  64.914  -2.150  1.00 30.15
C


ATOM  5910  CG  ASN D 102    -9.898  65.481  -1.045  1.00 36.72
C
ATOM  5911  OD1 ASN D 102   -11.120  65.332  -1.062  1.00 37.16
O
ATOM  5912  ND2 ASN D 102    -9.271  66.145  -0.078  1.00 41.06
N
ATOM  5913  H   ASN D 102  -11.322  65.725  -3.118  1.00 32.55
H
ATOM  5914  HA  ASN D 102    -9.215  64.311  -4.099  1.00 33.58
H
ATOM  5915  HB2 ASN D 102    -8.535  64.160  -1.787  1.00 36.19
H
ATOM  5916  HB3 ASN D 102    -8.409  65.608  -2.430  1.00 36.19
H
ATOM  5917 HD21 ASN D 102    -9.720  66.485   0.571  1.00 49.28
H
ATOM  5918 HD22 ASN D 102    -8.416  66.233  -0.102  1.00 49.28
H
ATOM  5919  N   TRP D 103  -11.696  62.897  -3.630  1.00 25.27
N
ATOM  5920  CA  TRP D 103   -12.400  61.619  -3.534  1.00 19.72
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C
ATOM  12172  CG  LYS F 125    0.491  36.018  -1.252  1.00 20.08
C
ATOM  12173  CD  LYS F 125    1.351  36.960  -0.420  1.00 22.60
C

ATOM  12174  CE  LYS F 125    1.664  36.362   0.940  1.00 23.37        C


ATOM  12175  NZ  LYS F 125    2.510  37.267   1.764  1.00 23.92
N1+

ATOM  12176  H   LYS F 125   0.183  34.801  -3.985  1.00 19.83        H
ATOM  12177  HA  LYS F 125   -1.854  35.662  -2.471  1.00 16.62
H
ATOM  12178  HB2 LYS F 125    0.595  36.915  -3.076  1.00 19.28
H
ATOM  12179  HB3 LYS F 125   -0.499  37.566  -2.127  1.00 19.28
H
ATOM  12180  HG2 LYS F 125   -0.219  35.674  -0.688  1.00 24.10
H
ATOM  12181  HG3 LYS F 125    1.052  35.291  -1.567  1.00 24.10
H
ATOM  12182  HD2 LYS F 125    2.188  37.123  -0.881  1.00 27.13
H
ATOM  12183  HD3 LYS F 125    0.874  37.794  -0.283  1.00 27.13
H
ATOM  12184  HE2 LYS F 125    0.834  36.205   1.417  1.00 28.04
H
ATOM  12185  HE3 LYS F 125    2.142  35.527   0.818  1.00 28.04
H
ATOM  12186  HZ1 LYS F 125    3.282  37.423   1.348  1.00 28.71
H
ATOM  12187  HZ2 LYS F 125    2.090  38.041   1.894  1.00 28.71
H
ATOM  12188  HZ3 LYS F 125    2.678  36.891   2.553  1.00 28.71
H

ATOM  12189  N   LYS F 126  -2.143  36.328  -5.363  1.00 14.39        N
ATOM  12190  CA  LYS F 126   -2.855  37.102  -6.371  1.00 15.04
C

ATOM  12191  C   LYS F 126  -4.200  37.597  -5.829  1.00 15.14        C

ATOM  12192  O   LYS F 126  -4.500  38.788  -5.906  1.00 13.71        O
ATOM  12193  CB  LYS F 126   -3.057  36.270  -7.637  1.00 15.31
C
ATOM  12194  CG  LYS F 126   -3.569  37.060  -8.822  1.00 14.58
C
ATOM  12195  CD  LYS F 126   -3.293  36.319 -10.120  1.00 18.23
C
ATOM  12196  CE  LYS F 126   -3.981  36.970 -11.302  1.00 24.64
C
ATOM  12197  NZ  LYS F 126   -3.627  36.281 -12.575  1.00 24.00
N1+

ATOM  12198  H   LYS F 126  -1.883  35.553  -5.630  1.00 17.27        H
ATOM  12199  HA  LYS F 126   -2.323  37.879  -6.605  1.00 18.05
H
ATOM  12200  HB2 LYS F 126   -2.207  35.876  -7.889  1.00 18.37
H
ATOM  12201  HB3 LYS F 126   -3.700  35.569  -7.449  1.00 18.37
H
ATOM  12202  HG2 LYS F 126   -4.528  37.183  -8.738  1.00 17.49
H
ATOM  12203  HG3 LYS F 126   -3.119  37.918  -8.857  1.00 17.49
H
ATOM  12204  HD2 LYS F 126   -2.338  36.318 -10.289  1.00 21.87
H
ATOM  12205  HD3 LYS F 126   -3.620  35.409 -10.043  1.00 21.87
H
ATOM  12206  HE2 LYS F 126   -4.943  36.917 -11.183  1.00 29.56
H
ATOM  12207  HE3 LYS F 126   -3.700  37.896 -11.367  1.00 29.56
H
ATOM  12208  HZ1 LYS F 126   -4.039  36.675 -13.258  1.00 28.80
H
ATOM  12209  HZ2 LYS F 126   -2.748  36.318 -12.706  1.00 28.80
H


ATOM  12210  HZ3 LYS F 126   -3.878  35.427 -12.538  1.00 28.80
H

ATOM  12211  N   TRP F 127  -4.983  36.690  -5.245  1.00 15.14        N
ATOM  12212  CA  TRP F 127   -6.284  37.040  -4.663  1.00 15.40
C

ATOM  12213  C   TRP F 127  -6.357  36.731  -3.163  1.00 15.55        C

ATOM  12214  O   TRP F 127  -7.408  36.886  -2.532  1.00 13.20        O
ATOM  12215  CB  TRP F 127   -7.397  36.293  -5.400  1.00 11.59
C
ATOM  12216  CG  TRP F 127   -7.543  36.706  -6.833  1.00 15.11
C
ATOM  12217  CD1 TRP F 127   -7.053  36.059  -7.931  1.00 17.05
C
ATOM  12218  CD2 TRP F 127   -8.229  37.863  -7.323  1.00 15.18
C
ATOM  12219  NE1 TRP F 127   -7.390  36.744  -9.075  1.00 17.58
N
ATOM  12220  CE2 TRP F 127   -8.114  37.854  -8.729  1.00 18.89
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C
ATOM  5921  C   TRP D 103    -12.378  60.891  -4.872  1.00 20.07
C
ATOM  5922  O   TRP D 103    -12.240  61.516  -5.927  1.00 20.39
O
ATOM  5923  CB  TRP D 103    -13.853  61.822  -3.094  1.00 22.50
C
ATOM  5924  CG  TRP D 103    -14.018  62.103  -1.636  1.00 21.05
C
ATOM  5925  CD1 TRP D 103    -13.247  62.919  -0.865  1.00 26.32
C
ATOM  5926  CD2 TRP D 103    -15.014  61.552  -0.768  1.00 22.01
C
ATOM  5927  NE1 TRP D 103    -13.708  62.920   0.430  1.00 31.25
N
ATOM  5928  CE2 TRP D 103    -14.792  62.088   0.516  1.00 23.75
C
ATOM  5929  CE3 TRP D 103    -16.075  60.660  -0.952  1.00 21.83
C
ATOM  5930  CZ2 TRP D 103    -15.589  61.759   1.611  1.00 26.02
C
ATOM  5931  CZ3 TRP D 103    -16.868  60.336   0.136  1.00 24.01
C
ATOM  5932  CH2 TRP D 103    -16.620  60.884   1.401  1.00 22.41
C
ATOM  5933  H   TRP D 103    -12.124  63.494  -4.077  1.00 30.33
H
ATOM  5934  HA  TRP D 103    -11.959  61.060  -2.876  1.00 23.66
H
ATOM  5935  HB2 TRP D 103    -14.225  62.572  -3.583  1.00 27.00
H
ATOM  5936  HB3 TRP D 103    -14.355  61.017  -3.298  1.00 27.00
H
ATOM  5937  HD1 TRP D 103    -12.520  63.412  -1.172  1.00 31.59
H
ATOM  5938  HE1 TRP D 103    -13.369  63.369   1.081  1.00 37.50
H
ATOM  5939  HE3 TRP D 103    -16.245  60.292  -1.789  1.00 26.20
H
ATOM  5940  HZ2 TRP D 103    -15.427  62.122   2.452  1.00 31.22
H
ATOM  5941  HZ3 TRP D 103    -17.577  59.744   0.025  1.00 28.82
H
ATOM  5942  HH2 TRP D 103    -17.169  60.649   2.114  1.00 26.90
H
ATOM  5943  N   ILE D 104    -12.524  59.571  -4.821  1.00 16.86
N
ATOM  5944  CA  ILE D 104    -12.597  58.755  -6.027  1.00 17.78
C


ATOM  5945  C   ILE D 104    -13.993  58.831  -6.627  1.00 18.20
C
ATOM  5946  O   ILE D 104    -14.975  58.549  -5.944  1.00 18.57
O
ATOM  5947  CB  ILE D 104    -12.255  57.281  -5.735  1.00 20.02
C
ATOM  5948  CG1 ILE D 104    -10.857  57.168  -5.119  1.00 20.67
C
ATOM  5949  CG2 ILE D 104    -12.338  56.446  -7.015  1.00 19.79
C
ATOM  5950  CD1 ILE D 104    -10.571  55.825  -4.483  1.00 17.10
C
ATOM  5951  H   ILE D 104    -12.585  59.120  -4.092  1.00 20.23
H
ATOM  5952  HA  ILE D 104    -11.965  59.091  -6.681  1.00 21.34
H
ATOM  5953  HB  ILE D 104    -12.901  56.935  -5.099  1.00 24.02
H
ATOM  5954 HG12 ILE D 104    -10.197  57.313  -5.815  1.00 24.80
H
ATOM  5955 HG13 ILE D 104    -10.763  57.847  -4.432  1.00 24.80
H
ATOM  5956 HG21 ILE D 104    -12.120  55.525  -6.805  1.00 23.75
H
ATOM  5957 HG22 ILE D 104    -13.240  56.500  -7.368  1.00 23.75
H
ATOM  5958 HG23 ILE D 104    -11.707  56.798  -7.662  1.00 23.75
H
ATOM  5959 HD11 ILE D 104     -9.673  55.834  -4.118  1.00 20.52
H
ATOM  5960 HD12 ILE D 104    -11.215  55.668  -3.774  1.00 20.52
H
ATOM  5961 HD13 ILE D 104    -10.648  55.134  -5.159  1.00 20.52
H
ATOM  5962  N   CYS D 105    -14.076  59.199  -7.902  1.00 17.45
N
ATOM  5963  CA  CYS D 105    -15.354  59.239  -8.602  1.00 17.74
C
ATOM  5964  C   CYS D 105    -15.465  58.067  -9.573  1.00 21.30
C
ATOM  5965  O   CYS D 105    -14.560  57.821 -10.371  1.00 19.85
O
ATOM  5966  CB  CYS D 105    -15.524  60.563  -9.345  1.00 20.49
C
ATOM  5967  SG  CYS D 105    -17.186  60.797 -10.022  1.00 29.47
S
ATOM  5968  H   CYS D 105    -13.404  59.431  -8.385  1.00 20.94
H
ATOM  5969  HA  CYS D 105    -16.073  59.163  -7.955  1.00 21.29
H
ATOM  5970  HB2 CYS D 105    -15.347  61.293  -8.731  1.00 24.59
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C
ATOM  12221  CE3 TRP F 127     -8.930  38.906  -6.710  1.00 19.66
C
ATOM  12222  CZ2 TRP F 127     -8.675  38.847  -9.531  1.00 19.66
C
ATOM  12223  CZ3 TRP F 127     -9.486  39.891  -7.507  1.00 17.24
C
ATOM  12224  CH2 TRP F 127     -9.353  39.854  -8.904  1.00 23.08
C

ATOM  12225  H   TRP F 127    -4.783  35.856  -5.172  1.00 18.17          H
ATOM  12226  HA  TRP F 127     -6.434  37.991  -4.779  1.00 18.48
H
ATOM  12227  HB2 TRP F 127     -7.202  35.343  -5.382  1.00 13.91
H
ATOM  12228  HB3 TRP F 127     -8.240  36.466  -4.953  1.00 13.91
H
ATOM  12229  HD1 TRP F 127     -6.560  35.270  -7.908  1.00 20.46
H
ATOM  12230  HE1 TRP F 127     -7.183  36.511  -9.877  1.00 21.10
H
ATOM  12231  HE3 TRP F 127     -9.022  38.937  -5.785  1.00 23.59
H
ATOM  12232  HZ2 TRP F 127     -8.589  38.826 -10.457  1.00 23.59
H
ATOM  12233  HZ3 TRP F 127     -9.954  40.589  -7.111  1.00 20.69
H
ATOM  12234  HH2 TRP F 127     -9.737  40.530  -9.415  1.00 27.70
H

ATOM  12235  N   PHE F 128    -5.230  36.311  -2.599  1.00 13.38          N
ATOM  12236  CA  PHE F 128     -5.188  35.772  -1.243  1.00 17.23
C

ATOM  12237  C   PHE F 128    -3.938  36.245  -0.498  1.00 16.62          C

ATOM  12238  O   PHE F 128    -2.925  35.552  -0.476  1.00 14.93          O
ATOM  12239  CB  PHE F 128     -5.234  34.241  -1.310  1.00 12.61
C
ATOM  12240  CG  PHE F 128     -5.412  33.567   0.020  1.00 15.61
C
ATOM  12241  CD1 PHE F 128     -6.504  33.855   0.818  1.00 17.23
C
ATOM  12242  CD2 PHE F 128     -4.503  32.619   0.454  1.00 13.57
C
ATOM  12243  CE1 PHE F 128     -6.674  33.226   2.031  1.00 14.89
C
ATOM  12244  CE2 PHE F 128     -4.668  31.985   1.669  1.00 16.18
C


ATOM  12245  CZ  PHE F 128     -5.756  32.288   2.459  1.00 14.81
C

ATOM  12246  H   PHE F 128    -4.463  36.329  -2.987  1.00 16.05          H
ATOM  12247  HA  PHE F 128     -5.967  36.079  -0.753  1.00 20.67
H
ATOM  12248  HB2 PHE F 128     -5.976  33.977  -1.876  1.00 15.13
H
ATOM  12249  HB3 PHE F 128     -4.402  33.922  -1.693  1.00 15.13
H
ATOM  12250  HD1 PHE F 128     -7.126  34.486   0.536  1.00 20.67
H
ATOM  12251  HD2 PHE F 128     -3.767  32.412  -0.075  1.00 16.29
H
ATOM  12252  HE1 PHE F 128     -7.409  33.432   2.563  1.00 17.87
H
ATOM  12253  HE2 PHE F 128     -4.047  31.355   1.954  1.00 19.41
H
ATOM  12254  HZ  PHE F 128     -5.870  31.864   3.278  1.00 17.78
H

ATOM  12255  N   ASP F 129    -4.011  37.426   0.108  1.00 16.80          N
ATOM  12256  CA  ASP F 129     -2.863  37.972   0.828  1.00 17.78
C

ATOM  12257  C   ASP F 129    -2.895  37.537   2.290  1.00 19.18          C

ATOM  12258  O   ASP F 129    -3.800  36.814   2.714  1.00 16.91          O
ATOM  12259  CB  ASP F 129     -2.819  39.504   0.714  1.00 18.37
C
ATOM  12260  CG  ASP F 129     -4.066  40.185   1.263  1.00 16.63
C
ATOM  12261  OD1 ASP F 129     -4.707  39.642   2.181  1.00 16.14
O
ATOM  12262  OD2 ASP F 129     -4.394  41.289   0.779  1.00 16.62
O1-

ATOM  12263  H   ASP F 129    -4.708  37.928   0.119  1.00 20.16          H
ATOM  12264  HA  ASP F 129     -2.050  37.621   0.432  1.00 21.34
H
ATOM  12265  HB2 ASP F 129     -2.055  39.834   1.212  1.00 22.04
H
ATOM  12266  HB3 ASP F 129     -2.734  39.747  -0.221  1.00 22.04
H

ATOM  12267  N   GLY F 130    -1.900  37.976   3.052  1.00 15.15          N
ATOM  12268  CA  GLY F 130     -1.783  37.608   4.450  1.00 17.82
C

ATOM  12269  C   GLY F 130    -2.997  37.984   5.277  1.00 16.60          C
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H
ATOM  5971  HB3 CYS D 105    -14.895  60.592 -10.083  1.00 24.59
H
ATOM  5972  N   TYR D 106   -16.577  57.343  -9.481  1.00 17.44
N
ATOM  5973  CA  TYR D 106    -16.858  56.216 -10.365  1.00 18.50
C
ATOM  5974  C   TYR D 106   -18.354  56.134 -10.632  1.00 19.85
C
ATOM  5975  O   TYR D 106   -19.139  55.879  -9.718  1.00 18.05
O
ATOM  5976  CB  TYR D 106    -16.362  54.902  -9.755  1.00 15.27
C
ATOM  5977  CG  TYR D 106    -16.488  53.707 -10.675  1.00 17.55
C
ATOM  5978  CD1 TYR D 106    -15.878  53.702 -11.922  1.00 20.29
C
ATOM  5979  CD2 TYR D 106    -17.202  52.577 -10.293  1.00 20.08
C


ATOM  5980  CE1 TYR D 106    -15.981  52.613 -12.768  1.00 20.50
C
ATOM  5981  CE2 TYR D 106    -17.309  51.476 -11.136  1.00 18.23
C
ATOM  5982  CZ  TYR D 106   -16.692  51.502 -12.373  1.00 22.08
C
ATOM  5983  OH  TYR D 106    -16.785  50.418 -13.224  1.00 18.81
O
ATOM  5984  H   TYR D 106   -17.196  57.488  -8.902  1.00 20.92
H
ATOM  5985  HA  TYR D 106    -16.403  56.351 -11.211  1.00 22.20
H
ATOM  5986  HB2 TYR D 106    -15.425  55.000  -9.524  1.00 18.33
H
ATOM  5987  HB3 TYR D 106    -16.879  54.715  -8.956  1.00 18.33
H
ATOM  5988  HD1 TYR D 106    -15.394  54.448 -12.195  1.00 24.35
H
ATOM  5989  HD2 TYR D 106    -17.616  52.557  -9.460  1.00 24.10
H
ATOM  5990  HE1 TYR D 106    -15.565  52.629 -13.600  1.00 24.60
H
ATOM  5991  HE2 TYR D 106    -17.790  50.727 -10.869  1.00 21.87
H
ATOM  5992  HH  TYR D 106    -17.243  49.811 -12.867  1.00 22.58
H
ATOM  5993  N   LYS D 107   -18.732  56.351 -11.888  1.00 16.29
N
ATOM  5994  CA  LYS D 107    -20.132  56.364 -12.294  1.00 20.57
C
ATOM  5995  C   LYS D 107   -20.916  57.330 -11.404  1.00 24.05
C
ATOM  5996  O   LYS D 107   -21.998  57.015 -10.907  1.00 17.53
O
ATOM  5997  CB  LYS D 107    -20.708  54.947 -12.249  1.00 20.83
C
ATOM  5998  CG  LYS D 107    -19.963  53.987 -13.184  1.00 20.22
C
ATOM  5999  CD  LYS D 107    -20.505  52.566 -13.145  1.00 20.35
C
ATOM  6000  CE  LYS D 107    -19.817  51.694 -14.198  1.00 23.07
C
ATOM  6001  NZ  LYS D 107    -20.217  50.259 -14.138  1.00 21.00
N1+
ATOM  6002  H   LYS D 107   -18.185  56.495 -12.536  1.00 19.55
H
ATOM  6003  HA  LYS D 107    -20.193  56.682 -13.208  1.00 24.68
H
ATOM  6004  HB2 LYS D 107    -20.637  54.604 -11.344  1.00 24.99
H
ATOM  6005  HB3 LYS D 107    -21.638  54.974 -12.523  1.00 24.99
H
ATOM  6006  HG2 LYS D 107    -20.041  54.311 -14.094  1.00 24.26
H
ATOM  6007  HG3 LYS D 107    -19.029  53.957 -12.923  1.00 24.26
H
ATOM  6008  HD2 LYS D 107    -20.338  52.180 -12.271  1.00 24.42
H
ATOM  6009  HD3 LYS D 107    -21.457  52.579 -13.332  1.00 24.42
H
ATOM  6010  HE2 LYS D 107    -20.045  52.029 -15.080  1.00 27.69
H
ATOM  6011  HE3 LYS D 107    -18.857  51.741 -14.065  1.00 27.69
H
ATOM  6012  HZ1 LYS D 107    -21.095  50.182 -14.267  1.00 25.20
H
ATOM  6013  HZ2 LYS D 107    -19.791  49.797 -14.768  1.00 25.20
H
ATOM  6014  HZ3 LYS D 107    -20.011  49.919 -13.341  1.00 25.20
H


ATOM  6015  N   ASN D 108    -20.318  58.503 -11.205  1.00 23.09
N
ATOM  6016  CA  ASN D 108    -20.912  59.622 -10.473  1.00 24.38
C
ATOM  6017  C   ASN D 108   -21.096  59.378  -8.976  1.00 22.29
C
ATOM  6018  O   ASN D 108    -21.565  60.261  -8.262  1.00 28.01
O
ATOM  6019  CB  ASN D 108    -22.253  60.012 -11.103  1.00 25.10
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ATOM  12270 O   GLY F 130   -3.425  37.224   6.147  1.00 14.57       O

ATOM  12271 H   GLY F 130   -1.273  38.496   2.775  1.00 18.18       H
ATOM  12272 HA2 GLY F 130    -1.654  36.649   4.518  1.00 21.38
H
ATOM  12273 HA3 GLY F 130    -1.007  38.048   4.832  1.00 21.38
H

ATOM  12274 N   GLU F 131   -3.560  39.156   5.010  1.00 13.72       N
ATOM  12275 CA  GLU F 131    -4.732  39.598   5.751  1.00 18.76
C

ATOM  12276 C   GLU F 131   -5.928  38.710   5.433  1.00 16.47       C

ATOM  12277 O   GLU F 131   -6.715  38.380   6.322  1.00 13.63       O
ATOM  12278 CB  GLU F 131    -5.052  41.056   5.440  1.00 19.73
C
ATOM  12279 CG  GLU F 131    -6.078  41.653   6.382  1.00 26.43
C


ATOM  12280 CD  GLU F 131    -6.202  43.154   6.229  1.00 27.13
C
ATOM  12281 OE1 GLU F 131    -5.568  43.715   5.309  1.00 19.31
O
ATOM  12282 OE2 GLU F 131    -6.931  43.773   7.034  1.00 31.50
O1-

ATOM  12283 H   GLU F 131   -3.285  39.709   4.412  1.00 16.47       H
ATOM  12284 HA  GLU F 131    -4.550  39.527   6.702  1.00 22.52
H
ATOM  12285 HB2 GLU F 131    -4.239  41.579   5.514  1.00 23.68
H
ATOM  12286 HB3 GLU F 131    -5.404  41.115   4.538  1.00 23.68
H
ATOM  12287 HG2 GLU F 131    -6.945  41.260   6.196  1.00 31.71
H
ATOM  12288 HG3 GLU F 131    -5.816  41.465   7.296  1.00 31.71
H

ATOM  12289 N   ASP F 132   -6.067  38.318   4.169  1.00 15.33       N
ATOM  12290 CA  ASP F 132    -7.115  37.374   3.801  1.00 13.35
C

ATOM  12291 C   ASP F 132   -6.949  36.086   4.596  1.00 14.58       C

ATOM  12292 O   ASP F 132   -7.918  35.557   5.137  1.00 15.18       O
ATOM  12293 CB  ASP F 132    -7.094  37.063   2.305  1.00 15.90
C
ATOM  12294 CG  ASP F 132    -7.322  38.286   1.444  1.00 17.33
C
ATOM  12295 OD1 ASP F 132    -8.013  39.232   1.887  1.00 16.63
O
ATOM  12296 OD2 ASP F 132    -6.809  38.292   0.308  1.00 18.06
O1-

ATOM  12297 H   ASP F 132   -5.575  38.581   3.515  1.00 18.40       H
ATOM  12298 HA  ASP F 132    -7.980  37.756   4.018  1.00 16.02
H
ATOM  12299 HB2 ASP F 132    -6.229  36.690   2.073  1.00 19.08
H
ATOM  12300 HB3 ASP F 132    -7.794  36.422   2.107  1.00 19.08
H

ATOM  12301 N   CYS F 133   -5.716  35.591   4.680  1.00 14.32       N
ATOM  12302 CA  CYS F 133    -5.449  34.328   5.364  1.00 14.59
C

ATOM  12303 C   CYS F 133   -5.892  34.382   6.825  1.00 15.41       C

ATOM  12304 O   CYS F 133   -6.499  33.441   7.328  1.00 14.68       O
ATOM  12305 CB  CYS F 133    -3.964  33.968   5.286  1.00 18.53
C
ATOM  12306 SG  CYS F 133    -3.547  32.418   6.119  1.00 24.44
S

ATOM  12307 H   CYS F 133   -5.017  35.968   4.350  1.00 17.18       H
ATOM  12308 HA  CYS F 133    -5.951  33.622   4.927  1.00 17.51
H
ATOM  12309 HB2 CYS F 133    -3.712  33.881   4.353  1.00 22.24
H
ATOM  12310 HB3 CYS F 133    -3.448  34.677   5.702  1.00 22.24
H

ATOM  12311 N   ILE F 134   -5.593  35.489   7.496  1.00 14.80      N

ATOM  12312 CA  ILE F 134    -5.980  35.661   8.890  1.00 12.54      C

ATOM  12313 C   ILE F 134   -7.507  35.701   9.031  1.00 14.20      C

ATOM  12314 O   ILE F 134   -8.068  35.120   9.957  1.00 14.69      O



ATOM  12315 CB  ILE F 134   -5.370  36.952   9.483  1.00 14.54       C
ATOM  12316 CG1 ILE F 134    -3.842  36.854   9.542  1.00 15.52
C
ATOM  12317 CG2 ILE F 134    -5.935  37.240  10.873  1.00 18.23
C
ATOM  12318 CD1 ILE F 134    -3.302  35.789  10.488  1.00 20.56
C

ATOM  12319 H   ILE F 134    5.165  36.157   7.165  1.00 17.76       H
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C
ATOM   6020  CG  ASN D 108    -22.084  60.642 -12.471  1.00 28.43
C
ATOM   6021  OD1 ASN D 108    -21.044  61.229 -12.769  1.00 25.66
O
ATOM   6022  ND2 ASN D 108    -23.107  60.529 -13.310  1.00 30.87
N
ATOM   6023  H   ASN D 108   -19.530  58.682 -11.500  1.00 27.71
H
ATOM   6024  HA  ASN D 108    -20.321  60.386 -10.565  1.00 29.25
H
ATOM   6025  HB2 ASN D 108    -22.800  59.217 -11.203  1.00 30.12
H
ATOM   6026  HB3 ASN D 108    -22.698  60.654 -10.529  1.00 30.12
H
ATOM   6027 HD21 ASN D 108    -23.057  60.871 -14.098  1.00 37.04
H
ATOM   6028 HD22 ASN D 108    -23.820  60.115 -13.066  1.00 37.04
H
ATOM   6029  N   ASN D 109   -20.704  58.205  -8.494  1.00 21.22
N
ATOM   6030  CA  ASN D 109    -20.646  57.967  -7.056  1.00 19.34
C
ATOM   6031  C   ASN D 109   -19.262  58.340  -6.533  1.00 19.61
C
ATOM   6032  O   ASN D 109   -18.267  58.162  -7.232  1.00 16.71
O
ATOM   6033  CB  ASN D 109    -20.973  56.512  -6.733  1.00 19.32
C
ATOM   6034  CG  ASN D 109    -22.421  56.167  -7.013  1.00 25.66
C
ATOM   6035  OD1 ASN D 109    -23.322  56.973  -6.770  1.00 19.34
O
ATOM   6036  ND2 ASN D 109    -22.652  54.969  -7.533  1.00 19.02
N
ATOM   6037  H   ASN D 109   -20.467  57.532  -8.974  1.00 25.47
H
ATOM   6038  HA  ASN D 109    -21.300  58.530  -6.613  1.00 23.20
H
ATOM   6039  HB2 ASN D 109    -20.415  55.934  -7.278  1.00 23.19
H
ATOM   6040  HB3 ASN D 109    -20.801  56.350  -5.792  1.00 23.19
H
ATOM   6041 HD21 ASN D 109    -23.457  54.725  -7.710  1.00 22.82
H
ATOM   6042 HD22 ASN D 109    -21.996  54.436  -7.693  1.00 22.82
H
ATOM   6043  N   CYS D 110   -19.204  58.867  -5.312  1.00 17.46
N
ATOM   6044  CA  CYS D 110    -17.941  59.308  -4.726  1.00 16.88
C
ATOM   6045  C   CYS D 110   -17.547  58.402  -3.573  1.00 19.16
C
ATOM   6046  O   CYS D 110   -18.374  58.079  -2.725  1.00 17.29
O
ATOM   6047  CB  CYS D 110    -18.047  60.751  -4.237  1.00 22.60
C
ATOM   6048  SG  CYS D 110    -18.972  61.837  -5.338  1.00 23.11
S
ATOM   6049  H   CYS D 110   -19.886  58.981  -4.801  1.00 20.95
H


ATOM   6050  HA  CYS D 110    -17.244  59.265  -5.399  1.00 20.25
H
ATOM   6051  HB2 CYS D 110    -18.493  60.756  -3.375  1.00 27.12
H
ATOM   6052  HB3 CYS D 110    -17.153  61.116  -4.145  1.00 27.12
H
ATOM   6053  N   TYR D 111   -16.280  58.001  -3.545  1.00 18.03
N
ATOM   6054  CA  TYR D 111    -15.768  57.132  -2.489  1.00 17.44
C
ATOM   6055  C   TYR D 111   -14.471  57.677  -1.920  1.00 15.34
C
ATOM   6056  O   TYR D 111   -13.731  58.388  -2.600  1.00 20.20
O
ATOM   6057  CB  TYR D 111    -15.515  55.718  -3.016  1.00 18.77
C
ATOM   6058  CG  TYR D 111    -16.678  55.089  -3.737  1.00 20.60
C
ATOM   6059  CD1 TYR D 111    -16.879  55.308  -5.090  1.00 15.51
C
ATOM   6060  CD2 TYR D 111    -17.561  54.251  -3.070  1.00 20.76
C
ATOM   6061  CE1 TYR D 111    -17.936  54.723  -5.757  1.00 18.59
C
ATOM   6062  CE2 TYR D 111    -18.625  53.664  -3.728  1.00 17.85
C
ATOM   6063  CZ  TYR D 111    -18.806  53.903  -5.071  1.00 18.90
C
ATOM   6064  OH  TYR D 111    -19.868  53.323  -5.732  1.00 19.85
O
ATOM   6065  H   TYR D 111   -15.691  58.220  -4.132  1.00 21.63
H
ATOM   6066  HA  TYR D 111    -16.418  57.080  -1.772  1.00 20.92
H
ATOM   6067  HB2 TYR D 111    -14.769  55.748  -3.635  1.00 22.52
H
ATOM   6068  HB3 TYR D 111    -15.291  55.145  -2.266  1.00 22.52
H
ATOM   6069  HD1 TYR D 111    -16.294  55.862  -5.556  1.00 18.61
H
ATOM  12319  H   ILE F 134    -5.165  36.157   7.165  1.00 17.76          H

ATOM  12320  HA  ILE F 134    -5.650  34.908   9.406  1.00 15.05          H

ATOM  12321  HB  ILE F 134    -5.604  37.692   8.902  1.00 17.45          H
ATOM  12322 HG12 ILE F 134     -3.512  36.651   8.653  1.00 18.62
H
ATOM  12323 HG13 ILE F 134     -3.489  37.710   9.832  1.00 18.62
H
ATOM  12324 HG21 ILE F 134     -5.533  38.054  11.214  1.00 21.87
H
ATOM  12325 HG22 ILE F 134     -6.896  37.348  10.806  1.00 21.87
H
ATOM  12326 HG23 ILE F 134     -5.725  36.496  11.459  1.00 21.87
H
ATOM  12327 HD11 ILE F 134     -2.333  35.802  10.457  1.00 24.67
H
ATOM  12328 HD12 ILE F 134     -3.608  35.983  11.388  1.00 24.67
H
ATOM  12329 HD13 ILE F 134     -3.631  34.921  10.206  1.00 24.67
H

ATOM  12330  N   MET F 135    -8.184  36.386   8.117  1.00 12.68          N
ATOM  12331  CA  MET F 135     -9.635  36.491   8.203  1.00 14.96
C
ATOM  12332  C   MET F 135   -10.291  35.143   7.899  1.00 17.64
C
ATOM  12333  O   MET F 135   -11.291  34.786   8.528  1.00 18.23
O
ATOM  12334  CB  MET F 135    -10.156  37.577   7.261  1.00 15.55
C
ATOM  12335  CG  MET F 135     -9.677  38.983   7.625  1.00 18.93
C
ATOM  12336  SD  MET F 135    -10.279  39.567   9.225  1.00 25.83
S
ATOM  12337  CE  MET F 135    -11.971  39.939   8.804  1.00 23.03
C

ATOM  12338  H   MET F 135    -7.833  36.795   7.446  1.00 15.22          H
ATOM  12339  HA  MET F 135     -9.872  36.751   9.107  1.00 17.96
H
ATOM  12340  HB2 MET F 135     -9.852  37.384   6.360  1.00 18.66
H
ATOM  12341  HB3 MET F 135    -11.126  37.577   7.288  1.00 18.66
H
ATOM  12342  HG2 MET F 135     -8.707  38.985   7.655  1.00 22.72
H
ATOM  12343  HG3 MET F 135     -9.986  39.605   6.947  1.00 22.72
H
ATOM  12344  HE1 MET F 135    -12.427  40.272   9.593  1.00 27.63
H
ATOM  12345  HE2 MET F 135    -11.982  40.613   8.107  1.00 27.63
H
ATOM  12346  HE3 MET F 135    -12.403  39.129   8.490  1.00 27.63
H

ATOM  12347  N   HIS F 136    -9.727  34.394   6.950  1.00 17.74          N
ATOM  12348  CA  HIS F 136   -10.191  33.034   6.677  1.00 14.38
C

ATOM  12349  C   HIS F 136   -10.007  32.155   7.908  1.00 15.88          C



ATOM  12350  O   HIS F 136   -10.899  31.400   8.284  1.00 15.42          O

ATOM  12351  CB  HIS F 136     -9.443  32.412   5.489  1.00 16.15          C

ATOM  12352  CG  HIS F 136     -9.875  32.932   4.152  1.00 15.03          C
ATOM  12353  ND1 HIS F 136     -9.959  32.127   3.035  1.00 15.21
N
ATOM  12354  CD2 HIS F 136    -10.236  34.172   3.748  1.00 13.64
C
ATOM  12355  CE1 HIS F 136    -10.355  32.850   2.003  1.00 15.34
C
ATOM  12356  NE2 HIS F 136    -10.530  34.094   2.408  1.00 15.92
N

ATOM  12357  H   HIS F 136    -9.074  34.650   6.451  1.00 21.29          H
ATOM  12358  HA  HIS F 136   -11.136  33.058   6.461  1.00 17.26
H
ATOM  12359  HB2 HIS F 136     -8.495  32.598   5.586  1.00 19.38
H
ATOM  12360  HB3 HIS F 136     -9.591  31.453   5.495  1.00 19.38
H
ATOM  12361  HD1 HIS F 136     -9.780  31.286   3.013  1.00 18.25
H
ATOM  12362  HD2 HIS F 136    -10.277  34.935   4.279  1.00 16.36
H
ATOM  12363  HE1 HIS F 136    -10.489  32.535   1.138  1.00 18.41
H
ATOM  12364  HE2 HIS F 136    -10.788  34.749   1.914  1.00 19.10
H

ATOM  12365  N   LEU F 137    -8.833  32.255   8.523  1.00 14.21          N
ATOM  12366  CA  LEU F 137     -8.515  31.483   9.717  1.00 16.46
C

ATOM  12367  C   LEU F 137    -9.530  31.739  10.832  1.00 16.07          C
ATOM  12368  O   LEU F 137   -10.045  30.804  11.433  1.00 16.54
O
ATOM  12369  CB  LEU F 137     -7.101  31.819  10.196  1.00 16.82
C
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ATOM  6070 HD2 TYR D 111   -17.440 54.089 -2.162 1.00 24.91 H
ATOM  6071 HE1 TYR D 111   -18.064 54.885 -6.664 1.00 22.30 H
ATOM  6072 HE2 TYR D 111   -19.212 53.110 -3.267 1.00 21.42 H
ATOM  6073 HH  TYR D 111   -19.863 53.553 -6.540 1.00 23.82 H
ATOM  6074 N   GLN D 112   -14.190 57.329 -0.673 1.00 17.91 N
ATOM  6075 CA  GLN D 112   -12.866 57.552 -0.119 1.00 20.98 C
ATOM  6076 C   GLN D 112   -12.549 56.483 0.914 1.00 18.40 C
ATOM  6077 O   GLN D 112   -13.417 56.045 1.668 1.00 17.57 O
ATOM  6078 CB  GLN D 112   -12.750 58.949 0.496 1.00 23.03 C
ATOM  6079 CG  GLN D 112   -11.326 59.331 0.905 1.00 24.86 C
ATOM  6080 CD  GLN D 112   -10.317 59.175 -0.225 1.00 29.43 C
ATOM  6081 OE1 GLN D 112   -9.797 58.083 -0.469 1.00 32.59 O
ATOM  6082 NE2 GLN D 112   -10.033 60.270 -0.920 1.00 35.19 N
ATOM  6083 H   GLN D 112   -14.747 56.965 -0.128 1.00 21.49 H
ATOM  6084 HA  GLN D 112   -12.211 57.483 -0.831 1.00 25.18 H

ATOM  6085 HB2 GLN D 112   -13.057 59.602 -0.152 1.00 27.63 H
ATOM  6086 HB3 GLN D 112   -13.306 58.987 1.290 1.00 27.63 H
ATOM  6087 HG2 GLN D 112   -11.318 60.259 1.187 1.00 29.83 H
ATOM  6088 HG3 GLN D 112   -11.045 58.760 1.637 1.00 29.83 H
ATOM  6089 HE21 GLN D 112   -9.469 60.234 -1.568 1.00 42.23 H
ATOM  6090 HE22 GLN D 112   -10.414 61.015 -0.721 1.00 42.23 H
ATOM  6091 N   PHE D 113   -11.293 56.059 0.921 1.00 15.24 N
ATOM  6092 CA  PHE D 113   -10.808 55.082 1.878 1.00 19.47 C
ATOM  6093 C   PHE D 113   -10.013 55.796 2.963 1.00 22.57 C
ATOM  6094 O   PHE D 113   -9.202 56.678 2.676 1.00 28.44 O
ATOM  6095 CB  PHE D 113   -9.955 54.026 1.172 1.00 25.43 C
ATOM  6096 CG  PHE D 113   -10.730 53.179 0.198 1.00 22.13 C
ATOM  6097 CD1 PHE D 113   -11.227 53.727 -0.976 1.00 29.41 C
ATOM  6098 CD2 PHE D 113   -10.953 51.836 0.450 1.00 23.89 C
ATOM  6099 CE1 PHE D 113   -11.940 52.951 -1.877 1.00 30.31 C
ATOM  6100 CE2 PHE D 113   -11.666 51.054 -0.447 1.00 21.37 C
ATOM  6101 CZ  PHE D 113   -12.160 51.613 -1.610 1.00 23.83 C
ATOM  6102 H   PHE D 113   -10.692 56.330 0.369 1.00 18.29 H
ATOM  6103 HA  PHE D 113   -11.562 54.637 2.294 1.00 23.37 H
ATOM  6104 HB2 PHE D 113   -9.247 54.472 0.681 1.00 30.51 H
ATOM  6105 HB3 PHE D 113   -9.571 53.436 1.839 1.00 30.51 H
ATOM  6106 HD1 PHE D 113   -11.084 54.627 -1.159 1.00 35.29 H
ATOM  6107 HD2 PHE D 113   -10.625 51.455 1.232 1.00 28.66 H
ATOM  6108 HE1 PHE D 113   -12.270 53.330 -2.659 1.00 36.37 H
ATOM  6109 HE2 PHE D 113   -11.812 50.154 -0.265 1.00 25.65 H
ATOM  6110 HZ  PHE D 113   -12.637 51.089 -2.213 1.00 28.60 H
ATOM  6111 N   PHE D 114   -10.275 55.420 4.209 1.00 21.22 N
ATOM  6112 CA  PHE D 114   -9.633 56.027 5.368 1.00 22.84 C
ATOM  6113 C   PHE D 114   -8.840 54.967 6.111 1.00 25.57 C
ATOM  6114 O   PHE D 114   -9.409 53.987 6.590 1.00 20.97 O
ATOM  6115 CB  PHE D 114   -10.682 56.665 6.280 1.00 25.74 C
ATOM  6116 CG  PHE D 114   -11.434 57.787 5.629 1.00 22.57 C
ATOM  6117 CD1 PHE D 114   -12.523 57.530 4.817 1.00 23.79 C
ATOM  6118 CD2 PHE D 114   -11.041 59.102 5.819 1.00 30.88 C
ATOM  6119 CE1 PHE D 114   -13.208 58.562 4.209 1.00 26.61 C
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ATOM  12370 CG  LEU F 137   -6.696 31.348 11.597 1.00 17.25 C
ATOM  12371 CD1 LEU F 137   -6.909 29.855 11.775 1.00 21.45 C
ATOM  12372 CD2 LEU F 137   -5.239 31.707 11.858 1.00 16.99 C

ATOM  12373 H   LEU F 137   -8.195 32.769 8.263 1.00 17.06        H
ATOM  12374 HA  LEU F 137   -8.542 30.538 9.499 1.00 19.75 H
ATOM  12375 HB2 LEU F 137   -6.472 31.425 9.572 1.00 20.18 H
ATOM  12376 HB3 LEU F 137   -7.000 32.784 10.182 1.00 20.18 H
ATOM  12377 HG  LEU F 137   -7.240 31.808 12.254 1.00 20.69 H
ATOM  12378 HD11 LEU F 137   -6.640 29.603 12.672 1.00 25.74 H
ATOM  12379 HD12 LEU F 137   -7.848 29.653 11.641 1.00 25.74 H
ATOM  12380 HD13 LEU F 137   -6.372 29.380 11.122 1.00 25.74 H
ATOM  12381 HD21 LEU F 137   -4.994 31.404 12.747 1.00 20.39 H
ATOM  12382 HD22 LEU F 137   -4.682 31.271 11.195 1.00 20.39 H
ATOM  12383 HD23 LEU F 137   -5.136 32.670 11.797 1.00 20.39 H
ATOM  12384 N   ARG F 138   -9.817 33.006 11.100 1.00 15.78 N

ATOM  12385 CA  ARG F 138   -10.767 33.360 12.147 1.00 21.48 C
ATOM  12386 C   ARG F 138   -12.162 32.844 11.802 1.00 20.46 C
ATOM  12387 O   ARG F 138   -12.903 32.389 12.676 1.00 17.61 O
ATOM  12388 CB  ARG F 138   -10.791 34.875 12.353 1.00 20.11 C
ATOM  12389 CG  ARG F 138   -9.496 35.437 12.926 1.00 22.32 C
ATOM  12390 CD  ARG F 138   -9.536 36.954 13.003 1.00 22.66 C
ATOM  12391 NE  ARG F 138   -10.564 37.424 13.925 1.00 25.37 N
ATOM  12392 CZ  ARG F 138   -10.969 38.686 14.016 1.00 33.49 C
ATOM  12393 NH1 ARG F 138   -10.435 39.618 13.241 1.00 30.85 N1+
ATOM  12394 NH2 ARG F 138   -11.917 39.018 14.882 1.00 35.00 N
ATOM  12395 H   ARG F 138   -9.477 33.681 10.690 1.00 18.94 H
ATOM  12396 HA  ARG F 138   -10.490 32.946 12.979 1.00 25.77 H
ATOM  12397 HB2 ARG F 138   -10.948 35.305 11.498 1.00 24.13 H
ATOM  12398 HB3 ARG F 138   -11.507 35.096 12.969 1.00 24.13 H
ATOM  12399 HG2 ARG F 138   -9.364 35.090 13.822 1.00 26.78 H
ATOM  12400 HG3 ARG F 138   -8.755 35.181 12.354 1.00 26.78 H
ATOM  12401 HD2 ARG F 138   -8.678 37.281 13.315 1.00 27.20 H
ATOM  12402 HD3 ARG F 138   -9.731 37.313 12.123 1.00 27.20 H
ATOM  12403 HE  ARG F 138   -10.932 36.845 14.443 1.00 30.44 H
ATOM  12404 HH11 ARG F 138   -9.821 39.407 12.676 1.00 37.02 H
ATOM  12405 HH12 ARG F 138   -10.700 40.433 13.303 1.00 37.02 H
ATOM  12406 HH21 ARG F 138   -12.267 38.417 15.388 1.00 42.00 H
ATOM  12407 HH22 ARG F 138   -12.178 39.836 14.942 1.00 42.00 H
ATOM  12408 N   SER F 139   -12.505 32.898 10.520 1.00 17.64 N
ATOM  12409 CA  SER F 139   -13.798 32.413 10.056 1.00 19.10 C
ATOM  12410 C   SER F 139   -13.890 30.893 10.185 1.00 20.53 C
ATOM  12411 O   SER F 139   -14.945 30.348 10.492 1.00 20.71 O
ATOM  12412 CB  SER F 139   -14.042 32.855 8.613 1.00 21.03 C
ATOM  12413 OG  SER F 139   -14.120 34.266 8.526 1.00 16.92 O
ATOM  12414 H   SER F 139   -12.003 33.212 9.896 1.00 21.17 H
ATOM  12415 HA  SER F 139   -14.496 32.797 10.609 1.00 22.92 H
ATOM  12416 HB2 SER F 139   -13.308 32.545 8.059 1.00 25.24 H
ATOM  12417 HB3 SER F 139   -14.877 32.473 8.302 1.00 25.24 H
ATOM  12418 HG  SER F 139   -13.402 34.611 8.793 1.00 20.30 H

ATOM  12419 N   LEU F 140   -12.783 30.210 9.897 1.00 17.28        N
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ATOM  6120  CE2 PHE D 114   -11.723  60.139  5.214  1.00 23.44
C
ATOM  6121  CZ  PHE D 114   -12.809  59.869  4.409  1.00 28.06
C
ATOM  6122  H   PHE D 114   -10.835  54.801  4.413  1.00 25.46
H
ATOM  6123  HA  PHE D 114    -9.020  56.719  5.073  1.00 27.40
H
ATOM  6124  HB2 PHE D 114   -11.325  55.987  6.540  1.00 30.89
H
ATOM  6125  HB3 PHE D 114   -10.240  57.019  7.067  1.00 30.89
H
ATOM  6126  HD1 PHE D 114   -12.796  56.652  4.678  1.00 28.55
H
ATOM  6127  HD2 PHE D 114   -10.308  59.288  6.361  1.00 37.05
H
ATOM  6128  HE1 PHE D 114   -13.941  58.378  3.667  1.00 31.94
H
ATOM  6129  HE2 PHE D 114   -11.451  61.018  5.351  1.00 28.13
H
ATOM  6130  HZ  PHE D 114   -13.271  60.565  4.001  1.00 33.67
H
ATOM  6131  N   ASP D 115    -7.526  55.161  6.199  1.00 23.12
N
ATOM  6132  CA  ASP D 115    -6.645  54.131  6.737  1.00 26.22
C
ATOM  6133  C   ASP D 115    -6.365  54.317  8.228  1.00 30.31
C
ATOM  6134  O   ASP D 115    -5.656  53.516  8.831  1.00 25.41
O
ATOM  6135  CB  ASP D 115    -5.328  54.096  5.957  1.00 27.72
C
ATOM  6136  CG  ASP D 115    -4.615  55.436  5.940  1.00 34.76
C
ATOM  6137  OD1 ASP D 115    -5.100  56.389  6.587  1.00 33.82
O
ATOM  6138  OD2 ASP D 115    -3.558  55.530  5.282  1.00 32.71
O1-
ATOM  6139  H   ASP D 115    -7.122  55.879  5.954  1.00 27.74
H
ATOM  6140  HA  ASP D 115    -7.075  53.269  6.626  1.00 31.46
H
ATOM  6141  HB2 ASP D 115    -4.735  53.447  6.367  1.00 33.26
H
ATOM  6142  HB3 ASP D 115    -5.512  53.843  5.039  1.00 33.26
H
ATOM  6143  N   GLU D 116    -6.920  55.373  8.817  1.00 29.51
N
ATOM  6144  CA  GLU D 116    -6.821  55.578  10.259  1.00 35.02
C
ATOM  6145  C   GLU D 116    -7.960  54.814  10.921  1.00 33.34
C
ATOM  6146  O   GLU D 116    -9.096  55.282  10.940  1.00 33.54
O
ATOM  6147  CB  GLU D 116    -6.880  57.067  10.624  1.00 38.38
C
ATOM  6148  CG  GLU D 116    -5.921  57.960  9.836  1.00 42.91
C
ATOM  6149  CD  GLU D 116    -6.444  58.351  8.458  1.00 44.87
C
ATOM  6150  OE1 GLU D 116    -7.627  58.078  8.155  1.00 38.52
O
ATOM  6151  OE2 GLU D 116    -5.664  58.934  7.673  1.00 52.44
O1-
ATOM  6152  H   GLU D 116    -7.360  55.986  8.404  1.00 35.41
H
ATOM  6153  HA  GLU D 116    -5.980  55.216  10.580  1.00 42.03
H
ATOM  6154  HB2 GLU D 116    -7.781  57.389  10.462  1.00 46.06
H

ATOM  12420  CA  LEU F 140   -12.766  28.753  9.949  1.00 20.30
C
ATOM  12421  C   LEU F 140   -12.769  28.260  11.394  1.00 21.22
C
ATOM  12422  O   LEU F 140   -13.346  27.216  11.695  1.00 23.85
O
ATOM  12423  CB  LEU F 140   -11.554  28.201  9.195  1.00 21.20
C
ATOM  12424  CG  LEU F 140   -11.611  28.339  7.669  1.00 20.22
C
ATOM  12425  CD1 LEU F 140   -10.258  28.037  7.052  1.00 19.97
C
ATOM  12426  CD2 LEU F 140   -12.680  27.431  7.075  1.00 21.22
C

ATOM  12427  H   LEU F 140   -12.030  30.565  9.682  1.00 20.74          H
ATOM  12428  HA  LEU F 140   -13.566  28.415  9.517  1.00 24.37
H
ATOM  12429  HB2 LEU F 140   -10.762  28.671  9.500  1.00 25.44
H
ATOM  12430  HB3 LEU F 140   -11.469  27.257  9.399  1.00 25.44
H
ATOM  12431  HG  LEU F 140   -11.841  29.254  7.446  1.00 24.27
H
ATOM  12432 HD11 LEU F 140   -10.323  28.132  6.088  1.00 23.96
H
ATOM  12433 HD12 LEU F 140    -9.605  28.662  7.402  1.00 23.96
H
ATOM  12434 HD13 LEU F 140   -10.003  27.129  7.279  1.00 23.96
H
ATOM  12435 HD21 LEU F 140   -12.689  27.542  6.112  1.00 25.46
H
ATOM  12436 HD22 LEU F 140   -12.473  26.510  7.300  1.00 25.46
H
ATOM  12437 HD23 LEU F 140   -13.543  27.676  7.445  1.00 25.46
H
ATOM  12438  N   VAL F 141   -12.132  29.008  12.288  1.00 19.00
N
ATOM  12439  CA  VAL F 141   -12.164  28.668  13.704  1.00 23.28
C
ATOM  12440  C   VAL F 141   -13.590  28.802  14.237  1.00 25.21
C
ATOM  12441  O   VAL F 141   -14.020  28.017  15.081  1.00 24.34
O
ATOM  12442  CB  VAL F 141   -11.210  29.556  14.528  1.00 19.95
C
ATOM  12443  CG1 VAL F 141   -11.452  29.377  16.024  1.00 26.02
C
ATOM  12444  CG2 VAL F 141    -9.758  29.225  14.198  1.00 24.20
C
ATOM  12445  H   VAL F 141   -11.678  29.714  12.101  1.00 22.80
H
ATOM  12446  HA  VAL F 141   -11.886  27.745  13.814  1.00 27.94
H
ATOM  12447  HB  VAL F 141   -11.367  30.487  14.305  1.00 23.94
H
ATOM  12448 HG11 VAL F 141   -10.838  29.947  16.514  1.00 31.23
H
ATOM  12449 HG12 VAL F 141   -12.368  29.624  16.227  1.00 31.23
H
ATOM  12450 HG13 VAL F 141   -11.300  28.448  16.259  1.00 31.23
H
ATOM  12451 HG21 VAL F 141    -9.177  29.794  14.727  1.00 29.04
H
ATOM  12452 HG22 VAL F 141    -9.591  28.293  14.410  1.00 29.04
H
ATOM  12453 HG23 VAL F 141    -9.605  29.382  13.253  1.00 29.04
H
ATOM  12454  N   ARG F 142   -14.315  29.802  13.745  1.00 21.37
N

ATOM  6155  HB3 GLU D 116    -6.665  57.163  11.565  1.00 46.06
H
ATOM  6156  HG2 GLU D 116    -5.768  58.775  10.338  1.00 51.49
H
ATOM  6157  HG3 GLU D 116    -5.083  57.487  9.712  1.00 51.49
H
ATOM  6158  N   SER D 117    -7.650  53.636  11.457  1.00 30.25
N
ATOM  6159  CA  SER D 117    -8.674  52.697  11.907  1.00 27.86
C
ATOM  6160  C   SER D 117    -9.509  53.219  13.077  1.00 33.38
C
ATOM  6161  O   SER D 117    -8.988  53.810  14.022  1.00 30.47
O
ATOM  6162  CB  SER D 117    -8.028  51.365  12.297  1.00 31.01
C
ATOM  6163  OG  SER D 117    -7.150  51.529  13.392  1.00 34.10
O
ATOM  6164  H   SER D 117    -6.845  53.355  11.571  1.00 36.30
H
ATOM  6165  HA  SER D 117    -9.279  52.525  11.169  1.00 33.44
H
ATOM  6166  HB2 SER D 117    -8.725  50.737  12.543  1.00 37.21
H
ATOM  6167  HB3 SER D 117    -7.527  51.024  11.539  1.00 37.21
H
ATOM  6168  HG  SER D 117    -6.803  50.792  13.595  1.00 40.92
H

ATOM  12455  CA  ARG F 142   -15.718  29.978  14.107  1.00 23.25
C
ATOM  12456  C   ARG F 142   -16.534  28.742  13.722  1.00 30.62
C
ATOM  12457  O   ARG F 142   -17.319  28.235  14.525  1.00 27.61
O
ATOM  12458  CB  ARG F 142   -16.286  31.230  13.436  1.00 28.79
C
ATOM  12459  CG  ARG F 142   -17.776  31.456  13.656  1.00 34.59
C
ATOM  12460  CD  ARG F 142   -18.109  31.669  15.122  1.00 36.74
C
ATOM  12461  NE  ARG F 142   -19.526  31.963  15.311  1.00 43.29
N
ATOM  12462  CZ  ARG F 142   -20.073  33.164  15.149  1.00 47.11
C
ATOM  12463  NH1 ARG F 142   -19.325  34.201  14.794  1.00 40.67
N1+
ATOM  12464  NH2 ARG F 142   -21.373  33.330  15.342  1.00 53.09
N
ATOM  12465  H   ARG F 142   -14.017  30.395  13.197  1.00 25.65
H
ATOM  12466  HA  ARG F 142   -15.785  30.095  15.068  1.00 27.90
H
ATOM  12467  HB2 ARG F 142   -15.818  32.006  13.782  1.00 34.55
H
ATOM  12468  HB3 ARG F 142   -16.138  31.161  12.479  1.00 34.55
H
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H
ATOM   6169  N   LYS D 118    -10.814  52.976  12.992  1.00 27.74
N
ATOM   6170  CA  LYS D 118    -11.771  53.385  14.015  1.00 27.96
C
ATOM   6171  C   LYS D 118    -12.805  52.284  14.202  1.00 31.80
C
ATOM   6172  O   LYS D 118    -12.946  51.409  13.343  1.00 27.27
O
ATOM   6173  CB  LYS D 118    -12.464  54.689  13.619  1.00 25.67
C
ATOM   6174  CG  LYS D 118    -11.533  55.875  13.440  1.00 29.25
C
ATOM   6175  CD  LYS D 118    -12.293  57.075  12.904  1.00 36.12
C
ATOM   6176  CE  LYS D 118    -11.416  58.312  12.827  1.00 36.20
C
ATOM   6177  NZ  LYS D 118    -10.988  58.767  14.175  1.00 46.64
N1+
ATOM   6178  H   LYS D 118    -11.179  52.564  12.332  1.00 33.29
H
ATOM   6179  HA  LYS D 118    -11.309  53.523  14.856  1.00 33.55
H
ATOM   6180  HB2 LYS D 118    -12.928  54.550  12.778  1.00 30.81
H
ATOM   6181  HB3 LYS D 118    -13.105  54.921  14.310  1.00 30.81
H
ATOM   6182  HG2 LYS D 118    -11.146  56.114  14.297  1.00 35.10
H
ATOM   6183  HG3 LYS D 118    -10.836  55.645  12.806  1.00 35.10
H
ATOM   6184  HD2 LYS D 118    -12.615  56.876  12.011  1.00 43.34
H
ATOM   6185  HD3 LYS D 118    -13.039  57.269  13.493  1.00 43.34
H
ATOM   6186  HE2 LYS D 118    -10.621  58.108  12.310  1.00 43.44
H
ATOM   6187  HE3 LYS D 118    -11.914  59.031  12.408  1.00 43.44
H
ATOM   6188  HZ1 LYS D 118    -10.477  59.492  14.103  1.00 55.96
H
ATOM   6189  HZ2 LYS D 118    -11.701  58.965  14.670  1.00 55.96
H


ATOM   6190  HZ3 LYS D 118    -10.524  58.125  14.580  1.00 55.96
H
ATOM   6191  N   ASN D 119    -13.531  52.314  15.316  1.00 28.46
N
ATOM   6192  CA  ASN D 119    -14.632  51.378  15.495  1.00 27.04
C
ATOM   6193  C   ASN D 119    -15.773  51.811  14.585  1.00 24.03
C
ATOM   6194  O   ASN D 119    -15.713  52.884  13.985  1.00 24.95
O
ATOM   6195  CB  ASN D 119    -15.068  51.301  16.964  1.00 27.48
C
ATOM   6196  CG  ASN D 119    -15.649  52.600  17.483  1.00 26.83
C
ATOM   6197  OD1 ASN D 119    -16.565  53.173  16.895  1.00 25.34
O
ATOM   6198  ND2 ASN D 119    -15.119  53.069  18.606  1.00 37.21
N
ATOM   6199  H   ASN D 119    -13.408  52.858  15.971  1.00 34.15
H
ATOM   6200  HA  ASN D 119    -14.345  50.494  15.220  1.00 32.45
H
ATOM   6201  HB2 ASN D 119    -15.747  50.613  17.054  1.00 32.97
H
ATOM   6202  HB3 ASN D 119    -14.298  51.079  17.510  1.00 32.97
H
ATOM   6203 HD21 ASN D 119    -15.411  53.803  18.945  1.00 44.65
H
ATOM   6204 HD22 ASN D 119    -14.484  52.638  18.994  1.00 44.65
H
ATOM   6205  N   TRP D 120    -16.807  50.986  14.472  1.00 21.37
N
ATOM   6206  CA  TRP D 120    -17.855  51.238  13.492  1.00 24.98
C
ATOM   6207  C   TRP D 120    -18.589  52.545  13.770  1.00 24.15
C
ATOM   6208  O   TRP D 120    -18.945  53.274  12.844  1.00 19.58
O
ATOM   6209  CB  TRP D 120    -18.855  50.083  13.460  1.00 21.60
C
ATOM   6210  CG  TRP D 120    -19.879  50.242  12.386  1.00 23.54
C
ATOM   6211  CD1 TRP D 120    -19.797  49.787  11.102  1.00 24.11
C
ATOM   6212  CD2 TRP D 120    -21.137  50.917  12.493  1.00 26.63
C
ATOM   6213  NE1 TRP D 120    -20.927  50.135  10.404  1.00 25.43
N
ATOM   6214  CE2 TRP D 120    -21.766  50.828  11.236  1.00 27.74
C
ATOM   6215  CE3 TRP D 120    -21.793  51.587  13.531  1.00 30.26
C
ATOM   6216  CZ2 TRP D 120    -23.020  51.379  10.989  1.00 28.23
C
ATOM   6217  CZ3 TRP D 120    -23.036  52.136  13.283  1.00 28.53
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H
ATOM  12469  HG2 ARG F 142    -18.054  32.244  13.164  1.00 41.50
H
ATOM  12470  HG3 ARG F 142    -18.265  30.678  13.345  1.00 41.50
H
ATOM  12471  HD2 ARG F 142    -17.896  30.864  15.619  1.00 44.08
H
ATOM  12472  HD3 ARG F 142    -17.595  32.419  15.461  1.00 44.08
H
ATOM  12473  HE  ARG F 142    -20.043  31.315  15.542  1.00 51.95
H
ATOM  12474 HH11 ARG F 142    -18.480  34.099  14.666  1.00 48.80
H
ATOM  12475 HH12 ARG F 142    -19.684  34.975  14.691  1.00 48.80
H
ATOM  12476 HH21 ARG F 142    -21.862  32.662  15.573  1.00 63.71
H
ATOM  12477 HH22 ARG F 142    -21.727  34.107  15.239  1.00 63.71
H
ATOM  12478  N   LYS F 143    -16.343  28.261  12.495  1.00 24.90
N
ATOM  12479  CA  LYS F 143    -17.016  27.049  12.034  1.00 28.02
C
ATOM  12480  C   LYS F 143    -16.646  25.854  12.897  1.00 28.44
C
ATOM  12481  O   LYS F 143    -17.509  25.084  13.314  1.00 28.33
O
ATOM  12482  CB  LYS F 143    -16.656  26.740  10.581  1.00 27.89
C
ATOM  12483  CG  LYS F 143    -17.165  27.743   9.576  1.00 21.75
C
ATOM  12484  CD  LYS F 143    -16.613  27.446   8.190  1.00 24.93
C
ATOM  12485  CE  LYS F 143    -17.698  26.971   7.242  1.00 33.41
C
ATOM  12486  NZ  LYS F 143    -18.262  25.655   7.631  1.00 38.22
N1+
ATOM  12487  H   LYS F 143    -15.826  28.619  11.908  1.00 29.88
H
ATOM  12488  HA  LYS F 143    -17.976  27.177  12.089  1.00 33.63
H
ATOM  12489  HB2 LYS F 143    -15.689  26.711  10.502  1.00 33.47
H


ATOM  12490  HB3 LYS F 143    -17.028  25.876  10.347  1.00 33.47
H
ATOM  12491  HG2 LYS F 143    -18.133  27.697   9.536  1.00 26.10
H
ATOM  12492  HG3 LYS F 143    -16.879  28.633   9.835  1.00 26.10
H
ATOM  12493  HD2 LYS F 143    -16.221  28.253   7.822  1.00 29.91
H
ATOM  12494  HD3 LYS F 143    -15.942  26.748   8.256  1.00 29.91
H
ATOM  12495  HE2 LYS F 143    -18.420  27.618   7.239  1.00 40.09
H
ATOM  12496  HE3 LYS F 143    -17.324  26.886   6.351  1.00 40.09
H
ATOM  12497  HZ1 LYS F 143    -17.620  25.038   7.635  1.00 45.86
H
ATOM  12498  HZ2 LYS F 143    -18.619  25.706   8.445  1.00 45.86
H
ATOM  12499  HZ3 LYS F 143    -18.893  25.412   7.052  1.00 45.86
H
ATOM  12500  N   MET F 144    -15.350  25.703  13.146  1.00 24.38
N
ATOM  12501  CA  MET F 144    -14.836  24.550  13.866  1.00 27.30
C
ATOM  12502  C   MET F 144    -15.415  24.490  15.276  1.00 34.88
C
ATOM  12503  O   MET F 144    -15.839  23.429  15.735  1.00 35.17
O
ATOM  12504  CB  MET F 144    -13.307  24.597  13.910  1.00 31.14
C
ATOM  12505  CG  MET F 144    -12.660  23.367  14.523  1.00 31.20
C
ATOM  12506  SD  MET F 144    -11.998  23.709  16.160  1.00 44.38
S
ATOM  12507  CE  MET F 144    -10.619  24.779  15.748  1.00 36.74
C
ATOM  12508  H   MET F 144    -14.743  26.263  12.906  1.00 29.26
H
ATOM  12509  HA  MET F 144    -15.093  23.745  13.389  1.00 32.76
H
ATOM  12510  HB2 MET F 144    -12.973  24.685  13.004  1.00 37.36
H
ATOM  12511  HB3 MET F 144    -13.035  25.365  14.435  1.00 37.36
H
ATOM  12512  HG2 MET F 144    -13.323  22.664  14.605  1.00 37.44
H
ATOM  12513  HG3 MET F 144    -11.930  23.074  13.955  1.00 37.44
H
ATOM  12514  HE1 MET F 144    -10.168  25.040  16.566  1.00 44.09
H
ATOM  12515  HE2 MET F 144    -10.007  24.296  15.172  1.00 44.09
H
ATOM  12516  HE3 MET F 144    -10.956  25.565  15.290  1.00 44.09
H
ATOM  12517  N   GLU F 145    -15.455  25.636  15.948  1.00 30.62
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ATOM 6217 CZ3 TRP D 120 -23.036 52.136 13.283 1.00 28.53 C
ATOM 6218 CH2 TRP D 120 -23.637 52.030 12.022 1.00 29.49 C
ATOM 6219 H TRP D 120 -16.924 50.278 14.947 1.00 25.65 H
ATOM 6220 HA TRP D 120 -17.452 51.305 12.612 1.00 29.98 H
ATOM 6221 HB2 TRP D 120 -18.377 49.255 13.300 1.00 25.92 H
ATOM 6222 HB3 TRP D 120 -19.317 50.041 14.312 1.00 25.92 H
ATOM 6223 HD1 TRP D 120 -19.079 49.312 10.750 1.00 28.93 H
ATOM 6224 HE1 TRP D 120 -21.084 49.945 9.580 1.00 30.52 H

ATOM 6225 HE3 TRP D 120 -21.400 51.661 14.370 1.00 36.31 H
ATOM 6226 HZ2 TRP D 120 -23.421 51.312 10.153 1.00 33.87 H
ATOM 6227 HZ3 TRP D 120 -23.482 52.583 13.965 1.00 34.24 H
ATOM 6228 HH2 TRP D 120 -24.475 52.408 11.885 1.00 35.38 H
ATOM 6229 N TYR D 121 -18.808 52.839 15.047 1.00 27.37 N
ATOM 6230 CA TYR D 121 -19.558 54.028 15.438 1.00 29.38 C
ATOM 6231 C TYR D 121 -18.799 55.295 15.065 1.00 22.01 C
ATOM 6232 O TYR D 121 -19.365 56.214 14.481 1.00 23.03 O
ATOM 6233 CB TYR D 121 -19.857 54.001 16.939 1.00 32.74 C
ATOM 6234 CG TYR D 121 -20.587 52.751 17.378 1.00 29.99 C
ATOM 6235 CD1 TYR D 121 -21.946 52.598 17.144 1.00 35.21 C
ATOM 6236 CD2 TYR D 121 -19.911 51.718 18.016 1.00 32.98 C
ATOM 6237 CE1 TYR D 121 -22.616 51.452 17.538 1.00 36.69 C
ATOM 6238 CE2 TYR D 121 -20.571 50.569 18.414 1.00 36.17 C
ATOM 6239 CZ TYR D 121 -21.922 50.442 18.172 1.00 40.29 C
ATOM 6240 OH TYR D 121 -22.582 49.300 18.566 1.00 49.60 O
ATOM 6241 H TYR D 121 -18.531 52.365 15.709 1.00 32.84 H
ATOM 6242 HA TYR D 121 -20.405 54.036 14.964 1.00 35.25 H
ATOM 6243 HB2 TYR D 121 -19.020 54.046 17.428 1.00 39.29 H
ATOM 6244 HB3 TYR D 121 -20.412 54.765 17.163 1.00 39.29 H
ATOM 6245 HD1 TYR D 121 -22.416 53.277 16.716 1.00 42.26 H
ATOM 6246 HD2 TYR D 121 -19.000 51.801 18.180 1.00 39.57 H
ATOM 6247 HE1 TYR D 121 -23.527 51.364 17.376 1.00 44.02 H
ATOM 6248 HE2 TYR D 121 -20.106 49.887 18.842 1.00 43.40 H
ATOM 6249 HH TYR D 121 -22.045 48.771 18.937 1.00 59.52 H
ATOM 6250 N GLU D 122 -17.513 55.332 15.395 1.00 23.53 N
ATOM 6251 CA GLU D 122 -16.664 56.463 15.044 1.00 26.93 C
ATOM 6252 C GLU D 122 -16.509 56.579 13.530 1.00 25.72 C
ATOM 6253 O GLU D 122 -16.406 57.680 12.991 1.00 23.66 O
ATOM 6254 CB GLU D 122 -15.294 56.318 15.702 1.00 31.25 C
ATOM 6255 CG GLU D 122 -15.338 56.331 17.223 1.00 35.27 C
ATOM 6256 CD GLU D 122 -14.056 55.821 17.855 1.00 43.03 C
ATOM 6257 OE1 GLU D 122 -13.270 55.135 17.162 1.00 42.60 O
ATOM 6258 OE2 GLU D 122 -13.837 56.104 19.051 1.00 53.83 O1-
ATOM 6259 H GLU D 122 -17.105 54.710 15.826 1.00 28.23 H

ATOM 6260 HA GLU D 122 -17.071 57.281 15.370 1.00 32.32 H
ATOM 6261 HB2 GLU D 122 -14.902 55.475 15.424 1.00 37.50 H
ATOM 6262 HB3 GLU D 122 -14.730 57.053 15.415 1.00 37.50 H
ATOM 6263 HG2 GLU D 122 -15.480 57.241 17.526 1.00 42.33 H
ATOM 6264 HG3 GLU D 122 -16.066 55.764 17.522 1.00 42.33
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ATOM 12517 N GLU F 145 -15.455 25.636 15.946 1.00 29.62 N
ATOM 12518 CA GLU F 145 -15.954 25.704 17.316 1.00 35.30 C
ATOM 12519 C GLU F 145 -17.462 25.475 17.409 1.00 33.13 C
ATOM 12520 O GLU F 145 -17.954 24.977 18.420 1.00 34.65 O
ATOM 12521 CB GLU F 145 -15.597 27.055 17.934 1.00 31.57 C
ATOM 12522 CG GLU F 145 -14.112 27.209 18.208 1.00 33.34 C
ATOM 12523 CD GLU F 145 -13.765 28.538 18.842 1.00 32.82 C
ATOM 12524 OE1 GLU F 145 -14.628 29.444 18.853 1.00 41.83 O

ATOM 12525 OE2 GLU F 145 -12.625 28.672 19.332 1.00 37.68 O1-
ATOM 12526 H GLU F 145 -15.197 26.392 15.631 1.00 35.54 H
ATOM 12527 HA GLU F 145 -15.518 25.015 17.841 1.00 42.36 H
ATOM 12528 HB2 GLU F 145 -15.864 27.760 17.324 1.00 37.89 H
ATOM 12529 HB3 GLU F 145 -16.069 27.150 18.776 1.00 37.89 H
ATOM 12530 HG2 GLU F 145 -13.828 26.506 18.813 1.00 40.00 H
ATOM 12531 HG3 GLU F 145 -13.628 27.142 17.370 1.00 40.00 H
ATOM 12532 N ASP F 146 -18.190 25.837 16.359 1.00 33.24 N
ATOM 12533 CA ASP F 146 -19.641 25.667 16.339 1.00 37.33 C
ATOM 12534 C ASP F 146 -20.054 24.299 15.791 1.00 42.30 C
ATOM 12535 O ASP F 146 -21.244 24.010 15.660 1.00 50.59 O
ATOM 12536 CB ASP F 146 -20.292 26.776 15.510 1.00 34.15 C
ATOM 12537 CG ASP F 146 -20.188 28.139 16.169 1.00 38.34 C
ATOM 12538 OD1 ASP F 146 -19.944 28.201 17.393 1.00 39.97 O
ATOM 12539 OD2 ASP F 146 -20.362 29.152 15.460 1.00 37.23 O1-
ATOM 12540 H ASP F 146 -17.868 26.186 15.641 1.00 39.88 H
ATOM 12541 HA ASP F 146 -19.976 25.737 17.247 1.00 44.79 H
ATOM 12542 HB2 ASP F 146 -19.853 26.825 14.647 1.00 40.97 H
ATOM 12543 HB3 ASP F 146 -21.233 26.570 15.393 1.00 40.97 H
ATOM 12544 N SER F 147 -19.073 23.459 15.476 1.00 44.15 N
ATOM 12545 CA SER F 147 -19.348 22.137 14.921 1.00 50.25 C
ATOM 12546 C SER F 147 -20.056 21.244 15.935 1.00 51.65 C
ATOM 12547 O SER F 147 -19.657 21.172 17.098 1.00 47.99 O
ATOM 12548 CB SER F 147 -18.052 21.468 14.460 1.00 45.00 C
ATOM 12549 OG SER F 147 -18.303 20.164 13.961 1.00 48.06 O
ATOM 12550 H SER F 147 -18.236 23.631 15.575 1.00 52.98 H
ATOM 12551 HA SER F 147 -19.928 22.233 14.149 1.00 60.30 H
ATOM 12552 HB2 SER F 147 -17.654 22.003 13.756 1.00 54.00 H
ATOM 12553 HB3 SER F 147 -17.444 21.406 15.213 1.00 54.00 H
ATOM 12554 HG SER F 147 -17.584 19.809 13.712 1.00 57.67 H
ATOM 12555 N LYS F 148 -21.095 20.552 15.474 1.00 56.81 N
ATOM 12556 CA LYS F 148 -21.896 19.678 16.328 1.00 60.25 C
ATOM 12557 C LYS F 148 -21.256 18.299 16.469 1.00 62.99 C
ATOM 12558 O LYS F 148 -21.945 17.311 16.731 1.00 62.68 O
ATOM 12559 CB LYS F 148 -23.312 19.528 15.761 1.00 56.25 C

