

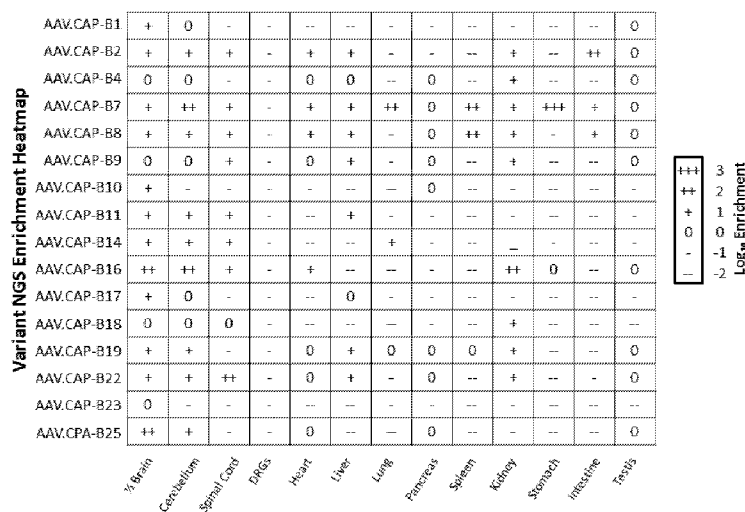


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(54) **Title:** ADENO-ASSOCIATED VIRUS COMPOSITIONS FOR TARGETED GENE THERAPY

FIG. 17C



(57) **Abstract:** Described herein are compositions and kits comprising recombinant adeno-associated viruses (rAAVs) with tropisms showing increased specificity and efficiency of viral transduction in targeted cell-types, for e.g., the brain, and lung. The rAAV compositions described herein also have tropisms showing decreased specificity and decreased efficiency of viral transduction in an off-target cell type, for e.g., the liver. The rAAV compositions described herein encapsidate a transgene, such as a therapeutic nucleic acid. Upon systemic delivery to a subject, the rAAV is capable of increased specificity and increased transduction of the transgene in a target cell-type, as compared to a parental or reference AAV.

SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,  
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**ADENO-ASSOCIATED VIRUS COMPOSITIONS FOR TARGETED GENE THERAPY****CROSS-REFERENCE**

[001] This application claims the benefit of U.S. Provisional Application Serial Number 62/736,904, filed September 26, 2018, and U.S. Provisional Application Serial Number 62/832,812, filed April 11, 2019, both of which are incorporate herein by reference in their entirety.

**STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT**

[002] This invention was made with government support under Grant No. NS087949 awarded by the National Institutes of Health and under grant No. W911NF-17-2-0036 awarded by DARPA. The government has certain rights in the invention.

**SEQUENCE LISTING**

[003] The instant application contains a Sequence Listing which has been submitted electronically in ASCII format and is hereby incorporated by reference in its entirety. Said ASCII copy, created on September 20, 2019, is named 38075-733\_601\_SL.txt and is 10,656,833 bytes in size.

**BACKGROUND**

[004] Recombinant adeno-associated viruses (rAAVs) are increasingly used for gene delivery in basic scientific research and therapeutic applications because of their ability to transduce both dividing and non-dividing cells, their long-term persistence as episomal DNA in infected cells, and their low immunogenicity. These characteristics make them appealing for applications in both basic science and in clinics, such as gene therapy. Current gene therapy approaches for many disorders have focused on direct delivery to increase transduction efficiency and restrict expression only to the cell types affected. However, this administrative route has led to limited success across many clinical trials and diseases due to the limited coverage of localized delivery.

[005] Intravenous administration addresses these limitations and allows for broad and efficient access to tissues and organs throughout the body in a non-invasive manner. Unfortunately, the naturally occurring serotypes have limited transduction of certain cell types and organs, and non-specific, overlapping tropisms in others. This leads to several complications in gene therapy applications, including but not limited to off-target effects due to transduction of unimpacted organs and cell types (in particular, the liver), and the necessity for a larger viral load to achieve sufficient therapeutic levels in the tissue or organ of interest. In addition, even with systemic delivery, current rAAV-mediated gene therapies lack the specificity to cross the blood brain barrier (BBB) or the epithelium, limiting their reach as therapeutic interventions for disease and conditions of the brain or organs (*e.g.*, the lung).

[006] Thus, there is a need for rAAVs capable of achieving high specificity to target specific cell types or organs and low specificity for unimpacted (off-target) organs and cell types in a subject when delivered to the subject systemically (*e.g.*, intravenously, intranasally).

### SUMMARY

[007] Disclosed herein are recombinant AAVs (rAAVs) comprising capsids with specificity engineered into the capsid structure through iterative rounds of positive and negative selection. This engineering yields rAAV variants with altered specificity for certain tissues or organs relative to the unmodified parental capsid from which they were derived. In some embodiments, the rAAV variant comprises an AAV capsid protein having a 7-mer peptide substitution at the residues corresponding to amino acids 452-458 of the AAV9 capsid protein VP1. In certain embodiments, the substitution is of amino acids 452-458 of AAV9 VP1. In certain other embodiments, the substitution is of amino acids 452-458 of AAV-PHP.B VP1. In yet other embodiments, the substitution is of amino acids 452-458 of AAV-PHP.eB VP1. In some embodiments, the substitution reduces the tropism of the rAAV capsid for a cell or tissue, enabling the rAAV variant to reduce the off-target effects of therapeutic viral transduction, thereby obviating a need for larger viral dosage amounts. In some embodiments, the substitution increases the tropism of the rAAV capsid for a cell or tissue, enabling the rAAV variant to achieve widespread transduction to a target environment (*e.g.*, target cell types or tissues) in a subject upon systemic delivery (*e.g.*, intravenous injection). Typically, the 7-mer peptide substitution is not ILGTGTS (SEQ ID NO: 45479), QSSQTPR (SEQ ID NO: 45479), or TLAVPFK (SEQ ID NO: 45477).

The rAAVs described herein are identified using a modified version of the Cre recombination-based AAV targeted evolution (CREATE) method. The Multiplexed-CREATE (M-CREATE) method generates enhanced transduction efficiency and/or specificity by introducing variations in the capsid protein sequence, unbiased *in vivo* selection and recovery of only those variants that travel to defined cell populations, cross the cell membrane, travel to the nucleus, and unpackage and express their genetic payload. Variant capsids exhibiting the most desirable tropism (*e.g.*, enhanced efficiency and specificity for a particular *in vivo* environment) are recovered and identified by deep sequencing. Strategies for unbiased selection and analysis include determining variants' enrichment score (by normalizing the target tissue library to starting virus library) and unbiased propagation between rounds of selections through a synthetic library construction (where each variant is represented equally). The detailed characterizations of the resultant libraries from sequencing data is also described herein, which provide useful insights on the selection of variants towards a target.

[008] Also disclosed herein are AAV capsid libraries comprising AAV capsid proteins having 7-mer peptide substitutions at the residues corresponding to amino acids 452-458 of AAV9 VP1. In some embodiments, the library is a library of capsids comprising 7-mer peptide substitutions at amino acids 452-458 of the AAV9 variant AAV-PHP.eB or AAV-PHP.B. Such libraries find particular use in *in*



*in vivo* positive selections across different brain cell types (*e.g.*, endothelial cells, neurons, and astrocytes) and negative selections across the liver, such libraries having been shown herein to yield a large pool of AAV9 variants with enhanced ability to cross the BBB, broadly transduce the central nervous system (CNS), and de-target off-target *in vivo* environments, *e.g.*, the liver. In other embodiments, the library is an AAV capsid library comprising AAV capsid proteins having 7-mer peptide substitutions at amino acids 452-458 of AAV9. Such libraries find particular use in *in vivo* selections across different organs, such as the spinal cord, brain, a liver, a stomach, an intestine, a lung, a heart, teste, spleen, adipose (fat), and muscle.

**[009]** Also disclosed herein are methods and kits for producing therapeutic recombinant AAV (rAAV) particles, as well as methods and pharmaceutical compositions or formulations comprising the rAAV particles for the treatment of a disease or condition affecting, for *e.g.*, the CNS, PNS, or target *in vivo* environment in a subject in need thereof (*e.g.*, lung).

**[0010]** Aspects disclosed herein provide recombinant AAV (rAAVs), the rAAV comprising: (a) a variant AAV capsid comprising a variant AAV capsid protein comprising an amino acid substitution of three or more amino acids within a 7-mer peptide sequence at a 3-fold axis of symmetry of a corresponding parental AAV capsid protein, wherein the 7-mer peptide sequence is at an amino acid position that corresponds to amino acid residues 452-458 of AAV9 VP1 (SEQ ID NO: 1), and wherein the amino acid substitution is not ILGTGTS (SEQ ID NO: 45479), QSSQTPR (SEQ ID NO: 45479), or TLAVPFK (SEQ ID NO: 45477); and (b) a heterologous polynucleotide comprising a nucleotide sequence encoding a gene product. In some embodiments, the variant AAV capsid has an increased tropism for a target tissue or a target cell, when measured in a subject, relative to a tropism of the corresponding parental AAV capsid. In some embodiments, the target tissue or the target cell comprises a tissue or a cell of a central nervous system (CNS) or a peripheral nervous system (PNS), or a combination thereof. In some embodiments, the variant AAV capsid has a decreased tropism for an off-target tissue comprising liver tissue or an off-target cell comprising a liver cell, when measured in a subject, relative to the tropism of the corresponding parental AAV capsid. In some embodiments, the three or more amino acids comprise three contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L, Q, S, T, and V at amino acid positions in the parental AAV capsid protein corresponding to amino acid residues 452-454, 453-455, 454-456, 455-457, or 456-458 of AAV9 VP1 (SEQ ID NO: 1). In some embodiments, the three or more amino acids comprise four contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L, Q, S, T, and V at amino acid positions in the parental AAV capsid protein corresponding to amino acid residues 452-455, 453-456, 454-457, or 455-458 of AAV9 VP1 (SEQ ID NO: 1). In some embodiments, three or more amino acids comprise at least five contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L, Q, S, T, and V at amino acid positions in the parental AAV capsid protein corresponding to amino acid residues 452-456, 453-457, or 454-458 of AAV9 VP1

(SEQ ID NO: 1). In some embodiments, the three or more amino acids comprise three or more of: (a) A, D, E, G, H, M, N, Q, S, T, or V substituted at an amino acid position corresponding to amino acid residue 452 of AAV9 VP1 (SEQ ID NO: 1); (b) A, D, E, G, K, N, Q, S, T, or V substituted at an amino acid position corresponding to amino acid residue 453 of AAV9 VP1 (SEQ ID NO: 1); (c) A, D, E, G, K, N, Q, S, T, or V substituted at amino acid position corresponding to amino acid residue 454 of AAV9 VP1 (SEQ ID NO: 1); (d) A, D, E, G, K, N, P, Q, S, or T substituted at an amino acid position corresponding to amino acid residue 455 of AAV9 VP1 (SEQ ID NO: 1); (e) A, D, E, G, H, K, N, P, Q, S, or T substituted at an amino acid position corresponding to amino acid residue 456 of AAV9 VP1 (SEQ ID NO: 1); (f) A, D, E, G, K, N, P, S, T, or V substituted at an amino acid position corresponding to amino acid residue 457 of AAV9 VP1 (SEQ ID NO: 1); and (g) A, E, G, H, K, L, N, Q, S, T, or V substituted at amino acid position corresponding to amino acid residue 458 of AAV9 VP1 (SEQ ID NO: 1). In some embodiments, the three or more amino acids comprise three or more of: (a) A, D, E, G, H, K, L, M, N, Q, S, T, or V substituted at an amino acid position corresponding to amino acid residue 452 of AAV9 VP1 (SEQ ID NO: 1); (b) A, D, G, H, M, N, P, Q, S, T, or V substituted at an amino acid position corresponding to amino acid residue 453 of AAV9 VP1 (SEQ ID NO: 1); (c) A, D, E, G, K, N, Q, S, T, or V substituted at amino acid position corresponding to amino acid residue 454 of AAV9 VP1 (SEQ ID NO: 1); (d) A, D, E, G, K, N, P, Q, S, or T substituted at an amino acid position corresponding to amino acid residue 455 of AAV9 VP1 (SEQ ID NO: 1); (e) A, D, G, K, N, P, Q, S, or T substituted at an amino acid position corresponding to amino acid residue 456 of AAV9 VP1 (SEQ ID NO: 1); (f) A, G, H, L, M, N, P, Q, S, T, or V substituted at an amino acid position corresponding to amino acid residue 457 of AAV9 VP1 (SEQ ID NO: 1); and (g) A, D, E, G, H, I, K, L, N, Q, R, S, T, or V substituted at amino acid position corresponding to amino acid residue 458 of AAV9 VP1 (SEQ ID NO: 1). In some embodiments, the amino acid substitution comprises an amino acid sequence selected from DGAATKN (SEQ ID NO: 3943), and DGQSSKS (SEQ ID NO: 2764). In some embodiments, the three or more amino acids comprises three or more of: (a) A, D, G, L, N, Q, S, or T substituted at an amino acid at a position corresponding to amino acid residue 452 of AAV9 VP1 (SEQ ID NO: 1); (b) A, G, N, P, Q, R, S, or substituted at an amino acid at a position corresponding to amino acid residue 453 of AAV9 VP1 (SEQ ID NO: 1); (c) A, D, G, N, S, or T substituted at an amino acid at a position corresponding to amino acid residue 454 of AAV9 VP1 (SEQ ID NO: 1); (d) A, D, G, K, N, P, Q, S, or T substituted at an amino acid at a position corresponding to amino acid residue 455 of AAV9 VP1 (SEQ ID NO: 1); (e) A, G, K, N, P, R, S, or T substituted at an amino acid at a position corresponding to amino acid residue 456 of AAV9 VP (SEQ ID NO: 1); (f) A, G, K, N, P, R, S, T, or V substituted at an amino acid at a position corresponding to amino acid residue 457 of AAV9 VP1 (SEQ ID NO: 1); and (g) A, G, K, L, R, S, T, or V substituted at an amino acid at a position corresponding to amino acid residue 458 of AAV9 VP1 (SEQ ID NO: 1). In some embodiments, the amino acid substitution comprises an amino acid sequence selected from the group consisting of LQTSSPG (SEQ ID NO: 2933), QQGKQSV (SEQ ID NO: 79),

SINTKTN (SEQ ID NO: 45475), SNGTKQT (SEQ ID NO: 442), GSGKTAA (SEQ ID NO: 88), MGDKPTR (SEQ ID NO: 2466), QPSGGNT (SEQ ID NO: 2672), ERGANTK (SEQ ID NO: 5192), TTGGHSS (SEQ ID NO: 2743), GTTKTSE (SEQ ID NO: 3064), GTGTSVL (SEQ ID NO: 11958), NQSGTKG (SEQ ID NO: 780), KGPGQMG (SEQ ID NO: 45476), and GTPSKAG (SEQ ID NO: 2741). In some embodiments, the target tissue or the target cell in the tissue is selected from the group consisting of lung, intestine, kidney, heart, and stomach. In some embodiments, the three or more amino acids comprise three contiguous amino acids at an amino acid position corresponding to amino acid residues 452-454, 453-455, 454-456, 455-457, or 456-458 of AAV9 VP1, wherein: (a) 452 is selected from the group consisting of N, K, R, and T; (b) 453 is selected from the group consisting of L, N, P, and S; (c) 454 is selected from the group consisting of A, D, G, N, S, and T; (d) 455 is selected from the group consisting of L, P, S, and T; (e) 456 is selected from the group consisting of P, R, and S; (f) 457 is selected from the group consisting of G, N, S, and T; and (g) 458 is selected from the group consisting of I, L, and R. In some embodiments, the three or more amino acids comprise: (a) four contiguous amino acids at an amino acid position corresponding to amino acid residues 452-455, 453-456, 454-457, or 455-458 of AAV9 VP1 (SEQ ID NO: 1); (b) five contiguous amino acids at an amino acid position corresponding to amino acid residues 452-456, 453-457, or 453-458 of AAV9 VP1 (SEQ ID NO: 1); (c) six contiguous amino acids at an amino acid position corresponding to amino acid residues 452-457 or 453-458 of AAV9 VP1 (SEQ ID NO: 1); and (d) seven contiguous amino acids at an amino acid position corresponding to amino acid residues 452-458 of AAV9 VP1 (SEQ ID NO: 1). In some embodiments, the target tissue is lung, and the three or more amino acids are provided in an amino acid sequence comprising KDNTPGR (SEQ ID NO: 32538),>NNLPRNL (SEQ ID NO: 32867), or any amino acid sequence provided in FIG. 13. In some embodiments, the target tissue is intestine, and the three or more amino acids are provided in an amino acid sequence comprising RESSPSL (SEQ ID NO: 26474), KDNTPGR (SEQ ID NO: 26584), or any amino acid sequence provided in FIG. 5. In some embodiments, the tissue is kidney, and the three or more amino acids are provided in an amino acid sequence comprising RVPLSTI (SEQ ID NO: 26933),>NNLPRNL (SEQ ID NO: 27530), KDNTPGR (SEQ ID NO: 28509), or any amino acid sequence provided in FIG. 6. In some embodiments, the tissue is heart, and the three or more amino acids are provided in an amino acid sequence comprising KDNTPGR (SEQ ID NO: 25633), or any amino acid sequence provided in FIG. 4. In some embodiments, the tissue is stomach, and the three or more amino acids are provided in an amino acid sequence comprising RESSPSL (SEQ ID NO: 31904) or any amino acid sequence of FIG. 12. In some embodiments, the corresponding parental AAV capsid protein is AAV9 VP1 or a variant thereof. In some embodiments, the AAV9 VP1 variant has a sequences identity of 90% or more to SEQ ID NO:1. In some embodiments, the AAV9 VP1 variant has a sequences identity of 95% or more to SEQ ID NO:1. In some embodiments, the corresponding parental AAV capsid protein further comprises an insertion of an amino acid sequence selected from the group consisting of TLAXPFK (SEQ ID NO: 46424), TLAX (SEQ ID NO: 46425),

LAVX (SEQ ID NO: 46426), AVPX (SEQ ID NO: 46427), and VPFX (SEQ ID NO: 46428), at an amino acid position corresponding to 588\_589 of the AAV9 VP1 (SEQ ID NO: 1), wherein X is any amino acid other than V. In some embodiments, the parental AAV capsid protein is from AAV-PHP.B or AAV-PHP.eB. In some embodiments, the rAAV is isolated and purified.

**[0011]** Aspects disclosed herein provide pharmaceutical formulations comprising the rAAV of the present disclosure and a pharmaceutical excipient. In some embodiments, the pharmaceutical formulation is formulated for intravenous, intraarterial, intranasal, intrathecal, intracisternae magna, or subcutaneous injection.

**[0012]** Aspects disclosed herein provide methods of treating a disease or condition in a subject, the method comprising administering to the subject a therapeutically effective amount the rAAV of the present disclosure, or the pharmaceutical formulation of the present disclosure, wherein the gene product is a therapeutic gene product. In some embodiments, the administering is by intravenous, intraarterial, intranasal, intrathecal, intracisternae magna, or subcutaneous injection. In some embodiments, the disease or the condition is selected from the group consisting of pulmonary fibrosis, surfactant protein disorders, peroxisome biogenesis disorders, or COPD. In some embodiments, the disease or the condition is a central nervous system (CNS) peripheral nervous system (PNS) disorder.

**[0013]** A method of manufacturing an rAAV of the present disclosure, the method comprising: (a) introducing into a cell a nucleic acid comprising: (i) a first nucleic acid sequence encoding a therapeutic gene expression product enclosed by a 5' and a 3' inverted terminal repeat (ITR) sequence; (ii) a second nucleic acid sequence encoding a viral genome comprising a 5' ITR sequence, a Replication (Rep) gene, Capsid (Cap) gene, and a 3' ITR, wherein the Cap gene encodes a rAAV capsid protein; and (iii) a third nucleic acid sequence encoding a first helper virus protein selected from the group consisting of E4orf6, E2a, and VA RNA, and optionally, a second helper virus protein comprising E1a or E1b55k; (b) expressing in the cell the AAV capsid protein; (c) assembling the rAAV of the present disclosure; and (d) packaging the first nucleic acid sequence in the rAAV.

Aspects disclosed herein provide variant adeno-associated virus (AAV) capsids comprising: (a) at least one of a decreased specificity and a decreased transduction efficiency, as measured in a liver of a primate subject when delivered to the primate subject intravenously, relative to a corresponding parental AAV capsid with an AAV capsid protein of SEQ ID NO: 1; and (b) at least one of an increased specificity and an increased transduction efficiency, as measured in a central nervous system (CNS) of the primate subject when delivered to the primate subject intravenously, relative to the corresponding parental AAV capsid. In some embodiments, the variant AAV capsids further comprising a variant AAV capsid protein comprising an amino acid substitution of three or more amino acids within a 7-mer peptide sequence at an amino acid position that corresponds to amino acid residues 452-458 of AAV9 VP1 (SEQ ID NO:1). In some embodiments, the three or more amino acids comprise three contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L, Q, S, T, and V at amino acid positions in the parental AAV

capsid protein corresponding to amino acid residues 452-454, 453-455, 454-456, 455-457, or 456-458 of AAV9 VP1 (SEQ ID NO: 1). In some embodiments, the 7-mer peptide sequence is DGAATKN (SEQ ID NO: 3943). In some embodiments, the variant AAV capsid protein further comprises an amino acid sequence that is at least 96% identical to an amino acid sequence between amino acid 217 to amino acid 736 of SEQ ID NO: 1. In some embodiments, the amino acid substitution is not ILGTGTS (SEQ ID NO: 45479), QSSQTPR (SEQ ID NO: 45479), or TLAVPFK (SEQ ID NO: 45477). In some embodiments, the variant AAV capsid protein further comprises an insertion of an amino acid sequence selected from the group consisting of TLAXPFK (SEQ ID NO: 46424), TLAX (SEQ ID NO: 46425), LAVX (SEQ ID NO: 46426), AVPX (SEQ ID NO: 46427), and VPFK (SEQ ID NO: 46428), at an amino acid position corresponding to 588\_589 of the AAV9 VP1 (SEQ ID NO: 1), wherein X is any amino acid other than V. Aspects disclosed herein provide variant adeno-associated virus (AAV) capsids comprising: (a) a variant AAV capsid protein comprising an amino acid sequence with an amino acid substitution of three or more amino acids within a 7-mer peptide sequence at an amino acid position that corresponds to amino acid residues 452-458 of AAV9 VP1 (SEQ ID NO: 1); and (b) at least one of an increased specificity and increased transduction efficiency in a target tissue as measured in the target tissue of a subject when delivered to the subject intranasally or intravenously, relative to a corresponding parental AAV capsid protein of SEQ ID NO: 1 or SEQ ID NO: 2, wherein the target tissue is selected from the group consisting of lung, intestine, kidney, heart, and stomach. In some embodiments, the three or more amino acids comprise three contiguous amino acids at an amino acid position corresponding to amino acid residues 452-454, 453-455, 454-456, 455-457, or 456-458 of AAV9 VP1, wherein: (a) 452 is selected from the group consisting of N, K, R, and T; (b) 453 is selected from the group consisting of L, N, P, and S; (c) 454 is selected from the group consisting of A, D, G, N, S, and T; (d) 455 is selected from the group consisting of L, P, S, and T; (e) 456 is selected from the group consisting of P, R, and S; (f) 457 is selected from the group consisting of G, N, S, and T; and (g) 458 is selected from the group consisting of I, L, and R. In some embodiments, the target tissue is the lung, and the three or more amino acids are provided in an amino acid sequence comprising KDNTPGR (SEQ ID NO: 32538),>NNLPRNL (SEQ ID NO: 32867), or any amino acid sequence provided in FIG. 13. In some embodiments, the target tissue is the intestine, and the three or more amino acids are provided in an amino acid sequence comprising RESSPSL (SEQ ID NO: 26474), KDNTPGR (SEQ ID NO: 26584), or any amino acid sequence provided in FIG. 5. In some embodiments, the tissue is the kidney, and the three or more amino acids are provided in an amino acid sequence comprising RVPLSTI (SEQ ID NO: 26933),>NNLPRNL (SEQ ID NO: 27530), KDNTPGR (SEQ ID NO: 28509), or any amino acid sequence provided in FIG. 6. In some embodiments, the tissue is the heart, and the three or more amino acids are provided in an amino acid sequence comprising KDNTPGR (SEQ ID NO: 25633), or any amino acid sequence provided in FIG. 4. In some embodiments, the tissue is the stomach, and the three or more amino acids are provided in an amino acid sequence comprising RESSPSL (SEQ ID NO: 31904) or any amino acid sequence of

FIG. 12. In some embodiments, the variant AAV capsid protein further comprises an amino acid sequence that is at least 96% identical to an amino acid sequence between amino acid 217 to amino acid 736 of SEQ ID NO: 1. In some embodiments, the variant AAV capsid of the present disclosure is isolated and purified. In some embodiments, the variant AAV capsid of the present disclosure is formulated as a pharmaceutical formulation further comprising a pharmaceutically acceptable carrier. In some embodiments, the pharmaceutical formulation is formulated for intranasal or intravenous administration.

**[0014]** Aspects disclosed provide methods of treating a disease or condition in a subject, the method comprising administering to the subject a therapeutically effective amount the rAAV of the present disclosure or the pharmaceutical formulation of the present disclosure. In some embodiments, the disease or the condition is selected from the group consisting of pulmonary fibrosis, surfactant protein disorders, peroxisome biogenesis disorders, chronic obstructive pulmonary disease (COPD), a CNS disease or condition, and a PNS disease or condition.

**[0015]** Aspects disclosed herein provide recombinant adeno-associated virus (rAAV) capsids comprising variant AAV capsid proteins, the rAAV capsids having at least one of an increased specificity and an increased transduction efficiency when measured in a target tissue in a primate subject relative to the corresponding parental AAV capsid, and at least one of a decreased specificity and a decreased transduction efficiency when measured in an off-target tissue in the primate subject relative to the corresponding parental AAV capsid. In some instances, the specificity or the transduction efficiency is measured following administration of the rAAV capsid to the subject intravenously, intraarterially, intrathecally, or subcutaneously. In some instances, the rAAV capsid is chimeric. In some instances, the rAAV, or variant AAV protein comprises therein, confer an increase in a localization of the rAAV within the target tissue, as compared to the parental AAV capsid or capsid protein.

**[0016]** In some instances, the variant AAV capsid protein (and rAAV capsid) comprises an amino acid substitution to an amino acid selected from the group consisting of A, D, E, G, K, H, M, N, P, L, Q, S, T, and V at one or more amino acid positions corresponding to one or more of residues 452-458 in an amino acid sequence of the AAV9 VP1 capsid protein provided in SEQ ID NO: 1. In some instances, the amino acid sequence of the AAV9 capsid protein is provided in amino acid 217-736 within SEQ ID NO: 1. In some instances, the target tissue is the central nervous system (CNS). In some instances, the CNS comprises a region selected from the neocortex, the basal ganglia, the hippocampus, the thalamus, the cerebellum, the brain stem, and the spinal cord. In some embodiments, the target tissue is the peripheral nervous system (PNS). In some instances, the PNS comprises a ganglion. In some instances, the ganglion comprises a trigeminal or dorsal root ganglion. In some instances, the target tissue is a non-dividing cell. In some instances, the non-dividing cell is selected from the group consisting of a neuron, an astrocyte, a microglial cell, an oligodendrocyte, and a Schwann cell. In some instances, the off-target tissue is a liver. In some instances, VP1, VP2, and

VP3 of the AAV capsid comprise the amino acid substitution. In some instances, the amino acid substitution is at a three (3)-fold axis of symmetry of a corresponding parental AAV capsid protein. In some instances, the amino acid substitution comprises at least three contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L, Q, S, T, and V at amino acid positions corresponding to residues 452-454, 453-455, 454-456, 455-457, or 456-458 of the amino acid sequence of the AAV9 VP1 capsid protein. In some instances, the amino acid substitution comprises at least four contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L, Q, S, T, and V at amino acid positions corresponding to residues 452-455, 453-456, 454-457, or 455-458 of the amino acid sequence of the AAV9 VP1 capsid protein. In some instances, the amino acid substitution comprises at least five contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L, Q, S, T, and V at amino acid positions corresponding to residues 452-456, 453-457, or 454-458 of the amino acid sequence the AAV9 VP1 capsid protein. In some instances, the corresponding parental AAV capsid (or AAV capsid protein) is a native AAV9 capsid. In some instances, the corresponding parental AAV capsid is a variant of AAV9 comprising an amino acid sequence provided in any one of SEQ ID NOS: 3-6.