ATOM 12560 CG LYS F 148 -23.992 20.839 15.384 1.00 64.67 C
ATOM 12561 CD LYS F 148 -25.039 21.247 16.406 1.00 71.20 C
ATOM 12562 CE LYS F 148 -25.557 22.651 16.134 1.00 76.82 C
ATOM 12563 NZ LYS F 148 -24.495 23.682 16.310 1.00 75.60 N1+
ATOM 12564 H LYS F 148 -21.360 20.572 14.656 1.00 68.17
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H
ATOM   6265  N   SER D 123    -16.486  55.436  12.848  1.00 21.52
N
ATOM   6266  CA  SER D 123    -16.412  55.419  11.391  1.00 23.20
C
ATOM   6267  C   SER D 123    -17.680  56.030  10.804  1.00 23.42
C
ATOM   6268  O   SER D 123    -17.620  56.862   9.898  1.00 20.31
O
ATOM   6269  CB  SER D 123    -16.216  53.993  10.871  1.00 21.62
C
ATOM   6270  OG  SER D 123    -14.982  53.454  11.306  1.00 19.63
O
ATOM   6271  H   SER D 123    -16.512  54.655  13.208  1.00 25.82
H
ATOM   6272  HA  SER D 123    -15.656  55.954  11.103  1.00 27.84
H
ATOM   6273  HB2 SER D 123    -16.938  53.435  11.202  1.00 25.94
H
ATOM   6274  HB3 SER D 123    -16.229  54.007   9.901  1.00 25.94
H
ATOM   6275  HG  SER D 123    -14.957  53.434  12.146  1.00 23.55
H
ATOM   6276  N   GLN D 124    -18.827  55.611  11.331  1.00 20.37
N
ATOM   6277  CA  GLN D 124    -20.107  56.170  10.922  1.00 24.01
C
ATOM   6278  C   GLN D 124    -20.123  57.683  11.103  1.00 25.04
C
ATOM   6279  O   GLN D 124    -20.549  58.420  10.214  1.00 21.92
O
ATOM   6280  CB  GLN D 124    -21.238  55.534  11.725  1.00 28.29
C
ATOM   6281  CG  GLN D 124    -22.605  56.135  11.471  1.00 32.29
C
ATOM   6282  CD  GLN D 124    -23.667  55.497  12.338  1.00 34.18
C
ATOM   6283  OE1 GLN D 124    -23.490  55.356  13.549  1.00 37.41
O
ATOM   6284  NE2 GLN D 124    -24.773  55.089  11.722  1.00 37.93
N
ATOM   6285  H   GLN D 124    -18.888  55.000  11.933  1.00 24.45
H
ATOM   6286  HA  GLN D 124    -20.255  55.975   9.983  1.00 28.81
H
ATOM   6287  HB2 GLN D 124    -21.284  54.591  11.501  1.00 33.95
H
ATOM   6288  HB3 GLN D 124    -21.042  55.636  12.669  1.00 33.95
H
ATOM   6289  HG2 GLN D 124    -22.579  57.083  11.672  1.00 38.75
H
ATOM   6290  HG3 GLN D 124    -22.848  55.995  10.543  1.00 38.75
H
ATOM   6291 HE21 GLN D 124    -25.405  54.720  12.174  1.00 45.51
H
ATOM   6292 HE22 GLN D 124    -24.855  55.194  10.873  1.00 45.51
H
ATOM   6293  N   ALA D 125    -19.652  58.135  12.260  1.00 25.98
N
ATOM   6294  CA  ALA D 125    -19.640  59.555  12.584  1.00 27.07
C


ATOM   6295  C   ALA D 125    -18.721  60.311  11.636  1.00 24.27
C
ATOM   6296  O   ALA D 125    -19.057  61.397  11.168  1.00 27.08
O
ATOM   6297  CB  ALA D 125    -19.207  59.766  14.027  1.00 26.32
C
ATOM   6298  H   ALA D 125    -19.331  57.633  12.880  1.00 31.18
H
ATOM   6299  HA  ALA D 125    -20.537  59.912  12.483  1.00 32.48
H
ATOM   6300  HB1 ALA D 125    -19.206  60.716  14.221  1.00 31.59
H
TER   12601      ARG F 149
HETATM12602  O   HOH A 301     -4.239   8.778 -55.547  1.00 45.04
O
HETATM12603  O   HOH A 302    -24.027  13.065 -38.411  1.00 31.04
O
HETATM12604  O   HOH A 303    -26.938  32.739 -45.146  1.00 27.98
O
HETATM12605  O   HOH A 304    -26.382  16.536 -35.436  1.00 35.92
O
HETATM12606  O   HOH A 305    -19.043   4.283 -27.862  1.00 40.38
O
HETATM12607  O   HOH A 306    -19.017   7.187 -59.366  1.00 28.55
O
HETATM12608  O   HOH A 307    -13.369  10.269 -60.520  1.00 31.03
O
HETATM12609  O   HOH A 308    -19.209   3.822 -43.074  1.00 38.43
O
HETATM12610  O   HOH A 309    -23.006  34.055 -48.572  1.00 21.85
O
HETATM12611  O   HOH A 310    -13.086   4.848 -49.321  1.00 25.83
O
HETATM12612  O   HOH A 311    -26.139  21.686 -35.299  1.00 30.33
O
HETATM12613  O   HOH A 312    -28.024  21.488 -43.474  1.00 27.79

H
ATOM  12565  HA  LYS F 148    -21.964  20.071  17.211  1.00 72.30
H
ATOM  12566  HB2 LYS F 148    -23.268  18.980  14.962  1.00 67.50
H
ATOM  12567  HB3 LYS F 148    -23.866  19.091  16.426  1.00 67.50
H
ATOM  12568  HG2 LYS F 148    -23.325  21.542  15.336  1.00 77.61
H
ATOM  12569  HG3 LYS F 148    -24.431  20.736  14.525  1.00 77.61
H
ATOM  12570  HD2 LYS F 148    -25.788  20.632  16.361  1.00 85.44
H
ATOM  12571  HD3 LYS F 148    -24.645  21.234  17.292  1.00 85.44
H
ATOM  12572  HE2 LYS F 148    -25.877  22.701  15.219  1.00 92.19
H
ATOM  12573  HE3 LYS F 148    -26.277  22.850  16.752  1.00 92.19
H
ATOM  12574  HZ1 LYS F 148    -23.822  23.524  15.749  1.00 90.72
H
ATOM  12575  HZ2 LYS F 148    -24.826  24.491  16.145  1.00 90.72
H
ATOM  12576  HZ3 LYS F 148    -24.187  23.660  17.145  1.00 90.72
H
ATOM  12577  N   ARG F 149    -19.938  18.236  16.295  1.00 62.51
N
ATOM  12578  CA  ARG F 149    -19.219  16.968  16.305  1.00 65.70
C
ATOM  12579  C   ARG F 149    -17.746  17.180  16.640  1.00 70.51
C
ATOM  12580  O   ARG F 149    -17.410  17.671  17.718  1.00 79.82
O
ATOM  12581  CB  ARG F 149    -19.361  16.277  14.948  1.00 59.09
C
ATOM  12582  CG  ARG F 149    -18.637  14.951  14.834  1.00 53.79
C
ATOM  12583  CD  ARG F 149    -18.960  14.289  13.514  1.00 43.18
C
ATOM  12584  NE  ARG F 149    -18.021  13.226  13.181  1.00 43.60
N
ATOM  12585  CZ  ARG F 149    -18.019  12.580  12.021  1.00 40.65
C
ATOM  12586  NH1 ARG F 149    -18.915  12.894  11.095  1.00 30.30
N1+
ATOM  12587  NH2 ARG F 149    -17.125  11.627  11.791  1.00 40.71
N
ATOM  12588  H   ARG F 149    -19.434  18.921  16.169  1.00 75.01
H
ATOM  12589  HA  ARG F 149    -19.603  16.389  16.982  1.00 78.85
H
ATOM  12590  HB2 ARG F 149    -20.303  16.112  14.782  1.00 70.91
H
ATOM  12591  HB3 ARG F 149    -19.007  16.865  14.263  1.00 70.91
H
ATOM  12592  HG2 ARG F 149    -17.679  15.101  14.877  1.00 64.55
H
ATOM  12593  HG3 ARG F 149    -18.921  14.363  15.551  1.00 64.55
H
ATOM  12594  HD2 ARG F 149    -19.848  13.902  13.562  1.00 51.81
H


ATOM  12595  HD3 ARG F 149    -18.925  14.954  12.808  1.00 51.81
H
ATOM  12596  HE  ARG F 149    -17.372  13.078  13.725  1.00 52.32
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ATOM  12597 HH11 ARG F 149    -19.492  13.514  11.246  1.00 36.36
H
ATOM  12598 HH12 ARG F 149    -18.919  12.478  10.342  1.00 36.36
H
ATOM  12599 HH21 ARG F 149    -16.546  11.425  12.394  1.00 48.86
H
ATOM  12600 HH22 ARG F 149    -17.127  11.207  11.040  1.00 48.86
H

HETATM12933  O   HOH D 370    -13.314  41.381  16.992  1.00 38.82
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HETATM12934  O   HOH D 371    -12.620  44.975  19.857  1.00 38.87
O
HETATM12935  O   HOH D 372    -34.361  45.041   6.117  1.00 40.66
O
HETATM12936  O   HOH D 373    -19.902  30.159  10.064  1.00 39.21
O
HETATM12937  O   HOH D 374    -19.665  42.831 -10.863  1.00 37.18
O
HETATM12938  O   HOH D 375    -26.348  36.818   9.412  1.00 40.39
O
HETATM12939  O   HOH D 376     -4.888  48.505   8.181  1.00 40.81
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HETATM12940  O   HOH D 377    -38.516  50.575   6.009  1.00 40.44
O
HETATM12941  O   HOH D 378    -20.538  43.117 -13.094  1.00 39.95
O
HETATM12942  O   HOH D 379    -19.702  45.502 -14.659  1.00 39.92
O
HETATM12943  O   HOH D 380     -5.678  50.415   4.198  1.00 39.75
O
HETATM12944  O   HOH D 381    -30.979  39.861   1.528  1.00 41.67
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HETATM12614  O   HOH A 313    -27.846  27.929 -39.556  1.00 26.71
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HETATM12615  O   HOH A 314    -24.877  25.289 -37.453  1.00 23.03
O
HETATM12616  O   HOH A 315    -23.432   2.197 -46.149  1.00 45.83
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HETATM12617  O   HOH A 316    -15.724   4.062 -48.517  1.00 31.61
O
HETATM12618  O   HOH A 317     -2.800  10.432 -52.680  1.00 44.34
O
HETATM12619  O   HOH A 318     -6.188  13.669 -60.812  1.00 40.71
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HETATM12620  O   HOH A 319    -17.985  34.899 -42.506  1.00 31.50
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HETATM12621  O   HOH A 320    -28.621  20.922 -40.469  1.00 33.98
O
HETATM12622  O   HOH A 321    -18.645   2.611 -46.685  1.00 37.54
O
HETATM12623  O   HOH A 322    -16.885  31.002 -38.916  1.00 34.95
O
HETATM12624  O   HOH A 323    -21.881   3.734 -45.145  1.00 36.20
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HETATM12625  O   HOH A 324    -25.857  14.476 -39.327  1.00 31.98
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HETATM12626  O   HOH A 325    -25.288  14.441 -48.620  1.00 43.09
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HETATM12627  O   HOH A 326    -28.979  18.292 -41.913  1.00 47.11
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HETATM12628  O   HOH A 327    -24.340  10.996 -37.382  1.00 40.96
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HETATM12629  O   HOH A 328    -19.874   4.657 -58.500  1.00 36.79
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HETATM12630  O   HOH A 329    -26.031  25.676 -31.147  1.00 37.82
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HETATM12631  O   HOH A 330    -27.566  18.957 -36.732  1.00 30.07
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HETATM12632  O   HOH A 331     -8.913  27.000 -45.980  1.00 12.02
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HETATM12633  O   HOH A 332    -10.394  31.464 -47.363  1.00 16.47
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HETATM12634  O   HOH A 333    -18.536  15.833 -38.047  1.00 16.68
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HETATM12635  O   HOH A 334     -5.338  21.441 -51.609  1.00 16.09
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HETATM12636  O   HOH A 335    -12.122  33.154 -42.888  1.00 16.62
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HETATM12637  O   HOH A 336    -15.470  38.747 -54.980  1.00 20.24
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HETATM12638  O   HOH A 337    -25.218  29.228 -45.447  1.00 21.12
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HETATM12639  O   HOH A 338    -22.624  16.737 -51.115  1.00 20.98
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HETATM12640  O   HOH A 339     -9.791  31.648 -42.114  1.00 20.54
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HETATM12641  O   HOH A 340     -7.624  22.593 -54.735  1.00 21.23
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HETATM12642  O   HOH A 341     -8.566  17.680 -49.881  1.00 20.80
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HETATM12643  O   HOH A 342    -15.963  33.241 -41.874  1.00 21.36
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HETATM12644  O   HOH A 343    -19.030  26.073 -64.023  1.00 23.32
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HETATM12645  O   HOH A 344    -16.073  12.338 -32.274  1.00 23.69
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HETATM12646  O   HOH A 345    -26.536  23.160 -45.165  1.00 23.77
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HETATM12647  O   HOH A 346    -19.582  22.927 -55.390  1.00 23.00
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HETATM12648  O   HOH A 347    -16.406  39.317 -52.362  1.00 24.48
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HETATM12649  O   HOH A 348    -19.870  13.559 -61.687  1.00 25.43
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HETATM12650  O   HOH A 349     -5.833  17.482 -49.868  1.00 25.86
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HETATM12651  O   HOH A 350    -25.211  15.985 -50.444  1.00 26.75
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HETATM12652  O   HOH A 351    -12.216  35.658 -47.659  1.00 25.66
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HETATM12653  O   HOH A 352    -13.625  34.548 -40.593  1.00 28.06
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HETATM12654  O   HOH A 353     -0.228  26.806 -42.285  1.00 27.65
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HETATM12655  O   HOH A 354     -9.513  28.977 -33.724  1.00 30.44
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HETATM12656  O   HOH A 355    -18.000  26.664 -35.394  1.00 30.38
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HETATM12657  O   HOH A 356     -6.117  23.891 -61.488  1.00 31.21
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HETATM12658  O   HOH A 357    -22.894   7.960 -52.559  1.00 30.84
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HETATM12659  O   HOH A 358    -30.349  16.369 -56.293  1.00 32.17
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HETATM12660  O   HOH A 359    -16.399  20.831 -30.607  1.00 31.30
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HETATM12661  O   HOH A 360    -19.674  31.626 -42.674  1.00 30.26
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HETATM12945  O   HOH D 382     -2.671  53.695   3.849  1.00 43.39
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HETATM12946  O   HOH D 383    -19.330  59.336 -14.515  1.00 41.05
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HETATM12947  O   HOH D 384     -4.565  50.742   9.290  1.00 43.74
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HETATM12948  O   HOH D 385     -8.160  46.304  15.569  1.00 43.97
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HETATM12949  O   HOH D 386    -25.184  57.527   7.930  1.00 45.06
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HETATM12950  O   HOH D 387     -4.607  53.167  12.075  1.00 45.50
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HETATM12951  O   HOH D 388    -24.884  61.682   5.724  1.00 44.83
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HETATM12952  O   HOH D 389     -3.603  55.589  12.168  1.00 46.39
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HETATM12954  O   HOH D 391     -3.734  50.441   6.426  1.00 46.63
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HETATM12955  O   HOH D 392    -36.904  50.371   3.671  1.00 47.15
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HETATM12956  O   HOH D 393    -27.650  47.407  15.339  1.00 48.03
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HETATM12957  O   HOH D 394     -4.345  50.000  12.069  1.00 52.40
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HETATM12958  O   HOH D 395     -2.354  52.209  10.316  1.00 52.31
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HETATM12959  O   HOH D 396    -27.163  57.745  10.042  1.00 55.92
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HETATM12960  O   HOH E 201     20.494  51.878 -47.045  1.00 38.36
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HETATM12961  O   HOH E 202      5.443  58.562 -39.314  1.00 42.47
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HETATM12962  O   HOH E 203    -18.499  40.511 -41.681  1.00 33.44
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HETATM12963  O   HOH E 204      1.599  52.032 -49.209  1.00 33.89
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HETATM12964  O   HOH E 205     11.912  50.194 -42.760  1.00 21.84
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HETATM12965  O   HOH E 206    -17.937  49.501 -56.867  1.00 34.84
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HETATM12966  O   HOH E 207     17.923  51.933 -35.640  1.00 31.78
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HETATM12967  O   HOH E 208     -2.199  33.502 -70.190  1.00 25.85
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HETATM12968  O   HOH E 209      2.012  50.071 -50.178  1.00 29.71
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HETATM12969  O   HOH E 210      8.708  60.651 -32.374  1.00 37.43
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HETATM12970  O   HOH E 211     19.514  34.404 -41.949  1.00 31.24
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HETATM12971  O   HOH E 212     19.045  40.903 -39.415  1.00 25.83
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HETATM12972  O   HOH E 213     15.836  35.403 -44.700  1.00 32.86
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HETATM12973  O   HOH E 214     14.125  59.306 -32.977  1.00 29.49
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HETATM12974  O   HOH E 215     19.703  52.322 -40.153  1.00 27.14
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HETATM12975  O   HOH E 216     -2.463  53.723 -54.580  1.00 28.50
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HETATM12976  O   HOH E 217     10.563  33.561 -43.051  1.00 36.69
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HETATM12977  O   HOH E 218     -0.141  51.923 -50.575  1.00 27.62
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HETATM12978  O   HOH E 219     12.831  35.059 -42.689  1.00 35.03
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HETATM12979  O   HOH E 220     24.777  35.876 -39.786  1.00 29.06
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HETATM12980  O   HOH E 221      6.701  51.104 -45.448  1.00 33.91
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HETATM12981  O   HOH E 222     12.353  56.858 -41.891  1.00 27.59
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HETATM12982  O   HOH E 223     20.887  45.533 -48.598  1.00 37.30
O
HETATM12983  O   HOH E 224     21.346  45.342 -43.106  1.00 35.26
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HETATM12984  O   HOH E 225      7.373  32.445 -56.036  1.00 21.09
O
HETATM12985  O   HOH E 226     20.215  35.480 -46.604  1.00 39.99
O
HETATM12986  O   HOH E 227      0.274  42.725 -65.832  1.00 45.95
O
HETATM12987  O   HOH E 228     20.314  50.527 -35.492  1.00 41.02
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HETATM12988  O   HOH E 229    -13.880  51.341 -57.551  1.00 16.07
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HETATM12989  O   HOH E 230     -9.877  56.257 -54.396  1.00 38.99
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HETATM12990  O   HOH E 231     19.372  46.521 -43.375  1.00 36.47
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HETATM12991  O   HOH E 232     10.082  46.364 -50.427  1.00 33.92
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HETATM12992  O   HOH E 233     -4.763  40.408 -66.546  1.00 29.64
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HETATM12662  O   HOH A 361    -18.835  37.948 -52.949  1.00 32.68
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HETATM12664  O   HOH A 363    -20.199  12.814 -54.832  1.00 29.92
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HETATM12666  O   HOH A 365    -23.022   6.776 -47.294  1.00 34.25
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HETATM12667  O   HOH A 366    -23.202  10.617 -46.884  1.00 35.35
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HETATM12668  O   HOH A 367    -15.127  15.870 -66.948  1.00 36.42
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HETATM12669  O   HOH A 368    -10.425  25.413 -65.962  1.00 35.77
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HETATM12670  O   HOH A 369     -9.161   5.879 -39.249  1.00 34.25
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HETATM12671  O   HOH A 370    -18.300  10.506 -31.994  1.00 36.35
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HETATM12672  O   HOH A 371    -15.552  26.800 -35.708  1.00 37.39
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HETATM12676  O   HOH A 375    -17.795  40.045 -55.287  1.00 40.70
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HETATM12685  O   HOH A 384     -9.476  26.592 -58.735  1.00 41.81
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HETATM12686  O   HOH A 385     -0.093  14.691 -60.500  1.00 46.70
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HETATM12688  O   HOH A 387      1.016  15.999 -58.764  1.00 46.48
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HETATM12689  O   HOH A 388    -11.840   6.782 -38.342  1.00 42.86
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HETATM12690  O   HOH A 389    -24.442   9.097 -54.148  1.00 47.82
O
HETATM12691  O   HOH A 390     -1.524  21.039 -54.891  1.00 49.79
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HETATM12692  O   HOH B 301      0.255   4.357 -36.678  1.00 34.00
O
HETATM12693  O   HOH B 302     -1.510   1.284 -29.004  1.00 49.63
O
HETATM12694  O   HOH B 303      4.441   5.187 -40.497  1.00 31.63
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HETATM12695  O   HOH B 304     18.157  28.044 -38.617  1.00 28.39
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HETATM12696  O   HOH B 305     16.389  23.262 -38.080  1.00 33.68
O
HETATM12697  O   HOH B 306     14.242  19.043 -38.919  1.00 31.86
O
HETATM12698  O   HOH B 307      8.535  29.943 -42.456  1.00 25.29
O
HETATM12699  O   HOH B 308     17.183  22.927 -33.325  1.00 30.12
O


HETATM12700  O   HOH B 309     16.403  25.735 -28.675  1.00 35.19
O
HETATM12701  O   HOH B 310     17.080  16.649 -32.273  1.00 42.13
O
HETATM12702  O   HOH B 311      6.661   9.067 -42.012  1.00 28.79
O
HETATM12703  O   HOH B 312     15.227  15.555 -40.166  1.00 38.54
O
HETATM12704  O   HOH B 313      8.730  27.534 -44.311  1.00 39.97
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HETATM12705  O   HOH B 314      0.801   1.560 -39.666  1.00 38.35
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HETATM12706  O   HOH B 315     13.293  20.152 -45.060  1.00 49.46
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HETATM12707  O   HOH B 316    -18.978  -3.549 -40.183  1.00 44.93
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HETATM12708  O   HOH B 317     -2.823   9.425 -49.639  1.00 48.93
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HETATM12709  O   HOH B 318      1.693  29.268 -31.511  1.00 10.93
HETATM12993  O   HOH E 234      4.217  38.319 -63.215  1.00 41.76
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HETATM12994  O   HOH E 235      8.559  36.851 -57.837  1.00 41.56
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HETATM12995  O   HOH E 236     24.352  28.927 -34.208  1.00 41.90
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HETATM12996  O   HOH E 237    -17.325  38.297 -40.647  1.00 34.44
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HETATM12997  O   HOH E 238     -4.792  37.706 -66.067  1.00 31.59
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HETATM12998  O   HOH E 239    -19.905  46.969 -53.848  1.00 40.89
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HETATM12999  O   HOH E 240     21.205  57.565 -29.082  1.00 35.91
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HETATM13000  O   HOH E 241    -14.408  43.441 -34.367  1.00 40.53
O
HETATM13001  O   HOH E 242    -18.248  42.762 -39.781  1.00 38.08
O
HETATM13002  O   HOH E 243     -1.904  37.410 -38.024  1.00 12.08
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HETATM13003  O   HOH E 244      2.195  29.709 -47.704  1.00 12.46
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HETATM13004  O   HOH E 245     -2.711  35.397 -39.987  1.00 14.22
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HETATM13005  O   HOH E 246     -8.067  32.033 -44.115  1.00 15.10
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HETATM13006  O   HOH E 247     -5.328  27.900 -46.610  1.00 14.73
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HETATM13007  O   HOH E 248    -14.067  37.085 -43.451  1.00 17.70
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HETATM13008  O   HOH E 249     -8.103  29.759 -45.554  1.00 17.16
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HETATM13009  O   HOH E 250      2.631  34.820 -60.892  1.00 18.37
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HETATM13010  O   HOH E 251     -2.585  26.386 -48.445  1.00 17.19
O
HETATM13011  O   HOH E 252     14.368  41.432 -47.732  1.00 18.81
O
HETATM13012  O   HOH E 253      4.438  36.255 -30.141  1.00 19.18
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HETATM13013  O   HOH E 254     -9.833  33.883 -45.802  1.00 18.67
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HETATM13014  O   HOH E 255     -0.172  45.659 -55.823  1.00 19.77
O
HETATM13015  O   HOH E 256      4.073  33.023 -49.760  1.00 19.37
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HETATM13016  O   HOH E 257      8.626  34.090 -40.146  1.00 19.00
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HETATM13017  O   HOH E 258     -0.019  28.183 -49.425  1.00 19.44
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HETATM13018  O   HOH E 259     -7.301  36.915 -61.775  1.00 20.23
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HETATM13019  O   HOH E 260     16.652  45.681 -30.513  1.00 21.09
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HETATM13020  O   HOH E 261     17.061  45.998 -33.860  1.00 20.74
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HETATM13021  O   HOH E 262      9.654  36.144 -41.561  1.00 19.51
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HETATM13022  O   HOH E 263     -2.177  29.327 -55.289  1.00 21.89
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HETATM13023  O   HOH E 264     20.395  43.071 -35.226  1.00 22.50
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HETATM13024  O   HOH E 265    -12.569  41.994 -37.550  1.00 21.72
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HETATM13025  O   HOH E 266      5.948  37.514 -57.958  1.00 22.22
O
HETATM13026  O   HOH E 267    -12.139  49.405 -38.284  1.00 23.22
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HETATM13027  O   HOH E 268    -19.085  41.806 -48.952  1.00 22.89
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HETATM13028  O   HOH E 269     -0.491  53.017 -35.212  1.00 22.63
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HETATM13029  O   HOH E 270      2.392  45.702 -55.514  1.00 23.55
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HETATM13030  O   HOH E 271    -16.754  37.318 -43.167  1.00 24.51
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HETATM13033  O   HOH E 274     -4.445  41.742 -31.636  1.00 25.74
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HETATM13034  O   HOH E 275      3.767  52.702 -39.445  1.00 23.38
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HETATM13035  O   HOH E 276     10.827  40.193 -26.673  1.00 25.23
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HETATM13036  O   HOH E 277     19.808  46.167 -34.735  1.00 25.39
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HETATM13037  O   HOH E 278    -13.356  37.144 -40.719  1.00 25.26
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HETATM13038  O   HOH E 279     -3.235  35.486 -33.597  1.00 25.77
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HETATM13039  O   HOH E 280     -5.334  23.912 -54.106  1.00 25.00
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HETATM13040  O   HOH E 281      9.135  43.283 -24.915  1.00 25.31
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HETATM12760  O   HOH B 369   -11.414   0.818 -33.091  1.00 38.98
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HETATM12761  O   HOH B 370     3.957  29.939 -41.721  1.00 36.44
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HETATM12762  O   HOH B 371     1.415  32.395 -31.962  1.00 38.37
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HETATM12779  O   HOH C 303   -18.771  72.520 -11.597  1.00 50.43
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HETATM12781  O   HOH C 305    14.117  54.287 -10.850  1.00 32.29
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HETATM12782  O   HOH C 306    14.225  41.941 -16.874  1.00 31.56
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HETATM12792  O   HOH C 316    12.833  50.464  -7.757  1.00 25.81
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HETATM12793  O   HOH C 317    14.853  60.630  -3.192  1.00 40.43
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HETATM12794  O   HOH C 318    15.234  52.634 -14.036  1.00 35.89
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HETATM12795  O   HOH C 319    13.683  53.611  -5.566  1.00 22.28
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HETATM12796  O   HOH C 320     2.942  64.638  -7.909  1.00 37.82
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HETATM12797  O   HOH C 321   -19.200  50.531 -17.969  1.00 48.48
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HETATM12798  O   HOH C 322    15.266  45.443 -11.477  1.00 32.35
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HETATM12799  O   HOH C 323     7.296  41.743  -1.677  1.00 40.74
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HETATM12802  O   HOH C 326    -2.319  43.891  -5.752  1.00 13.59
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HETATM13105  O   HOH E 346   -18.847  41.059 -58.010  1.00 42.05
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HETATM13126  O   HOH F 202   -19.543  20.243  12.049  1.00 45.46
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HETATM13131  O   HOH F 207     6.564  15.612  -1.375  1.00 41.69
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HETATM13132  O   HOH F 208     8.066  32.992  -3.689  1.00 17.90
O
HETATM13133  O   HOH F 209     0.058  18.240   8.199  1.00 28.41
O
HETATM13134  O   HOH F 210   -19.213  23.477   6.264  1.00 38.03
O
HETATM13135  O   HOH F 211   -20.574  28.547  -3.455  1.00 30.72
O
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HETATM12805  O   HOH C 329    -6.887  40.435 -12.171  1.00 17.62
O
HETATM12806  O   HOH C 330    -4.688  60.007  -9.543  1.00 18.14
O
HETATM12807  O   HOH C 331    -7.544  45.424 -14.275  1.00 18.04
O
HETATM12808  O   HOH C 332     5.302  59.867  -4.400  1.00 19.82
O
HETATM12809  O   HOH C 333     5.432  31.407 -12.874  1.00 19.82
O
HETATM12810  O   HOH C 334    12.458  38.537 -12.898  1.00 21.18
O
HETATM12811  O   HOH C 335     2.371  54.039 -19.590  1.00 23.02
O
HETATM12812  O   HOH C 336    -0.845  36.490 -13.349  1.00 22.27
O
HETATM12813  O   HOH C 337    -9.333  41.364 -12.280  1.00 24.14
O
HETATM12814  O   HOH C 338    -5.551  36.788 -16.645  1.00 24.51
O
HETATM12815  O   HOH C 339    18.970  48.948 -26.393  1.00 27.40
O
HETATM12816  O   HOH C 340    10.670  41.206 -24.143  1.00 25.12
O
HETATM12817  O   HOH C 341   -16.849  51.063 -16.204  1.00 26.42
O
HETATM12818  O   HOH C 342   -14.675  49.165 -14.386  1.00 26.37
O
HETATM12819  O   HOH C 343     1.745  36.752 -14.713  1.00 25.70
O
HETATM12820  O   HOH C 344     2.671  45.837   0.002  1.00 28.69
O
HETATM12821  O   HOH C 345     2.363  38.996  -4.167  1.00 27.56
O
HETATM12822  O   HOH C 346     8.830  45.251 -22.965  1.00 27.35
O
HETATM12823  O   HOH C 347     9.728  34.210 -19.230  1.00 30.42
O
HETATM12824  O   HOH C 348    13.579  35.984 -12.512  1.00 30.95
O
HETATM12825  O   HOH C 349    -5.968  33.951 -21.436  1.00 31.55
O
HETATM12826  O   HOH C 350     3.725  56.468 -20.085  1.00 30.74
O
HETATM12827  O   HOH C 351    -1.274  34.886 -16.374  1.00 29.17
O
HETATM12828  O   HOH C 352    12.617  60.940 -17.481  1.00 31.37
O
HETATM12829  O   HOH C 353    -1.666  38.934 -29.839  1.00 30.37
O
HETATM12830  O   HOH C 354    14.741  40.249 -23.443  1.00 31.65
O
HETATM12831  O   HOH C 355    -2.518  60.895 -20.585  1.00 32.96
O
HETATM12832  O   HOH C 356     7.127  61.591 -10.423  1.00 31.47
O
HETATM12833  O   HOH C 357    -5.600  44.765 -28.090  1.00 31.15
O
HETATM12834  O   HOH C 358   -10.941  59.853 -24.323  1.00 34.36
O
HETATM12835  O   HOH C 359    -0.816  52.113 -24.375  1.00 31.68
O
HETATM12836  O   HOH C 360     3.609  51.670  -0.408  1.00 34.63
O
HETATM12837  O   HOH C 361     9.892  60.476  -6.784  1.00 35.19
O
HETATM12838  O   HOH C 362    10.755  32.402 -12.499  1.00 35.48
O
HETATM12839  O   HOH C 363     6.093  50.992 -25.892  1.00 37.00
O

HETATM12840  O   HOH C 364   -15.880  57.983 -23.777  1.00 36.98
O
HETATM12841  O   HOH C 365     0.393  41.558  -3.765  1.00 35.61
O
HETATM12842  O   HOH C 366     6.953  50.058  -3.109  1.00 36.36
O
HETATM12843  O   HOH C 367   -15.843  54.220 -21.989  1.00 38.70
O
HETATM12844  O   HOH C 368    -8.251  39.252 -26.196  1.00 39.82
O
HETATM12845  O   HOH C 369    -1.325  65.418 -10.424  1.00 39.57
O
HETATM12846  O   HOH C 370    -9.758  65.282  -9.577  1.00 38.51
O
HETATM12847  O   HOH C 371   -10.068  66.122 -12.738  1.00 39.97
O
HETATM12848  O   HOH C 372    -0.163  56.220  -1.118  1.00 39.64
O
HETATM12849  O   HOH C 373     7.462  59.831 -12.678  1.00 38.52
O
HETATM12850  O   HOH C 374   -15.708  71.501 -12.017  1.00 42.69
O
HETATM12851  O   HOH C 375   -11.434  61.708 -22.273  1.00 41.02
O
HETATM12852  O   HOH C 376     3.053  61.926 -15.937  1.00 41.78
O
HETATM12853  O   HOH C 377   -11.813  56.242 -24.753  1.00 42.43
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HETATM13136  O   HOH F 212   -19.727  24.190  12.150  1.00 35.82
O
HETATM13137  O   HOH F 213    -6.519  33.477  18.095  1.00 25.53
O
HETATM13138  O   HOH F 214     3.516  39.938  11.660  1.00 51.22
O
HETATM13139  O   HOH F 215    19.299  16.452   3.770  1.00 34.46
O
HETATM13140  O   HOH F 216    17.855  34.803  -3.198  1.00 35.20
O
HETATM13141  O   HOH F 217    17.412  28.323  -5.670  1.00 20.16
O
HETATM13142  O   HOH F 218    -5.023  36.607  24.570  1.00 26.68
O
HETATM13143  O   HOH F 219    23.059  33.278  -5.275  1.00 33.18
O
HETATM13144  O   HOH F 220    10.140  19.065  -1.747  1.00 21.28
O
HETATM13145  O   HOH F 221    11.249  34.079  -2.525  1.00 28.26
O
HETATM13146  O   HOH F 222     9.004  35.713  -2.263  1.00 24.55
O
HETATM13147  O   HOH F 223    19.500  16.378  -0.248  1.00 29.44
O
HETATM13148  O   HOH F 224   -20.175  22.978   9.804  1.00 46.18
O
HETATM13149  O   HOH F 225     5.288  37.480  10.722  1.00 19.13
O
HETATM13150  O   HOH F 226     5.453  14.458  -3.053  1.00 34.48
O
HETATM13151  O   HOH F 227   -15.756  29.376  -9.488  1.00 37.41
O
HETATM13152  O   HOH F 228   -19.022  18.909   0.622  1.00 28.29
O
HETATM13153  O   HOH F 229   -20.898  27.401   4.084  1.00 26.70
O
HETATM13154  O   HOH F 230   -19.021  30.972  -4.004  1.00 39.16
O
HETATM13155  O   HOH F 231    -7.383  32.419  20.342  1.00 34.95
O
HETATM13156  O   HOH F 232     8.349  37.236  -4.104  1.00 31.77
O
HETATM13157  O   HOH F 233     4.333  12.477  -2.010  1.00 45.11
O
HETATM13158  O   HOH F 234    -7.078  35.465  22.272  1.00 41.68
O
HETATM13159  O   HOH F 235   -19.934  26.230  -4.724  1.00 28.02
O
HETATM13160  O   HOH F 236    26.367  32.963 -11.321  1.00 50.03
O
HETATM13161  O   HOH F 237   -17.720  31.079  -5.950  1.00 36.12
O
HETATM13162  O   HOH F 238   -18.463  32.439  -1.941  1.00 25.63
O
HETATM13163  O   HOH F 239     2.653   5.356 -14.873  1.00 46.82
O
HETATM13164  O   HOH F 240    -3.735  31.693  -7.047  1.00 10.47
O
HETATM13165  O   HOH F 241    -4.547  33.876  -5.223  1.00 13.03
O
HETATM13166  O   HOH F 242     6.925  35.119  -5.357  1.00 14.32
O
HETATM13167  O   HOH F 243   -15.826  32.289  -1.829  1.00 15.17
O
HETATM13168  O   HOH F 244    -9.965  37.443  -1.569  1.00 15.69
O
HETATM13169  O   HOH F 245    -9.742  39.964   0.015  1.00 16.14
O
HETATM13170  O   HOH F 246    -7.063  41.598   0.842  1.00 16.53
O

HETATM13171  O   HOH F 247    -9.317  33.140  16.189  1.00 18.72
O
HETATM13172  O   HOH F 248     2.149  32.410 -15.614  1.00 18.49
O
HETATM13173  O   HOH F 249   -15.940  23.447  -4.656  1.00 19.05
O
HETATM13174  O   HOH F 250   -11.606  35.731   0.174  1.00 18.79
O
HETATM13175  O   HOH F 251     0.542  35.305  15.748  1.00 20.02
O
HETATM13176  O   HOH F 252   -13.796  19.841  -6.650  1.00 18.56
O
HETATM13177  O   HOH F 253    -4.266  43.217   2.838  1.00 20.11
O
HETATM13178  O   HOH F 254    12.459  28.178   2.623  1.00 21.69
O
HETATM13179  O   HOH F 255     4.373  33.451 -11.924  1.00 21.34
O
HETATM13180  O   HOH F 256     3.759  24.044 -14.369  1.00 20.67
O
HETATM13181  O   HOH F 257     2.309  23.531 -12.365  1.00 20.53
O
HETATM13182  O   HOH F 258    -2.175  24.331  10.942  1.00 22.37
O
HETATM13183  O   HOH F 259    -4.924  33.722 -11.652  1.00 23.33
O
HETATM13184  O   HOH F 260     2.888  31.320  10.701  1.00 21.46
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HETATM12854  O   HOH C 378    -12.294  68.959 -13.958  1.00 43.23
O
HETATM12855  O   HOH C 379    -13.626  40.659 -13.158  1.00 44.07
O
HETATM12856  O   HOH C 380    -18.577  58.814 -16.670  1.00 43.85
O
HETATM12857  O   HOH C 381     -6.123  56.420   0.688  1.00 43.90
O
HETATM12858  O   HOH C 382     15.008  39.775 -13.505  1.00 44.17
O
HETATM12859  O   HOH C 383     13.735  37.957 -23.731  1.00 45.18
O
HETATM12860  O   HOH C 384      7.339  51.857  -1.904  1.00 45.28
O
HETATM12861  O   HOH C 385      0.323  50.868   1.825  1.00 45.24
O
HETATM12862  O   HOH C 386    -13.084  72.084 -12.424  1.00 47.76
O
HETATM12863  O   HOH C 387     -2.518  64.672 -13.262  1.00 51.25
O
HETATM12864  O   HOH D 301    -10.014  58.236   9.846  1.00 41.05
O
HETATM12865  O   HOH D 302    -20.836  64.885  -3.698  1.00 32.34
O
HETATM12866  O   HOH D 303    -29.323  34.099  -0.835  1.00 37.76
O
HETATM12867  O   HOH D 304    -27.572  48.271 -11.004  1.00 32.15
O
HETATM12868  O   HOH D 305    -28.558  37.290  -0.037  1.00 33.63
O
HETATM12869  O   HOH D 306    -27.043  50.867 -13.269  1.00 41.10
O
HETATM12870  O   HOH D 307    -31.831  48.983  -1.175  1.00 30.08
O
HETATM12871  O   HOH D 308    -34.607  38.068   8.993  1.00 50.45
O
HETATM12872  O   HOH D 309    -29.402  41.181  -6.304  1.00 18.23
O
HETATM12873  O   HOH D 310    -20.557  63.151  12.656  1.00 32.23
O
HETATM12874  O   HOH D 311    -21.400  37.640  -3.067  1.00 25.32
O
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O
HETATM13185  O   HOH F 261     -5.374  33.307  -8.950  1.00 22.52
O
HETATM13186  O   HOH F 262      1.881  27.353 -16.537  1.00 22.47
O
HETATM13187  O   HOH F 263     -3.975  40.677   9.749  1.00 23.30
O
HETATM13188  O   HOH F 264    -15.275  32.135  -4.615  1.00 24.42
O
HETATM13189  O   HOH F 265    -16.311  25.385  -7.099  1.00 25.23
O
HETATM13190  O   HOH F 266     -1.736  41.293   3.810  1.00 23.93
O
HETATM13191  O   HOH F 267     -4.202  23.902 -12.285  1.00 24.85
O
HETATM13192  O   HOH F 268      2.245  36.873   4.382  1.00 26.53
O
HETATM13193  O   HOH F 269      2.028  16.729  -5.628  1.00 25.81
O
HETATM13194  O   HOH F 270      2.418  29.226  14.147  1.00 26.76
O
HETATM13195  O   HOH F 271     -7.374  35.479 -11.771  1.00 26.50
O
HETATM13196  O   HOH F 272     -2.513  25.904  16.638  1.00 27.14
O
HETATM13197  O   HOH F 273     15.661  22.668 -10.655  1.00 27.91
O
HETATM13198  O   HOH F 274     -8.779  22.086  13.700  1.00 27.84
O
HETATM13199  O   HOH F 275     18.181  23.098  -9.881  1.00 28.66
O
HETATM13200  O   HOH F 276     19.009  25.676  -9.376  1.00 29.16
O
HETATM13201  O   HOH F 277     -3.777  41.358  13.650  1.00 28.76
O
HETATM13202  O   HOH F 278      0.518  21.676 -12.890  1.00 28.10
O
HETATM13203  O   HOH F 279    -14.404  26.981  -7.575  1.00 26.80
O
HETATM13204  O   HOH F 280    -10.486  14.191  -8.585  1.00 29.07
O
HETATM13205  O   HOH F 281      9.959  20.871 -16.225  1.00 30.36
O
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HETATM12875  O   HOH D 312    -22.384  62.847  -7.540  1.00 29.35
O
HETATM12876  O   HOH D 313    -18.632  68.900   8.837  1.00 34.40
O
HETATM12877  O   HOH D 314     -8.493  59.348   2.983  1.00 36.40
O
HETATM12878  O   HOH D 315    -30.165  48.359  -6.181  1.00 22.59
O
HETATM12879  O   HOH D 316    -17.964  48.761 -15.769  1.00 28.20
O
HETATM12880  O   HOH D 317    -19.745  34.632  -2.943  1.00 27.55
O
HETATM12881  O   HOH D 318    -17.971  38.231  -7.160  1.00 34.96
O
HETATM12882  O   HOH D 319    -28.217  52.165 -11.635  1.00 30.04
O
HETATM12883  O   HOH D 320    -23.038  50.237 -14.769  1.00 36.26
O
HETATM12884  O   HOH D 321    -28.153  61.887  -9.601  1.00 30.37
O
HETATM12885  O   HOH D 322    -26.580  43.886  -8.527  1.00 20.77
O
HETATM12886  O   HOH D 323    -17.358  66.140   1.531  1.00 25.79
O
HETATM12887  O   HOH D 324    -26.072  44.773 -10.589  1.00 36.24
O
HETATM12888  O   HOH D 325    -26.556  55.322   2.037  1.00 38.13
O
HETATM12889  O   HOH D 326    -35.713  49.635   0.340  1.00 34.68
O
HETATM12890  O   HOH D 327    -27.768  42.716 -14.490  1.00 38.65
O
HETATM12891  O   HOH D 328    -29.821  48.131  -2.685  1.00 19.27
O
HETATM12892  O   HOH D 329    -25.620  55.841  -0.274  1.00 36.69
O
HETATM12893  O   HOH D 330    -29.046  49.891  -9.928  1.00 25.60
O
HETATM12894  O   HOH D 331    -21.683  41.023 -11.782  1.00 36.29
O
HETATM12895  O   HOH D 332    -10.571  42.635   0.175  1.00 12.74
O
HETATM12896  O   HOH D 333    -20.065  53.613  -8.395  1.00 16.11
O
HETATM12897  O   HOH D 334-11.560  37.804  -3.864  1.00 17.32    O
HETATM12898  O   HOH D 335 -12.245  38.019   1.674  1.00 18.53   O
HETATM12899  O   HOH D 336  -24.421  53.209   4.702  1.00 19.91  O
HETATM12900  O   HOH D 337 -14.003  36.210  -2.688  1.00 18.75    O
HETATM12901  O   HOH D 338 -17.497  31.159   9.724  1.00 21.04   O
HETATM12902  O   HOH D 339 -28.129  46.355  -1.126  1.00 21.24  O
HETATM12903  O   HOH D 340 -26.845  40.357  -0.313  1.00 21.34  O
HETATM12904  O   HOH D 341 -17.361  56.914 -14.106  1.00 21.76    O
HETATM12905  O   HOH D 342  -27.042  53.777   4.020  1.00 22.08    O
HETATM12906  O   HOH D 343-10.184  52.061   3.850  1.00 20.97  O
HETATM12907  O   HOH D 344 -9.553  43.638 -13.524  1.00 22.98   O
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HETATM13206  O   HOH F 282     -3.940  21.831 -10.379  1.00 28.83
O
HETATM13207  O   HOH F 283     -2.308  16.861 -10.402  1.00 29.44
O
HETATM13208  O   HOH F 284      0.593  24.088  10.684  1.00 30.07
O
HETATM13209  O   HOH F 285      5.429  28.280  11.372  1.00 30.78
O
HETATM13210  O   HOH F 286     -3.529  46.071   2.704  1.00 31.55
O
HETATM13211  O   HOH F 287     -5.988  15.408  -2.568  1.00 30.43
O
HETATM13212  O   HOH F 288     19.464  21.444  -5.039  1.00 29.96
O
HETATM13213  O   HOH F 289    -13.091  33.252  15.093  1.00 30.25
O
HETATM13214  O   HOH F 290    -15.860  20.845  -5.386  1.00 30.72
O
HETATM13215  O   HOH F 291     -0.548  41.122   6.205  1.00 30.25
O
HETATM13216  O   HOH F 292      0.872  22.132   8.978  1.00 32.13
O
HETATM13217  O   HOH F 293     -4.646  40.663  -3.810  1.00 30.37
O
HETATM13218  O   HOH F 294     -1.733  41.211   8.740  1.00 30.96
O
HETATM13219  O   HOH F 295     17.789  19.420  -2.510  1.00 32.13
O
HETATM13220  O   HOH F 296     -6.483  35.917  19.186  1.00 31.79
O
HETATM13221  O   HOH F 297     -6.811  46.182   8.298  1.00 33.29
O
HETATM13222  O   HOH F 298     24.483  26.687  -7.015  1.00 32.28
O
HETATM13223  O   HOH F 299      8.774  18.059 -17.214  1.00 34.11
O
HETATM13224  O   HOH F 300     -1.427  24.083 -15.823  1.00 30.66
O
HETATM13225  O   HOH F 301     -0.326  17.915 -12.041  1.00 33.10
O
HETATM13226  O   HOH F 302    -18.854  28.350   4.883  1.00 32.52
O
HETATM13227  O   HOH F 303     -0.512  28.693  17.595  1.00 33.48
O
HETATM13228  O   HOH F 304  0.612  18.849  -0.549  1.00 30.68       O
HETATM13229  O   HOH F 305      3.163  24.825  11.846  1.00 35.31   O
HETATM13230  O   HOH F 306    -11.255  35.349  16.013  1.00 34.65  O
HETATM13231  O   HOH F 307     -6.233  27.414 -13.640  1.00 33.28    O
HETATM13232  O   HOH F 308     24.472  31.760  -9.444  1.00 38.36   O
HETATM13233  O   HOH F 309     -0.858  41.712  13.920  1.00 35.42    O
HETATM13234  O   HOH F 310     -8.502  14.607   8.108  1.00 34.48  O
HETATM13235  O   HOH F 311    -11.747  36.065  -8.832  1.00 36.55   O
HETATM13236  O   HOH F 312    -13.422  32.266  -6.212  1.00 35.58  O
HETATM13237  O   HOH F 313     -9.184  42.722  14.344  1.00 36.94  O
HETATM13238  O   HOH F 314     -7.836  32.532  -8.638  1.00 33.21  O
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HETATM12908  O   HOH D 345 -7.177  48.203   5.730  1.00 23.17   O      HETATM13239  O   HOH F 315    -11.233  36.685 -11.238  1.00 37.77   O
HETATM12909  O   HOH D 346  -20.740  32.126   7.345  1.00 24.69    O    HETATM13240  O   HOH F 316      2.196  36.096  17.820  1.00 37.57   O
HETATM12910  O   HOH D 347 -14.099  34.185   2.290  1.00 22.84    O     HETATM13241  O   HOH F 317    -10.469  34.025  -6.845  1.00 36.34    O
HETATM12911  O   HOH D 348  -9.441  47.216   8.730  1.00 22.77    O     HETATM13242  O   HOH F 318    -12.355  13.497   1.919  1.00 38.36   O
HETATM12912  O   HOH D 349 -20.923  44.212  18.055  1.00 25.08    O     HETATM13243  O   HOH F 319      8.181  37.389  -7.197  1.00 35.45   O
HETATM12913  O   HOH D 350  -18.270  30.605   6.907  1.00 26.34    O    HETATM13244  O   HOH F 320     -2.200  22.735 -13.952  1.00 37.96   O
HETATM12914  O   HOH D 351   -13.980  50.776  20.324  1.00 26.98   O    HETATM13245  O   HOH F 321     -1.126  40.141  -2.821  1.00 34.62    O
HETATM12915  O   HOH D 352      -2.005  42.516  -3.642  1.00 25.82  O   HETATM13246  O   HOH F 322     -7.967  40.257  12.151  1.00 38.24    O
HETATM12916  O   HOH D 353   -7.703  52.259   4.077  1.00 26.17    O    HETATM13247  O   HOH F 323     -3.921  34.800 -15.368  1.00 38.04    O
HETATM12917  O   HOH D 354 -11.794  36.384  -6.367  1.00 26.68     O    HETATM13248  O   HOH F 324     -4.863  41.033  -1.662  1.00 35.30O
HETATM12918  O   HOH D 355 -10.128  63.157  -6.959  1.00 27.34    O     HETATM13249  O   HOH F 325    -19.662  22.552  -1.211  1.00 39.70  O
HETATM12919  O   HOH D 356 -11.014  43.097  12.898  1.00 28.51   O      HETATM13250  O   HOH F 326     13.170  30.100   7.044  1.00 42.72 O
HETATM12920  O   HOH D 357 -17.799  36.217  -3.851  1.00 27.25   O      HETATM13251  O   HOH F 327     -4.159  30.406 -15.614  1.00 41.98   O
HETATM12921  O   HOH D 358  -22.102  56.645  14.994  1.00 30.12   O     HETATM13252  O   HOH F 328     -7.903  43.105   9.586  1.00 42.28  O
HETATM12922  O   HOH D 359 -20.209  36.430  13.367  1.00 33.14   O      HETATM13253  O   HOH F 329     13.573  32.711 -11.570  1.00 41.52   O


HETATM12923  O   HOH D 360   -14.485  66.577  -8.289  1.00 33.72O       HETATM13254  O   HOH F 330     14.948  30.890 -13.150  1.00 42.12    O
HETATM12924  O   HOH D 361 -30.601  51.048   9.610  1.00 34.97    O      HETATM13255  O   HOH F 331      1.675  39.444   5.350  1.00 41.37  O
HETATM12925  O   HOH D 362 -21.306  47.042   8.896  1.00 29.93  O        HETATM13256  O   HOH F 332     -4.339  46.291   8.078  1.00 44.13    O
HETATM12926  O   HOH D 363   -22.223  57.165   8.167  1.00 32.47    O    HETATM13257  O   HOH F 333     -0.243  42.515  10.561  1.00 43.05    O
HETATM12927  O   HOH D 364 -15.412  34.891  -4.724  1.00 31.83     O    HETATM13258  O   HOH F 334     -3.795  46.593   5.507  1.00 44.66   O
HETATM12928  O   HOH D 365   -17.332  42.668 -10.347  1.00 34.57 O      HETATM13259  O   HOH F 335      0.948  36.794  19.762  1.00 45.40   O
HETATM12929  O   HOH D 366 -15.156  33.187  17.114  1.00 36.79 O        HETATM13260  O   HOH F 336     12.513  30.470   9.388  1.00 52.16    O
HETATM12930  O   HOH D 367 -24.157  64.135   7.163  1.00 36.53  O       HETATM13261  O   HOH F 337     -2.319  48.414   6.788  1.00 52.97   O
HETATM12931  O   HOH D 368   -6.100  54.260   2.297  1.00 36.69   O
HETATM12932  O   HOH D 369 -16.246  42.716 -13.033  1.00 39.37    O
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CONECT  267   83                                                     CONECT 5587 5377
CONECT  538 1855                                                     CONECT 5704 4387
CONECT 1528 1738                                                     CONECT 5833 5967
CONECT 1738 1528                                                     CONECT 5864 6048
CONECT 1855  538                                                     CONECT 5967 5833
CONECT 1969 2103                                                     CONECT 6048 5864
CONECT 2000 2184                                                     CONECT 6319 7636
CONECT 2103 1969                                                     CONECT 7309 7519
CONECT 2184 2000                                                     CONECT 7519 7309
CONECT 2455 3772                                                     CONECT 7636 6319
CONECT 3445 3655                                                     CONECT 9055 9862
CONECT 3655 3445                                                     CONECT 9862 9055
CONECT 3772 2455                                                     CONECT1149912306
CONECT 3901 4035                                                     CONECT1230611499
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SEQUENCE LISTING

[0204]

<110> Washington University
KRUPNICK, Alexander S.
LAZEAR, Eric R.
FREMONT, Daved H.

<120> COMPOSITIONS AND METHODS FOR TARGETED CYTOKINE DELIVERY

<130> 047563-508855

<150> 62/091,898
<151> 2014-12-15

<160> 34

<170> PatentIn version 3.5

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gaagaatata ctgtcaaaac acaggaggcc actaataaaa atatgtggct aactacttcc       360

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gattacaagg acgatgacga caagcaccac catcatcatc atcaccacgg tagcagcggc       540

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gcgagaccac gttcatgtgc gagtacgccg acgagacggc caccatagtg gagtttctta       900

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His Lys Leu Ala Phe Asn Phe Asn Leu Glu Ile Asn Gly Ser Asp Thr
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His Ser Thr Val Asp Val Tyr Leu Asp Asp Ser Gln Ile Ile Thr Phe
            20                  25                  30


Asp Gly Lys Asp Ile Arg Pro Thr Ile Pro Phe Met Ile Gly Asp Glu
        35                  40                  45


Ile Phe Leu Pro Phe Tyr Lys Asn Val Phe Ser Glu Phe Phe Ser Leu
    50                  55                  60


Phe Arg Arg Val Pro Thr Ser Thr Pro Tyr Glu Asp Leu Thr Tyr Phe
```

```
65                  70                  75                  80

Tyr Glu Cys Asp Tyr Thr Asp Asn Lys Ser Thr Phe Asp Gln Phe Tyr
                85                  90                  95

Leu Tyr Asn Gly Glu Glu Tyr Thr Val Lys Thr Gln Glu Ala Thr Asn
            100                 105                 110

Lys Asn Met Trp Leu Thr Thr Ser Glu Phe Arg Leu Lys Lys Trp Phe
        115                 120                 125

Asp Gly Glu Asp Cys Ile Met His Leu Arg Ser Leu Val Arg Lys Met
    130                 135                 140

Glu Asp Ser Lys Arg Asn Thr Gly Gly Thr Gly Ser Ser Gly Ser Ser
145                 150                 155                 160

Asp Tyr Lys Asp Asp Asp Asp Lys His His His His His His His His
                165                 170                 175

Gly Ser Ser Gly Ser Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr
            180                 185                 190

Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn
        195                 200                 205

Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Ala Met Leu Thr Lys
    210                 215                 220

Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys
225                 230                 235                 240

Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln
                245                 250                 255

Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn
            260                 265                 270

Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu
        275                 280                 285

Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile
    290                 295                 300

Thr Phe Ser Gln Ser Ile Ile Ser Thr Leu Thr
305                 310                 315
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Ser Val Tyr Asp Phe Phe Val Trp Leu
1               5
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Ser Ile Ile Asn Phe Glu Lys Leu
1               5
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<213> Homo sapiens

<400> 5
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Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His
1               5                   10                  15

Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys
            20                  25                  30

Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe Tyr Met Pro Lys
        35                  40                  45

Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu Glu Glu Leu Lys
    50                  55                  60

Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys Asn Phe His Leu
65                  70                  75                  80

Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu
                85                  90                  95

Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala
            100                 105                 110

Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe Cys Gln Ser Ile
        115                 120                 125

Ile Ser Thr Leu Thr
    130
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<220>
<223> SYNTHESIZED

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Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His
1               5                   10                  15
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```
Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys
            20                  25                  30

Asn Pro Lys Leu Thr Ala Met Leu Thr Lys Lys Phe Tyr Met Pro Lys
        35                  40                  45

Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu Glu Glu Leu Lys
    50                  55                  60

Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys Asn Phe His Leu
65                  70                  75                  80

Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu
                85                  90                  95

Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala
            100                 105                 110

Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe Ser Gln Ser Ile
        115                 120                 125

Ile Ser Thr Leu Thr
    130
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<210> 7

<211> 151

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<213> Artificial Sequence

<220>

<223> SYNTHESIZED

<400> 7

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His Lys Leu Ala Phe Asn Phe Asn Leu Glu Ile Asn Gly Ser Asp Thr
1               5                   10                  15

His Ser Thr Val Asp Val Tyr Leu Asp Asp Ser Gln Ile Ile Thr Phe
            20                  25                  30

Asp Gly Lys Asp Ile Arg Pro Thr Ile Pro Phe Met Ile Gly Asp Glu
        35                  40                  45

Ile Phe Leu Pro Phe Tyr Lys Asn Val Phe Ser Glu Phe Phe Ser Leu
    50                  55                  60

Phe Arg Arg Val Pro Thr Ser Thr Pro Tyr Glu Asp Leu Thr Tyr Phe
65                  70                  75                  80

Tyr Glu Cys Asp Tyr Thr Asp Asn Lys Ser Thr Phe Asp Gln Phe Tyr
                85                  90                  95

Leu Tyr Asn Gly Glu Glu Tyr Thr Val Lys Thr Gln Glu Ala Thr Asn
            100                 105                 110
```

```
Lys Asn Met Trp Leu Thr Thr Ser Glu Phe Arg Leu Lys Lys Trp Phe
        115                 120                 125


Asp Gly Glu Asp Cys Ile Met His Leu Arg Ser Leu Val Arg Lys Met
    130                 135                 140


Glu Asp Ser Lys Arg Asn Thr
145                 150
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<210> 8
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> SYNTHESIZED

<400> 8

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Gly Ser Ser Gly Ser Ser Asp Tyr Lys Asp Asp Asp Asp Lys His His
1               5                   10                  15


His His His His His His Gly Ser Ser Gly Ser Ser
            20                  25
```

<210> 9
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> SYNTHESIZED

<400> 9

```
Asp Tyr Lys Asp Asp Asp Lys
1               5
```

<210> 10
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> SYNTHESIZED

<400> 10

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Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
1               5
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<210> 11
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<212> PRT
<213> Artificial Sequence

<220>
<223> SYNTHESIZED

<400> 11

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Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
1               5                   10
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<210> 12
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<212> PRT
<213> Artificial Sequence

<220>
<223> SYNTHESIZED

<400> 12

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Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser Thr
1               5                   10
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<210> 13
<211> 150
<212> PRT
<213> Cowpox virus

<400> 13

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Gly His Lys Leu Ala Phe Asn Phe Asn Leu Glu Ile Asn Gly Ser Asp
1               5                   10                  15


Thr His Ser Thr Val Asp Val Tyr Leu Asp Asp Ser Gln Ile Ile Thr
            20                  25                  30


Phe Asp Gly Lys Asp Ile Arg Pro Thr Ile Pro Phe Met Ile Gly Asp
        35                  40                  45


Glu Ile Phe Leu Pro Phe Tyr Lys Asn Val Phe Ser Glu Phe Phe Ser
    50                  55                  60


Leu Phe Arg Arg Val Pro Thr Ser Thr Pro Tyr Glu Asp Leu Thr Tyr
65                  70                  75                  80


Phe Tyr Glu Cys Asp Tyr Thr Asp Asn Lys Ser Thr Phe Asp Gln Phe
                85                  90                  95


Tyr Leu Tyr Asn Gly Glu Glu Tyr Thr Val Lys Thr Gln Glu Ala Thr
            100                 105                 110


Asn Lys Asn Met Trp Leu Thr Thr Ser Glu Phe Arg Leu Lys Lys Trp
        115                 120                 125


Phe Asp Gly Glu Asp Cys Ile Met His Leu Arg Ser Leu Val Arg Lys
    130                 135                 140


Met Glu Asp Ser Lys Arg
145                 150
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<210> 14

<211> 150

<212> PRT

<213> Monkeypox virus

<400> 14

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His Lys Leu Val His Tyr Phe Asn Leu Lys Ile Asn Gly Ser Asp Ile
1               5                   10                  15

Thr Asn Thr Ala Asp Ile Leu Leu Asp Asn Tyr Pro Ile Met Thr Phe
            20                  25                  30

Asp Gly Lys Asp Ile Tyr Pro Ser Ile Ala Phe Met Val Gly Asn Lys
        35                  40                  45

Leu Phe Leu Asp Leu Tyr Lys Asn Ile Phe Val Glu Phe Phe Arg Leu
    50                  55                  60

Phe Arg Val Ser Val Ser Ser Gln Tyr Glu Glu Leu Glu Tyr Tyr Tyr
65                  70                  75                  80

Ser Cys Asp Tyr Thr Asn Asn Arg Pro Thr Ile Lys Gln His Tyr Phe
                85                  90                  95

Tyr Asn Gly Glu Glu Tyr Thr Glu Ile Asp Arg Ser Lys Lys Ala Thr
            100                 105                 110

Asn Lys Asn Ser Trp Leu Ile Thr Ser Gly Phe Arg Leu Gln Lys Trp
        115                 120                 125

Phe Asp Ser Glu Asp Cys Ile Ile Tyr Leu Arg Ser Leu Val Arg Arg
    130                 135                 140

Met Glu Asp Ser Asn Lys
145                 150
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<210> 15

<211> 181

<212> PRT

<213> Homo sapiens

<400> 15

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Met Glu Pro His Ser Leu Arg Tyr Asn Leu Thr Val Leu Ser Trp Asp
1               5                   10                  15

Gly Ser Val Gln Ser Gly Phe Leu Thr Glu Val His Leu Asp Gly Gln
            20                  25                  30

Pro Phe Leu Arg Cys Arg Asp Arg Gln Lys Cys Arg Ala Lys Pro Gln
        35                  40                  45

Gly Gln Trp Ala Glu Asp Val Leu Gly Asn Lys Thr Trp Asp Arg Glu
    50                  55                  60
```

Thr Arg Asp Leu Thr Gly Asn Gly Lys Asp Leu Arg Met Thr Leu Ala
65 70 75 80

His Ile Lys Asp Gln Lys Glu Gly Leu His Ser Leu Gln Glu Ile Arg
85 90 95

Val Cys Glu Ile His Glu Asp Asn Ser Thr Arg Ser Ser Gln His Phe
100 105 110

Tyr Tyr Asp Gly Glu Leu Phe Leu Ser Gln Asn Leu Glu Thr Lys Glu
115 120 125

Trp Thr Met Pro Gln Ser Ser Arg Ala Gln Thr Leu Ala Met Asn Val
130 135 140

Arg Asn Phe Leu Lys Glu Asp Ala Met Lys Thr Lys Thr His Tyr His
145 150 155 160

Ala Met His Ala Asp Cys Leu Gln Glu Leu Arg Arg Tyr Leu Lys Ser
165 170 175

Gly Val Val Leu Arg
180

<210> 16
<211> 180
<212> PRT
<213> Homo sapiens

<400> 16
Met Glu Pro His Ser Leu Arg Tyr Asn Leu Met Val Leu Ser Gln Asp
1 5 10 15

Gly Ser Val Gln Ser Gly Phe Leu Ala Glu Gly His Leu Asp Gly Gln
20 25 30

Pro Phe Leu Arg Tyr Asp Arg Gln Lys Arg Arg Ala Lys Pro Gln Gly
35 40 45

Gln Trp Ala Glu Asp Val Leu Gly Ala Glu Thr Trp Asp Thr Glu Thr
50 55 60

Glu Asp Leu Thr Glu Asn Gly Gln Asp Leu Arg Arg Thr Leu Thr His
65 70 75 80

Ile Lys Asp Gln Lys Gly Gly Leu His Ser Leu Gln Glu Ile Arg Val
85 90 95

Cys Glu Ile His Glu Asp Ser Ser Thr Arg Gly Ser Arg His Phe Tyr
100 105 110

Tyr Asn Gly Glu Leu Phe Leu Ser Gln Asn Leu Glu Thr Gln Glu Ser
115 120 125

Thr Val Pro Gln Ser Ser Arg Ala Gln Thr Leu Ala Met Asn Val Thr

130 135 140

Asn Phe Trp Lys Glu Asp Ala Met Lys Thr Lys Thr His Tyr Arg Ala
145 150 155 160

Met Gln Ala Asp Cys Leu Gln Lys Leu Gln Arg Tyr Leu Lys Ser Gly
165 170 175

Val Ala Ile Arg
180

<210> 17
<211> 178
<212> PRT
<213> Homo sapiens

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His Gly Gln Gln Trp Cys Glu Val Gln Ser Gln Val Asp Gln Lys Asn
20 25 30

Phe Leu Ser Tyr Asp Cys Gly Ser Asp Lys Val Leu Ser Met Gly His
35 40 45

Leu Glu Glu Gln Leu Tyr Ala Thr Asp Ala Trp Gly Lys Gln Leu Glu
50 55 60

Met Leu Arg Glu Val Gly Gln Arg Leu Arg Leu Glu Leu Ala Asp Thr
65 70 75 80

Glu Leu Glu Asp Phe Thr Pro Ser Gly Pro Leu Thr Leu Gln Val Arg
85 90 95

Met Ser Cys Glu Cys Glu Ala Asp Gly Tyr Ile Arg Gly Ser Trp Gln
100 105 110

Phe Ser Phe Asp Gly Arg Lys Phe Leu Leu Phe Asp Ser Asn Asn Arg
115 120 125

Lys Trp Thr Val Val His Ala Gly Ala Arg Arg Met Lys Glu Lys Trp
130 135 140

Glu Lys Asp Ser Gly Leu Thr Thr Phe Phe Lys Met Val Ser Met Arg
145 150 155 160

Asp Cys Lys Ser Trp Leu Arg Asp Phe Leu Met His Arg Lys Lys Arg
165 170 175

Leu Glu

<210> 18
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<212> PRT
<213> Homo sapiens

<400> 18
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Asp Ala His Ser Leu Arg Cys Asn Leu Thr Ile Lys Asp Pro Thr Pro
1               5                   10                  15

Ala Asp Pro Leu Trp Tyr Glu Ala Lys Cys Phe Val Gly Glu Ile Leu
            20                  25                  30

Ile Leu His Leu Ser Asn Ile Asn Lys Thr Met Thr Ser Gly Asp Pro
        35                  40                  45

Gly Glu Thr Ala Asn Ala Thr Glu Val Lys Lys Cys Leu Thr Gln Pro
    50                  55                  60

Leu Lys Asn Leu Cys Gln Lys Leu Arg Asn Lys Val Ser Asn Thr Lys
65                  70                  75                  80

Val Asp Thr His Lys Thr Asn Gly Tyr Pro His Leu Gln Val Thr Met
                85                  90                  95

Ile Tyr Pro Gln Ser Gln Gly Arg Thr Pro Ser Ala Thr Trp Glu Phe
            100                 105                 110

Asn Ile Ser Asp Ser Tyr Phe Phe Thr Phe Tyr Thr Glu Asn Met Ser
        115                 120                 125

Trp Arg Ser Ala Asn Asp Glu Ser Gly Val Ile Met Asn Lys Trp Lys
    130                 135                 140

Asp Asp Gly Glu Phe Val Lys Gln Leu Lys Phe Leu Ile His Glu Cys
145                 150                 155                 160

Ser Gln Lys Met Asp Glu Phe Leu Lys Gln Ser Lys Glu Lys
                165                 170
```

<210> 19
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<212> PRT
<213> Homo sapiens

<400> 19
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Leu Thr Ile Ile Glu Met Gln Lys Gly Asp Cys Ala Leu Tyr Ala Ser
1               5                   10                  15
```

<210> 20
<211> 16
<212> PRT
<213> Chlorocebus sabaeus

<400> 20
```
Leu Thr Ile Ile Glu Met Gln Lys Gly Glu Cys Ala Leu Tyr Ala Ser
1               5                   10                  15
```

<210> 21
<211> 16
<212> PRT
<213> Callithrix jacchus

<400> 21
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Leu Thr Ile Ile Glu Met Gln Lys Gly Asp Cys Ala Val Tyr Ala Ser
1               5                   10                  15
```

<210> 22
<211> 16
<212> PRT
<213> Mus musculus

<400> 22
```
Leu Thr Leu Val Glu Ile Pro Lys Gly Ser Cys Ala Val Tyr Gly Ser
1               5                   10                  15
```

<210> 23
<211> 16
<212> PRT
<213> Rattus norvegicus

<400> 23
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Leu Thr Leu Val Lys Thr Pro Ser Gly Thr Cys Ala Val Tyr Gly Ser
1               5                   10                  15
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<210> 24
<211> 16
<212> PRT
<213> Cavia porcellus

<400> 24
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Leu Thr Leu Met Asp Thr Gln Asn Gly Lys Cys Ala Leu Tyr Gly Ser
1               5                   10                  15
```

<210> 25
<211> 16
<212> PRT
<213> Spermophilus sensu stricto

<400> 25
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Leu Thr Leu Val Glu Met Gln Asn Gly Thr Cys Ile Val Tyr Gly Ser
1               5                   10                  15
```

<210> 26
<211> 16
<212> PRT
<213> Peromyscus maniculatus

<400> 26
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Leu Thr Val Val Glu Met Gln Ser Gly Ser Cys Ala Val Tyr Gly Ser
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```
1               5                   10                  15
```

<210> 27
<211> 16
<212> PRT
<213> Heterocephalus glaber

<400> 27

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Leu Ser Met Val Glu Met Gln Asn Gly Thr Cys Ala Val Tyr Ala Ser
1               5                   10                  15
```

<210> 28
<211> 16
<212> PRT
<213> Microtus ochrogaster

<400> 28

```
Leu Thr Leu Val Glu Met Gln Arg Gly Ser Cys Ala Val Tyr Gly Ser
1               5                   10                  15
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<210> 29
<211> 16
<212> PRT
<213> Sorex araneus

<400> 29

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Val Ser Ile Val Glu Met Gln Gly Gly Asn Cys Ala Val Tyr Gly Ser
1               5                   10                  15
```

<210> 30
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<400> 30

```
Val Thr Val Tyr Glu Met Gln Asn Gly Ser Cys Ala Val Tyr Gly Ser
1               5                   10                  15
```

<210> 31
<211> 16
<212> PRT
<213> Cricetulus griseus

<400> 31

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Leu Thr Leu Val Glu Met Gln Asn Gly Ser Cys Ala Val Tyr Gly Ser
1               5                   10                  15
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<210> 32
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<212> PRT
<213> Felis catus

<400> 32

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PATENTKRAV

1. Kimærisk peptid, der omfatter et cytokinpeptid og et ligandpeptid, hvor cytokinpeptidet ikke er en bindingspartner for ligandpeptidet, og hvor ligandpeptidet er en bindingspartner for en receptor, der udtrykkes på naturlige dræber (NK)-celler eller cytotoksiske CD8+-T-lymfocytter (CTL), hvor receptoren er NKG2D-receptoren, og hvor cytokinpeptidet er valgt fra gruppen bestående af IL2, IL7, IL15, IL18, IL21 og mutanter deraf.

2. Kimærisk peptid ifølge krav 1, hvor cytokinpeptidet er et muteret interleukin-2 (IL2).

3. Kimærisk peptid ifølge krav 2, hvor det muterede interleukin-2 omfatter mindst én mutation valgt fra gruppen bestående af R38A, F42K og C125S.

4. Kimærisk peptid ifølge et hvilket som helst af kravene 1-3, hvor cytokinpeptidet omfatter aminosyresekvensen ifølge SEQ ID NO: 6.

5. Kimærisk peptid ifølge et hvilket som helst af kravene 1-4, hvor ligandpeptidet er klasse-I-lignende protein af orthopoxvirus fra det større histokompatibilitetskompleks (OMCP) eller en del deraf, eller et muteret OMCP.

6. Kimærisk peptid ifølge et hvilket som helst af kravene 1-5, der endvidere omfatter et linker-peptid på ca. 20 til ca. 30 aminosyrer.

7. Kimærisk peptid ifølge et hvilket som helst foregående krav, hvor ligandpeptidet binder sig til receptoren med større affinitet end cytokinpeptidet binder sig til dets målcytokinreceptor.

8. Farmaceutisk sammensætning, der omfatter det kimæriske peptid ifølge et hvilket som helst af kravene 1-7 og en farmaceutisk acceptabel excipiens, der er virksom til systemisk indgivelse af det kimæriske peptid.

9. Kimærisk peptid ifølge et hvilket som helst af kravene 1-7 eller en farmaceutisk sammensætning ifølge krav 8 til anvendelse i en fremgangsmåde til indgivelse af et cytokin i en målcelle, hvilken fremgangsmåde omfatter at bringe en målcelle i kontakt med en sammensætning, der omfatter det kimæriske peptid.

10. Kimærisk peptid eller farmaceutisk sammensætning til anvendelse ifølge krav 9, hvor målcellen er en NK-celle eller en CD8+-CTL.

11. Kimærisk peptid eller farmaceutisk sammensætning ifølge et hvilket som helst af kravene 1-10 til anvendelse i en fremgangsmåde til at behandle en tumor, hvilken fremgangsmåde omfatter:

a) identificering af en person med en tumor og

b) indgivelse til personen af en terapeutisk virksom mængde af en sammensætning, der omfatter det kimæriske peptid, hvor det kimæriske peptid aktiverer naturlige dræber (NK)-celler eller cytotoksiske CD8+-T-lymfocytter (CTL), hvorved tumoren behandles.