**[0017]** In some instances, the amino acid substitution at the amino acid position corresponding to residue 452 in AAV9 VP1 is selected from the group consisting of N452A, N452D, N452E, N452G, N452H, N452M, N452N, N452Q, N452S, N452T, and N452V. In some instances, the amino acid substitution at the amino acid position corresponding to residue 453 in AAV9 VP1 is selected from the group consisting of G453A, G453D, G453E, G453G, G453K, G453N, G453Q, G453S, G453T, and G453V. In some instances, the amino acid substitution at the amino acid position corresponding to residue 454 in AAV9 VP1 is selected from the group consisting of S454A, S454D, S454E, S454G, S454K, S454N, S454Q, S454S, S454T, and S454V. In some instances, the amino acid substitution at the amino acid position corresponding to residue 455 in AAV9 VP1 is selected from the group consisting of G455A, G455D, G455E, G455G, G455K, G455N, G455P, G455Q, G455S, and G455T. In some instances, the amino acid substitution at the amino acid position corresponding to residue 456 in AAV9 VP1 is selected from the group consisting Q456A, Q456D, Q456E, Q456G, Q456H, Q456K, Q456N, Q456P, Q456Q, Q456S, and Q456T. In some instances, the amino acid substitution at the amino acid position corresponding to residue 457 in AAV9 VP1 is selected from the group consisting N457A, N457D, N457E, N457G, N457K, N457N, N457P, N457S, N457T, and N457V. In some instances, the amino acid substitution at the amino acid position corresponding to residue 458 in AAV9 VP1 is selected from the group consisting Q458A, Q458E, Q458G, Q458H, Q458K, Q458L, Q458N, Q458Q, Q458S, Q458T, and Q458V. In some instances, the amino acid substitution at amino acid positions corresponding to residues 452-458 in AAV9 VP1 is DGAATKN (SEQ ID NO: 3943). In some instances, the amino acid substitution comprises an amino acid sequence selected from **FIG. 3** or **Table 1**, or a combination thereof.

[0018] In some instances, the variant AAV capsid protein further comprises an insertion of an amino acid sequence selected from the group consisting of TLAXPFK (SEQ ID NO: 46424), TLAX (SEQ ID NO: 46425), LAVX (SEQ ID NO: 46426), AVPX (SEQ ID NO: 46427), and VPFX (SEQ ID NO: 46428), following the amino acid at the position corresponding to residue 588 in the amino acid sequence of the AAV9 VP1, wherein X is any amino acid other than V. In some instances, the substitution comprises an amino acid sequence provided in **FIG. 3**.

[0019] In some instances, the target tissue is a brain, and the rAAV capsids, or variant AAV capsid proteins comprised therein, have the increased specificity for the brain, as compared to the parental AAV capsid or capsid protein (*e.g.*, AAV9). In some instances, the off-target tissue is a liver, and the rAAV capsids, or variant AAV capsid proteins, have a decreased specificity for the liver, as compared to the parental AAV capsid or capsid protein (*e.g.*, AAV9). In some instances, the target tissue is a central nervous system (CNS), and the rAAV capsids, or variant AAV capsid proteins, have an increased efficiency of viral transduction of at least 12-fold in the central nervous system (CNS), as compared to the corresponding parental AAV capsid or capsid protein (*e.g.*, AAV9). In some instances, the target tissue is a spinal cord, and the rAAV capsids, or variant AAV capsid proteins, have an increased efficiency of viral transduction of at least 20-fold in the spinal cord, as compared to the corresponding parental AAV capsid or capsid protein. In some instances, the target tissue is a neuron, and the rAAV capsids, or variant AAV capsid proteins, have an increased specificity for the neuron, as compared to the corresponding parental AAV capsid or capsid protein. In some instances, the off-target tissue is a liver, and the rAAV capsids, or variant AAV capsid proteins, have a decreased efficiency of viral transduction of at least 50-fold in the liver, as compared to the corresponding parental AAV capsid or capsid protein. In some instances, the off-target tissue is a Purkinje cell, and the rAAV capsids, or variant AAV capsid proteins, have a decreased efficiency of viral transduction of at least 4-fold in the Purkinje cell, as compared to the corresponding parental AAV capsid or capsid protein. In some instances, the off-target tissue is a liver, and the rAAV capsids, or variant AAV capsid proteins, have a decreased efficiency of viral transduction of at least 100-fold in the liver, as compared to the corresponding parental AAV capsid or capsid protein. In some instances, the AAV further comprises a heterologous nucleic acid encoding a therapeutic gene expression product. In some instances, the AAV capsid is isolated and purified. In some instances, the AAV capsids described herein are formulated as a pharmaceutical formulation further comprising a pharmaceutically acceptable carrier. In some instances, the pharmaceutical formulation further comprises a heterologous nucleic acid encoding a therapeutic gene expression product. In some instances, the pharmaceutical formulation further comprises a pharmaceutical excipient. In some instances, the pharmaceutical formulation is formulated for intravenous, intraarterial, intrathecal, or subcutaneous administration to treat a disease or a condition of the CNS or PNS.

[0020] Aspects disclosed herein provide rAAV capsids comprising variant AAV capsid proteins with an amino acid substitution to an amino acid selected from the group consisting of A, D, E, G, K, H,



M, N, P, L Q, S, T, and V, at an amino acid position corresponding to residues selected from 452-458 within an amino acid sequence of the AAV9 VP1, the rAAV capsids, and variant AAV capsid proteins, having at least one of a decreased specificity and a decreased transduction efficiency for an off-target tissue in a subject, relative to a corresponding parental AAV capsid or capsid protein, and at least one of an increased specificity and an increased transduction efficiency for a target tissue in a subject, relative to the corresponding parental AAV capsid or capsid protein. In some instances, the rAAV capsid is chimeric. In some instances, the amino acid substitution is at a three (3)-fold axis of symmetry of the rAAV capsid. In some instances, the rAAV, or variant AAV protein comprises therein, confer an increase in a localization of the rAAV within the target tissue, as compared to the corresponding parental AAV capsid or capsid protein.

**[0021]** In some instances, the target tissue is the central nervous system (CNS) or the peripheral nervous system (PNS). In some instances, the CNS comprises a region selected from the neocortex, the basal ganglia, the hippocampus, the thalamus, the cerebellum, the brain stem, and the spinal cord. In some instances, the PNS comprises a ganglion. In some instances, the ganglion comprises a trigeminal or dorsal root ganglion. In some instances, the target tissue is a non-dividing cell. In some instances, the CNS comprises a cell selected from the group consisting of a neuron, a spinal cord, an astrocyte, an oligodendrocyte, and Schwann cell. In some instances, the off-target tissue is a liver.

**[0022]** In some instances, the amino acid substitution comprises at least three contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L Q, S, T, and V at amino acid positions corresponding to residues 452-454, 453-455, 454-456, 455-457, or 456-458, in the amino acid sequence of the AAV9 capsid protein. In some instances, the amino acid substitution comprises at least four contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L Q, S, T, and V at amino acid positions corresponding to residues 452-455, 453-456, 454-457, or 455-458, in the amino acid sequence of the AAV9 capsid protein. In some instances, the amino acid substitution comprises at least five contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L Q, S, T, and V at amino acid positions corresponding to residues 452-456, 453-457, or 454-458, in the amino acid sequence of the AAV9 capsid protein. In some instances, the AAV capsid protein is an AAV9 capsid protein.

**[0023]** In some instances, the amino acid substitution at the amino acid position corresponding to residue 452 in AAV9 VP1 is selected from the group consisting of N452A, N452D, N452E, N452G, N452H, N452M, N452N, N452Q, N452S, N452T, and N452V. In some instances, the amino acid substitution at the amino acid position corresponding to residue 453 in AAV9 VP1 is selected from the group consisting of G453A, G453D, G453E, G453G, G453K, G453N, G453Q, G453S, G453T, and G453V. In some instances, the amino acid substitution at the amino acid position corresponding to residue 454 in AAV9 VP1 is selected from the group consisting of S454A, S454D, S454E, S454G, S454K, S454N, S454Q, S454S, S454T, and S454V. In some instances, the amino acid substitution at

the amino acid position corresponding to residue 455 in AAV9 VP1 is selected from the group consisting of G455A, G455D, G455E, G455G, G455K, G455N, G455P, G455Q, G455S, and G455T. In some instances, the amino acid substitution at the amino acid position corresponding to residue 456 in AAV9 VP1 is selected from the group consisting Q456A, Q456D, Q456E, Q456H, Q456K, Q456N, Q456P, Q456Q, Q456S, and Q456T. In some instances, the amino acid substitution at the amino acid position corresponding to residue 457 in AAV9 VP1 is selected from the group consisting N457A, N457D, N457E, N457G, N457K, N457N, N457P, N457S, N457T, and N457V. In some instances, the amino acid substitution at the amino acid position corresponding to residue 458 in AAV9 VP1 is selected from the group consisting Q458A, Q458E, Q458G, Q458H, Q458K, Q458L, Q458N, Q458Q, Q458S, Q458T, and Q458V. In some instances, the amino acid substitution comprises at least three contiguous amino acids in an amino acid sequence selected from the group consisting of DGAATKN (SEQ ID NO: 3943), DGQSSKS (SEQ ID NO: 2764), and an amino acid sequence provided in **Table 1**. In some instances, an amino acid sequence of the AAV9 VP1 is provided in SEQ ID NO: 1. In some instances, the amino acid sequence of the AAV9 VP1 is provided in amino acid 217-736 within SEQ ID NO: 1. In some instances, VP1, VP2, and VP3 of the AAV capsid protein comprise the amino acid substitution. In some instances, the corresponding parental AAV capsid or capsid protein is a native AAV9 VP1 capsid. In some instances, the native AAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 1. In some instances, the corresponding parental AAV capsid or capsid protein is a variant of AAV9 comprising an amino acid sequence provided in any one of SEQ ID NOS: 3-6.

**[0024]** In some instances, the rAAV capsids, or variant AAV capsid proteins, further comprise an insertion of an amino acid sequence selected from the group consisting of TLAXPFK (SEQ ID NO: 46424), TLAX (SEQ ID NO: 46425), LAVX (SEQ ID NO: 46426), AVPX (SEQ ID NO: 46427), and VPFX (SEQ ID NO: 46428), at an amino acid position 588\_589 within an amino acid sequence of the AAV capsid protein, wherein X is any amino acid other than V.

**[0025]** In some instances, the target tissue is a brain, and the rAAV capsids, or variant AVV capsid proteins, have the increased specificity for the brain, as compared to the corresponding parental AAV capsid or capsid protein. In some instances, the off-target tissue is a liver, and the rAAV capsid s, or variant AVV capsid proteins, have a decreased specificity for the liver, as compared to the corresponding parental AAV capsid or capsid protein. In some instances, the target tissue is a central nervous system (CNS), and the rAAV capsid s, or variant AVV capsid proteins, have an increased efficiency of viral transduction of at least 12-fold in the CNS, as compared to the corresponding parental AAV capsid or capsid protein. In some instances, the target tissue is a spinal cord, and the rAAV capsid s, or variant AVV capsid proteins, have an increased efficiency of viral transduction of at least 20-fold in the spinal cord, as compared to the corresponding parental AAV capsid or capsid protein. In some instances, the target tissue is a neuron, and the rAAV capsid s, or variant AVV capsid proteins, have an increased specificity for the neuron, as compared to the corresponding

parental AAV capsid or capsid protein. In some instances, the off-target tissue is a liver, and the rAAV capsid s, or variant AVV capsid proteins, have a decreased efficiency of viral transduction of at least 50-fold in the liver, as compared to the corresponding parental AAV capsid or capsid protein . In some instances, the off-target tissue is a Purkinje cell, and the rAAV capsid s, or variant AVV capsid proteins, have a decreased efficiency of viral transduction of at least 4-fold in the Purkinje cell, as compared to the r corresponding parental AAV capsid or capsid protein. In some instances, the off-target tissue is a liver, and the rAAV capsid s, or variant AVV capsid proteins, have a decreased efficiency of viral transduction of at least 100-fold in the liver, as compared to the corresponding parental AAV capsid or capsid protein. In some instances, the rAAV capsids, or variant AVV capsid proteins, have described herein are isolated and purified. In some instances, the rAAV capsids or variant capsid proteins described herein are formulated as a pharmaceutical formulation further comprising a pharmaceutically acceptable carrier. In some instances, the pharmaceutical formulation further comprises a heterologous nucleic acid encoding a therapeutic gene expression product. In some instances, the pharmaceutical formulation further comprises a pharmaceutical excipient. In some instances, the pharmaceutical formulation is formulated for intravenous, intraarterial, intrathecal, or subcutaneous administration to treat a disease or a condition of the CNS or PNS.

**[0026]** Aspects disclosed herein provide recombinant AAV (rAAV) capsids comprising an variant AAV capsid proteins comprising at least four contiguous amino acids at amino acid positions corresponding to residues selected from the group consisting of 452-455, 453-456, 454-457, and 455-458 of an amino acid sequence of the AAV9 capsid protein according to VP1 numbering, conferring at least one of an increased specificity and an increased transduction efficiency for a target tissue in a subject, wherein: (a) an amino acid at amino acid position corresponding to residue 452 is selected from the group consisting of A, D, G, L, N, Q, S, and T; (b) an amino acid at amino acid position corresponding to residue 453 is selected from the group consisting of A, G, N, P, Q, R, S, and T; (c) an amino acid at amino acid position corresponding to residue 454 is selected from the group consisting of A, D, G, N, S, and T; (d) an amino acid at amino acid position corresponding to residue 455 is selected from the group consisting of A, D, G, K, N, P, Q, S, and T; (e) an amino acid at amino acid position corresponding to residue 456 is selected from the group consisting of A, G, K, N, P, R, S, and T; (f) an amino acid at amino acid position corresponding to residue 457 is selected from the group consisting of A, G, K, N, P, R, S, T, and V; and (g) an amino acid at amino acid position corresponding to residue 458 is selected from the group consisting of A, G, K, L, R, S, T, and V. In some instances, the AAV capsid protein does not contain at amino acid positions corresponding to residues selected from the group consisting of 452-455, 453-456, 454-457, and 455-458 of AAV9 VP1 an amino acid sequence ILGTGTS (SEQ ID NO: 45479), QSSQTPR (SEQ ID NO: 45479), or TLAVPFK (SEQ ID NO: 45477). In some instances, the amino acid substitution is at a three (3)-fold axis of symmetry of the rAAV capsid. In some instances, the specificity or the transduction efficiency is measured following systemically administration of the rAAV capsid to the subject. In some

instances, systemic administration comprises intraarterial, intravenous, or subcutaneous, administration. In some instances, the rAAV capsid, or variant AAV capsid protein therein, is from AAV9. In some instances, the rAAV, or variant AAV protein comprises therein, confer an increase in a localization of the rAAV within the target tissue, as compared to the corresponding parental AAV capsid or capsid protein.

**[0027]** In some instances, the substitution comprises an amino acid sequence provided in **FIG. 3**. In some such instances, the at least four contiguous amino acids are provided in an amino acid sequence selected from the group consisting of LQTSSPG (SEQ ID NO: 2933), SINTKTN (SEQ ID NO: 45475), ERGANTK (SEQ ID NO: 5192), TTGGHSS (SEQ ID NO: 2743), GTTKTSE (SEQ ID NO: 3064), GTGTSVL (SEQ ID NO: 11958), and GTPSKAG (SEQ ID NO: 2741). In some instances, the substitution comprises an amino acid sequence provided in **FIG. 2**. In some such instances the at least four contiguous amino acids are provided in an amino acid sequence selected from the group consisting of QQGKQSV (SEQ ID NO: 79), SNGTKQT (SEQ ID NO: 442), GSGKTAA (SEQ ID NO: 88), MGDKPTR (SEQ ID NO: 2466), QPSGGNT (SEQ ID NO: 2672), and NQSGTKG (SEQ ID NO: 780). In some instances, the at least four contiguous amino acids are provided in an amino acid sequence selected from the group consisting of LQTSSPG (SEQ ID NO: 2933), QQGKQSV (SEQ ID NO: 79), SINTKTN (SEQ ID NO: 45475), SNGTKQT (SEQ ID NO: 442), GSGKTAA (SEQ ID NO: 88), MGDKPTR (SEQ ID NO: 2466), QPSGGNT (SEQ ID NO: 2672), ERGANTK (SEQ ID NO: 5192), TTGGHSS (SEQ ID NO: 2743), GTTKTSE (SEQ ID NO: 3064), GTGTSVL (SEQ ID NO: 11958), NQSGTKG (SEQ ID NO: 780), and GTPSKAG (SEQ ID NO: 2741). In some instances, the at least four contiguous amino acids are provided in an amino acid sequence provided in **Table 2**. In some instances, the target tissue is a central nervous system (CNS). In some instances, the CNS comprises a region selected from the neocortex, the basal ganglia, the hippocampus, the thalamus, the cerebellum, the brain stem, and the spinal cord. In some embodiments, the target tissue is the peripheral nervous system (PNS). In some instances, the PNS comprises a ganglion. In some instances, the ganglion is a trigeminal or dorsal root ganglion. In some instances, the target tissue is a non-dividing cell. In some instances, the CNS comprises a cell selected from the group consisting of a neuron, an astrocyte, a microglial cell, an oligodendrocyte, and a Schwann cell. In some instances, the target tissue is a CNS, and the AAV capsid has an increased efficiency of viral transduction of at least 12-fold in the CNS, as compared to the parental AAV capsid or AAV capsid protein. In some instances, the target tissue is a brain, and the AAV capsid has the increased specificity for the brain, as compared to the parental AAV capsid or AAV capsid protein. In some instances, the target tissue is a spinal cord, and the AAV capsid has an increased efficiency of viral transduction of at least 20-fold in the spinal cord, as compared to the parental AAV capsid or AAV capsid protein. In some instances, the target tissue is a neuron, and the AAV capsid has an increased specificity for the neuron, as compared to the parental AAV capsid or AAV capsid protein. In some instances, the rAAV capsids, or variant AAV capsid proteins, described herein are isolated and purified. In some instances, the

rAAV capsids, or variant AAV proteins, described herein are formulated as a pharmaceutical formulation further comprising a pharmaceutically acceptable carrier. In some instances, the pharmaceutical formulation further comprises a heterologous nucleic acid encoding a therapeutic gene expression product. In some instances, the pharmaceutical formulation further comprises a pharmaceutical excipient. In some instances, the pharmaceutical formulation is formulated for intravenous, intraarterial, intrathecal, or subcutaneous administration to treat a disease or a condition of the CNS or PNS.

**[0028]** Aspects disclosed herein provide rAAV capsids comprising AAV capsid proteins comprising at least four contiguous amino acids from an amino acid sequence provided in **FIG. 2** or **Table 2** at an amino acid position corresponding to residues selected from the group consisting of 452-455, 453-456, 454-457, and 455-458 of AAV9 VP1 conferring at least one of an increased specificity and an increased transduction efficiency when measured in a target tissue in a subject, as compared to a parental AAV capsid or capsid protein. In some instances, the at least four contiguous amino acids are at a three (3)-fold axis of symmetry of the rAAV capsid. In some instances, the AAV capsid protein does not contain at amino acid positions corresponding to residues selected from the group consisting of 452-455, 453-456, 454-457, and 455-458 of AAV9 VP1 an amino acid sequence ILGTGTS (SEQ ID NO: 45479), QSSQTPR (SEQ ID NO: 45479), or TLAVPFK (SEQ ID NO: 45477). In some instances, the specificity or the transduction efficiency is measured following systemically administration of the AAV capsid to the subject. In some instances, the rAAV capsid is chimeric. In some instances, the rAAV, or variant AAV protein comprises therein, confer an increase in a localization of the rAAV within the target tissue, as compared to the parental AAV capsid or capsid protein.

**[0029]** In some instances, the at least four contiguous amino acids comprise at least four, five, six, or seven contiguous amino acids in an amino acid sequence selected from the group consisting of LQTSSPG (SEQ ID NO: 2933), QQGKQSV (SEQ ID NO: 79), SINTKTN (SEQ ID NO: 45475), SNGTKQT (SEQ ID NO: 442), GSGKTAA (SEQ ID NO: 88), MGDKPTR (SEQ ID NO: 2466), QPSGGNT (SEQ ID NO: 2672), ERGANTK (SEQ ID NO: 5192), TTGGHSS (SEQ ID NO: 2743), GTTKTSE (SEQ ID NO: 3064), GTGTSVL (SEQ ID NO: 11958), NQSGTKG (SEQ ID NO: 780), and GTPSKAG (SEQ ID NO: 2741)

**[0030]** In some instances, the target tissue is a **central nervous system (CNS)**. In some instances, the CNS comprises a region selected from the neocortex, the basal ganglia, the hippocampus, the thalamus, the cerebellum, the brain stem, and the spinal cord. In some embodiments, the target tissue is the **peripheral nervous system (PNS)**. In some instances, the PNS comprises a ganglion. In some instances, the ganglion is a trigeminal or dorsal root ganglion. In some instances, the target tissue is a non-dividing cell. In some instances, the CNS comprises a cell selected from the group consisting of a neuron, an astrocyte, a microglial cell, an oligodendrocyte, and a Schwann cell.

**[0031]** In some instances, the rAAV capsid, or variant AAV capsid protein comprised therein, further comprises an insertion of an amino acid sequence selected from the group consisting of TLAXPFK (SEQ ID NO: 46424), TLAX (SEQ ID NO: 46425), LAVX (SEQ ID NO: 46426), AVPX (SEQ ID NO: 46427), and VPFX (SEQ ID NO: 46428), at an amino acid position corresponding to residues 588\_589 in the amino acid sequence of AAV9 VP1, wherein X is any amino acid other than V. In some instances, the parental AAV capsid or capsid protein is AAV9. In some instances, the amino acid sequence of a AAV9 capsid protein is provided in SEQ ID NO: 1. In some instances, the amino acid sequence of the AAV9 capsid protein is provided in amino acid 217-736 within SEQ ID NO: 1

**[0032]** In some instances, the target tissue is a brain, and the rAAV capsid, or variant AAV capsid protein, has the increased specificity for the brain, as compared to the parental AAV capsid or capsid protein. In some instances, the target tissue is the CNS, and the rAAV capsid, or variant AAV capsid protein, has an increased efficiency of viral transduction of at least 12-fold in the CNS, as compared to the parental AAV capsid or capsid protein. In some instances, the target tissue is a spinal cord, and the rAAV capsid, or variant AAV capsid protein, has an increased efficiency of viral transduction of at least 20-fold in the spinal cord, as compared to the parental AAV capsid or capsid protein. In some instances, the target tissue is a neuron, and the rAAV capsid, or variant AAV capsid protein, has an increased specificity for the neuron, as compared to the parental AAV capsid or capsid protein. In some instances, the rAAV capsids, or variant AAV capsid proteins, described herein are isolated and purified. In some instances, the rAAV capsids, or variant AAV capsid proteins, described herein are formulated as a pharmaceutical formulation further comprising a pharmaceutically acceptable carrier. In some instances, the pharmaceutical formulation further comprises a heterologous nucleic acid encoding a therapeutic gene expression product. In some instances, the pharmaceutical formulation further comprises a pharmaceutical excipient.

**[0033]** Aspects provided herein provide rAAV capsids comprising variant AAV capsid proteins, the rAAV capsids having at least one of an increased specificity and increased transduction efficiency when measured in a target tissue of a subject relative to a corresponding parental AAV capsid or capsid protein, the AAV capsid protein comprising three amino acids (X1-X2-X3) at an amino acid position corresponding to residues selected from the group consisting of 452-454, 453-455, 454-456, 455-457, and 456-458 in AAV9 VP1, wherein: (a) X1 is selected from the group consisting of N, K, R, L, and T; (b) X2 is selected from the group consisting of N, S, L, E, D, and P; and (c) X3 is selected from the group consisting of N, S, A, D, G, L, and T. In some instances, the target tissue is selected from the group consisting of a lung, a heart, an intestine, a kidney, and a stomach. In some instances, the target tissue is a non-dividing cell. In some instances, the tissue is the lung and the amino acid sequence is KDNTPGR (SEQ ID NO: 32538), or any amino acid sequence provided in **FIG. 13**. In some instances, the tissue is the lung and the amino acid sequence is>NNLPRNL (SEQ ID NO: 32867), or any amino acid sequence provided in **FIG. 13**. In some instances, the tissue is an intestine and the amino acid sequence is RESSPSL (SEQ ID NO: 29065), or any amino acid sequence provided in **FIG.**

5. In some instances, the tissue is the kidney and the amino acid sequence is RVPLSTI (SEQ ID NO: 26933), or any amino acid sequence provided in FIG. 6. In some instances, the AAV capsid protein is an AAV9 capsid protein. In some instances, the AAV9 capsid protein is provided in SEQ ID NO: 1. In some instances, the AAV capsid protein further comprises four amino acids at an amino acid position selected from the group consisting of 452-455, 453-456, 454-457, and 455-458, wherein X4 is selected from the group consisting of T, S, P, and L. In some instances, the AAV capsid protein further comprises five amino acids at an amino acid position selected from the group consisting of 452-456, 453-457, and 453-458, wherein X5 is selected from the group consisting of P, R, and S. In some instances, the AAV capsid protein further comprises six amino acids at an amino acid position 452-457 or 453-458, wherein X6 is selected from the group consisting of N, G, S, and T. In some instances, the AAV capsid protein further comprises seven amino acids at an amino acid position 452-458, wherein X7 is selected from the group consisting of R, L, and I. In some instances, VP1, VP2, and VP3 of the AAV capsid protein comprise the amino acid sequence. In some instances, the corresponding parental AAV capsid is a native AAV9 capsid. In some instances, an amino acid sequence of the VP1 protein of the native AAV9 capsid is provided in SEQ ID NO: 1. In some instances, the corresponding parental AAV is a native AAV5 capsid. In some instances, an amino acid sequence of the VP1 protein of the native AAV5 capsid is provided in SEQ ID NO: 2.

**[0034]** In some instances, the rAAV, or variant AAV capsid proteins described herein, have at least one of the increased specificity and increased transduction efficiency for a target tissue when measured in a subject as compared to the corresponding parental AAV capsid or capsid protein. In some instances, the target tissue is a lung cell-type that is an alveolar type II epithelial (ATII) cell, and the rAAV capsid, or variant AAV capsid, has an increased efficiency of viral transduction of at least 60-fold in the ATII cell, as compared to a parental AAV capsid or capsid protein. In some instances, the target tissue is a lung cell-type that is an ATII cell, and the rAAV capsid, or variant AAV capsid, has an increased efficiency of viral transduction of at least 60-fold in the ATII cell, as compared to the parental AAV capsid or capsid protein. In some instances, the rAAV capsid, or variant AAV capsid, has an increased efficiency of viral transduction of at least 15-fold in the lung, as compared to the parental AAV capsid or capsid protein. In some instances, the rAAV capsid, or variant AAV capsid, has an increased efficiency of viral transduction of at least 30-fold in the lung, as compared to the parental AAV capsid or capsid protein. Also envisioned are AAV capsids comprising these AAV capsid proteins. In some instances, the rAAV capsids, or variant AAV capsids, described herein are isolated and purified. In some instances, the rAAV capsids, or variant AAV capsids, described herein are formulated as a pharmaceutical formulation further comprising a pharmaceutically acceptable carrier. In some instances, the pharmaceutical formulation further comprises a heterologous nucleic acid encoding a therapeutic gene expression product. In some instances, the pharmaceutical formulation further comprises a pharmaceutical excipient. In some instances, the pharmaceutical

formulation is formulated for intravenous, intraarterial, subcutaneous, or intranasal administration to treat a disease or a condition of the target tissue.

[0035] Aspects disclosed herein provide rAAV capsids comprising variant AAV capsid proteins comprising three amino acids at an amino acid position corresponding to residues selected from the group consisting of 452-454, 453-455, 454-456, 455-457, and 456-458 in AAV9 VP1, wherein the three amino acids are provided in an amino acid sequence is provided in one or more of **FIG. 4-FIG. 14**. In some instances, the rAAV capsid or variant AAV capsid proteins, have at least one of an increased specificity and increased transduction efficiency when measured in a target tissue in a subject. In some instances, the target tissue is selected from the group consisting of a lung, an intestine, a liver, a stomach, a heart, a muscle, an adipose tissue, a spleen, a kidney, or reproductive organs (e.g., testis, ovaries). In some instances, the target tissue is a non-dividing cell. In some instances, the amino acid sequence is provided in **FIG. 4**. In some instances, the amino acid sequence is provided in **FIG. 5**. In some instances, the amino acid sequence is provided in **FIG. 6**. In some instances, the amino acid sequence is provided in **FIG. 7**. In some instances, the amino acid sequence is provided in **FIG. 8**. In some instances, the amino acid sequence is provided in **FIG. 9**. In some instances, the amino acid sequence is provided in **FIG. 10**. In some instances, the amino acid sequence is provided in **FIG. 11**. In some instances, the amino acid sequence is provided in **FIG. 12**. In some instances, the amino acid sequence is provided in **FIG. 13**. In some instances, the amino acid sequence is provided in **FIG. 14**. In some instances, the rAAV, or variant AAV protein comprises therein, confer an increase in a localization of the rAAV within the target tissue, as compared to the parental AAV capsid or capsid protein.