12. Kimærisk peptid eller farmaceutisk sammensætning ifølge et hvilket som helst af kravene 1-10 til anvendelse i en fremgangsmåde til at behandle en virusinfektion, hvilken fremgangsmåde omfatter indgivelse til en person af en terapeutisk virksom mængde af en sammensætning, der omfatter det kimæriske peptid.

DRAWINGS

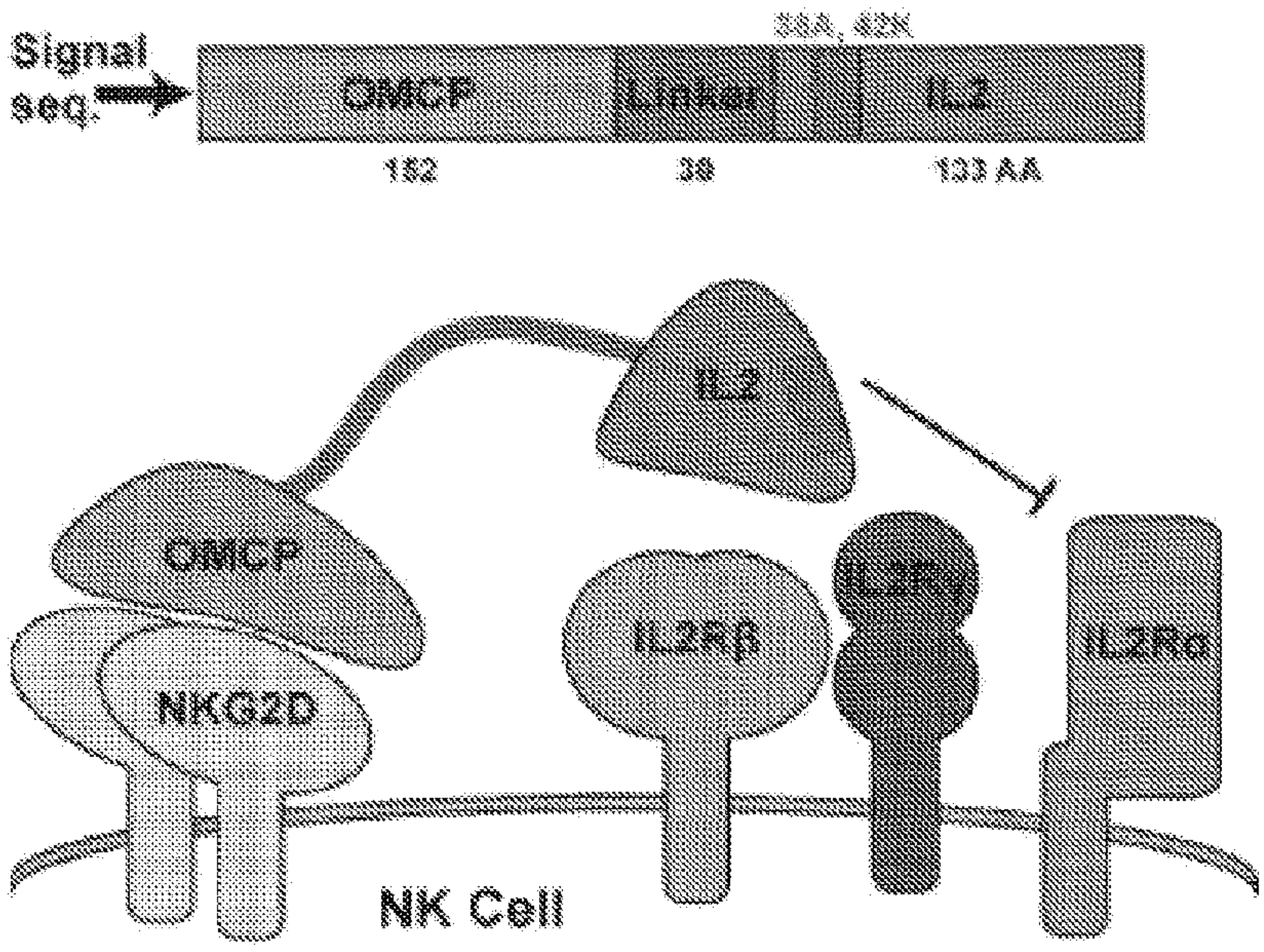


FIG. 1A

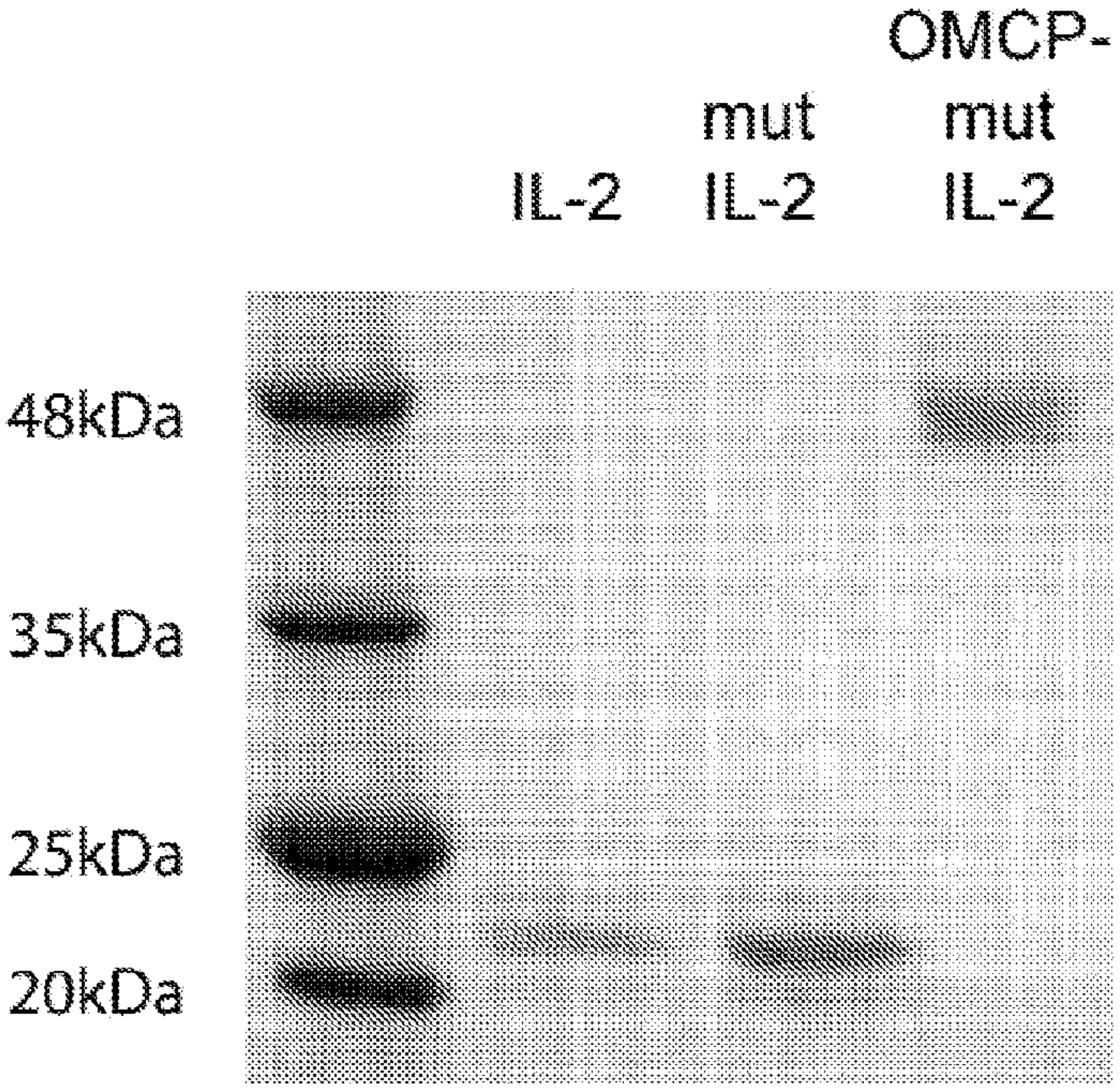


FIG. 1B

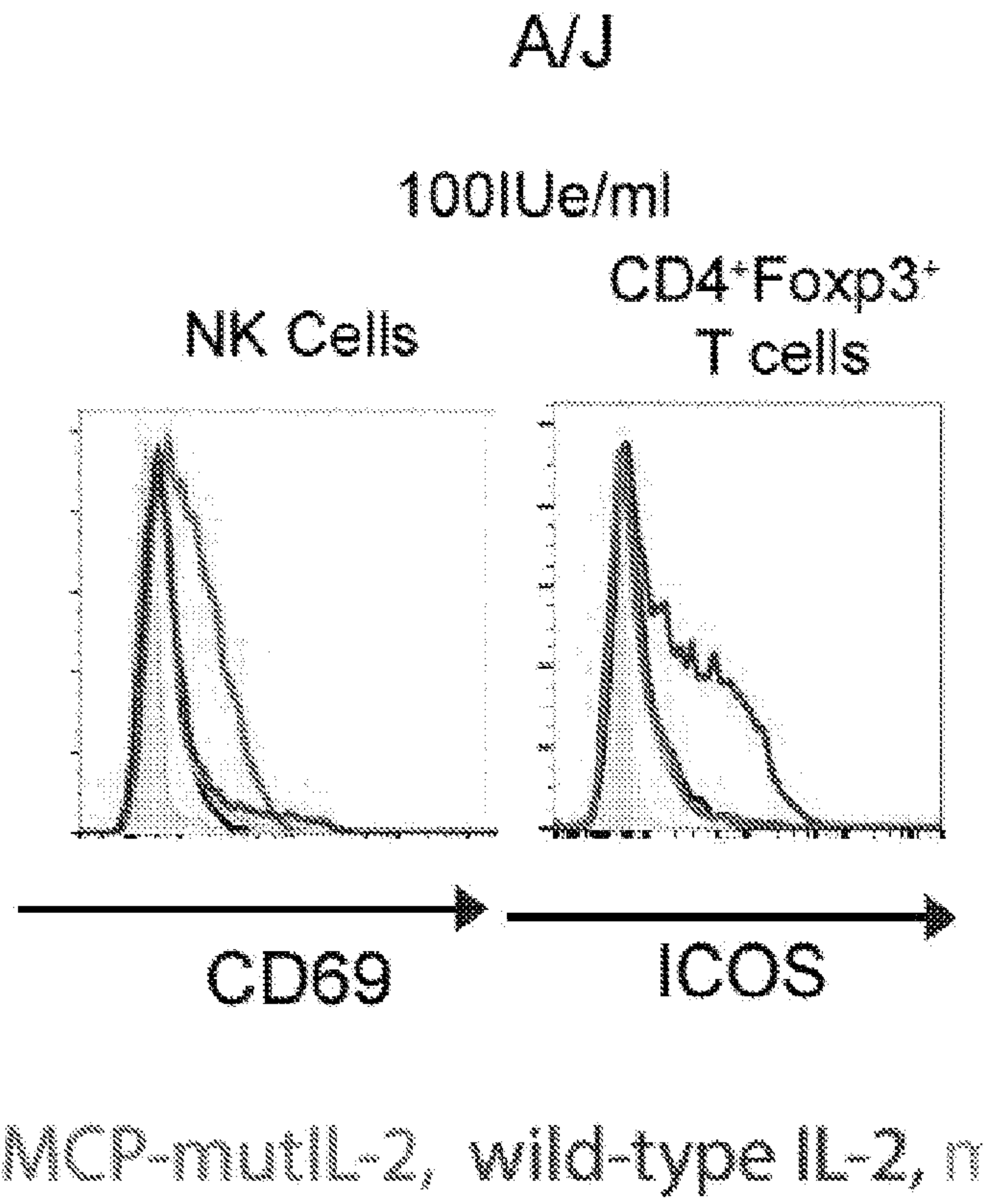

A/J
100IUe/ml
NK Cells
CD4+Foxp3+ T cells
CD69
ICOS
OMCP-mutIL-2, wild-type IL-2, mutIL-2, Saline

FIG. 1C

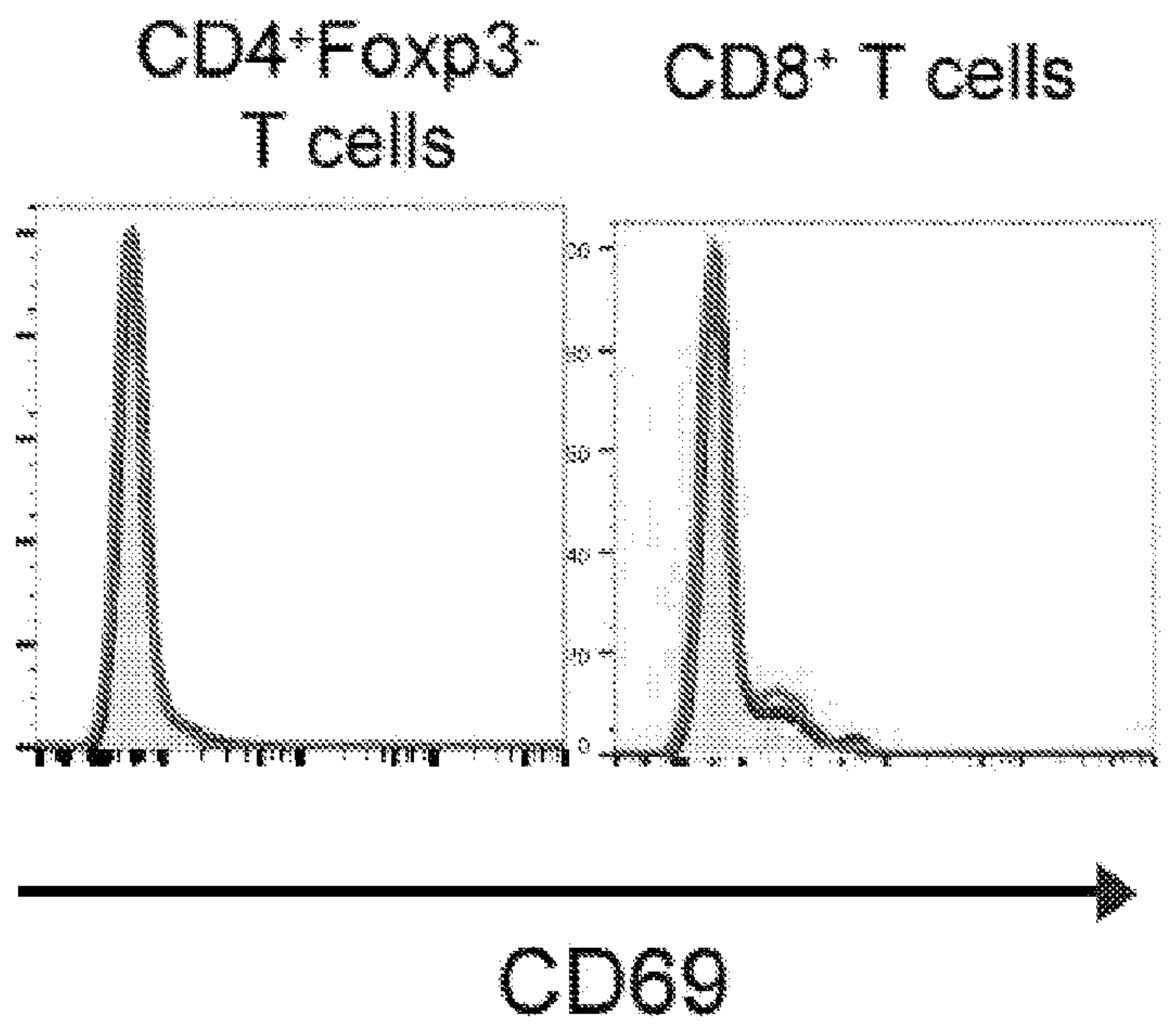

CD4+Foxp3- T cells
CD8+ T cells
CD69

FIG. 1D

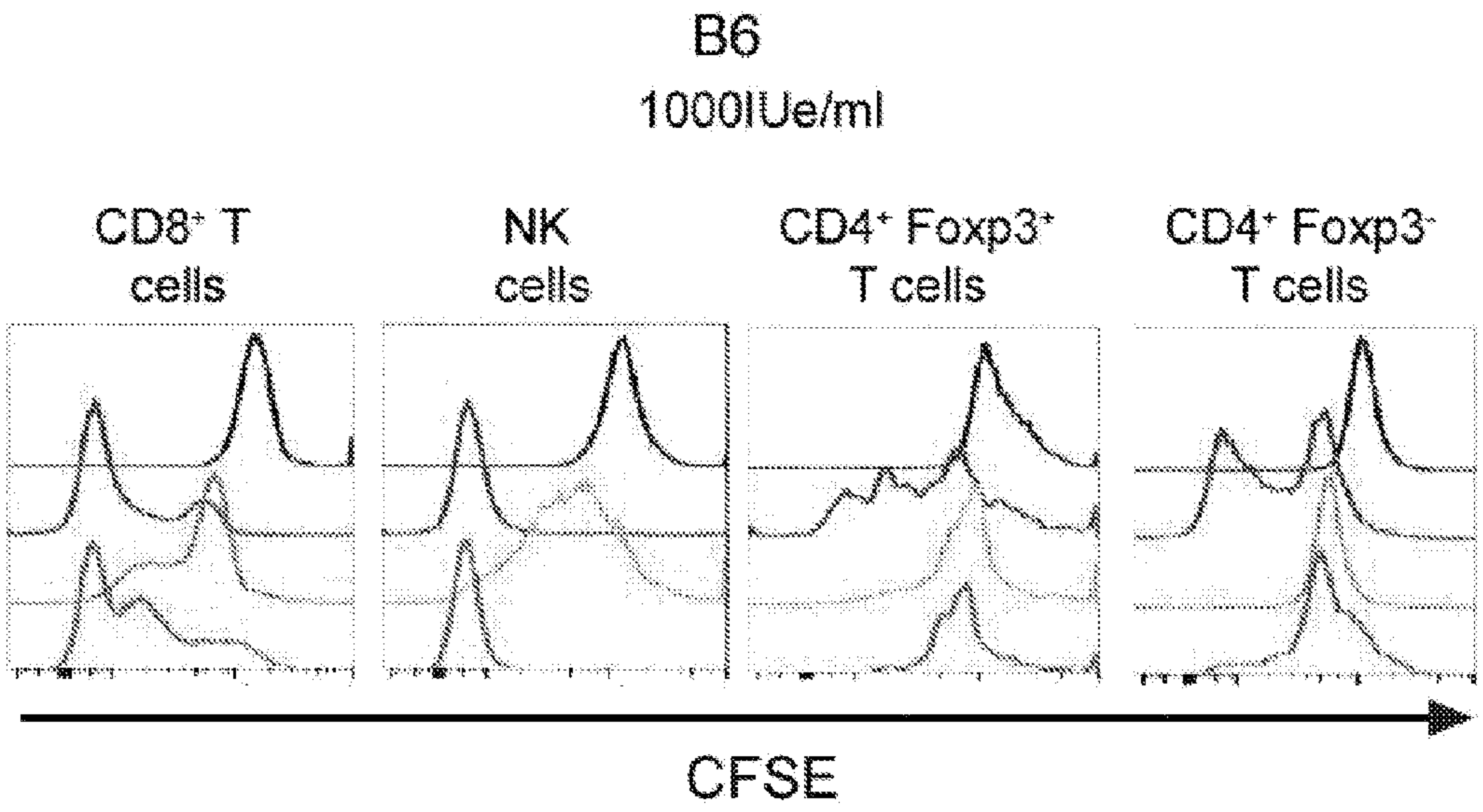

B6
1000IUe/ml
CD8+ T cells
NK cells
CD4+ Foxp3+ T cells
CD4+ Foxp3- T cells
CFSE

FIG. 1E

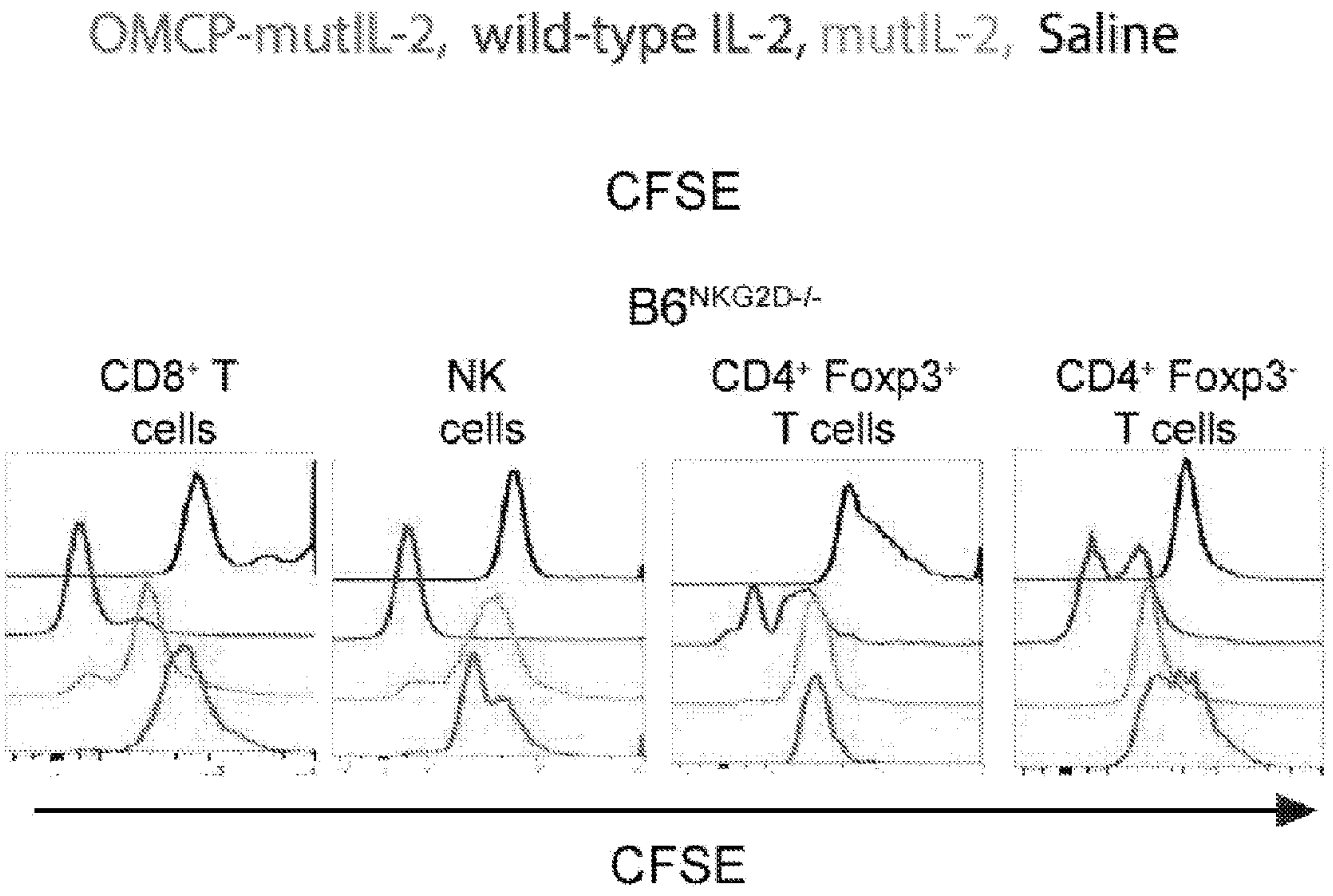

OMCP-mutIL-2, wild-type IL-2, mutIL-2, Saline
CFSE
B6NKG2D-/-
CD8+ T cells
NK cells
CD4+ Foxp3+ T cells
CD4+ Foxp3- T cells
CFSE

FIG. 1F

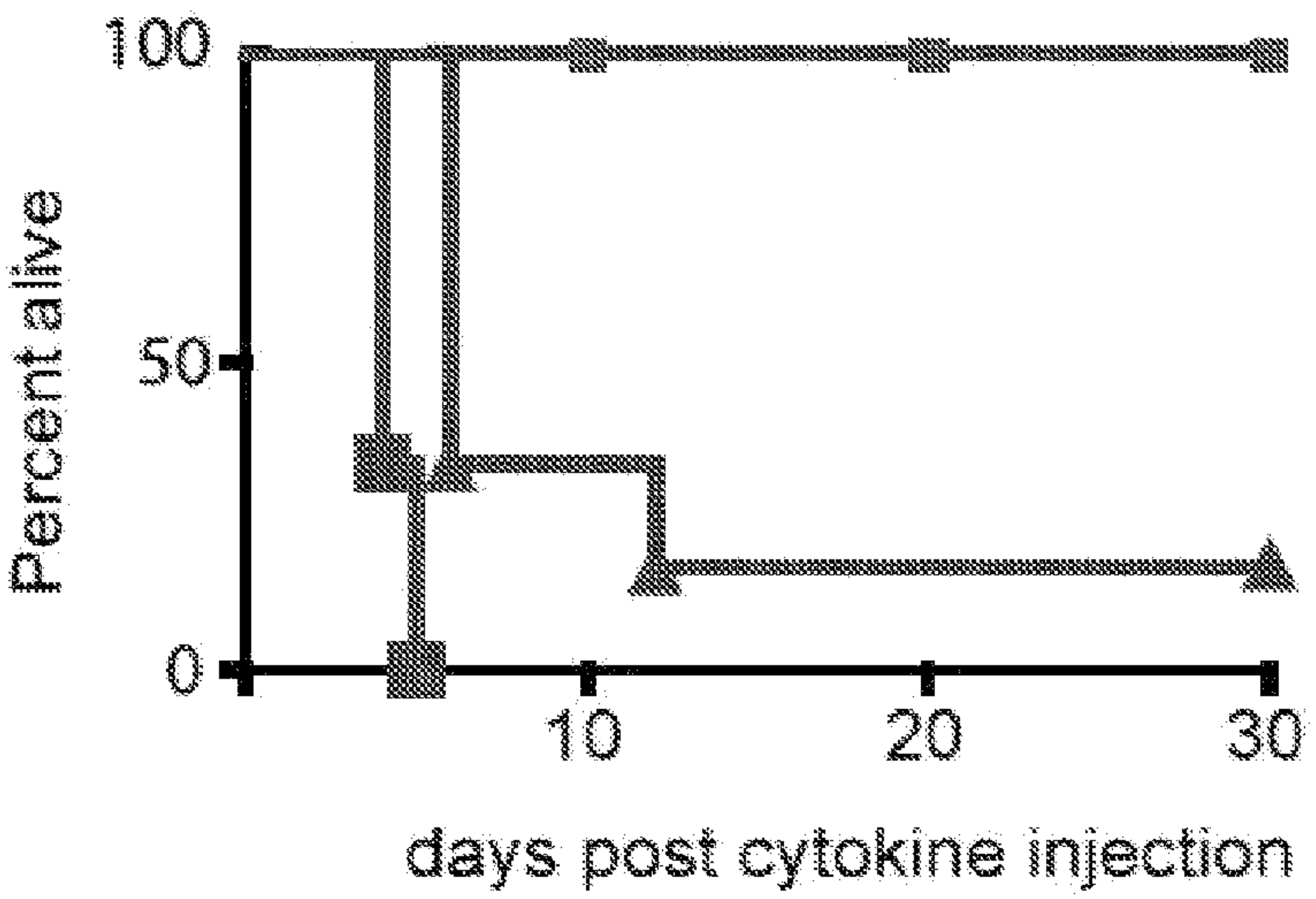

100
50
0
Percent alive
10
20
30
days post cytokine injection

FIG. 2A

750,000IUe wtIL-2
1,500,000IUe wtIL-2
3,500,000IUe wtIL-2

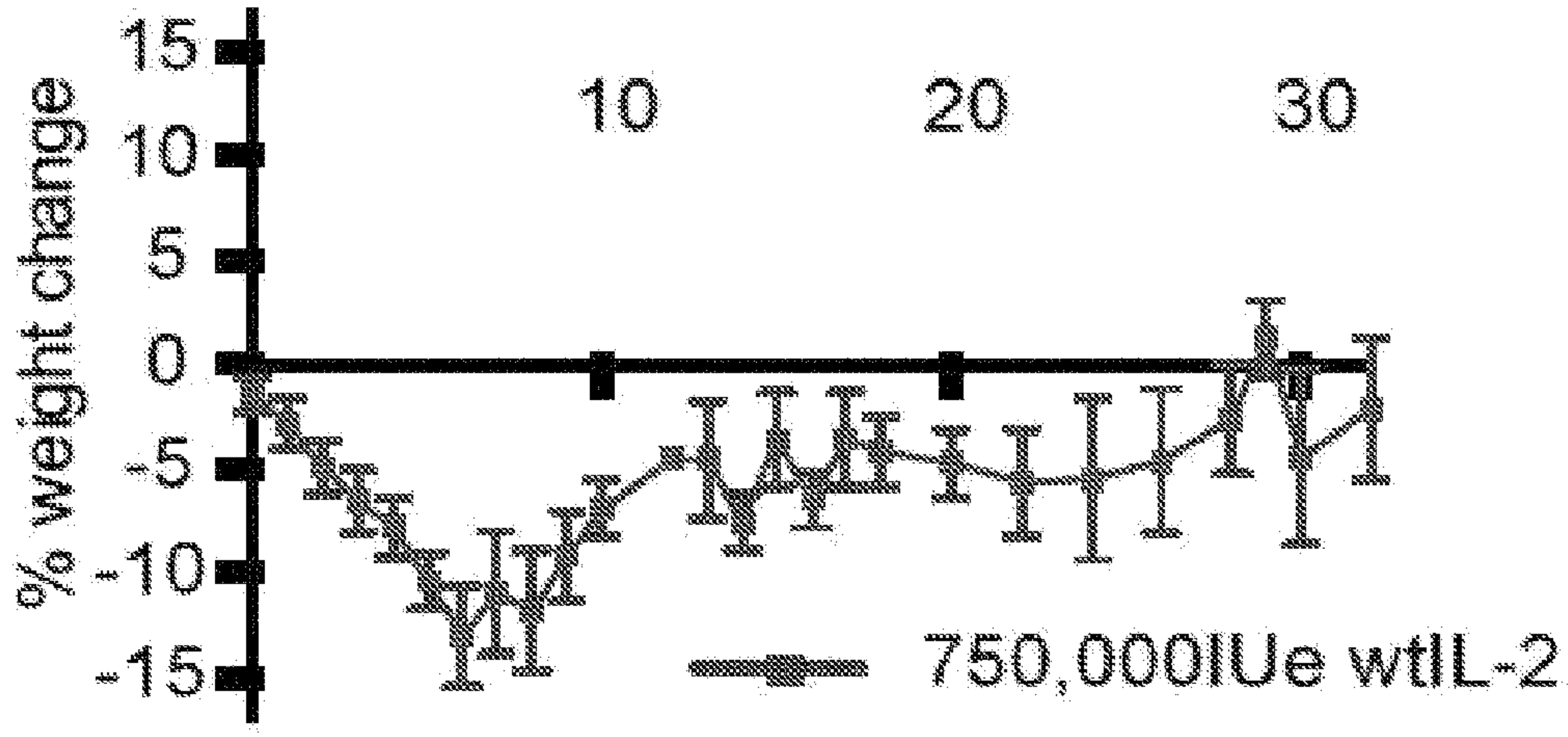

15
10
5
0
-5
-10
-15
% weight change
10
20
30
750,000IUe wtIL-2

FIG. 2B

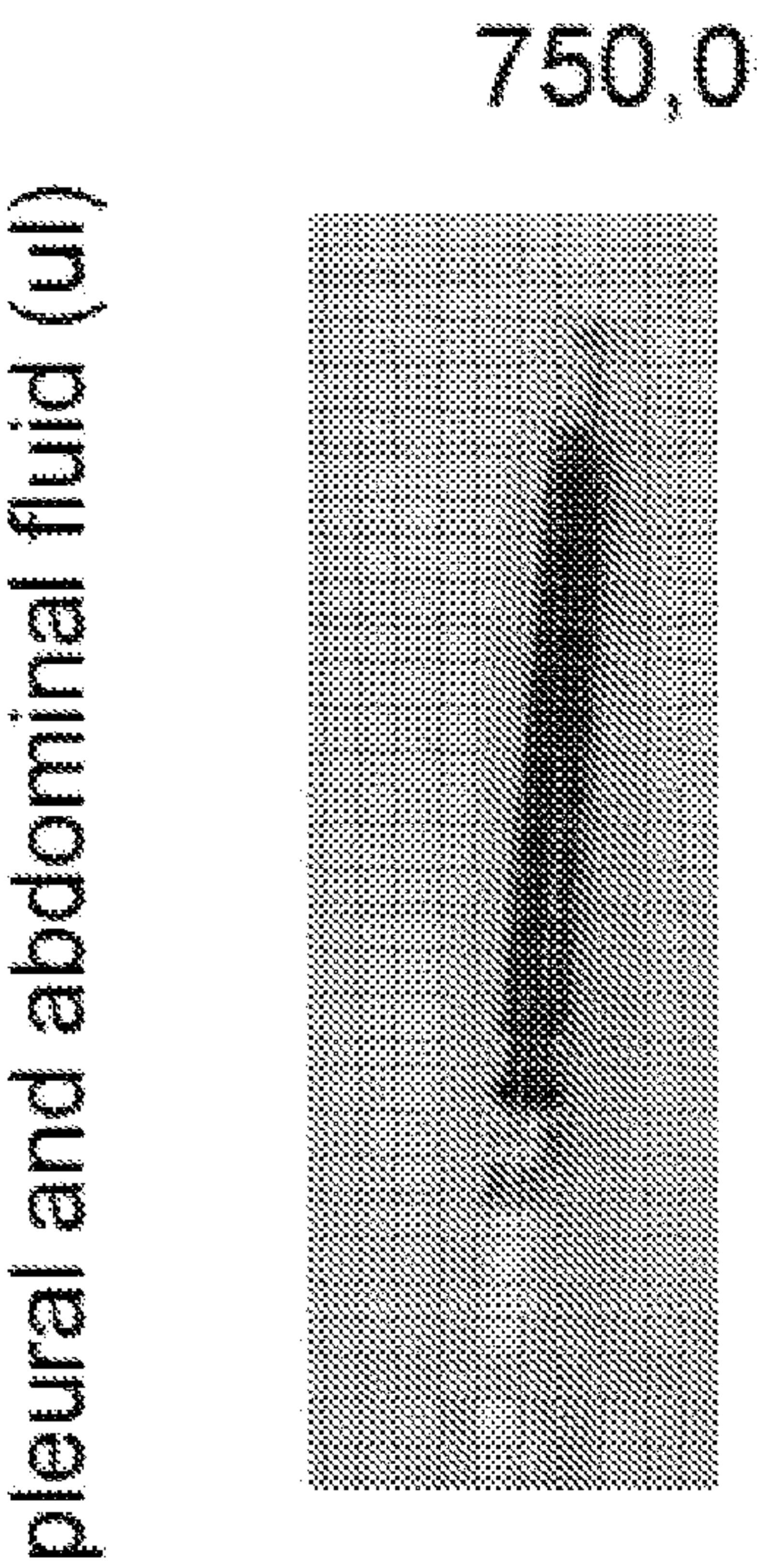

750,000IUe wtIL-2
pleural and abdominal fluid (ul)

FIG. 2C

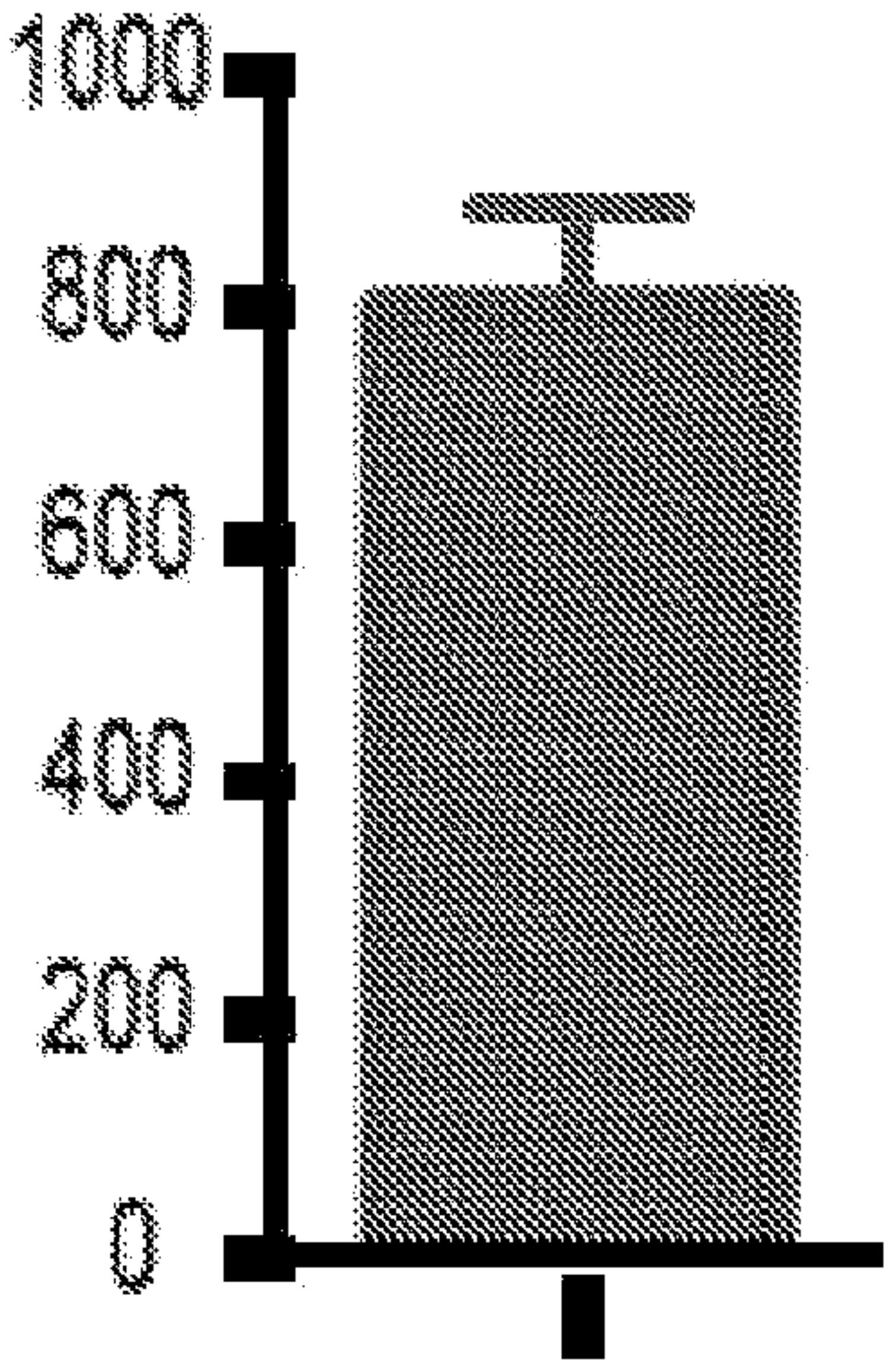

1000
800
600
400
200
0

FIG. 2D

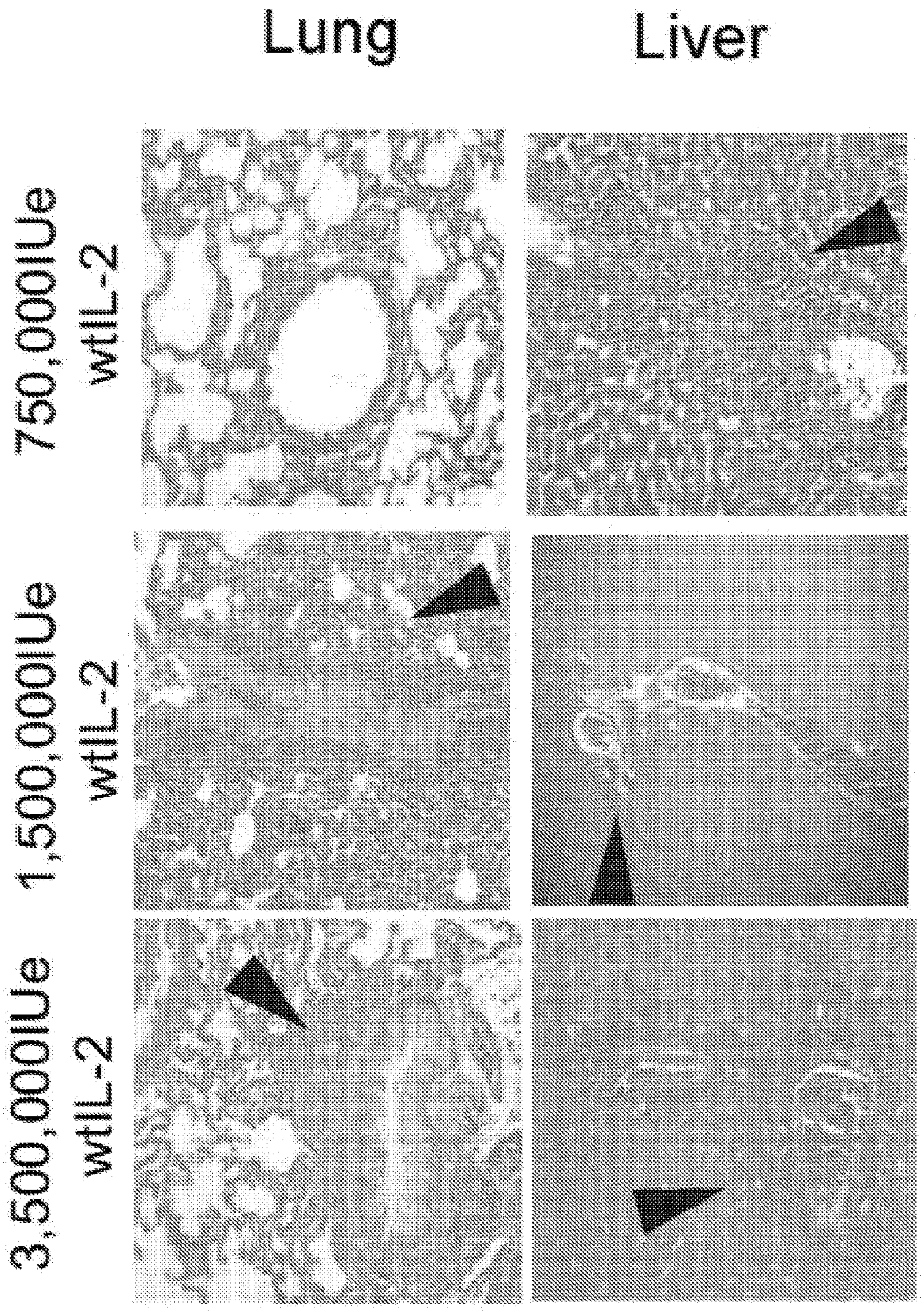

Lung
Liver
750,000IUe wtIL-2
1,500,000IUe wtIL-2
3,500,000IUe wtIL-2

FIG. 2E

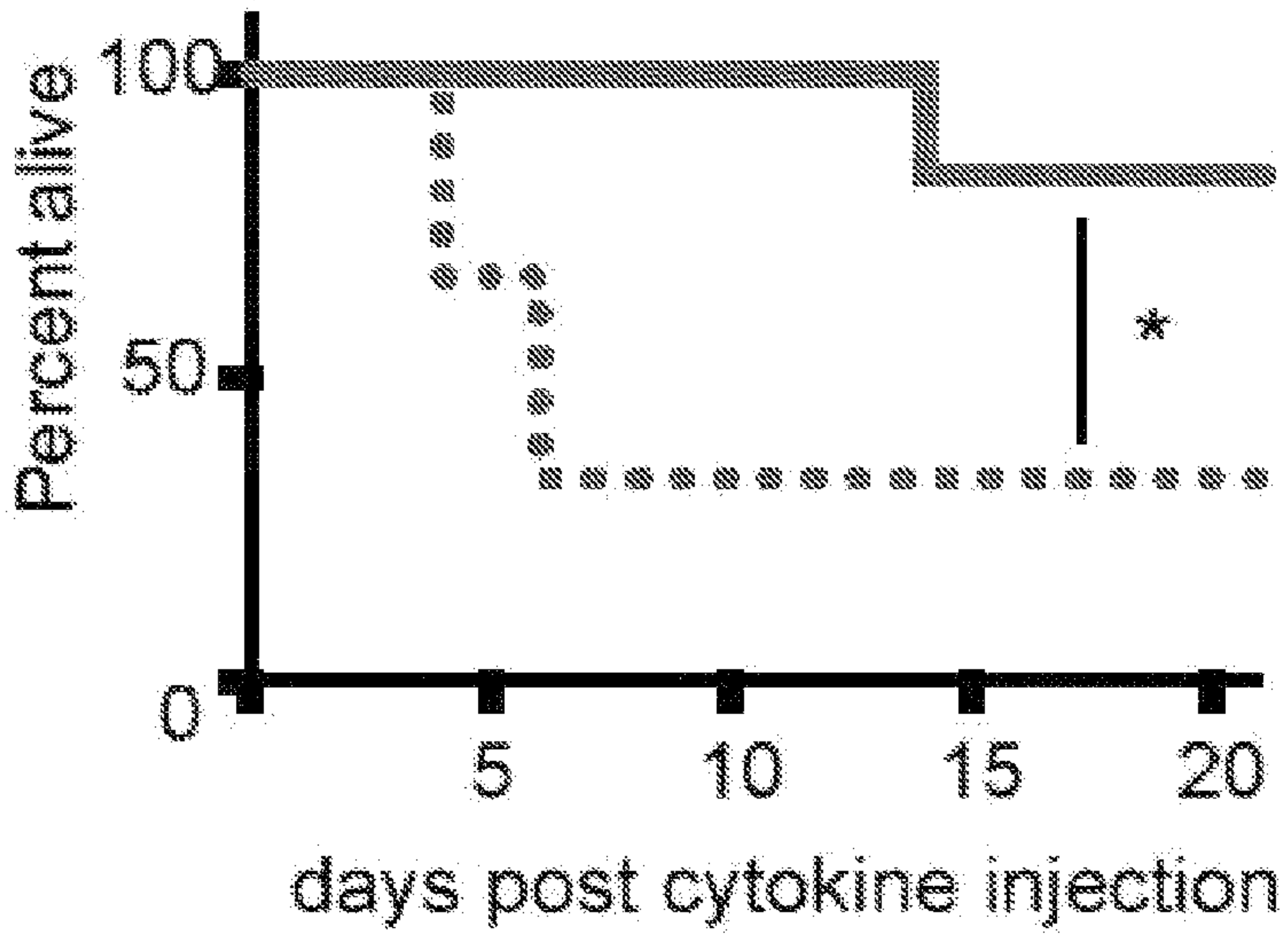


FIG. 2F

- - - +rabbit IgG
——— +anti-asialoGM

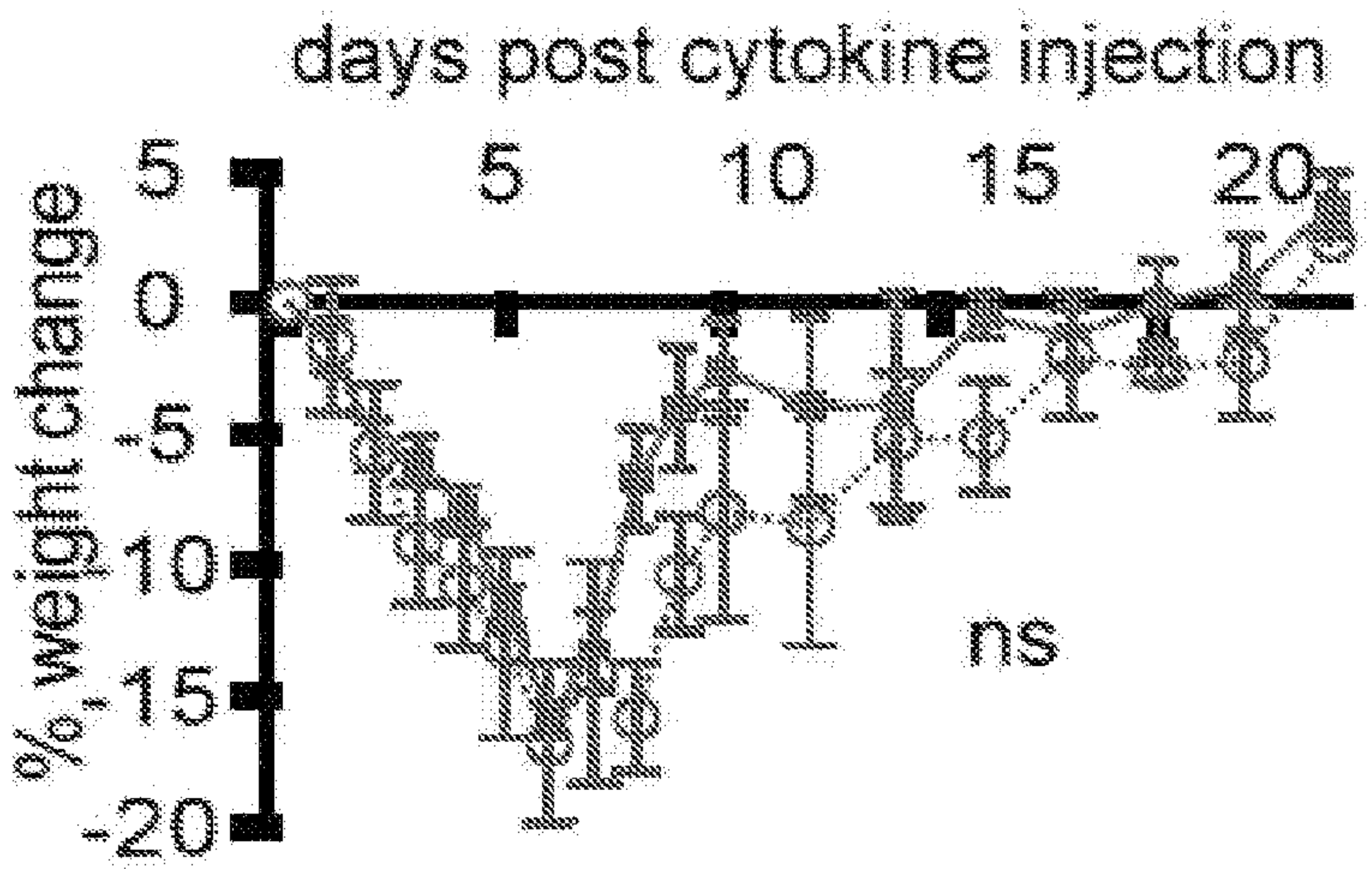


FIG. 2G

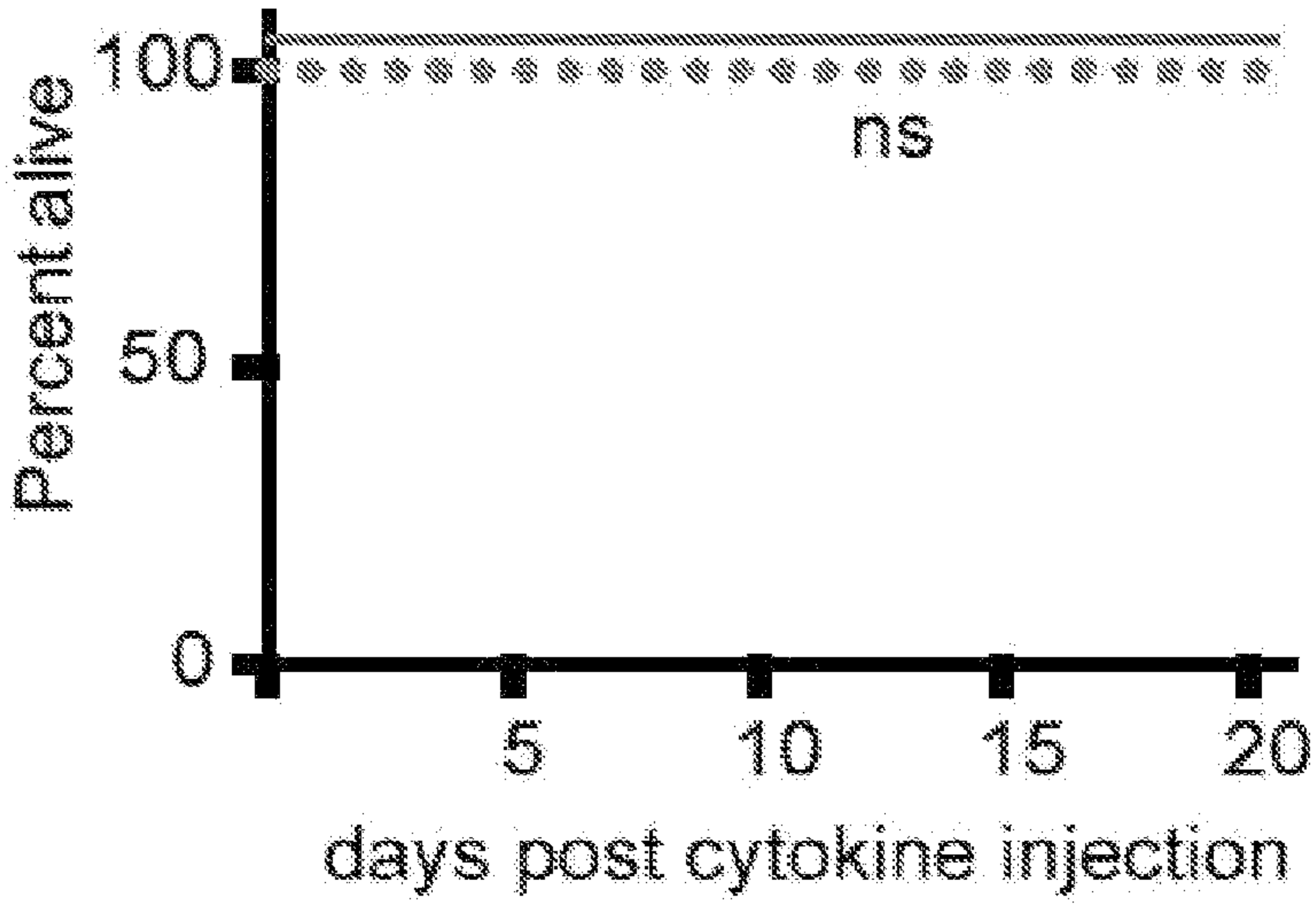

Percent alive
100
50
0
ns
5
10
15
20
days post cytokine injection

FIG. 2H

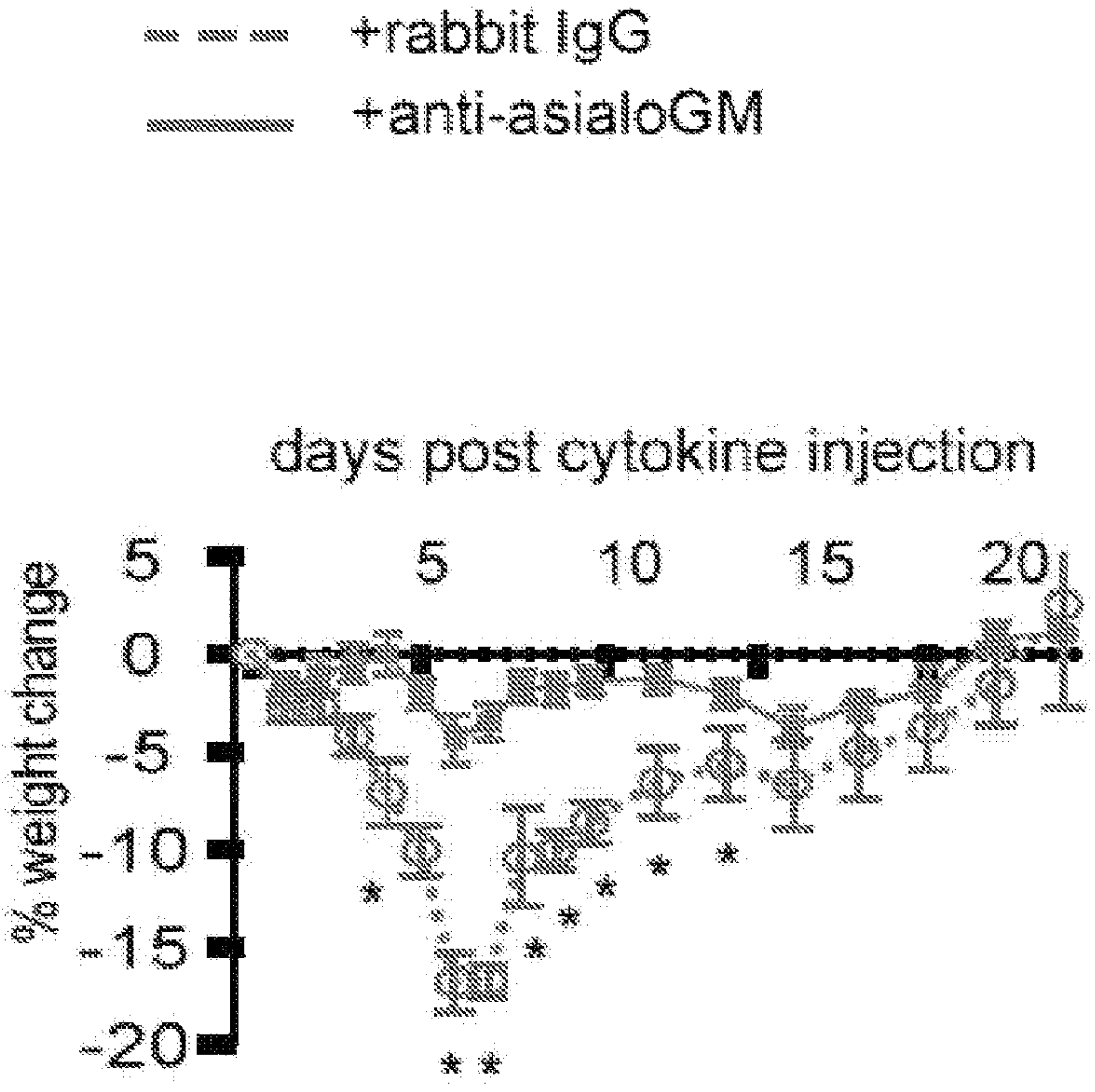

+rabbit IgG
+anti-asialoGM
days post cytokine injection
5
10
15
20
% weight change
5
0
-5
-10
-15
-20
*
*
*
*
*
*
**

FIG. 2I

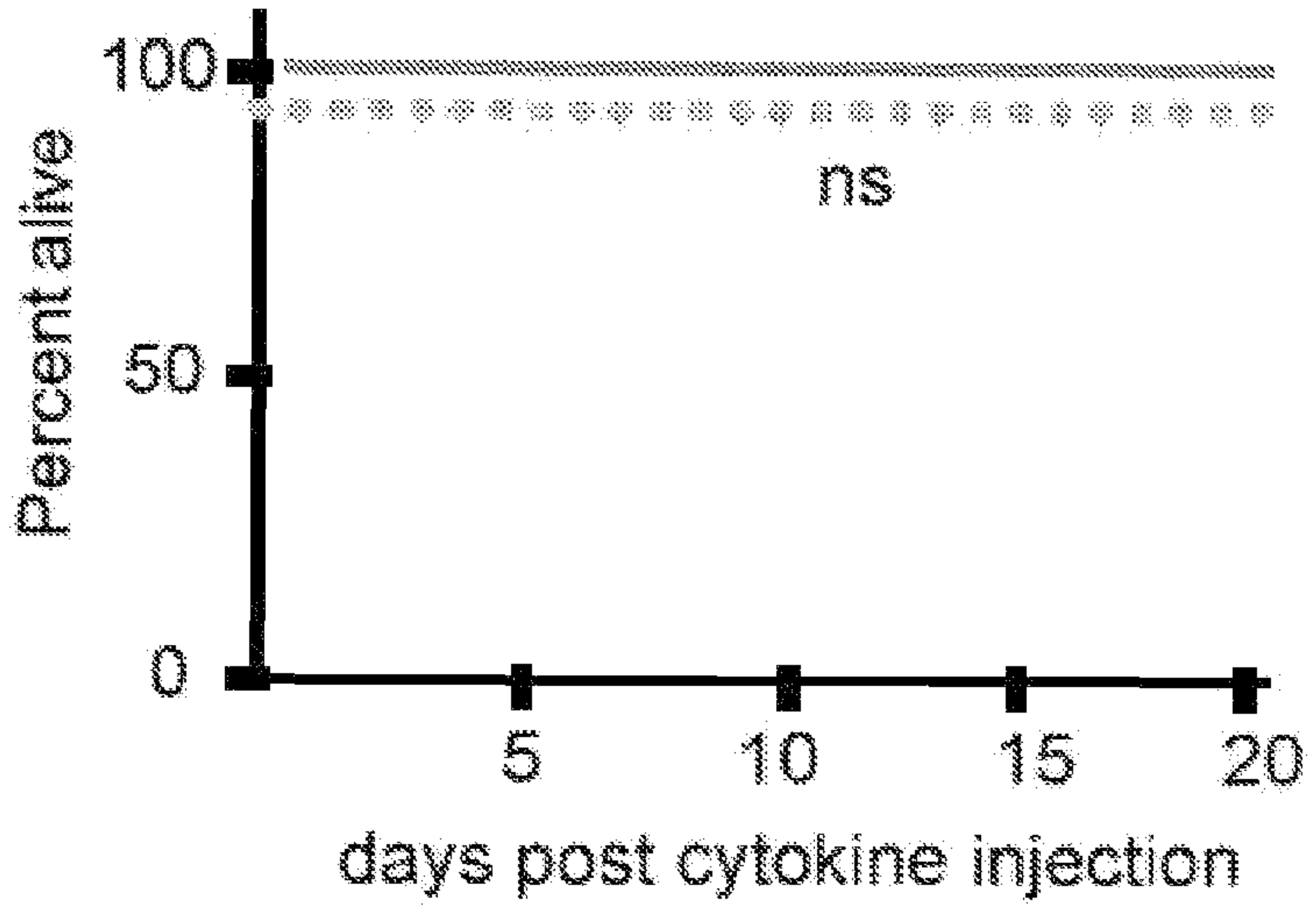

Percent alive
100
50
0
ns
5
10
15
20
days post cytokine injection

FIG. 2J

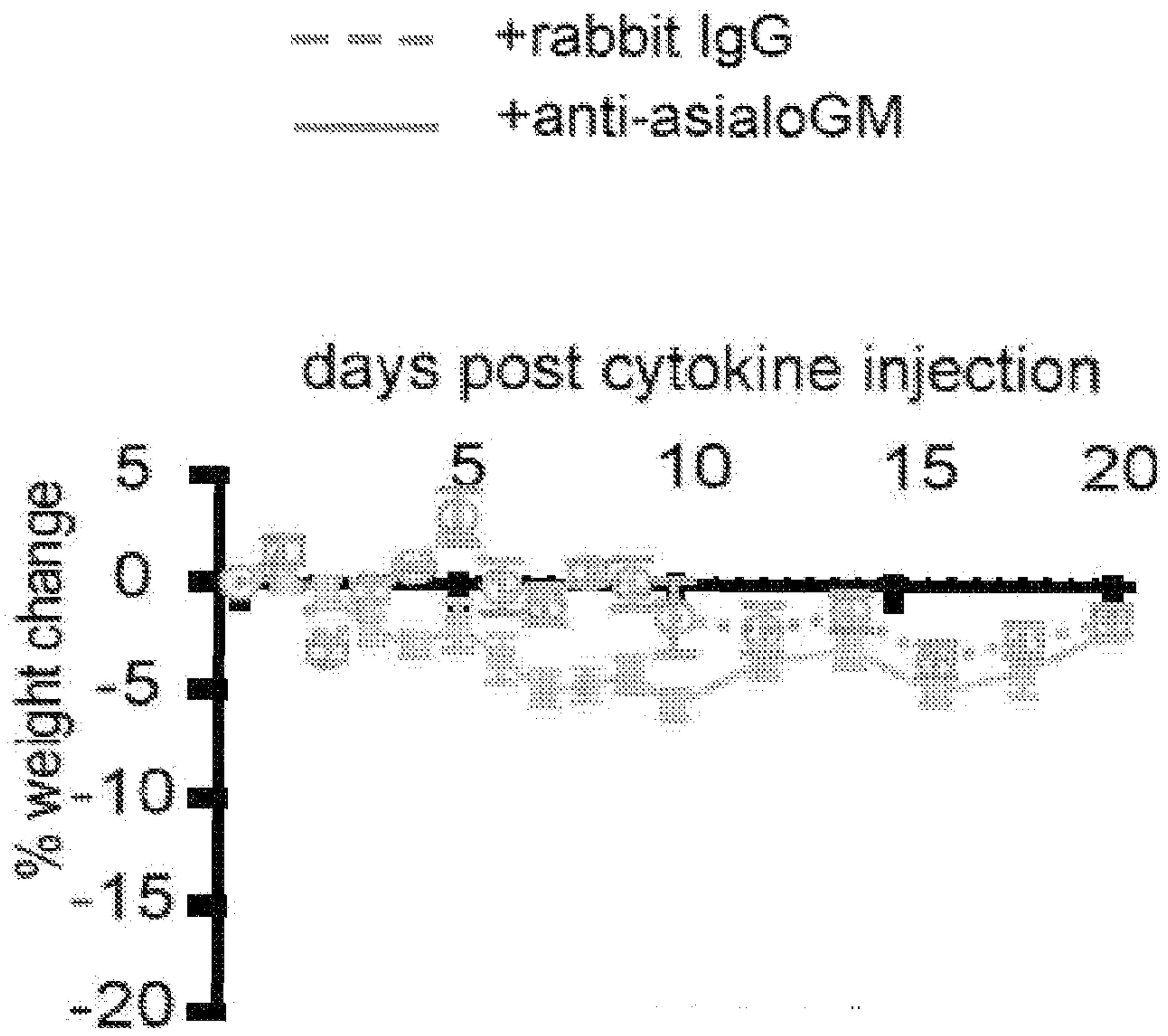

+rabbit IgG
+anti-asialoGM
days post cytokine injection
5
10
15
20
% weight change
5
0
-5
-10
-15
-20

FIG. 2K

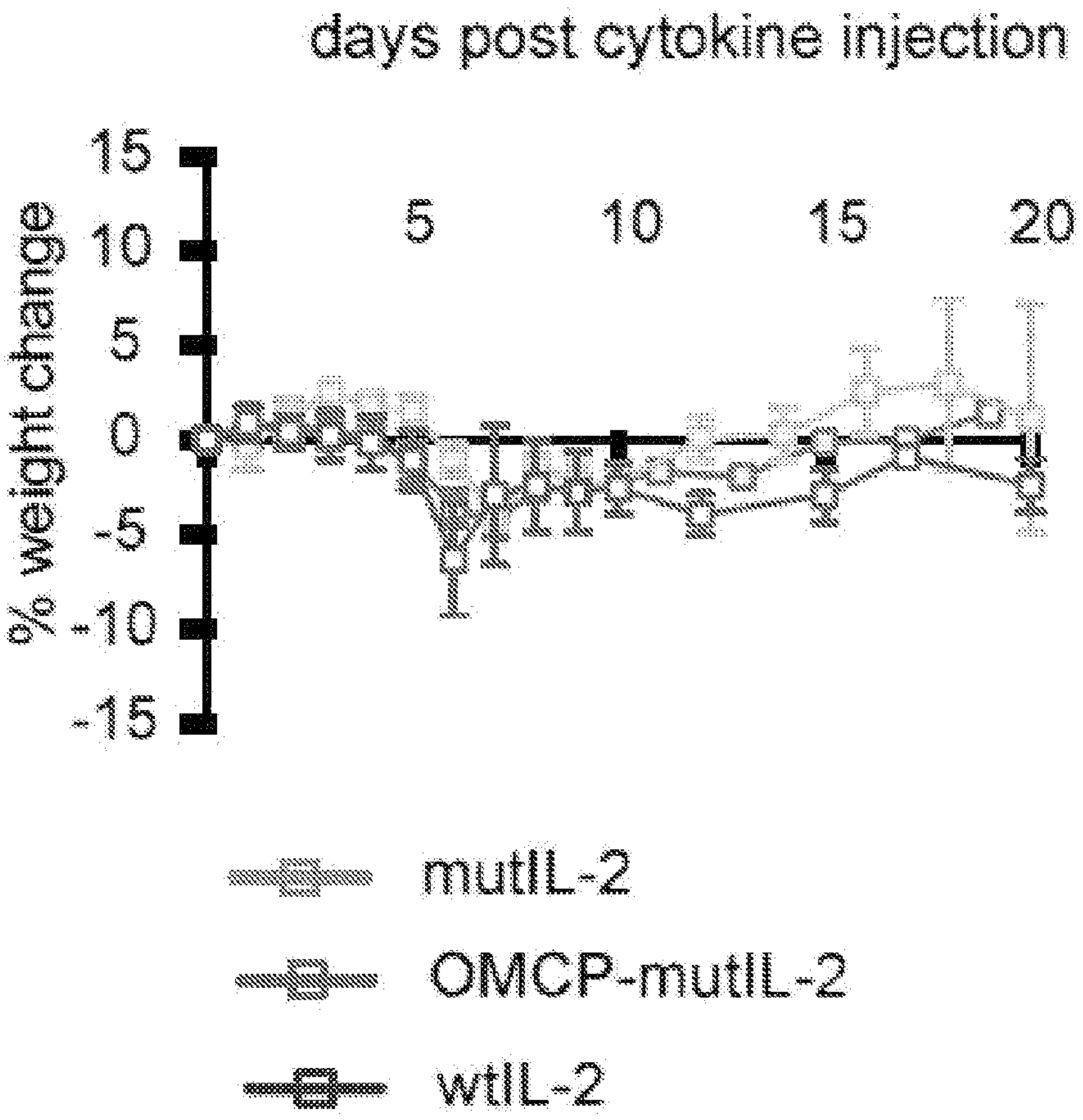

days post cytokine injection
% weight change
15
10
5
0
-5
-10
-15
5
10
15
20
mutIL-2
OMCP-mutIL-2
wtIL-2

FIG. 2L

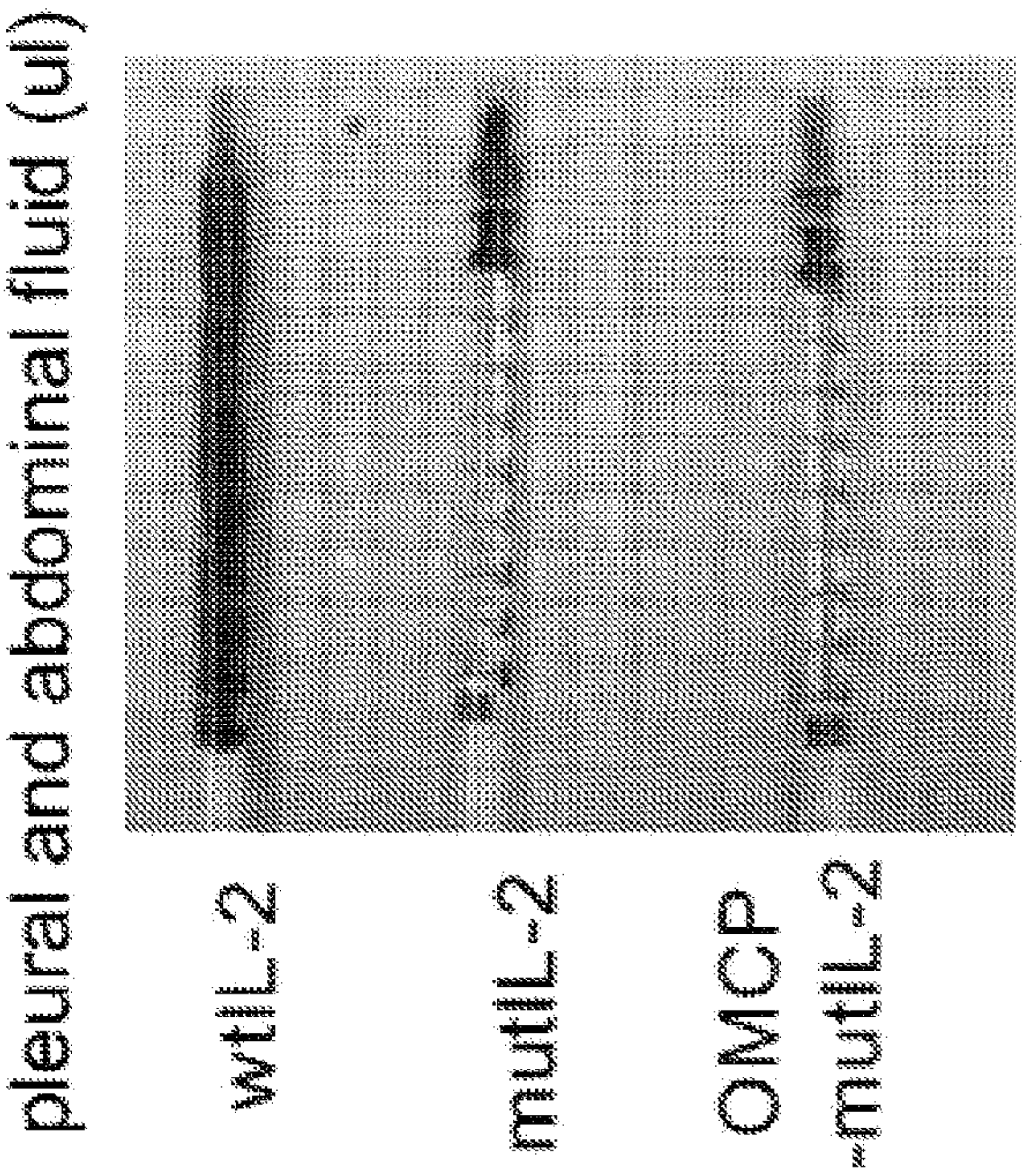

pleural and abdominal fluid (ul)
wtIL-2
mutIL-2
OMCP
-mutIL-2

FIG. 2M

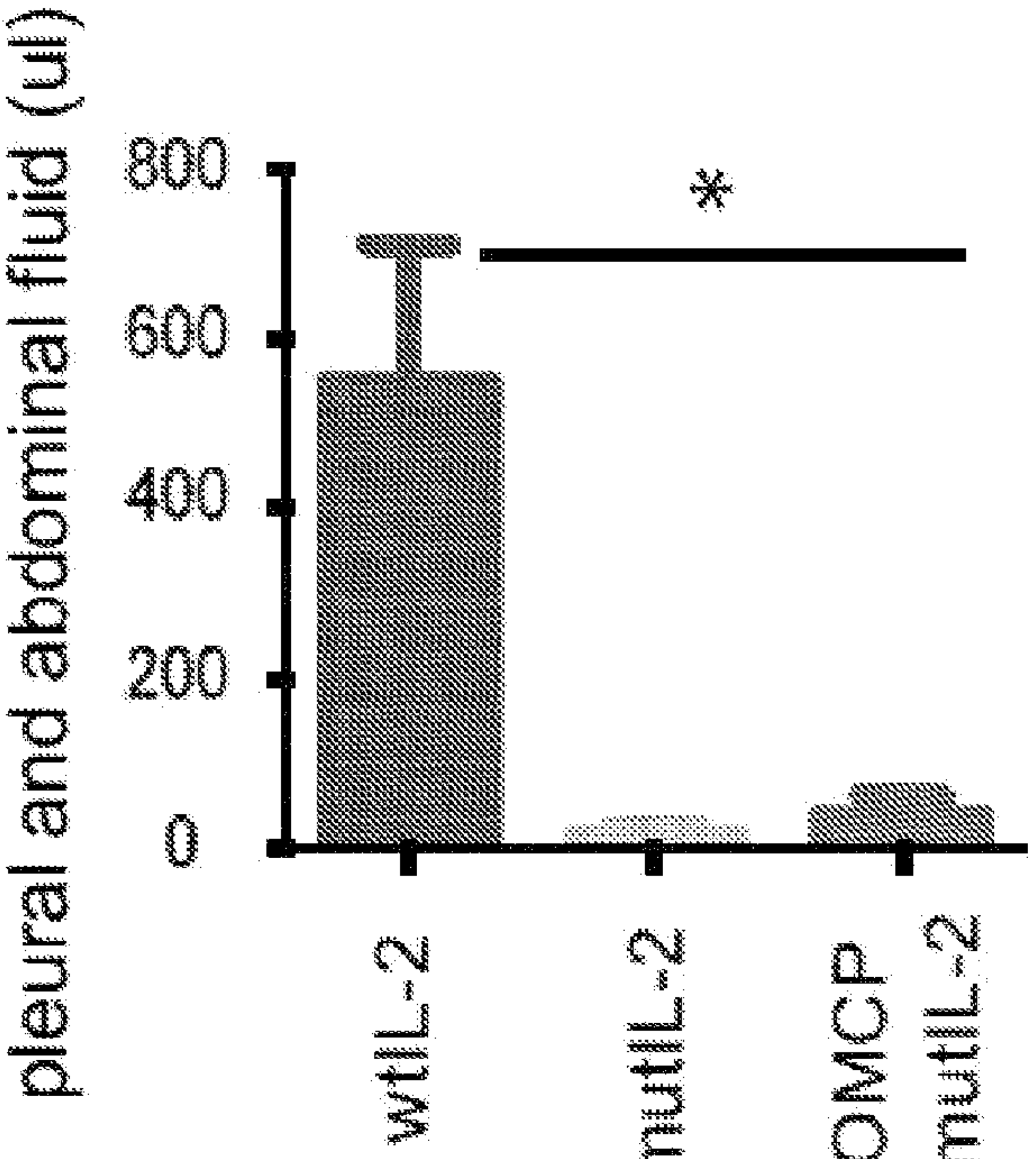

pleural and abdominal fluid (ul)
800
600
400
200
0
*
wtIL-2
mutIL-2
OMCP
-mutIL-2

FIG. 2N

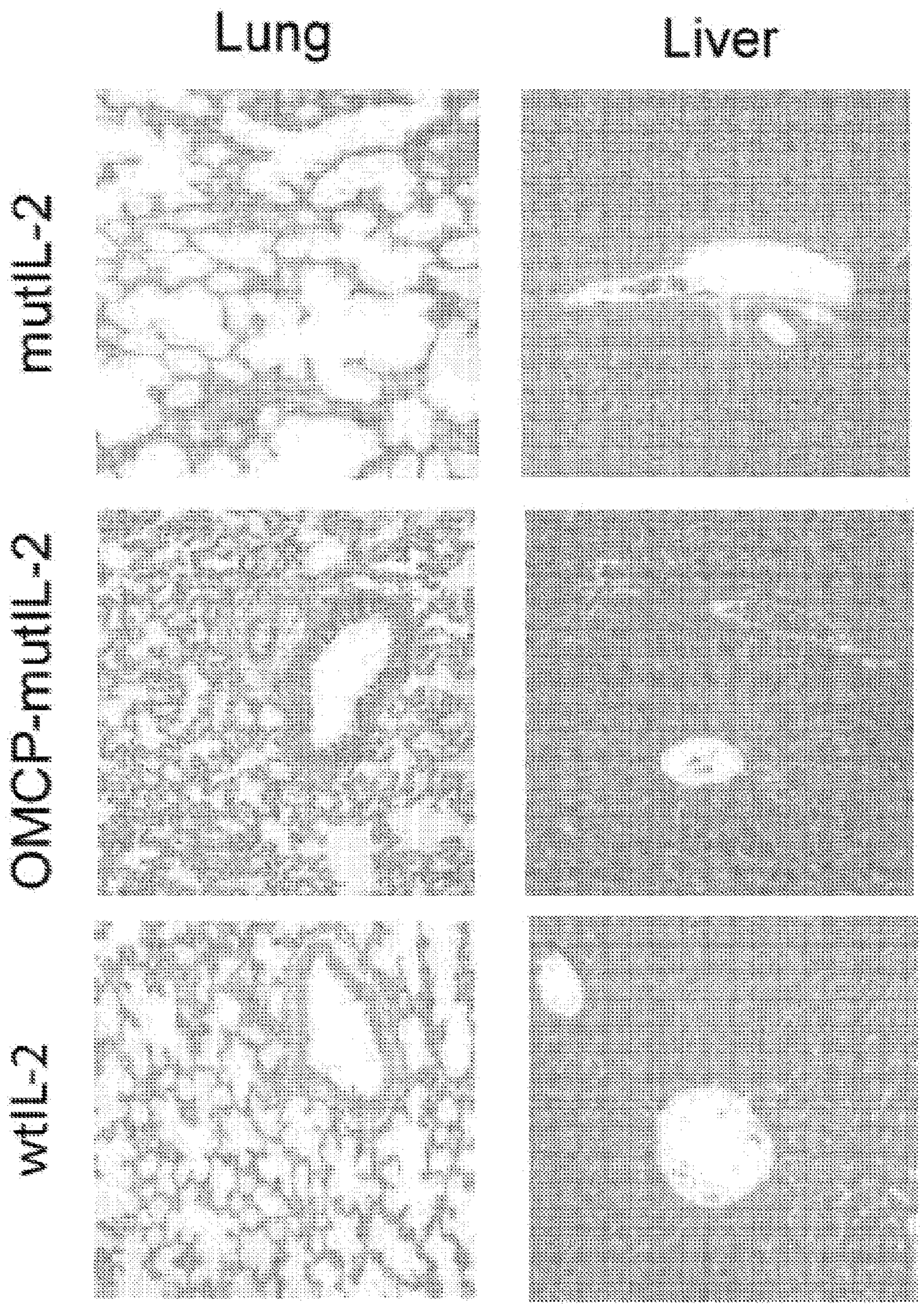


FIG. 20

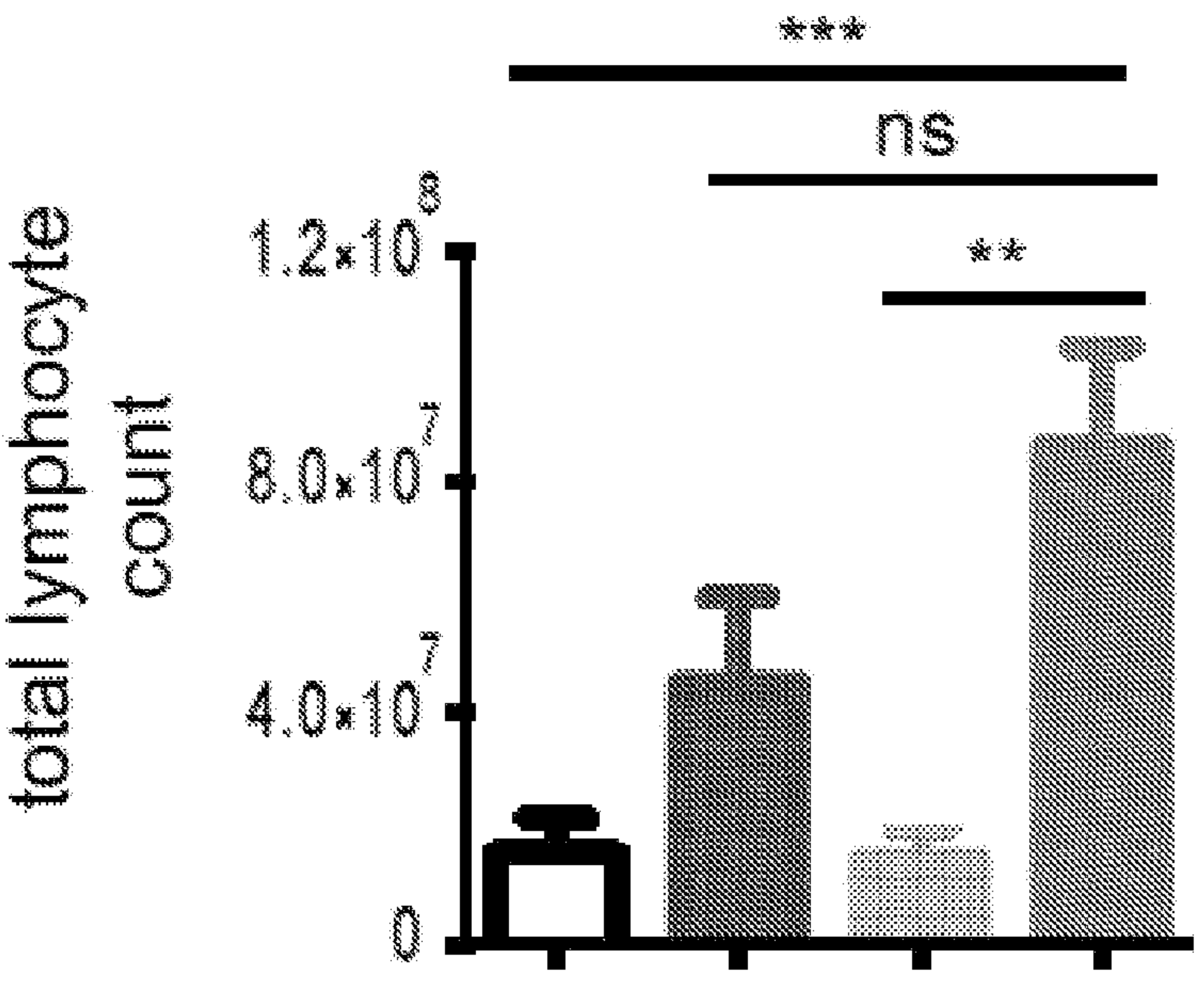

***
ns
**
total lymphocyte count
1.2×10^8
8.0×10^7
4.0×10^7
0

FIG. 3A

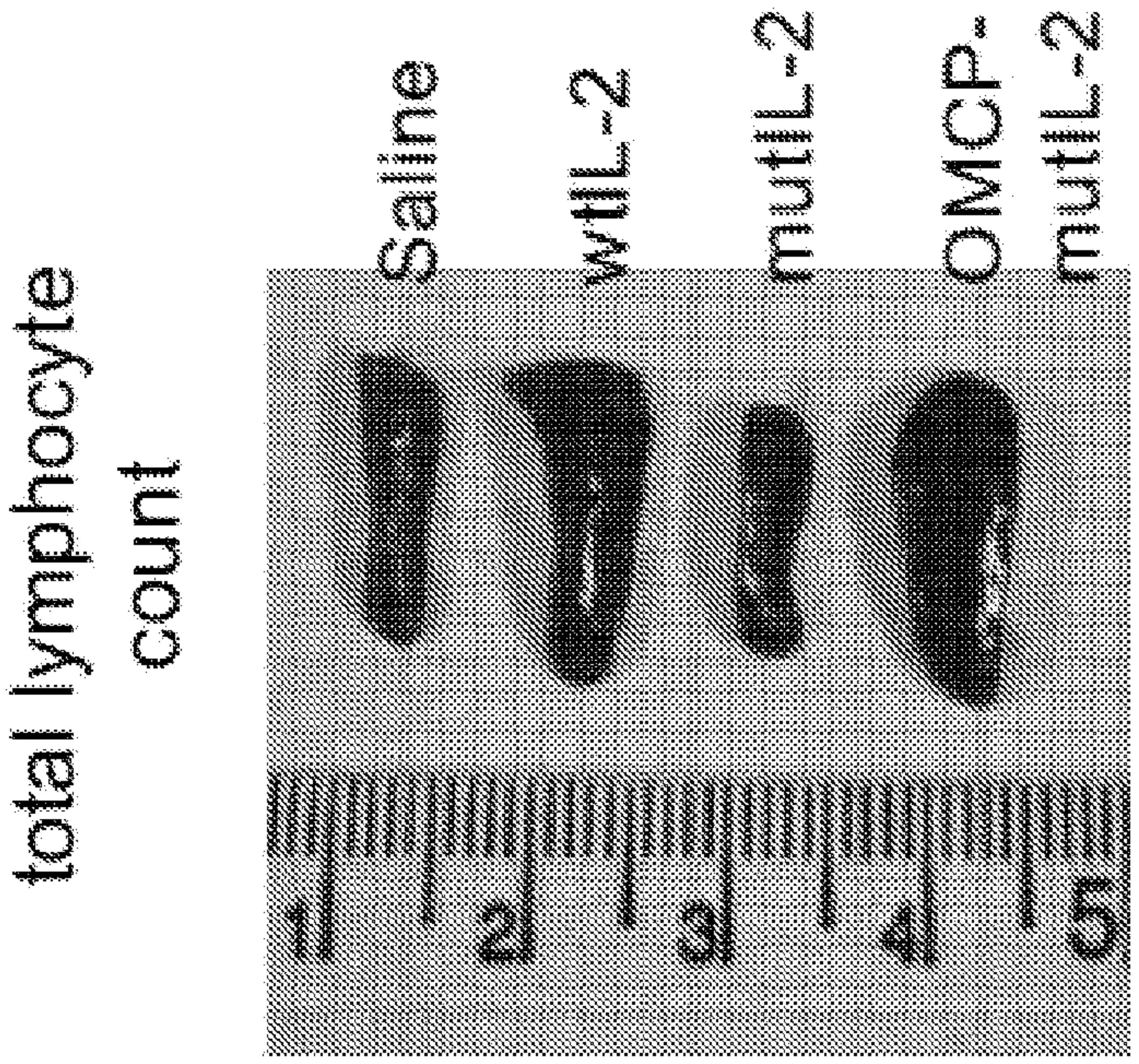
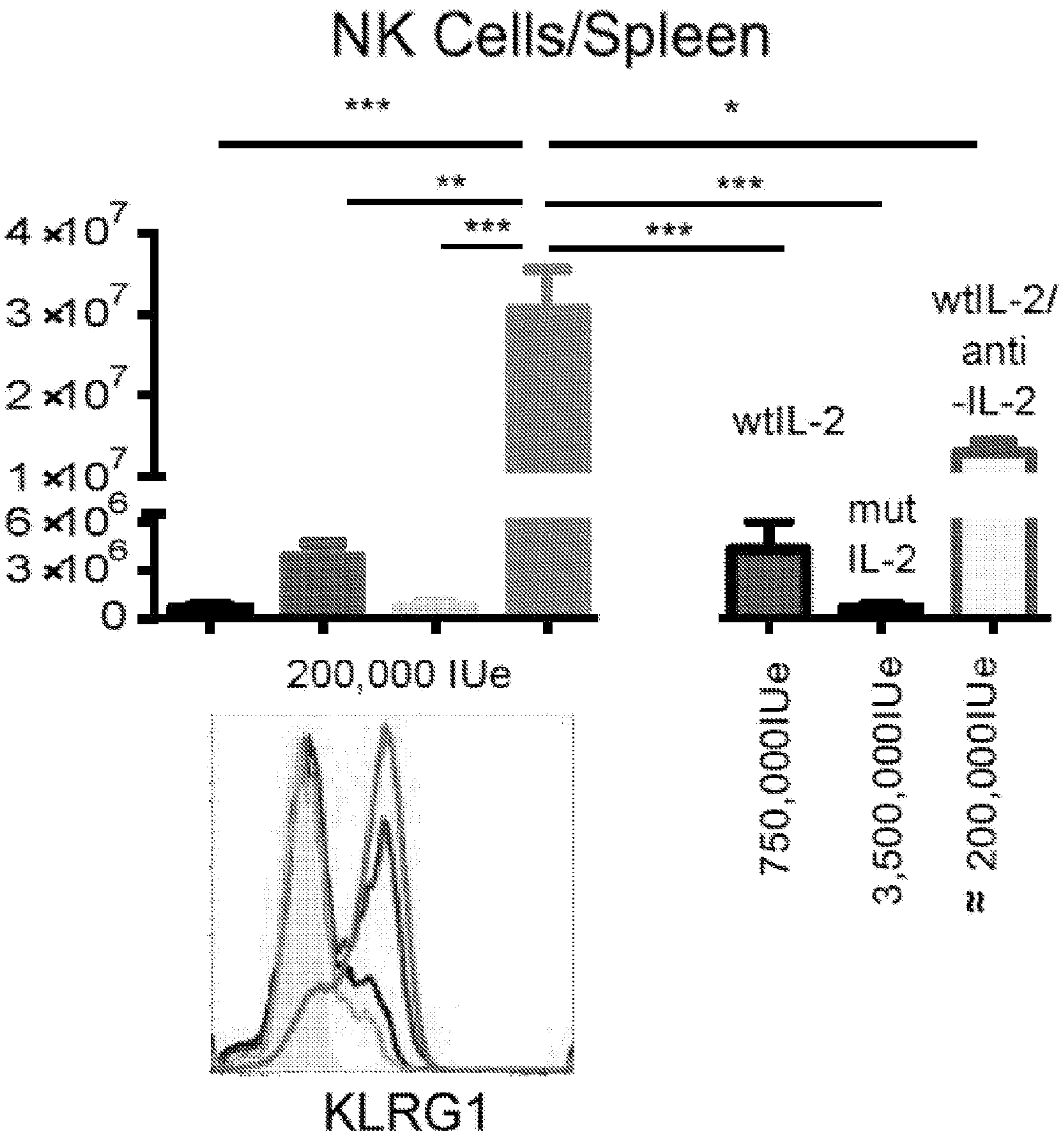

Saline
wtIL-2
mutIL-2
OMCP-mutIL-2
total lymphocyte count
1
2
3
4
5

FIG. 3B



Saline, wtIL-2, mutIL-2, OMCP-mutIL-2

FIG. 3C

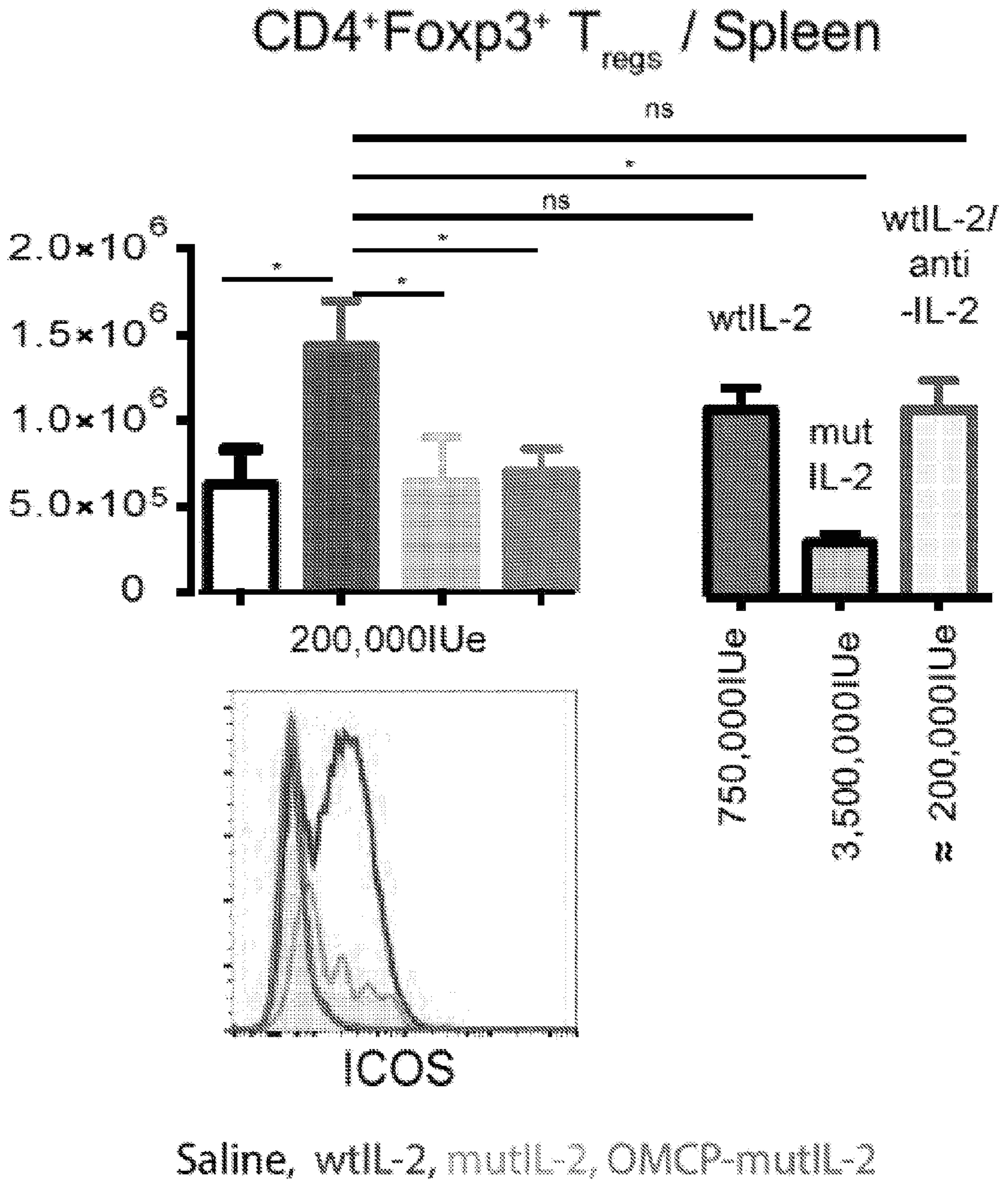
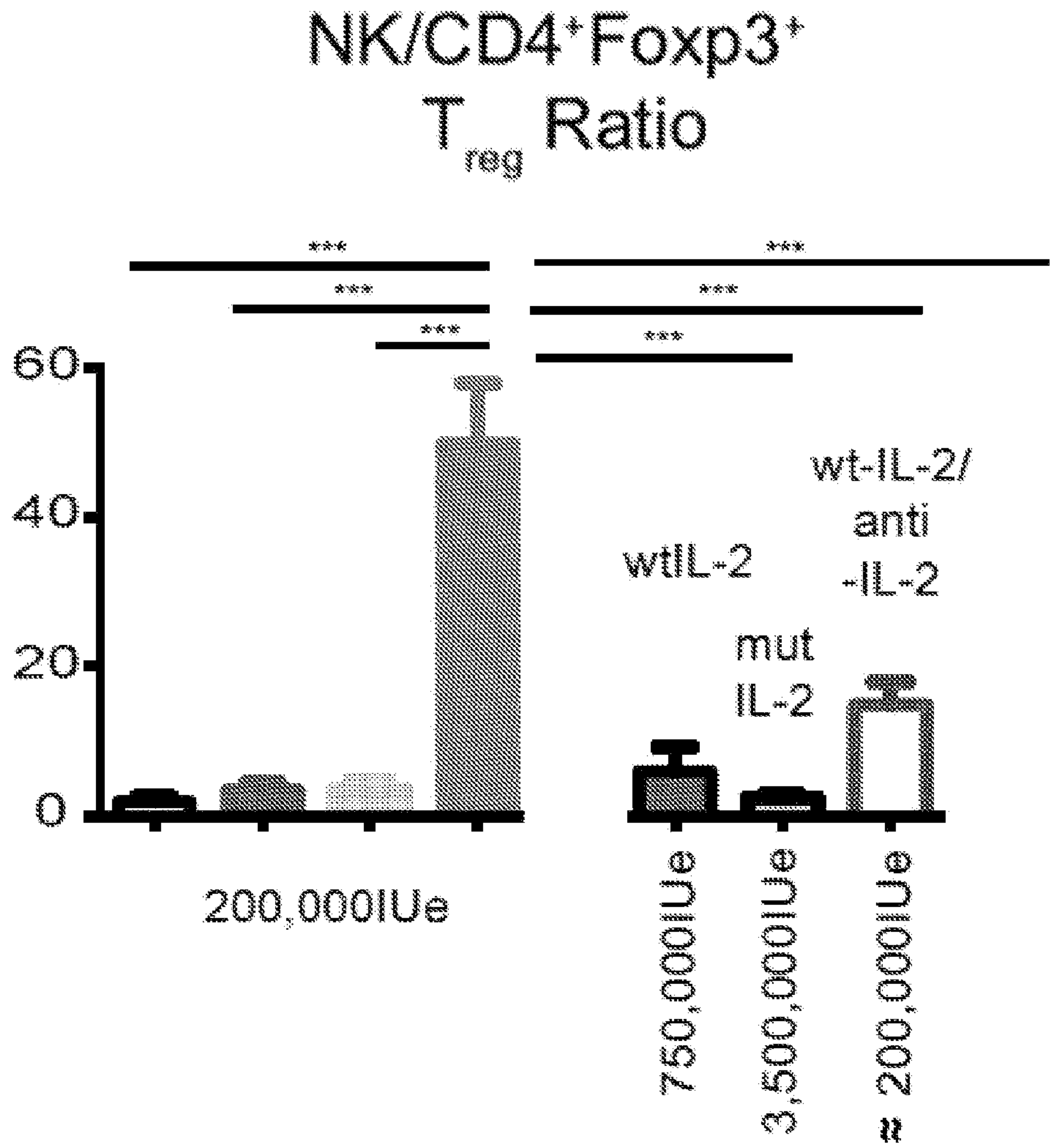

CD4+Foxp3+ Tregs / Spleen
ns
*
ns
*
*
*
2.0×10^6
1.5×10^6
1.0×10^6
5.0×10^5
0
200,000IUe
wtIL-2
mut IL-2
wtIL-2/ anti -IL-2
750,000IUe
3,500,000IUe
≈ 200,000IUe
ICOS
Saline, wtIL-2, mutIL-2, OMCP-mutIL-2

FIG. 3D



Saline, wtIL-2, mutIL-2, OMCP-mutIL-2

FIG. 3E

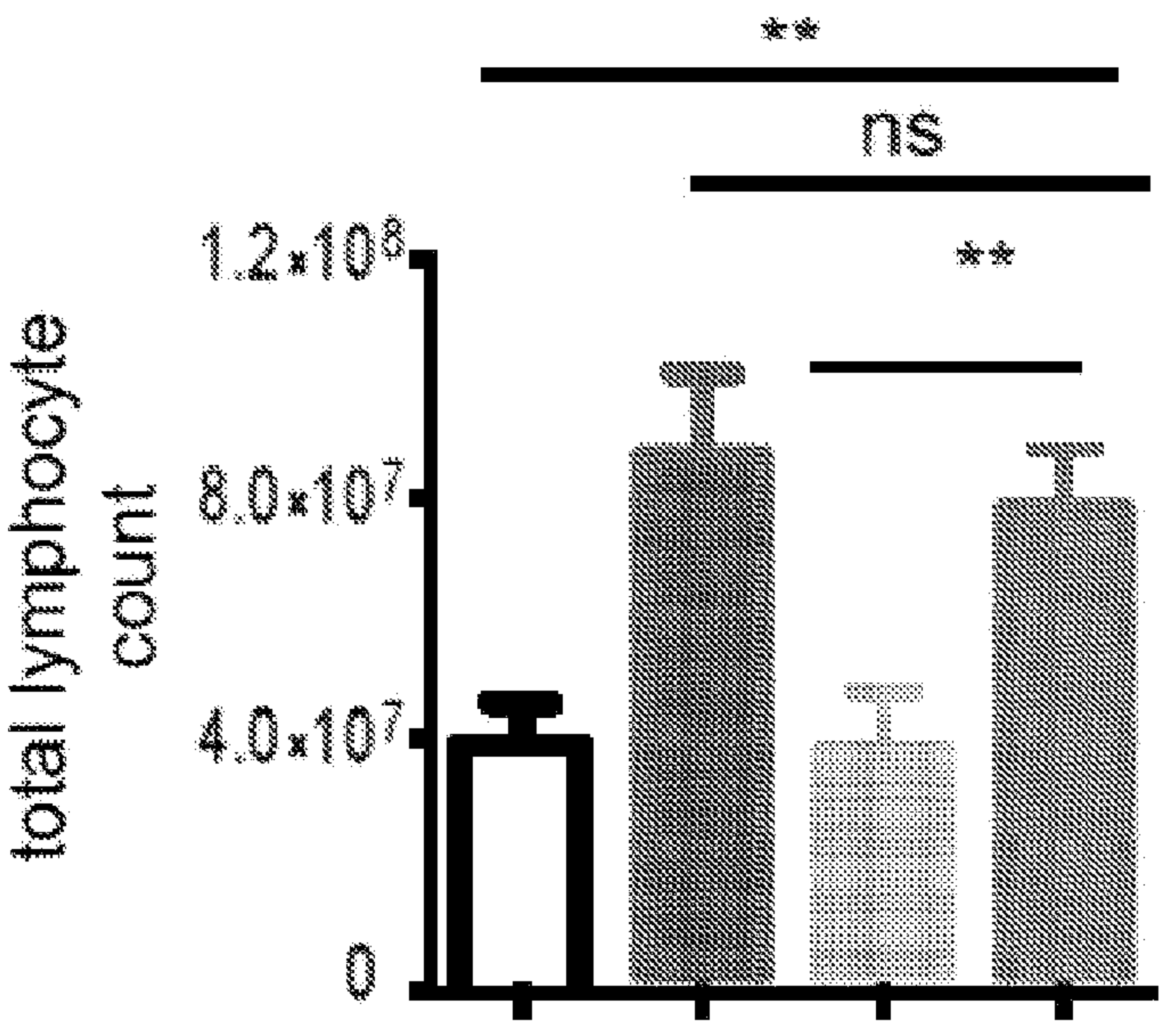

**
ns
**
total lymphocyte count
1.2×10⁸
8.0×10⁷
4.0×10⁷
0

FIG. 3F

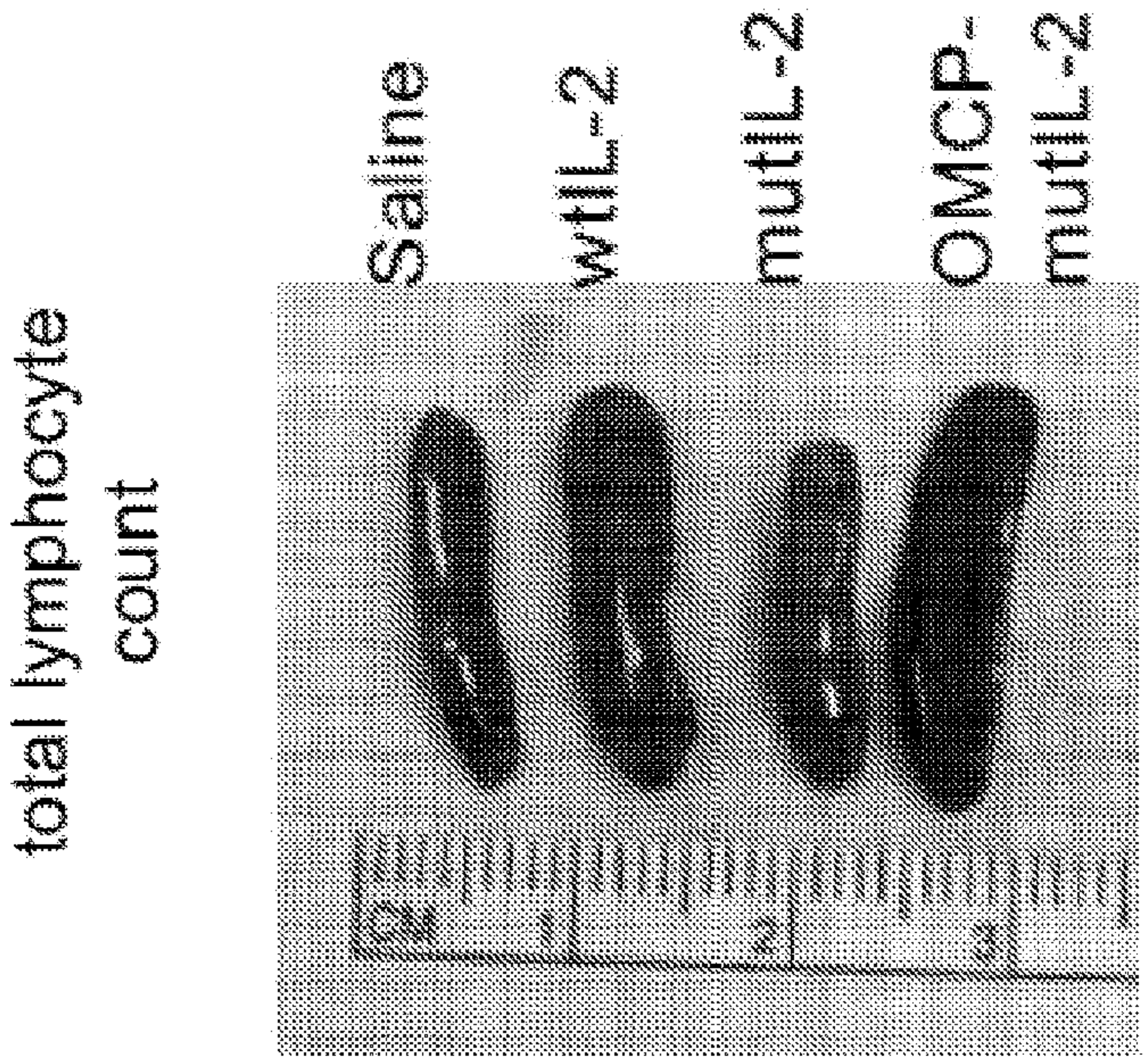

Saline
wtIL-2
mutIL-2
OMCP-mutIL-2
total lymphocyte count
CM
1
2
3

FIG. 3G

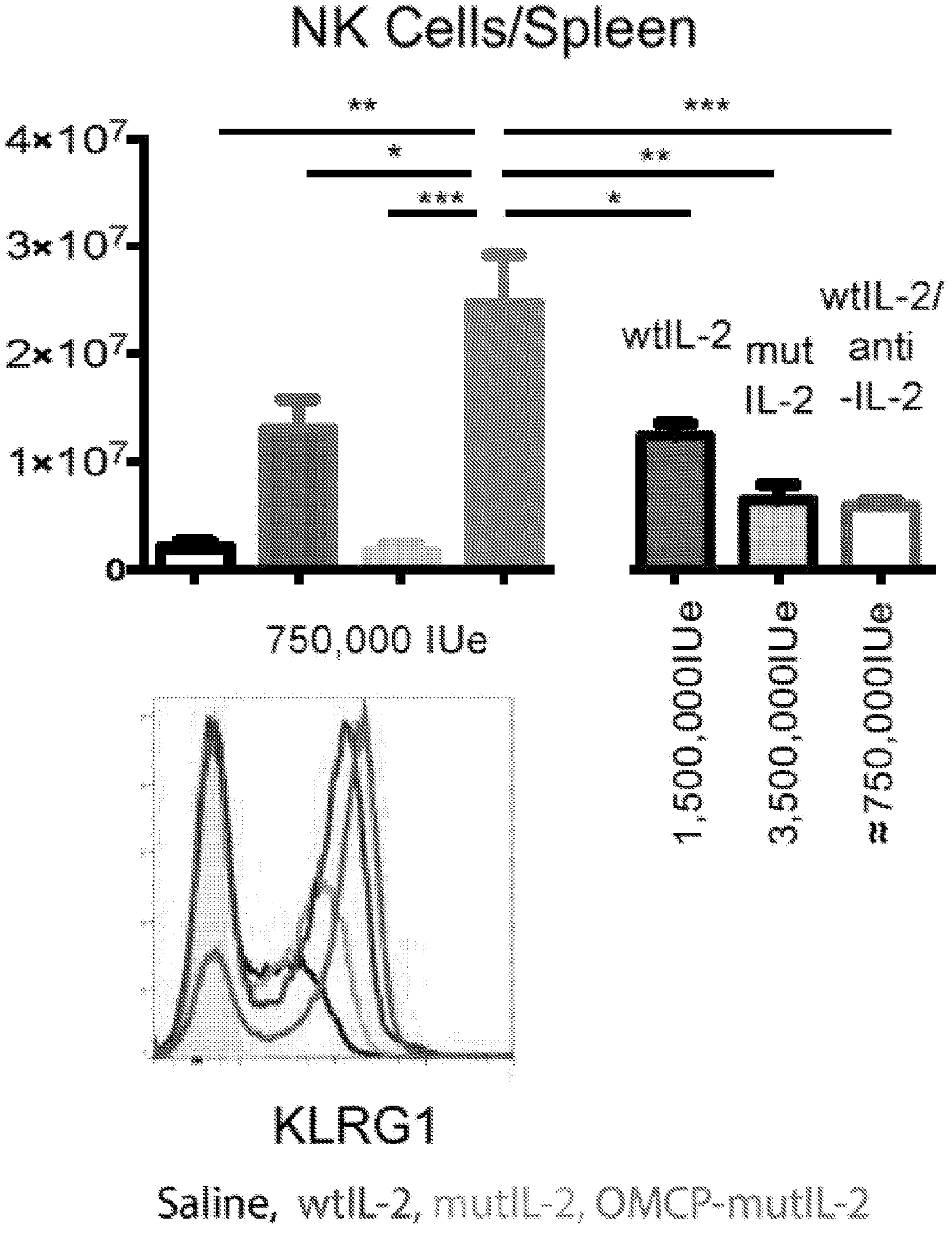

NK Cells/Spleen
**
***
*
**
***
*
4×10⁷
3×10⁷
2×10⁷
1×10⁷
0
750,000 IUe
wtIL-2
mut IL-2
wtIL-2/ anti -IL-2
1,500,000IUe
3,500,000IUe
≈ 750,000IUe
KLRG1
Saline, wtIL-2, mutIL-2, OMCP-mutIL-2

FIG. 3H

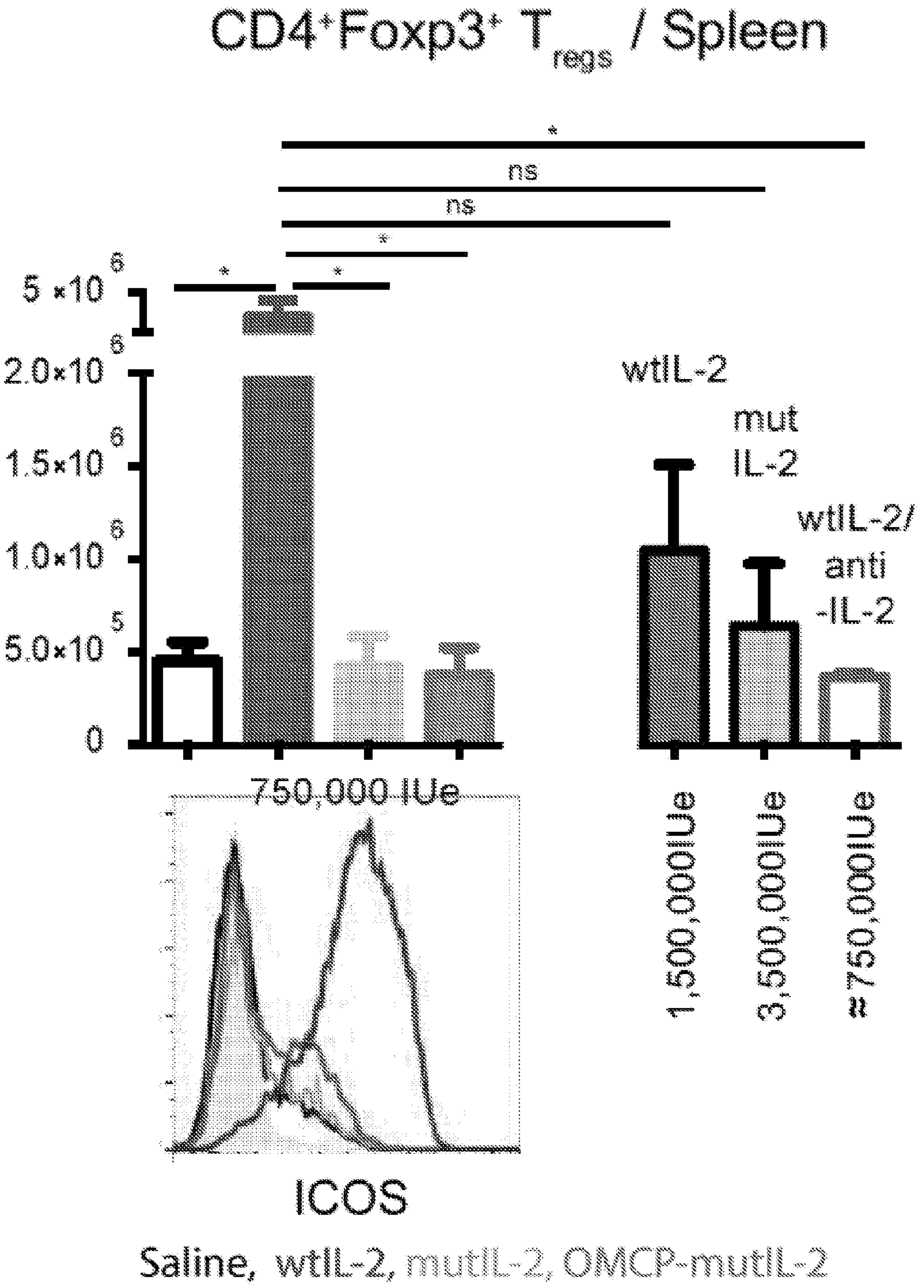
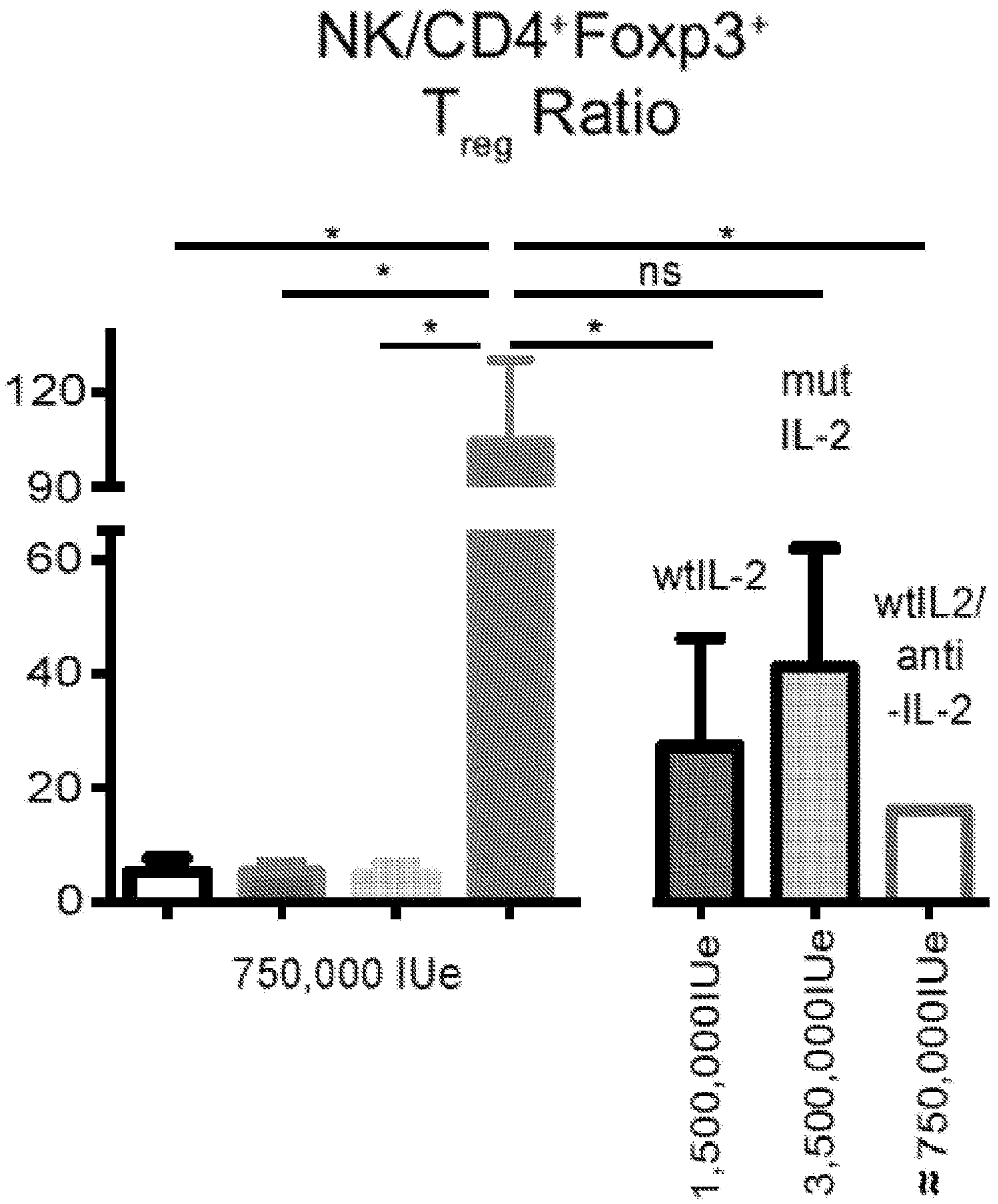

CD4+Foxp3+ Tregs / Spleen
*
ns
ns
*
*
*
5 ×10^6
2.0×10^6
1.5×10^6
1.0×10^6
5.0×10^5
0
wtIL-2
mut IL-2
wtIL-2/ anti -IL-2
750,000 IUe
1,500,000IUe
3,500,000IUe
≈ 750,000IUe
ICOS
Saline, wtIL-2, mutIL-2, OMCP-mutIL-2

FIG. 3I



Saline, wtIL-2, mutIL-2, OMCP-mutIL-2

FIG. 3J

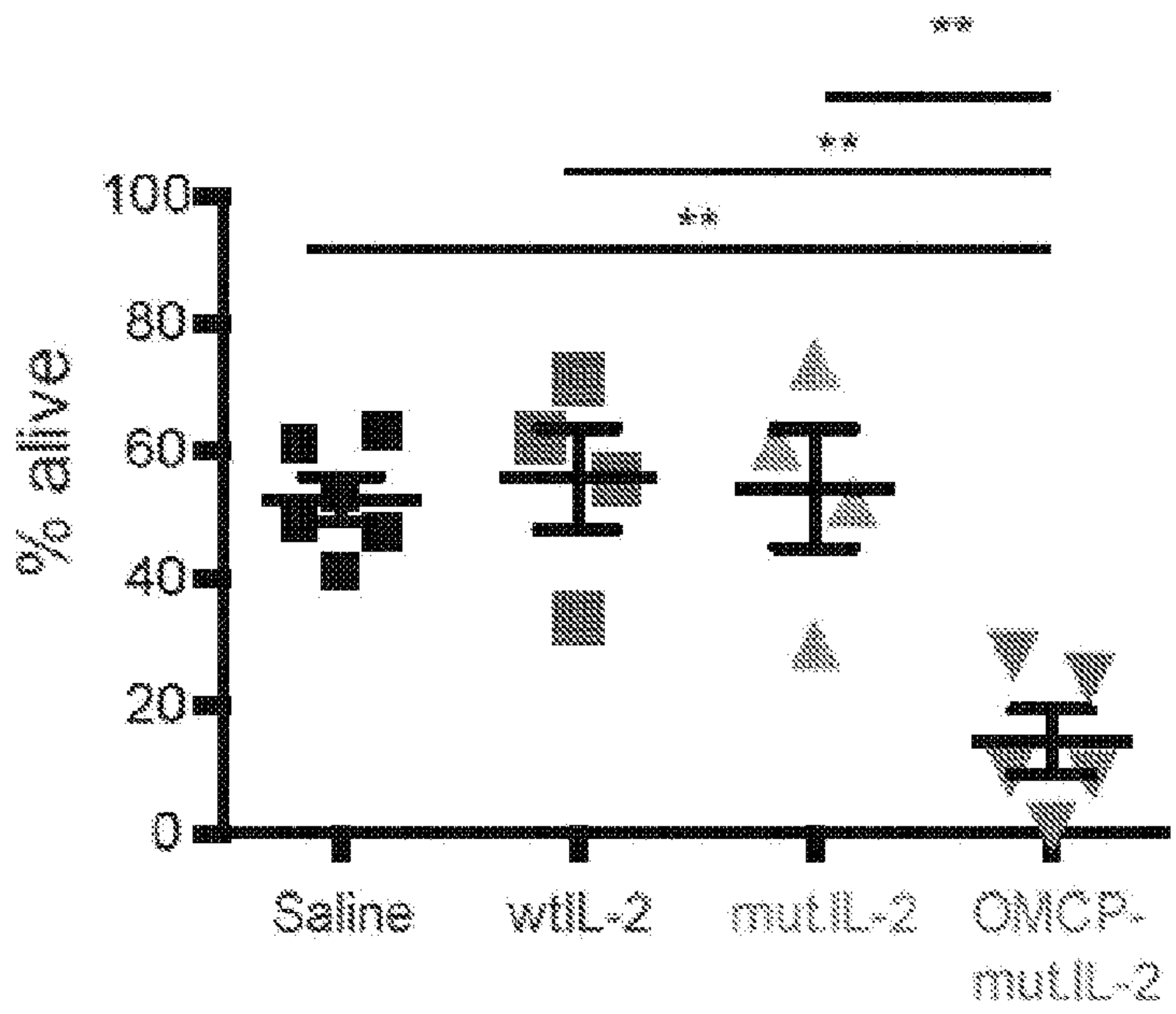

**
**
**
100
80
60
40
20
0
% alive
Saline
wtIL-2
mutIL-2
OMCP-mutIL-2

FIG. 4A

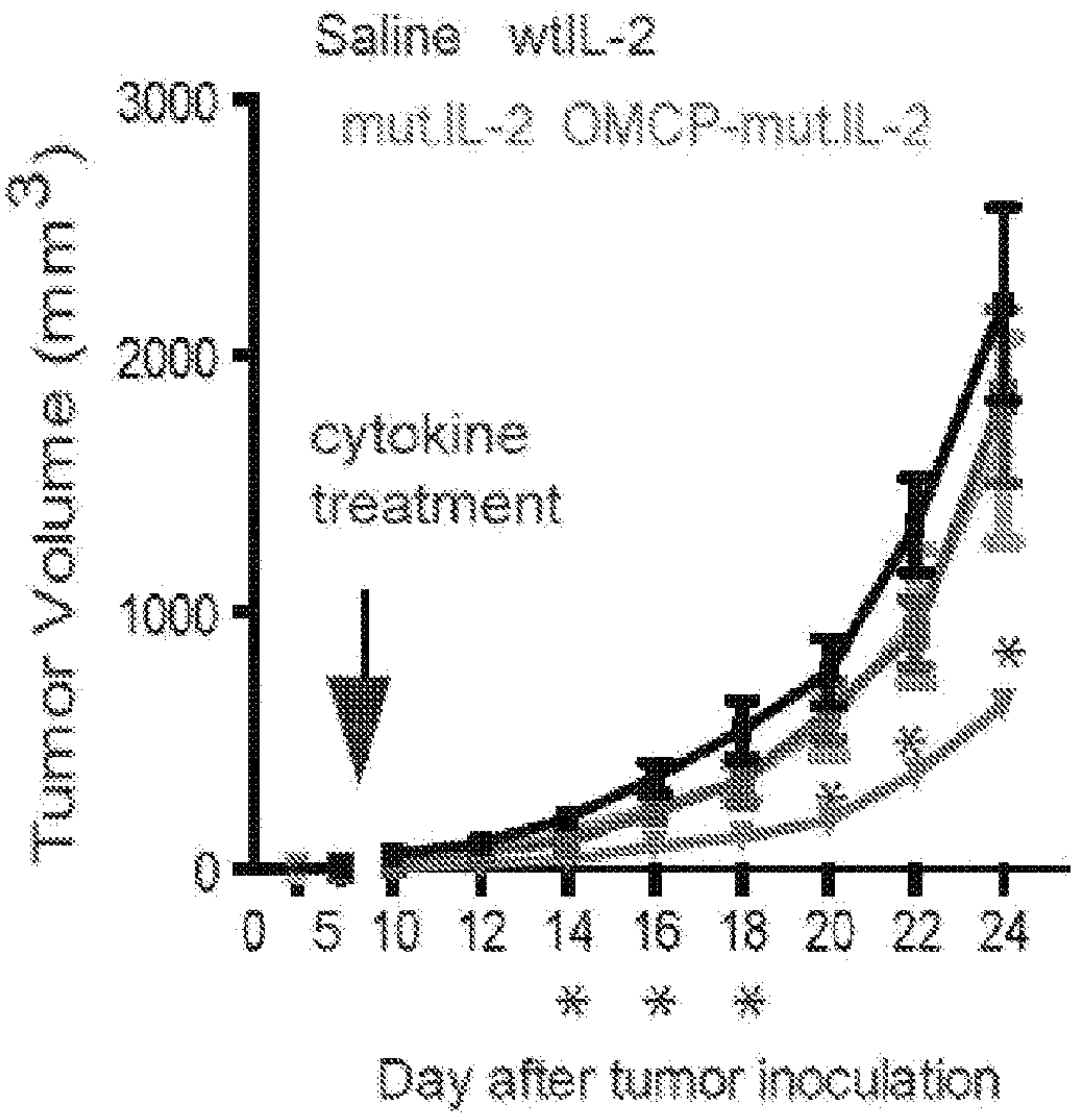

Saline
wtIL-2
mutIL-2
OMCP-mutIL-2
3000
2000
1000
0
Tumor Volume (mm3)
cytokine treatment
*
*
*
*
0
5
10
12
14
16
18
20
22
24
*
*
*
Day after tumor inoculation

FIG. 4B

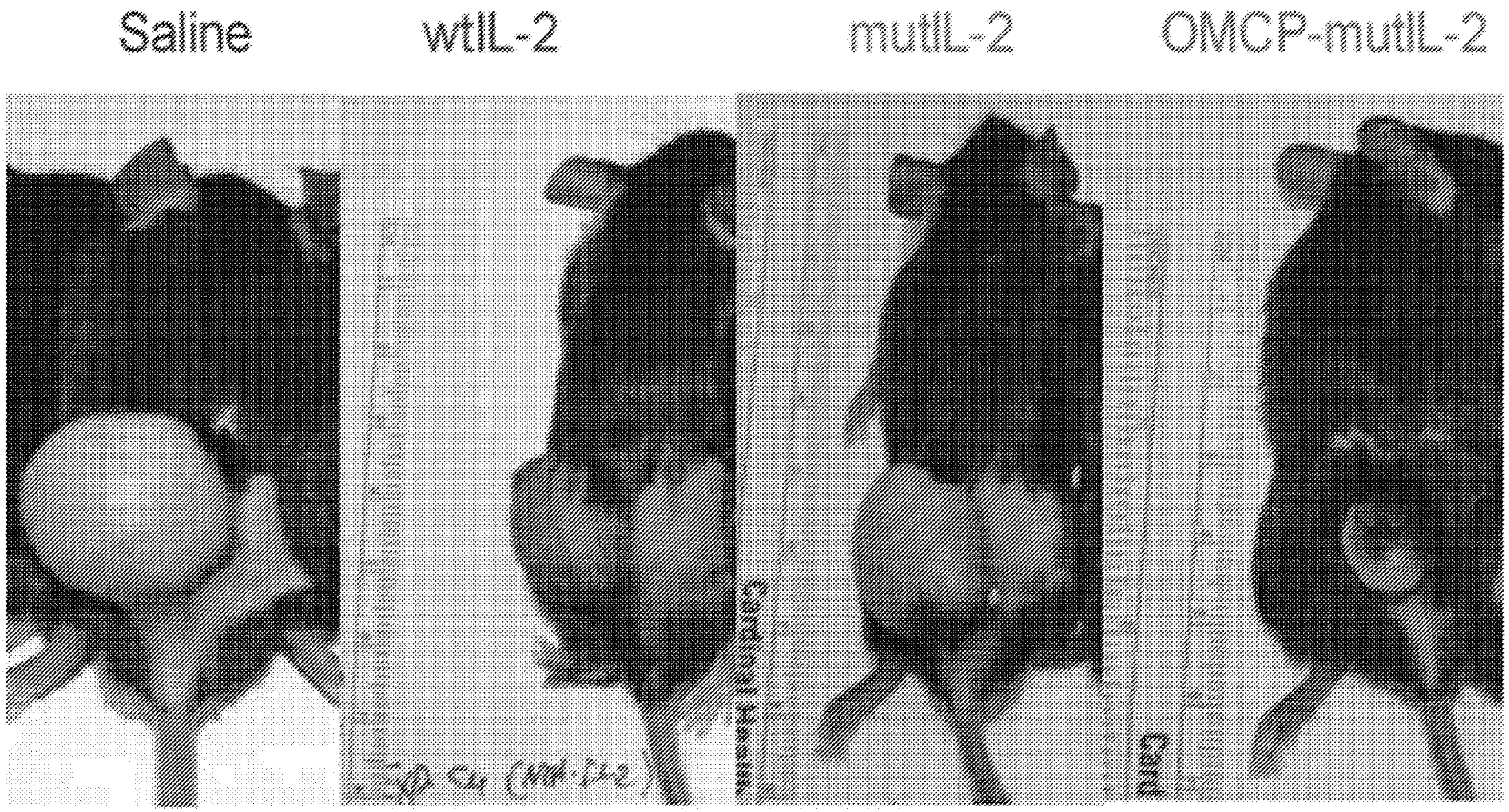


FIG. 4C

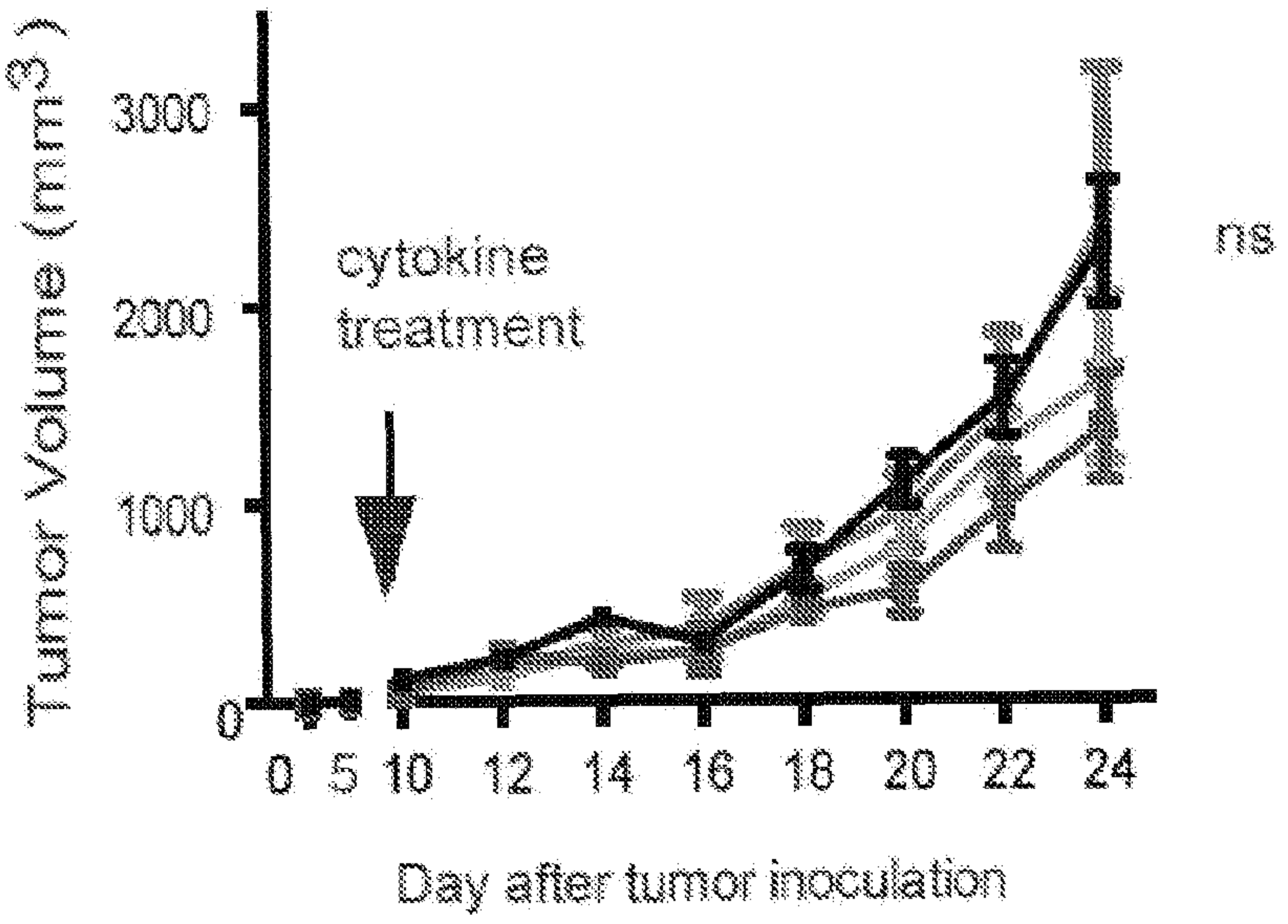

Tumor Volume (mm^3)
3000
2000
1000
0
cytokine treatment
ns
0
5
10
12
14
16
18
20
22
24
Day after tumor inoculation

FIG. 4D

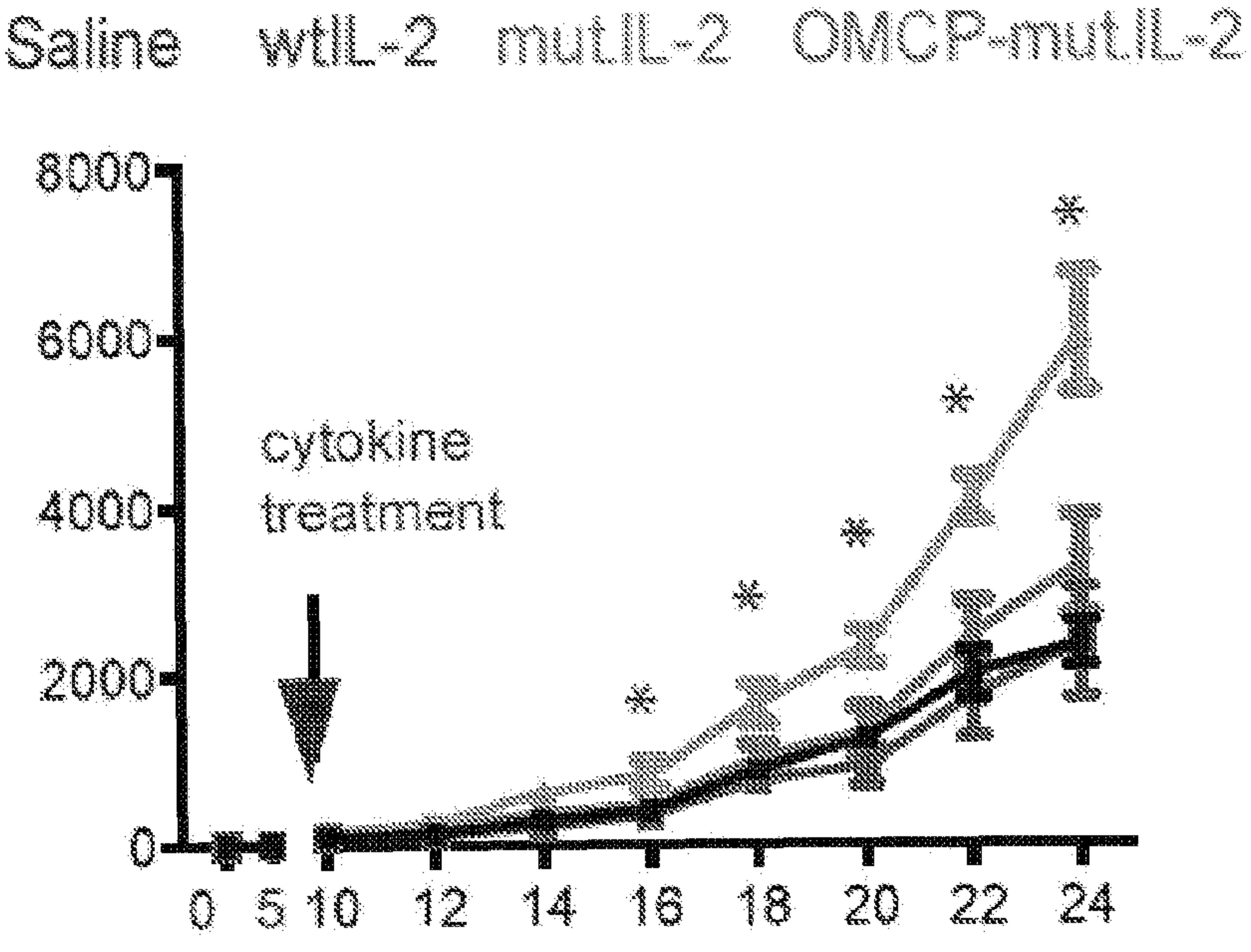

Saline
wtIL-2
mutIL-2
OMCP-mutIL-2
8000
6000
4000
2000
0
cytokine treatment
*
*
*
*
*
0
5
10
12
14
16
18
20
22
24
Day after tumor inoculation

FIG. 4E

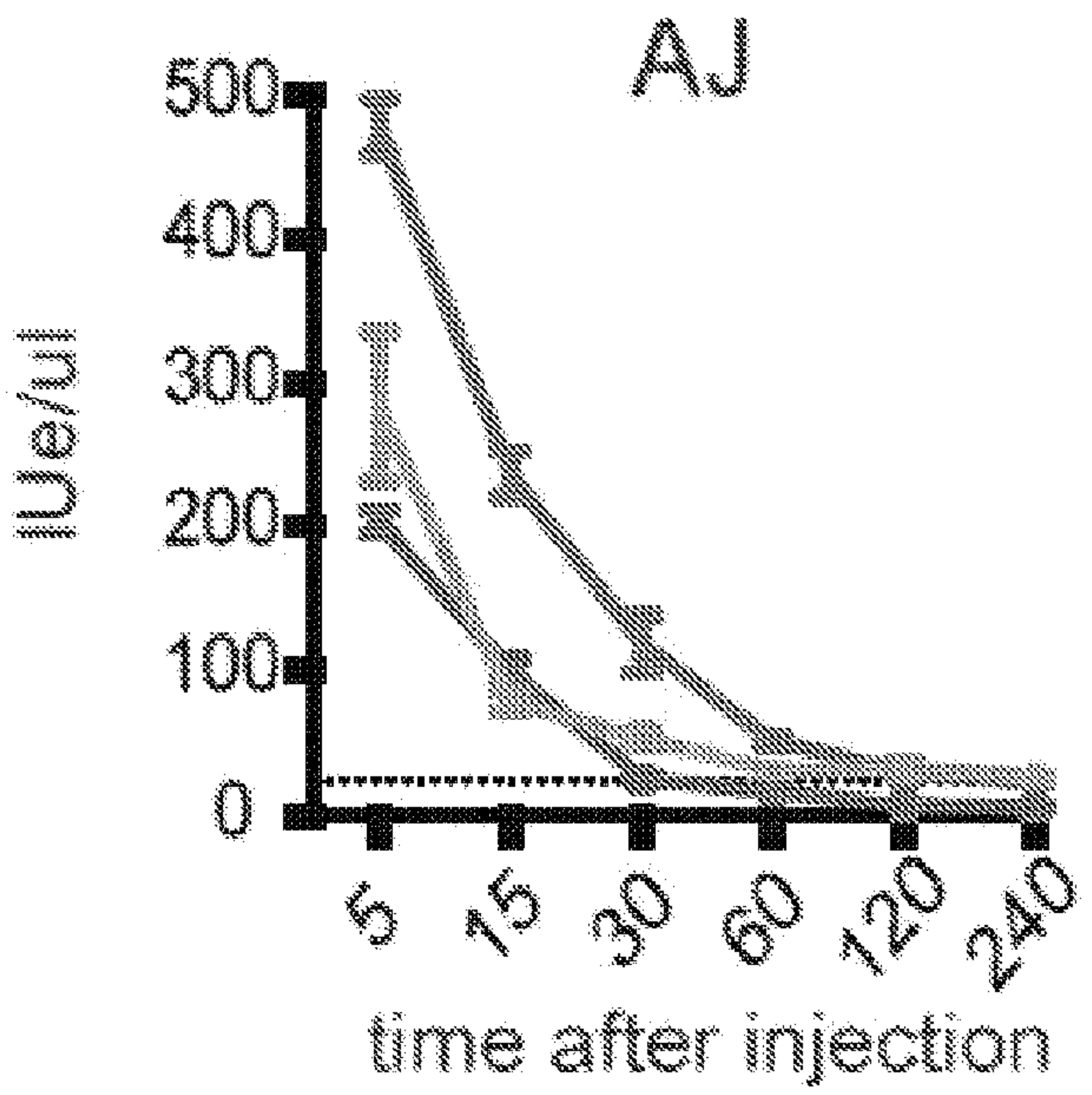


FIG. 5A

OMCP-mutIL-2, wtIL-2, mutIL-2

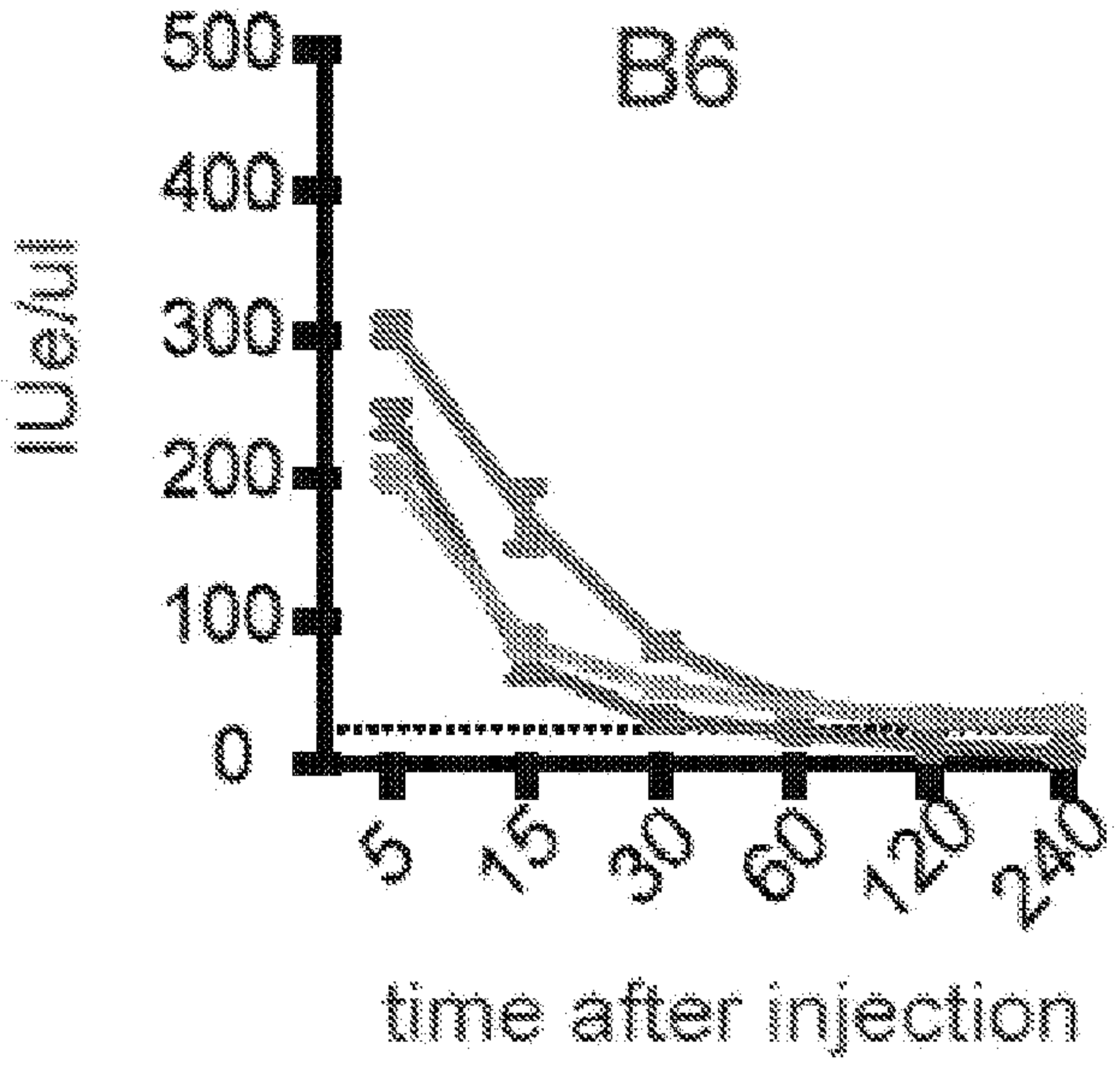


FIG. 5B

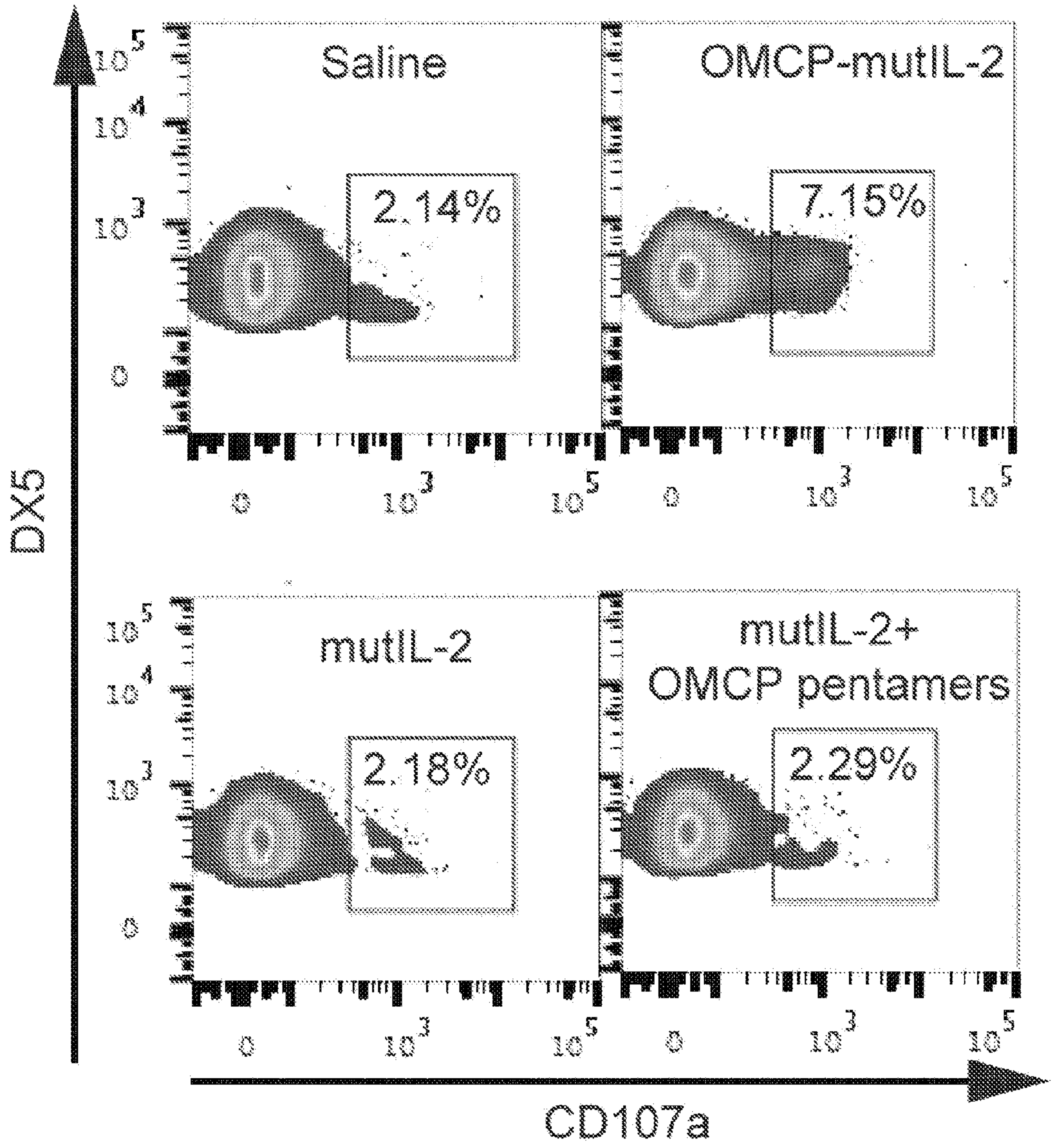

Saline
2.14%
OMCP-mutIL-2
7.15%
mutIL-2
2.18%
mutIL-2+
OMCP pentamers
2.29%
DX5
CD107a
10^5
10^4
10^3
0
10^3
10^5

FIG. 5C

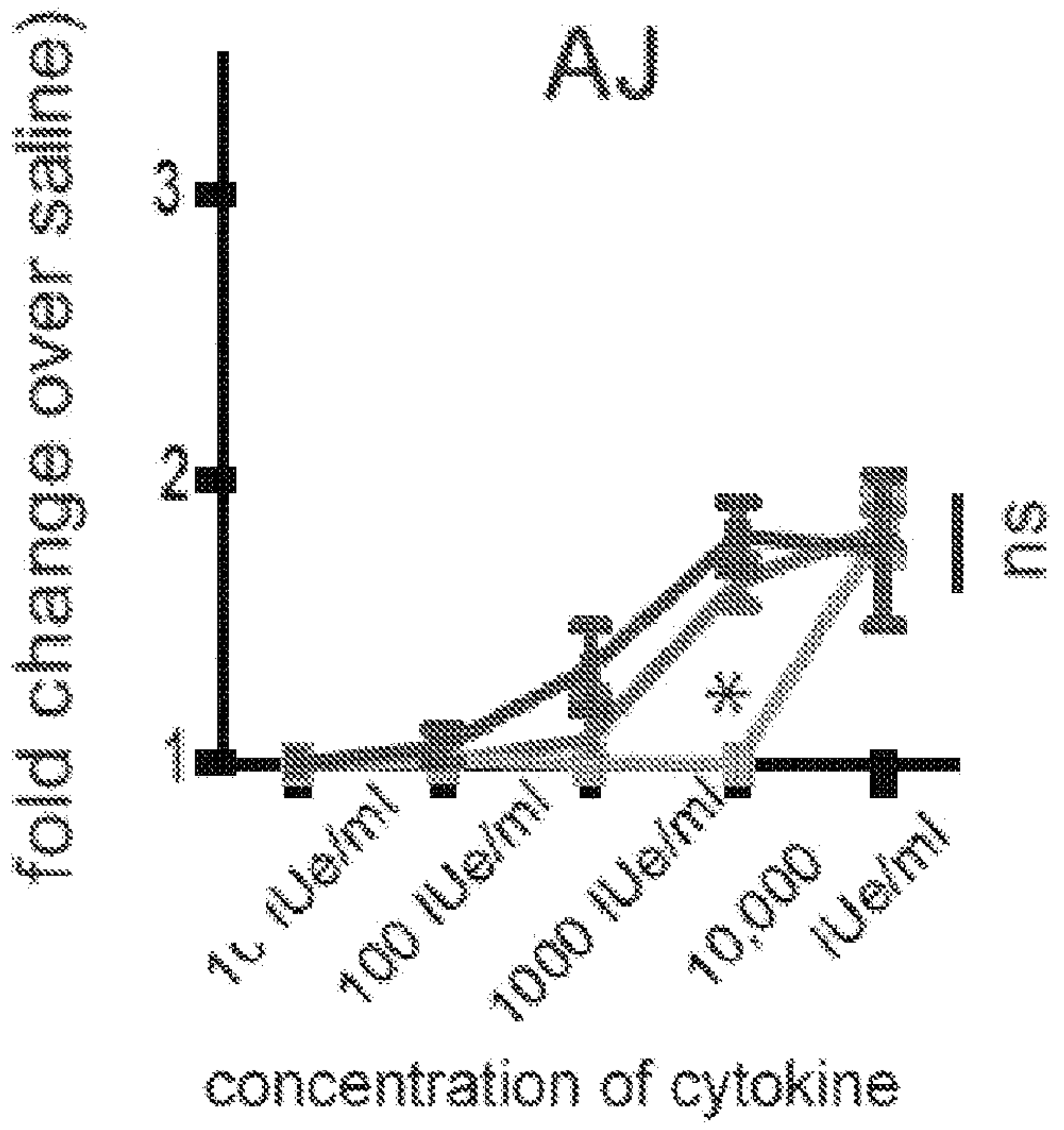

AJ
pSTAT5
(fold change over saline)
3
2
1
ns
*
10 IUe/ml
100 IUe/ml
1000 IUe/ml
10,000 IUe/ml
concentration of cytokine

FIG. 5D

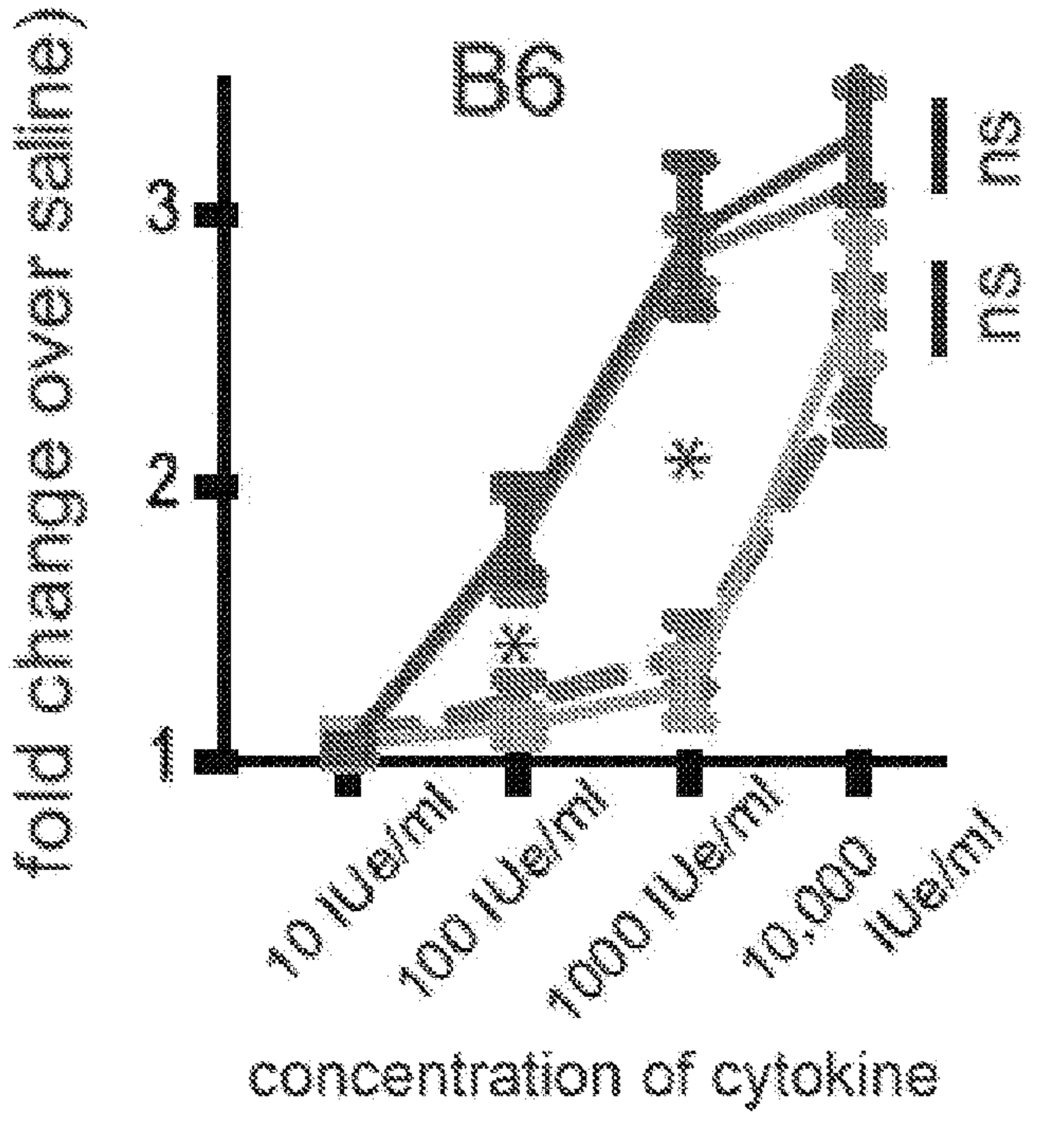

B6
pSTAT5
(fold change over saline)
3
2
1
ns
ns
*
*
10 IUe/ml
100 IUe/ml
1000 IUe/ml
10,000 IUe/ml
concentration of cytokine

FIG. 5E

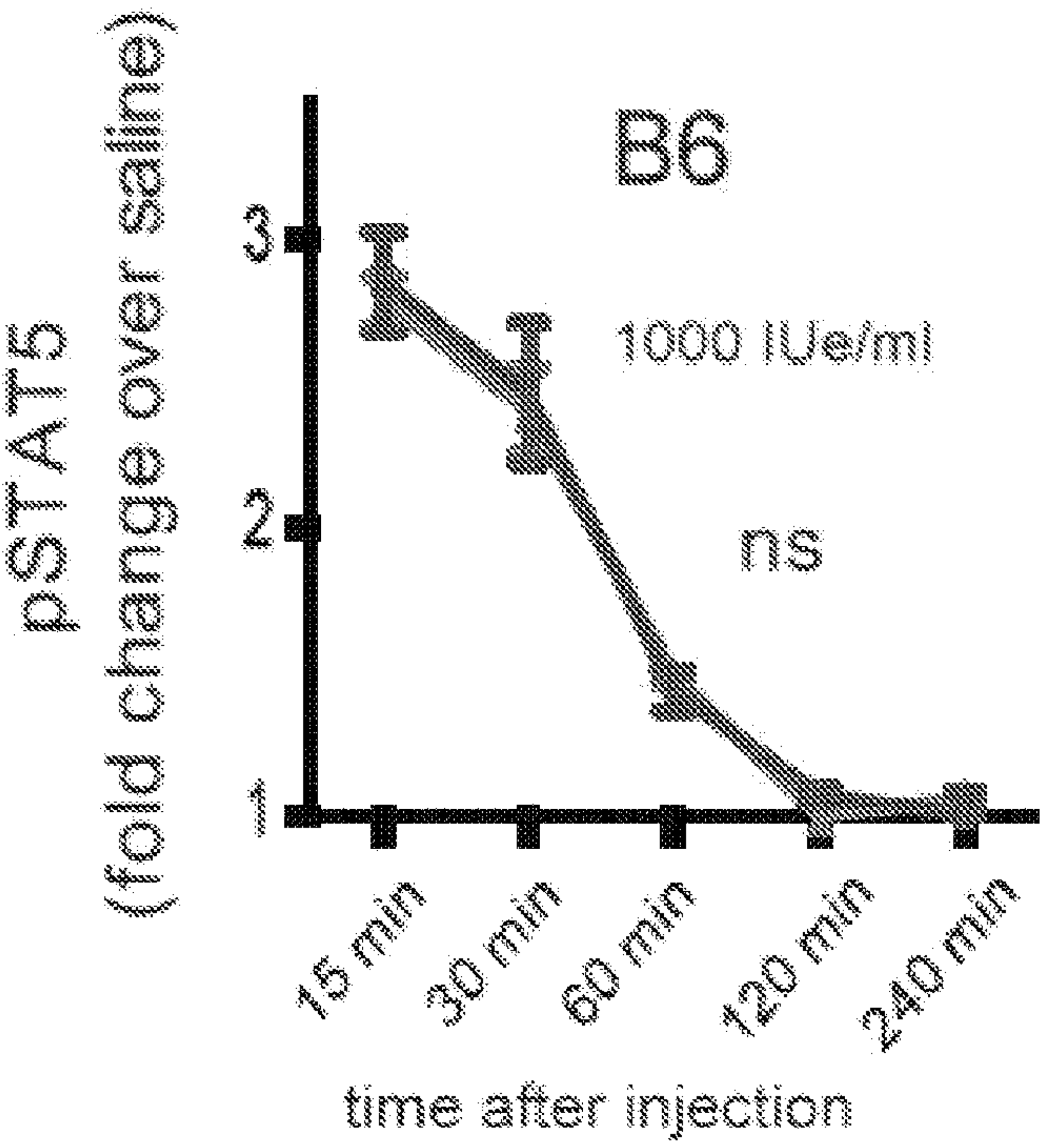

B6
1000 IUe/ml
ns
pSTAT5
(fold change over saline)
3
2
1
15 min
30 min
60 min
120 min
240 min
time after injection

FIG. 5F

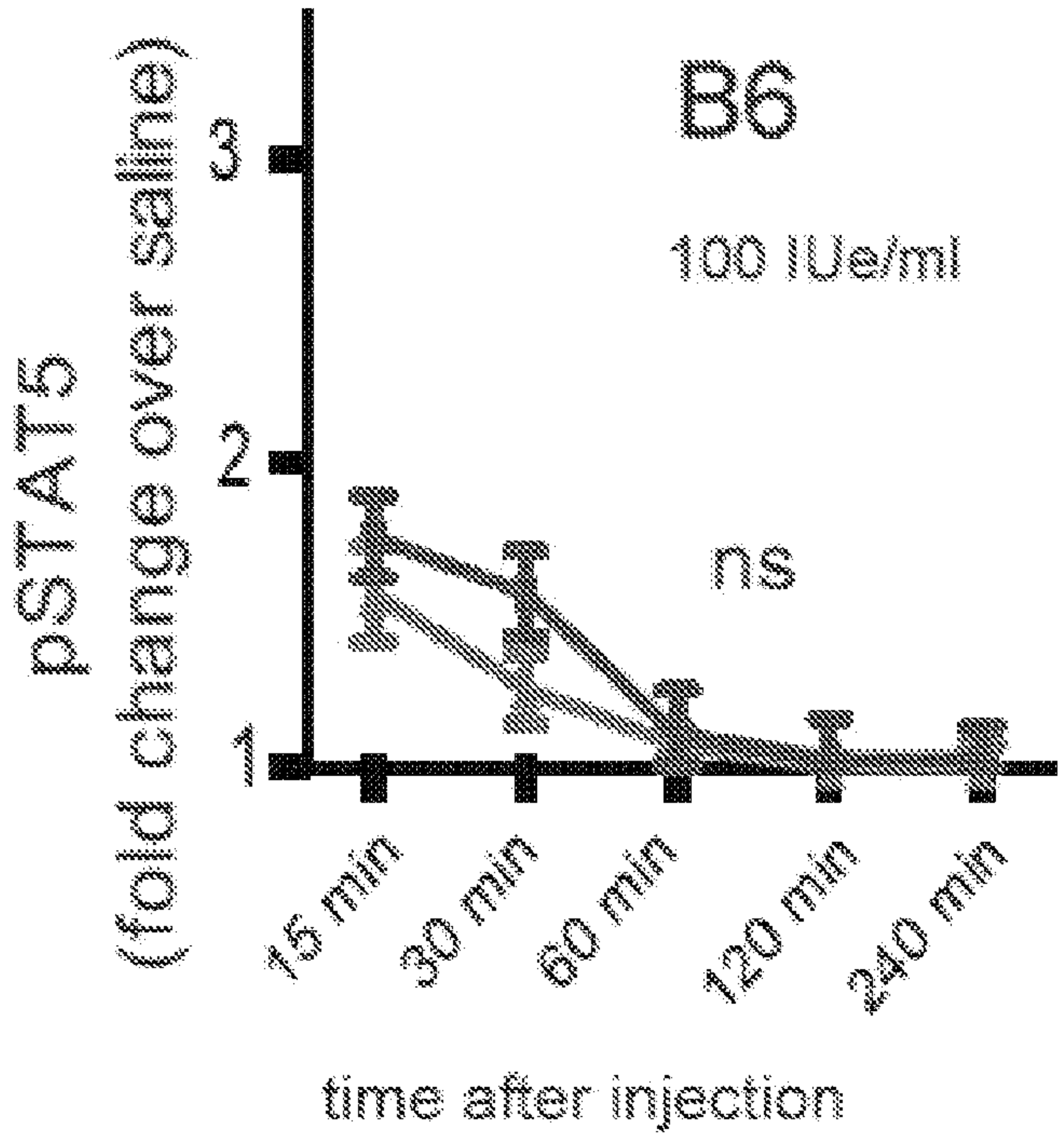

B6
100 IUe/ml
ns
pSTAT5