[0036] In some instances, the parental AAV capsid a native AAV9. In some instances, an amino acid sequence of a VP1 protein of the native AAV9 capsid protein is provided in SEQ ID NO: 1.

[0037] In some instances, the three amino acids further comprises four amino acids at an amino acid position corresponding to residues selected from the group consisting of 452-455, 453-456, 454-457, and 455-458 of AAV9 VP1, wherein the amino acid sequence is provided in one or more of **FIG. 4-FIG. 14**. In some instances, the three amino acids comprises five amino acids at an amino acid position corresponding to residues selected from the group consisting of 452-456, 453-457, and 453-458 of AAV9 VP1, wherein the amino acid sequence is provided in one or more of **FIG. 4-FIG. 14**. In some instances, the three amino acids further comprises six amino acids at an amino acid position corresponding to residues 452-457 or 453-458, wherein the amino acid sequence is provided in one or more of **FIG. 4-FIG. 14**. In some instances, the three amino acids further comprises seven amino acids at an amino acid position corresponding to residues 452-458, wherein the amino acid sequence is provided in one or more of **FIG. 4-FIG. 14**. In some instances, VP1, VP2, and VP3 of the rAAV capsid comprise the amino acid sequence. In some instances, the rAAV capsid, or variant AAV capsid proteins, described herein are isolated and purified. In some instances, the AAV capsids, or variant AAV capsid proteins described herein, are formulated as a pharmaceutical formulation further



comprising a pharmaceutically acceptable carrier. In some instances, the pharmaceutical formulation further comprises a heterologous nucleic acid encoding a therapeutic gene expression product. In some instances, the pharmaceutical formulation further comprises a pharmaceutical excipient. In some instances, the pharmaceutical formulation is formulated for intravenous, intraarterial, subcutaneous, or intranasal administration to treat a disease or a condition of the target tissue.

**[0038]** Aspects disclosed herein provide methods of treating a disease or condition in a subject comprising administering to the subject a therapeutically effective amount of a composition comprising the rAAV capsids disclosed herein, the rAAV capsid encapsidating a nucleic acid sequence encoding a therapeutic gene expression product. In some instances, the mammalian subject is a primate. In some instances, the mammalian subject is a non-human primate. In some instances, the mammalian subject is a human. In some instances, the therapeutic gene expression product is a protein. In other instances, the therapeutic gene expression product is an RNA, e.g. a small interfering RNA (siRNA), a short hairpin RNA (shRNA), or a microRNA (miRNA). In some instances, the administering comprises intravenous or intranasal administration. In some instances, the disease or condition is a disease or condition of the central nervous system or peripheral nervous system. In some instances, the disease or condition is a disease or condition of the CNS or PNS. In some instances, the disease or condition is selected from the group consisting of Adrenoleukodystrophy, Alzheimer's disease, Amyotrophic lateral sclerosis, Angelman syndrome, Ataxia telangiectasia, Charcot-Marie-Tooth syndrome, classical rhizomelic chondrodysplasia punctata (RCDP), Cockayne syndrome, Deafness, Dravet Syndrome, Duchenne muscular dystrophy, Epilepsy, Essential tremor, Fragile X syndrome, Friedreich's ataxia, Frontotemporal dementia (FTD), Gaucher disease, glioblastoma, Huntington disease, infantile Refsum disease (IRD), Lesch-Nyhan syndrome, Maple syrup urine disease, Menkes syndrome, Myotonic dystrophy, Narcolepsy, Neurofibromatosis, Niemann-Pick disease, Parkinson disease, Phenylketonuria, Prader-Willi syndrome, Refsum disease, Rett syndrome, Spinal muscular atrophy, Spinocerebellar ataxia, Tangier disease, Tay-Sachs disease, Tuberous sclerosis, Von Hippel-Lindau syndrome, Williams syndrome, Wilson's disease, and Zellweger syndrome. In some instances, the therapeutic gene expression product is effective to modulate an activity or an expression of a target gene or gene expression product selected from the group consisting of Sarcoglycan Alpha (SGCA), glutamic acid decarboxylase 65 (GAD65), glutamic acid decarboxylase 67 (GAD67), CLN2, Nerve Growth Factor (NGF), Survival Of Motor Neuron 1, Telomeric (SMN1), Factor X (FIX), Retinoid Isomerohydrolase (RPE65), sarco/endoplasmic reticulum Ca<sup>2+</sup>-ATPase (SERCA2a),  $\beta$ -Glucocerebrosidase (GCase), Frataxin (FXN), Huntingtin (HTN), methyl-CpG binding protein 2 (MECP2), a peroxisomal biogenesis factor (PEX), progranulin (GRN), an antitubulin agent, copper-zinc superoxide dismutase (SOD1), Glucosylceramidase Beta (GBA), NPC Intracellular Cholesterol Transporter 1 (NPC1), and a NLRP3 inflammasome. In some instances, the therapeutic gene expression product comprises gene editing components. In some instances, the gene editing components are selected from the group consisting of, an artificial site-

specific RNA endonuclease (ASRE), a zinc finger endonuclease (ZFN), a transcription factor like effector nuclease (TALEN), a clustered regularly interspaced short palindromic repeats (CRISPR)/Cas enzyme, and a CRISPR/Cas guide RNA.

**[0039]** Aspects disclosed herein comprise plasmid vectors comprising a nucleic acid sequence encoding the AAV capsids described herein. In some instances, the plasmid vector is bacterial. In some instances, the plasmid vector is derived from *Escherichia coli*. In some instances, the nucleic acid sequence comprises, in a 5' to 3' direction: (1) a 5' inverted terminal repeat (ITR) sequence, (2) a Replication (*Rep*) gene, (3) a Capsid (*Cap*) gene, and (4) a 3' ITR, wherein the *Cap* gene encodes the AAV capsid protein described herein. In some instances, the plasmid vector encodes a pseudotyped AAV capsid protein. In some instances, the *Cap* gene is derived from the deoxyribose nucleic acid (DNA) provided in any one of SEQ ID NOS: 6-10. In some instances, the nucleic acid sequence comprising the *Cap* gene is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical to any one of the DNA sequences provided in SEQ ID NOS: 46364-46383. In some instances, the 5' ITR and the 3' ITR are derived from an AAV2 serotype. In some instances, the 5' ITR and the 3' ITR are derived from an AAV5 serotype. In some instances, the 5' ITR and the 3' ITR are derived from an AAV9 serotype.

**[0040]** Aspects disclosed herein provide methods of manufacturing comprising: (a) introducing into a cell a nucleic acid comprising: (i) a first nucleic acid sequence encoding a therapeutic gene expression product, flanked by at its 5' and 3' ends by inverted terminal repeat (ITR) sequences; (ii) a second nucleic acid sequence encoding a viral genome comprising a 5' ITR sequence, a Replication (*Rep*) gene, Capsid (*Cap*) gene, and a 3' ITR, wherein the *Cap* gene encodes the AAV capsid protein described herein; and (iii) a third nucleic acid sequence encoding a first helper virus protein selected from the group consisting of E4orf6, E2a, and VA RNA, and optionally, a second helper virus protein comprising E1a or E1b55k; (b) expressing in the cell the AAV capsid protein described herein; (c) assembling an AAV particle comprising the AAV capsid proteins disclosed herein; and (d) packaging the first nucleic acid sequence in the AAV particle. In some instances, the nucleic acid is comprised by a plasmid and the cell is mammalian. In some instances, the cell is immortalized. In some instances, the immortalized cell is an embryonic stem cell. In some instances, the embryonic stem cell is a human embryonic stem cell. In certain instances, the human embryonic stem cell is a human embryonic kidney 293 (HEK-293) cell. In other instances, the nucleic acid is comprised by a virus, e.g. a baculovirus. In some such instances, the cell is an insect cell. In certain such instances, the cell is an SF9 cell. In some instances, the *Cap* gene is derived from the deoxyribose nucleic acid (DNA) provided in any one of SEQ ID NOS: 6-10. In some instances, the nucleic acid sequence comprising the *Cap* gene is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical to any one of the DNA sequences provided in SEQ ID NOS: 46364-46383. In some instances, the 5' ITR and the 3' ITR are derived from an AAV2 serotype. In some instances, the 5' ITR and the 3' ITR are derived from an AAV5 serotype. In some instances, the 5' ITR and the 3' ITR are derived from an

AAV9 serotype. In some instances, the first nucleic acid sequence (encoding a therapeutic gene expression product) and the second nucleic acid sequence (encoding the cap gene) are in *trans*. In some instances, the first nucleic acid sequence and the second nucleic acid sequence are in *cis*. In some instances, the first nucleic acid sequence, the second nucleic acid sequence and the third nucleic acid sequence (encoding the helper virus), are in *trans*.

**[0041]** Aspects disclosed herein provide kits comprising: (a) a first vector comprising a first nucleic acid sequence encoding a viral genome comprising in a 5' to 3' direction: (i) a 5' inverted terminal repeat (ITR) sequence; (ii) a Replication (*Rep*) gene; (iii) a Capsid (*Cap*) gene encoding the AAV capsid proteins described herein, and (iv) a 3' ITR; and (b) optionally, a second vector comprising a second nucleic acid sequence encoding a helper virus protein comprising at least one of E4orf6, E2a, VA RNA, E1a and E1b55k. In some instances, the kit further comprises a cell. In some instances, the cell is mammalian. In some instances, the cell is immortalized. In some instances, the immortalized cell is an embryonic stem cell. In some instances, the embryonic stem cell is a human embryonic stem cell. In some instances, the human embryonic stem cell is a human embryonic kidney 293 (HEK-293) cell. In some instances, the kit further comprises a vector comprising a heterologous nucleic acid encoding a therapeutic gene expression product. In some instances, the vector is an episome.

#### INCORPORATE BY REFERENCE

**[0042]** All publications, patents, and patent applications mentioned in this specification are herein incorporated by reference to the same extent as if each individual publication, patent, or patent application was specifically and individually indicated to be incorporated by reference.

#### BRIEF DESCRIPTION OF THE FIGURES

**[0043]** The embodiments are set forth with particularity in the appended claims. A better understanding of the features and advantages of the present invention will be obtained by reference to the following detailed description that sets forth illustrative embodiments, in which the principles of the invention are utilized, and the accompanying drawings. The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee. It is emphasized that, according to common practice, the various features of the drawings are not to-scale. On the contrary, the dimensions of the various features are arbitrarily expanded or reduced for clarity. Included in the drawings are the following figures:

**[0044]** FIG. 1A-1D show a viral engineering overview according to the present embodiments. FIG. 1A shows a surface model of three monomers comprising the 3-fold symmetry of AAV9 (circled), illustrating the location of the 7 amino acid substitution introduced in this library (red) at amino acids 452-458, and the 2 amino acid substitution and 7 amino acid insertion introduced by AAV-PHP.eB

previously (green) at amino acids 588-589. **FIG. 1B** shows the position of the two loops within a single AAV9 monomer, indicating the proximity of the loops and their relation to the capsid surface (AAV interior is down, exterior is up). **FIG. 1C** shows the spike created by the 588 (left) and 455 (right) loops of one AAV9 monomer interacting with the 495 (middle) loop of a second monomer. **FIG. 1D** shows a schematic of the engineering process (“TATT NNKNNK...NNKNNK CAAC” disclosed as SEQ ID NOS 45492-45493 and “TATT AACGGT...AATCAA CAAC” disclosed as SEQ ID NOS 45494-45495). Using PCR, diversity is introduced in the form of a 9-amino acid substitution/insertion (AAV-PHP.eB; green band) and/or substitution (AA 452-458; red band) in the rAAV9 genome, which harbors a Cre inducible switch surrounding the polyadenylation sequence. The DNA capsid library is transfected into HEK-293T cells, and diverse viral capsid libraries are harvested 60 hours later. The viral library is systemically injected into a panel of Cre-transgenic animals. Following three weeks of expression, tissue is harvested, and DNA extracted from all organs. Using PCR, sequences are selectively recovered from only those capsids which transduced Cre+ cells, flipping their polyadenylation sequence. The recovered sequences are subsequently prepared for next generation sequencing (NGS) by PCR, adding dual-index barcodes unique to each specific Cre- tissue combination. Following NGS, the data is mined using positive and negative selection for enrichment (increased prevalence within a specific tissue compared to other sequences, normalized to their presence in the injected viral library) and specificity (increased prevalence within a specific tissue or cell type compared to other tissues or cell types). After one to two rounds of selection, individual variants are tested based on their enrichment and specificity scores. Sequence in italics represents AAV9, which is highly enriched in liver (right) but not in brain (left).

**[0045]** **FIG. 2** shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences positively enriched in the central nervous system (CNS) after two rounds of *in vivo* selection.

**[0046]** **FIG. 3** shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the CNS, and that detarget the liver, after two rounds of *in vivo* selection. “Enrichment” is the prevalence of a given variant in the tissue compared to its prevalence in the viral library that was administered to the transgenic animal. An enrichment score of above 1 indicates a positive enrichment; and an enrichment score below 0 indicates negative enrichment. An enrichment score of 0 indicates that the variant could not be detected in the tissue.

**[0047]** **FIG. 4** shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the heart after two rounds of *in vivo* selection.

**[0048]** **FIG. 5** shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the intestine after two rounds of *in vivo* selection.

[0049] FIG. 6 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the kidney after two rounds of *in vivo* selection.

[0050] FIG. 7 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the liver after two rounds of *in vivo* selection.

[0051] FIG. 8 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to muscle after two rounds of *in vivo* selection.

[0052] FIG. 9 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the pancreas after two rounds of *in vivo* selection.

[0053] FIG. 10 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the spleen after two rounds of *in vivo* selection.

[0054] FIG. 11 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the stomach after two rounds of *in vivo* selection.

[0055] FIG. 12 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the testicle after two rounds of *in vivo* selection.

[0056] FIG. 13 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to lung after two rounds of *in vivo* selection.

[0057] FIG. 14 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to adipose tissue after two rounds of *in vivo* selection.

[0058] FIG. 15A-15B shows next generation sequencing data and *in vivo* transduction efficiency of candidate variants. FIG. 15A shows the relative abundance in log enrichment of two candidate variants, AAV.CAP-A4 and AAV.CAP-A14, and a randomly chosen variant. The NGS data shows significant enrichment of AAV.CAP-A4 in the lung, with negative enrichment in several peripheral organs. Conversely, AAV.CAP-A14 is enriched in neurons within the stomach and intestine, and negatively enriched in other organs like the lung. FIG. 15B shows *In vivo* transduction 2 weeks after systemic administration of  $5 \times 10^{11}$  vg of rAAV:CAG-mNeonGreen confirms the NGS data from in 2A, with AAV.CAP-A4 strongly transducing the lung when compared to AAV9, and AAV.CAP-A14 more strongly transducing neurons in the stomach and intestine. For the avoidance of doubt, AAV.CAP-A4 is KDNTPGR, which is provided in SEQ ID NO: 32538 (enrichment in the lung), SEQ

ID NO: 25633 (enrichment in the heart), SEQ ID NO: 26584 (enrichment in the intestine), and SEQ ID NO: 28509 (enrichment in the kidney). AAV.CAP-A14 is RESSPSL, which is provided in SEQ ID NO: 26474 (enrichment in the intestine), SEQ ID NO: 29065 (enrichment in the kidney), and SEQ ID NO: 31904 (enrichment in the stomach).

**[0059]** FIG. 16A-16D shows the tropism of AAV.CAP-A4 is strongly enriched in submucosal cells within the lung. ssAAV9:CAG-NLSx2-EGFP, ssAAV5:CAG-NLSx2-EGFP or ssAAV.CAP-A4:CAG-NLSx2-EGFP was intravenously injected into male adult mice at  $1 \times 10^{11}$  vg/mouse. GFP fluorescence was assessed after three weeks of expression. FIG. 16A provides a comparison of the total number of cells transduced by AAV.CAP-A4, compared to its parents capsid AAV9. FIG. 16B shows overall transduction, as assessed by EGFP expression, is increased 15-30 fold compared to AAV5 and AAV9. FIG. 16C provides a cell-type specific quantification, as assessed by colocalization of EGFP signal with antibody staining and shows that AAV.CAP-A4 transduction of ATII cells is increased 30-60 fold compared to AAV5 and AAV9 (respectively). A significant number of the cells transduced by AAV.CAP-A4 are alveolar type II pneumocytes. FIG. 16D shows quantification of cell-type specificity with 60% of cells transduced in the lung identified as ATII cells. For quantification: n = 3 mice per group for AAV9, AAV5 and AAV.CAP-A4, mean  $\pm$  SE, one-way ANOVA (\*P  $\leq$  0.05; n.s., P  $\geq$  0.05). Scale bars are 50  $\mu$ m.

**[0060]** FIG 17A-17E show the characterization of the 7 amino acid (AA) substitution library in AAV-PHP.eB. FIG. 17A shows the distribution across the 7 amino acid substitution in AAV-PHP.eB, showing a relatively uniform distribution (with a few notable exceptions) a low prevalence of stop codons, and no bias towards the wildtype (WT) AAV9 sequence (NGSGQNQ (SEQ ID NO: 545)) following PCR generation of the DNA library and packaging of the viral capsid library. FIG. 17B shows a subset of the top performing variants (SEQ ID NOS: 45496-45513), respectively, in order of appearance) obtained from two rounds of positive and negative selection, showing a strong divergence from the WT AAV9 sequence. TI: threonine and isoleucine residues present at positions 450-451; QT: glutamine and threonine residues present at positions 459-460. FIG. 17C shows a heat map plotting the log-enrichment scores of a subset of the top performers, demonstrating specificity for, and enrichment in, neuronal populations, a target for which AAV-PHP.eB is already biased towards. FIG. 17D shows ssAAV9:CAG-mNeonGreen, ssAAV-PHP.eB:CAG-mNeonGreen, ssAAV.CAP-B1:CAG-mNeonGreen (LQTSSPG; SEQ ID NO: 2933), ssAAV.CAP-B2:CAG-mNeonGreen (QQGKQSV; SEQ ID NO: 79), ssAAV.CAP-B4:CAG-mNeonGreen (SINTKTN; SEQ ID NO: 45475), and ssAAV.CAP-B7:CAG-mNeonGreen (SNGTKQT; SEQ ID NO: 442) was intravenously injected into male adult mice at  $5 \times 10^{11}$  vg/mouse and mNeonGreen fluorescence assessed after two weeks. FIG. 17E shows ssAAV.CAP-B8:CAG-mNeonGreen (GSGKTAA; SEQ ID NO: 88), ssAAV.CAP-B9:CAG-mNeonGreen (MGDKPTR; SEQ ID NO: 2466), ssAAV.CAP-B10:CAG-mNeonGreen (DGAATKN; SEQ ID NO: 3943), ssAAV.CAP-B11:CAG-mNeonGreen (QPSGGNT; SEQ ID NO: 2672), ssAAV.CAP-

B14:CAG-mNeonGreen (ERGANTK; SEQ ID NO: 5192), ssAAV.CAP-B16:CAG-mNeonGreen (TTGGHSS; SEQ ID NO: 2743), ssAAV.CAP-B17:CAG-mNeonGreen (GTTKTSE; SEQ ID NO: 3064), ssAAV.CAP-B18:CAG-mNeonGreen (GTGTSVL; SEQ ID NO: 11958), ssAAV.CAP-B19:CAG-mNeonGreen (NQSGTKG; SEQ ID NO: 780), ssAAV.CAP-B22:CAG-mNeonGreen (DGQSSKS; SEQ ID NO: 2764), ssAAV.CAP-B23:CAG-mNeonGreen (KGPGQMG; SEQ ID NO: 45476), or ssAAV.CAP-B25:CAG-mNeonGreen (GTPSKAG; SEQ ID NO: 2741) was intravenously injected into male adult mice at  $5 \times 10^{11}$  vg/mouse and mNeonGreen fluorescence assessed after two weeks. In **FIG. 17D** and **FIG. 17E**, direct comparison of the transduction profiles of the top performing variants shows a strong correlation between validated tropisms, and those predicted by the NGS data. Scale bars are 2 mm.

**[0061] FIG. 18A-18D** shows the tropism of AAV.CAP-B10 is strongly biased towards the brain, with significant liver detargeting. ssAAV9:CAG-NLSx2-EGFP, ssAAV-PHP.eB:CAG-NLSx2-EGFP or ssAAV.CAP-B10:CAG-NLSx2-EGFP was intravenously injected into male adult mice at  $1 \times 10^{11}$  vg/mouse. GFP fluorescence was assessed after three weeks of expression. **FIG. 18A** shows a comparison of BBB crossing and brain transduction in AAV9, AAV-PHP.eB, and AAV.CAP-B10, showing a progressive increase in transduction efficiency in the brain following iterative engineering of the WT capsid. **FIG. 18B** shows the same comparison in the livers, showing a progressive decrease in transduction efficiency. **FIG. 18C** provides quantification of the total number of cells transduced in the brain, and shows a non-significant increase in total transduction for AAV.CAP-B10 compared to AAV-PHP.eB, both of which are significantly increased compared to AAV9. Comparison of the average brightness per cell shows a significant increase of AAV.CAP-B10 over AAV9 but not over AAV-PHP.eB. **FIG. 18D** provides quantification of the total number of cells transduced in the liver, and shows a significant decrease comparing AAV.CAP-B10 to both AAV9 and AAV-PHP.eB. Brightness per cell is also significant decreased when comparing AAV.CAP-B10 and AAV9, with no significant difference observed with AAV-PHP.eB. For quantification: n = 6 mice per group, mean  $\pm$  SE, Brown-Forsythe and Welch ANOVA tests for transduction and Kruskal-Wallis test for brightness (\*P  $\leq$  0.05; n.s., P  $\geq$  0.05). Scale bars are 1 mm.

**[0062] FIG. 19A-F** shows that within the brain, AAV.CAP-B10 is strongly biased towards neurons. ssAAV-PHP.eB:CAG-NLSx2-EGFP or ssAAV.CAP-BB10:CAG-NLSx2-EGFP was intravenously injected into male adult mice at  $1 \times 10^{11}$  vg/mouse. GFP fluorescence was assessed after three weeks of expression. **FIG. 19A-19B** shows that across multiple brain regions, AAV.CAP-B10 showed non-significant increases in the total number of neurons transduced compared to AAV-PHP.eB. **FIG. 19C-19D** shows that AAV.CAP-B10 shows significantly reduced transduction of astrocytes across all brain regions quantified compared to AAV-PHP.eB. **FIG. 19E-19F** shows that AAV.CAP-B10 shows significantly reduced transduction of oligodendrocytes across all brain regions quantified compared to

AAV-PHP.eB. For quantification:  $n = 6$  mice per group, mean  $\pm$  SE, Mann-Whitney test ( $*P \leq 0.05$ ; n.s.,  $P \geq 0.05$ ). Scale bars are 200  $\mu\text{m}$ .

**[0063] FIG. 20A-20C** shows the amino-acid contribution across the 7-mer substitution to variants enriched in the brain and detargeted from the liver. **FIG. 20A** shows the amino acid contribution across the 7-mer substitution to variants enriched in the brain. **FIG. 20B** shows the amino acid contribution across the 7-mer substitution to variants negatively enriched (de-targeted) from the liver. **FIG. 20C** shows the amino acid contribution across the 7-mer substitution to variants enriched in the brain and negatively enriched (de-targeted) from the liver. The 1000 variants with highest enrichment in the brain of hSyn-Cre animals, the 1000 variants with lowest enrichment in the liver of Tek-Cre animals, and all variants with positive enrichment in the brain and negative enrichment in the liver were analyzed. Plotted is the z-score of all amino acids at each position.

**[0064] FIG. 21** shows that AAV.CAP-B10 is detargeted from peripheral organs. ssAAV9:CAG-NLSx2-EGFP, ssAAV-PHP.eB:CAG-NLSx2-EGFP or ssAAV.CAP-B10:CAG-NLSx2-EGFP was intravenously injected into male adult mice at  $1 \times 10^{11}$  vg/mouse. GFP fluorescence was assessed after three weeks of expression. Transduction efficiencies in peripheral tissues show a significant increase and decrease in spinal cord transduction for AAV.CAP-B10 when compared to AAV9 or AAV-PHP.eB, respectively. In the DRGs, AAV.CAP-B10 is significantly decreased when compared to AAV9 and non-significantly decreased when compared to AAV-PHP.eB. In the myenteric and submucosal plexi of the intestines, AAV.CAP-B10 is significantly decreased compared to AAV9 and non-significantly decreased compared to AAV-PHP.eB. In the lungs, AAV.CAP-B10 is significantly decreased when compared to AAV-PHP.eB and non-significantly decreased compared to AAV9. In the kidneys, spleen, pancreas and testes, AAV.CAP-B10 is significantly decreased when compared to AAV9 and non-significantly decreased compared to AAV-PHP.eB. For quantification:  $n = 6$  mice per group except for spinal cord and DRGs where  $n = 3$  mice for AAV9 and AAV-PHP.eB and  $n = 5$  mice for AAV.CAP-B10, mean  $\pm$  SE, ANOVA for spinal cord, Brown-Forsythe and Welch ANOVA tests for myenteric plexus and pancreas, Kruskal-Wallis test for DRGs, submucosal plexus, lungs, kidneys, spleen and testes ( $*P \leq 0.05$ ; n.s.,  $P \geq 0.05$ ).

**[0065] FIG. 22A-22B** shows that AAV.CAP-B10 is significantly detargeted from purkinje cells in the cerebellum. ssAAV-PHP.eB:CAG-NLSx2-EGFP or ssAAV.CAP-B10:CAG-NLSx2-EGFP was intravenously injected into male adult mice at  $1 \times 10^{11}$  vg/mouse. GFP fluorescence was assessed after three weeks of expression. **FIG. 22A** shows immunofluorescence in cerebellum sections. **FIG. 22B** shows quantification of purkinje cell transduction in the cerebellum, and shows significantly fewer purkinje cells transduced by AAV.CAP-B10 when compared to AAV-PHP.eB. For quantification:  $n = 6$  mice per group, mean  $\pm$  SE, Mann-Whitney test ( $*P \leq 0.05$ ; n.s.,  $P \geq 0.05$ ). Scale bar is 200  $\mu\text{m}$ .

**[0066] FIG. 23A-23F** shows the characterization of pooled expression in non-human primates. **FIG. 23A** shows the experimental paradigm for pooled injection of the novel variants AAV.CAP-B1, AAV.CAP-B2, AAV.CAP-B8, AAV.CAP-B10, AAV.CAP-B18 and AAV.CAP-B22 and controls



AAV9 and AAV-PHP.eB. Human FXN fused to an HA tag is packaged in each variant under control of the ubiquitous CAG promoter, with a unique 12bp RNA barcode in the 5' UTR differentiating each variant. Two marmosets were injected at a dose of  $1.2 \times 10^{14}$  vg/kg, of which 1/8 was contributed by each variant in the pool. **FIG. 23B** shows six sections distributed through the anterior-posterior axis and cerebellum of the marmoset brain. Counter-staining for the HA tag on the FXN transgene show robust expression distributed throughout the brain following IV administration of the pool of variants. **FIG. 23C** shows NGS quantification of RNA barcode expression from two marmosets for each of the 8 variants in the pool, showing a dramatic increase for several variants, including >12-fold increase in RNA levels of AAV.CAP-B22 and >5-fold increase for AAV.CAP-B10 compared to AAV9. **FIG. 23D** shows zoomed-in frames from a variety of cortical and sub-cortical regions shows significant and broad transduction across most brain regions, including cortex, hippocampus, and cerebellum. **FIG 23E** shows counter-staining for the HA tag in the liver, revealing low overall transduction from the viral pool. NGS quantification shows relative detargeting from the liver, with AAV.CAP-B22 contributing similar RNA levels to AAV9, and AAV.CAP-B10 contributing >5-fold less. **FIG 23F** shows that transduction of the heart is increased from AAV9 for several of the variants with AAV.CAP-B22 contributing almost 5-fold more RNA in comparison. Transduction of the adrenal cortex by the variants was varied in comparison with AAV9. RNA was collected from two animals for analysis of liver transduction, and one animal for heart and adrenal transduction.

#### DETAILED DESCRIPTION OF THE DISCLOSURE

[0067] Provided herein are modified adeno-associated (AAV) virus capsid protein compositions useful for integrating a transgene into a target cell or environment (*e.g.*, a cell-type or tissue) in a subject when they are administered to the subject. The modified AAV capsid proteins of the present disclosure comprise at least one insertion or substitution of an amino acid in a corresponding parental AAV capsid protein that confers a desired tropism such as an increased or decreased specificity as compared to a reference AAV capsid protein, *e.g.* the corresponding unmodified parental capsid protein, or increased or decreased transgene transduction efficiency as compared to a reference AAV capsid protein, *e.g.* the corresponding unmodified parental capsid protein,.

[0068] The most commonly manipulated loop in AAVs is the 588 loop, due to it being the site of heparan sulfate binding of AAV2 and amenable to peptide display. The only known receptor for AAV9 is N-linked terminal galactose, but many indications point toward there being others. Although modifications to AAV9 588 loop have been shown to confer an increased specificity and transgene transduction efficiency in target *in vivo* environments as compared to a correspond parental AAV capsid protein in rodent models, these desired tropisms do not translate in non-human primate models, rendering them of limited value to treat human disease. Non-limiting examples of modified AAV capsid proteins include AAV-PHP.B, AAV-PHP.eB, AAV-PHP.S, and AAV-PHP.

[0069] Disclosed herein are modified AAV capsid proteins with desired tropisms observed in both rodent and non-human primate models of human disease that comprise an insertion or a substitution of at least one amino acid relative to the corresponding parental AAV capsid protein, that insertion or substitution residing in the loop corresponding to the amino acid 455 loop (AA455 loop) of AAV9. The AA455 loop is the furthest protruding from the surface of the capsid and has been implicated in neutralizing antibody binding. The AA455 loop is believed to play a significant role in cell-surface receptor binding, either on its own or by interaction with the 588 loop. In some cases, the parental AAV capsid protein is AAV5, AAV9, or a previously modified AAV5 or AAV9 (*e.g.*, AAV-PHP.eB, AAV-PHP.B, and the like).

[0070] The most common method of AAV-mediated transgene delivery is by direct injection to the target *in vivo* environment, which is disadvantageous for many reasons, including risk of injury or death, pain, and higher cost, as compared to less invasive methods. Previous AAV-mediated delivery by intravenous administration avoids a need for a direct injection, but suffers from reduced specificity and transduction efficiency for the target *in vivo* environment resulting in off-target transduction events and necessitating a larger viral load to achieve sufficient therapeutic levels in the target *in vivo* environment. This is especially evident when the AAV must cross the blood brain barrier (BBB) or the epithelial lining to reach the target *in vivo* environment, such as to treat a disease or condition of the central nervous system (CNS) and the lung.

[0071] Disclosed herein are methods comprising systemically administering a modified AAV capsid of the present disclosure encapsidating a viral vector comprising a transgene (*e.g.*, therapeutic nucleic acid) with an increased specificity and an increased transduction efficiency, as compared to a reference AAV capsid protein, *e.g.* the corresponding parental capsid protein. The modified AAV capsid proteins of the present disclosure are capable of crossing the BBB, and transducing a transgene in a particular target cell-type (*e.g.*, neuron) in both rodent and non-human primate models. In addition, the modified AAV capsid proteins of the present disclosure are capable of targeting a cell-type of the lung (*e.g.*, a type II epithelial (ATII) cell) with in some cases a 60-fold increase in transgene transduction efficiency as compared to a reference AAV capsid protein, *e.g.* the corresponding parental capsid protein. The modified AAV capsid proteins of the present disclosure are capable of detargeting off-target *in vivo* environments, such as the liver by, in some cases, a 100-fold decrease in transgene transduction efficiency relative to a reference AAV capsid protein, *e.g.* the corresponding parental capsid protein. Accordingly, the modified AAV capsid proteins of the present disclosure are suitable for transgene therapy to treat human disease.

[0072] Disclosed herein are transgenes contained in a recombinant AAV (rAAV) vector and encapsidated by the modified AAV capsid proteins of the present disclosure. The transgenes disclosed herein are delivered to a subject for a variety of purposes, *e.g.*, to treat a disease or condition in the subject. The transgene can be gene editing components that modulate the activity or expression of a target gene or gene expression product. Alternatively, the transgene is a gene encoding a therapeutic

gene expression product that is effective to modulate the activity or expression of itself, of another target gene or gene expression product.

**[0073]** Methods of producing recombinant AAV (rAAV) virions, or rAAV particles, comprising AAV capsids comprising the modified AAV capsid proteins and heterologous polynucleotide encoding a therapeutic nucleic acid are also provided. The modified capsid proteins are produced by introducing to a cell (*e.g.*, immortalized stem cell) a heterologous polynucleotide encoding the transgene (*e.g.*, containing the therapeutic nucleic acid), a first plasmid vector encoding the AAV genome with a modified AAV capsid protein, and a second plasmid vector encoding helper virus proteins, required for assembly of the modified capsid structure and packaging of the transgene in the modified capsid. The assembled rAAV particle can be isolated and purified from the cell using suitable methods known in the art.

**[0074]** The vectors comprising a nucleic acid sequence encoding the modified AAV capsid proteins of the present disclosure are also provided herein. For example, the vectors of the present disclosure comprise a nucleic acid sequence encoding the two AAV viral genes, *Rep* (Replication), *Cap* (Capsid), wherein the *Cap* gene, encoding viral capsid proteins VP1, VP2, and VP3 is modified to produce the modified AAV capsid proteins of the present disclosure. The vector can comprise the viral genome from one or more AAV serotype (*e.g.*, AAV5, AAV9), or a variant AAV serotype (*e.g.*, AAV-PHP.eB, AAV-PHP.B, and the like).

## OVERVIEW

**[0075]** Recombinant AAV (rAAV) mediated gene delivery leverages the AAV mechanism of viral transduction for nuclear expression of an episomal heterologous nucleic acid (*e.g.*, a transgene, therapeutic nucleic acid). Upon delivery to a host *in vivo* environment, a rAAV will (1) bind or attach to cellular surface receptors on the target cell, (2) endocytose, (3) traffic to the nucleus, (4) uncoat the virus to release the encapsidated heterologous nucleic acid, (5) convert of the heterologous nucleic acid from single-stranded to double-stranded DNA as a template for transcription in the nucleus, and (6) transcribe of the episomal heterologous nucleic acid in the nucleus of the host cell (“transduction”). rAAVs engineered to have an increased specificity (binding to cellular surface receptors on the target cell) and transduction efficiency (transcription of the episomal heterologous nucleic acid in the host cell) are desirable for gene therapy applications.

**[0076]** The AAV capsid is made up of three capsid protein monomers, VP1, VP2, and VP3. Sixty copies of these three VP proteins interact in a 1:1:10 ratio to form the viral capsid. VP1 covers the whole of VP2 protein in addition to a ~137 amino acid N-terminal region (VP1u), VP2 covers the whole of VP3 in addition to ~65 amino acid N-terminal region (VP1/2 common region). The three capsid proteins share a conserved amino acid sequence of VP3, which in some cases is the region beginning at amino acid position 217 (*e.g.*, AA 217-736).

**[0077]** The AAV VP3 structure contains highly conserved regions that are common to all serotypes, a core eight-stranded  $\beta$ -barrel motif ( $\beta$ B- $\beta$ I) and a small  $\alpha$ -helix ( $\alpha$ A). The loop regions inserted

between the  $\beta$ -strands consist of the distinctive HI loop between  $\beta$ -strands H and I, the DE loop between  $\beta$ -strands D and E, and nine variable regions (VRs), which form the top of the loops. These VRs are found on the capsid surface and can be associated with specific functional roles in the AAV life cycle including receptor binding, transduction and antigenic specificity. For example, the AA455 loop is the furthest protruding from the surface of the capsid, has been implicated in neutralizing antibody binding, and is believed to play a significant role in cell-surface receptor binding, either on its own or by interaction with the 588 loop.

**[0078]** Disclosed herein are recombinant adeno-associated viruses (rAAVs) with AAV capsids comprising modified AAV capsid proteins at the AA455 loop that confer a desired tropism characterized by a higher efficiency and specificity for transduction in specific cell-types, *e.g.*, brain cell types. In particular, the modified AAV capsids disclosed herein enable rAAV-mediated transduction of a heterologous gene (*e.g.*, transgene), while de-targeting others, thereby preventing off-target transduction events in peripheral organs, such as the liver. Also Disclosed herein are rAAVs with AAV capsids comprising modified AAV capsid proteins that confer a tropism characterized by a higher efficiency and specificity for transduction in particular organs or environments, *e.g.*, the lungs, intestine, stomach, heart, muscle, adipose tissue, spleen, kidney, or reproductive organs (*e.g.*, testis, ovaries). The rAAVs described herein are useful for a wide range of applications, including but not limited to the treatment of disease.

## COMPOSITIONS

### **[0079]** *rAAV Capsids and Variant AAV Capsid Proteins*

**[0080]** Disclosed herein are recombinant AAV (rAAV) with variant capsid proteins (*e.g.*, rAAV capsid proteins) that are engineered with a modified capsid protein (*e.g.*, VP1, VP2, VP3). In some embodiments, the rAAV capsid proteins of the present disclosure are generated using the methods disclosed herein (*e.g.*, M-CREATE). In some embodiments, the AAV capsid proteins are used in the methods of delivering a therapeutic nucleic acid (*e.g.*, a transgene) to a subject. In some instances, the rAAV capsid proteins have desired AAV tropisms rendering them particularly suitable for certain therapeutic applications, *e.g.*, the treatment of a disease or disorder in a subject such as those disclosed herein.

**[0081]** The rAAV capsid proteins are engineered for optimized entry into and through the blood brain barrier (BBB) of a subject upon systemic administration of the rAAV to the subject, such as those provided in **Tables 3-4**. Prior methods of AAV-mediated delivery of a therapeutic transgene to the brain required intracranial injection. Intracranial injection is an invasive procedure that causes a subject discomfort, and in some cases, pain. For example, intracranial injection can cause hemorrhaging of the brain. Additionally, intracranial delivery has limited spread and is highly heterogeneous. The rAAV capsid proteins provided in **Tables 3-4** are engineered to have tropisms that eliminate the need for intracranial injection, while also achieving widespread and efficient transduction of an encapsidated transgene. In particular, the tropisms comprise at least one of an

increased specificity and efficiency (*e.g.*, of viral transduction) in the central nervous system (CNS) of a subject, and/or peripheral nervous system (PNS) of a subject, as compared to a corresponding parental AAV or a reference AAV. The rAAVs disclosed herein may also de-target certain peripheral organs (*e.g.*, the liver), thereby avoiding off-target viral transduction, such as those provided in **Table 1**.

**[0082]** Also disclosed herein are rAAVs with engineered capsid proteins that are optimized for targeting specific organ or tissue within a subject. In some embodiments, the organ is the heart. In some embodiments, the organ is the lung. In some embodiments, the organ is the liver. In some embodiments, the organ is the intestine. In some embodiments, the organ is the stomach. In some embodiments, the organ is the spleen. In some embodiments, the organ is the kidney. In some embodiments, the tissue is the fat (adipose). In some embodiments, the tissue is the muscle. The muscle may be cardiac muscle. The muscle may be skeletal muscle. In some embodiments, the organ is the pancreas. In some embodiments, the organ is the reproductive organ, such as a testicle or ovary. In further embodiments, the rAAVs disclosed herein may also de-target certain peripheral organs, thereby reducing or avoiding off-target viral transduction. In a non-limiting example, the rAAVs of the present embodiment, **Table 1** have increased specificity and transduction in the brain (*e.g.*, target environment), and very low transduction efficiency and no specificity in the liver (*e.g.*, off-target environment), as compared to a reference AAV (*e.g.*, AAV9).

**[0083]** The engineered AAV capsid proteins described herein have, in some cases, an insertion or substitution of an amino acid that is heterologous to the parental AAV capsid protein at the amino acid position of the insertion or substitution. In some embodiments, the amino acid is not endogenous to the parental AAV capsid protein at the amino acid position of the insertion or substitution. The amino acid may be a naturally occurring amino acid in the same or equivalent amino acid position as the insertion of the substitution in a different AAV capsid protein.

**[0084]** Generally, the insertion or substitution comprises a five-, six-, or seven-amino acid polymer (5-mer, 6-mer, or 7-mer, respectively) that is inserted or substituted at the 455 loop in a parental AAV capsid protein. The 7-mers described herein were advantageously generated using polymerase chain reaction (PCR) with degenerate primers, where each of the seven amino acids is encoded by a deoxyribose nucleic acid (DNA) sequence N-N-K. "N" is any of the four DNA nucleotides and K is guanine (G) or thymine (T). This method of generating random 7-mer amino acid sequences enables 1.28 billion possible combinations at the protein level. Since the 7-mers developed are random, some amino acids in the 7-mer may be naturally occurring in the AAC capsid protein at that amino acid position, while other amino acids may differ.

**[0085]** Recombinant AAVs (rAAVs) were generated, each with a unique 7-mer at the 455 loop and each encapsidating a reporter gene that, when administered systemically in multiple transgenic animals, enabled the selective amplification and recovery of sequences that effectively transduced the reporter gene in a target *in vivo* environment of the transgenic animal. 7-mers that were found to be

positively enriched in the target *in vivo* environment (e.g., central nervous system, lung), and negatively enriched in off-target *in vivo* environments (e.g., the liver), are provided herein.

“Enrichment” is the prevalence of a given 7-mer in the tissue of the *in vivo* environment compared to its prevalence in the viral library that was administered to the transgenic animal. An enrichment score above 0 indicates a positive enrichment. An enrichment score below 0 indicates a negative enrichment. An enrichment score of 0 indicates that the variant is not present in the tissue. A subset of the rAAVs with desired enrichment profiles were tested individually *in vivo* to determine exact systemic expression (e.g., specificity and transduction efficiency). rAAVs from this subset exhibiting a desired tropism comprising increased specificity, and in some cases, transduction efficiency are considered to be uniquely suited for targeted rAAV-mediated transgene delivery useful for a wide variety of purposes (e.g., therapeutic, diagnostic, scientific discovery).

**[0086]** The rAAV particles with the 7-mer insertion or substitutions described herein have an increased transduction efficiency in a target *in vivo* environment (e.g., tissue or cell type). In some instances, the increased transduction efficiency comprises a 1-fold, 2-fold, 3-fold, 4-fold, 5-fold, 6-fold, 7-fold, 8-fold, 9-fold, 10-fold, 11-fold, 12-fold, 13-fold, 14-fold, 15-fold, 16-fold, 17-fold, 18-fold, 19-fold, 20-fold, 21-fold, 22-fold, 23-fold, 24-fold, 25-fold, 26-fold, 27-fold, 28-fold, 29-fold, 30-fold, 31-fold, 32-fold, 33-fold, 34-fold, 35-fold, 36-fold, 37-fold, 38-fold, 39-fold, 40-fold, 41-fold, 42-fold, 43-fold, 44-fold, 45-fold, 46-fold, 47-fold, 48-fold, 49-fold, 50-fold, 75-fold, or 100-fold increase, or more, relative to a reference AAV, e.g. the corresponding parental capsid protein. In some instances, the increased transduction efficiency is at least 30-fold. In some instances, the increased transduction efficiency is at least 40-fold. In some instances, the increased transduction efficiency is at least 50-fold. In some instances, the increased transduction efficiency is at least 60-fold. In some instances, the increased transduction efficiency is at least 80-fold. In some instances, the increased transduction efficiency is at least 90-fold. In some instances, the increased transduction efficiency is at least 100-fold.

**[0087]** The rAAV particles with the 7-mer insertion or substitutions described herein have decreased transduction efficiency in an off-target *in vivo* environment (e.g., tissue or cell type). In some instances, the off-target gene transfer is reduced by 1-fold, 2-fold, 3-fold, 4-fold, 5-fold, 6-fold, 7-fold, 8-fold, 9-fold, 10-fold, 11-fold, 12-fold, 13-fold, 14-fold, 15-fold, 16-fold, 17-fold, 18-fold, 19-fold, 20-fold, 21-fold, 22-fold, 23-fold, 24-fold, 25-fold, 26-fold, 27-fold, 28-fold, 29-fold, 30-fold, 31-fold, 32-fold, 33-fold, 34-fold, 35-fold, 36-fold, 37-fold, 38-fold, 39-fold, 40-fold, 41-fold, 42-fold, 43-fold, 44-fold, 45-fold, 46-fold, 47-fold, 48-fold, 49-fold, 50-fold, 75-fold, or 100-fold, or more, relative to a reference AAV, e.g. the corresponding parental capsid protein. In some instances, the off-target gene transfer is reduced by at least 20-fold. In some instances, the off-target gene transfer is reduced by at least 30-fold. In some instances, the off-target gene transfer is reduced by at least 40-fold. In some instances, the off-target gene transfer is reduced by at least 50-fold. In some instances, the off-target gene transfer is reduced by at least 60-fold. In some instances, the off-target

gene transfer is reduced by at least 80-fold. In some instances, the off-target gene transfer is reduced by at least 90-fold. In some instances, the off-target gene transfer is reduced by at least 100-fold.

**[0088]** The rAAV particles with the 7-mer insertion or substitutions described herein have an increased or decreased specificity in a target *in vivo* environment (*e.g.*, tissue or cell type), as compared to a reference AAV, *e.g.* the corresponding parental capsid protein. Detecting whether a rAAV possesses more or less specificity for a target *in vivo* environment than a reference AAV, includes measuring a level of gene expression product (*e.g.*, RNA or protein) expressed from the heterologous nucleic acid encapsidated by the rAAV in a tissue sample obtained from the target *in vivo* environment in a subject; and comparing the measured level to a control level (*e.g.*, the gene expression product expressed from a heterologous nucleic acid encapsidated by a reference AAV (*e.g.*, AAV9). Suitable methods for measuring expression of a gene expression product luciferase reporter assay and quantitative polymerase chain reaction (qPCR).

**[0089]** The increased specificity is correlated with an increased enrichment in the target *in vivo* environment, which in some cases is represented with an enrichment score provided herein in **FIGS. 2-14**. As a non-limiting example, AAV.CAP-B10 (SEQ ID NO: 3943; DGAATKN), which is shown herein to be positively enriched in the brain (enrichment score of approximately 0.950) and not enriched in the liver (enrichment score of ~0), as compared to a reference AAV9, also exhibited an increase in reporter gene expression (*e.g.*, measured by luciferase reporter assay) in the brain and not in the liver as compared to a reference AAV9. Without being bound by a particular theory, the inventors of the present disclosure would expect to see this correlation for all rAAVs disclosed herein, and further, would expect that a more significant the enrichment score (whether negative or positive) would correlate with a more significant specificity to the *in vivo* environment(s) as indicated by a measured level of the gene expression product in the *in vivo* environment(s).

**[0090]** Transduction efficiency, as disclosed herein, may be measured by at least one of (1) a number of cells in a target *in vivo* or off-target *in vivo* environment expressing the heterologous nucleic acid encapsidated by the modified AAV capsid proteins disclosed herein, and (2) a quantity of expression of the heterologous nucleic acid in a single cell. Specificity for a target *in vivo* environment may be inferred when a presence, or an increase in a level, of rAAV-mediated transduction in a target *in vivo* environment is observed, as compared to a reference AAV. A lack of, or reduced, specificity to an off-target *in vivo* environment may be inferred when an absence, or a decrease in a level, of rAAV-mediated transduction in the off-target *in vivo* environment is observed, as compared to a reference AAV.

**[0091]** Native AAV serotypes have been shown to exhibit distinct tropism for various tissues and organs. The rAAV particles of the present disclosure include modified (*e.g.*, chimeric) AAV9 capsids. AAV9 has been shown to exhibit a strong tropism for the central nervous system (CNS), lung, heart, liver, muscle, and testes as compared to AAV serotypes 1-8. In a direct comparison of AAV serotypes 1-9 administered intravenously via a tail vein injection in mice, AAV9 exhibits an increased

specificity for viral transduction for the liver, lung, muscle, brain, testes, and heart as compared to AAV serotypes 1-8. In addition, AAV9 exhibits a high level of transduction efficiency in the liver, muscle, brain, and heart, as compared to AAV serotypes 1-8. However, the 7-mers disclosed herein may be engineered into a capsid protein from an AAV serotype other than AAV9, such as AAV2 or AAV8.

**[0092]** AAV capsid proteins from native AAV serotypes, such as AAV9, with tropisms specific to the liver activate the innate immune response, which in some cases causes a severe inflammatory response in a subject, which can lead to multi-organ failure. By improving transduction efficiency of a native AAV serotype for a target *in vivo* tissue (*e.g.*, brain) and decreasing the specificity of the AAV capsid protein to the liver, the rAAV particles of the present disclosure reduce the immunogenic properties of AAV-mediated transgene delivery and prevent activation of the innate immune response.

**[0093]** The rAAV may comprise a chimeric AAV capsid. A “chimeric” AAV capsid refers to a capsid that has an exogenous amino acid or amino acid sequence (*e.g.*, 7-mer substitution). The rAAV may comprise a mosaic AAV capsid. A “mosaic” AAV capsid refers to a capsid that is made up of two or more capsid proteins or polypeptides, each derived from a different AAV serotype. The rAAV may be a result of transcapsidation, which, in some cases, refers to the packaging of an inverted terminal repeat (ITR) from a first serotype into a capsid of a second serotype, wherein the first and second serotypes are not the same. In some cases, the capsid genes of the parental AAV serotype is pseudotyped, which means that the ITRs from a first AAV serotype (*e.g.*, AAV2) are used in a capsid from a second AAV serotype (*e.g.*, AAV9), wherein the first and second AAV serotypes are not the same. As a non-limiting example, a pseudotyped AAV serotype comprising the AAV2 ITRs and AAV9 capsid protein may be indicated AAV2/9. The rAAV may additionally, or alternatively, comprise a capsid that has been engineered to express an exogenous ligand binding moiety (*e.g.*, receptor), or a native receptor that is modified. For example, the 7-mer substitutions described herein may alter the ligand-binding function of the parental AAV to provide an increased specificity for a particular cell-surface antigen.

**[0094]** The reference AAV disclosed herein, in some cases, is AAV9, because it provides the best comparison of a native AAV with strong tropisms for the CNS, lung, heart, liver, muscle, and testes. However, the reference AAV may be any serotype, *e.g.* a serotype selected from the group consisting of AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, AAV11, AAV12, or variant thereof. For example, the reference AAV can have a serotype selected from the group consisting of AAV-PHP.B, AAV-PHP.eB, and AAV-PHP.S. In many instances, the reference AAV is the parental AAV, *e.g.*, the corresponding unmodified AAV from which the variant AAV was engineered.

**[0095]** The rAAV capsid proteins of the present disclosure comprise a substitution of one or more amino acids in an amino acid sequence of an AAV capsid protein. The AAV capsid protein from which the engineered AAV capsid protein of the present disclosure is produced is referred to as a



“parental” AAV capsid protein, or a “corresponding unmodified capsid protein”. In some cases, the parental AAV capsid protein has a serotype selected from the group consisting of AAV1, AAV2, rAAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, AAV11, and AAV12. The complete genome of AAV-1 is provided in GenBank Accession No. NC\_002077; the complete genome of AAV-2 is provided in GenBank Accession No. NC\_001401 and Srivastava et al., *J. Virol.*, 45: 555-564 (1983); the complete genome of AAV-3 is provided in GenBank Accession No. NC\_1829; the complete genome of AAV-4 is provided in GenBank Accession No. NC\_001829; the AAV-5 genome is provided in GenBank Accession No. AF085716; the complete genome of AAV-6 is provided in GenBank Accession No. NC\_001862; at least portions of AAV-7 and AAV-8 genomes are provided in GenBank Accession Nos. AX753246 and AX753249, respectively; the AAV -9 genome is provided in Gao et al., *J. Virol.*, 78: 6381-6388 (2004); the AAV-10 genome is provided in *Mol. Ther.*, 13(1): 67-76 (2006); the AAV-11 genome is provided in *Virology*, 330(2): 375-383 (2004); portions of the AAV-12 genome are provided in Genbank Accession No. DQ813647; portions of the AAV-13 genome are provided in Genbank Accession No. EU285562.

**[0096]** In some cases, the parental AAV is derived from an AAV with a serotype selected from the group consisting of AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, AAV11, and AAV12. Put another way, the parental AAV is a variant of AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, AAV11, or AAV12. By an AAV variant, it is meant an AAV having a sequence identity of 70% or more to AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, AAV11, or AAV12, for example, a sequence identity of 80%, 85%, or 90% or more; of 91%, 92%, 93%, 94%, 95% or more, in some instances of 96%, 97%, 98%, or 99% to AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, AAV11, and AAV12. A variant may include, for example, an AAV comprising a heterologous amino acid or heterologous amino acid sequence within an amino acid sequence of the AAV capsid protein. The heterologous amino acid may be naturally occurring in a different AAV capsid protein. In some instances, the parental AAV capsid is described in US2019/0055578, US2018/0230489, US2017/0067908, US2019/0048041, US9585971, or US2017/0166926, all of which are incorporated herein in their entirety.

**[0097]** In some instances, the parental AAV is AAV9. In some instances, the amino acid sequence of the AAV9 capsid protein comprises SEQ ID NO: 1. In some instances, the parental AAV capsid protein sequence is 70%, 75%, 80%, 85%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% homologous to SEQ ID NO: 1, or part of SEQ ID NO: 1. In some instances, the parental AAV capsid protein comprises the entire VP1 region provided in SEQ ID NO: 1 (e.g., amino acids 1-736). In some instances, the parental AAV capsid protein comprises amino acids 217-736 in SEQ ID NO: 1, which is the common region found in VP1, VP2 and VP3 AAV9 capsid proteins. In some instances, the AAV capsid protein comprises amino acids 64-736 in SEQ ID NO: 1, which is the common region found in VP1 and VP2. The parental AAV capsid protein sequence may comprise

amino acids selected from the group consisting of 1-736, 10-736, 20-736, 30-736, 40-736, 50-736, 60-736, 70-736, 80-736, 90-736, 100-736, 110-736, 120-736, 130-736, 140-736, 150-736, 160-736, 170-736, 180-736, 190-736, 200-736, 210-736, 220-736, 230-736, 240-736, 250-736, 260-736, 270-736, 280-736, 290-736, 300-736, 310-736, 320-736, 330-736, 340-736, 350-736, 360-736, 370-736, 380-736, 390-736, 400-736, 410-736, 420-736, 430-736, 440-736, and 450-736, from SEQ ID NO: 1.

**[0098]** In some instances, the parental AAV is AAV5. In some instances, the amino acid sequence of the AAV5 capsid protein comprises SEQ ID NO: 2. In some instances, the parental AAV capsid protein sequence is 70%, 75%, 80%, 85%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% homologous to SEQ ID NO: 2, or part of SEQ ID NO: 2. The parental AAV capsid protein sequence may comprise amino acids selected from the group consisting of 1-724, 10-724, 20-724, 30-724, 40-724, 50-724, 60-724, 70-724, 80-724, 90-724, 100-724, 110-724, 120-724, 130-724, 140-724, 150-724, 160-724, 170-724, 180-724, 190-724, 200-724, 210-724, 220-724, 230-724, 240-724, 250-724, 260-724, 270-724, 280-724, 290-724, 300-724, 310-724, 320-724, 330-724, 340-724, 350-724, 360-724, 370-724, 380-724, 390-724, 400-724, 410-724, 420-724, 430-724, 440-724, and 450-724, of SEQ ID NO: 2.

**[0099]** In some instances, the parental AAV is AAV-PHP.B. In some instances, the amino acid sequence of the AAV-PHP.B capsid protein comprises SEQ ID NO: 3. In some instances, the parental AAV capsid protein is 70%, 75%, 80%, 85%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% homologous to SEQ ID NO: 3, or part of SEQ ID NO: 3. The parental AAV capsid protein sequence may comprise amino acids selected from the group consisting of 1-743, 10-743, 20-743, 30-743, 40-743, 50-743, 60-743, 70-743, 80-743, 90-743, 100-743, 110-743, 120-743, 130-743, 140-743, 150-743, 160-743, 170-743, 180-743, 190-743, 200-743, 210-743, 220-743, 230-743, 240-743, 250-743, 260-743, 270-743, 280-743, 290-743, 300-743, 310-743, 320-743, 330-743, 340-743, 350-743, 360-743, 370-743, 380-743, 390-743, 400-743, 410-743, 420-743, 430-743, 440-743, and 450-743, of SEQ ID NO: 3.

**[00100]** In some instances, the parental AAV is AAV.PHP.S. In some instances, the amino acid sequence of the AAV-PHP.S capsid protein comprises SEQ ID NO: 4. In some instances, the parental capsid protein is 70%, 75%, 80%, 85%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% homologous to SEQ ID NO: 4, or part of SEQ ID NO: 4. The parental AAV capsid protein sequence may comprise amino acids selected from the group consisting of 1-743, 10-743, 20-743, 30-743, 40-743, 50-743, 60-743, 70-743, 80-743, 90-743, 100-743, 110-743, 120-743, 130-743, 140-743, 150-743, 160-743, 170-743, 180-743, 190-743, 200-743, 210-743, 220-743, 230-743, 240-743, 250-743, 260-743, 270-743, 280-743, 290-743, 300-743, 310-743, 320-743, 330-743, 340-743, 350-743, 360-743, 370-743, 380-743, 390-743, 400-743, 410-743, 420-743, 430-743, 440-743, and 450-743, of SEQ ID NO: 4.