(fold change over saline)
3
2
1
15 min
30 min
60 min
120 min
240 min
time after injection

FIG. 5G

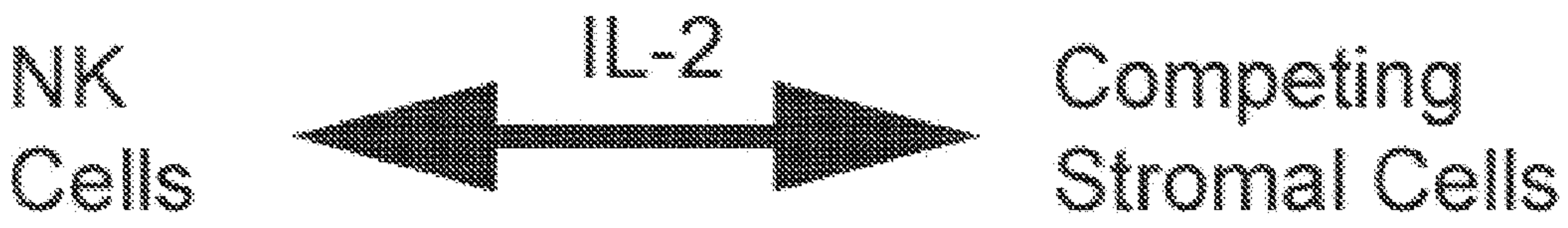

NK
Cells
IL-2
Competing
Stromal Cells

FIG. 5H

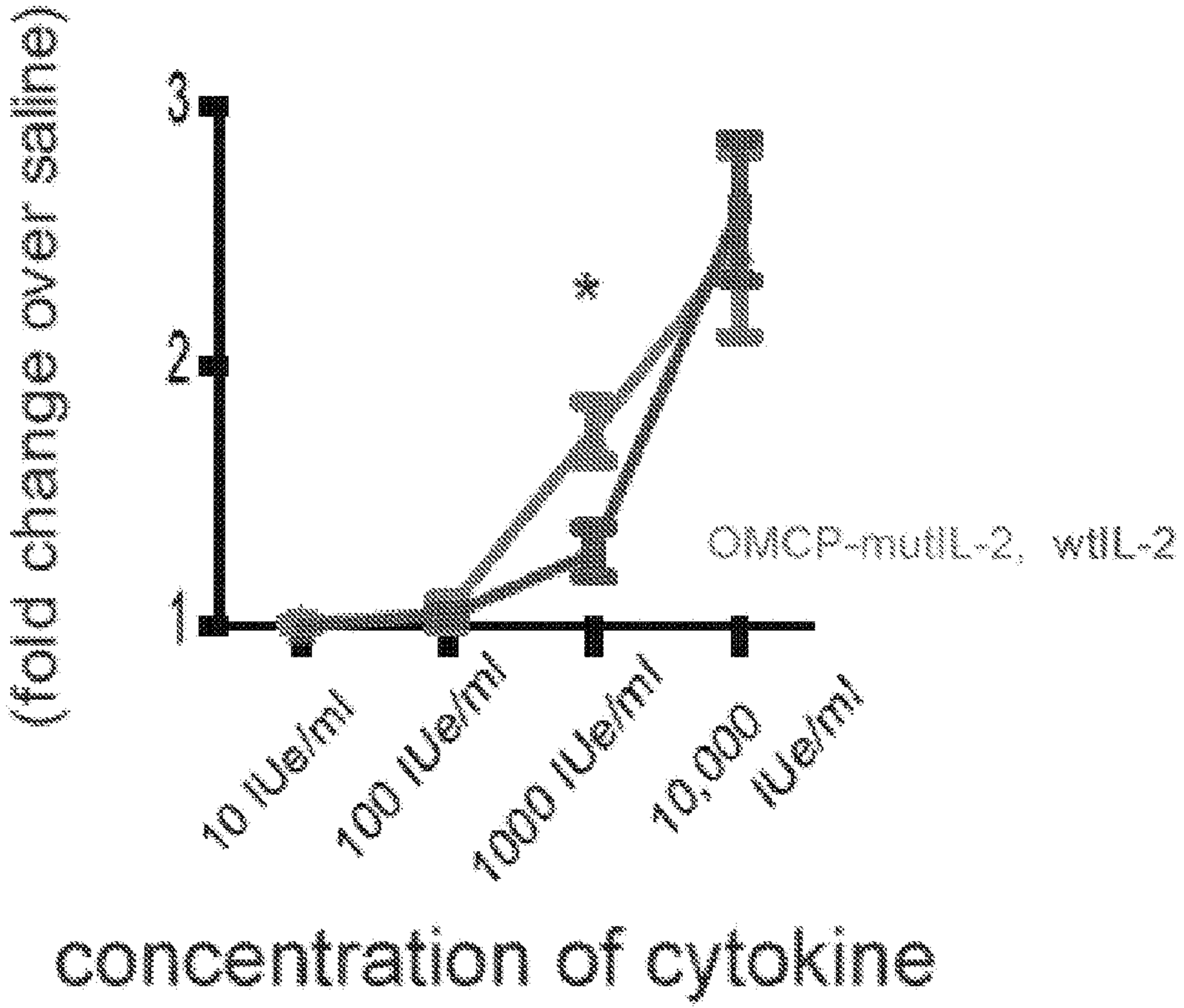

pSTAT5
(fold change over saline)
3
2
1
*
OMCP-mutIL-2, wtIL-2
10 IUe/ml
100 IUe/ml
1000 IUe/ml
10,000 IUe/ml
concentration of cytokine

FIG. 5I

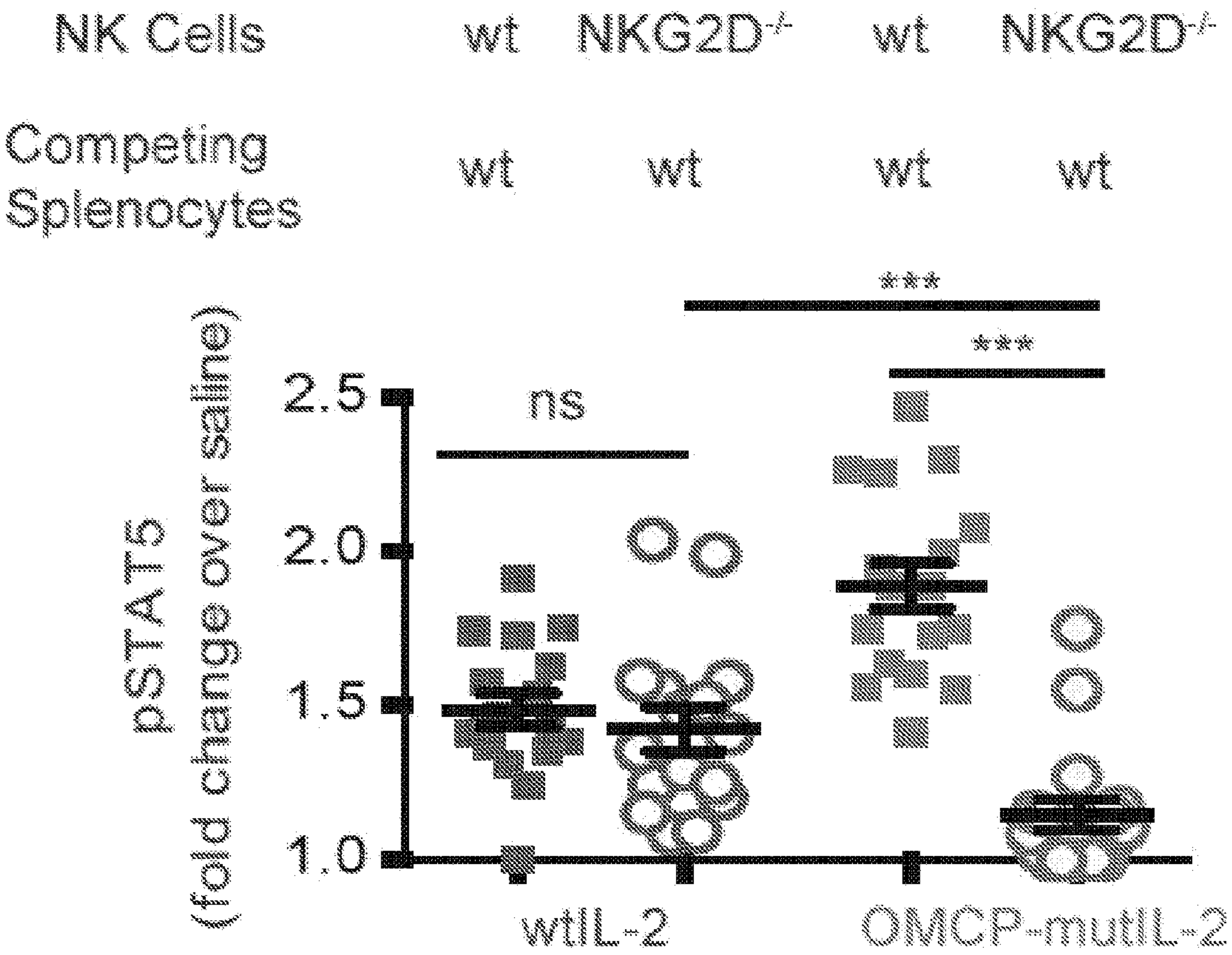

NK Cells
wt
NKG2D-/-
wt
NKG2D-/-
Competing Splenocytes
wt
wt
wt
wt
***
***
ns
pSTAT5 (fold change over saline)
2.5
2.0
1.5
1.0
wtIL-2
OMCP-mutIL-2

FIG. 5J

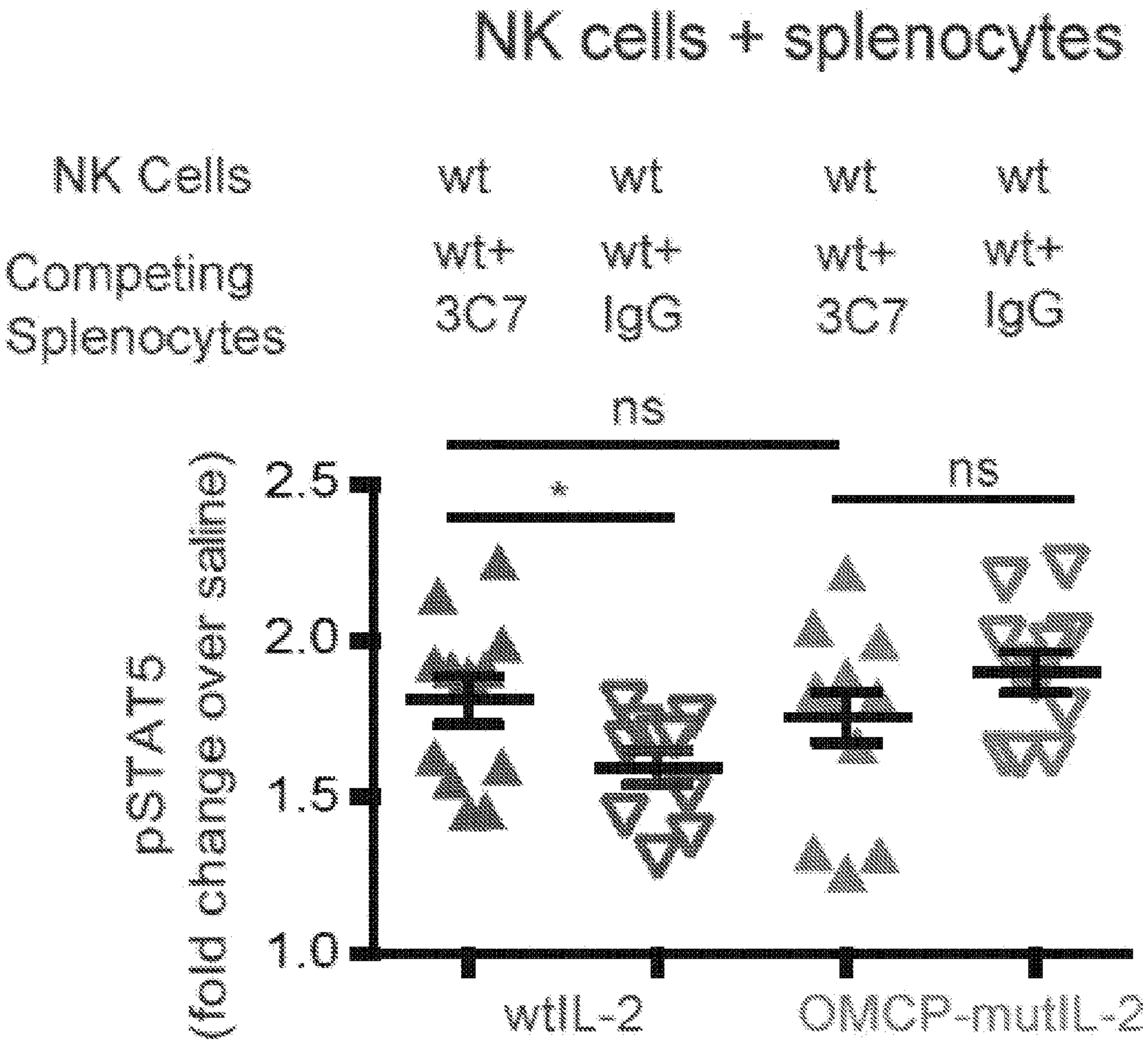

NK cells + splenocytes
NK Cells
wt
wt
wt
wt
Competing Splenocytes
wt+ 3C7
wt+ IgG
wt+ 3C7
wt+ IgG
ns
*
ns
pSTAT5 (fold change over saline)
2.5
2.0
1.5
1.0
wtIL-2
OMCP-mutIL-2

FIG. 5K

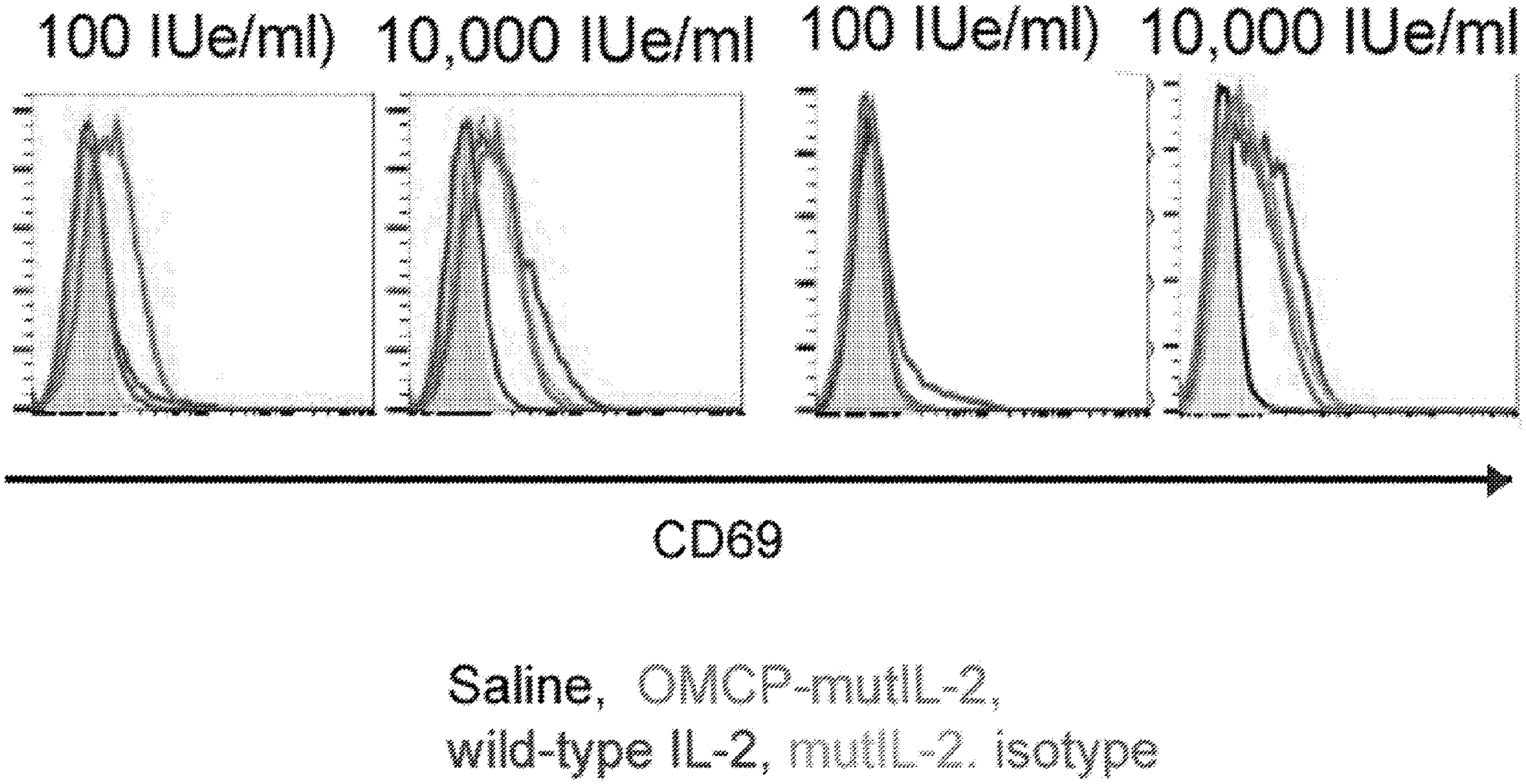

100 IUe/ml)
10,000 IUe/ml
100 IUe/ml)
10,000 IUe/ml
CD69
Saline, OMCP-mutIL-2,
wild-type IL-2, mutIL-2. isotype

FIG. 6


Saline

FIG. 7A


200,000IUe

FIG. 7B


750,000IUe

FIG. 7C

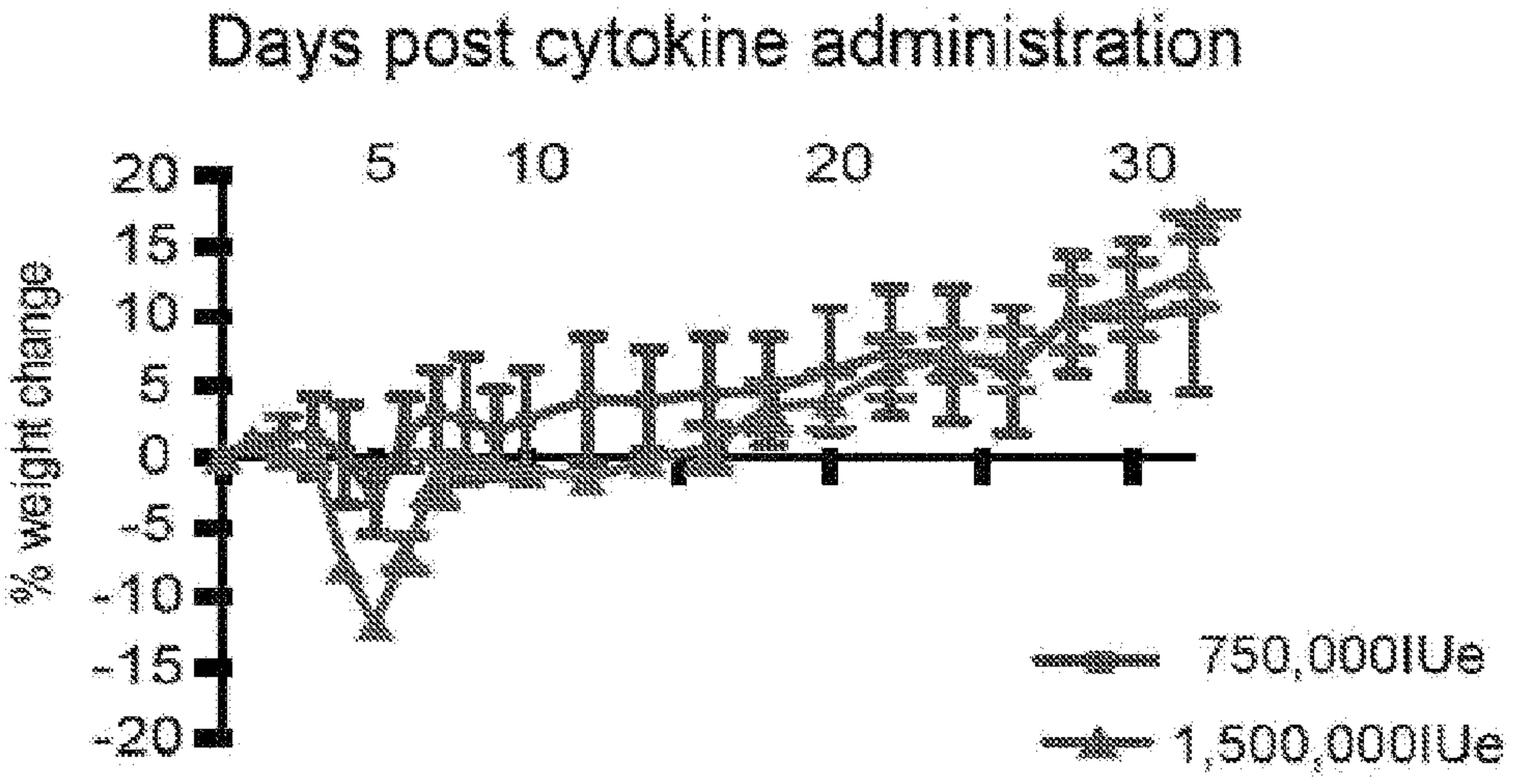


FIG. 7D

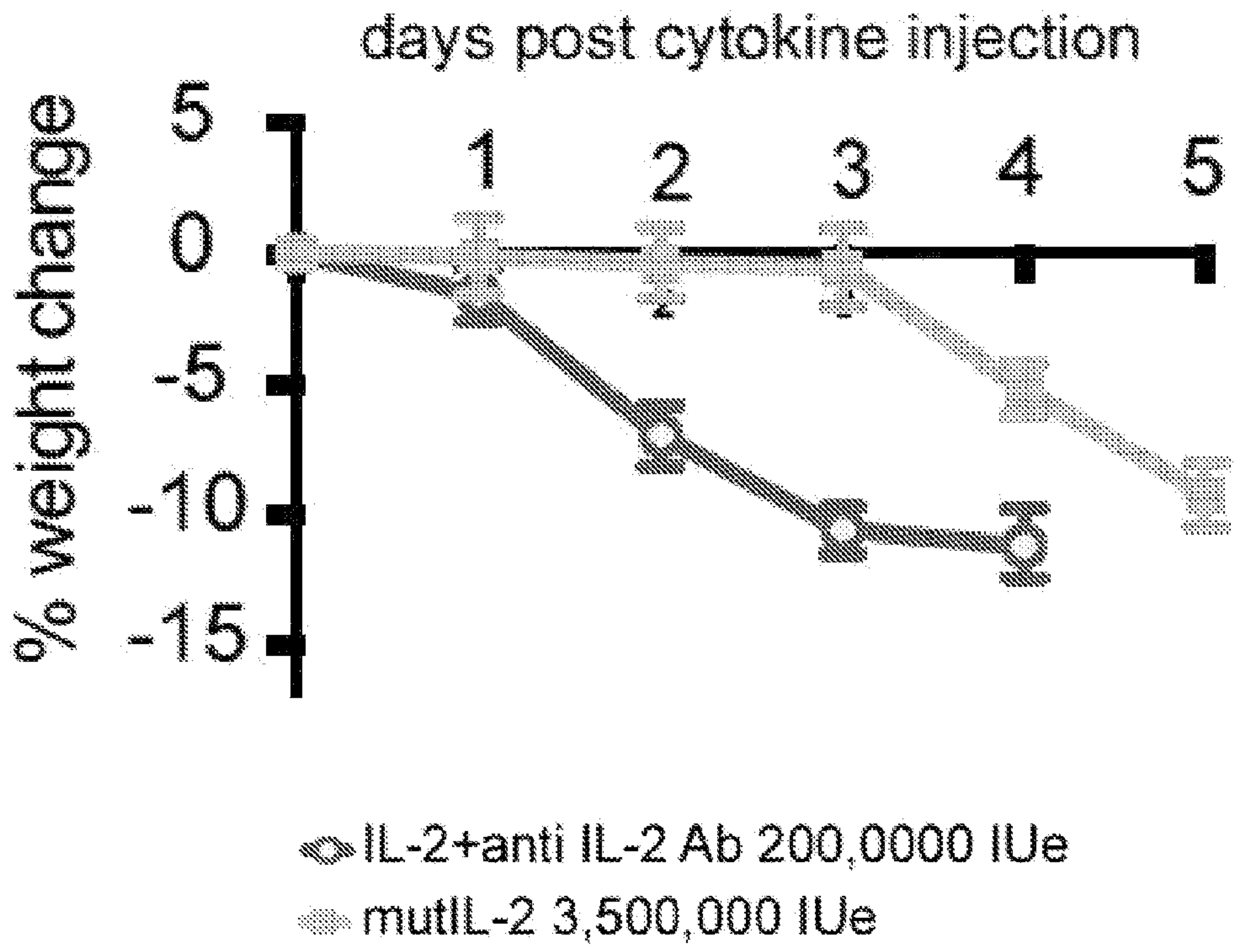

days post cytokine injection
% weight change
5
0
-5
-10
-15
1
2
3
4
5
IL-2+anti IL-2 Ab 200,0000 IUe
mutIL-2 3,500,000 IUe

FIG. 8A

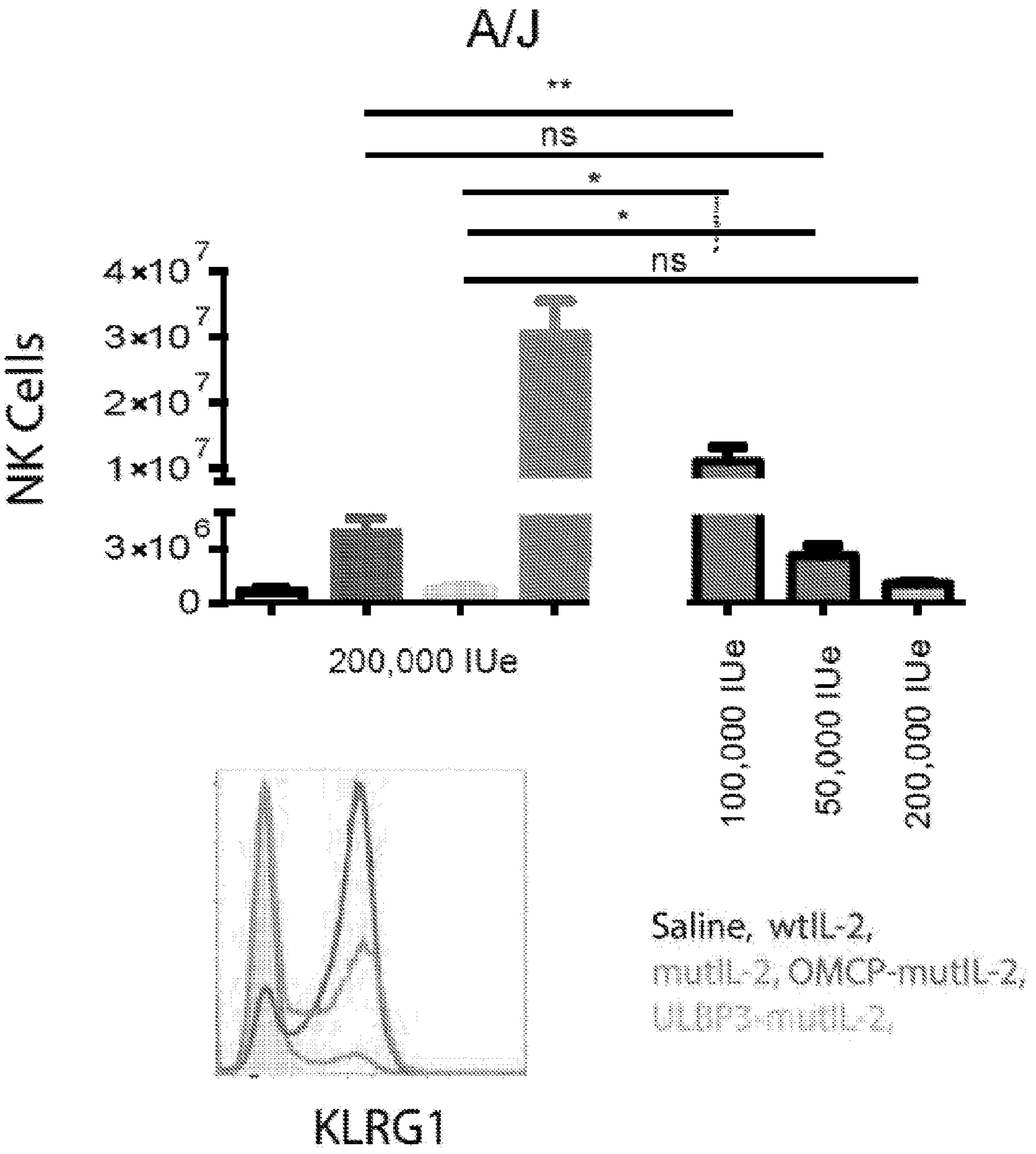

A/J
**
ns
*
*
ns
NK Cells
4×10^7
3×10^7
2×10^7
1×10^7
3×10^6
0
200,000 IUe
100,000 IUe
50,000 IUe
200,000 IUe
KLRG1
Saline, wtIL-2,
mutIL-2, OMCP-mutIL-2,
ULBP3-mutIL-2,

FIG. 8B

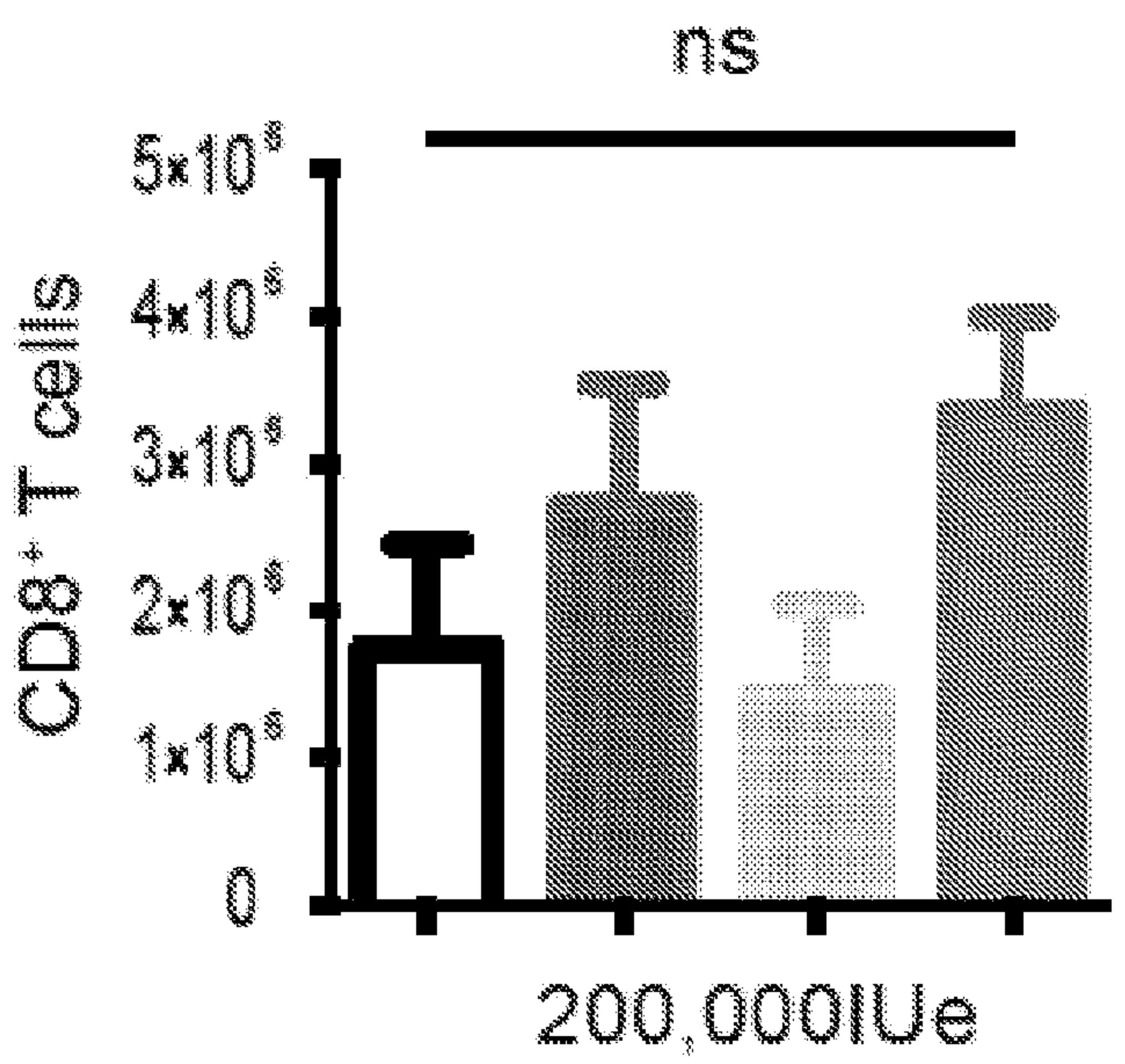


FIG. 8C

Saline, wtIL-2, mutIL-2, OMCP-mutIL-2,

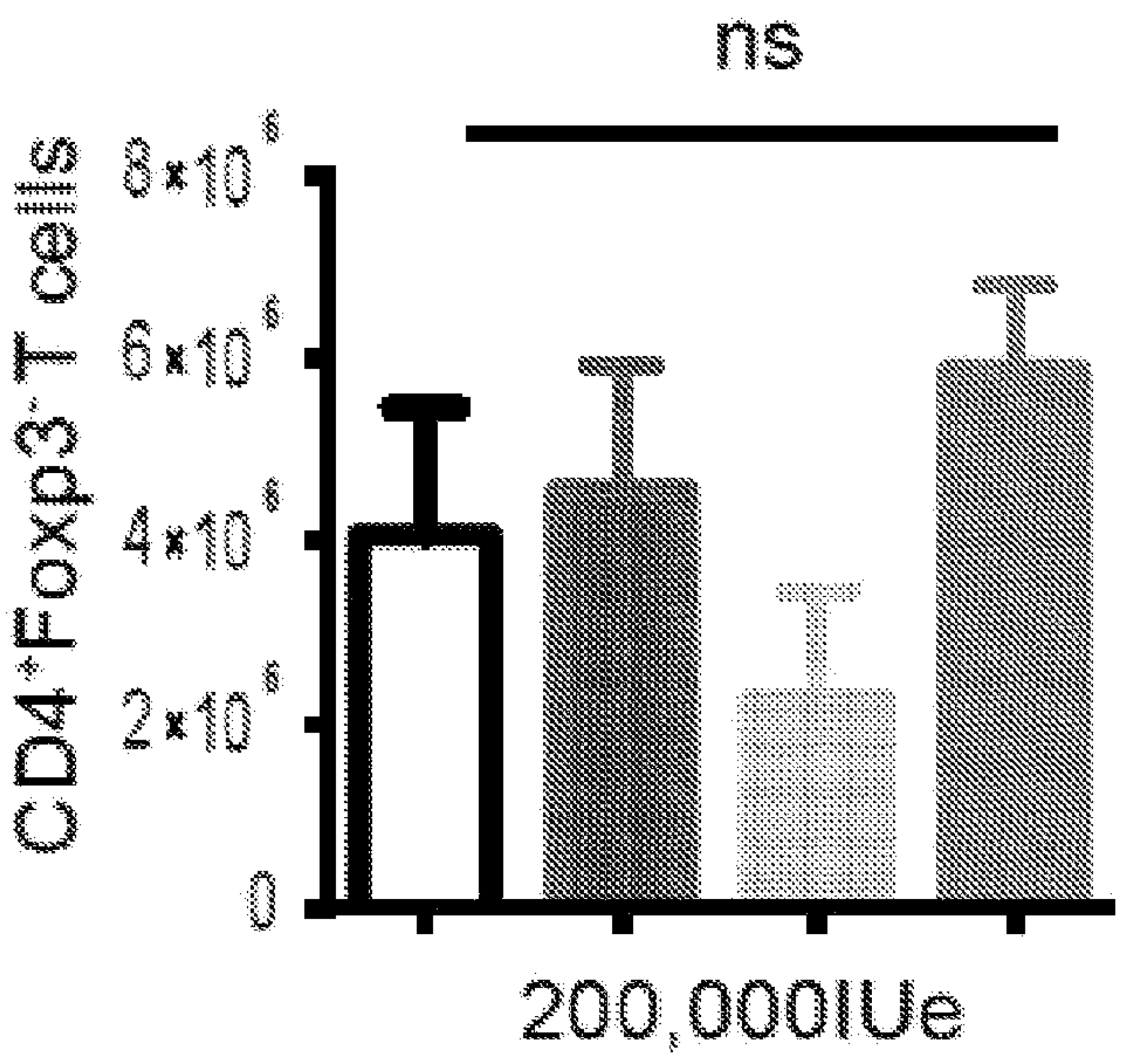


FIG. 8D

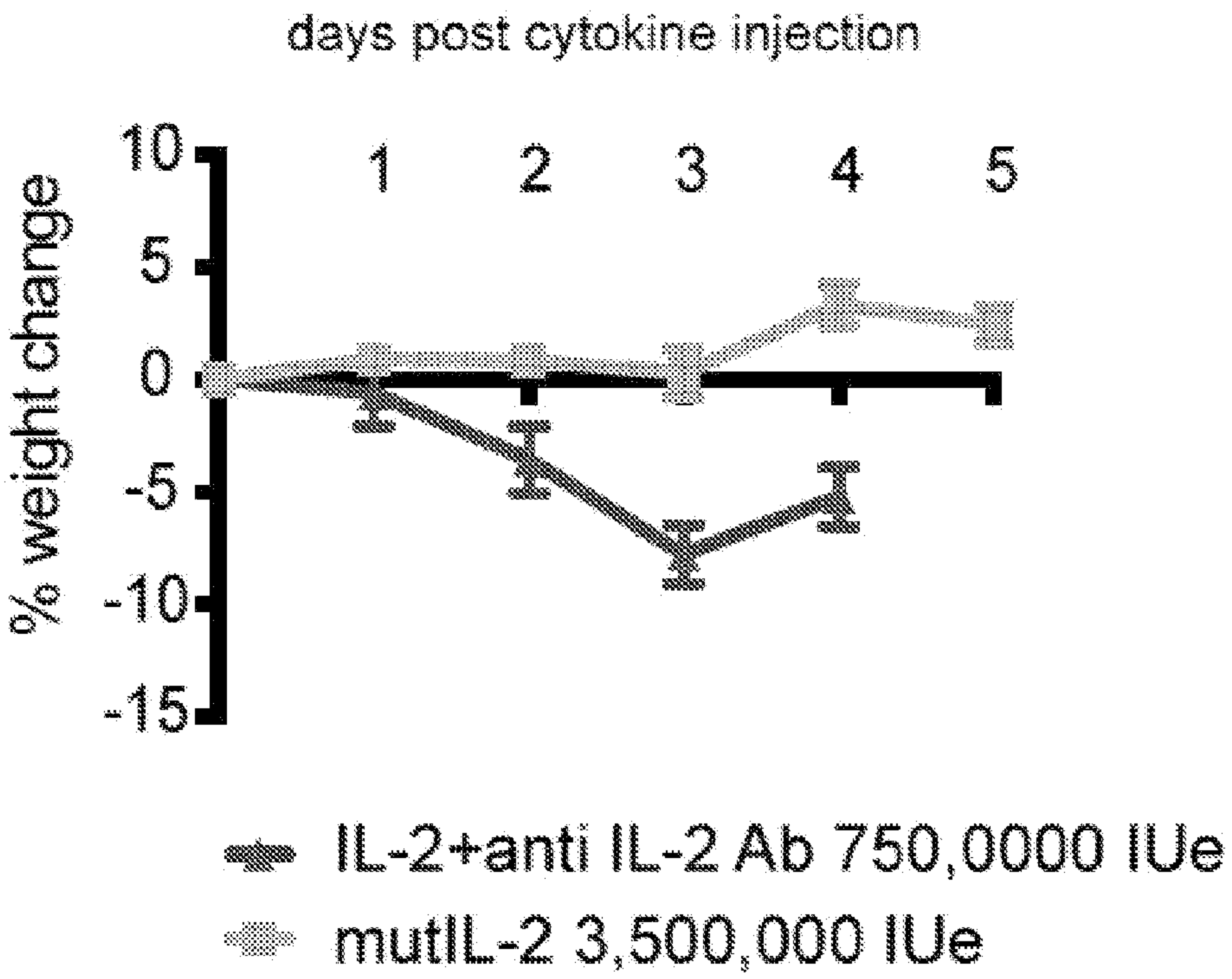

days post cytokine injection
% weight change
10
5
0
-5
-10
-15
1
2
3
4
5
IL-2+anti IL-2 Ab 750,0000 IUe
mutIL-2 3,500,000 IUe

FIG. 8E

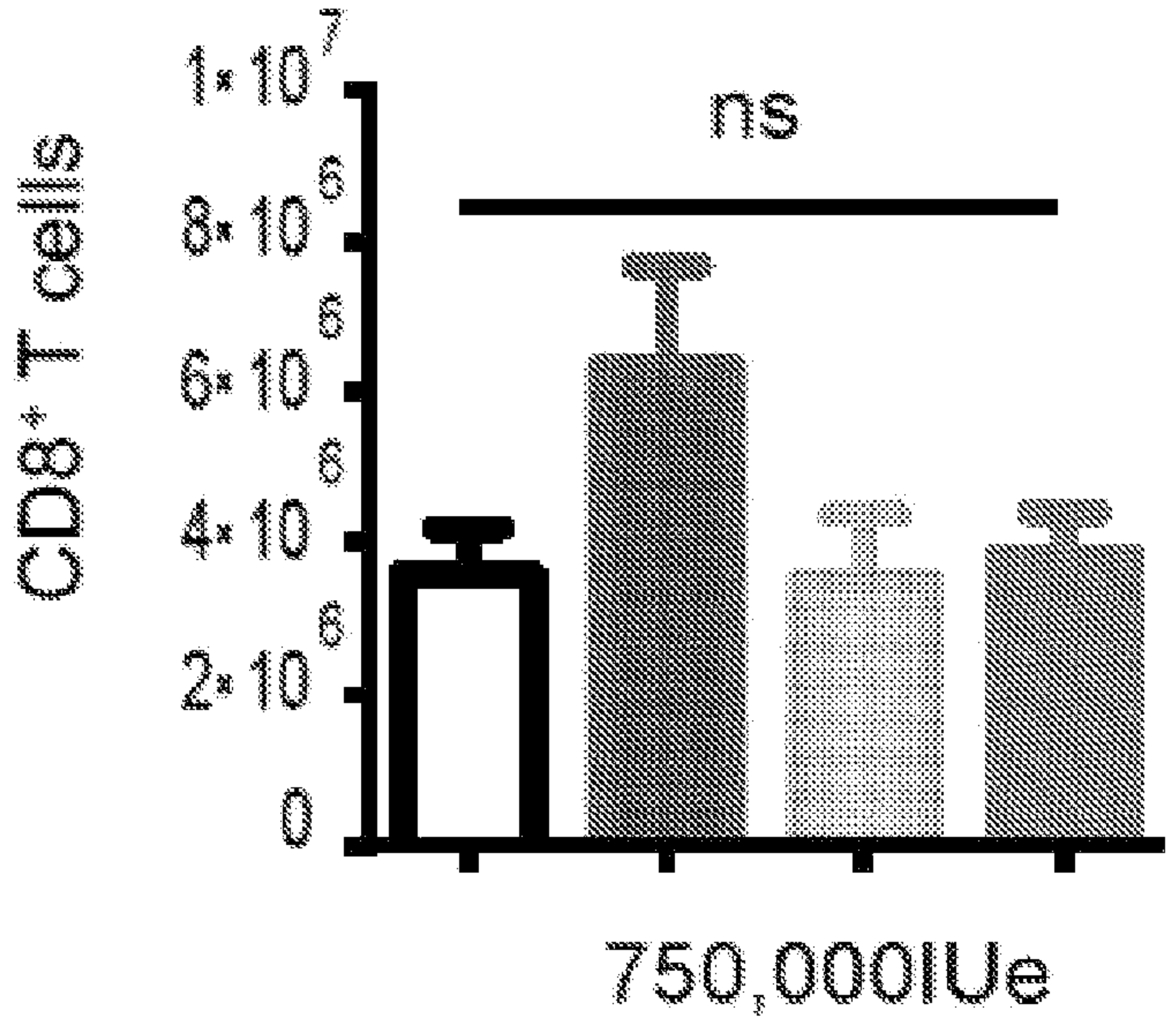


FIG. 8F

Saline, wtIL-2, mutIL-2, OMCP-mutIL-2,

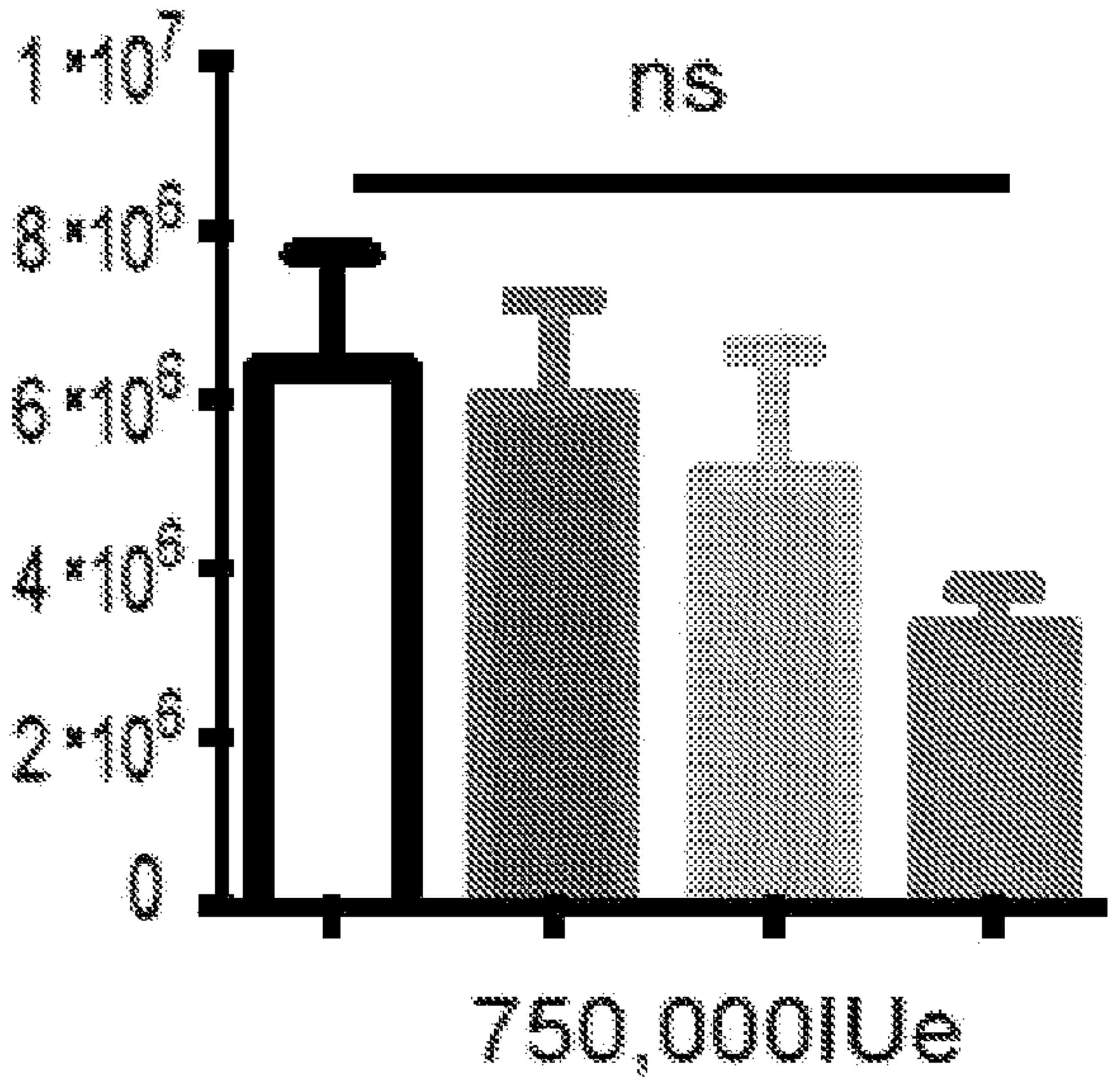


FIG. 8G

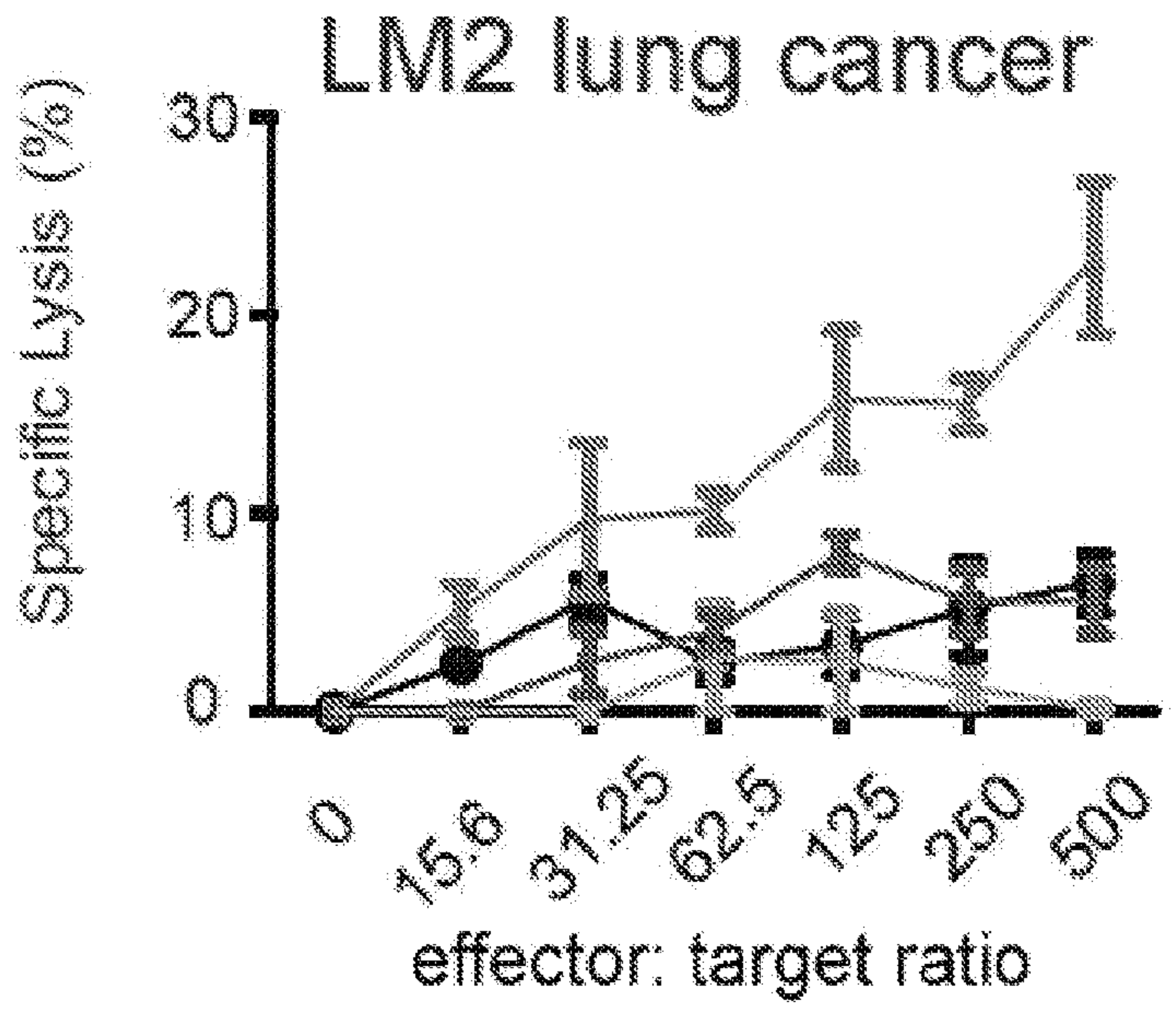


FIG. 9A

saline, wtIL-2, mutIL-2, OMCP-mutIL-2

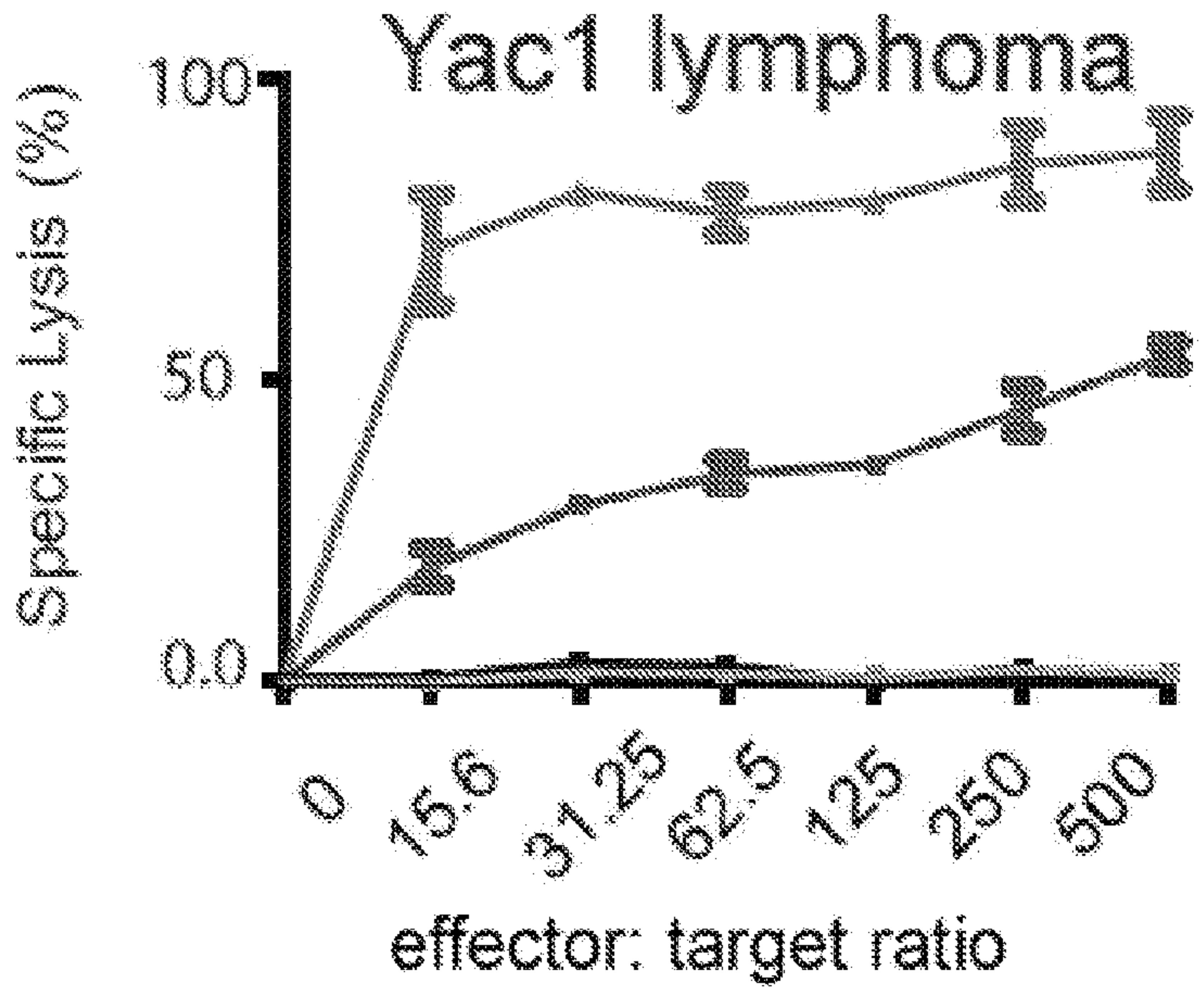
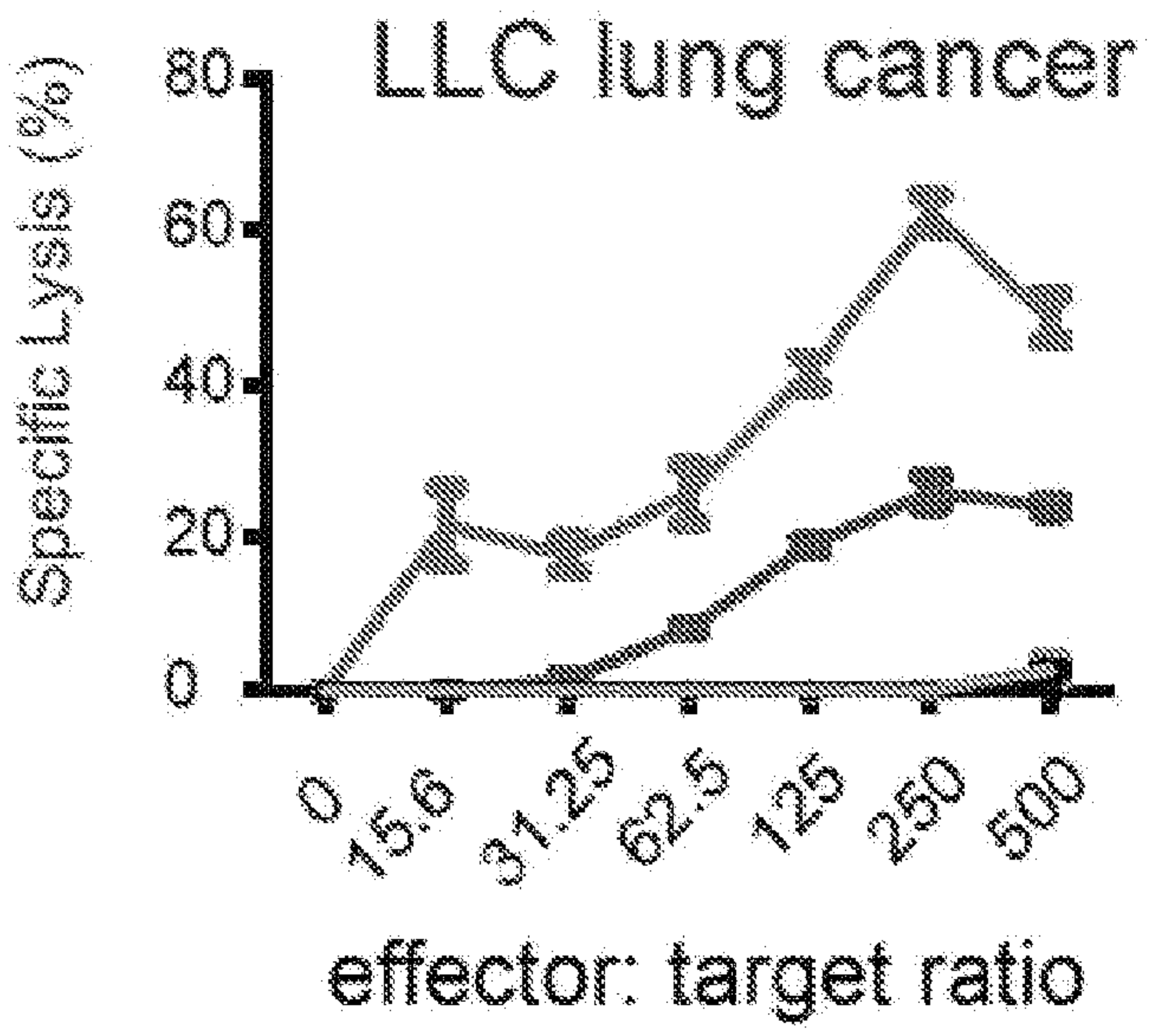


FIG. 9B



saline, wtIL-2, mutIL-2, OMCP-mutIL-2

FIG. 9C

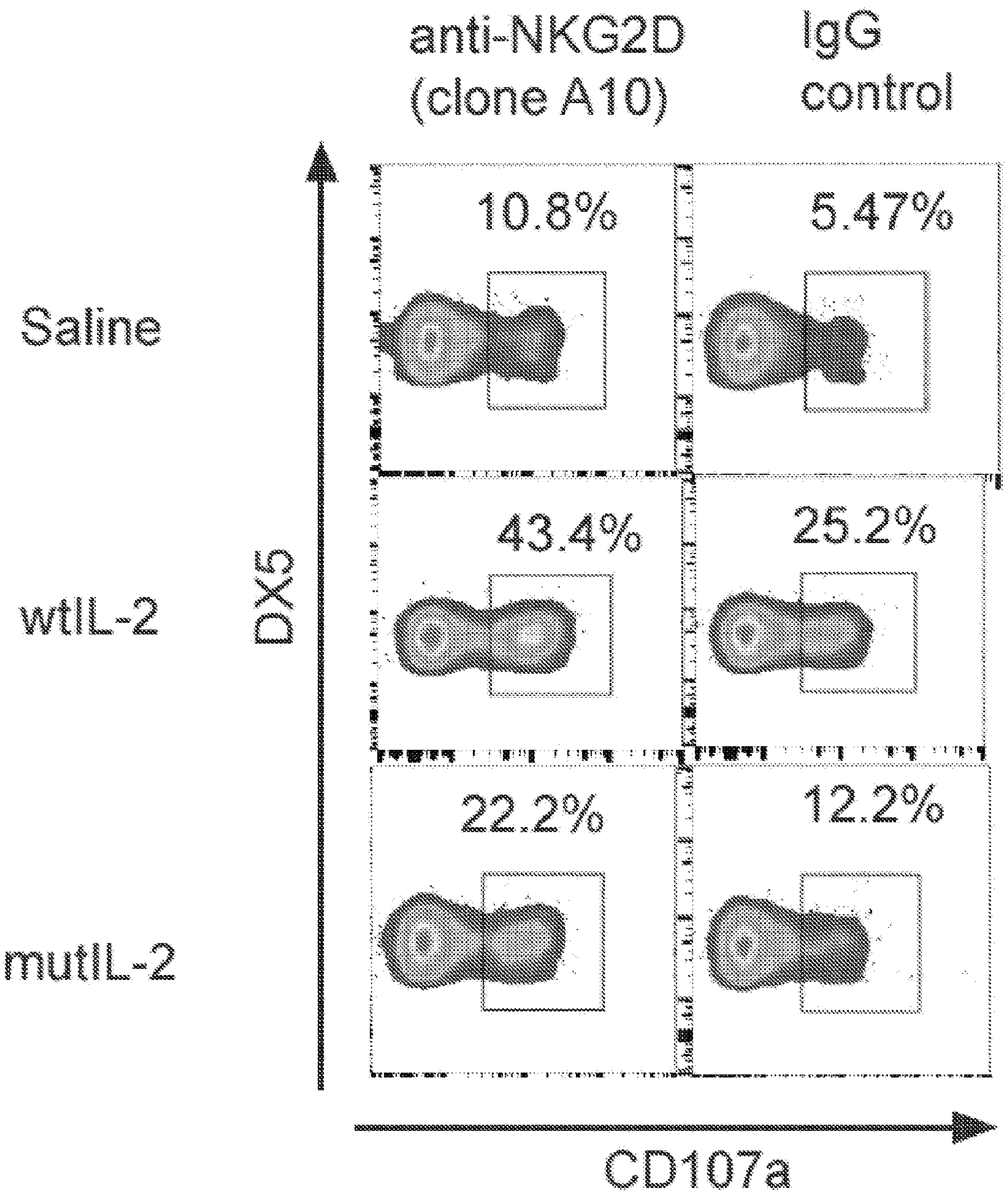

anti-NKG2D (clone A10)
IgG control
Saline
wtIL-2
mutIL-2
DX5
CD107a
10.8%
5.47%
43.4%
25.2%
22.2%
12.2%

FIG. 10A

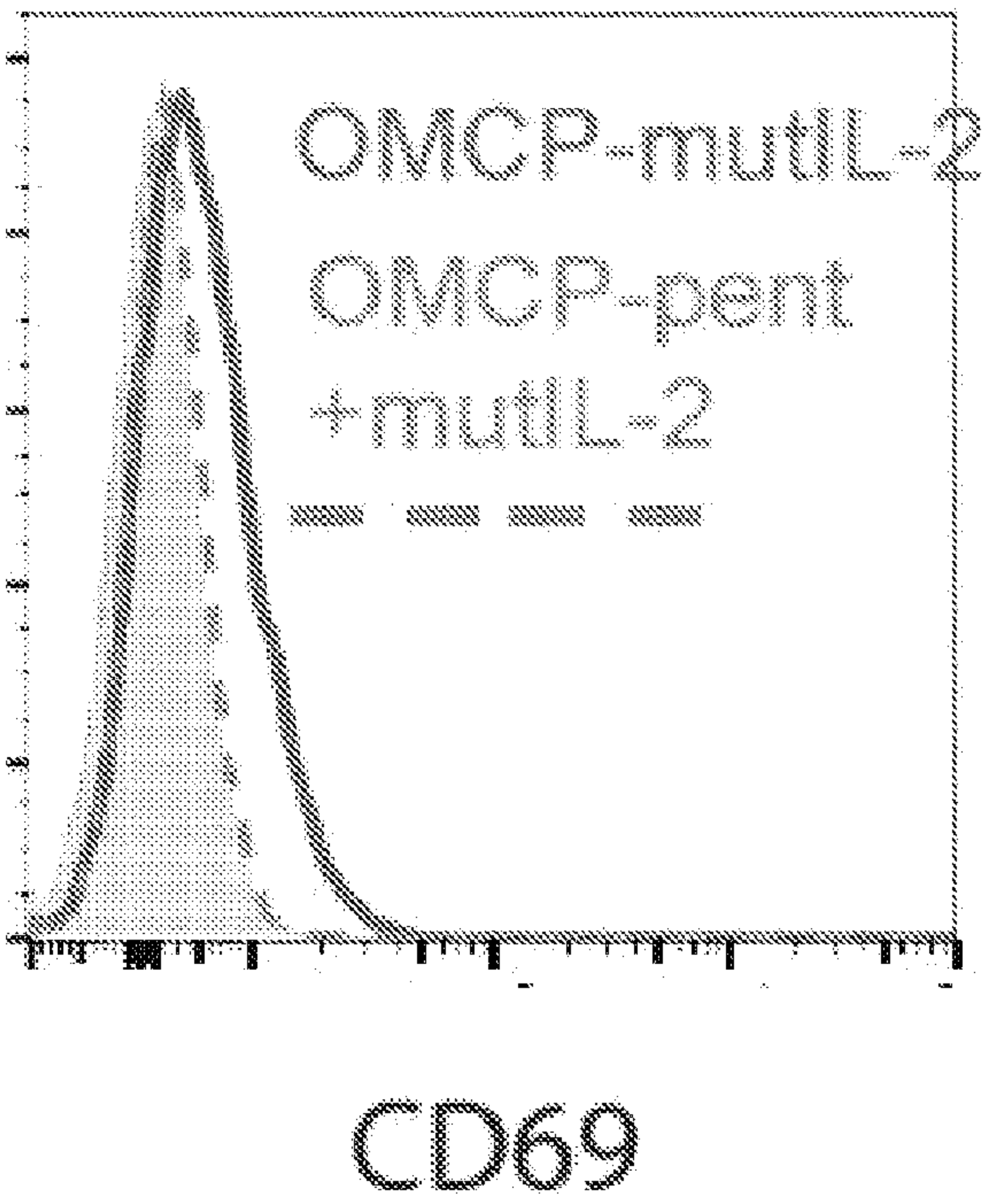


FIG. 10B

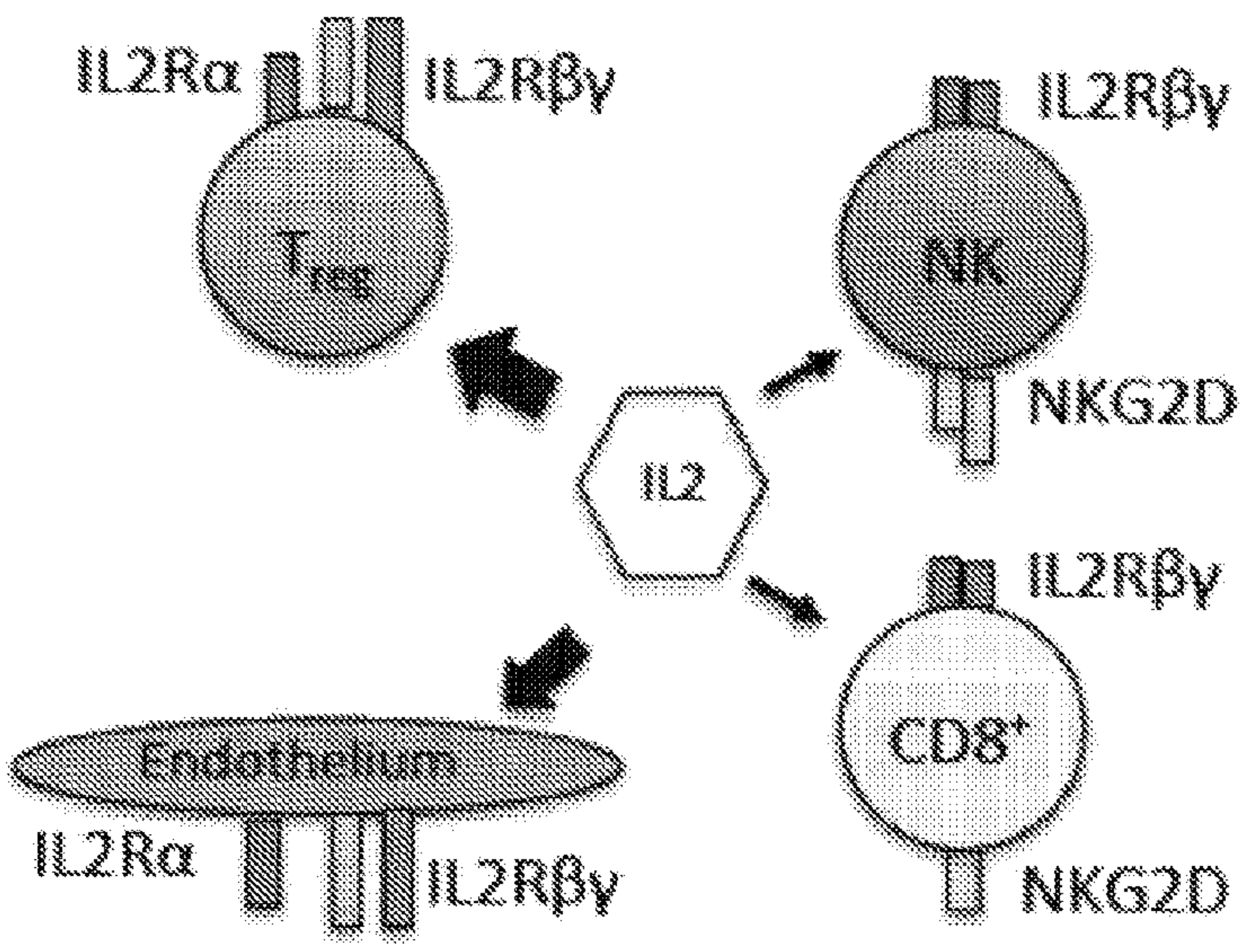


FIG. 11A

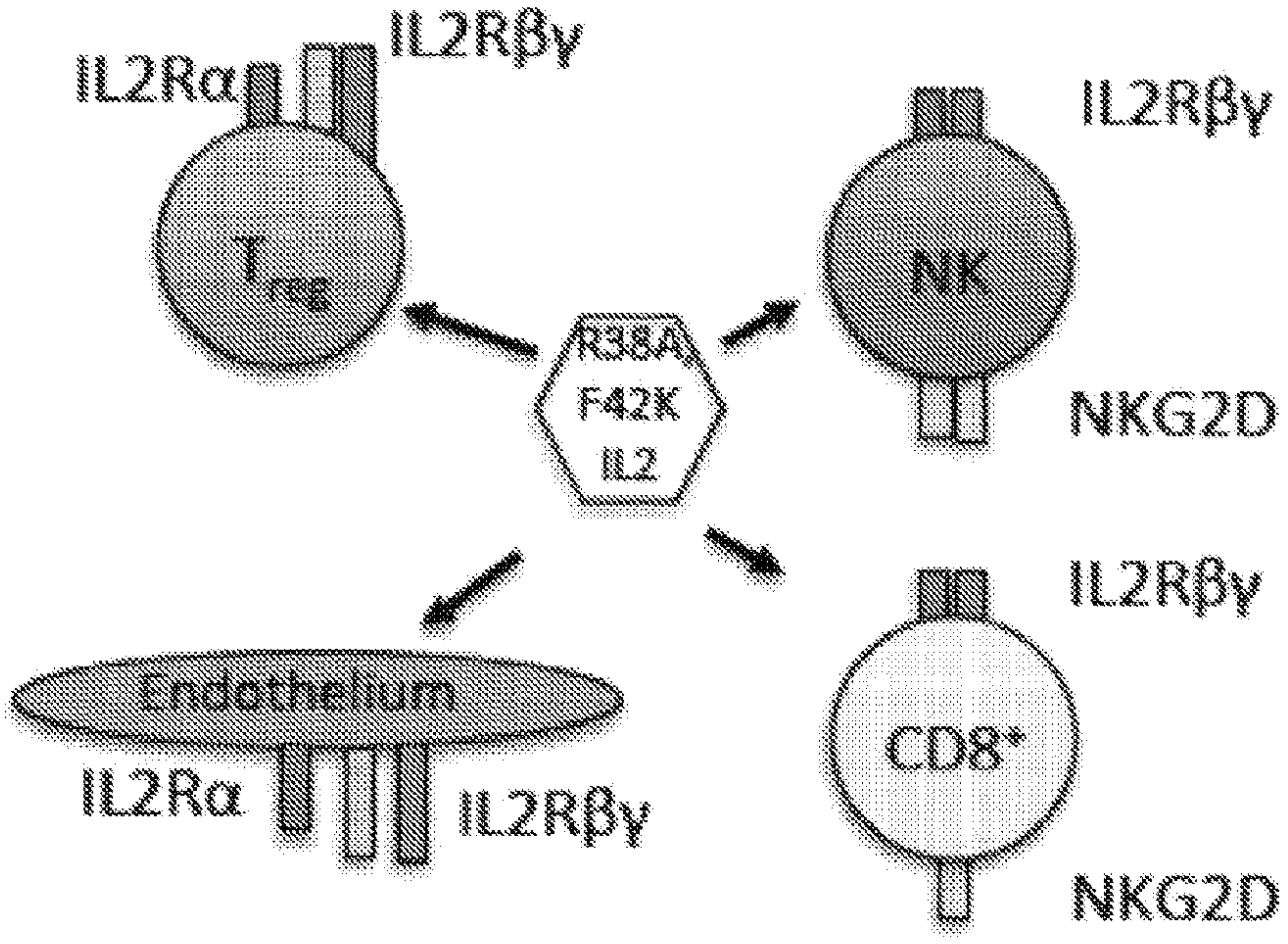


FIG. 11B

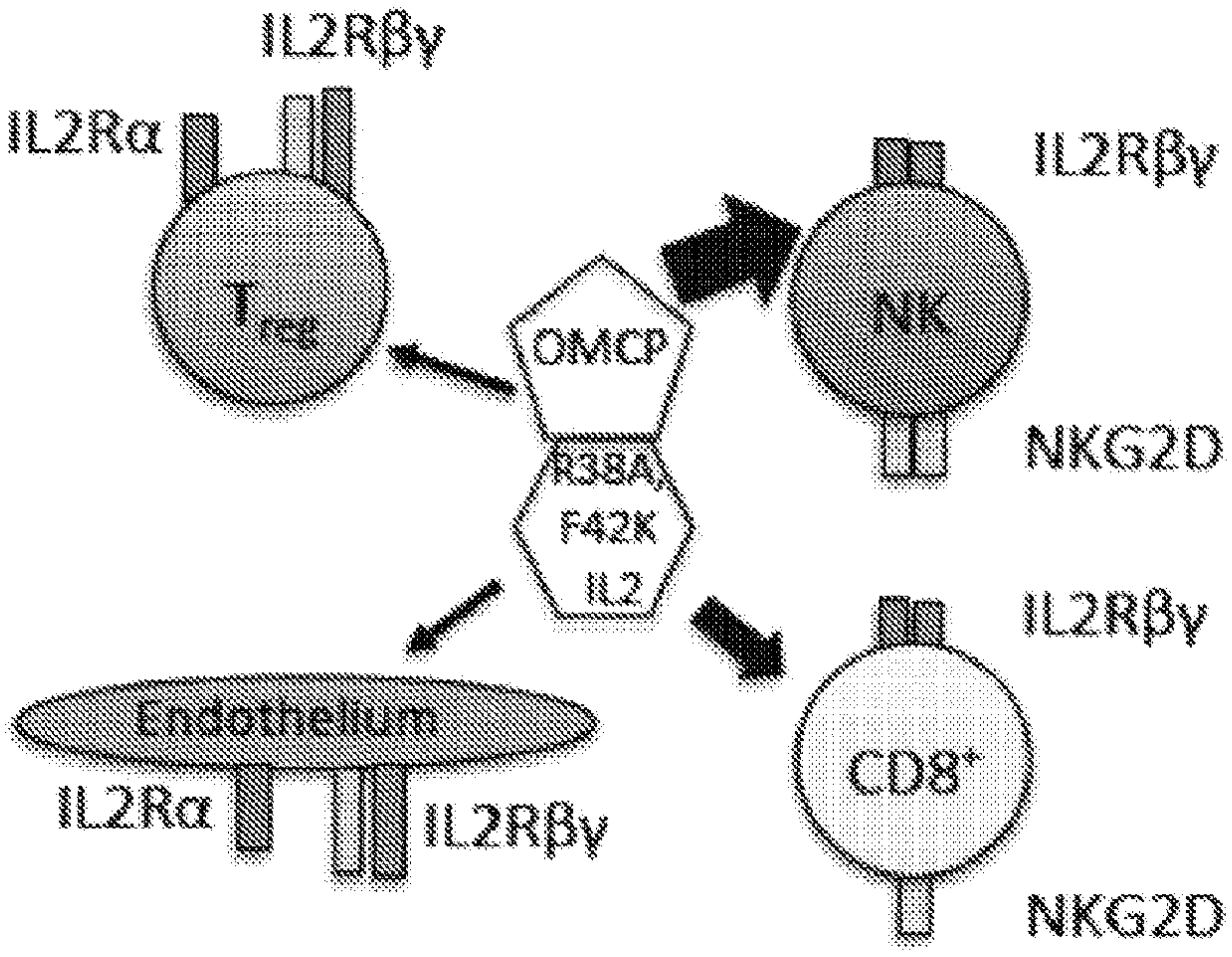

IL2Rβγ
IL2Rα
T reg
OMCP
IL2Rβγ
NK
NKG2D
R38A, F42K IL2
IL2Rβγ
Endothelium
IL2Rα
IL2Rβγ
CD8+
NKG2D

FIG. 11C

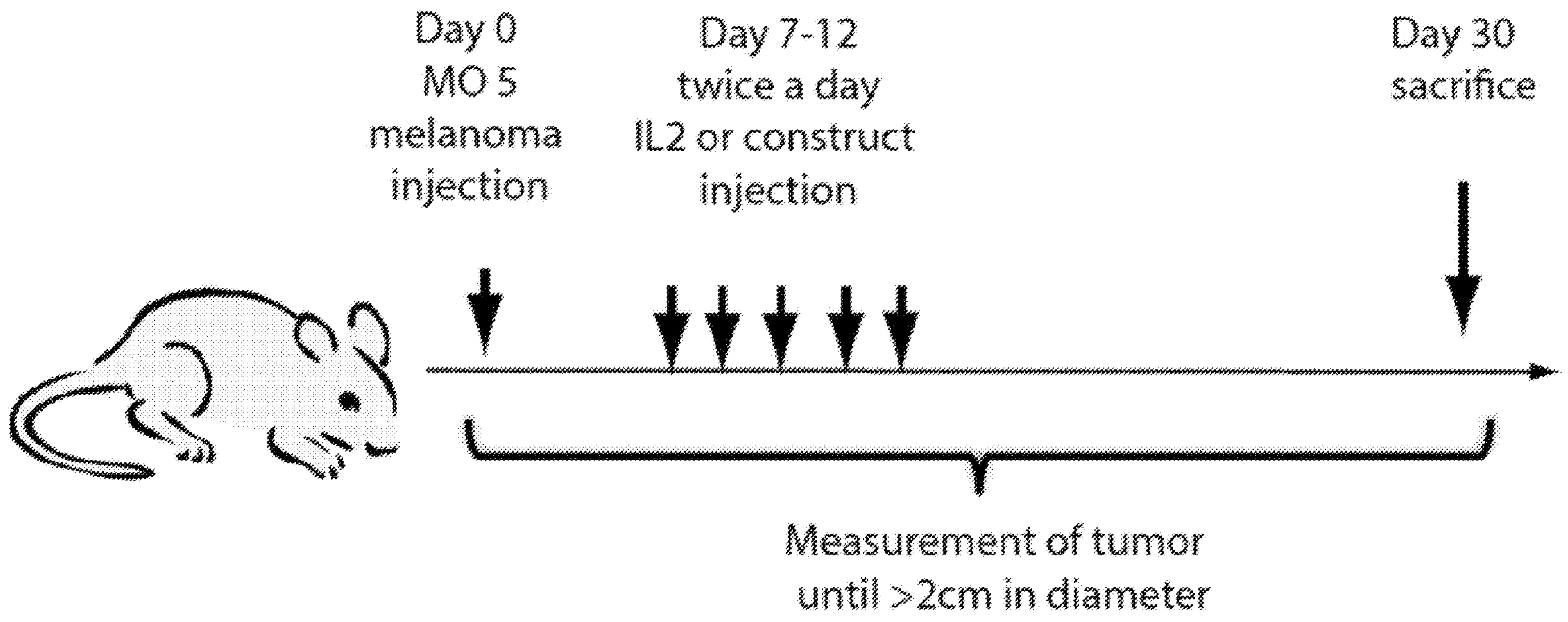

Day 0
MO 5
melanoma
injection
Day 7-12
twice a day
IL2 or construct
injection
Day 30
sacrifice
Measurement of tumor
until >2cm in diameter

FIG. 12

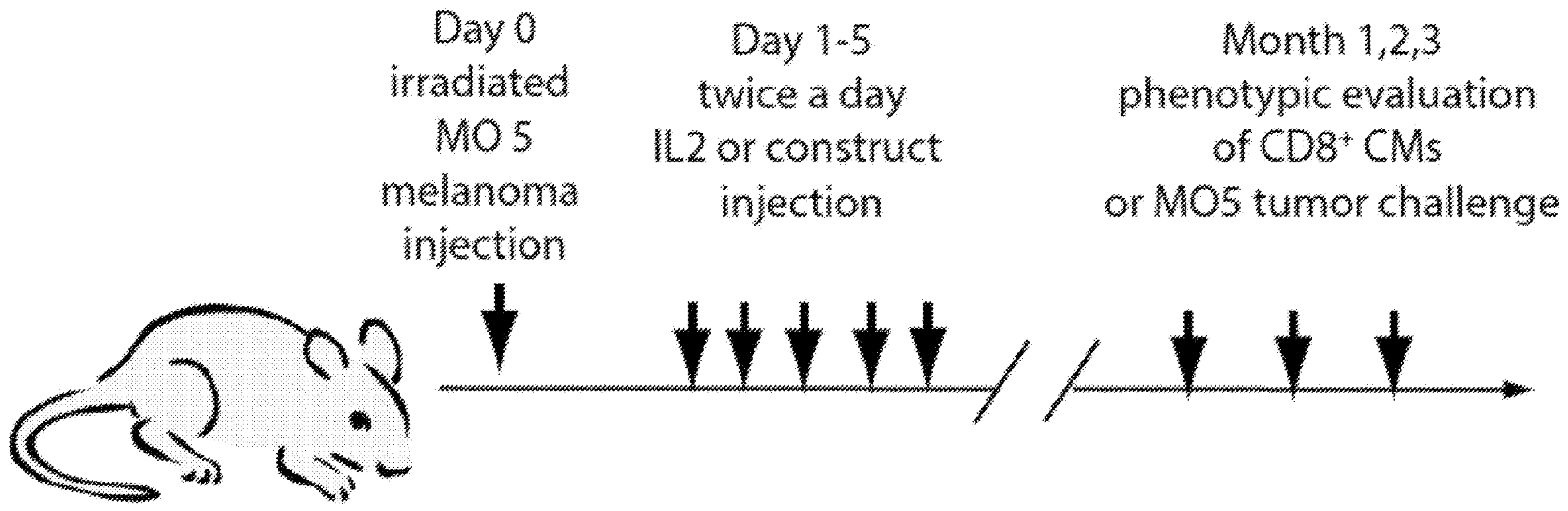

Day 0
irradiated
MO 5
melanoma
injection
Day 1-5
twice a day
IL2 or construct
injection
Month 1,2,3
phenotypic evaluation