**[00101]** In some instances, the parental AAV is AAV-PHP.eB. In some instances, the amino acid sequence of the AAV-PHP.eB capsid protein comprises SEQ ID NO: 5. In some instances, the AAV

parental capsid protein is 70%, 75%, 80%, 85%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% homologous to SEQ ID NO: 5, or part of SEQ ID NO: 5. The parental AAV capsid protein sequence may comprise amino acids selected from the group consisting of 1-743, 10-743, 20-743, 30-743, 40-743, 50-743, 60-743, 70-743, 80-743, 90-743, 100-743, 110-743, 120-743, 130-743, 140-743, 150-743, 160-743, 170-743, 180-743, 190-743, 200-743, 210-743, 220-743, 230-743, 240-743, 250-743, 260-743, 270-743, 280-743, 290-743, 300-743, 310-743, 320-743, 330-743, 340-743, 350-743, 360-743, 370-743, 380-743, 390-743, 400-743, 410-743, 420-743, 430-743, 440-743, and 450-743, of SEQ ID NO: 5.

**[00102]** In some instances, the insertion is introduced after any one amino acid position selected from 452-458 within an AAV9 (VP1 numbering), or equivalent amino acid position in a variant thereof. The amino acid sequence of AAV9 (VP1) is provided in SEQ ID NO: 1. In some instances, the substitution is a substitution of an amino acid at any one amino acid position selected from 452-458 within an AAV9 (VP1 numbering), or equivalent amino acid position in a variant thereof. In the some instances, the substitution is a substitution of the amino acid at amino acid position 452. In the some instances, the substitution is a substitution of the amino acid at amino acid position 453. In the some instances, the substitution is a substitution of the amino acid at amino acid position 454. In the some instances, the substitution is a substitution of the amino acid at amino acid position 455. In the some instances, the substitution is a substitution of the amino acid at amino acid position 456. In the some instances, the substitution is a substitution of the amino acid at amino acid position 457. In the some instances, the substitution is a substitution of the amino acid at amino acid position 458. In some instances, the substitution comprises a substitution of one amino acid. In some instances, the substitution comprises a substitution of two amino acids. In some instances, the substitution comprises a substitution of three amino acids. In some instances, the substitution comprises a substitution of four amino acids. In some instances, the substitution comprises a substitution of five amino acids. In some instances, the substitution comprises a substitution of six amino acids. In some instances, the substitution comprises a substitution of seven amino acids. The substitution or the insertion of two or more amino acids may be contiguous. The substitution or the insertion of two or more amino acids may not be contiguous.

**[00103]** Amino acids at position 452-458 according to VP1 numbering within SEQ ID NO: 1 (AAV9), SEQ ID NO: 3 (AAV-PHP.B), SEQ ID NO: 4 (AAV-PHP.S), and SEQ ID NO: 5 (AAV-PHP.eB) are indicated as “**NGSGQNQ**” (SEQ ID NO: 545). In some instances, amino acids at positions 452-458 within SEQ ID NO: 2 (AAV5) is indicated by a “**NLAGRYA**” (SEQ ID NO: 45478). In some instances, the substitution is at an amino acid position N452, G453, S454, G455, Q456, N457, or Q458, or a combination thereof, of an AAV9 capsid protein or variant thereof. In some instances, the substitution is an amino acid position N452, L453, A454, G455, G455, R456, Y457, or A458, or a combination thereof, of an AAV5 capsid protein or variant thereof. In some instances, the amino acid(s) substituted are located at amino acids 452-453, which may include a

substituted amino acid at position 452 and 453. In some instances, two amino acids are substituted at an amino acid position selected from the group consisting of 452-453, 453-455, 455-456, 456-457, and 457-458. In some instances, three amino acids are substituted at an amino acid position selected from the group consisting of 452-454, 453-455, 454-456, 455-457, and 456-458. In some instances, four amino acids are substituted at an amino acid position selected from the group consisting of 452-455, 452-456, 453-457, 454-458. In some instances, five amino acids are substituted at an amino acid position selected from the group consisting of 452-456, 453-457, and 454-458. In some instances, six amino acids are substituted at an amino acid position 452-457 or 453-458. In some instances, seven amino acids are substituted at an amino acid position 452-458.

**[00104]** The rAAV capsid proteins described herein may be isolated and purified. The AAV may be isolated and purified by methods standard in the art such as by column chromatography or cesium chloride gradients. Methods for purifying AAV from helper virus are known in the art and may include methods disclosed in, for example, Clark et al., *Hum. Gene Ther.*, 10(6): 1031-1039 (1999); Schenpp and Clark, *Methods Mol. Med.*, 69: 427-443 (2002); U.S. Patent No. 6,566,118 and WO 98/09657.

**[00105]** The rAAV capsid protein can be conjugated to a nanoparticle, a second molecule, or a viral capsid protein. In some cases, the nanoparticle or viral capsid protein would encapsidate the therapeutic nucleic acid described herein. In some instances, the second molecule is a therapeutic agent, *e.g.*, a small molecule, antibody, antigen-binding fragment, peptide, or protein, such as those described herein. In some instances, the second molecule is a detectable moiety. For example, the modified AAV capsid protein conjugated to a detectable moiety may be used for *in vitro*, *ex vivo*, or *in vivo* biomedical research applications, the detectable moiety used to visualize the modified capsid protein. The modified AAV capsid protein conjugated to a detectable moiety may also be used for diagnostic purposes.

**[00106] *rAAV Capsid Proteins Targeting the Central Nervous System***

**[00107]** Disclosed herein are recombinant AAVs (rAAV) with variant capsid proteins comprising a desired tropism characterized by a substitution or an insertion of at least one amino acid at an amino acid position described above in a corresponding parental AAV capsid protein. In some instances, the rAAV capsid protein has a desired a tropism comprising increased specificity for a target *in vivo* environment in a subject. In some instances, the target *in vivo* environment comprises the central nervous system (CNS), or peripheral nervous system (PNS). One of the many advantages of the tropism of the rAAV capsid proteins described herein is their ability to target the CNS and penetrate the blood brain barrier (BBB). In some instances, the desired tropism further comprises a decreased specificity for an off-target *in vivo* environment, relative to a tropism of a corresponding parental AAV capsid protein. In some instances, the off-target *in vivo* environment comprises a peripheral organ, such as a liver. Another advantage of the rAAV capsid proteins described herein, is their ability

to avoid expression of the heterologous nucleic acid in the liver, thereby reducing liver toxicity and the viral dosage amount required for therapeutic effectiveness.

**[00108]** The *in vivo* environment can be a cell. The cell can be a cell-type selected from the group consisting of a central nervous system (CNS) cell and a peripheral nervous system (PNS) cell. Non-limiting examples of CNS cells include a neuron and a glial cell. Glial cells can be selected from the group consisting of an oligodendrocyte, an ependymal cell, and an astrocytes. Non-limiting examples of a PNS cell includes a neuron or a glial cell. The glial cell can be selected from the group consisting of a Schwann cell a satellite cell, and an enteric glial cell.

**[00109]** The *in vivo* environment can be a tissue, such as from an organ or organ system. The organ can be the brain, or the spinal cord. The tissue can be a region of an organ, such as for example, the cerebrum, the cerebellum, the brainstem, the cortex, the striatum, the thalamus, the lateral ventricles, the putamen, the hypothalamus, the medulla, the pons, the hippocampus, the amygdala, the motor cortex, or a combination thereof.

**[00110]** Disclosed herein are rAAV capsid proteins comprising an amino acid sequence that confers an increased specificity and/or increased transduction efficiency for the CNS or PNS of a subject, as compared to a reference AAV. In some cases, the amino acid sequence also confers a decreased specificity or decreased transduction efficiency for a peripheral organ (*e.g.*, liver), as compared to the reference AAV. The amino acid sequence, in some cases, comprises a substitution of at least one amino acid at an amino acid position selected from the group consisting of 452, 453, 454, 455, 456, 457, and 458 in an amino acid sequence of the AAV capsid protein (*e.g.*, parental AAV). In some embodiments, the parental AAV is AAV9 or variant thereof.

**[00111]** Provided herein are rAAV capsid proteins with an increased specificity and/or increased transduction efficiency for the CNS or PNS as compared to a reference AAV, the rAAV capsid proteins comprising an amino acid (X1), wherein X1 is A, D, G, L, N, Q, S, or T. The rAAV capsid protein can comprise at least two amino acids, wherein X1 is A, D, G, L, N, Q, S, or T; and X2 is A, G, N, P, Q, R, S, or T. The rAAV can comprise at least three amino , wherein X1 is A, D, G, L, N, Q, S, or T; and X2 is A, G, N, P, Q, R, S, or T; and X3 is A, D, G, N, S, or T. The rAAV can comprise at least four amino acids , wherein X1 is A, D, G, L, N, Q, S, or T; X2 is A, G, N, P, Q, R, S, or T; X3 is A, D, G, N, S, or T; and X4 is A, D, G, K, N, P, Q, S, or T. The rAAV can comprise at least five amino acids , wherein X1 is A, D, G, L, N, Q, S, or T; X2 is A, G, N, P, Q, R, S, or T; X3 is A, D, G, N, S, or T; X4 is A, D, G, K, N, P, Q, S, or T; and X5 is A, G, K, N, P, R, S, or T. The rAAV can comprise at least six amino acids , wherein X1 is A, D, G, L, N, Q, S, or T; X2 is A, G, N, P, Q, R, S, or T; X3 is A, D, G, N, S, or T; X4 is A, D, G, K, N, P, Q, S, or T; X5 is A, G, K, N, P, R, S, or T; and X6 is A, G, K, N, P, R, S, T, or V. The rAAV can comprise at least seven amino acids , wherein X1 is A, D, G, L, N, Q, S, or T; X2 is A, G, N, P, Q, R, S, or T; X3 is A, D, G, N, S, or T; X4 is A, D, G, K, N, P, Q, S, or T; X5 is A, G, K, N, P, R, S, or T; X6 is A, G, K, N, P, R, S, T, or V; and X7 is A, G, K, L, R, S, T, or V.

**[00112]** Provided herein are rAAV capsid proteins with an increased specificity and/or increased transduction efficiency for the CNS or PNS as compared to a reference AAV and a decreased specificity and/or a decreased transduction efficiency for a peripheral organ (*e.g.*, liver) as compared to a reference AAV. The rAAV, in some cases, comprises an amino acid (X1), wherein X1 is G, A, V, N, S, H, L, E or Q. The rAAV capsid protein can comprise at least two amino acids, wherein X1 is G, A, V, N, S, H, L, E or Q; and X2 is A, I, T, P, N, R, T, G, S, K, H, or Q. The rAAV can comprise at least three amino acids, wherein X1 is G, A, V, N, S, H, L, E or Q; and X2 is A, I, T, P, N, R, T, G, S, K, H, or Q; and X3 is S, N, D, A, T, H, K, Q. The rAAV can comprise at least four amino acids. In some embodiments X1 is G, A, V, N, S, H, L, E or Q; X2 is A, I, T, P, N, R, T, G, S, K, H, or Q; X3 is , N, D, A, T, H, K, Q; and X4 is N, G, T, S, D, P, R, T, or Q. The rAAV can comprise at least five amino acids, wherein X1 is G, A, V, N, S, H, L, E or Q; X2 is A, I, T, P, N, R, T, G, S, K, H, or Q; X3 is , N, D, A, T, H, K, Q; X4 is N, G, T, S, D, P, R, T, or Q; and X5 is S, K, P, T, G, D, P, N, or V. The rAAV can comprise at least six amino acids, wherein X1 is G, A, V, N, S, H, L, E or Q; X2 is A, I, T, P, N, R, T, G, S, K, H, or Q; X3 is , N, D, A, T, H, K, Q; X4 is N, G, T, S, D, P, R, T, or Q; X5 is S, K, P, T, G, D, P, N, or V; and X6 is T, A, R, S, N, G, D, P, or V. The rAAV can comprise at least seven amino acids, wherein X1 is G, A, V, N, S, H, L, E or Q; X2 is A, I, T, P, N, R, T, G, S, K, H, or Q; X3 is , N, D, A, T, H, K, Q; X4 is N, G, T, S, D, P, R, T, or Q; X5 is S, K, P, T, G, D, P, N, or V; X6 is T, A, R, S, N, G, D, P, or V; and X7 is G, N, S, L, A, E, K, or Q.

**[00113]** In some cases, the rAAV, in some cases, comprises an amino acid (X1), wherein X1 is A, D, E, G, H, M, N, Q, S, T, or V. The rAAV can comprise at least two amino acids, wherein X1 is A, D, E, G, H, M, N, Q, S, T, or V; and X2 is A, D, E, G, K, N, Q, S, T, or V. The rAAV can comprise at least three amino acids, wherein X1 is A, D, E, G, H, M, N, Q, S, T, or V; X2 is A, D, E, G, K, N, Q, S, T, or V; and X3 is A, D, E, G, K, N, Q, S, T, or V. The rAAV can comprise at least four amino acids, wherein X1 is A, D, E, G, H, M, N, Q, S, T, or V; X2 is A, D, E, G, K, N, Q, S, T, or V; X3 is A, D, E, G, K, N, Q, S, T, or V; and X4 is A, D, E, G, K, N, P, Q, S, or T. The rAAV can comprise at least five amino acids, wherein X1 is A, D, E, G, H, M, N, Q, S, T, or V; X2 is A, D, E, G, K, N, Q, S, T, or V; X3 is A, D, E, G, K, N, Q, S, T, or V; X4 is A, D, E, G, K, N, P, Q, S, or T; and X5 is A, D, E, G, H, K, N, P, Q, S, or T. The rAAV can comprise at least six amino acids, wherein X1 is A, D, E, G, H, M, N, Q, S, T, or V; X2 is A, D, E, G, K, N, Q, S, T, or V; X3 is A, D, E, G, K, N, Q, S, T, or V; X4 is A, D, E, G, K, N, P, Q, S, or T; X5 is A, D, E, G, H, K, N, P, Q, S, or T; and X6 is A, D, E, G, K, N, P, S, T, or V. The rAAV can comprise at least seven amino acids, wherein X1 is A, D, E, G, H, M, N, Q, S, T, or V; X2 is A, D, E, G, K, N, Q, S, T, or V; X3 is A, D, E, G, K, N, Q, S, T, or V; X4 is A, D, E, G, K, N, P, Q, S, or T; X5 is A, D, E, G, H, K, N, P, Q, S, or T; X6 is A, D, E, G, K, N, P, S, T, or V; and X7 is A, E, G, H, K, L, N, Q, S, T, or V.

**[00114]** In some cases, X1, X2, X3, X4, X5, X6, and X7 are contiguous (X1-X2-X3-X4-X5-X6-X7). Alternatively, X1, X2, X3, X4, X5, X6, and X7 are not contiguous. In some embodiments, any two of X1, X2, X3, X4, X5, X6, and X7 are contiguous. In some embodiments, any three of X1, X2, X3, X4,

X5, X6, and X7 are contiguous. In some embodiments, any four of X1, X2, X3, X4, X5, X6, and X7 are contiguous. In some embodiments, any five of X1, X2, X3, X4, X5, X6, and X7 are contiguous. In some embodiments, any six of X1, X2, X3, X4, X5, X6, and X7 are contiguous. In some embodiments, any seven of X1, X2, X3, X4, X5, X6, and X7 are contiguous. In some embodiments, X1 is at an amino acid position 452 within an AAV9 capsid protein, or variant thereof. In some embodiments X2 is at an amino acid position 453 within an AAV9 capsid protein, or variant thereof. In some embodiments X3 is at an amino acid position 454 within an AAV9 capsid protein, or variant thereof. In some embodiments X4 is at an amino acid position 455 within an AAV9 capsid protein, or variant thereof. In some embodiments X5 is at an amino acid position 456 within an AAV9 capsid protein, or variant thereof. In some embodiments X6 is at an amino acid position 457 within an AAV9 capsid protein, or variant thereof. In some embodiments X7 is at an amino acid position 458 within an AAV9 capsid protein, or variant thereof. In some embodiments, the amino acid sequence of the rAAV does not comprise of an amino acid sequence ILGTGTS (SEQ ID NO: 45479) or QSSQTPR (SEQ ID NO: 45479) at amino acids 452-458 in a parental AAV9 capsid protein, or variant thereof.

**[00115]** Disclosed herein are rAAV capsid proteins comprising a substitution of one, two, three, four, five, six, or seven amino acids in an amino acid sequence provided any one of SEQ ID NOS: 11-12739. In some embodiments, the rAAV capsid proteins comprise a substitution of two amino acids in an amino acid sequence provided in any one of SEQ ID NOS: 11-12739. In some embodiments, the rAAV capsid proteins comprise a substitution of three amino acids in an amino acid sequence provided in any one of SEQ ID NOS: 11-12739. In some embodiments, the rAAV capsid proteins comprise a substitution of four amino acids in an amino acid sequence provided in any one of SEQ ID NOS: 11-12739. In some embodiments, the rAAV capsid proteins comprise a substitution of five amino acids in an amino acid sequence provided in any one of SEQ ID NOS: 11-12739. In some embodiments, the rAAV capsid proteins comprise a substitution of six amino acids in an amino acid sequence provided in any one of SEQ ID NOS: 11-12739.

**[00116]** Disclosed herein are rAAV capsid proteins that have an increased specificity and/or increased transduction efficiency for the central nervous system (CNS) or the peripheral nervous system (PNS). Exemplary substitutions include N452D, N452A, N452G, N452L, N452Q, N452S, N452T, G453I, G453N, G453S, G453P, G453R, G453T, S454A, S454Q, S454D, S454G, S454N, S454T, G455A, G455S, G455D, G455K, G455N, G455P, G455Q, G455T, Q456T, Q456S, Q456A, Q456G, Q456K, Q456N, Q456R, Q456P, N457K, N457A, N457G, N457P, N457R, N457S, N457T, N457V, Q458N, Q458A, Q458G, Q458K, Q458L, Q458R, Q458S, Q458T, or Q458V, in an amino acid sequence of the AAV9 capsid protein, or a variant thereof. In some embodiments, the substitution is of at least or about one two, three, four, five, six, or seven amino acids of an amino acid sequence LQTSSPG (SEQ ID NO: 2933). In some embodiments, the amino acid sequence is QQGKQSV (SEQ ID NO: 79). In some embodiments, the amino acid sequence is SINTKTN (SEQ ID NO: 45475). In some embodiments, the amino acid sequence is SNGTKQT (SEQ ID NO: 442). In some embodiments, the

amino acid sequence is GSGKTAA (SEQ ID NO: 88). In some embodiments, the amino acid sequence is MGDKPTR (SEQ ID NO: 2466). In some embodiments, the amino acid sequence is DGAATKN (SEQ ID NO: 3943). In some embodiments, the amino acid sequence is QPSGGNT (SEQ ID NO: 2672). In some embodiments, the amino acid sequence is ERGANTK (SEQ ID NO: 5192). In some embodiments, the amino acid sequence is TTGGHSS (SEQ ID NO: 2743). In some embodiments, the amino acid sequence is GTTKTSE (SEQ ID NO: 3064). In some embodiments, the amino acid sequence is GTGTSVL (SEQ ID NO: 11958). In some embodiments, the amino acid sequence is NQSGTKG (SEQ ID NO: 780). In some embodiments, the amino acid sequence is DGQSSKS (SEQ ID NO: 2764). In some embodiments, the amino acid sequence is KGPGQMG (SEQ ID NO: 45476). In some embodiments, the amino acid sequence is GTPSKAG (SEQ ID NO: 2741).

**[00117]** Also provided herein are rAAV capsid proteins that have an increased specificity and/or increased transduction efficiency for the CNS and PNS, and a decrease in specificity and/or a decrease in transduction efficiency for an off-target *in vivo* environment, such as the liver. Exemplary substitutions include N452D, N452G, N452A, N452V, N452S, N452H, N452L, N452E, N452Q, G452A, G452I, G452T, G452P, G452R, G452T, G452S, G452K, G452H, S454A, S454N, S454D, S454G, S454T, S454H, S454K, S454Q, G455A, G455N, G455T, G455S, G455D, G455P, G455R, G455Q, Q456T, Q456S, Q456K, Q456P, Q456G, Q456D, Q456V, Q456A, Q456N, N457K, N457T, N457A, N457R, N457S, N457G, N457D, N457P, N457V, Q458N, Q458G, Q458S, Q458L, Q458A, Q458E, and Q458K, in an amino acid sequence of the AAV9 capsid protein, or a variant thereof. Additional exemplary substitutions include N452A, N452D, N452E, N452G, N452H, N452M, N452N, N452Q, N452S, N452T, N452V, G453A, G453D, G453E, G453G, G453K, G453N, G453Q, G453S, G453T, G453V, S454A, S454D, S454E, S454G, S454K, S454N, S454Q, S454S, S454T, S454V, G455A, G455D, G455E, G455G, G455K, G455N, G455P, G455Q, G455S, G455T, Q456A, Q456D, Q456E, Q456H, Q456K, Q456N, Q456P, Q456Q, Q456S, Q456T, N457A, N457D, N457E, N457G, N457K, N457N, N457P, N457S, N457T, N457V, Q458A, Q458E, Q458G, Q458H, Q458K, Q458L, Q458N, Q458Q, Q458S, Q458T, and Q458V. Additional exemplary substitutions include N452A, N452D, N452E, N452G, N452H, N452K, N452L, N452M, N452N, N452Q, N452S, N452T, N452V, G453A, G453D, G453G, G453H, G453M, G453N, G453P, G453Q, G453S, G453T, G453V, S454A, S454D, S454E, S454G, S454K, S454N, S454Q, S454S, S454T, S454V, G455A, G455D, G455E, G455G, G455K, G455N, G455P, G455Q, G455S, G455T, Q456A, Q456D, Q456G, Q456K, Q456N, Q456P, Q456Q, Q456S, Q456T, N457A, N457G, N457H, N457L, N457M, N457N, N457P, N457Q, N457S, N457T, N457V, Q458A, Q458D, Q458E, Q458G, Q458H, Q458I, Q458K, Q458L, Q458N, Q458Q, Q458R, Q458S, Q458T, and Q458V. In some embodiments, the substitution is of at least or about one two, three, four, five, six, or seven amino acids of an amino acid sequence DGAATKN (SEQ ID NO: 3943). In some embodiments, the substitution is of at least or



about one two, three, four, five, six, or seven amino acids of an amino acid sequence DGQSSKS (SEQ ID NO: 2764).

**[00118]** In some instances, the substitution of an amino acid is at an amino acid position selected from 452-458 in a capsid amino acid sequence of AAV9 or a variant thereof. In some instances, the substitution of the amino acid is at amino acid position selected from 452-458 in a capsid amino acid sequence provided in SEQ ID NO: 1. In some instances, the substitution of the amino acid is at amino acid position selected from 452-458 in a capsid amino acid sequence of AAV5 or variant thereof. In some instances, the substitution of the amino acid is at amino acid position selected from 452-458 in a capsid amino acid sequence of provided in SEQ ID NO: 2. In some instances, the substitution of the amino acid is at amino acid position selected from 452-458 in the AAVV-PHP.B capsid protein sequence (SEQ ID NO: 3). In some instances, the substitution of the amino acid is at amino acid position selected from 452-458 in the AAV-PHP.S capsid protein sequence (SEQ ID NO: 4). In some instances, the substitution of the amino acid is at amino acid position selected from 452-458 in the AAV-PHP.eB capsid protein sequence (SEQ ID NO: 5). In some embodiments, the rAAV of the present disclosure comprises the substitution of the amino acid at an amino acid position selected from 452-458 in a parental AAV capsid protein, and an insertion of an amino acid or amino acid sequence at an amino acid position 588-589 in the parental AAV capsid protein. .

**[00119]** The rAAV capsid proteins of the present disclosure may also have an insertion of an amino acid sequence at amino acid position 588-589 in a parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises X1LAVPFK (SEQ ID NO: 45481) at amino acid position 588-589 in the parental AAV9 capsid protein, wherein X1 is any amino acid other than T, S, or N. In some embodiments, the insertion of the amino acid sequence comprises X1X2AVPFK (SEQ ID NO: 45482) at amino acid position 588-589 in the parental AAV9 capsid protein, wherein X2 is any amino acid other than L or V. In some embodiments, the insertion of the amino acid sequence comprises X1X2X3VPFK (SEQ ID NO: 45483) at amino acid position 588-589 in the parental AAV9 capsid protein, wherein X3 is any amino acid other than A, S, Q, P, and T. In some embodiments, the insertion of the amino acid sequence comprises X1X2X3X4PFK (SEQ ID NO: 45484) at amino acid position 588-589 in the parental AAV9 capsid protein, wherein X4 is any amino acid other than V, T, Q, N, L, and M. In some embodiments, the insertion of the amino acid sequence comprises TLAX4PFK (SEQ ID NO: 45485) at amino acid position 588-589 in the parental AAV9 capsid protein, wherein X is any amino acid other than V, T, Q, N, L, and M. In some embodiments, the rAAV further comprises a substitution of an amino acid at an amino acid position 587 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the substitution is A587D. In some embodiments, the substitution is a substitution with amino acid other than D. In some embodiments, the rAAV further comprises a substitution of an amino acid at an amino acid position 588 in the parental AAV9 capsid protein or variant thereof. In, some embodiments, the

substitution is Q588G. In some embodiments, the substitution is a substitution with amino acid other than G.

**[00120]** In some embodiments, the rAAV capsid has a variant AAV capsid protein (*e.g.*, an rAAV capsid protein) comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence LQTSSPG (SEQ ID NO: 2933) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence LQTSSPG (SEQ ID NO: 2933) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence LQTSSPG (SEQ ID NO: 2933) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46386.

**[00121]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence QQGKQSV (SEQ ID NO: 79) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence QQGKQSV (SEQ ID NO: 79) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence QQGKQSV (SEQ ID NO: 79) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46387.

**[00122]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence SINTKTN (SEQ ID NO: 45475) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence SINTKTN (SEQ ID NO: 45475) at an amino

acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence SINTKTN (SEQ ID NO: 45475) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46368.

**[00123]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence SNGTKQT (SEQ ID NO: 442) at an amino acid position 452-458 in a parental AAV9 capsid protein represented by SEQ ID NO: 1. In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence SNGTKQT (SEQ ID NO: 442) at an amino acid position 452-458 in a parental AAV9 variant capsid protein represented by SEQ ID NO: 3 or SEQ ID NO: 5. In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46389.

**[00124]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence GSGKTAA (SEQ ID NO: 88) at an amino acid position 452-458 in a parental AAV9 capsid protein represented by SEQ ID NO: 1. In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence GSGKTAA (SEQ ID NO: 88) at an amino acid position 452-458 in a parental AAV9 variant capsid protein represented by SEQ ID NO: 3 or SEQ ID NO: 5. In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46390.

**[00125]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence MGDKPTR (SEQ ID NO: 2466) at an amino acid position 452-458 in a parental AAV9 capsid protein represented by SEQ ID

NO: 1. In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence MGDKPTR (SEQ ID NO: 2466) at an amino acid position 452-458 in a parental AAV9 variant capsid protein represented by SEQ ID NO: 3 or SEQ ID NO: 5. In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46391.

**[00126]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence DGAATKN (SEQ ID NO: 3943) at an amino acid position 452-458 in a parental AAV9 capsid protein represented by SEQ ID NO: 1. In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence DGAATKN (SEQ ID NO: 3943) at an amino acid position 452-458 in a parental AAV9 variant capsid protein represented by SEQ ID NO: 3 or SEQ ID NO: 5. In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46384.

**[00127]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence QPSGGNT (SEQ ID NO: 2672) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence QPSGGNT (SEQ ID NO: 2672) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence QPSGGNT (SEQ ID NO: 2672) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46392.

**[00128]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence ERGANTK (SEQ ID NO: 5192) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence ERGANTK (SEQ ID NO: 5192) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence ERGANTK (SEQ ID NO: 5192) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46393.

**[00129]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence TTGGHSS (SEQ ID NO: 2743) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence TTGGHSS (SEQ ID NO: 2743) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence TTGGHSS (SEQ ID NO: 2743) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46394.

**[00130]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence GTTKTSE (SEQ ID NO: 3064) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence GTTKTSE (SEQ ID NO: 3064) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven

amino acids of an amino acid sequence GTTKTSE (SEQ ID NO: 3064) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46395.