of CD8⁺ CMs
or MO5 tumor challenge

FIG. 13

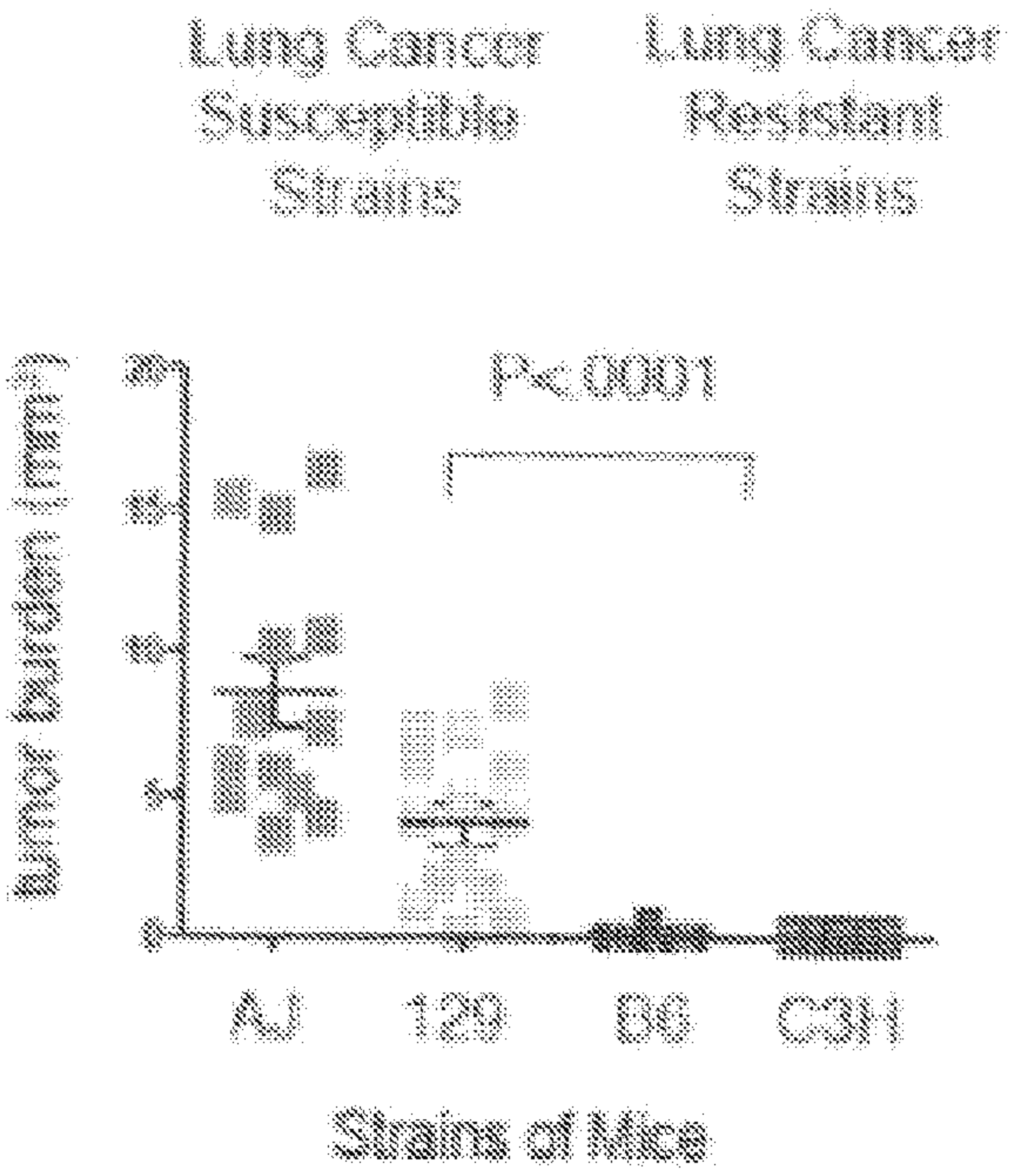


FIG. 14A

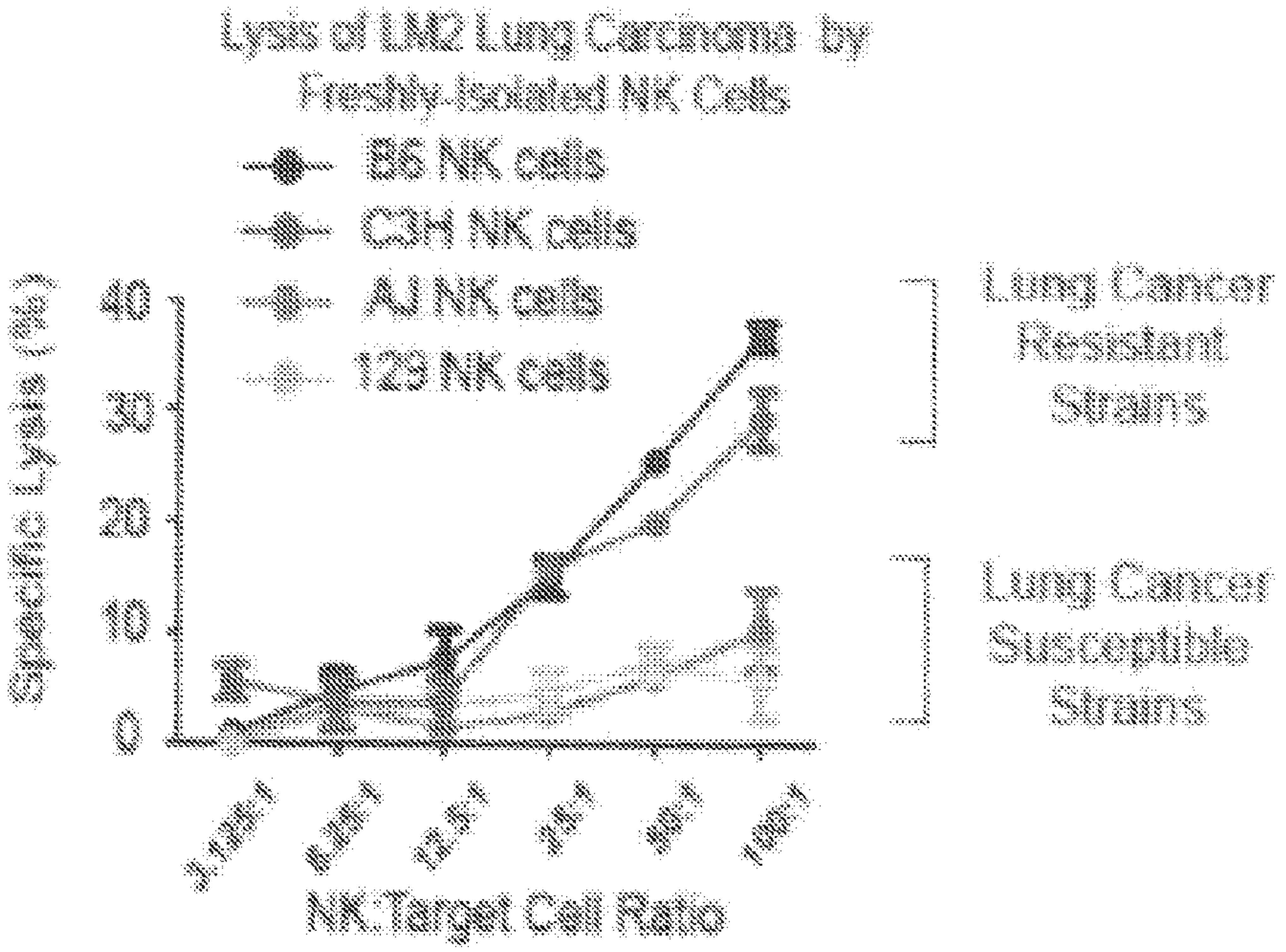


FIG. 14B

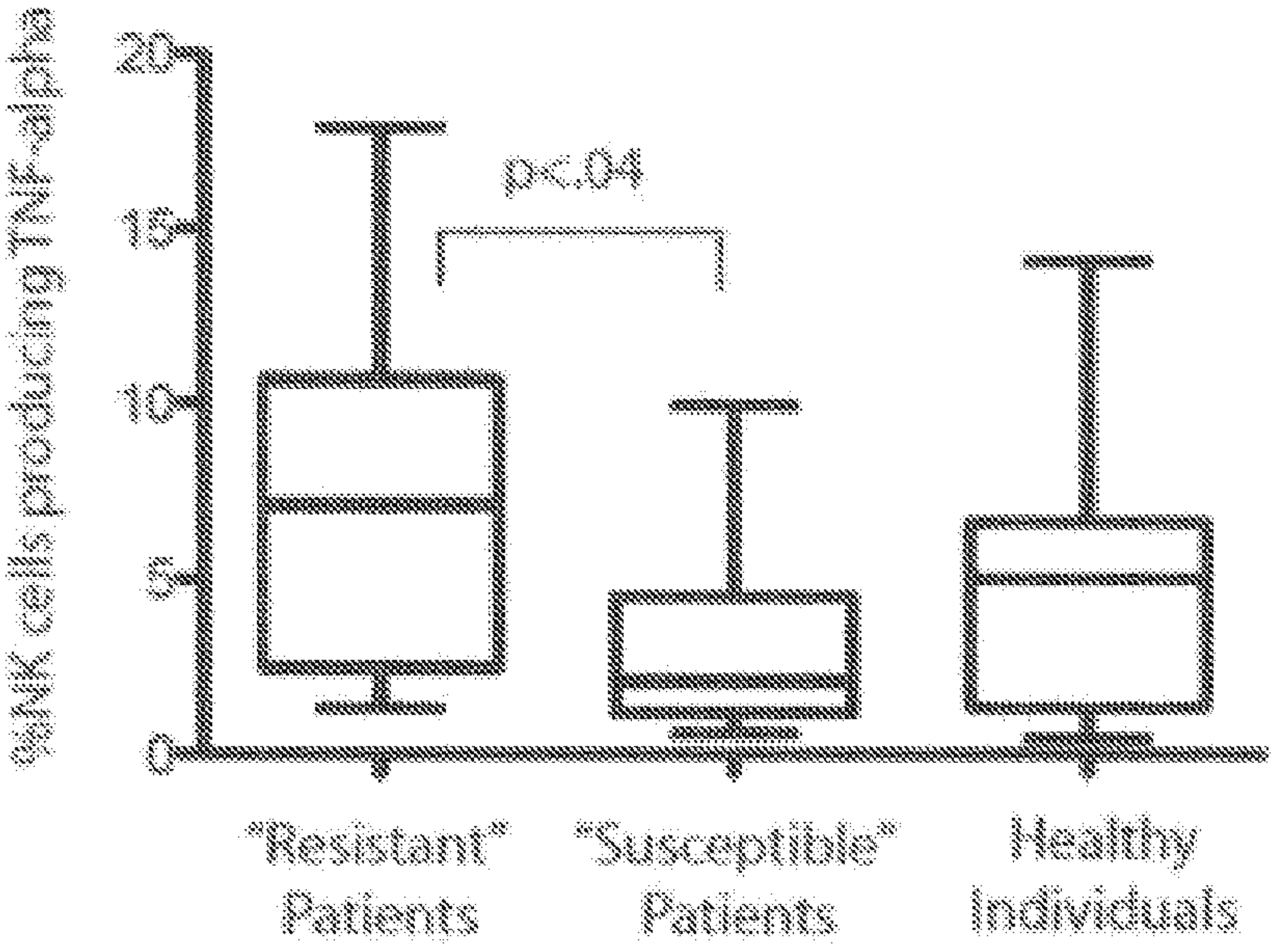

%NK cells producing TNF-alpha
20
15
10
5
0
p<.04
"Resistant" Patients
"Susceptible" Patients
Healthy Individuals

FIG. 15

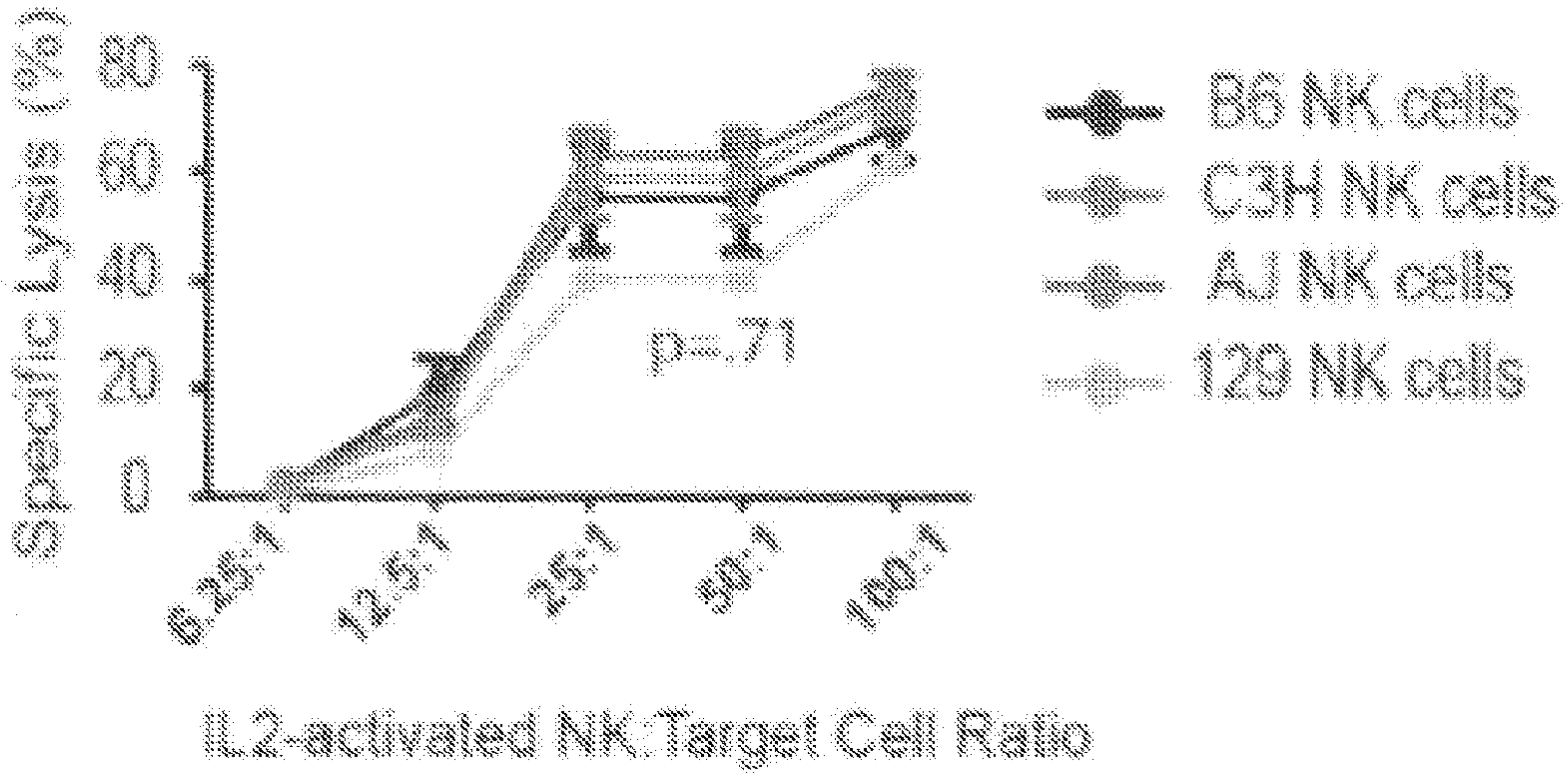

Specific Lysis (%)
80
60
40
20
0
p=.71
6.25:1
12.5:1
25:1
50:1
100:1
IL2-activated NK:Target Cell Ratio
B6 NK cells
C3H NK cells
AJ NK cells
129 NK cells

FIG. 16

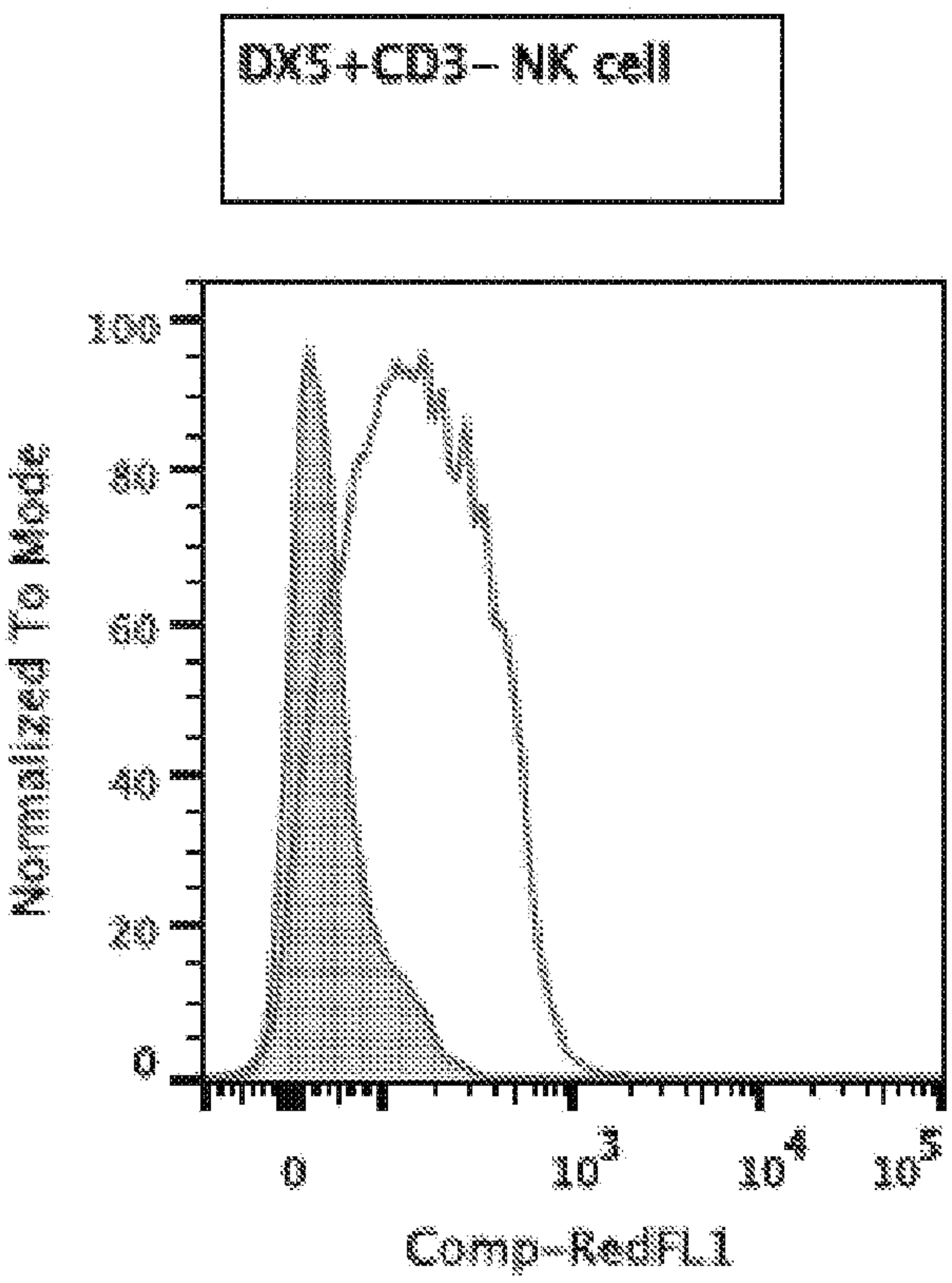
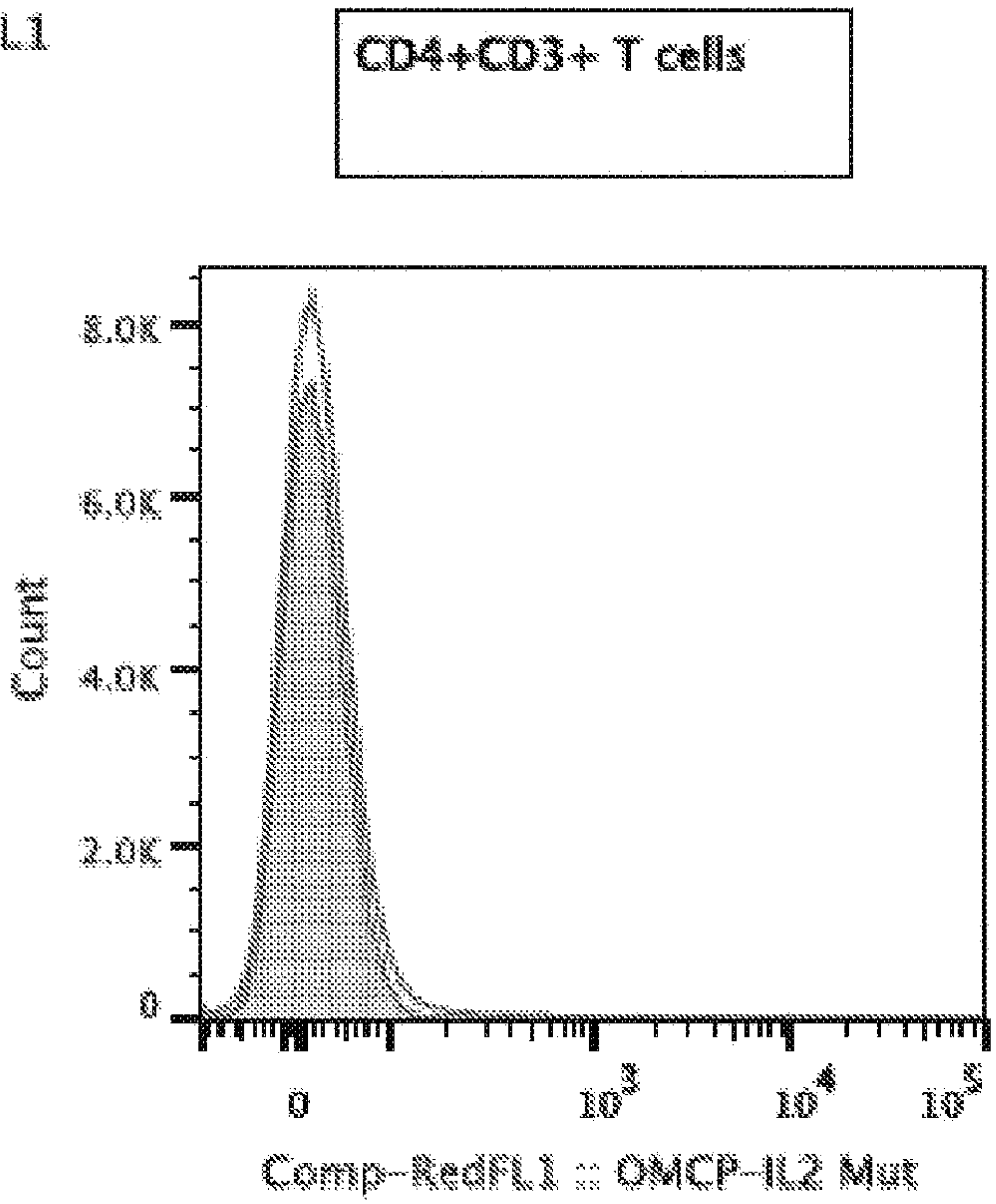


FIG. 17A

FIG. 17B



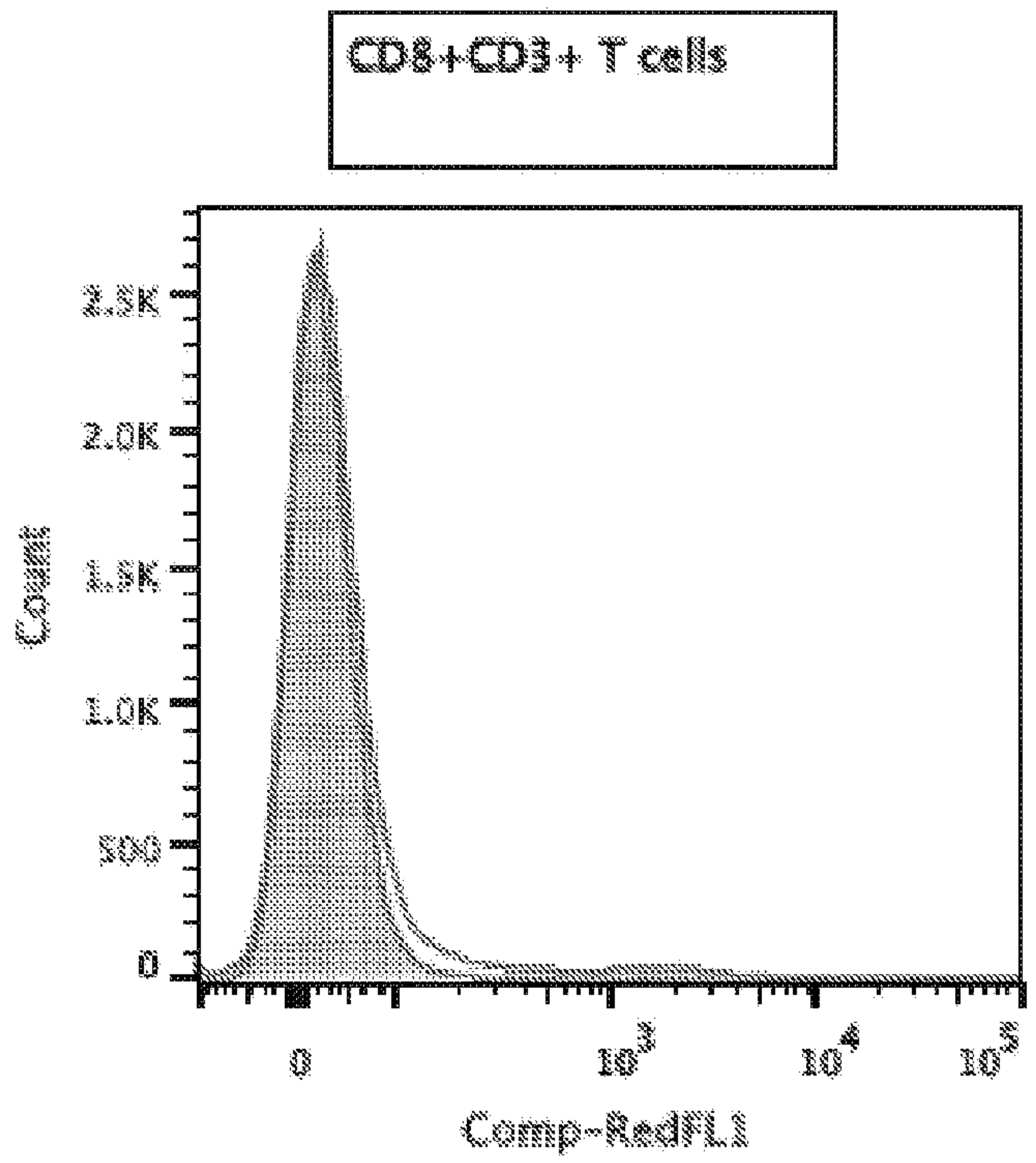
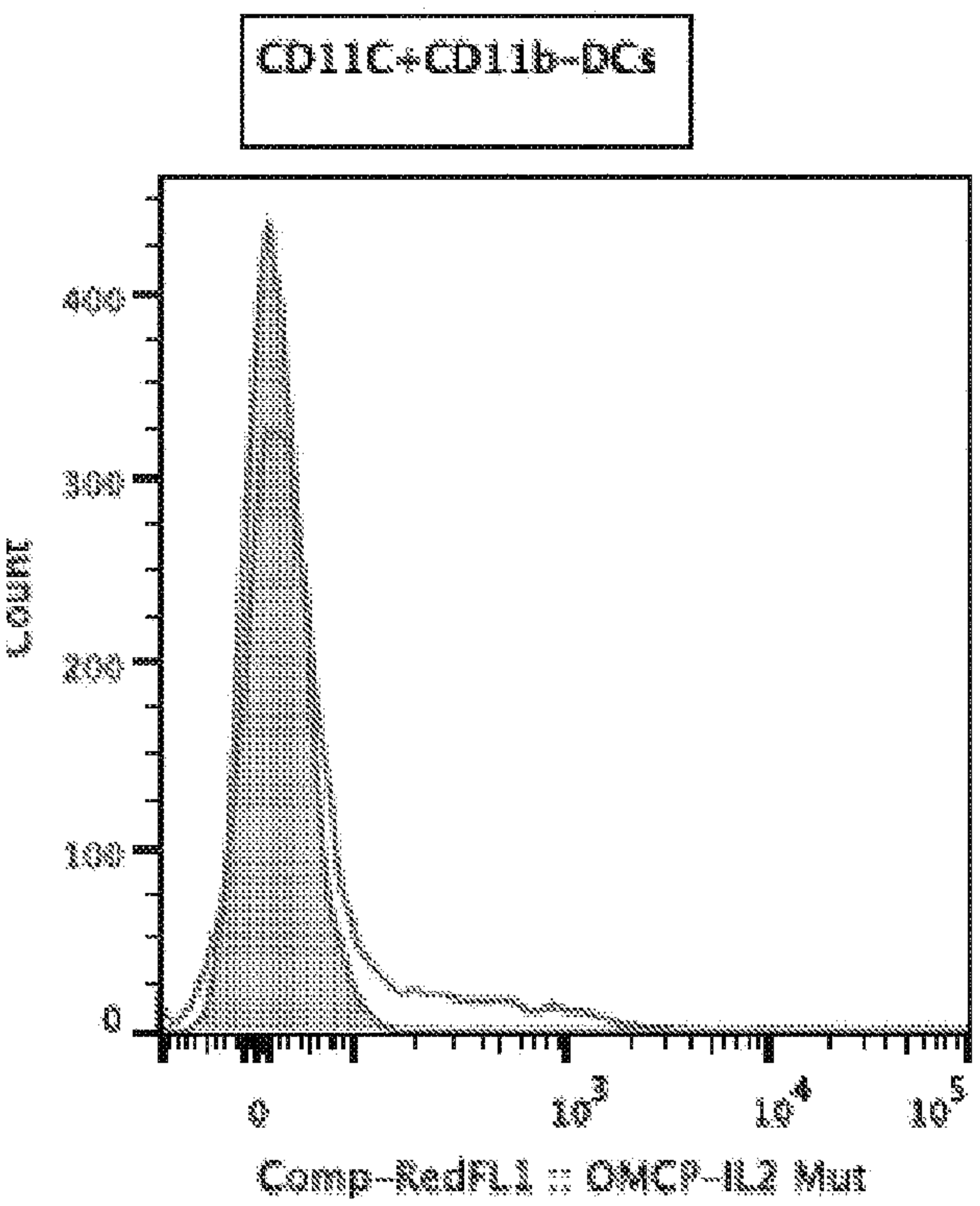


FIG. 17C

FIG. 17D



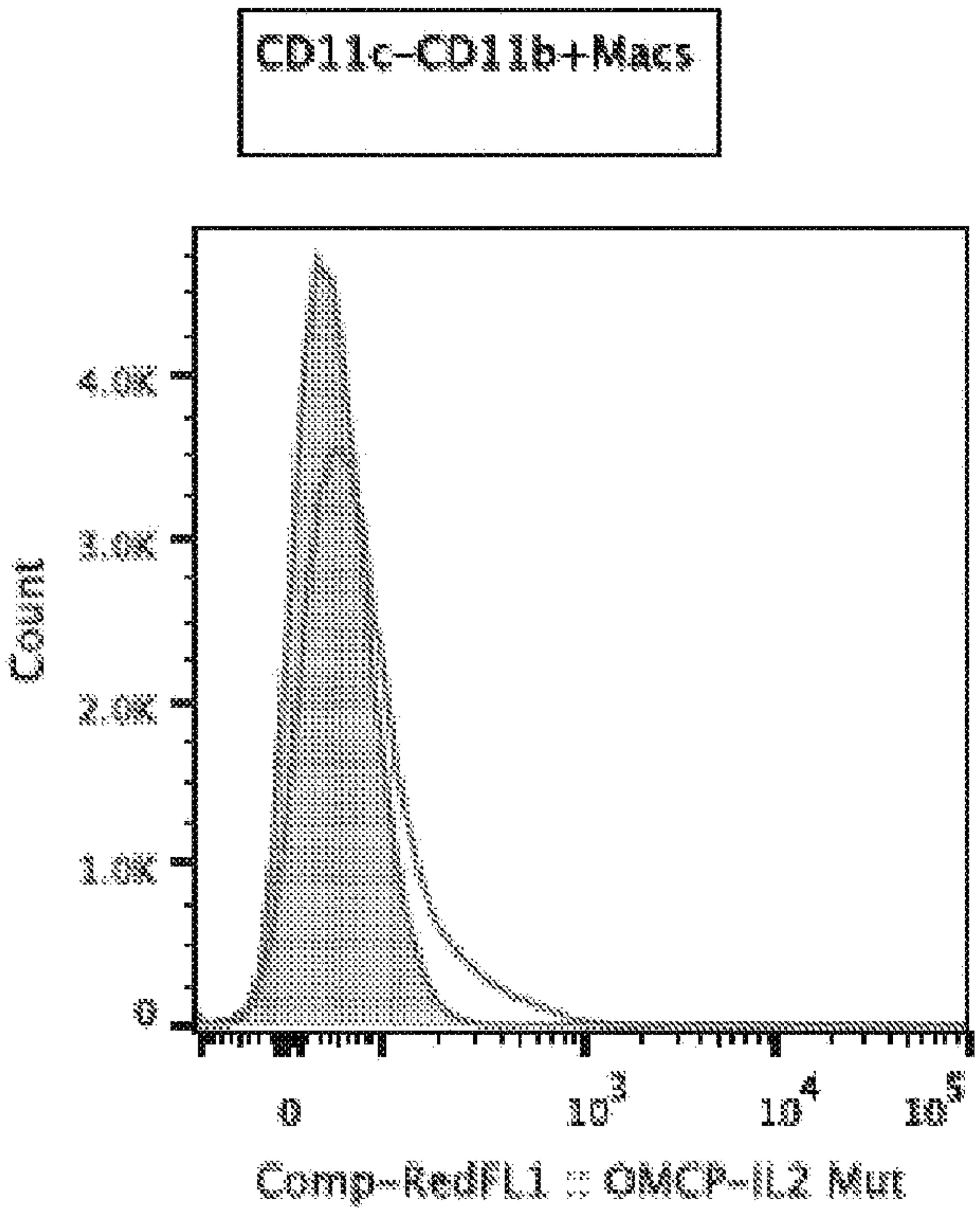
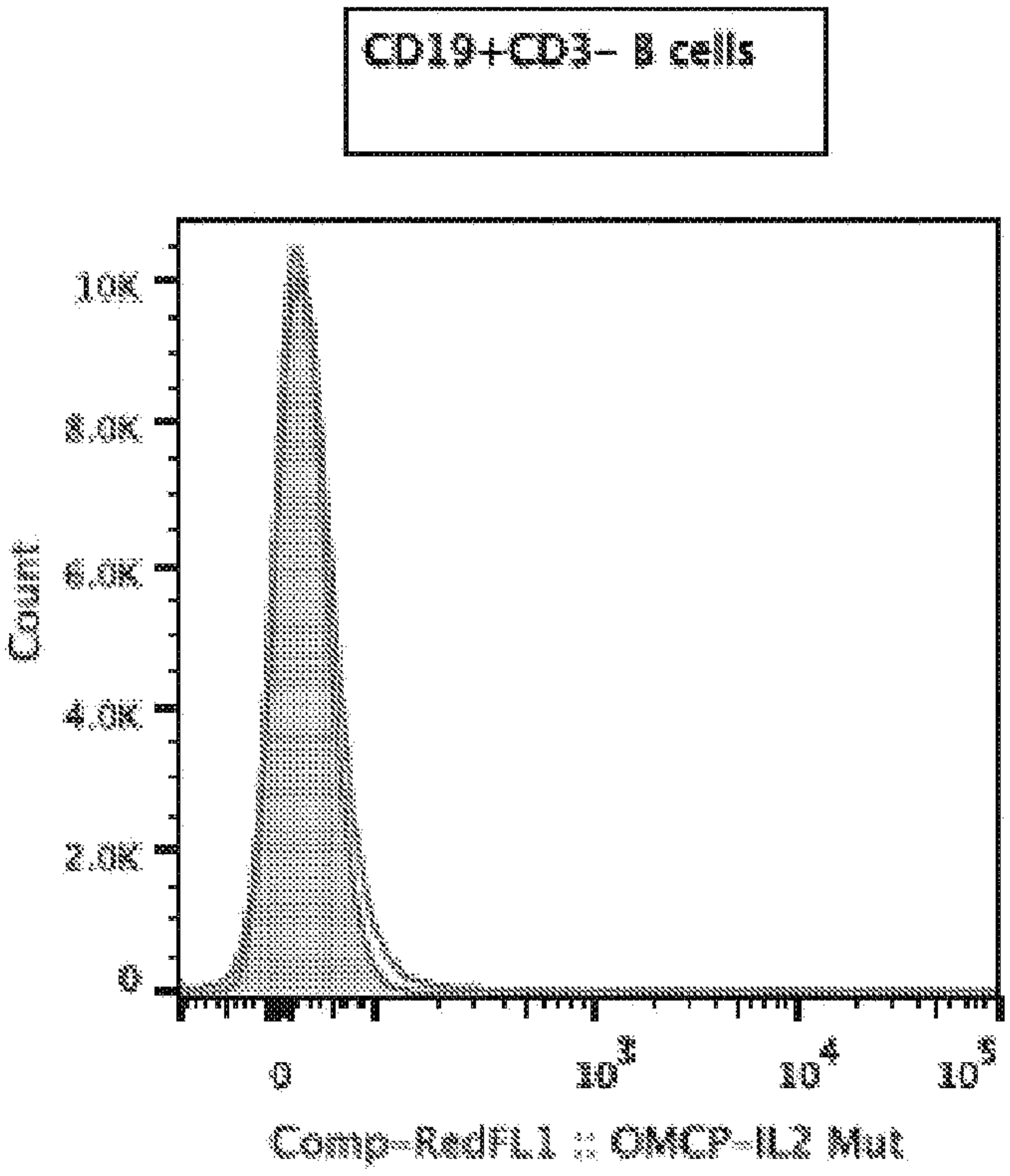


FIG. 17E

FIG. 17F



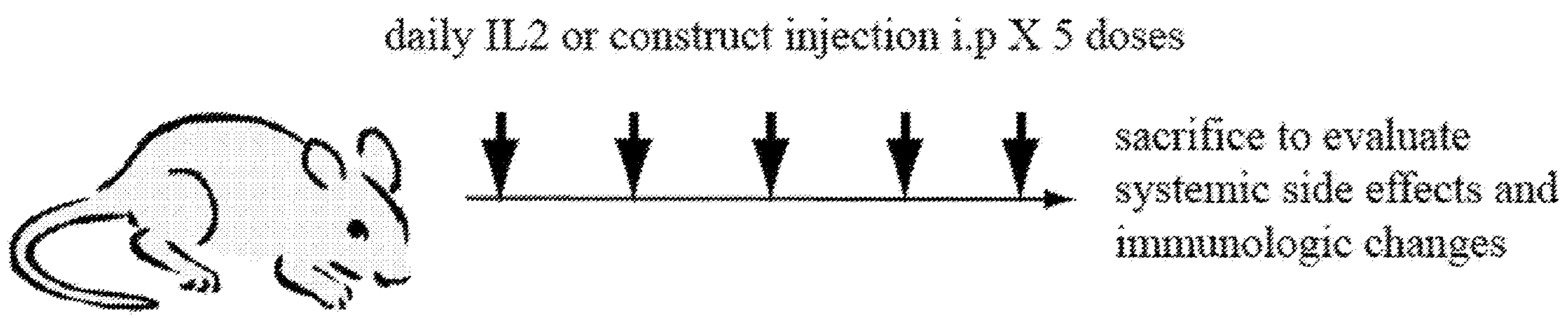

daily IL2 or construct injection i.p X 5 doses
sacrifice to evaluate systemic side effects and immunologic changes

FIG. 18

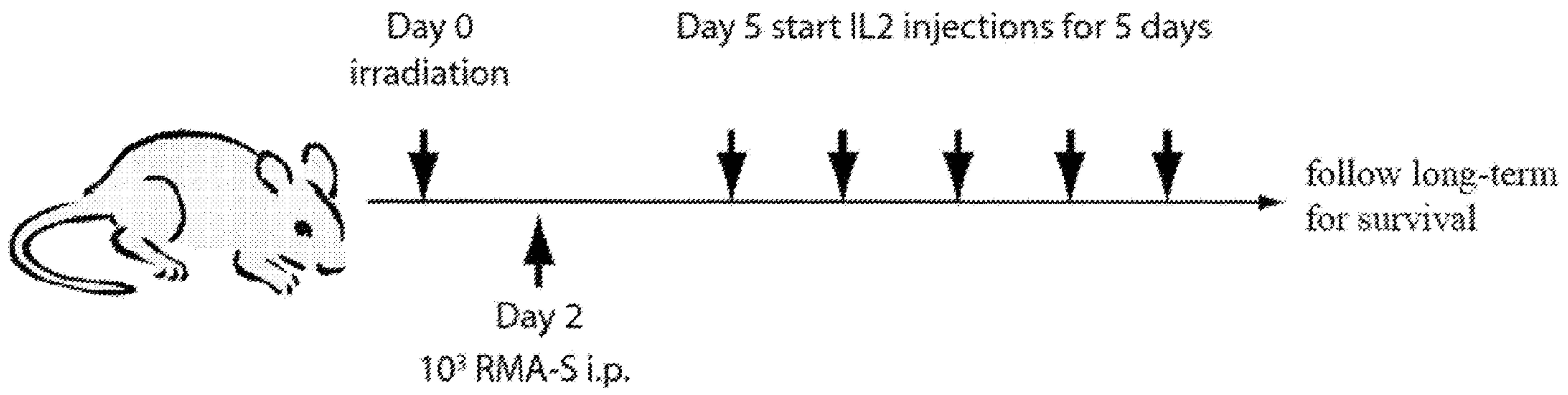

Day 0 irradiation
Day 5 start IL2 injections for 5 days
follow long-term for survival
Day 2
10³ RMA-S i.p.

FIG. 19

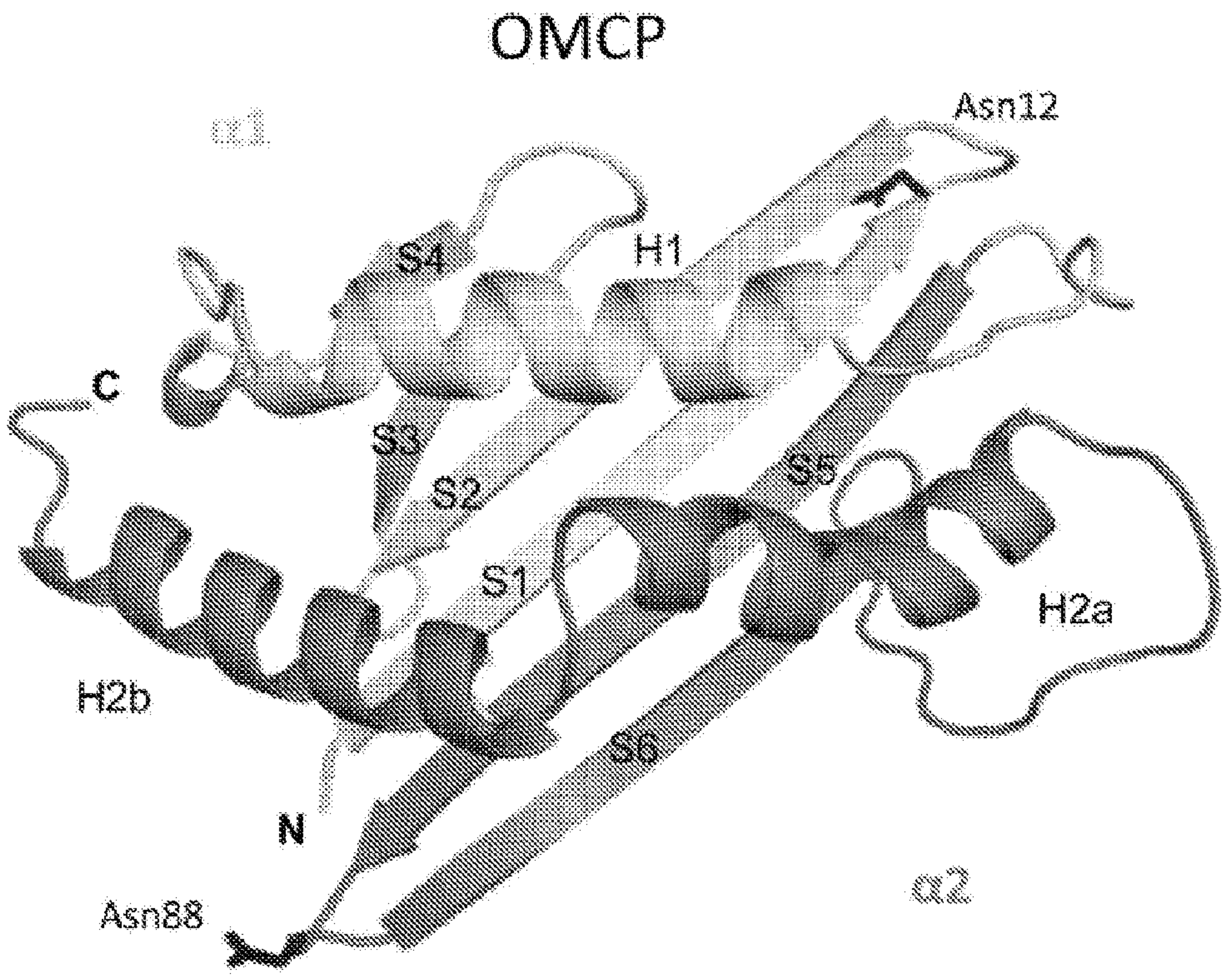


FIG. 20A

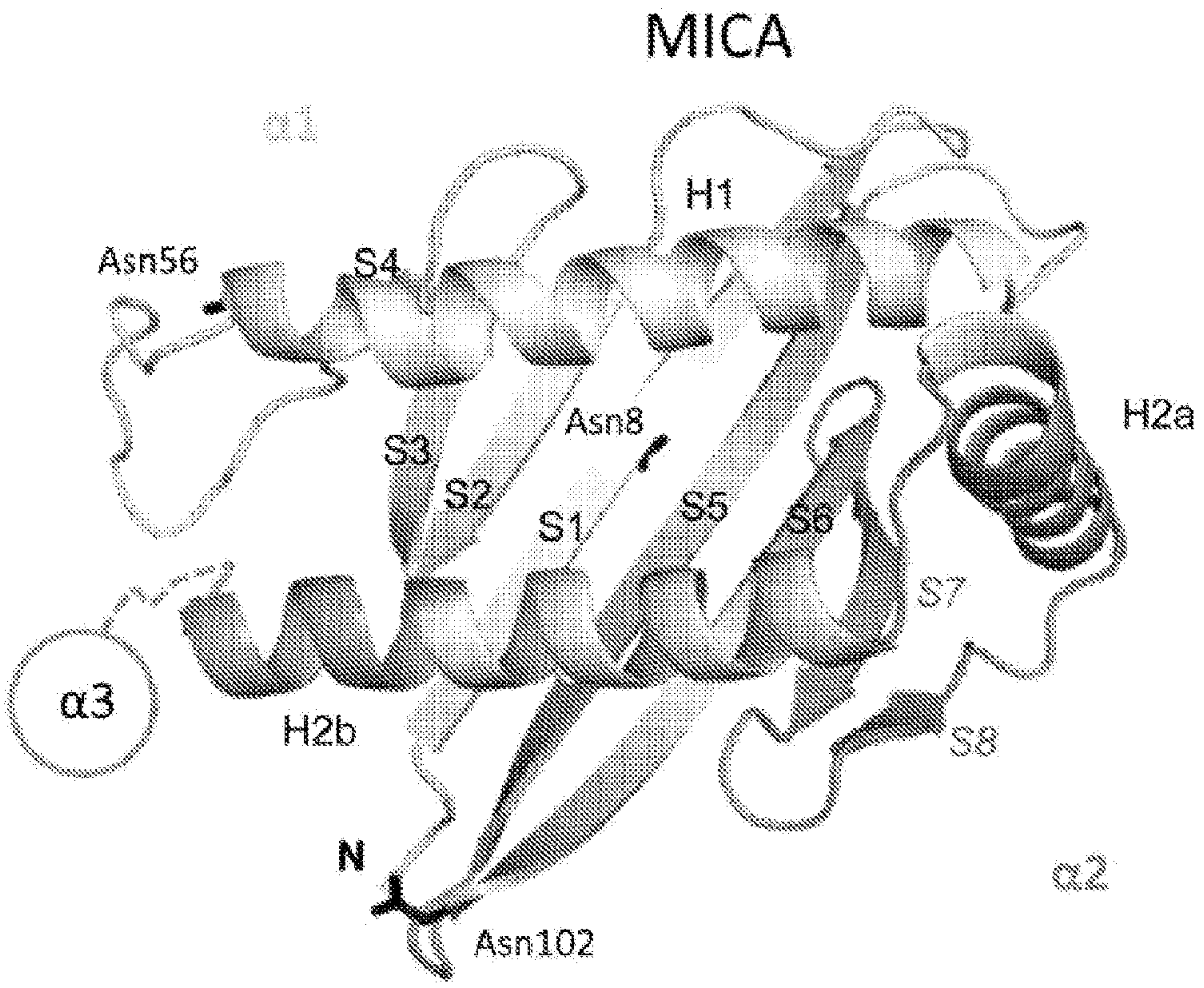

MICA
α1
H1
Asn56
S4
Asn8
H2a
S3
S2
S1
S5
S6
S7
α3
H2b
S8
N
α2
Asn102

FIG. 20B

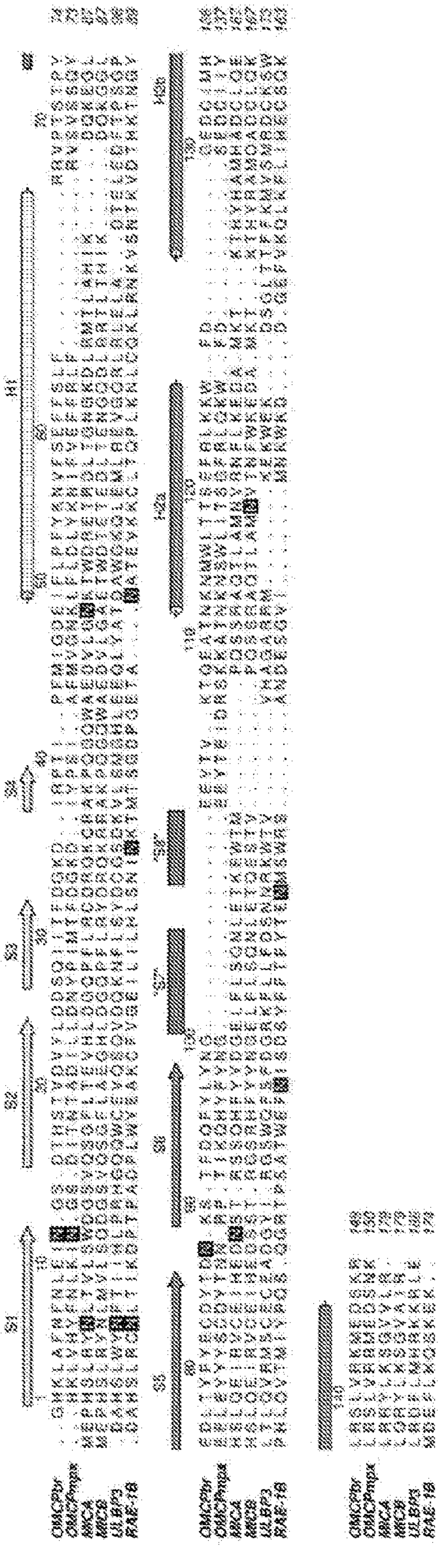

OMCPbr
OMCPmpx
MICA
MICB
ULBP3
RAE-1β
S1
S2
S3
S4
H1
S5
S6
S7'
S8'
H2a
H2b

FIG. 20C

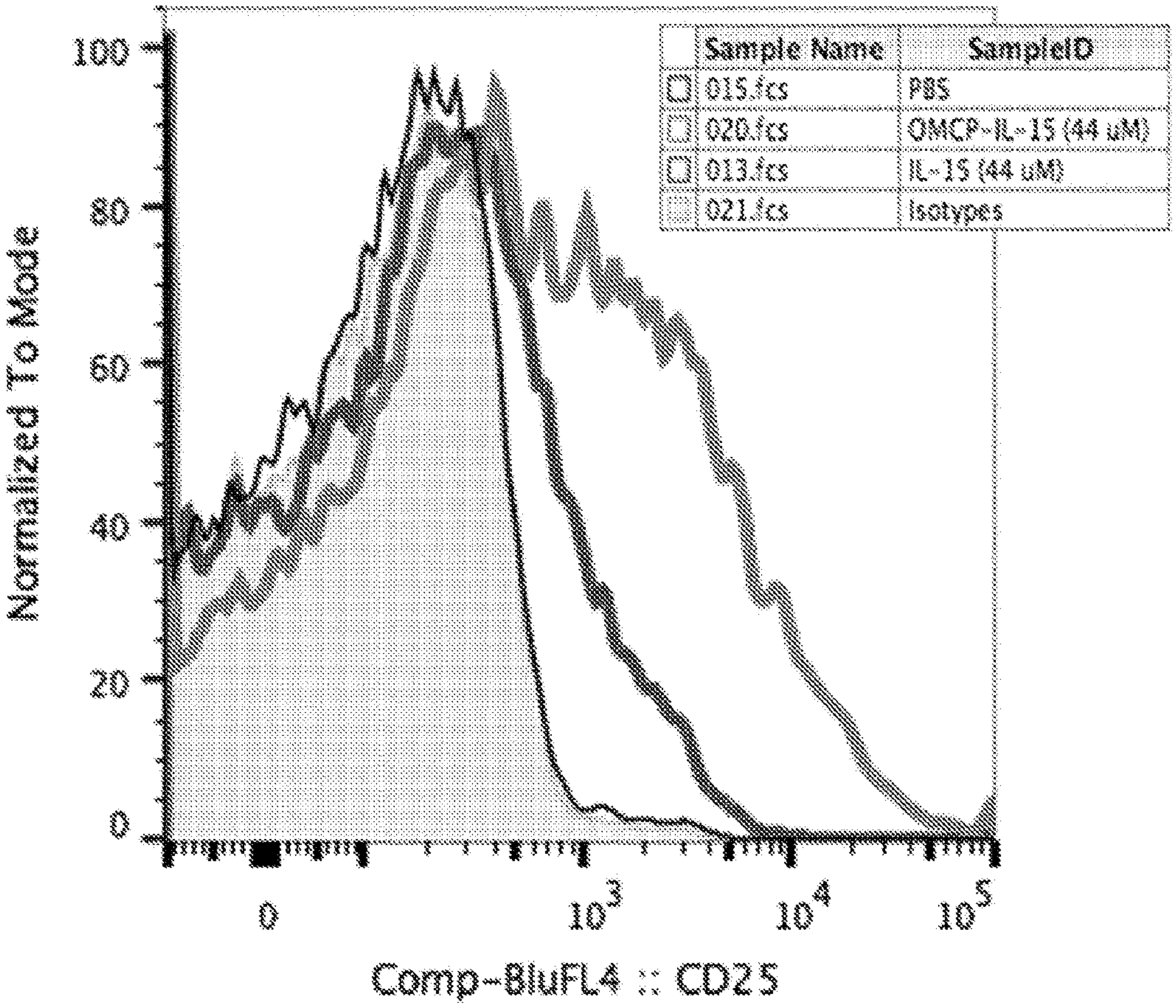

Normalized To Mode
100
80
60
40
20
0
0
10^3
10^4
10^5
Comp-BluFL4 :: CD25
Sample Name
SampleID
015.fcs
PBS
020.fcs
OMCP-IL-15 (44 uM)
013.fcs
IL-15 (44 uM)
021.fcs
Isotypes

FIG. 21

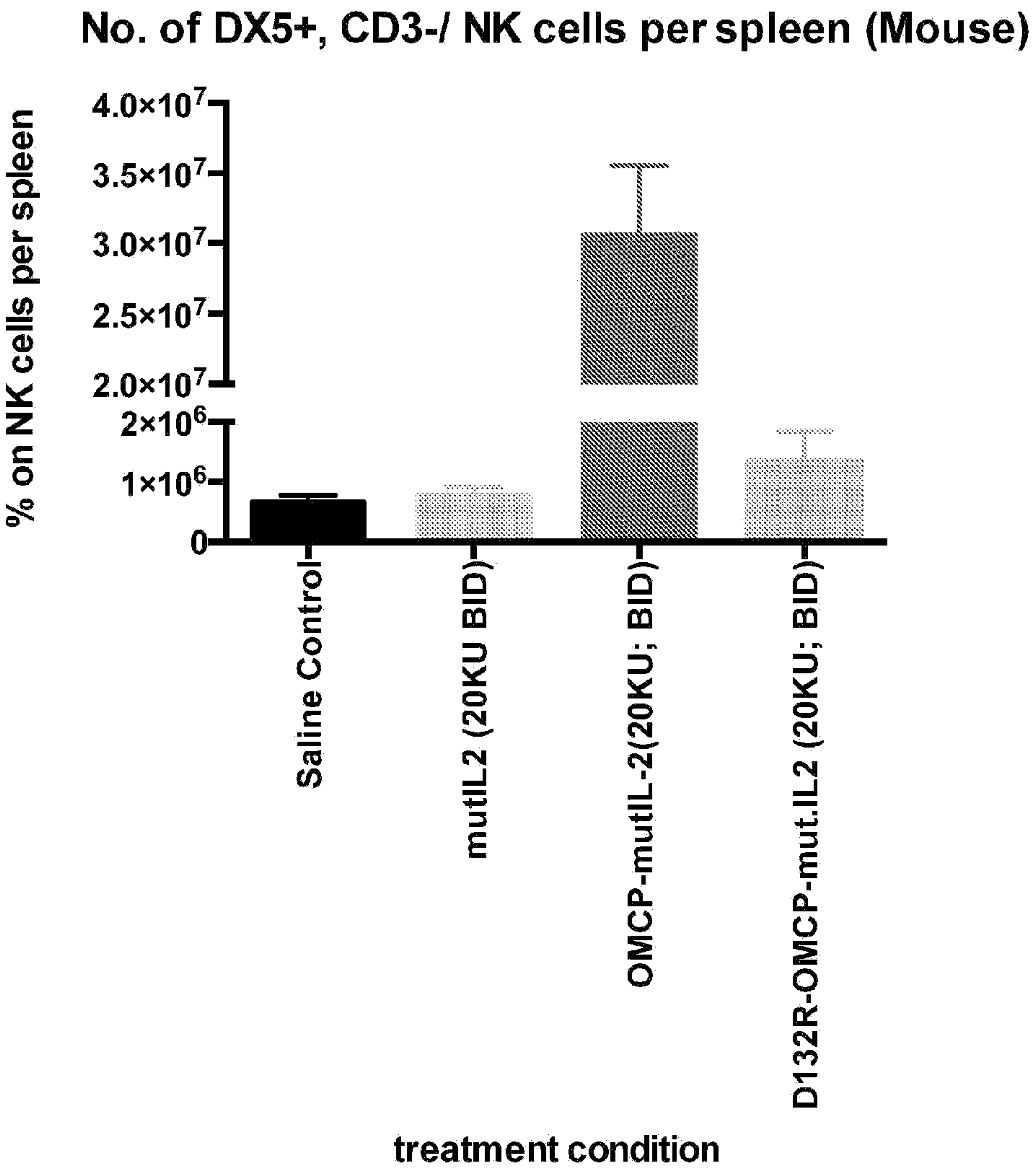

No. of DX5+, CD3-/ NK cells per spleen (Mouse)
% on NK cells per spleen
4.0×10^7
3.5×10^7
3.0×10^7
2.5×10^7
2.0×10^7
2×10^6
1×10^6
0
Saline Control
mutIL2 (20KU BID)
OMCP-mutIL-2(20KU; BID)
D132R-OMCP-mut.IL2 (20KU; BID)
treatment condition

FIG. 22

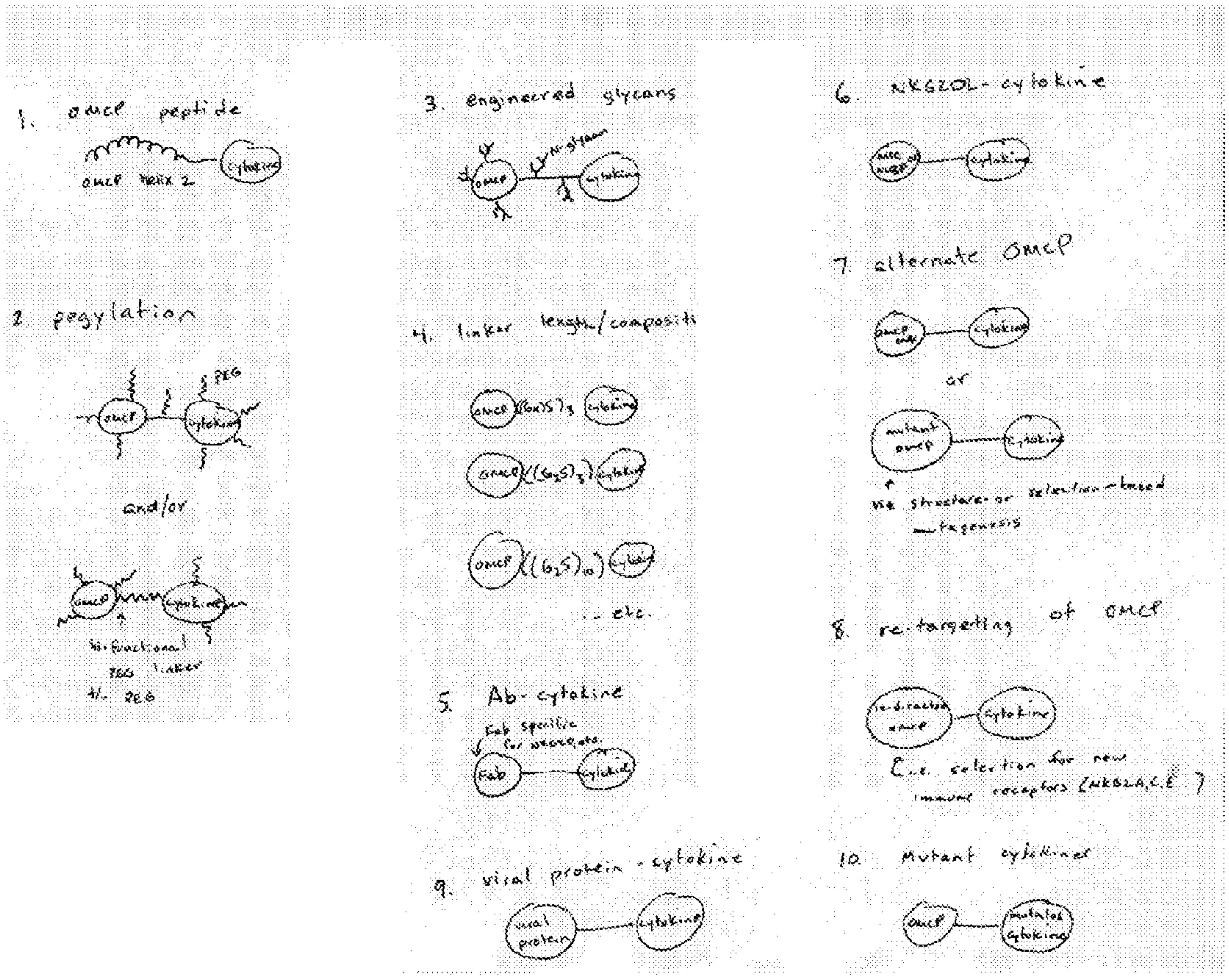

1. OMCP peptide
OMCP helix 2
cytokine
2 pegylation
PEG
OMCP
cytokine
and/or
OMCP
cytokine
bi-functional
PEG linker
+/- PEG
3. engineered glycans
N-glycan
OMCP
cytokine
4. linker length/compositi
OMCP
(G4S)3
cytokine
OMCP
((G4S)3)
cytokine
OMCP
((G4S)10)
cytokine
... etc.
5. Ab-cytokine
Fab specific
for NKG2D, etc.
Fab
cytokine
9. viral protein - cytokine
viral
protein
cytokine
6. NKG2DL-cytokine
MIC or
ULBP
cytokine
7. alternate OMCP
OMCP
orth
cytokine
or
mutant
OMCP
cytokine
via structure- or selection-based
mutagenesis
8. re-targeting of OMCP
re-directed
OMCP
cytokine
[i.e. selection for new
immune receptors (NKG2A,C,E)
10. Mutant cytokines
OMCP
mutated
cytokine

FIG. 23

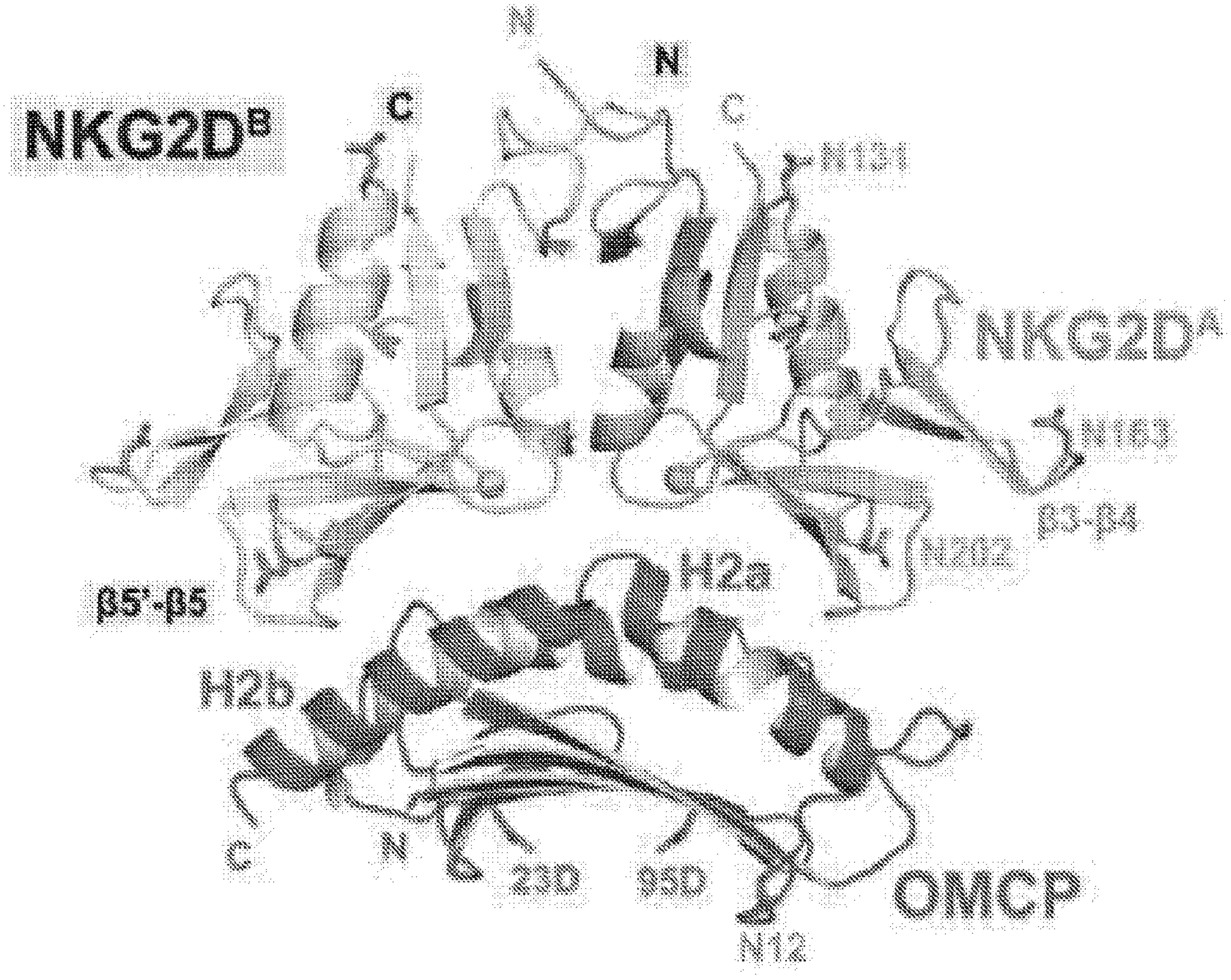

NKG2D^B
C
N
N
C
N131
NKG2D^A
N163
β3-β4
N202
β5'-β5
H2a
H2b
C
N
23D
95D
N12
OMCP

FIG. 24A

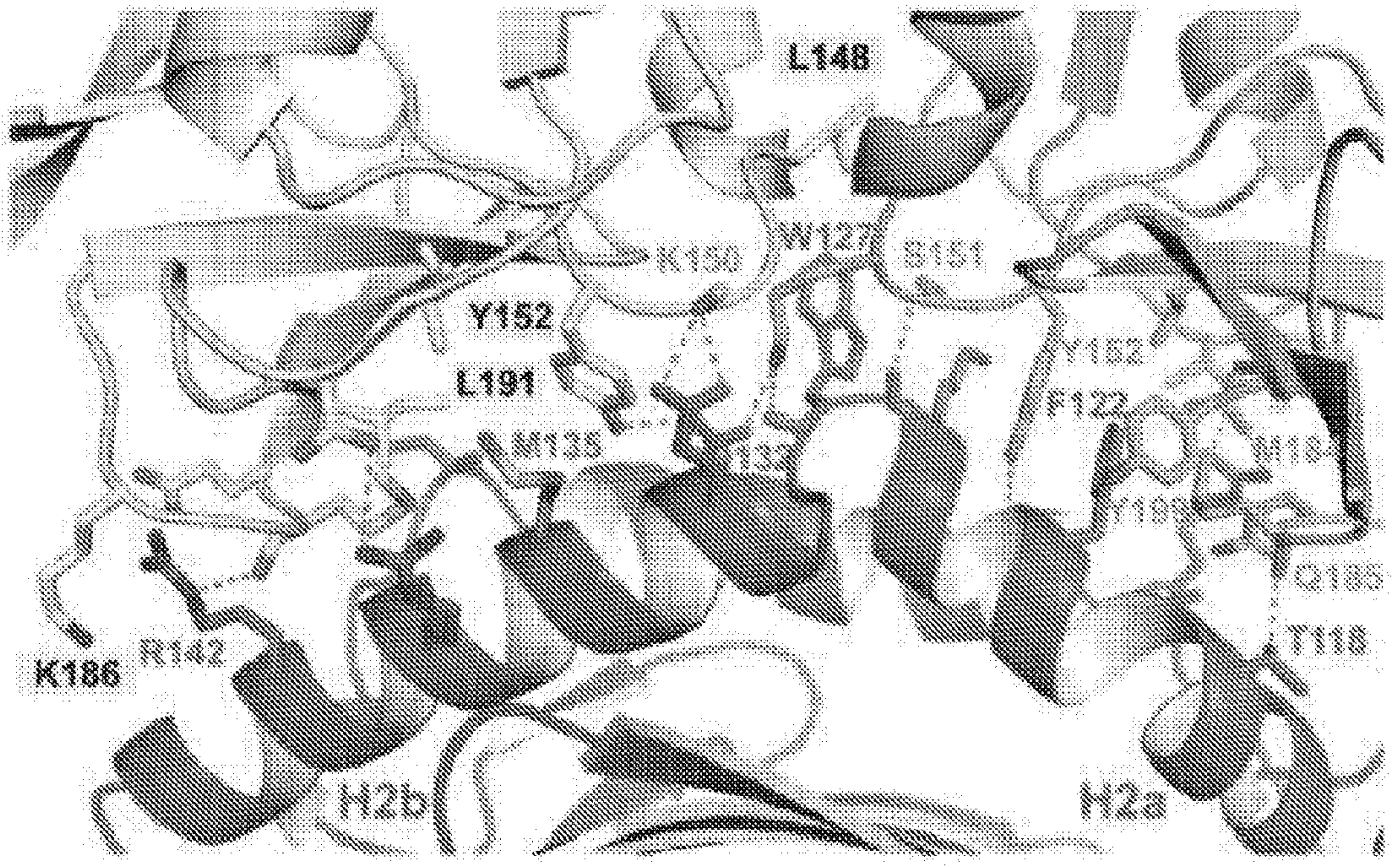

L148
K150
W127
S151
Y152
L191
M135
133
Y152
F122
M11
Y199
Q185
T118
K186
R142
H2b
H2a

FIG. 24B

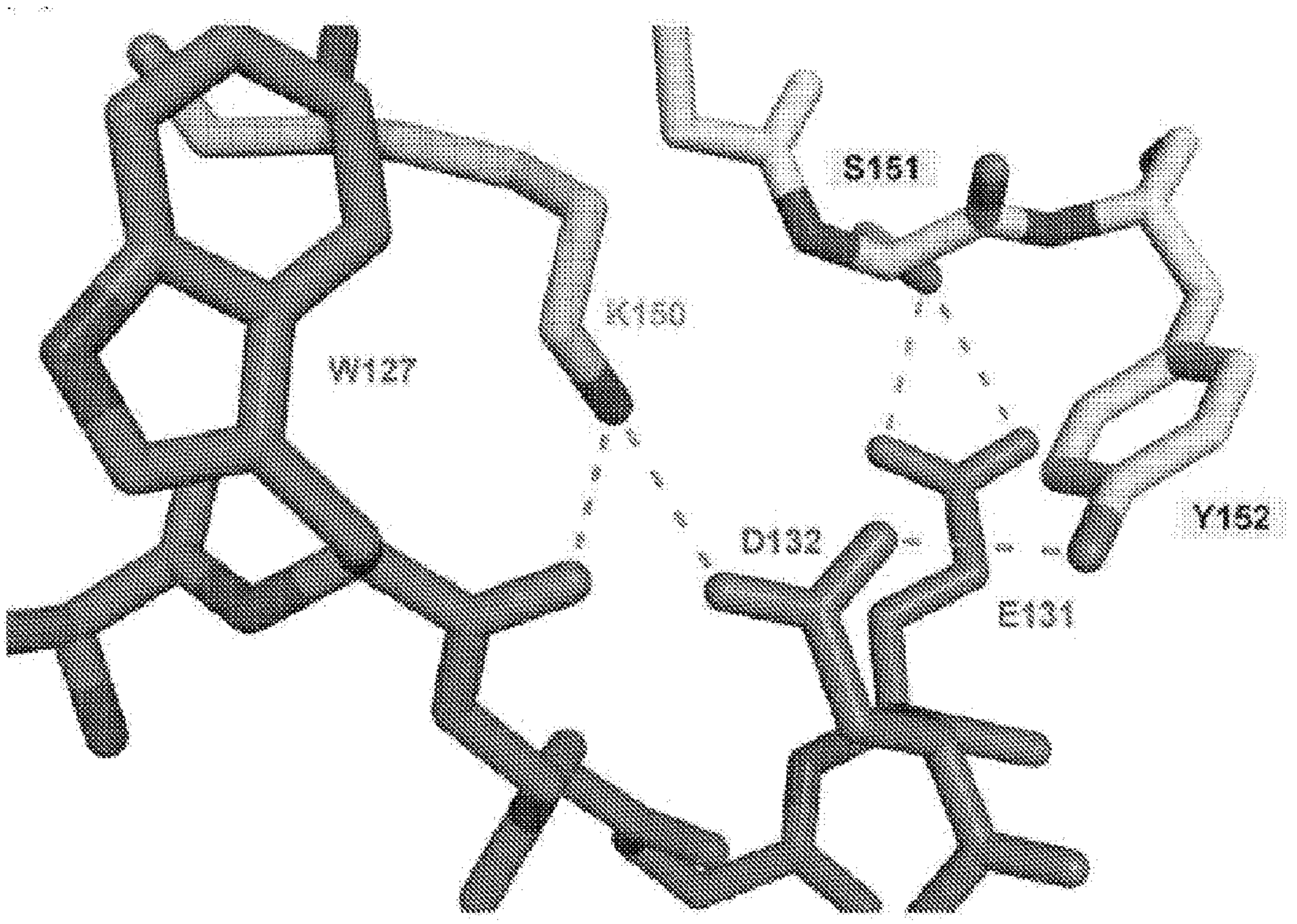


FIG. 25A

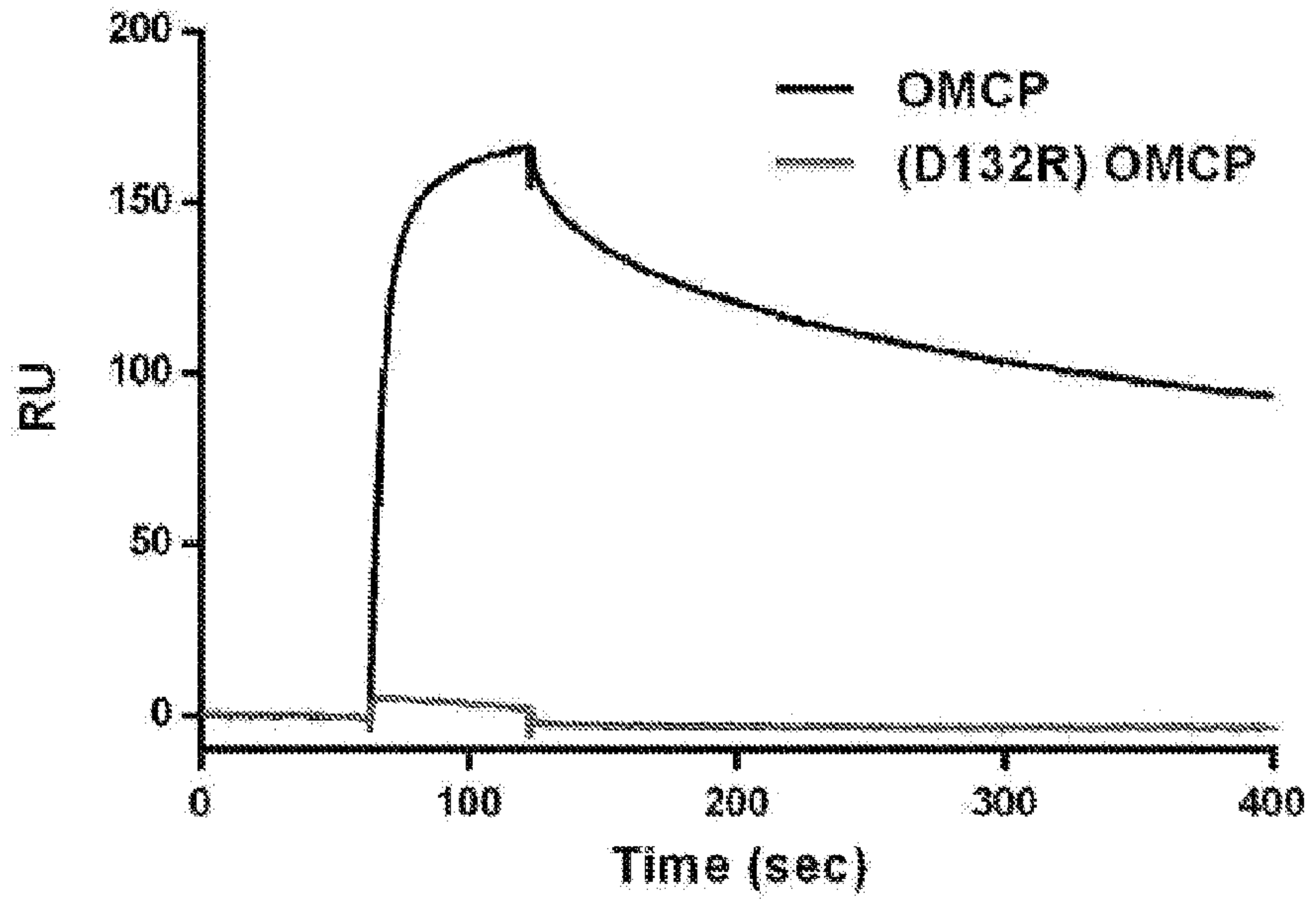


FIG. 25B

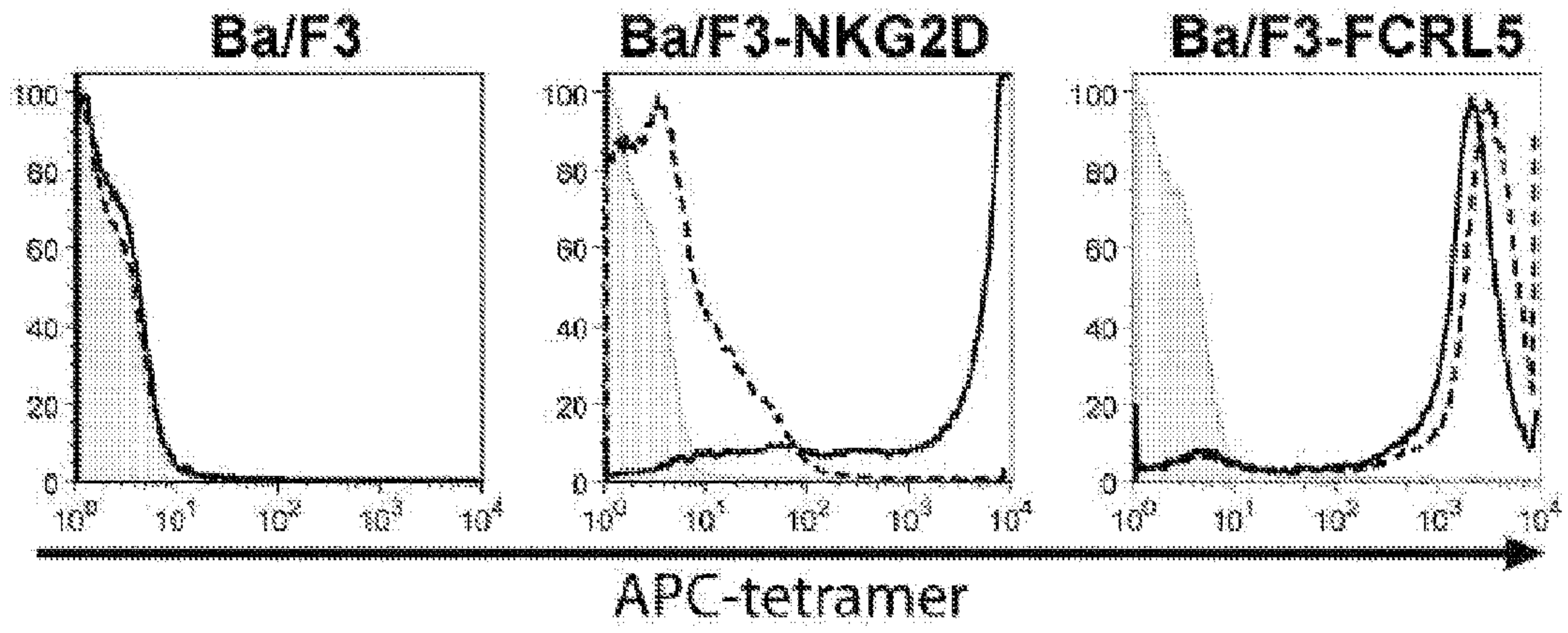


FIG. 25C

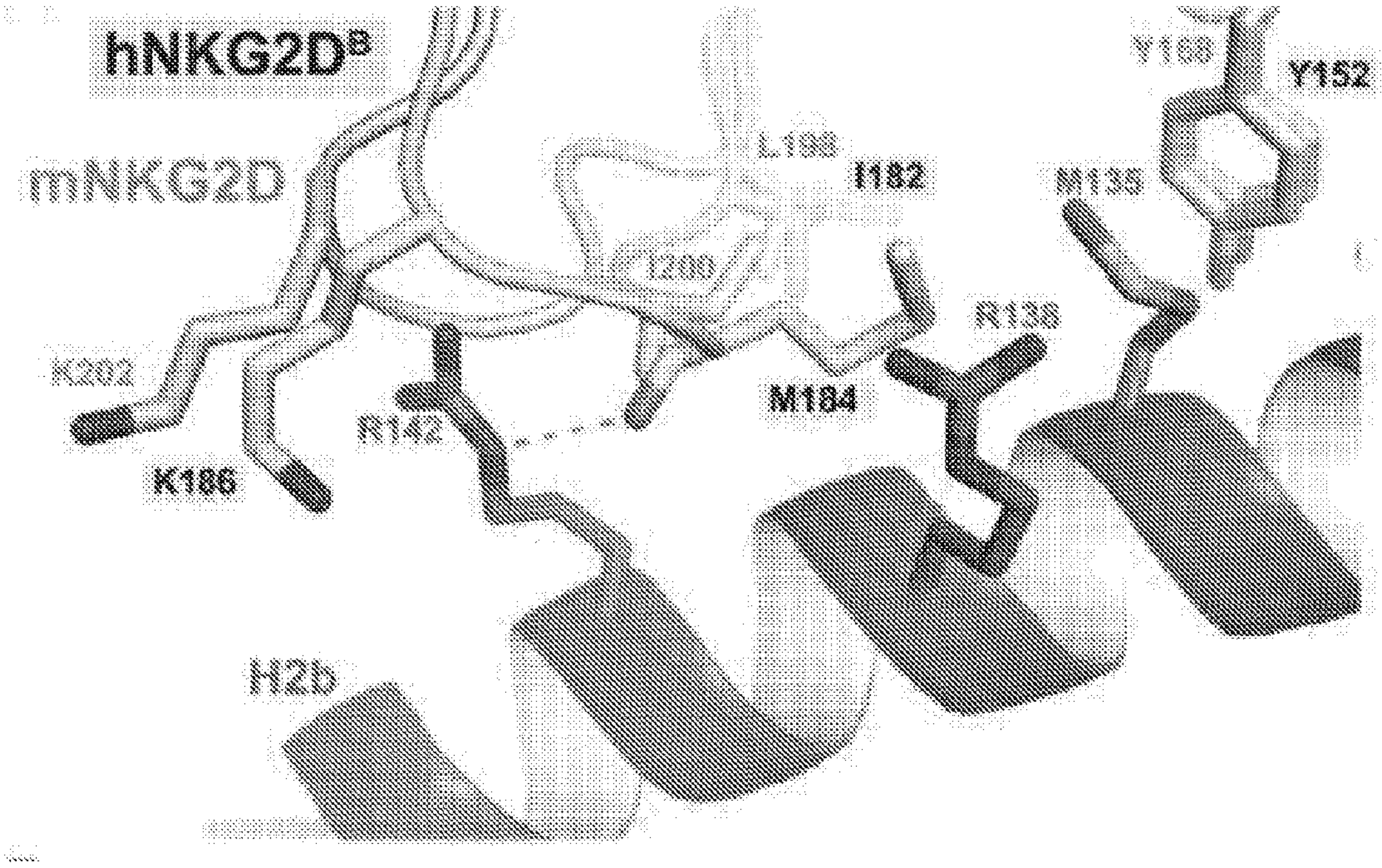

hNKG2D^{B}
mNKG2D
Y168
Y152
L198
I182
M139
I200
R138
K202
M184
R142
K186
H2b

FIG. 26A

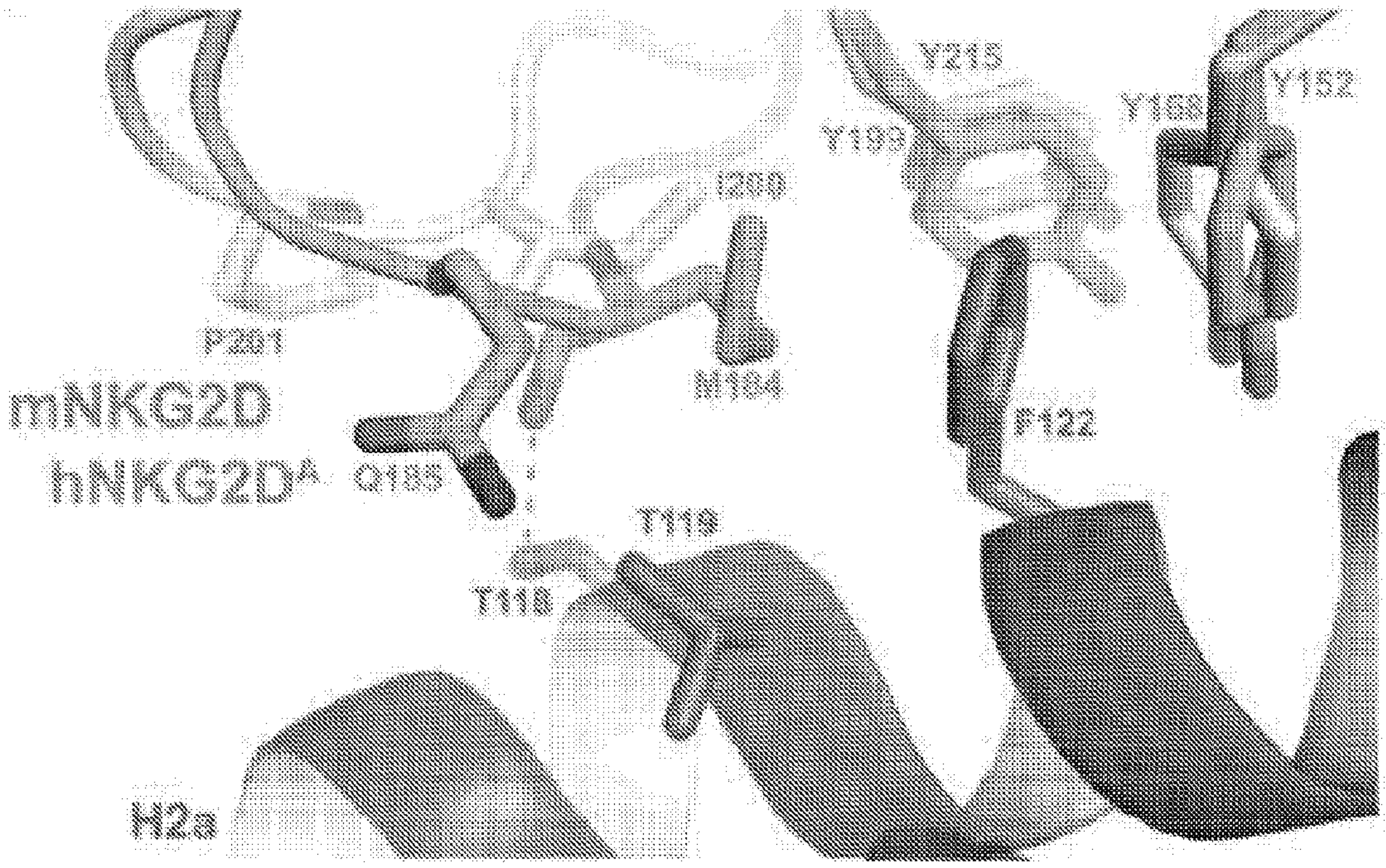

Y215
Y168
Y152
Y199
I200
P201
M184
mNKG2D
hNKG2D^A
Q185
F122
T119
T118
H2a

FIG. 26B

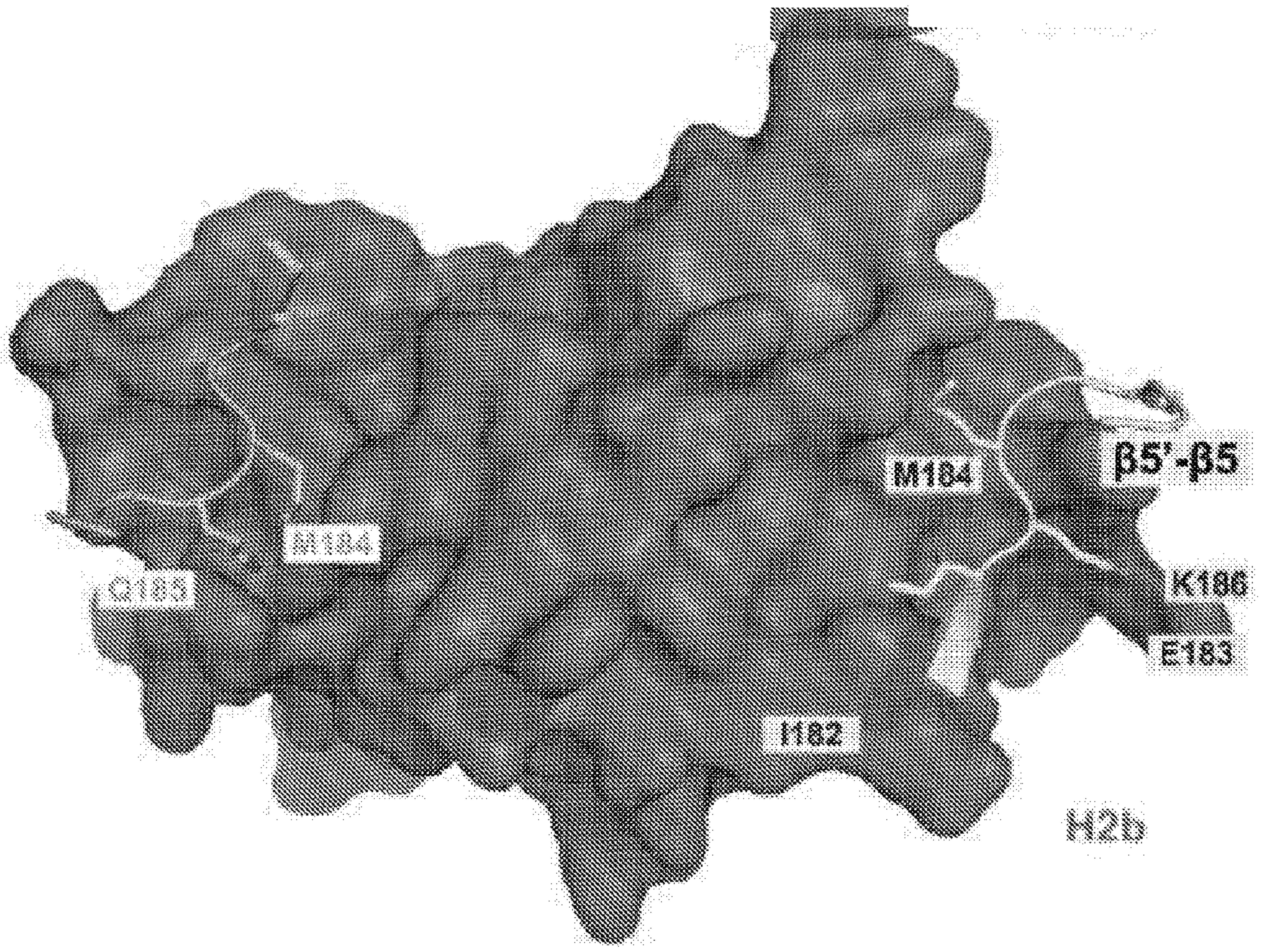


FIG. 26C

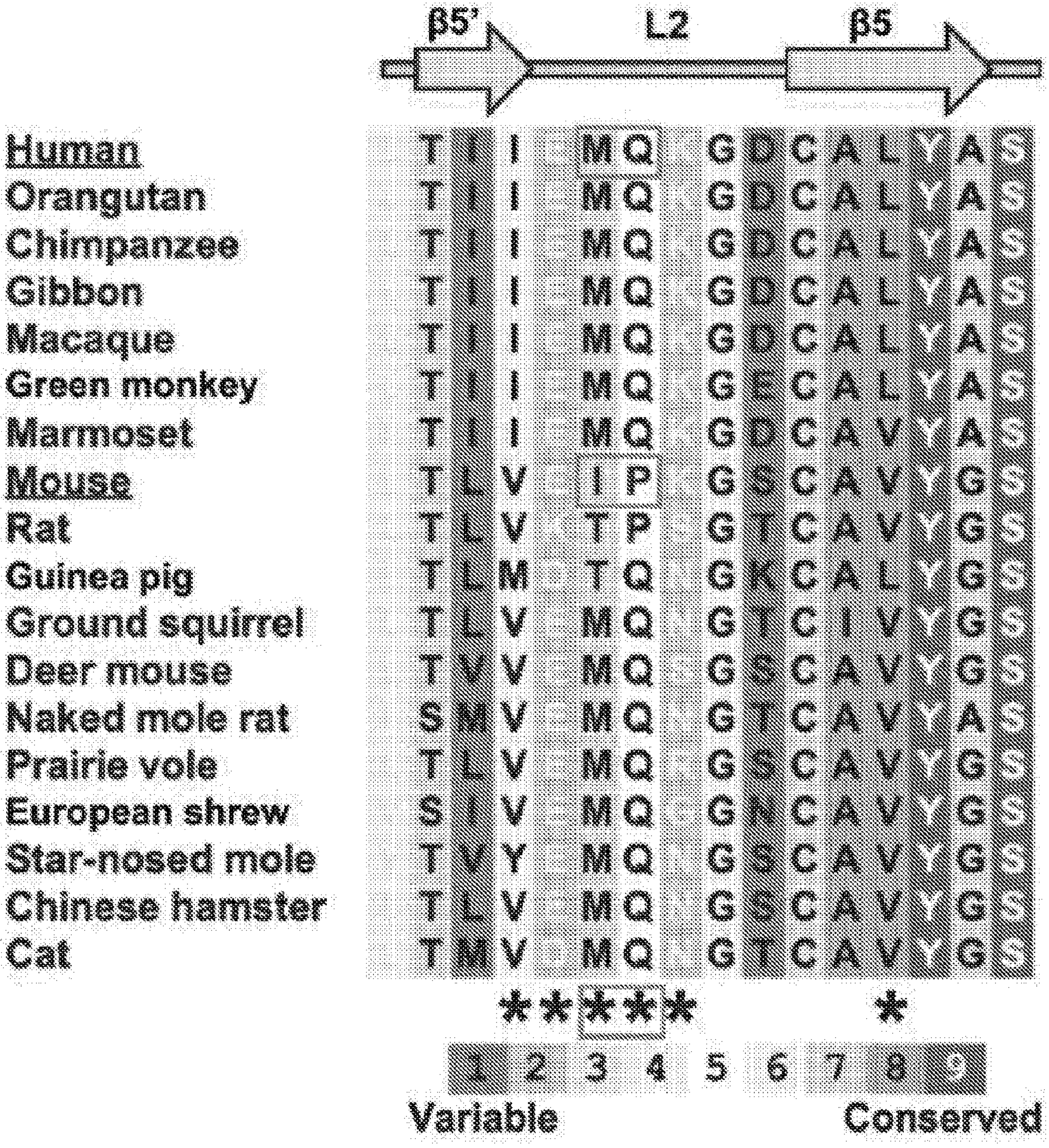

β5'
L2
β5
Human T I I M Q G D C A L Y A S
Orangutan T I I M Q G D C A L Y A S
Chimpanzee T I I M Q G D C A L Y A S
Gibbon T I I M Q G D C A L Y A S
Macaque T I I M Q G D C A L Y A S
Green monkey T I I M Q G E C A L Y A S
Marmoset T I I M Q G D C A V Y A S
Mouse T L V I P G S C A V Y G S
Rat T L V K T P G T C A V Y G S
Guinea pig T L M T Q G K C A L Y G S
Ground squirrel T L V M Q G T C I V Y G S
Deer mouse T V V M Q G S C A V Y G S
Naked mole rat S M V M Q G T C A V Y A S
Prairie vole T L V M Q G S C A V Y G S
European shrew S I V M Q G N C A V Y G S
Star-nosed mole T V Y M Q G S C A V Y G S
Chinese hamster T L V M Q G S C A V Y G S
Cat T M V M Q G T C A V Y G S
* * * * * *
1 2 3 4 5 6 7 8 9
Variable
Conserved

FIG. 26D

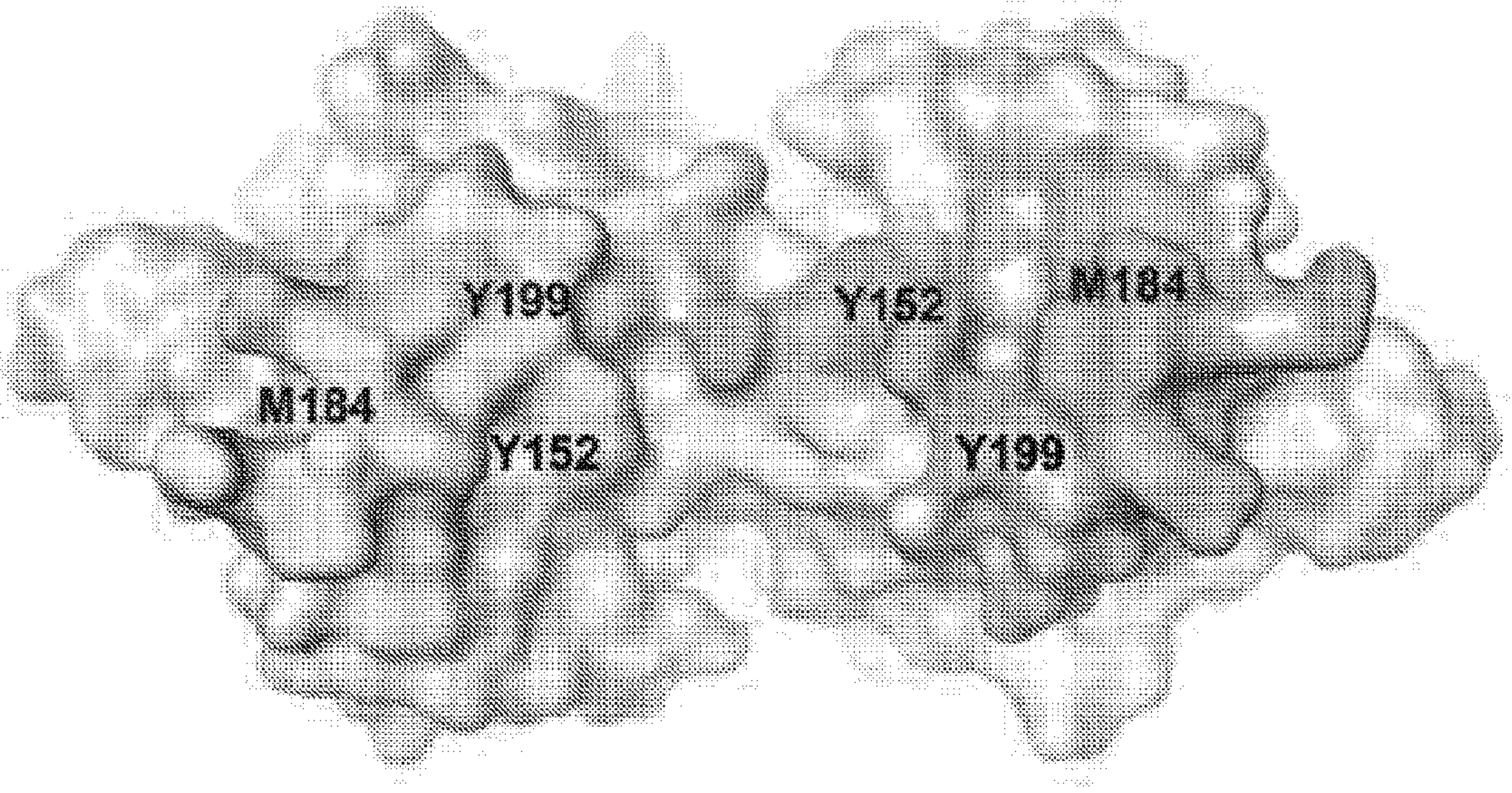


FIG. 27A

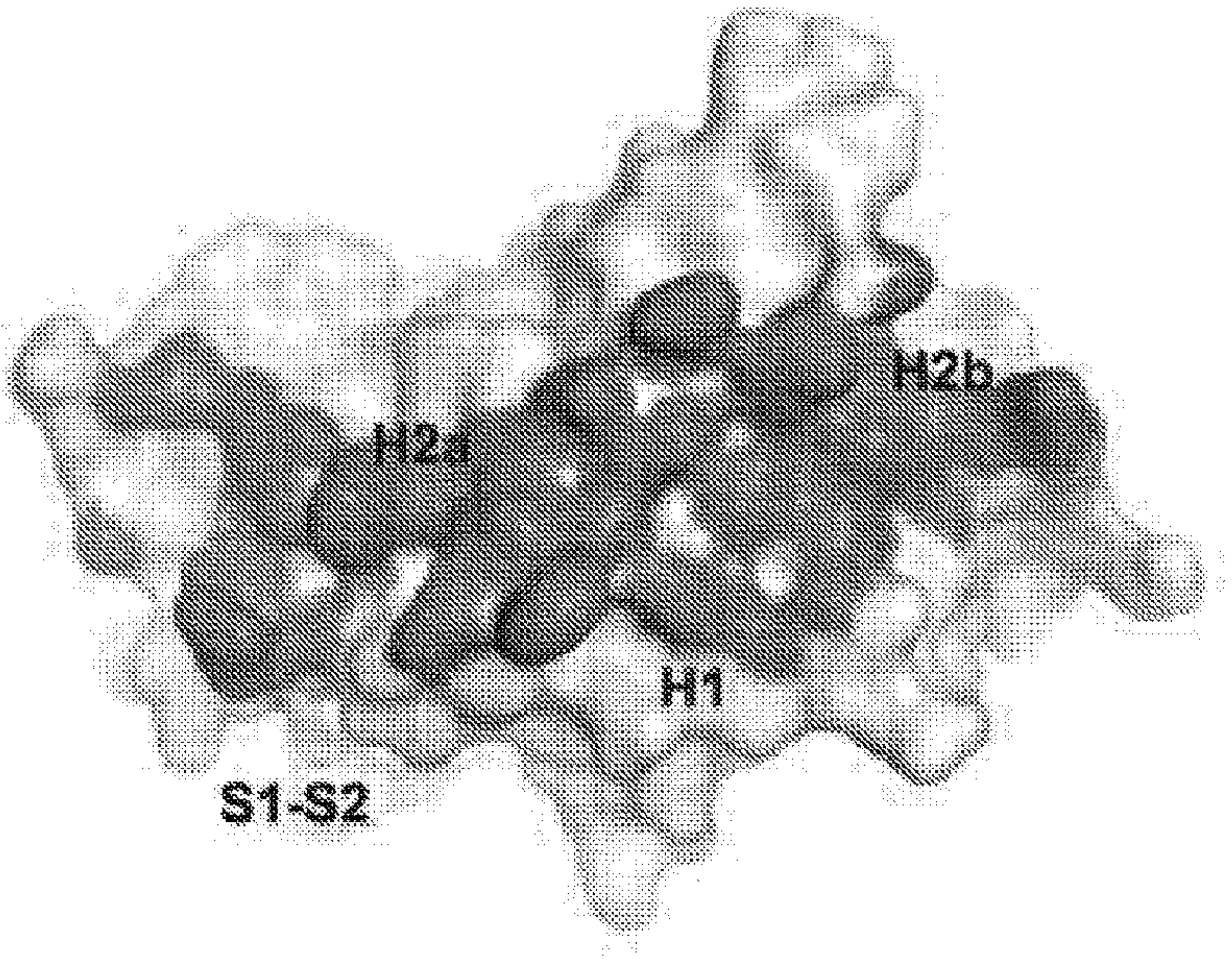


FIG. 27B

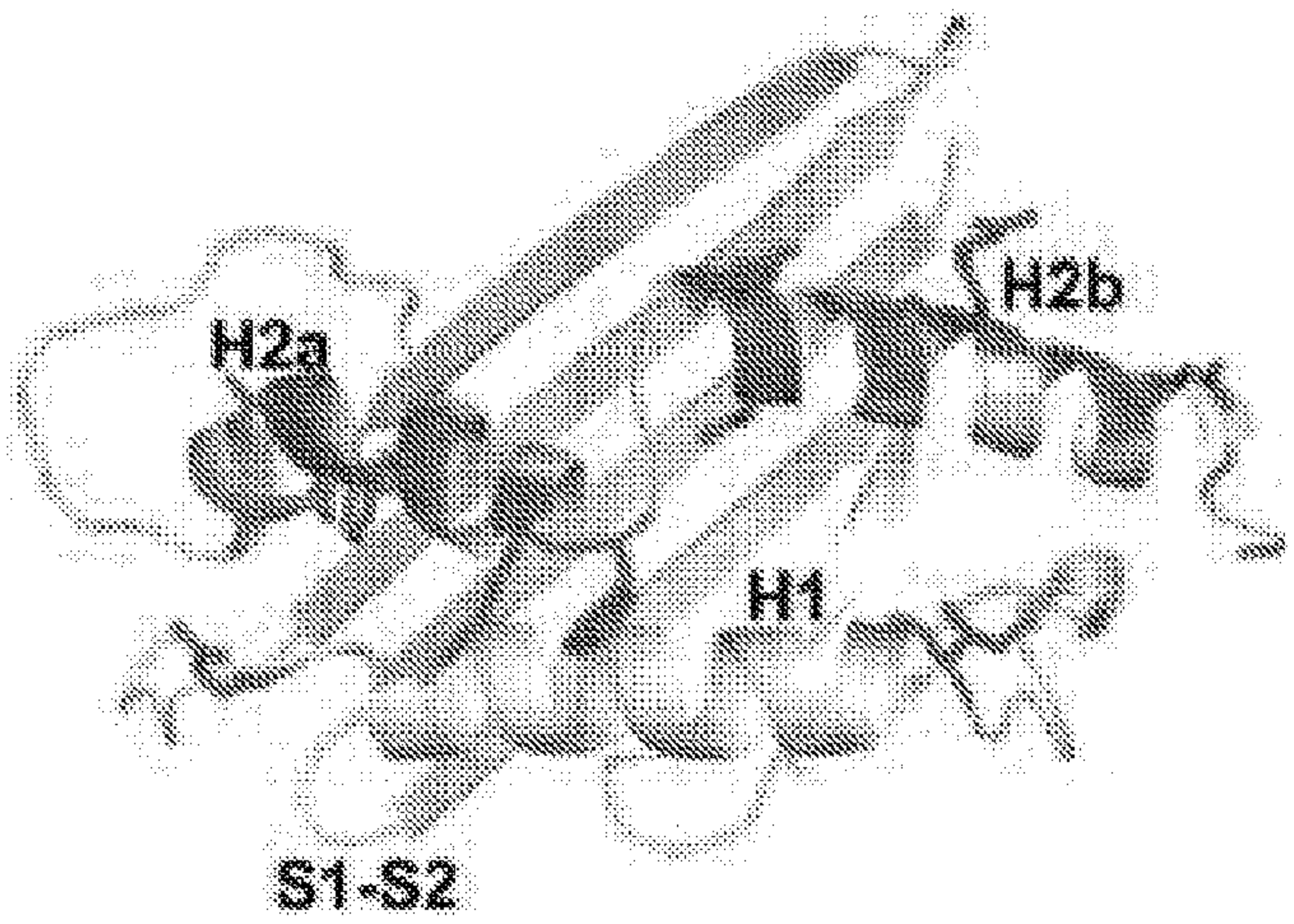


FIG. 27C

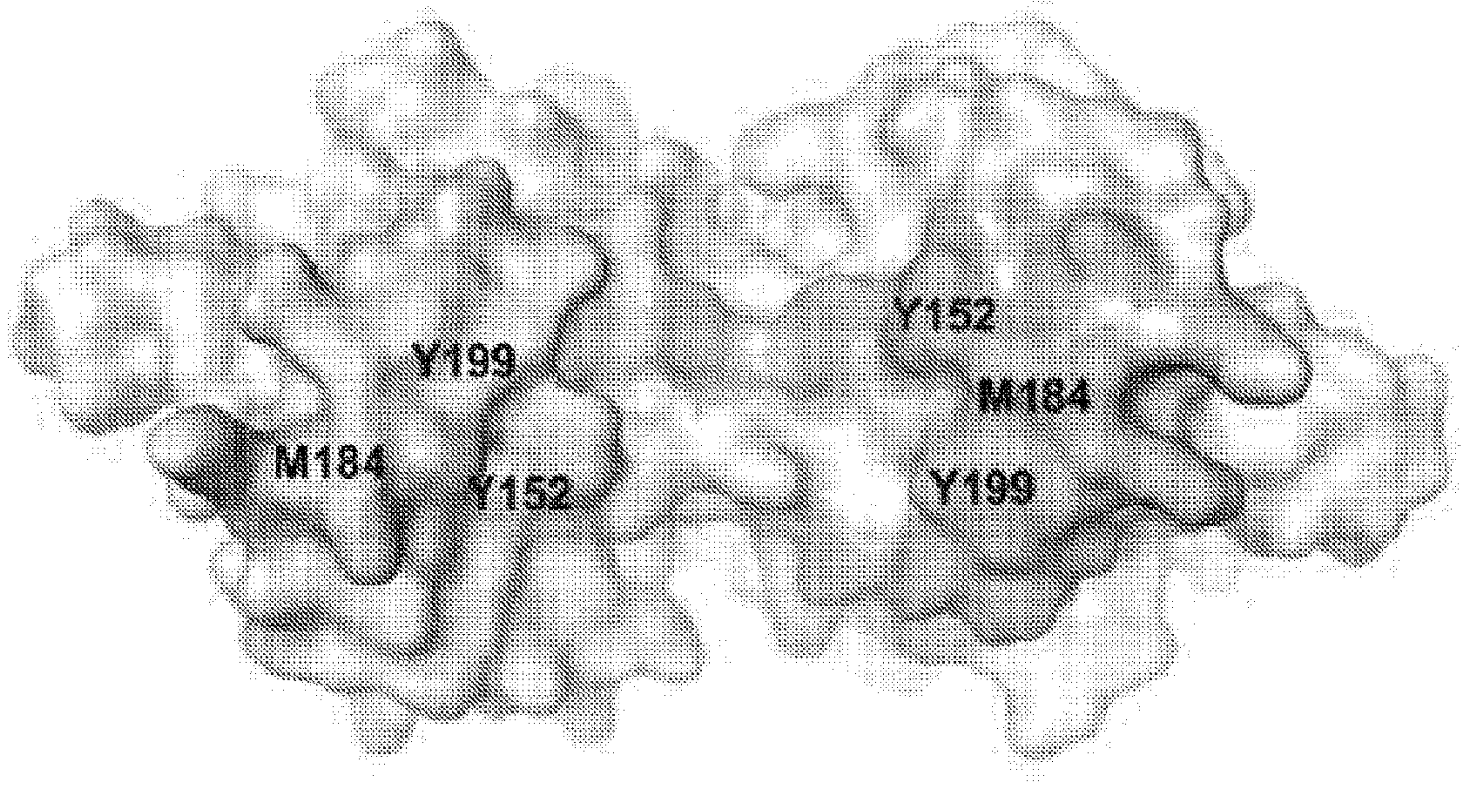


FIG. 27D

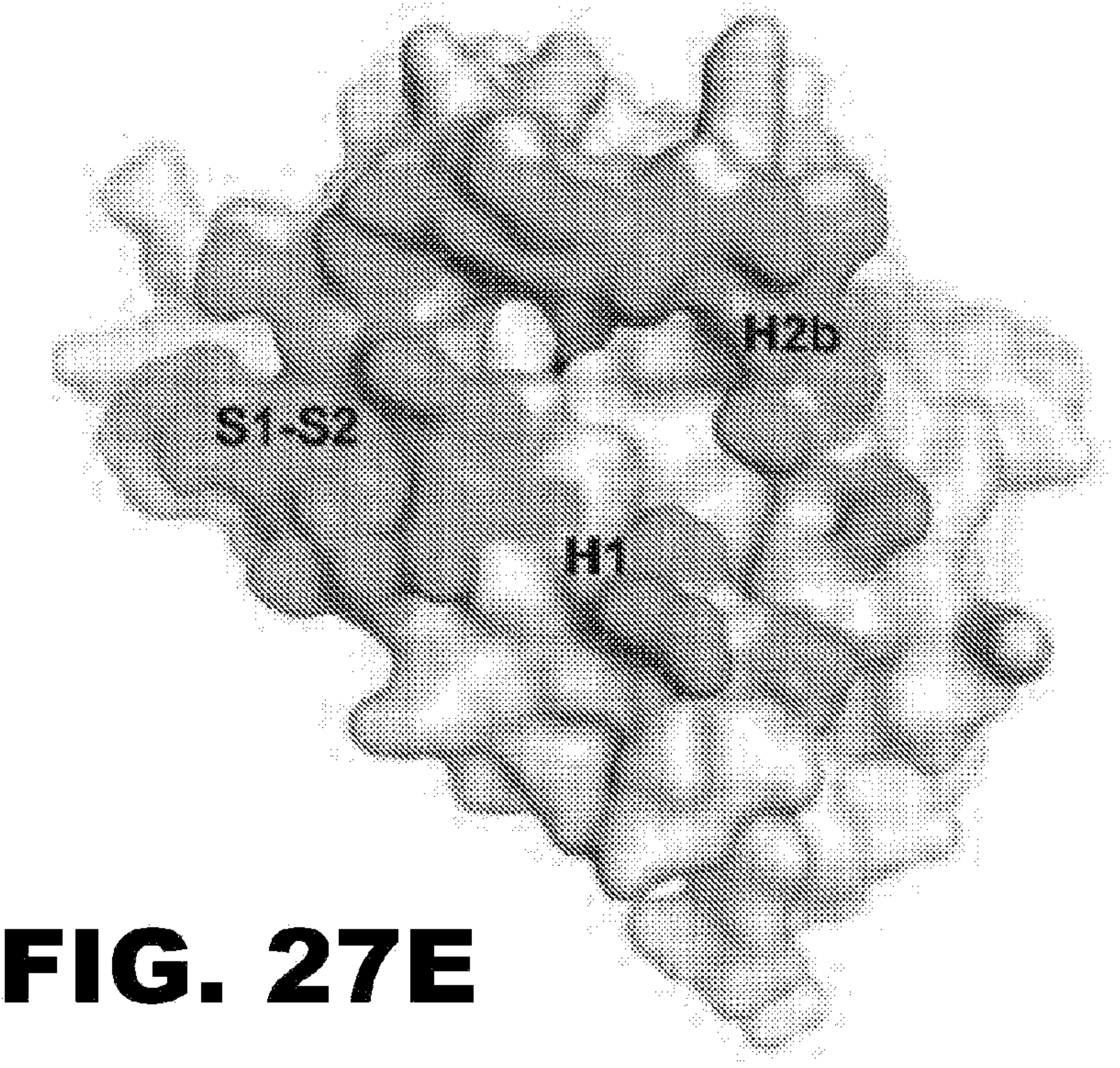


FIG. 27E

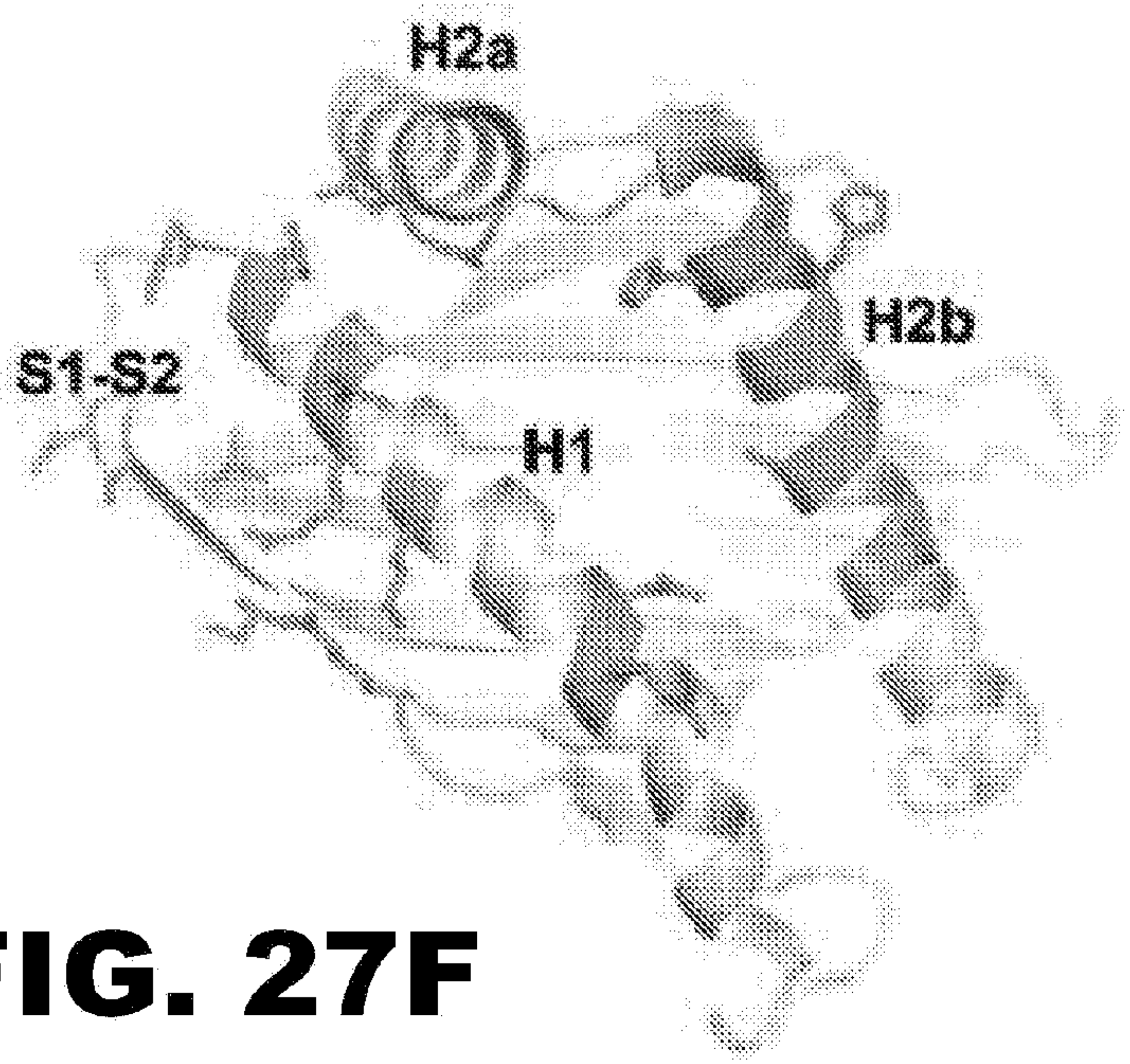


FIG. 27F

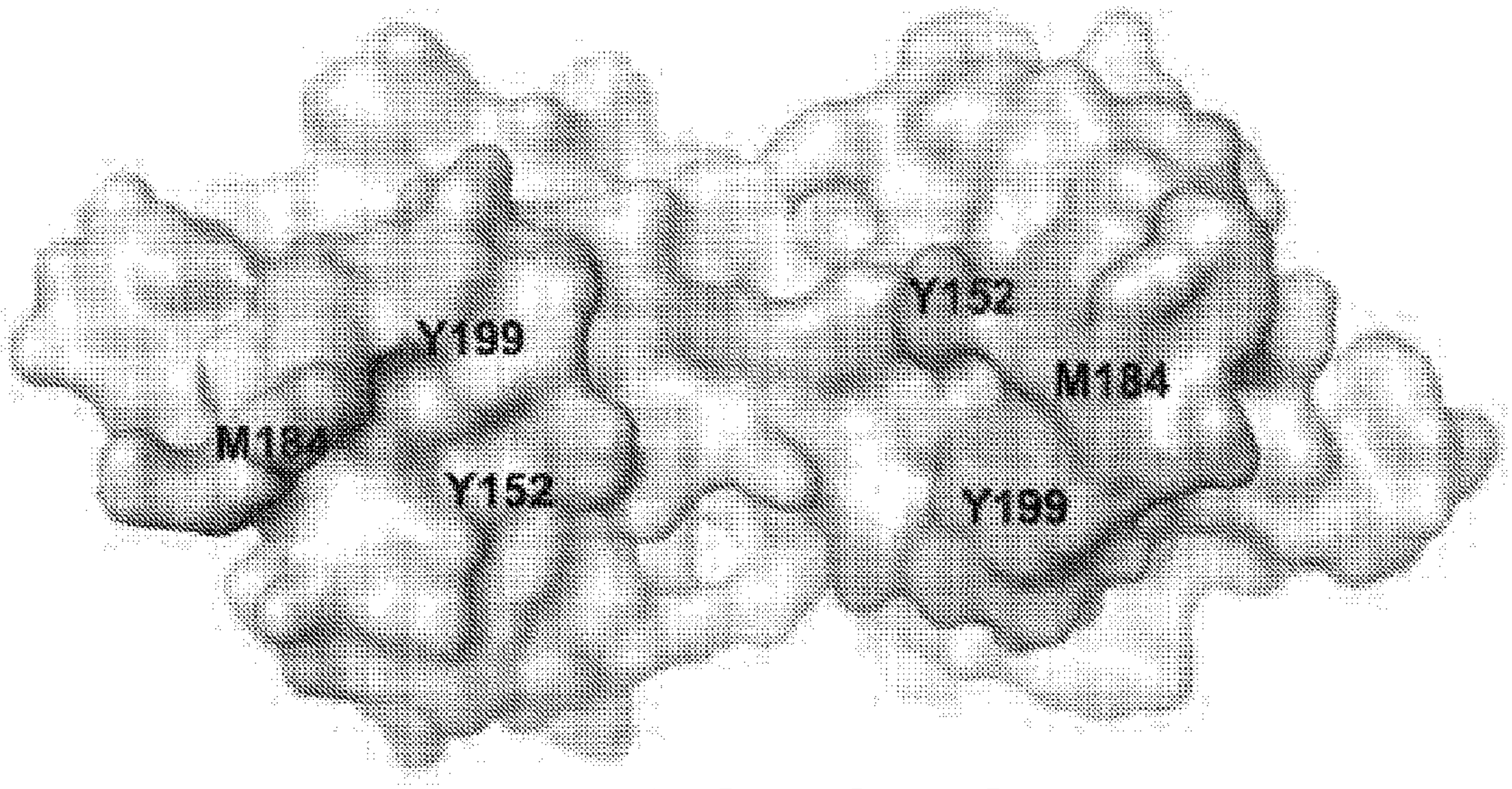


FIG. 27G

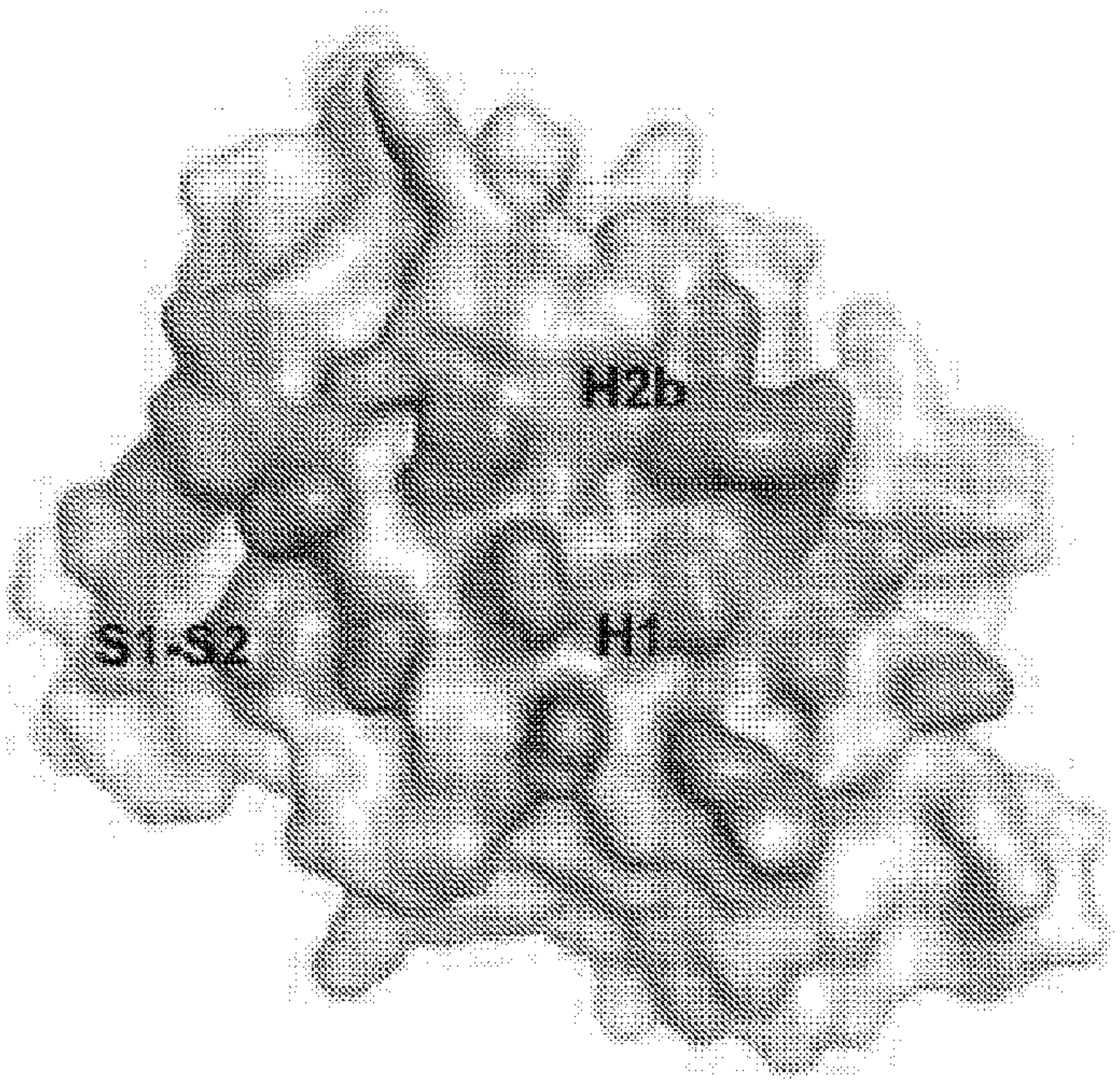


FIG. 27H

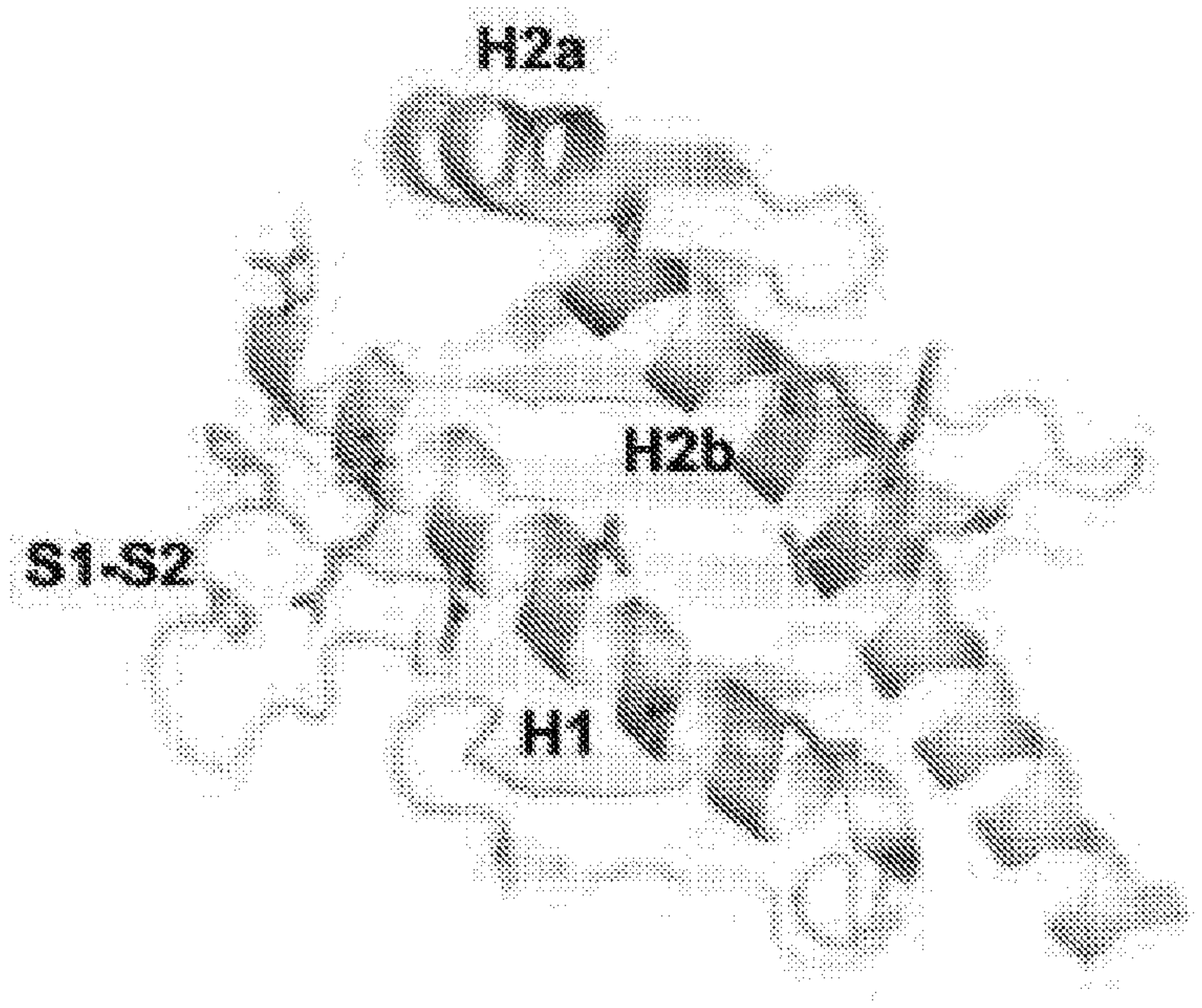


FIG. 27I

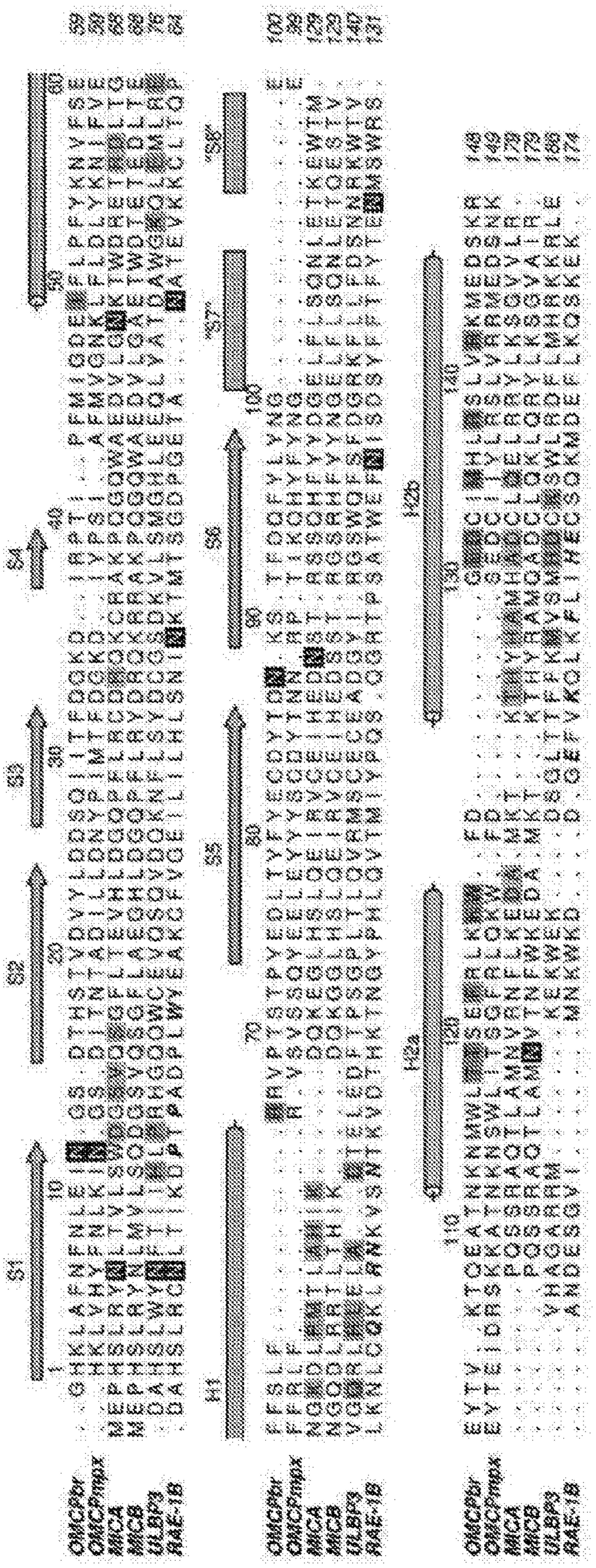

OMCPbr
OMCPmpx
MICA
MICB
ULBP3
RAE-1B
S1
S2
S3
S4
H1
S5
S6
"S7"
"S8"
H2a
H2b
1
10
20
30
40
50
60
70
80
90
100
110
120
130
140

FIG. 27J

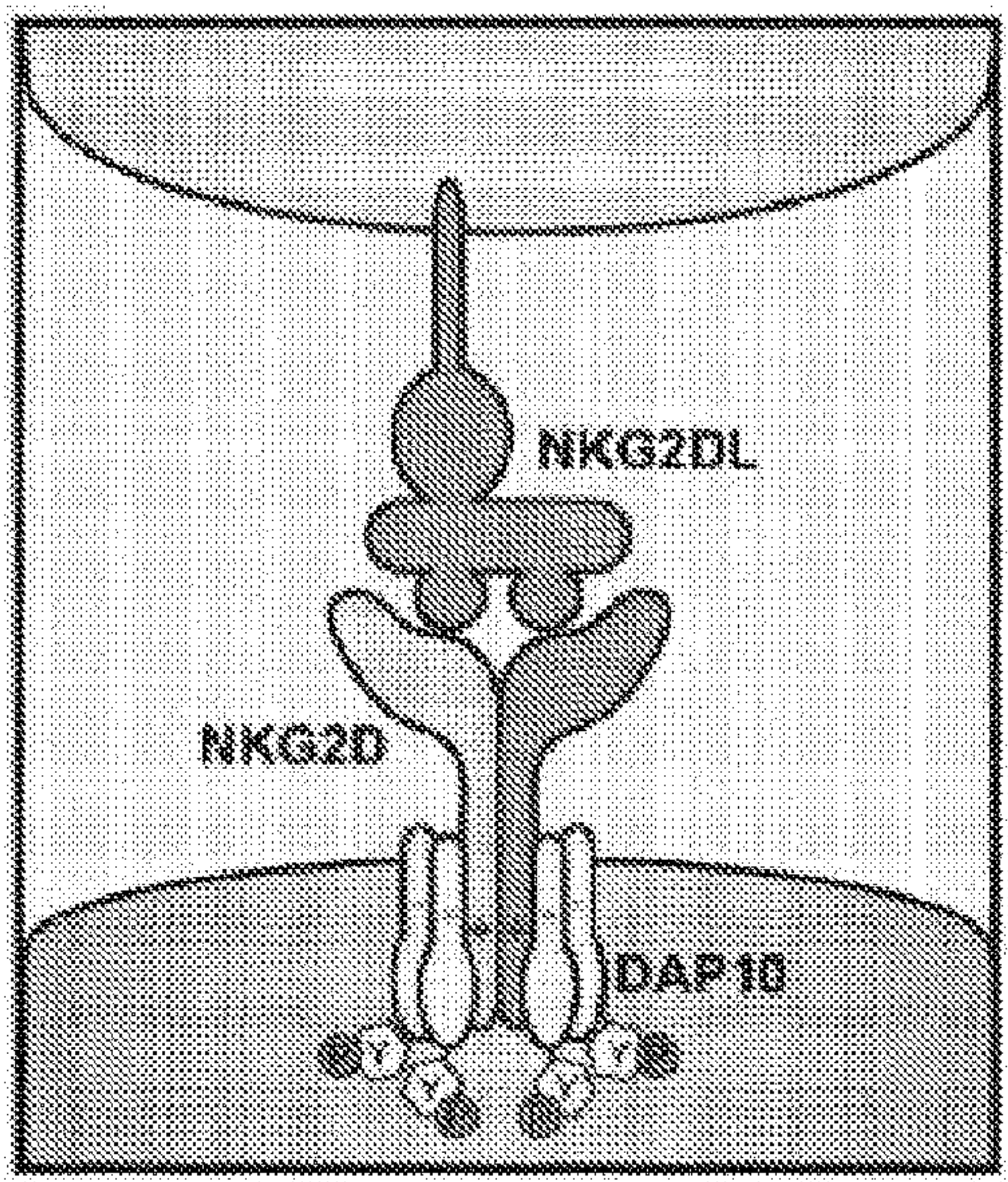


FIG. 28A

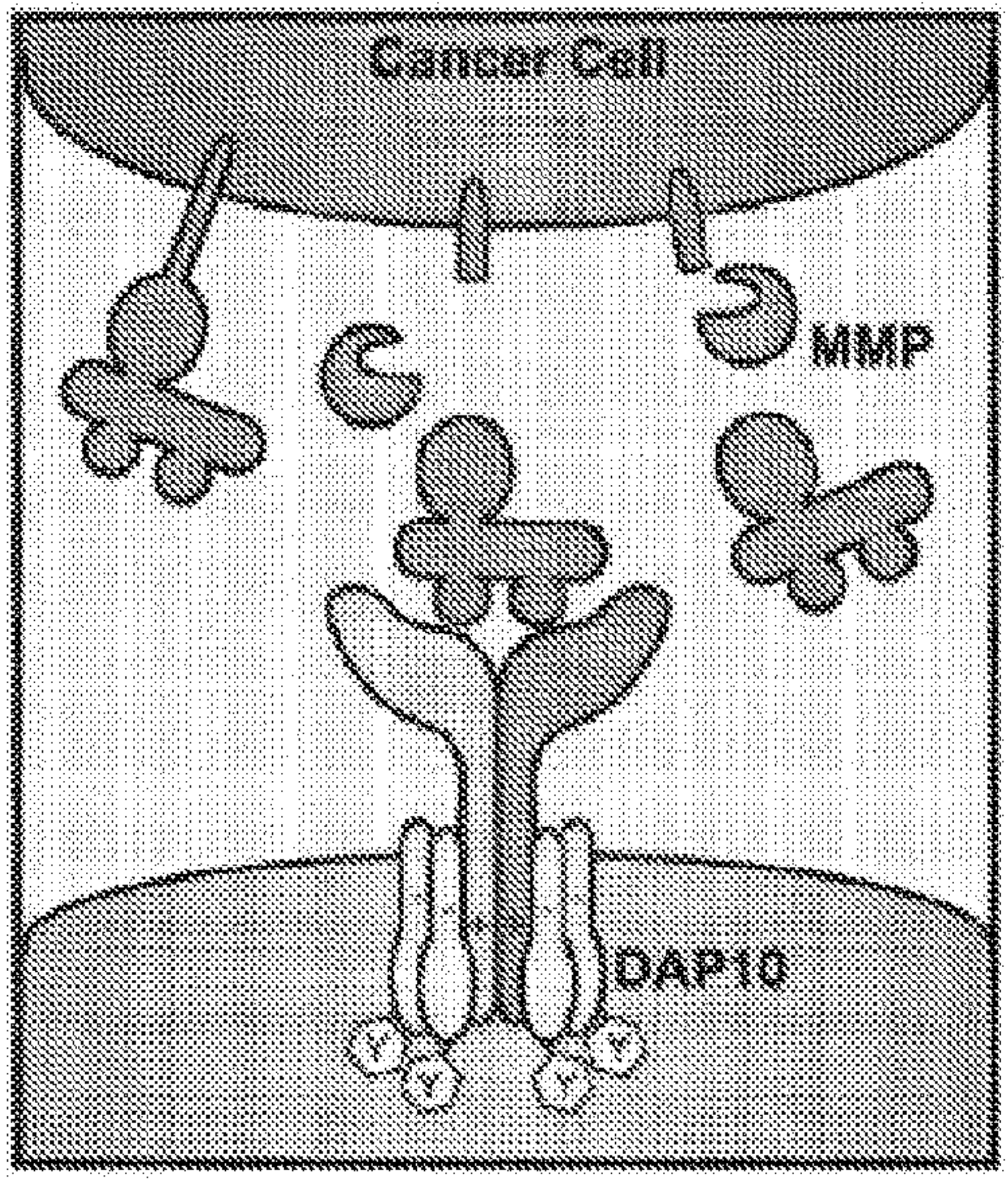


FIG. 28B

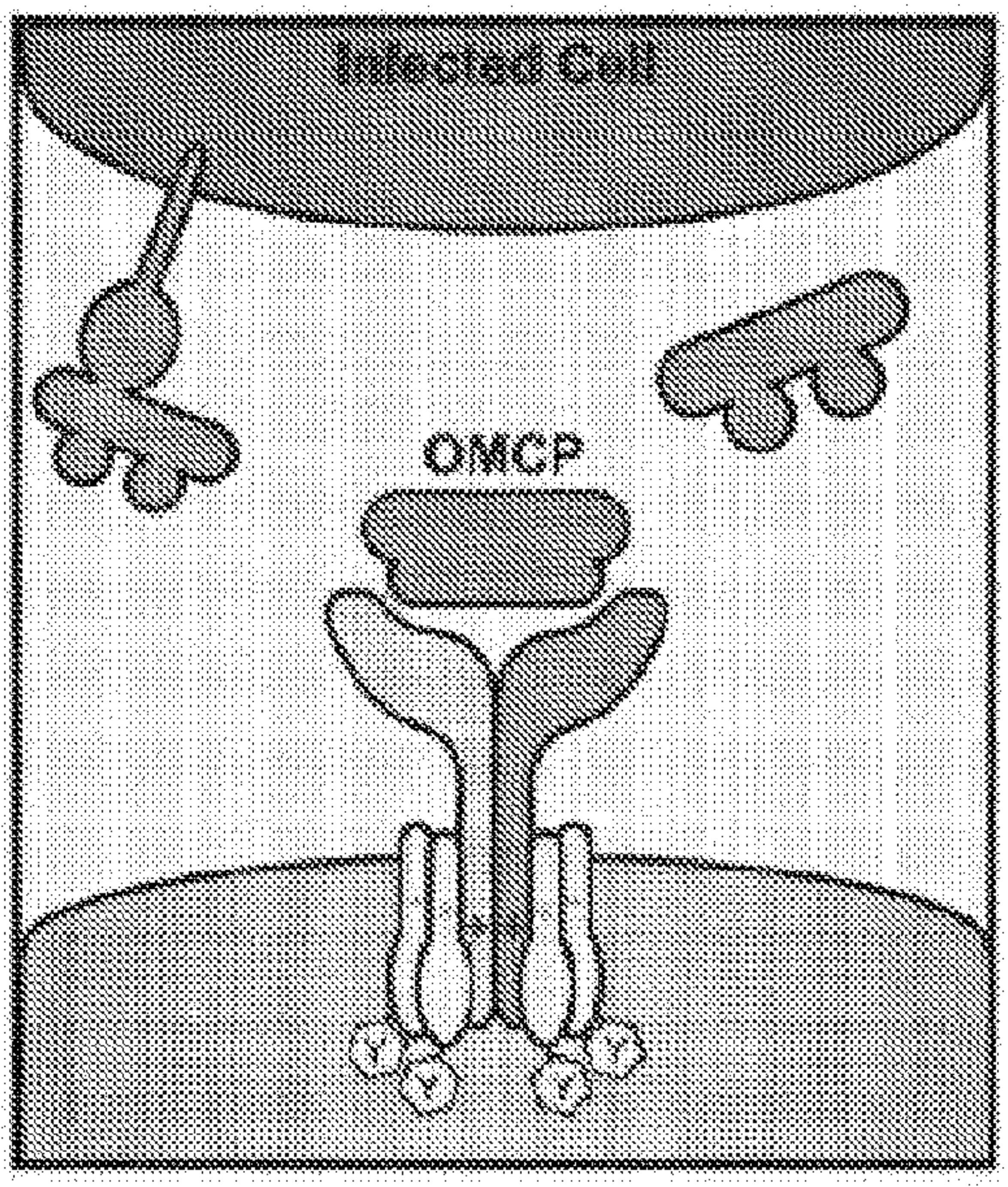


FIG. 28C

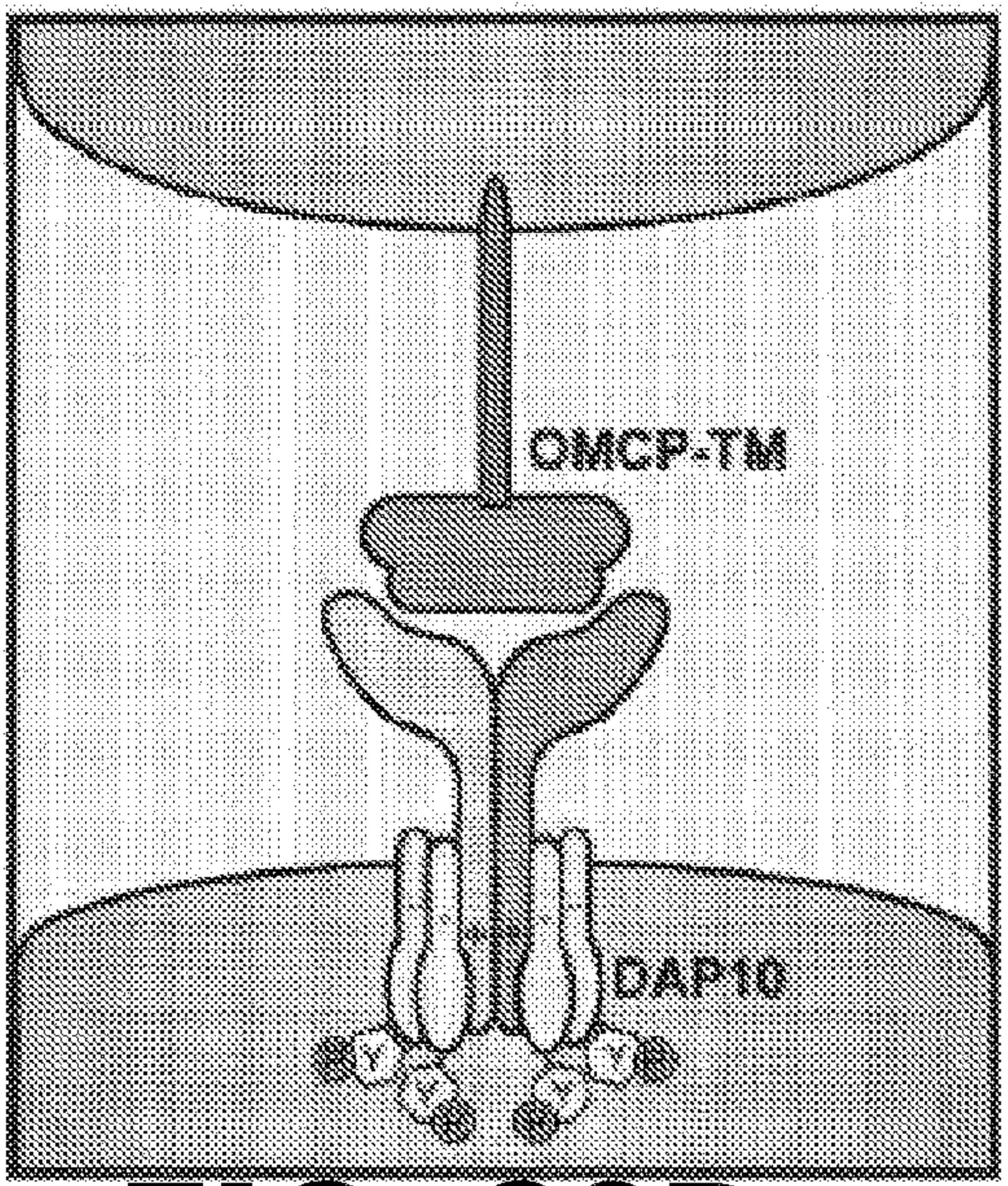


FIG. 28D

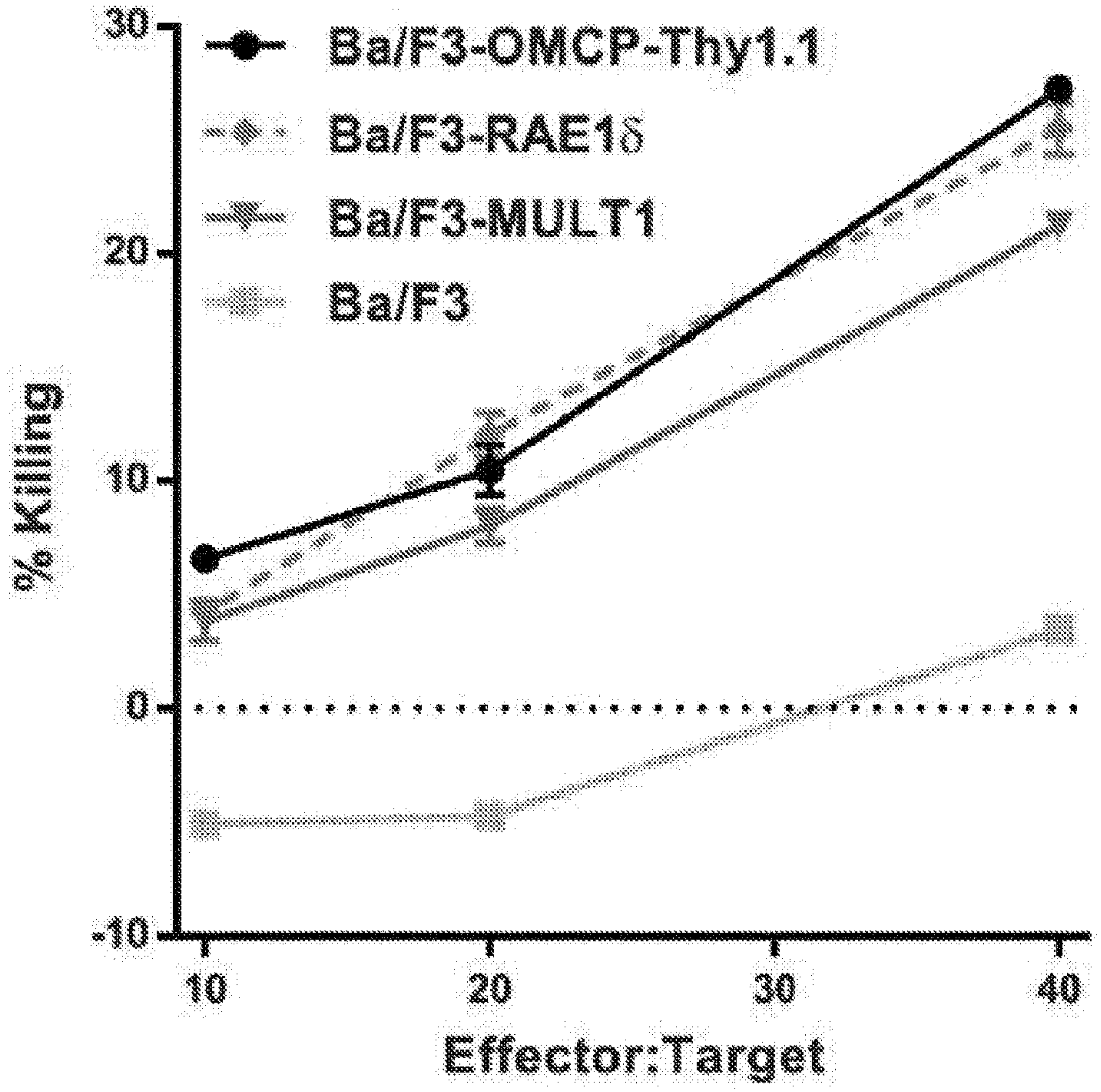

Ba/F3-OMCP-Thy1.1
Ba/F3-RAE1δ
Ba/F3-MULT1
Ba/F3
% Killing
30
20
10
0
-10
10
20
30
40
Effector:Target

FIG. 28E

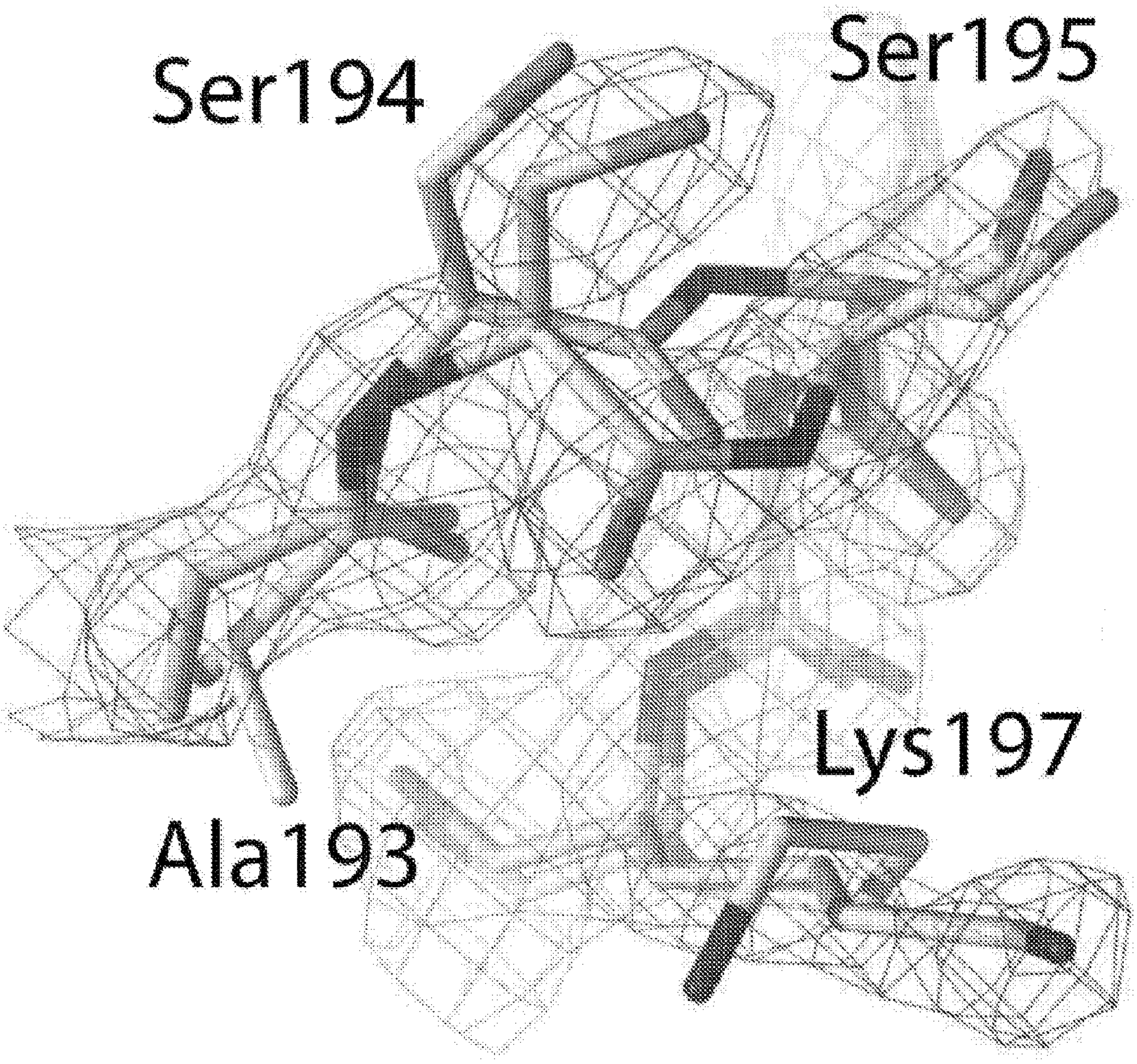


FIG. 29A

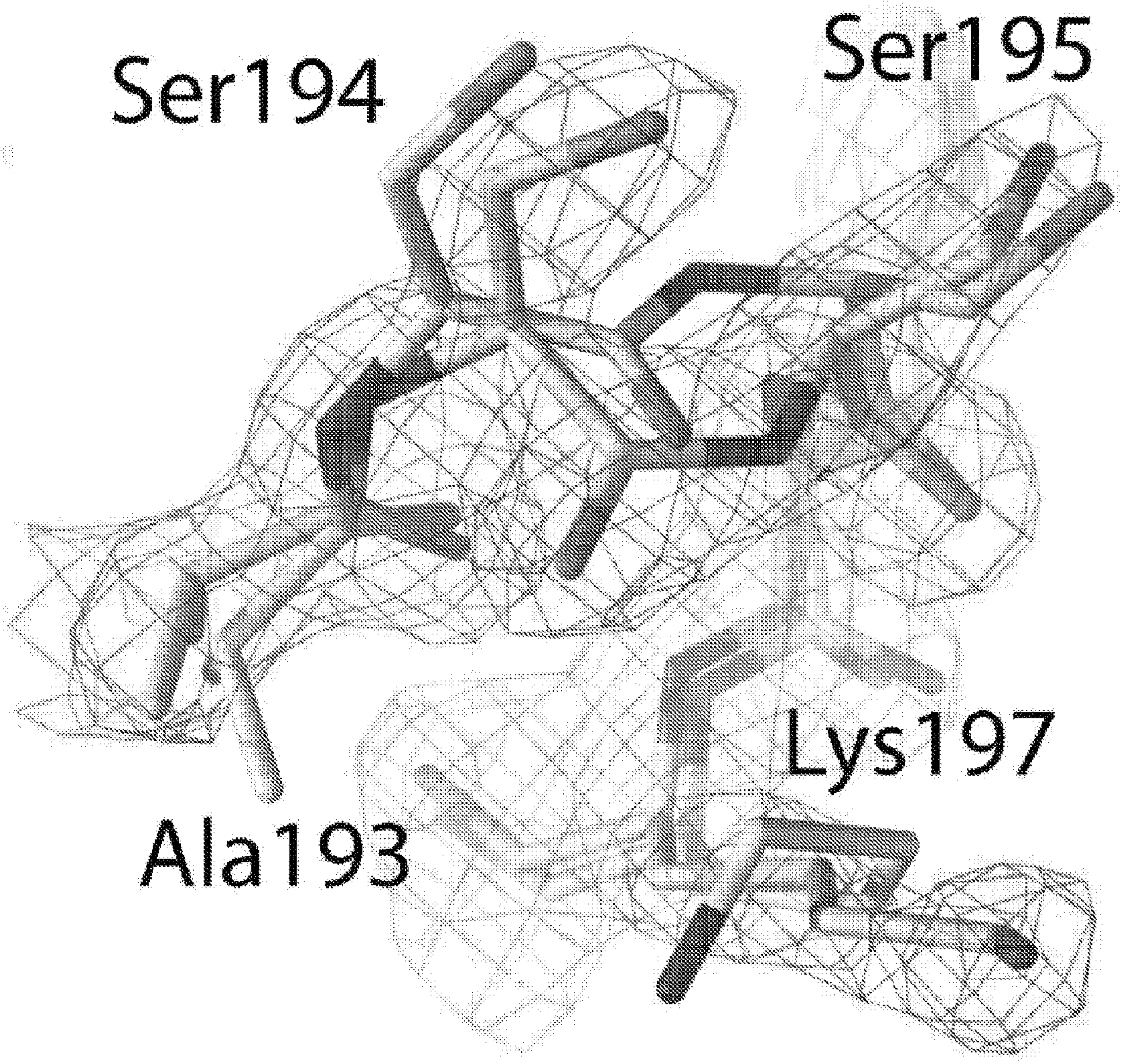


FIG. 29B

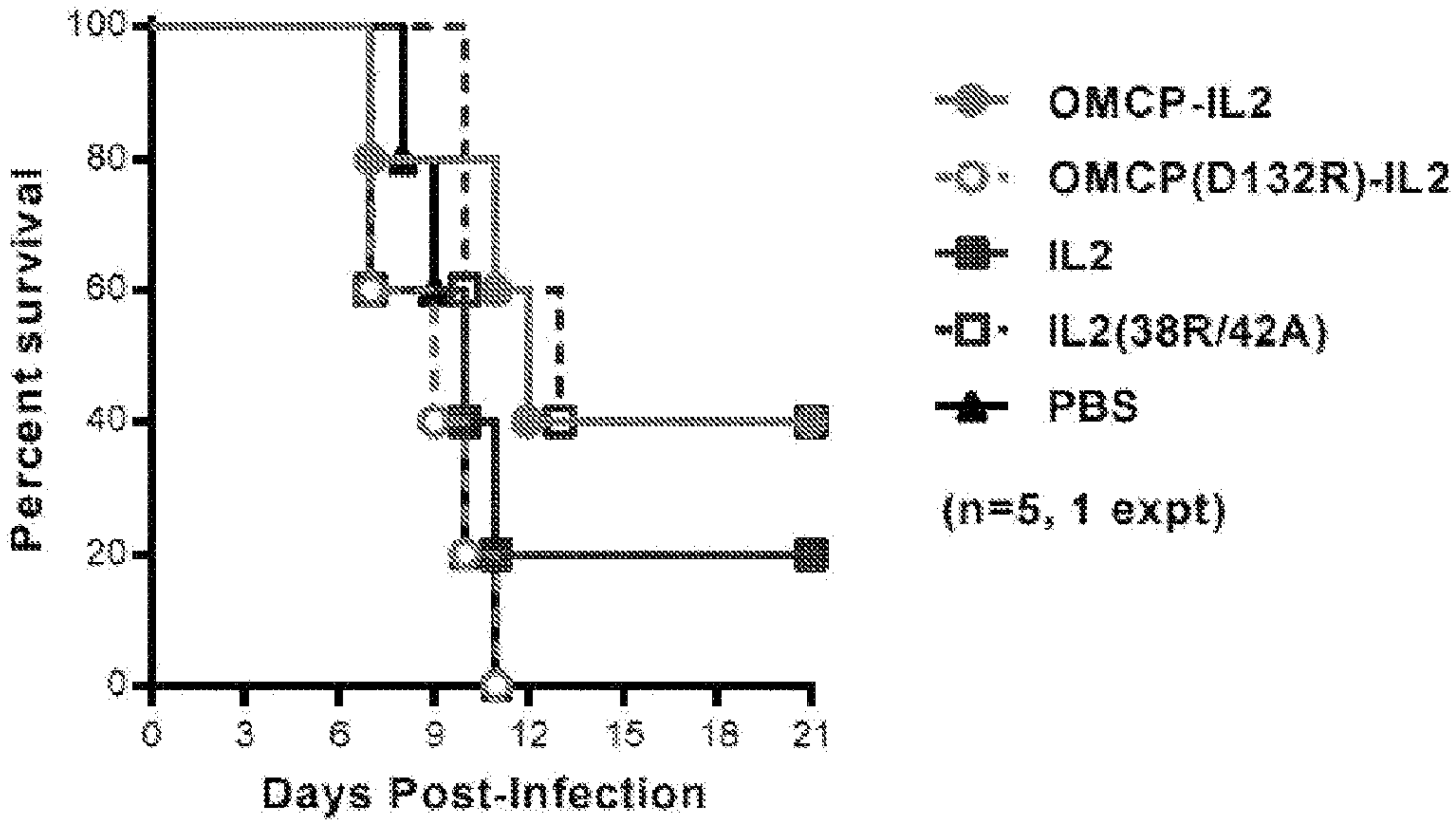


FIG. 30A

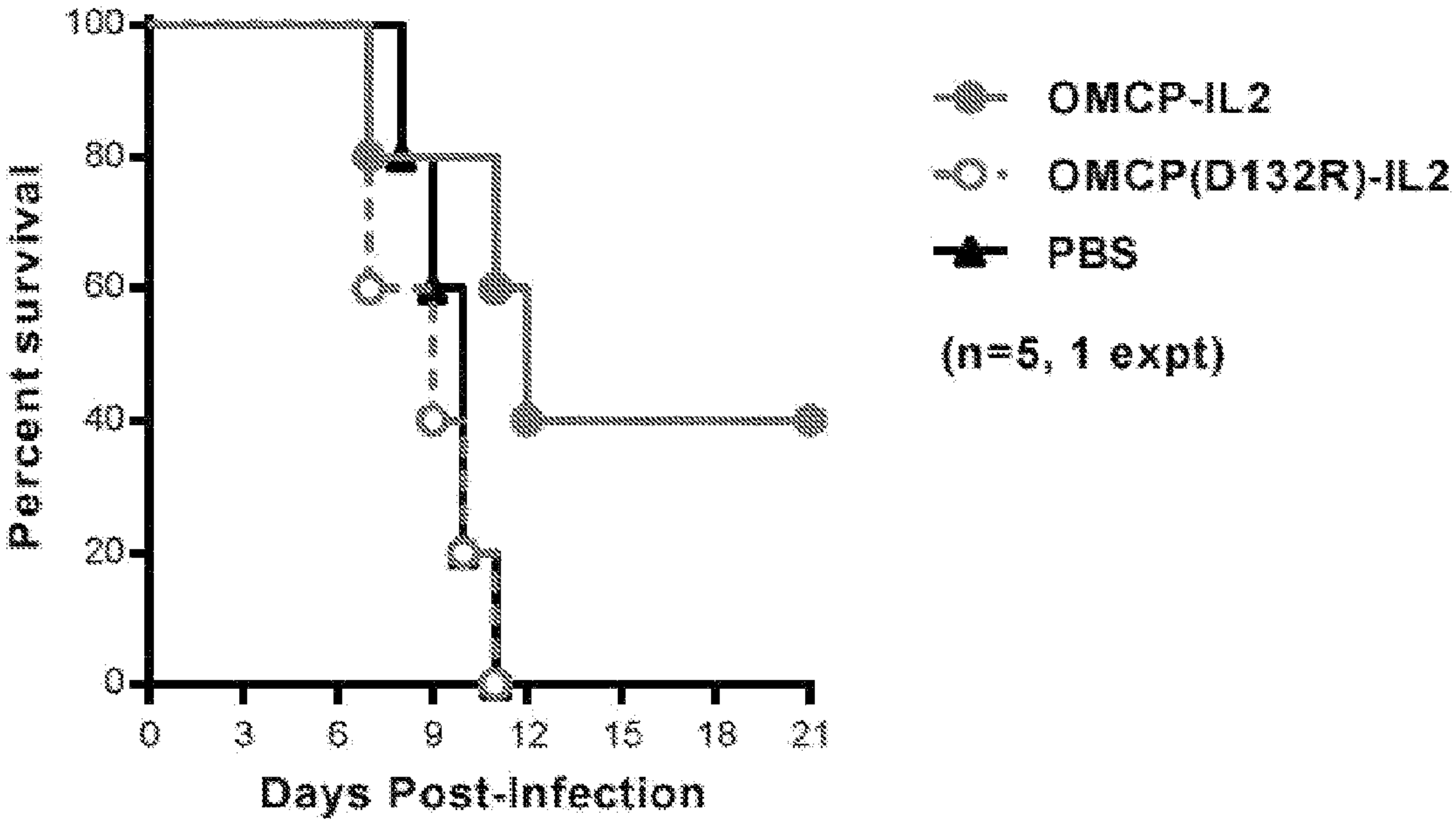


FIG. 30B

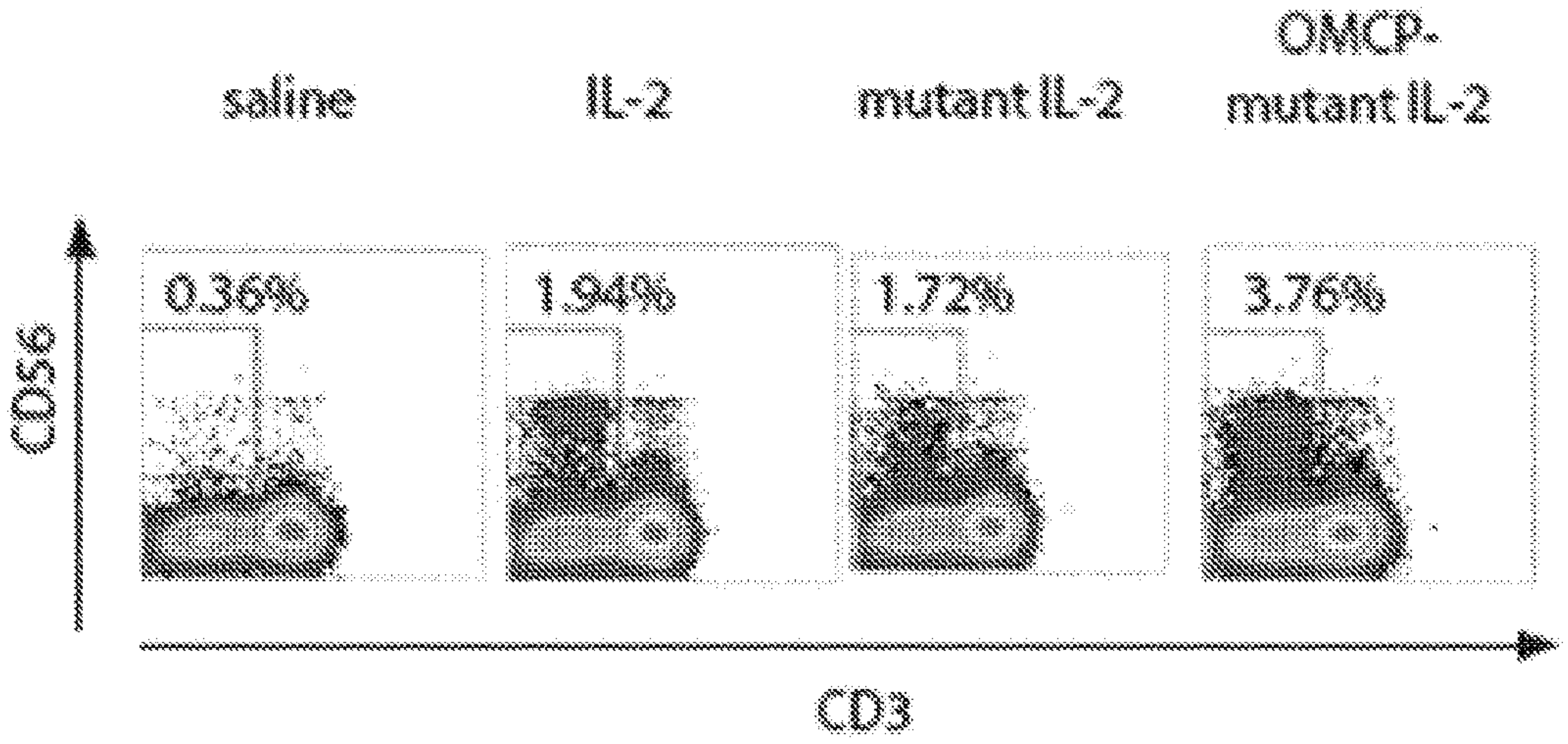


FIG. 31A

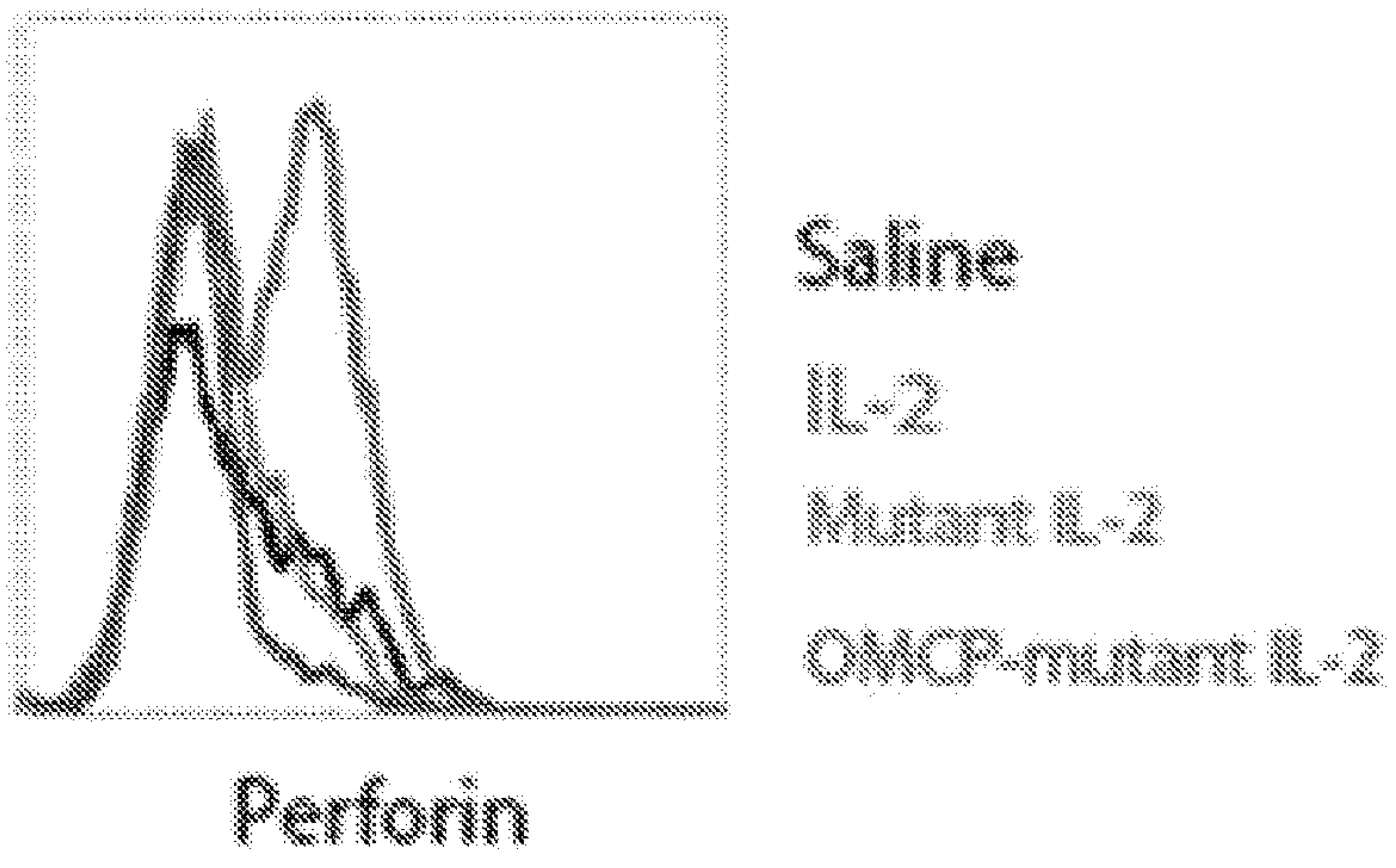


FIG. 31B

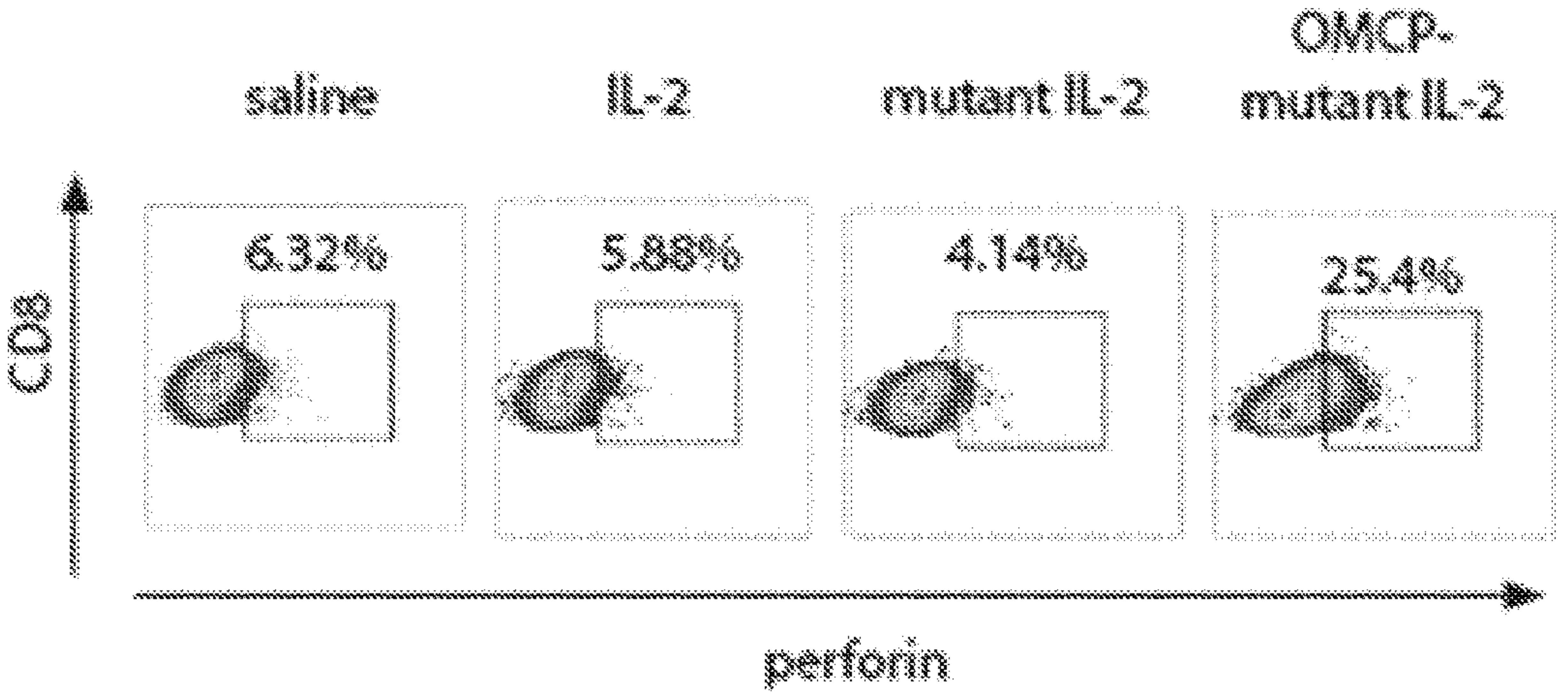


FIG. 31C

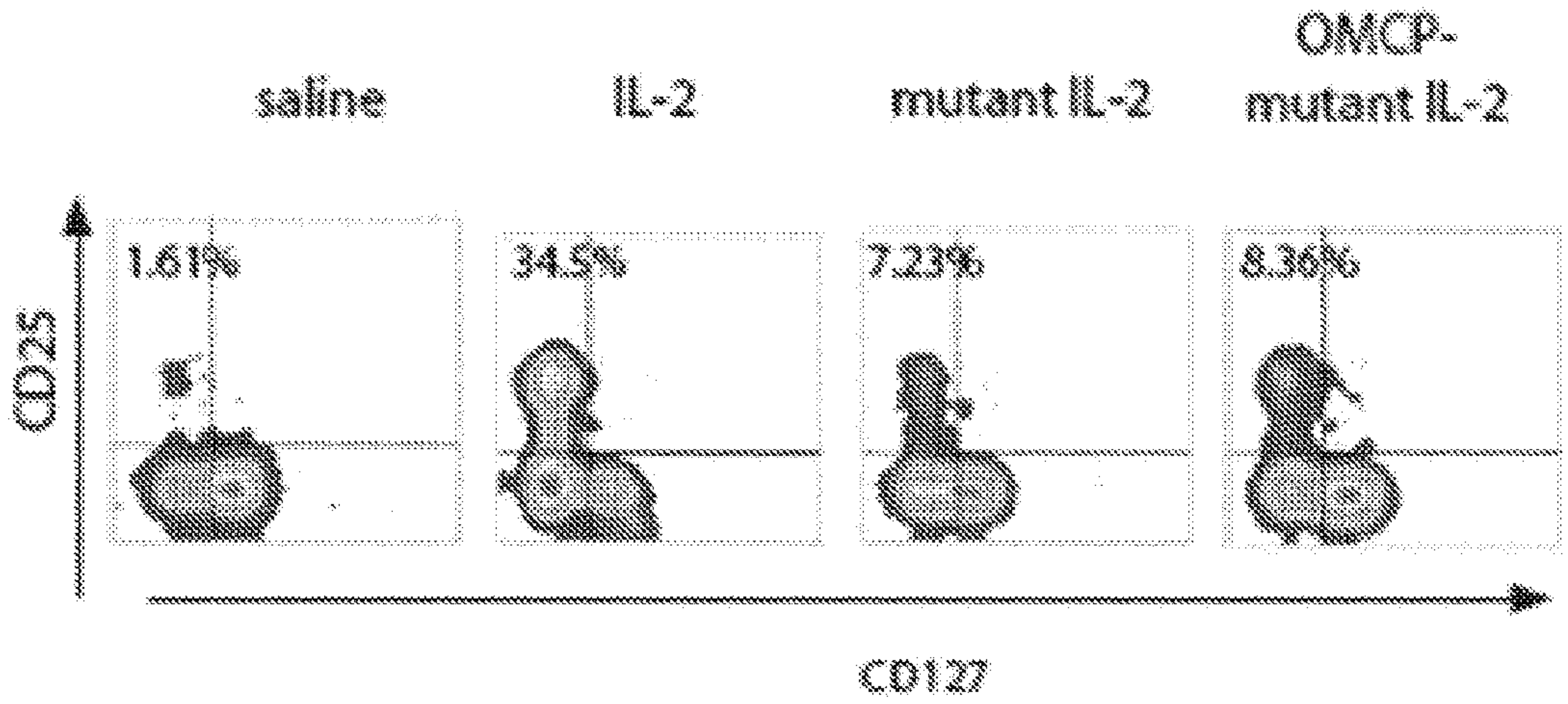


FIG. 31D

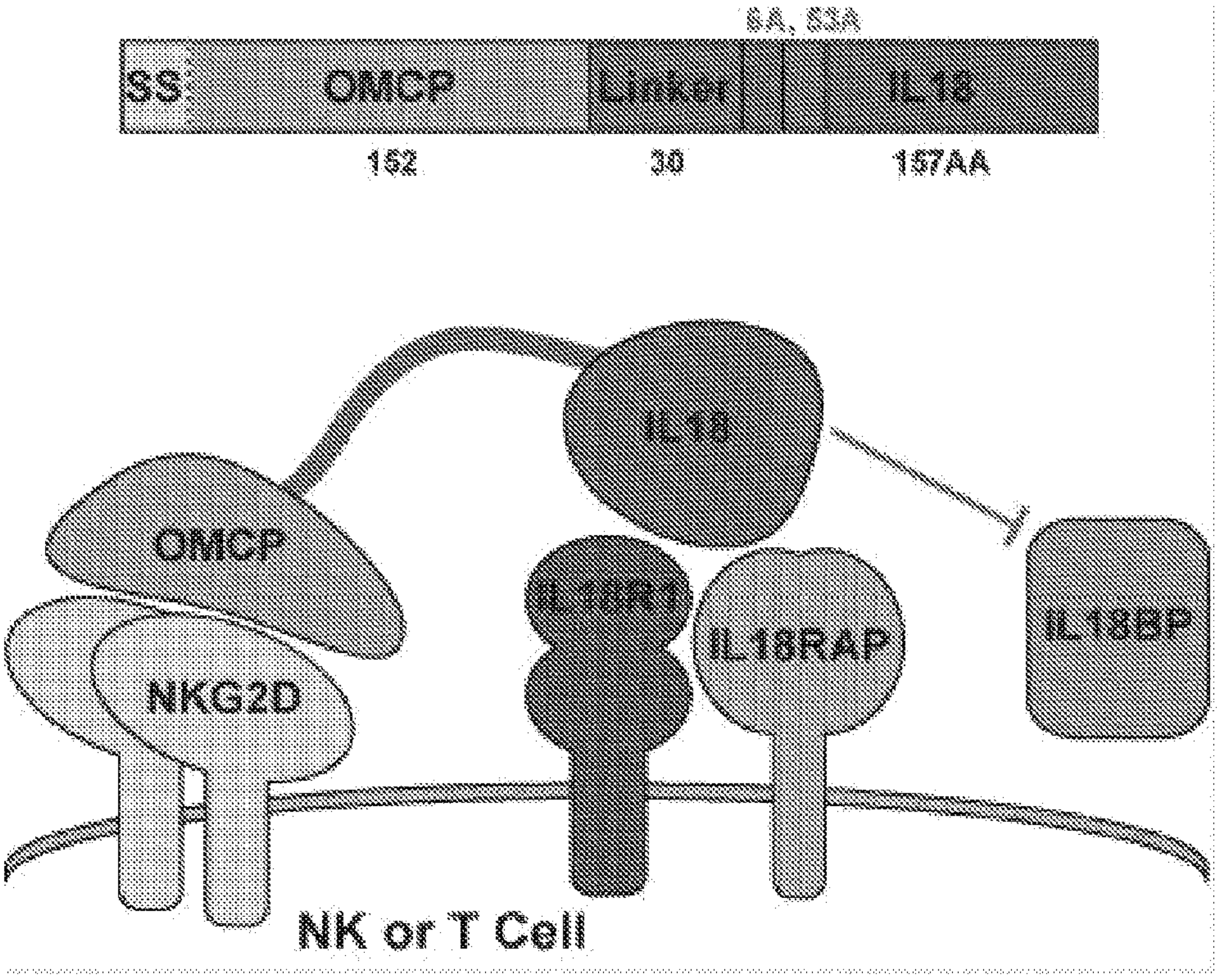
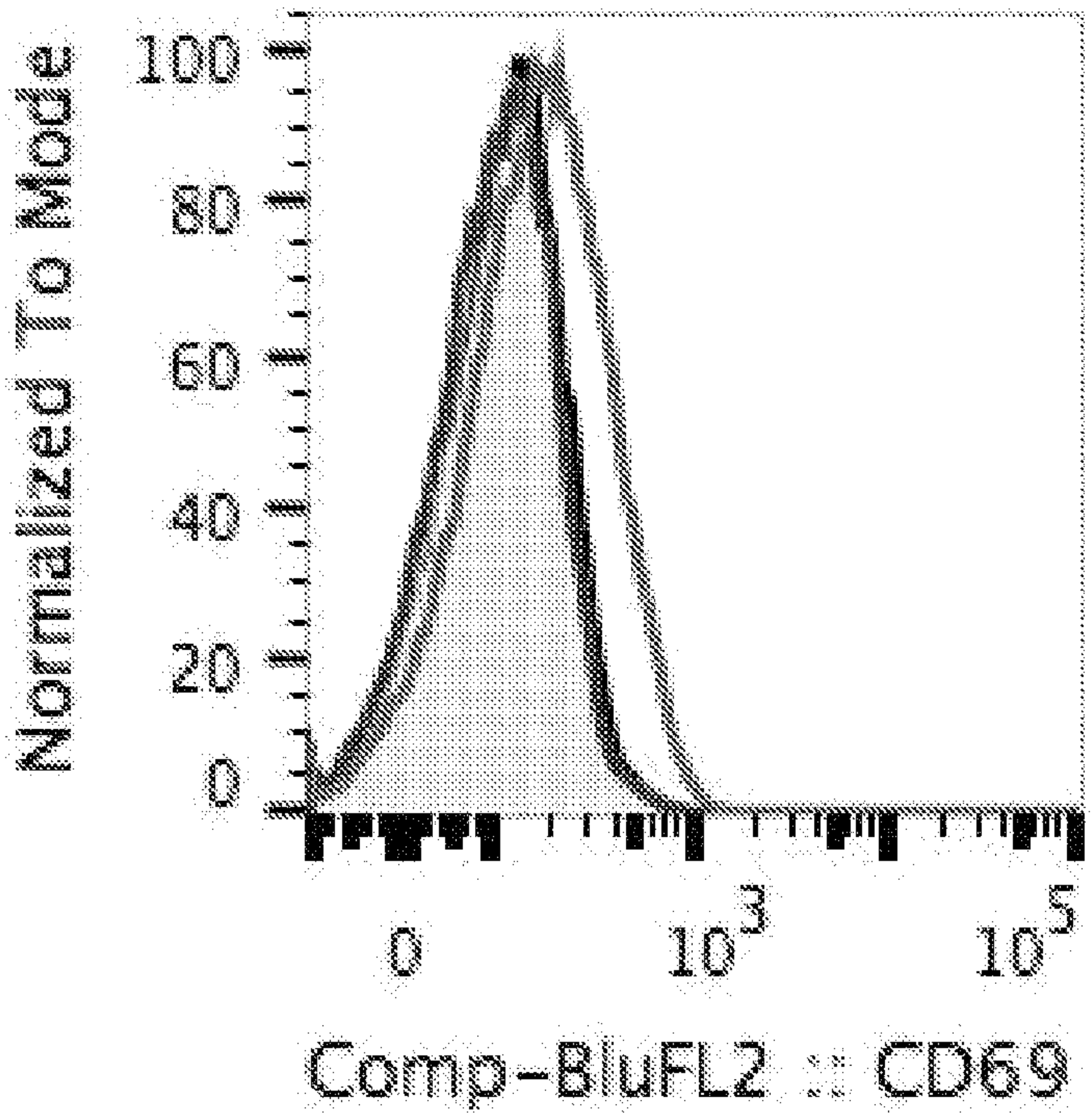

6A, 53A
SS
OMCP
Linker
IL18
152
30
157AA
IL18
OMCP
NKG2D
IL18R1
IL18RAP
IL18BP
NK or T Cell

FIG. 32



	Sample Name	SampleID
☐	021.fcs	OMCP-hIL-18 (4.4)
☐	015.fcs	hIL-18 (4.4)
▨	030.fcs	PBS (Isotype)
☐	009.fcs	PBS#1

FIG. 33