**[00131]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence GTGTSVL (SEQ ID NO: 11958) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence GTGTSVL (SEQ ID NO: 11958) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence GTGTSVL (SEQ ID NO: 11958) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46396.

**[00132]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence NQSGTKG (SEQ ID NO: 780) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence NQSGTKG (SEQ ID NO: 780) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence NQSGTKG (SEQ ID NO: 780) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of an amino acid sequence comprising at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid

position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46397.

**[00133]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence DGQSSKS (SEQ ID NO: 2764) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence DGQSSKS (SEQ ID NO: 2764) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence DGQSSKS (SEQ ID NO: 2764) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46385.

**[00134]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence KGPGQMG (SEQ ID NO: 45476) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence KGPGQMG (SEQ ID NO: 45476) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence KGPGQMG (SEQ ID NO: 45476) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46398.

**[00135]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence GTPSKAG (SEQ ID NO: 2741) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence GTPSKAG (SEQ ID NO: 2741) at an amino

acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence GTPSKAG (SEQ ID NO: 2741) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the insertion of an amino acid sequence comprising at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids. In some embodiments, the insertion of the amino acid sequence comprises TLAVPFK (SEQ ID NO: 45477) at amino acid position 588-589 in the parental AAV9 capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46399.

**[00136]** Table 1 provides amino acid sequences of top performing rAAV capsid proteins, ranked based on a positive enrichment in the brain and negative enriched in the liver after two rounds of *in vivo* selection, as well as the DNA sequences encoding them. Table 2 provides amino acid sequences of top performing rAAV capsid proteins ranked based on an enrichment in the brain alone after two rounds of *in vivo* selection, and corresponding DNA sequences. Example 3 provides details on how the enrichment score was calculated. An AAV variant was determined to de-target a tissue if its enrichment score in that tissue was less than or equal to 0.

**TABLE 1: List of 7 amino acid targeting peptides of rAAVs that target the CNS and detarget the liver**

SEQ ID NO	DNA Sequence	SEQ ID NO	Amino Acid Sequence	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15469	AGCAGCACCAGCGGCCCGGC	2740	SSTSGAG	1.805607713	0
15470	GGCACCCCAGCAAAGCCGGC	2741	GTPSKAG	1.782483914	0
15471	GACAAAACCACCGCCGCCAA	2742	DKTTAGQ	1.756796407	0
15472	ACCACCGGCGGCCACAGCAGC	2743	TTGGHSS	1.7086977	0
15473	GGCGCCAGCAACAGCACCGGC	2744	GASNSTG	1.6215475	0
15474	GCCATCAACGGCAAAGCCGGC	2745	AIN GKAG	1.611787687	0
15475	GTCATCGACACCAAAGCCGGC	2746	VIDTKAG	1.611787687	0
15476	AACGCCAGCAGCAGCACCGGC	2747	NASSSTG	1.599553231	0
15477	GGTACGAGTAGTCCGGCTAAT	2748	GTSSPAN	1.593175811	0
15478	GGCCCCGGCGACACCAGAAGC	2749	GPGDTRS	1.559758687	0
15479	GGGAATGGGTTCGTCGGCGCTG	2750	GNGSSAL	1.534699431	-1.140781313
15480	GGCAGAAGCGGCGGCACCGGC	2751	GRSGGTG	1.532606441	0
15481	AGCACCGGCCCCACCCCGCC	2752	STGPTPA	1.532606441	0
15482	CATGGGGGGAGGGATTCTAGT	2753	HGGRDSS	1.514877674	0



SEQ ID NO	DNA Sequence	SEQ ID NO	Amino Acid Sequence	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15483	GGTTCTGGTACGCCTAATGGG	2754	GSGTPNG	1.511287094	0
15484	GGCAAAGCCGGCAGCACCGGC	2755	GKAGSTG	1.497844335	0
15485	CTTAGTGCGGGTAAGGGTGAG	2756	LSAGKGE	1.496394268	-1.222750977
15486	GTCGGCATCCCCAGCGCCGGC	2757	VGIPSAG	1.486848951	0
15487	AGTGGTGGGCAGAAGGATAAT	2758	SGGQKDN	1.480843526	0
15488	GAAACCGGCGGCAGCCCCAAA	2759	ETGGSPK	1.45728072	-1.321740616
15489	CAAGGCCACACCAACGTCGCC	2760	QGHTNVA	1.455309339	0
15490	TCGCATGGGAGTCCGGCTAGT	2761	SHGSPAS	1.445456265	0
15491	AGCCAAAAAAGCGTCGCCGGC	2762	SQKSVAG	1.445456265	0
15492	GTTGGTCAGTCTGCTGCTCAG	2763	VGQSAAQ	1.444470352	0
15493	GACGGCCAAAGCAGCAAAAGC	2764	DGQSSKS	1.444085169	0
15494	GCCCAAGCCAAACCCGCCGGC	2765	AQAKPAG	1.442429811	0
15495	ACCGGCCACAACAGCAGCATG	2766	TGHNSSM	1.435696428	0
15496	GGCCAAAGCACCAGCAGCGGC	2767	GQSTSSG	1.432491288	0
15497	ACCGGCATCAGCGGCGCCGGC	2768	TGISGAG	1.429944099	0
15498	GTCAGAGACACCAGCAGCAGC	2769	VRDTSSS	1.417512639	-0.925181513
15499	GTCAGCAGCAAAGGCCTCGCC	2770	VSSKGLA	1.4131306	-1.199559314
15500	GATGGTCGGTCGACTAGTGCT	2771	DGRSTSA	1.411817991	0
15501	AGCAGCAACACCGGCCACACC	2772	SSNTGHT	1.407667705	0
15502	CAGAATAATTCTAAGACGGAG	2773	QNNSKTE	1.404438734	0
15503	CAGGAGGGGTCTTCGTCTAAG	2774	QEGSSSK	1.403779635	-1.39768257
15504	AACACCAAAACCACCACCGGC	2775	NTKTTTG	1.397907867	0
15505	GCCAGCAACAGCGGCAGCACC	2776	ASNSGST	1.397404629	0
15506	CTGGGTGGTGGGAAGGAGTCG	2777	LGGGKES	1.39473782	0
15507	GGGAATGGGAAGAGTGATGGT	2778	GNGKSDG	1.39394168	0
15508	TCGGAGGCTAATCAGAAGCTT	2779	SEANQKL	1.386478405	0
15509	GCCAGCAGCCCCAGCGCGGC	2780	ASSPSGG	1.3821136	-1.271968999
15510	GATACGGGTAAGGCGTCGATG	2781	DTGKASM	1.379456849	0
15511	GAGACTTCGAAGGAGAGGGCT	2782	ETSKERA	1.379378065	0
15512	GGCGGCGGCCACAAAGAAAGC	2783	GGGHKES	1.374998588	-0.4875688
15513	GACAACGGCACCAAAGTCATC	2784	DNGTKVI	1.3740768	0
15514	CAGGTGGGGAAGGATAGTCAT	2785	QVGKDSH	1.3706897	0
15515	ACCACCAGCGCCACCAGCGTC	2786	TTSATSV	1.365741816	0
15516	CAGGCTACTGGTGGGACGCAG	2787	QATGGTQ	1.358399326	-1.4875688
15517	GAGTCTGGGAAGGGTAGTTTG	2788	ESGKGSL	1.345977191	0
15518	GAAAACAGCAGCGGCCACGCC	2789	ENSSGHA	1.3451798	0

**TABLE 2: List of 7 amino acid targeting peptides of rAAVs that target the CNS**

SEQ ID NO	DNA Sequence	SEQ ID NO	Amino Acid Sequence	Log 10 enrichment in the brain
12740	AGCGGCCTCAAAGGCACCGGC	11	SGLKGTG	1.912817683
15469	AGCAGCACCAGCGGCGCCGGC	2740	SSTSGAG	1.805607713
15470	GGCACCCCAAGCAAAGCCGGC	2741	GTPSKAG	1.782483914
15471	GACAAAACCACCGCCGGCCAA	2742	DKTTAGQ	1.756796407
15472	ACCACCGGCGGCCACAGCAGC	2743	TTGGHSS	1.7086977
12741	GTGGGTGGGACTCAGGGTAAG	12	VGGTQ GK	1.683542214
12742	AGCATGGACAGCAGACCCGGC	13	SMDSRPG	1.646549793
12743	GGTAGTAGTCCTAGTAAGGCT	14	GSSPSKA	1.624376814
15473	GGCGCCAGCAACAGCACCGGC	2744	GASNSTG	1.6215475
15474	GCCATCAACGGCAAAGCCGGC	2745	AINGKAG	1.611787687
15475	GTCATCGACACCAAAGCCGGC	2746	VIDTKAG	1.611787687
12744	ACTGGTACGGCGAATCCGTTG	15	TGTANPL	1.609487799
15476	AACGCCAGCAGCAGCACCGGC	2747	NASSSTG	1.599553231
15477	GGTACGAGTAGTCCGGCTAAT	2748	GTSSPAN	1.593175811
12745	AGCCAAGGCGCCAAACCCGTC	16	SQGAKPV	1.581298365
12746	CAGGGGGAGAAGAATACTATG	17	QGEKNTM	1.560127515
15478	GGCCCCGGCGACACCAGAAGC	2749	GPGDTRS	1.559758687
15479	GGAATGGGTCGTCGGCGCTG	2750	GNGSSAL	1.534699431
15480	GGCAGAAGCGGCGGCACCGGC	2751	GRSGGTG	1.532606441
15481	AGCACCGGCCCCACCCCGCC	2752	STGPTPA	1.532606441
12747	ACCAGCGGCAACAGCAGCAAA	18	TSGNSSK	1.532606441
15482	CATGGGGGGAGGGATTCTAGT	2753	HGGRDSS	1.514877674
15483	GGTTCTGGTACGCCTAATGGG	2754	GSGTPNG	1.511287094
12748	ACGACGTCTAAGCCTGGTACT	19	TTSKPGT	1.510809312
15484	GGCAAAGCCGGCAGCACCGGC	2755	GKAGSTG	1.497844335
12749	AGCCAAGGCAAAGGCGGCAGC	20	SQGKGS	1.497374065
15485	CTTAGTGCGGGTAAGGGTGAG	2756	LSAGKGE	1.496394268
12750	GGGTGCGATTAAGGGGGAGGCT	21	GSIKGEA	1.495179943
12751	AACAGCGGCACCACCGGCAAC	22	NSGTTGN	1.492959081
15486	GTCGGCATCCCAGCGCCGGC	2757	VGIPSAG	1.486848951
15487	AGTGGTGGGCAGAAGGATAAT	2758	SGGQKDN	1.480843526
12752	GAAAGAACCAAAGAAACCCCTC	23	ERTKETL	1.465659651
12753	GATCATGGTAAGGGGAATCAG	24	DHGKGNQ	1.464822053
12754	GATGGGCAGCAGCGGAGTAGT	25	DGQQRSS	1.464030027
12755	TCGGGTAATAGTACTAATAAG	26	SGNSTNK	1.458626389

SEQ ID NO	DNA Sequence	SEQ ID NO	Amino Acid Sequence	Log 10 enrichment in the brain
15488	GAAACCGGCAGCCCAAAA	2759	ETGGSPK	1.45728072
12756	GGTGTGAGCAGCGTTCGGGG	27	GVEQRSG	1.456753138
15489	CAAGGCCACACCAACGTCGCC	2760	QGHTNVA	1.455309339
12757	AATGGTGGTAAGTCGAGTTCG	28	NGGKSSS	1.451684533
12758	TCGACTAATAAGAGTAATCTG	29	STNKSNL	1.44624661
15490	TCGCATGGGAGTCCGGCTAGT	2761	SHGSPAS	1.445456265
15491	AGCCAAAAAGCGTCGCCGGC	2762	SQKSVAG	1.445456265
15492	GTTGGTCAGTCTGCTGCTCAG	2763	VGQSAAQ	1.444470352
15493	GACGGCCAAAGCAGCAAAAGC	2764	DGQSSKS	1.444085169
15494	GCCCAAGCCAAACCCGCCGGC	2765	AQAKPAG	1.442429811
15495	ACCGGCCACAACAGCAGCATG	2766	TGHNSSM	1.435696428
15496	GGCCAAAGCACCAGCAGCGGC	2767	GQSTSSG	1.432491288
15497	ACCGGCATCAGCGCGCCGGC	2768	TGISGAG	1.429944099
12759	GACGGCCAAGGCAACGGCAAA	30	DGQGNGK	1.424823398
15498	GTCAGAGACACCAGCAGCAGC	2769	VRDTSSS	1.417512639

**[00137] Modified AAV Capsid Proteins Targeting Organs or Tissues**

**[00138]** Disclosed herein are recombinant AAV (rAAV) capsid proteins comprising a desired tropism characterized by a substitution or an insertion of at least one amino acid at an amino acid position described above in a parental AAV capsid protein (*e.g.*, AAV5 or AAV9). The AAV capsid protein of the present disclosure is engineered to have a desired tropism comprising increased specificity for a target *in vivo* environment in a subject, such as an organ or organ system. One of the many advantages of the tropism of the rAAV capsid proteins described herein is their ability to express the heterologous nucleic acid in the organ, or organ system selectively and efficiently, while avoiding expression of the heterologous nucleic acid in an off-target organ, thereby reducing toxicity and the viral dosage amount required for therapeutic effectiveness.

**[00139]** The *in vivo* environment can be a tissue or a cell. The *in vivo* environment can be a tissue, such as from an organ or organ system. Non-limiting examples of an organ or organ system include a liver, intestine, heart, lung, reproductive organ, muscle, adipose, pancreas, a brain, and spleen. Non-limiting examples of a reproductive organ include an ovary and a testicle. The *in vivo* environment can be a cell. The cell can be a cell-type selected from the group consisting of a central nervous system (CNS) cell, a peripheral nervous system (PNS) cell, a liver cell, an intestine cell, a lung cell, a heart cell, an adipose cell, a muscle cell, a kidney cell, a muscle cell, a pancreas cell, a spleen cell, a reproductive organ cell, and a stomach cell. The CNS cell can be a neuron or a glial cell. The glial cell

can be selected from the group consisting of an oligodendrocyte, an ependymal cell, and an astrocyte. The PNS cell can be a neuron or a glial cell. The glial cell can be selected from the group consisting of a Schwann cell a satellite cell, and an enteric glial cell. The liver cell can be a hepatocyte. The intestine cell can be selected from the group consisting of an enterocyte, a goblet cell, an enteroendocrine cell, a cup cell, a tuft cell, and a Paneth cell. The lung cell can be selected from the group consisting of an alveolar type I epithelial cell, an alveolar type II epithelial cell, an alveolar type I pneumocyte, an alveolar type II pneumocyte, a capillary endothelial cell, and an alveolar macrophage. The heart cell can be a cardiomyocyte. The stomach cell can be selected from the group consisting a mucous cell, a parietal cell, a chief cell, and a G cell. The muscle cell can be a myocyte.

**[00140]** rAAVs of the present disclosure that are optimized for targeting specific organ or tissue within a subject have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 25469-35471. In some embodiments, rAAVs optimized for targeting the heart have amino acid sequence comprising an amino acid sequence provided in SEQ ID NOS: 25469-26205. In some embodiments, rAAVs optimized for targeting the lung have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 32537-34198. In some embodiments, rAAVs optimized for targeting the liver have amino acid sequences that comprise an amino acid sequence provided in SEQ ID NOS: 30720-30923. In some embodiments, rAAVs optimized for targeting the intestine have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 26206-26873. In some embodiments, rAAVs optimized for targeting the stomach have amino acid sequences comprising amino acid sequence provided in SEQ ID NOS: 31873-32060. In some embodiments, rAAVs optimized for targeting the spleen have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 31468-31872. In some embodiments, rAAVs optimized for targeting the kidney have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 26874-30719. In some embodiments, rAAVs optimized for targeting the fat (adipose) have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 34199-35471. In some embodiments, rAAVs optimized for targeting the muscle have amino acid sequences comprising an amino acid sequence provided in SEQ ID NO: 30924-31451. The muscle may be cardiac muscle. The muscle may be skeletal muscle. In some embodiments, rAAVs optimized for targeting the pancreas have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 31452-31467. In some embodiments, rAAVs optimized for targeting a reproductive organ, such as a testicle, comprise amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 32061-32536. In some instances, the reproductive organ is an ovary.

**[00141]** Disclosed herein are rAAV capsid proteins comprising a desired tropism characterized by a substitution of at least one amino acid at an amino acid position selected from 452-458 in an amino acid sequence of a parental AAV9 capsid protein, or a variant thereof. The rAAV capsid protein can comprise a substitution of at least one amino acid in a parental AAV capsid protein. In some

instances, X1 is K, R, N, or T. The rAAV capsid protein can comprise a substitution or an insertion of at least two amino acids in a parental AAV capsid protein, wherein X1 is K, R, N, or T; and X2 is D, E, N, or V. The rAAV capsid protein can comprise a substitution or an insertion of at least three amino acids in a parental AAV capsid protein, wherein X1 is K, R, N, or T; X2 is D, E, N, or V; and X3 is N, S, L, or P. The rAAV capsid protein can comprise a substitution or an insertion of at least four amino acids in a parental AAV capsid protein, wherein X1 is K, R, N, or T; X2 is D, E, N, or V; X3 is N, S, L, or P; and X4 is T, S, P, or L. The rAAV capsid protein can comprise a substitution or an insertion of at least five amino acids in a parental AAV capsid protein, wherein X1 is K, R, N, or T; X2 is D, E, N, or V; X3 is N, S, L, or P; X4 is T, S, P, or L; and X5 is P, R, or S. The rAAV capsid protein can comprise a substitution or an insertion of at least six amino acids in a parental AAV capsid protein, wherein X1 is K, R, N, or T; X2 is D, E, N, or V; X3 is N, S, L, or P; X4 is T, S, P, or L; X5 is P, R, or S; and X6 is G, S, N, or T. The rAAV capsid protein can comprise a substitution or an insertion of at least seven amino acids in a parental AAV capsid protein, wherein, X1 is K, R, N, or T; X2 is D, E, N, or V; X3 is N, S, L, or P; X4 is T, S, P, or L; X5 is P, R, or S; X6 is G, S, N, or T; and X7 is R, L or I.

**[00142]** In some embodiments, X1, X2, X3, X4, X5, X6, and X7 are contiguous (X1-X2-X3-X4-X5-X6-X7). In some embodiments, any two of X1, X2, X3, X4, X5, X6, and X7 are contiguous. In some embodiments, any three of X1, X2, X3, X4, X5, X6, and X7 are contiguous. In some embodiments, any four of X1, X2, X3, X4, X5, X6, and X7 are contiguous. In some embodiments, any five of X1, X2, X3, X4, X5, X6, and X7 are contiguous. In some embodiments, any six of X1, X2, X3, X4, X5, X6, and X7 are contiguous. In some embodiments, any seven of X1, X2, X3, X4, X5, X6, and X7 are contiguous. In some embodiments, X1, X2, X3, X4, X5, X6, and X7 are not contiguous. In some embodiments, X1 is at an amino acid position 452 within an AAV9 capsid protein, or variant thereof. In some embodiments X2 is at an amino acid position 453 within an AAV9 capsid protein, or variant thereof. In some embodiments X3 is at an amino acid position 454 within an AAV9 capsid protein, or variant thereof. In some embodiments X4 is at an amino acid position 455 within an AAV9 capsid protein, or variant thereof. In some embodiments X5 is at an amino acid position 456 within an AAV9 capsid protein, or variant thereof. In some embodiments X6 is at an amino acid position 457 within an AAV9 capsid protein, or variant thereof. In some embodiments X7 is at an amino acid position 458 within an AAV9 capsid protein, or variant thereof.

**[00143]** Disclosed herein are rAAV capsid proteins that comprise a substitution of at least one, two, three, four, five, six, or seven amino acids provided any one of SEQ ID NOS: 25469-35471. In some embodiments, the at least one, two, three, four, five, six, or seven amino acids are provided in an amino acid sequence selected from SEQ ID NOS: 25469-26205. In some embodiments, the at least one, two, three, four, five, six, or seven amino acids are provided in an amino acid sequence selected from SEQ ID NOS: 26206-26873. In some embodiments, the at least one, two, three, four, five, six, or seven amino acids are provided in an amino acid sequence selected from SEQ ID NOS: 26874-30719.

In some embodiments, the at least one, two, three, four, five, six, or seven amino acids are provided in an amino acid sequence selected from SEQ ID NOS: 30720-30923. In some embodiments, the at least one, two, three, four, five, six, or seven amino acids are provided in an amino acid sequence selected from SEQ ID NO: 30924-31451. In some embodiments, the at least one, two, three, four, five, six, or seven amino acids are provided in an amino acid sequence selected from SEQ ID NOS: 31452-31467. In some embodiments, the at least one, two, three, four, five, six, or seven amino acids are provided in an amino acid sequence selected from SEQ ID NOS: 31468-31872. In some embodiments, the at least one, two, three, four, five, six, or seven amino acids are provided in an amino acid sequence selected from SEQ ID NOS: 31873-32060. In some embodiments, the at least one, two, three, four, five, six, or seven amino acids are provided in an amino acid sequence selected from SEQ ID NOS: 32061-32536. In some embodiments, the at least one, two, three, four, five, six, or seven amino acids are provided in an amino acid sequence selected from SEQ ID NOS: 32537-34198. In some embodiments, the at least one, two, three, four, five, six, or seven amino acids are provided in an amino acid sequence selected from SEQ ID NOS: 34199-35471. In some embodiments, the substitution comprises N452K, N452R, N452T, G453D, G453L, G453E, G453V, G453N, G453S, G453L, G453P, S454L, S454P, S454A, S454D, S454G, S454T, G455T, G455S, G455P, G455L, Q456P, Q456R, Q456S, N457G, N457S, N457T, Q458R, Q458L or Q458I, or a combination thereof.

**[00144]** Disclosed herein are rAAV capsid proteins that comprise a substitution of at least or about one, two, three, four, five, six, or seven amino acids of an amino acid sequence provided herein. In some embodiments, the amino acid sequence is KDNTPGR (SEQ ID NO: 32538). In some embodiments, the amino acid sequence is>NNLPRNL (SEQ ID NO: 32867). In some embodiments, the amino acid sequence is RESSPSL (SEQ ID NO: 29065). In some embodiments, the amino acid sequence is RVPLSTI (SEQ ID NO: 26933).

**[00145]** In some instances, the substitution of an amino acid is at an amino acid position selected from 452-458 in a capsid amino acid sequence of AAV9 or a variant thereof. In some instances, the substitution of the amino acid is at amino acid position selected from 452-458 in a capsid amino acid sequence provided in SEQ ID NO: 1. In some instances, the substitution of the amino acid is at amino acid position selected from 452-458 in a capsid amino acid sequence of AAV5 or variant thereof. In some instances, the substitution of the amino acid is at amino acid position selected from 452-458 in a capsid amino acid sequence of provided in SEQ ID NO: 2. In some instances, the substitution of the amino acid is at amino acid position selected from 452-458 in the AAVV-PHP.B capsid protein sequence (SEQ ID NO: 3). In some instances, the substitution of the amino acid is at amino acid position selected from 452-458 in the AAV-PHP.S capsid protein sequence (SEQ ID NO: 4). In some instances, the substitution of the amino acid is at amino acid position selected from 452-458 in the AAV-PHP.eB capsid protein sequence (SEQ ID NO: 5). In some embodiments, the rAAV of the present disclosure comprises the substitution of the amino acid at an amino acid position selected

from 452-458 in a parental AAV capsid protein, and an insertion of an amino acid or amino acid sequence at an amino acid position 588-589 in the parental AAV capsid protein.

**[00146]** The rAAV capsid proteins of the present disclosure may also have an insertion of an amino acid sequence at amino acid position 588 in a parental AAV9 or AAV5 capsid protein, or variant thereof. In some embodiments, the insertion of the amino acid sequence comprises X1LAVPFK (SEQ ID NO: 45481) at amino acid position 588-589 in the parental AAV9 AAV5 capsid protein, wherein X1 is any amino acid other than T, S, or N. In some embodiments, the insertion of the amino acid sequence comprises X1X2AVPFK (SEQ ID NO: 45482) at amino acid position 588-589 in the parental AAV9 or AAV5 capsid protein, wherein X2 is any amino acid other than L or V. In some embodiments, the insertion of the amino acid sequence comprises X1X2X3VPFK (SEQ ID NO: 45483) at amino acid position 588-589 in the parental AAV9 or AAV5 capsid protein, wherein X3 is any amino acid other than A, S, Q, P, and T. In some embodiments, the insertion of the amino acid sequence comprises X1X2X3X4PFK (SEQ ID NO: 45484) at amino acid position 588-589 in the parental AAV9 or AAV5 capsid protein, wherein X4 is any amino acid other than V, T, Q, N, L, and M. In some embodiments, the insertion of the amino acid sequence comprises TLAX4PFK (SEQ ID NO: 45485) at amino acid position 588-589 in the parental AAV9 or AAV5 capsid protein, wherein X is any amino acid other than V, T, Q, N, L, and M. In some embodiments, the rAAV further comprises a substitution of an amino acid at an amino acid position 587 in the parental AAV9 or AAV5 capsid protein, or variant thereof. In some embodiments, the substitution is A587D. In some embodiments, the substitution is a substitution with amino acid other than D. In some embodiments, the rAAV further comprises a substitution of an amino acid at an amino acid position 588 in the parental AAV9 or AAV5 capsid protein or variant thereof. In, some embodiments, the substitution is Q588G. In some embodiments, the substitution is a substitution with amino acid other than G.

**[00147]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence KDNTPGR (SEQ ID NO:32538) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence KDNTPGR (SEQ ID NO:32538) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence KDNTPGR (SEQ ID NO:32538) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence KDNTPGR (SEQ ID NO:32538) at an amino acid position 452-458 in a parental AAV5 capsid protein (SEQ ID NO: 2). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence KDNTPGR (SEQ ID NO:32538) at an amino acid position 452-458 in a parental AAV5

variant capsid protein. In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46400.

**[00148]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence NNLPRNL (SEQ ID NO: 32867) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence NNLPRNL (SEQ ID NO: 32867) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence NNLPRNL (SEQ ID NO: 32867) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence NNLPRNL (SEQ ID NO: 32867) at an amino acid position 452-458 in a parental AAV5 capsid protein (SEQ ID NO: 2). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence NNLPRNL (SEQ ID NO: 32867) at an amino acid position 452-458 in a parental AAV5 variant capsid protein. In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46401.

**[00149]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence RESSPSL (SEQ ID NO: 29065) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence RESSPSL (SEQ ID NO: 29065) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence RESSPSL (SEQ ID NO: 29065) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence RESSPSL (SEQ ID NO: 29065) at an amino acid position 452-458 in a parental AAV5 capsid protein (SEQ ID NO: 2). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence RESSPSL (SEQ ID NO: 29065) at an amino acid position 452-458 in a parental AAV5



variant capsid protein. In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46402.

**[00150]** In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence RVPLSTI (SEQ ID NO: 26933) at an amino acid position 452-458 in a parental AAV9 capsid protein (SEQ ID NO: 1). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence RVPLSTI (SEQ ID NO: 26933) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 3). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence RVPLSTI (SEQ ID NO: 26933) at an amino acid position 452-458 in a parental AAV9 variant capsid protein (SEQ ID NO: 5). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence RVPLSTI (SEQ ID NO: 26933) at an amino acid position 452-458 in a parental AAV5 capsid protein (SEQ ID NO: 2). In some embodiments, the rAAV capsid protein comprises a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence RVPLSTI (SEQ ID NO: 26933) at an amino acid position 452-458 in a parental AAV5 variant capsid protein. In some embodiments, the rAAV capsid protein comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids at an amino acid position 588-589 in the parental AAV9 capsid protein, or variant thereof. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in SEQ ID NO: 46403.

#### **[00151] Heterologous Nucleic Acids**

**[00152]** Disclosed herein are heterologous nucleic acids comprising therapeutic nucleic acids useful for the treatment or prevention of a disease or condition, or symptom of the disease or condition, disclosed herein. In some embodiments, the therapeutic nucleic acids encode a therapeutic gene expression product. Non-limiting examples of gene expression products include proteins, polypeptides, peptides, enzymes, antibodies, antigen binding fragments, nucleic acid (RNA, DNA, antisense oligonucleotide, siRNA, and the like), and gene editing components, for use in the treatment, prophylaxis, and/or amelioration of the disease or disorder, or symptoms of the disease or disorder. In some instances, the therapeutic nucleic acids are placed in an organism, cell, tissue or organ of a subject by way of a rAAV, such as those disclosed herein.

**[00153]** Disclosed herein are rAAVs, each comprising a viral genome (*e.g.*, a single stranded DNA molecule (ssDNA)). In some instances, the viral vector comprises two inverted terminal repeat (ITR) sequences that are about 145 bases each, flanking the heterologous nucleic acid or transgene. In some embodiments, the transgene comprises a therapeutic nucleic acid, and in some cases, a promoter in *cis* with the therapeutic nucleic acid in an open reading frame (ORF). The promoter is capable of

initiating transcription of therapeutic nucleic acid in the nucleus of the target cell. The ITR sequences can be from any AAV serotype. Non-limiting examples of AAV serotypes include AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, AAV11, and AAV12. In some cases, an ITR is from AAV2. In some cases, an ITR is from AAV9.

**[00154]** Disclosed herein are transgenes that can comprise any number of nucleotides. In some cases, a transgene can comprise less than about 100 nucleotides. In some cases, a transgene can comprise at least about 100 nucleotides. In some cases, a transgene can comprise at least about 200 nucleotides. In some cases, a transgene can comprise at least about 300 nucleotides. In some cases, a transgene can comprise at least about 400 nucleotides. In some cases, a transgene can comprise at least about 500 nucleotides. In some cases, a transgene can comprise at least about 1000 nucleotides. In some cases, a transgene can comprise at least about 5000 nucleotides. In some cases, a transgene can comprise at least about 10,000 nucleotides. In some cases, a transgene can comprise at least about 20,000 nucleotides. In some cases, a transgene can comprise at least about 30,000 nucleotides. In some cases, a transgene can comprise at least about 40,000 nucleotides. In some cases, a transgene can comprise at least about 50,000 nucleotides. In some cases, a transgene can comprise between about 500 and about 5000 nucleotides. In some cases, a transgene can comprise between about 5000 and about 10,000 nucleotides. In any of the cases disclosed herein, the transgene can comprise DNA, RNA, or a hybrid of DNA and RNA. In some cases, the transgene can be single stranded. In some cases, the transgene can be double stranded.

**[00155]** Disclosed herein are transgenes useful for modulating the expression or activity of a target gene or gene expression product thereof. In some instances, the transgene is encapsidated by an rAAV capsid protein of an rAAV particle described herein. In some instances, the rAAV particle is delivered to a subject to treat a disease or condition disclosed herein in the subject. In some instances, the delivery is systemic (*e.g.*, intravenous, intranasal).

**[00156]** The transgenes disclosed herein are useful for expressing an endogenous gene at a level similar to that of a healthy or normal individual. This is particularly useful in the treatment of a disease or condition related to the underexpression, or lack of expression, of a gene expression product. In some embodiments, the transgenes disclosed herein are useful for overexpressing an endogenous gene, such that an expression level of the endogenous gene is above the expression level of a healthy or normal individual. Additionally, transgenes can be used to express exogenous genes (*e.g.*, active agent such as an antibody, peptide, nucleic acid, or gene editing components). In some embodiments, the therapeutic gene expression product is capable of altering, enhancing, increasing, or inducing the activity of one or more endogenous biological processes in the cell. In some embodiments, the transgenes disclosed herein are useful for reducing expressing an endogenous gene, such as for example, a dominant negative gene. In some embodiments, the therapeutic gene expression product is capable of altering, inhibiting, reducing, preventing, eliminating, or impairing the activity of one or more endogenous biological processes in the cell. In some aspects, the increase

of gene expression refers to an increase by at least about 20%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95% and 100%. In one aspect, the protein product of the targeted gene may be increased by at least about 20%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95% and 100%. In some aspects, the decrease of gene expression refers to an increase by at least about 20%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95% and 100%. In one aspect, the protein product of the targeted gene may be decreased by at least about 20%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95% and 100%.

**[00157]** When endogenous sequences (endogenous or part of a transgene) are expressed with a transgene, the endogenous sequences can be full-length sequences (wild-type or mutant) or partial sequences. The endogenous sequences can be functional. Non-limiting examples of the function of these full length or partial sequences include increasing the serum half-life of the polypeptide expressed by a transgene (e.g., therapeutic gene) and/or acting as a carrier.

**[00158]** A transgene can be inserted into an endogenous gene such that all, some or none of the endogenous gene is expressed. For example, a transgene as described herein can be inserted into an endogenous locus such that some (N-terminal and/or C-terminal to a transgene) or none of the endogenous sequences are expressed, for example as a fusion with a transgene. In other cases, a transgene (e.g., with or without additional coding sequences such as for the endogenous gene) is integrated into any endogenous locus, for example a safe-harbor locus. For example, a Frataxin (FXN) transgene can be inserted into an endogenous FXN gene. A transgene can be inserted into any gene, e.g., the genes as described herein.

**[00159]** At least one advantage of the present disclosure is that virtually any therapeutic nucleic acid may be used to express any therapeutic gene expression product. In some instances, the therapeutic gene expression product is a therapeutic protein or a peptide (e.g., antibody, antigen-binding fragment, peptide, or protein). In one embodiment the protein encoded by the therapeutic nucleic acid is between 50-5000 amino acids in length. In some embodiments the protein encoded is between 50-2000 amino acids in length. In some embodiments the protein encoded is between 50-1000 amino acids in length. In some embodiments the protein encoded is between 50-1500 amino acids in length. In some embodiments the protein encoded is between 50-800 amino acids in length. In some embodiments the protein encoded is between 50-600 amino acids in length. In some embodiments the protein encoded is between 50-400 amino acids in length. In some embodiments the protein encoded is between 50-200 amino acids in length. In some embodiments the protein encoded is between 50-100 amino acids in length. In some embodiments the peptide encoded is between 4-50 amino acids in length. In some embodiments, the protein encoded is a tetrapeptide, a pentapeptide, a hexapeptide, a heptapeptide, an octapeptide, a nonapeptide, or a decapeptide. In some embodiments, the protein encoded comprises a peptide of 2-30 amino acids, such as 5-30, 10-30, 2-25, 5-25, 10-25, or 10-20 amino acids. In some embodiments, the protein encoded comprises a peptide of at least 11, 12, 13, 14, 15, 17, 20, 25 or 30 amino acids, or a peptide that is no longer than 50 amino acids, e.g. no longer than 35, 30, 25, 20, 17, 15, 14, 13, 12, 11 or 10 amino acids.

**[00160]** Non-limiting examples of therapeutic protein or peptides include an adrenergic agonist, an anti-apoptosis factor, an apoptosis inhibitor, a cytokine receptor, a cytokine, a cytotoxin, an erythropoietic agent, a glutamic acid decarboxylase, a glycoprotein, a growth factor, a growth factor receptor, a hormone, a hormone receptor, an interferon, an interleukin, an interleukin receptor, a kinase, a kinase inhibitor, a nerve growth factor, a netrin, a neuroactive peptide, a neuroactive peptide receptor, a neurogenic factor, a neurogenic factor receptor, a neuropilin, a neurotrophic factor, a neurotrophin, a neurotrophin receptor, an N-methyl-D-aspartate antagonist, a plexin, a protease, a protease inhibitor, a protein decarboxylase, a protein kinase, a protein kinase inhibitor, a proteolytic protein, a proteolytic protein inhibitor, a semaphoring, a semaphorin receptor, a serotonin transport protein, a serotonin uptake inhibitor, a serotonin receptor, a serpin, a serpin receptor, and a tumor suppressor. In certain embodiments, the therapeutic protein or peptide is selected from the group consisting of brain-derived neurotrophic factor (BDNF), ciliary neurotrophic factor (CNTF), macrophage colony-stimulating factor (CSF), epidermal growth factor (EGF), fibroblast growth factor (FGF), gonadotropin, interferon-gamma (IFN), insulin-like growth factor 1 (IGF-1), nerve growth factor (NGF), platelet-derived growth factor (PDGF), pigment epithelium-derived factor (PEDF), transforming growth factor (TGF), transforming growth factor-beta (TGF- $\beta$ ), tumor necrosis factor (TNF), vascular endothelial growth factor (VEGF), prolactin, somatotropin, X-linked inhibitor of apoptosis protein 1 (XIAP1), interleukin 1 (IL-1), IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-10, viral IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, IL-17, and IL-18.

**[00161]** A therapeutic gene expression product can comprise gene editing components. Non-limiting examples of gene editing components include those required for CRISPR/Cas, artificial site-specific RNA endonuclease (ASRE), zinc finger endonuclease (ZFN), and transcription factor like effector nuclease (TALEN). In a non-limiting example, a subject having Huntington's disease is identified. The subject is then systemically administered a first amount of a rAAV encapsidating a viral vector encoding ZFN engineered to represses the transcription of the Huntingtin (HTT) gene. In some instances, the route of administration is intravenous. The rAAV will include a modified AAV capsid protein that includes an amino acid sequence provided in any one of **Tables 1-2**, or **SEQ ID NOS: 11-12739**, so as to allow proper targeting of the ZFN to the nervous system, while retargeting off-target organs, such as the liver. If needed, the subject is administered a second or third dose of the rAAV, until a therapeutically effective amount of the ZFN is expressed the subject in the nervous system. In another non-limiting example, a subject with cystic fibrosis is identified. The subject is then systemically administered a first amount of a rAAV encapsidating a transgene encoding ZFN engineered to represses the transcription of the cystic fibrosis transmembrane conductance regulator (CFTR) gene. In some instances the route of administration is intranasal (*e.g.*, intranasal spray). The rAAV will include a modified AAV capsid protein that includes an amino acid sequence provided in any one of **SEQ ID NOS: 32537-34198**, so as to allow proper targeting of the ZFN to the lung. If

needed, the subject is administered a second or third dose of the rAAV, until a therapeutically effective amount of the ZFN is expressed the subject in the lung.

**[00162]** A therapeutic nucleic acid can comprise a non-protein coding gene e.g., sequences encoding antisense RNAs, RNAi, shRNAs and micro RNAs (miRNAs), miRNA sponges or decoys, recombinase delivery for conditional gene deletion, conditional (recombinase-dependent) expression, includes those required for the gene editing components described herein. The a non-protein coding gene may also encode a tRNA, rRNA, tmRNA, piRNA, double stranded RNA, snRNA, snoRNA, and/or long non-coding RNA (lncRNA). In some cases, the non-protein coding gene can modulate the expression or the activity of a target gene or gene expression product. a non-protein coding gene. For example, the RNAs described herein may be used to inhibit gene expression in a target cell, for example, a cell in the central nervous system (CNS) or peripheral organ (e.g., lung). In some cases, inhibition of gene expression refers to an inhibition by at least about 20%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95% and 100%. In some cases, the protein product of the targeted gene may be inhibited by at least about 20%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95% and 100%. The gene can be either a wild type gene or a gene with at least one mutation. The targeted protein may be either a wild type protein or a protein with at least one mutation.

**[00163]** A therapeutic nucleic acid can modulates the expression or activity of a gene or gene expression product expressed from the gene that is implicated in disease or disorder of the brain. For example, the therapeutic nucleic acid, in some cases is a gene or a modified version of the gene described herein. In another example, the therapeutic nucleic acid comprises an effector gene expression product such as a gene editing components specific to target a gene therein. Non-limited examples of genes include Sarcoglycan Alpha (SGCA), glutamic acid decarboxylase 65 (GAD65), glutamic acid decarboxylase 67 (GAD67), CLN2 gene, Nerve Growth Factor (NGF), glial cell derived neurotrophic factor(GDNF), Neurturin, Survival Of Motor Neuron 1, Telomeric (SMN1),  $\beta$ -Glucocerebrosidase (GCase), Frataxin (FXN), Huntingtin (HTN), methyl-CpG binding protein 2 (MECP2), peroxisomal biogenesis factor (PEX), progranulin (GRN), an antitubulin agent, copper-zinc superoxide dismutase (SOD1), Glucosylceramidase Beta (GBA), NPC Intracellular Cholesterol Transporter 1 (NPC1), and NPS3. In some embodiments, the peroxisomal biogenesis factor (PEX) is selected from the group consisting of PEX1, PEX2, PEX3, PEX4, PEX5, PEX6, PEX7, PEX10, PEX11 $\beta$ , PEX12, PEX13, PEX14, PEX16, PEX19, and PEX26. In some instances, the gene or gene expression product is inhibited. In some instances, the gene or gene expression product is enhanced.

**[00164]** A therapeutic nucleic acid modulates expression or activity of a gene or gene expression product expressed from the gene that is implicated in disease or disorder of a particular organ (e.g., lung, heart, liver, muscle, eye). Non-limited examples of genes include Cystic Fibrosis Transmembrane Conductance Regulator (CFTR), Factor X (FIX), RPE65, Retinoid Isomerohydrolase (RPE65), Sarcoglycan Alpha (SGCA), and sarco/endoplasmic reticulum Ca<sup>2+</sup>-ATPase (SERCA2a). In some embodiments, the therapeutic gene expression product is of human, murine, avian, porcine,

bovine, ovine, feline, canine, equine, epine, caprine, lupine or primate origin. In some instances, the gene or gene expression product is inhibited. In some instances, the gene or gene expression product is enhanced.

**[00165]** Disclosed herein are modified viral genomes comprising genetic information (*e.g.*, heterologous nucleic acid) that are assembled into a rAAV via viral packaging. In some instances, the viral genome is from an AAV serotypes selected from the group consisting of AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, AAV11, and AAV12. In some instances, the viral genome is from a modified AAV serotype selected from the group consisting of AAV-PHP.B, AAV-PHP.eB, and AAV-PHP.S.

**[00166]** A viral genome, such as those described herein, can comprise a transgene, which in some cases encodes a heterologous gene expression product (*e.g.*, therapeutic gene expression product, recombinant capsid protein, and the like). The transgene is in *cis* with two inverted terminal repeats (ITRs) flanking the transgene. The transgene may comprise a therapeutic nucleic acid encoding a therapeutic gene expression product. Due to the limited packaging capacity of the rAAV (~2.5kB), in some cases, a longer transgene may be split between two AAV vectors, the first with 3' splice donor and the second with a 5' splice acceptor. Upon co-infection of a cell, concatemers form, which are spliced together to express a full-length transgene.

**[00167]** The viral genome, in some cases, is a single stranded viral DNA comprising the transgene. The AAV vector can be episomal. In some instances, the viral genome is a concatemer. An episomal viral genome can develop chromatin-like organization in the target cell that does not integrate into the genome of the target cell. When infected into non-dividing cells, the stability of the episomal viral genome in the target cell enable the long-term transgene expression. Alternatively, the AAV vector integrates the transgene into the genome of the target cell predominantly at a specific site (*e.g.*, AAVS1 on human chromosome 19).

**[00168]** A transgene is generally inserted so that its expression is driven by the endogenous promoter at the integration site, namely the promoter that drives expression of the endogenous gene into which a transgene is inserted. In some instances, a transgene comprises a promoter and/or enhancer, for example a constitutive promoter or an inducible or tissue/cell specific promoter. As a non-limiting example, the promoter may be CMV promoter, a CMV- $\beta$ -Actin-intron- $\beta$ -Globin hybrid promoter (CAG), CBA promoter, FRDA or FXN promoter, UBC promoter, GUSB promoter, NSE promoter, Synapsin promoter, MeCP2 promoter, GFAP promoter, H1 promoter, U6 promoter, NFL promoter, NFH promoter, SCN8A promoter, or PGK promoter. As a non-limiting example, promoters can be tissue-specific expression elements include, but are not limited to, human elongation factor 1 $\alpha$ -subunit (EF1 $\alpha$ ), immediate-early cytomegalovirus (CMV), chicken  $\beta$ -actin (CBA) and its derivative CAG, the  $\beta$  glucuronidase (GUSB), and ubiquitin C (UBC). The transgene may include a tissue-specific expression elements for neurons such as, but not limited to, neuron-specific enolase (NSE), platelet-derived growth factor (PDGF), platelet-derived growth factor B-chain (PDGF- $\beta$ ), the synapsin (Syn),

the methyl-CpG binding protein 2 (MeCP2), Ca<sup>2+</sup>/calmodulin-dependent protein kinase II (CaMKII), metabotropic glutamate receptor 2 (mGluR2), NFL, NFH, np32, PPE, Enk and EAAT2 promoters. The transgene may comprise a tissue-specific expression elements for astrocytes such as, but not limited to, the glial fibrillary acidic protein (GFAP) and EAAT2 promoters. The transgene may comprise tissue-specific expression elements for oligodendrocytes such as, but not limited to, the myelin basic protein (MBP) promoter. In one embodiment, the transgene comprises a region located approximately ~5 kb upstream of the first exon of the encoded therapeutic nucleic acid, more specifically, there is a 17 bp region located approximately 4.9 kb upstream of the first exon of the encoded frataxin gene in order to allow for expression with the FRDA promoter (See *e.g.*, Puspasari et al. Long Range Regulation of Human FXN Gene Expression, PLOS ONE, 2011; the contents of which is herein incorporated by reference in its entirety).

**[00169]** In some embodiments, the promoter is less than 1 kb. The promoter may have a length of 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800 or more than 800. The promoter may have a length between 200-300, 200-400, 200-500, 200-600, 200-700, 200-800, 300-400, 300-500, 300-600, 300-700, 300-800, 400-500, 400-600, 400-700, 400-800, 500-600, 500-700, 500-800, 600-700, 600-800 or 700-800. The promoter may provide expression of the therapeutic gene expression product for a period of time in targeted tissues such as, but not limited to, the central nervous system and peripheral organs (*e.g.*, lung). Expression of the therapeutic gene expression product may be for a period of 1 hour, 2, hours, 3 hours, 4 hours, 5 hours, 6 hours, 7 hours, 8 hours, 9 hours, 10 hours, 11 hours, 12 hours, 13 hours, 14 hours, 15 hours, 16 hours, 17 hours, 18 hours, 19 hours, 20 hours, 21 hours, 22 hours, 23 hours, 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, 1 week, 8 days, 9 days, 10 days, 11 days, 12 days, 13 days, 2 weeks, 15 days, 16 days, 17 days, 18 days, 19 days, 20 days, 3 weeks, 22 days, 23 days, 24 days, 25 days, 26 days, 27 days, 28 days, 29 days, 30 days, 31 days, 1 month, 2 months, 3 months, 4 months, 5 months, 6 months, 7 months, 8 months, 9 months, 10 months, 11 months, 1 year, 13 months, 14 months, 15 months, 16 months, 17 months, 18 months, 19 months, 20 months, 21 months, 22 months, 23 months, 2 years, 3 years, 4 years, 5 years, 6 years, 7 years, 8 years, 9 years, 10 years, 11 years, 12 years, 13 years, 14 years, 15 years, 16 years, 17 years, 18 years, 19 years, 20 years, 21 years, 22 years, 23 years, 24 years, 25 years, 26 years, 27 years, 28 years, 29 years, 30 years, 31 years, 32 years, 33 years, 34 years, 35 years, 36 years, 37 years, 38 years, 39 years, 40 years, 41 years, 42 years, 43 years, 44 years, 45 years, 46 years, 47 years, 48 years, 49 years, 50 years, 55 years, 60 years, 65 years, or more than 65 years. Expression of the payload may be for 1-5 hours, 1-12 hours, 1-2 days, 1-5 days, 1-2 weeks, 1-3 weeks, 1-4 weeks, 1-2 months, 1-4 months, 1-6 months, 2-6 months, 3-6 months, 3-9 months, 4-8 months, 6-12 months, 1-2 years, 1-5 years, 2-5 years, 3-6 years, 3-8 years, 4-8 years or 5-10 years or

10-15 years, or 15-20 years, or 20-25 years, or 25-30 years, or 30-35 years, or 35-40 years, or 40-45 years, or 45-50 years, or 50-55 years, or 55-60 years, or 60-65 years.

**[00170]** Heterologous nucleic acids and transgenes of the present embodiment may also include plasmid vectors. Plasmid vectors are useful for the generation of the recombinant AAV (rAAV) particles described herein. An AAV vector can comprise a genome of a helper virus. Helper virus proteins are required for the assembly of a recombinant rAAV, and packaging of a transgene containing a heterologous nucleic acid into the rAAV. The helper virus genes are adenovirus genes E4, E2a and VA, that when expressed in the cell, assist with AAV replication. In some embodiments, an AAV vector comprises E2. In some embodiments, an AAV vector comprises E4. In some embodiments, an AAV vector comprises VA. In some instances, the AAV vector comprises one of helper virus proteins, or any combination thereof.

**[00171]** An plasmid vector can comprise a viral genome comprising a nucleic acid encoding the recombinant AAV (rAAV) capsid protein described herein. The viral genome can comprise a Replication (*Rep*) gene encoding a Rep protein, and Capsid (*Cap*) gene encoding an Aap protein in the first open reading frame (ORF1) or a Cap protein in the second open reading frame (ORF2). The Rep protein is selected from the group consisting of Rep78, Rep68, Rep52, and Rep40. In some instances, the *Cap* gene is modified encoding a modified AAV capsid protein described herein. A wild-type *Cap* gene encodes three proteins, VP1, VP2, and VP3. In some cases, VP1 is modified. In some cases, VP2 is modified. In some cases, VP3 is modified. In some cases, all three VP1-VP3 are modified. The AAV vector can comprise nucleic acids encoding wild-type Rep78, Rep68, Rep52, Rep40 and Aap proteins.

**[00172]** In some instances, the plasmid vector is bacterial. In some instances, the plasmid vector is derived from *Escherichia coli*. In some instances, the nucleic acid sequence comprises, in a 5' to 3' direction: (1) a 5' inverted terminal repeat (ITR) sequence, (2) a Replication (*Rep*) gene, (3) a Capsid (*Cap*) gene, and (4) a 3' ITR, wherein the *Cap* gene encodes the AAV capsid protein described herein. In some instances, the plasmid vector encodes a pseudotyped AAV capsid protein. In some instances, the *Cap* gene is derived from the deoxyribose nucleic acid (DNA) provided in any one of SEQ ID NOS: 6-10.

**[00173]** In some instances, the 5' ITR and the 3' ITR are derived from an AAV2 serotype. In some instances, the 5' ITR and the 3' ITR are derived from an AAV5 serotype. In some instances, the 5' ITR and the 3' ITR are derived from an AAV9 serotype.

**[00174]** Disclosed herein are plasmid vectors comprising any one of SEQ ID NOS: 12740-25468 and 35472-45474, which are the DNA sequences encoding the rAAV capsid proteins of the present disclosure. In some instances, plasmid vector comprises a *Cap* gene that is at least 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% identical to any one of the DNA sequences provided in SEQ ID NOS: 46404-46423. The plasmid vector of the present disclosure can comprise the VP1 *Cap* gene comprises any one of SEQ ID NOS: 6-10. An AAV vector can comprise 70%, 75%, 80%,



85%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% of any one of SEQ ID NOS: 6-10.

**[00175]** Also disclosed are nucleic acids encoding the rAAV capsids comprising variant AAV capsid proteins (*e.g.*, rAAV capsid proteins) of the present disclosure. In some instances, the rAAV capsid proteins comprise a DNA sequence provided in any one of SEQ ID NOS: 46404-46423, which encode the full-length VP1 protein with the 7-mer substituted at amino acid position 452-458. In some cases, the 7-mer is encoded by DNA sequence provided in any one of SEQ ID NOS: 46364-46383.

**[00176]** Provided here are plasmid vectors encoding the rAAV capsid proteins of the present disclosure comprising: (a) a nucleic acid sequence encoding 7-mer amino acid sequence provided in any one of FIGS. 2-14; and (b) a nucleic acid sequence that is 70%, 75%, 80%, 85%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% of any one of SEQ ID NOS: 6-10. In some instances, AAV9 (SEQ ID NO: 6) is modified to include any one of SEQ ID NOS: 12740-25468 and 35472-45474. In some instances, the AAV-PHP.eB (SEQ ID NO: 10) is modified to include any one of SEQ ID NOS: 12740-25468 and 35472-45474. In some instances, AAV5 (SEQ ID NO: 7) is modified to include any one of SEQ ID NOS: 35472-45474. In some instances, AAV-PHP.B (SEQ ID NO: 8) is modified to include any one of SEQ ID NOS: SEQ ID NOS: 12740-25468 and 35472-45474. In some instances, AAV-PHP.S VP1 (SEQ ID NO: 9) is modified to include any one of SEQ ID NOS: 12740-25468 and 35472-45474. The AAV vector described herein may be used to produce a variant AAV capsid by the methods described herein.

## METHODS

### **[00177] Methods of Producing rAAVs**

**[00178]** Disclosed herein are methods of producing a recombinant AAV (rAAV). In some instances all elements that are required for AAV production in target cell (*e.g.*, HEK293 cells) are transiently transfected into the target cell using suitable methods known in the art. For example, the rAAV of the present disclosure can be produced by co-transfecting three plasmid vectors, a first vector with ITR-containing plasmid carrying the transgene (*e.g.*, therapeutic nucleic acid), a second vector that carries the AAV *Rep* and *Cap* genes; and (3), a third vector that provides the helper genes isolated from adenovirus. The methods described herein generate high-titer AAV vectors that are free of adenovirus. The *Cap* gene disclosed here comprises any one of SEQ ID NOS: 12740-25468 and 35472-45474, which are the DNA sequences encoding the modified AAV capsid proteins of the present disclosure. In some cases, rAAVs of the present disclosure are generated using the methods described in Challis, R. C. *et al.* Systemic AAV vectors for widespread and targeted gene delivery in rodents. *Nat. Protoc.* 14, 379 (2019), which is hereby incorporated by reference in its entirety. Briefly, triple transfection of HEK293T cells (ATCC) using polyethylenimine (PEI) is performed, viruses are collected after 120 hours from both cell lysates and media and purified over iodixanol.

[00179] Disclosed herein, are methods of manufacturing comprising: (a) introducing into a cell a nucleic acid comprising: (i) a first nucleic acid sequence encoding a therapeutic gene expression product enclosed by a 5' and a 3' inverted terminal repeat (ITR) sequence; (ii) a second nucleic acid sequence encoding a viral genome comprising a 5' ITR sequence, a Replication (*Rep*) gene, Capsid (*Cap*) gene, and a 3' ITR, wherein the *Cap* gene encodes the AAV capsid protein described herein; and (iii) a third nucleic acid sequence encoding a first helper virus protein selected from the group consisting of E4orf6, E2a, and VA RNA, and optionally, a second helper virus protein comprising E1a or E1b55k; (b) expressing in the cell the AAV capsid protein described herein; (c) assembling an AAV particle comprising the AAV capsid proteins disclosed herein; and (d) packaging the first nucleic acid sequence in the AAV particle. In some instances, the AAV particle is a rAAV capsid with an increased specificity when measured in a target tissue (*e.g.*, CNS, PNS, lung) in a subject and a decreased specificity when measured in an off-target tissue (*e.g.*, liver), relative to a reference AAV capsid. In some instances, the methods further comprise packing the first nucleic acid sequence encoding the therapeutic gene expression product such that it becomes encapsidated by the rAAV capsid protein. In some embodiments, the rAAV particles are isolated, concentrated, and purified using suitable viral purification methods, such as those described herein.

[00180] In a non-limiting example, the rAAVs are generated by triple transfection of precursor cells (*e.g.*, HEK293T) cells using a standard transfection protocol (*e.g.*, with PEI). Viral particles are harvested from the media after a period of time (*e.g.*, 72 h post transfection) and from the cells and media at a later point in time (*e.g.*, 120 h post transfection). Virus present in the media is concentrated by precipitation with 8% poly(ethylene glycol) and 500 mM sodium chloride and the precipitated virus is added to the lysates prepared from the collected cells. The viruses are purified over iodixanol (Optiprep, Sigma) step gradients (15%, 25%, 40% and 60%). Viruses are concentrated and formulated in PBS. Virus titers are determined by measuring the number of DNaseI-resistant vector genome copies (VGs) using qPCR and the linearized genome plasmid as a control.

[00181] The Rep protein can be selected from the group consisting of Rep78, Rep68, Rep52, and Rep40. The genome of the AAV helper virus comprises an AAV helper gene selected from the group consisting of E2, E4, and VA. In some instances, the first nucleic acid sequence and the second nucleic acid sequence are in *trans*. In some instances, the first nucleic acid sequence and the second nucleic acid sequence are in *cis*. In some instances, the first nucleic acid sequence, the second nucleic acid sequence and the third nucleic acid sequence, are in *trans*.

[00182] The cell can be selected from a group consisting of a human, a primate, a murine, a feline, a canine, a porcine, an ovine, a bovine, an equine, an epine, a caprine and a lupine host cell. In some instances, the cell is a progenitor or precursor cell, such as a stem cell. In some instances, the stem cell is a mesenchymal cell, embryonic stem cell, induced pluripotent stem cell (iPSC), fibroblast or other tissue specific stem cell. The cell can be immortalized. In some instances, the embryonic stem cell is a human embryonic stem cell. In some instances, the human embryonic stem cell is a human embryonic

kidney 293 (HEK-293) cell. In some instances, the cell is a differentiated cell. Base on the disclosure provided, it is expected that this system can be used in conjunction with any transgenic line expressing a recombinase in the target cell type of interest to develop AAV capsids that more efficiently transduce that target cell population.

**[00183] Methods of rAAV-Mediated Delivering a Heterologous Nucleic Acid**

**[00184]** Disclosed herein are methods of delivering a heterologous nucleic acid (*e.g.*, therapeutic nucleic acid or transgene disclosed herein) to subject in need thereof. The transgene may be encapsidated by a recombinant AAV (rAAV) capsid protein or rAAV particle such as those described herein.

**[00185]** Methods may be *ex vivo*, *e.g.*, scientific research purposes or for producing adoptive cellular therapies. The subject may be a human primary cell or a mature cell, or cell line. The subject may be a cell from a monkey, hamster, or mouse. In either case, delivery may include contacting the composition with the cell or cell line.

**[00186]** Methods may be *in vivo*, *e.g.*, treating a disease or a condition in a subject in need thereof. In some instances, the subject may be mammal, such as a human or non-human primate, in which case delivery of the composition may comprise administering the composition to the subject. In some embodiments, delivery of the heterologous nucleic acid comprises administering to the subject the composition using any one of the routes of administration described herein. In a non-limiting example, the rAAV encapsidating an aromatic L-amino acid decarboxylase deficiency (AADC) gene may be administered to a subject intravenously to treat AADC deficiency.

**[00187]** In some embodiments, methods of increasing transduction of a heterologous nucleic acid in a target *in vivo* or *ex vivo* tissue comprise delivering a rAAV particle described herein, the rAAV engineered to have an increased transduction efficiency in a target *in vivo* environment (*e.g.*, tissue or cell type). In some instances, the increased transduction efficiency comprises a 1-fold, 2-fold, 3-fold, 4-fold, 5-fold, 6-fold, 7-fold, 8-fold, 9-fold, 10-fold, 11-fold, 12-fold, 13-fold, 14-fold, 15-fold, 16-fold, 17-fold, 18-fold, 19-fold, 20-fold, 21-fold, 22-fold, 23-fold, 24-fold, 25-fold, 26-fold, 27-fold, 28-fold, 29-fold, 30-fold, 31-fold, 32-fold, 33-fold, 34-fold, 35-fold, 36-fold, 37-fold, 38-fold, 39-fold, 40-fold, 41-fold, 42-fold, 43-fold, 44-fold, 45-fold, 46-fold, 47-fold, 48-fold, 49-fold, 50-fold, 75-fold, or 100-fold increase, or more, relative to a reference AAV. In some instances, the increased transduction efficiency is at least 30-fold. In some instances, the increased transduction efficiency is at least 40-fold. In some instances, the increased transduction efficiency is at least 50-fold. In some instances, the increased transduction efficiency is at least 60-fold. In some instances, the increased transduction efficiency is at least 80-fold. In some instances, the increased transduction efficiency is at least 90-fold. In some instances, the increased transduction efficiency is at least 100-fold.

**[00188]** In some embodiments, methods of decreasing transduction of a heterologous nucleic acid in an off-target *in vivo* or *ex vivo* tissue comprise delivering a rAAV particle described herein, the rAAV engineered to have a reduced transduction efficiency by 1-fold, 2-fold, 3-fold, 4-fold, 5-fold, 6-fold,

7-fold, 8-fold, 9-fold, 10-fold, 11-fold, 12-fold, 13-fold, 14-fold, 15-fold, 16-fold, 17-fold, 18-fold, 19-fold, 20-fold, 21-fold, 22-fold, 23-fold, 24-fold, 25-fold, 26-fold, 27-fold, 28-fold, 29-fold, 30-fold, 31-fold, 32-fold, 33-fold, 34-fold, 35-fold, 36-fold, 37-fold, 38-fold, 39-fold, 40-fold, 41-fold, 42-fold, 43-fold, 44-fold, 45-fold, 46-fold, 47-fold, 48-fold, 49-fold, 50-fold, 75-fold, or 100-fold, or more, relative to a reference AAV. In some instances, the off-target gene transfer is reduced by at least 20-fold. In some instances, the off-target gene transfer is reduced by at least 30-fold. In some instances, the off-target gene transfer is reduced by at least 40-fold. In some instances, the off-target gene transfer is reduced by at least 50-fold. In some instances, the off-target gene transfer is reduced by at least 60-fold. In some instances, the off-target gene transfer is reduced by at least 80-fold. In some instances, the off-target gene transfer is reduced by at least 90-fold. In some instances, the off-target gene transfer is reduced by at least 100-fold.

**[00189]** Methods of delivering a heterologous nucleic acid to a target *in vivo* environment are also provided comprising delivering the a rAAV particle described herein that has been engineered to have an increased specificity in a target *in vivo* or *ex vivo* tissue (*e.g.*, organ or cell type), as compared to a reference AAV. In some embodiment, the rAAV particle has been engineered to have a decreased specificity for an off-target *in vivo* or *ex vivo* tissue. Methods, in some cases, comprise detecting whether a rAAV possesses more specificity for a target *in vivo* or *ex vivo* tissue than a reference AAV, includes measuring a level of gene expression product (*e.g.*, RNA or protein) expressed from the heterologous nucleic acid encapsidated by the rAAV in a tissue sample obtained from the target *in vivo* environment in a subject; and comparing the measured level to a control level (such as, for *e.g.*, the gene expression product expressed from a heterologous nucleic acid encapsidated by a reference AAV (*e.g.*, AAV9)). Suitable methods for measuring expression of a gene expression product luciferase reporter assay and quantitative polymerase chain reaction (qPCR).

**[00190]** In some instances, the reference AAV has a serotype selected from the group consisting of AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, AAV11, AAV12, or variant thereof. For example, the reference AAV can have a serotype selected from the group consisting of AAV-PHP.B, AAV-PHP.eB, and AAV-PHP.S.

**[00191] *Delivery to the Central or Peripheral Nervous System***

**[00192]** Provided herein are methods of delivering a heterologous nucleic acid to a target *in vivo* environment comprising delivering a composition to the target *in vivo* environment selected from the group consisting of a central nervous system (CNS) and the peripheral nervous system (PNS) in a subject, the composition comprising a rAAV particle with a rAAV capsid protein, the rAAV capsid protein encapsidating a viral vector encoding a heterologous nucleic acid (*e.g.*, therapeutic nucleic acid). In some embodiments, the rAAV particle encapsidating the heterologous nucleic acid comprises a rAAV capsid protein engineered with an increased specificity and, in some cases, transduction efficiency for the CNS or the PNS of the subject, even when administered to the subject systemically, as compared to a reference AAV.

**[00193]** Methods comprise delivering a rAAV particle comprising an rAAV capsid protein with increased specificity and/or transduction efficiency for the CNS or the PNS in the subject, as compared to a reference AAV (*e.g.*, AAV9, AAV5). The rAAV capsid protein, in some cases, has a decreased specificity and/or transduction efficiency for a peripheral organ (*e.g.*, liver). In some instances, the delivery is systemic. Alternatively, delivery is direct (*e.g.*, into the affected area of the CNS or PNS). The rAAV capsid protein may comprise a substitution of at least one amino acid in an amino acid sequence in an amino acid sequence of a parental AAV, wherein X1 is A, D, G, L, N, Q, S, or T. The rAAV capsid protein can comprise a substitution of at least two amino acids in an amino acid sequence of a parental AAV, wherein X1 is A, D, G, L, N, Q, S, or T; and X2 is A, G, N, P, Q, R, S, or T. The rAAV can comprise a substitution of at least three amino in an amino acid sequence of a parental AAV, wherein X1 is A, D, G, L, N, Q, S, or T; and X2 is A, G, N, P, Q, R, S, or T; and X3 is A, D, G, N, S, or T. The rAAV can comprise a substitution of at least four amino acids in an amino acid sequence of a parental AAV, wherein X1 is A, D, G, L, N, Q, S, or T; X2 is A, G, N, P, Q, R, S, or T; X3 is A, D, G, N, S, or T; and X4 is A, D, G, K, N, P, Q, S, or T. The rAAV can comprise a substitution of at least five amino acids in an amino acid sequence of a parental AAV, wherein X1 is A, D, G, L, N, Q, S, or T; X2 is A, G, N, P, Q, R, S, or T; X3 is A, D, G, N, S, or T; X4 is A, D, G, K, N, P, Q, S, or T; and X5 is A, G, K, N, P, R, S, or T. The rAAV can comprise a substitution of at least six amino acids in an amino acid sequence of a parental AAV, wherein X1 is A, D, G, L, N, Q, S, or T; X2 is A, G, N, P, Q, R, S, or T; X3 is A, D, G, N, S, or T; X4 is A, D, G, K, N, P, Q, S, or T; X5 is A, G, K, N, P, R, S, or T; and X6 is A, G, K, N, P, R, S, T, or V. The rAAV can comprise a substitution of at least seven amino acids in an amino acid sequence of a parental AAV, wherein X1 is A, D, G, L, N, Q, S, or T; X2 is A, G, N, P, Q, R, S, or T; X3 is A, D, G, N, S, or T; X4 is A, D, G, K, N, P, Q, S, or T; X5 is A, G, K, N, P, R, S, or T; X6 is A, G, K, N, P, R, S, T, or V; and X7 is A, G, K, L, R, S, T, or V.

**[00194]** X1, X2, X3, X4, X5, X6, and X7 are, in some cases, contiguous (X1-X2-X3-X4-X5-X6-X7). Any two, three, four, five, six or seven of X1, X2, X3, X4, X5, X6, and X7 may be contiguous. In some embodiments, X1 is at an amino acid position 452 within an AAV9 capsid protein, or variant thereof. In some embodiments X2 is at an amino acid position 453 within an AAV9 capsid protein, or variant thereof. In some embodiments X3 is at an amino acid position 454 within an AAV9 capsid protein, or variant thereof. In some embodiments X4 is at an amino acid position 455 within an AAV9 capsid protein, or variant thereof. In some embodiments X5 is at an amino acid position 456 within an AAV9 capsid protein, or variant thereof. In some embodiments X6 is at an amino acid position 457 within an AAV9 capsid protein, or variant thereof. In some embodiments X7 is at an amino acid position 458 within an AAV9 capsid protein, or variant thereof.

**[00195]** Methods disclosed herein provide delivering a rAAV particle comprising an rAAV capsid protein with increased specificity and/or transduction efficiency for the CNS or the PNS in the subject, as compared to a reference AAV, wherein the substitution comprises N452D, N452A,

N452G, N452L, N452Q, N452S, N452T, G453I, G453N, G453S, G453P, G453R, G453T, S454A, S454Q, S454D, S454G, S454N, S454T, G455A, G455S, G455D, G455K, G455N, G455P, G455Q, G455T, Q456T, Q456S, Q456A, Q456G, Q456K, Q456N, Q456R, Q456P, N457K, N457A, N457G, N457P, N457R, N457S, N457T, N457V, Q458N, Q458A, Q458G, Q458K, Q458L, Q458R, Q458S, Q458T, or Q458V in an amino acid sequence of the AAV9 capsid protein (VP1 numbering), variant thereof, or equivalent amino acid position in a different AAV serotype. In some embodiments, methods comprising delivering a rAAV particle comprising a rAAV capsid protein comprising a substitution of one, two, three, four, five, six, or seven amino acids in an amino acid sequence provided any one of SEQ ID NOS: 11-12739. The substitution can comprise at least one, two, three, four, five, six, or seven, amino acids from an amino acid sequence selected from the group consisting of LQTSSPG (SEQ ID NO: 2933), QQGKQSV (SEQ ID NO: 79), SINTKTN (SEQ ID NO: 45475), SNGTKQT (SEQ ID NO: 442), GSGKTAA (SEQ ID NO: 88), MGDKPTR (SEQ ID NO: 2466), QPSGGNT (SEQ ID NO: 2672), ERGANTK (SEQ ID NO: 5192), TTGGHSS (SEQ ID NO: 2743), GTTKTSE (SEQ ID NO: 3064), GTGTSVL (SEQ ID NO: 11958), NQSGTKG (SEQ ID NO: 780), KGPGQMG (SEQ ID NO: 45476), GTPSKAG (SEQ ID NO: 2741), and any amino acid sequence provided in **Table 1** or **Table 2**. In some embodiments, the rAAV capsid proteins suitable for delivery of a heterologous nucleic acid to the CNS or PNS of a subject may also have an insertion of an amino acid sequence at amino acid position 588 (AAV9 VP1 numbering). In some cases, the rAAV capsid protein has a decreased specificity and/or transduction efficiency for the liver. In some embodiments, the substitution does not consist of an amino acid sequence ILGTGTS (SEQ ID NO: 45479) or QSSQTPR (SEQ ID NO: 45480) at amino acids 452-458 in a parental AAV9 capsid protein, or variant thereof. In some embodiments, the rAAV capsid proteins suitable for delivery of a heterologous nucleic acid to the CNS or PNS of a subject may also have an insertion of an amino acid sequence at amino acid position 588 (AAV9 VP1 numbering).

**[00196]** Disclosed herein are methods comprising delivering a rAAV particle encapsidating a heterologous nucleic acid to a CNS or PNS in a subject, the rAAV particle comprising (i) an increased specificity and/or transduction efficiency of the heterologous nucleic acid for the CNS or PNS, and (ii) a decreased specificity and/or transduction efficiency for the heterologous nucleic acid for the liver, wherein the rAAV particle has an rAAV capsid protein comprising a substitution selected from the group consisting of N452D, N452G, N452A, N452V, N452S, N452H, N452L, N452E, N452Q, G452A, G452I, G452T, G452P, G452R, G452T, G452S, G452K, G452H, S454A, S454N, S454D, S454G, S454T, S454H, S454K, S454Q, G455A, G455N, G455T, G455S, G455D, G455P, G455R, G455Q, Q456T, Q456S, Q456K, Q456P, Q456G, Q456D, Q456V, Q456A, Q456N, N457K, N457T, N457A, N457R, N457S, N457G, N457D, N457P, N457V, Q458N, Q458G, Q458S, Q458L, Q458A, Q458E, and Q458K, in an amino acid sequence of the AAV9 capsid protein, or a variant thereof, or equivalent amino acid position in a different AAV serotype. In some cases, the substitution is of at least or about one two, three, four, five, six, or seven amino acids of an amino acid

sequence DGAATKN (SEQ ID NO: 3943). In some cases, the substitution is of at least or about one two, three, four, five, six, or seven amino acids of an amino acid sequence DGQSSKS (SEQ ID NO: 2764). In some cases, the substitution is any amino acid sequence provided in **Table 1** or **Table 2**. In some embodiments, the delivering is systemic. In some embodiments, the delivery is direct (*e.g.*, injected into the *in vivo* environment). In some embodiments, the parental AAV capsid protein is AAV9 capsid protein (for *e.g.*, provided in SEQ ID NO: 1). In some embodiments, the parental AAV capsid protein is an AAV9 variant capsid protein AAV-PHP.B (SEQ ID NO: 3). In some embodiments, the parental AAV capsid protein is AAV9 variant capsid protein AAV-PHP.eB (SEQ ID NO: 5). In some embodiments, the parental AAV capsid protein further comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids of an amino acid in an amino acid position 588-589 of the amino acid sequence of the parental AAV (AAV9 VP1 numbering). In some embodiments, delivery is more specific than a delivery of the heterologous nucleic acid by a reference AAV, *e.g.*, AAV9. In some embodiments, methods further comprise reducing or ablating delivery of the heterologous nucleic acid in an off-target *in vivo* environment, such as the liver. In some embodiments, delivery is characterized by an increase in efficiency of transduction (*e.g.*, of the heterologous nucleic acid) in the CNS or PNS than a transduction efficiency in the CNS or PNS of the reference AAV. In some embodiments, the delivery is systemic (*e.g.*, intravenous). In some embodiments, the subject is a human or a non-human primate.

**[00197] Delivery to a Target Organs or Tissues**

**[00198]** In some cases, the methods of delivering a heterologous nucleic acid comprise delivering to a target *in vivo* environment in a subject a composition, the composition comprising a rAAV particle with a rAAV capsid protein, the rAAV capsid protein encapsidating a viral vector encoding a heterologous nucleic acid (*e.g.*, therapeutic nucleic acid). In some cases, the target *in vivo* environment is the liver, intestine, heart, lung, reproductive organ, muscle, adipose, pancreas, a brain, or spleen. In some embodiments, the rAAV particle encapsidating the heterologous nucleic acid comprises a rAAV capsid protein engineered with an increased specificity and, in some cases, transduction efficiency for the target *in vivo* environment of the subject, even when administered to the subject systemically.

**[00199]** Disclosed herein are methods that comprise delivering to a subject a rAAV particle encapsidating a heterologous nucleic acid, the rAAV comprising an rAAV capsid protein with increased specificity and/or transduction efficiency of the heterologous nucleic acid when measured in the heart of the subject, as compared to a reference AAV (*e.g.*, AAV9, AAV5). In some embodiments, rAAVs optimized for targeting the heart have amino acid sequence comprising an amino acid sequence provided in SEQ ID NOS: 25469-26205. In some embodiments, methods comprise delivering a rAAV particle comprising an rAAV capsid protein with increased specificity and/or transduction efficiency of the heterologous nucleic acid when measured in the lung in the subject, as compared to a reference AAV (*e.g.*, AAV9, AAV5). In some embodiments, rAAVs optimized for

targeting the lung have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 32537-34198. In some embodiments, methods comprise delivering a rAAV particle comprising an rAAV capsid protein with increased specificity and/or transduction efficiency of the heterologous nucleic acid when measured in the liver in the subject, as compared to a reference AAV (*e.g.*, AAV9, AAV5). In some embodiments, rAAVs optimized for targeting the liver have amino acid sequences that comprise an amino acid sequence provided in SEQ ID NOS: 30720-30923. In some embodiments, methods comprise delivering a rAAV particle comprising an rAAV capsid protein with increased specificity and/or transduction efficiency of the heterologous nucleic acid when measured in the intestine in the subject, as compared to a reference AAV (*e.g.*, AAV9, AAV5). In some embodiments, rAAVs optimized for targeting the intestine have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 26206-26873. In some embodiments, methods comprise delivering a rAAV particle comprising a rAAV capsid protein with increased specificity and/or transduction efficiency of the heterologous nucleic acid when measured in the stomach in the subject, as compared to a reference AAV (*e.g.*, AAV9, AAV5). In some embodiments, rAAVs optimized for targeting the stomach have amino acid sequences comprising amino acid sequence provided in SEQ ID NOS: 31873-32060. In some embodiments, methods comprise delivering a rAAV particle comprising an rAAV capsid protein with increased specificity and/or transduction efficiency of the heterologous nucleic acid when measured in the spleen in the subject, as compared to a reference AAV (*e.g.*, AAV9, AAV5). In some embodiments, rAAVs optimized for targeting the spleen have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 31468-31872. In some embodiments, methods comprise delivering a rAAV particle comprising a rAAV capsid protein with increased specificity and/or transduction efficiency of the heterologous nucleic acid when measured in the kidney in the subject, as compared to a reference AAV (*e.g.*, AAV9, AAV5). In some embodiments, rAAVs optimized for targeting the kidney have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 26874-30719. In some embodiments, methods comprise delivering a rAAV particle comprising an rAAV capsid protein with increased specificity and/or transduction efficiency of the heterologous nucleic acid when measured in the fat of the subject, as compared to a reference AAV (*e.g.*, AAV9, AAV5). In some embodiments, rAAVs optimized for targeting the fat (adipose) have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 34199-35471.

**[00200]** Provided herein are methods that comprise delivering a rAAV particle to a subject, the rAAV comprising an rAAV capsid protein with increased specificity and/or transduction efficiency of the heterologous nucleic acid for the muscle in the subject, as compared to a reference AAV (*e.g.*, AAV9, AAV5). In some embodiments, rAAVs optimized for targeting the muscle have amino acid sequences comprising an amino acid sequence provided in SEQ ID NO: 30924-31451. The muscle may be cardiac muscle. The muscle may be skeletal muscle. In some embodiments, methods comprise delivering a rAAV particle comprising an rAAV capsid protein with increased specificity and/or



transduction efficiency of the heterologous nucleic acid for the pancreas in the subject, as compared to a reference AAV (*e.g.*, AAV9, AAV5). In some embodiments, rAAVs optimized for targeting the pancreas have amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 31452-31467. In some embodiments, methods comprise delivering a rAAV particle comprising an rAAV capsid protein with increased specificity and/or transduction efficiency of the heterologous nucleic acid for the reproductive organ(s) in the subject, as compared to a reference AAV (*e.g.*, AAV9, AAV5). In some embodiments, rAAVs optimized for targeting a reproductive organ, such as a testicle, comprise amino acid sequences comprising an amino acid sequence provided in SEQ ID NOS: 32061-32536. In some instances, the reproductive organ is an ovary.

**[00201]** The rAAV capsid protein suitable for delivery of the heterologous nucleic acid to the liver, intestine, heart, lung, reproductive organ, muscle, adipose, pancreas, a brain, or spleen can comprise a substitution of at least one amino acid in a parental AAV capsid protein. In some embodiments, X1 is K, R, N, or T. The rAAV capsid protein can comprise a substitution or an insertion of at least two amino acids in a parental AAV capsid protein. In some embodiments, X1 is K, R, N, or T; and X2 is D, E, N, or V. The rAAV capsid protein can comprise a substitution or an insertion of at least three amino acids in a parental AAV capsid protein. In some embodiments, X1 is K, R, N, or T; X2 is D, E, N, or V; and X3 is N, S, L, or P. The rAAV capsid protein can comprise a substitution or an insertion of at least four amino acids in a parental AAV capsid protein. In some embodiments, X1 is K, R, N, or T; X2 is D, E, N, or V; X3 is N, S, L, or P; and X4 is T, S, P, or L. The rAAV capsid protein can comprise a substitution or an insertion of at least five amino acids in a parental AAV capsid protein. In some embodiments, X1 is K, R, N, or T; X2 is D, E, N, or V; X3 is N, S, L, or P; X4 is T, S, P, or L; and X5 is P, R, or S. The rAAV capsid protein can comprise a substitution or an insertion of at least six amino acids in a parental AAV capsid protein. In some embodiments, X1 is K, R, N, or T; X2 is D, E, N, or V; X3 is N, S, L, or P; X4 is T, S, P, or L; X5 is P, R, or S; and X6 is G, S, N, or T. The rAAV capsid protein can comprise a substitution or an insertion of at least seven amino acids in a parental AAV capsid protein. In some embodiments, X1 is K, R, N, or T; X2 is D, E, N, or V; X3 is N, S, L, or P; X4 is T, S, P, or L; X5 is P, R, or S; X6 is G, S, N, or T; and X7 is R, L or I. In some embodiments, X1, X2, X3, X4, X5, X6, and X7 are contiguous (X1-X2-X3-X4-X5-X6-X7). In some embodiments, any two, three, four, five, six, or seven, of X1, X2, X3, X4, X5, X6, and X7 are contiguous. In some embodiments, X1, X2, X3, X4, X5, X6, and X7 are not contiguous. In some embodiments, X1 is at an amino acid position 452 within an AAV9 capsid protein, or variant thereof. In some embodiments X2 is at an amino acid position 453 within an AAV9 capsid protein, or variant thereof. In some embodiments X3 is at an amino acid position 454 within an AAV9 capsid protein, or variant thereof. In some embodiments X4 is at an amino acid position 455 within an AAV9 capsid protein, or variant thereof. In some embodiments X5 is at an amino acid position 456 within an AAV9 capsid protein, or variant thereof. In some embodiments X6 is at an amino acid position 457 within an AAV9 capsid protein, or variant thereof. In some embodiments X7 is at an amino acid position 458

within an AAV9 capsid protein, or variant thereof. In some embodiments, the substitution does not consist of an amino acid sequence ILGTGTS (SEQ ID NO: 45479) or QSSQTPR (SEQ ID NO: 45480) at amino acids 452-458 in a parental AAV9 capsid protein, or variant thereof. In some embodiments, the rAAV capsid proteins suitable for delivery of a heterologous nucleic acid to the target *in vivo* environment of a subject may also have an insertion of an amino acid sequence at amino acid position 588 (AAV9 VP1 numbering).

**[00202]** Disclosed herein are methods comprising delivering a rAAV particle encapsidating a heterologous nucleic acid to the target *in vivo* environment selected from the group consisting of the liver, intestine, heart, lung, reproductive organ, muscle, adipose, pancreas, a brain, and spleen, in a subject, the rAAV particle comprising an increased specificity and/or transduction efficiency of the heterologous nucleic acid for the target *in vivo* environment, wherein the rAAV particle has an rAAV capsid protein comprising a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence KDNTPGR (SEQ ID NO: 32538), NNLPRNL (SEQ ID NO: 32867), RESSPSL (SEQ ID NO: 29065), or RVPLSTI (SEQ ID NO: 26933) at an amino acid position 452-458 in a parental AAV capsid protein. In some embodiments, the parental AAV capsid protein is AAV9 capsid protein (for *e.g.*, provided in SEQ ID NO: 1). In some embodiments, the parental AAV capsid protein is AAV5 capsid protein (for *e.g.*, provided in SEQ ID NO: 2). In some embodiments, the parental AAV capsid protein is an AAV9 variant capsid protein AAV-PHP.B (SEQ ID NO: 3). In some embodiments, the parental AAV capsid protein is AAV9 variant capsid protein AAV-PHP.eB (SEQ ID NO: 5). In some embodiments, the parental AAV capsid protein further comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids of an amino acid in an amino acid position 588-589 of the amino acid sequence of the parental AAV (AAV9 VP1 numbering). In some embodiments, delivery is more specific than a delivery of the heterologous nucleic acid by a reference AAV, *e.g.*, AAV9. In some embodiments, methods further comprise reducing or ablating delivery of the heterologous nucleic acid in an off-target *in vivo* environment, such as the liver, compared to a reference AAV. In some embodiments, delivery is characterized by an increase in efficiency of transduction (*e.g.*, of the heterologous nucleic acid) in the target *in vivo* environment than a transduction efficiency in the target *in vivo* environment of the reference AAV. In some embodiments, the delivery is systemic (*e.g.*, intravenous). In some embodiments, the subject is a human or a non-human primate.

### **[00203] Methods of Treatment**

**[00204]** Disclosed herein are methods of treating a disease or condition, or a symptom of the disease or condition, in a subject, comprising administering of therapeutically effective amount of one or more compositions (*e.g.*, rAAV particle, AAV vector, pharmaceutical formulations and composition) disclosed herein to the subject. In some embodiments, the composition is a rAAV capsid protein described herein. In some embodiments, the composition is an isolated and purified rAAV capsid protein described herein. In some embodiments, the rAAV particle encapsidates a heterologous

nucleic acid comprising a transgene (*e.g.*, therapeutic nucleic acid). In some embodiments, the composition is a rAAV capsid protein described herein conjugated with a therapeutic agent disclosed herein. In some embodiments, the composition is a pharmaceutical composition comprising the rAAV particle and a pharmaceutically acceptable carrier. In some embodiments, the one or more compositions are administered to the subject alone (*e.g.*, standalone therapy). In some embodiments, the one or more compositions are administered in combination with an additional agent. In some embodiments, the composition is a first-line therapy for the disease or condition. In some embodiments, the composition is a second-line, third-line, or fourth-line therapy, for the disease or condition.

**[00205]** Provided herein are methods of treating a disease or a condition, or a symptom of the disease or condition, in a subject, comprising: (a) diagnosing a subject with a disease or a condition affecting a target *in vivo* environment; and (b) treating the disease or the condition by administering to the subject a therapeutically effective amount of a composition disclosed herein (*e.g.*, rAAV particle, AAV vector, pharmaceutical composition), wherein the composition is engineered with an increased specificity for the target *in vivo* environment. In some cases, the composition is engineered with a decreased specificity for an off-target *in vivo* environment, *e.g.*, the liver.

**[00206]** Disclosed herein are methods of treating a disease or a condition, or a symptom of the disease or the condition, afflicting a target *in vivo* environment in a subject comprising: (a) administering to the subject a composition (*e.g.*, rAAV particle, AAV vector, pharmaceutical composition); and (b) expressing the therapeutic nucleic acid into a target *in vivo* environment in the subject with an increased specificity and/or transduction efficiency, as compared to a reference AAV. In some cases, the reference AAV is AAV9 or AAV5, or a variant thereof.

**[00207]** Methods of treating a disease or condition affecting the central nervous system (CNS) or peripheral nervous system (PNS) comprise administering a rAAV particle to a subject, the rAAV particle comprising an rAAV capsid protein comprising a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence DGAATKN (SEQ ID NO: 3943) or DGQSSKS (SEQ ID NO: 2764), LQTSSPG (SEQ ID NO: 2933), QQGKQSV (SEQ ID NO: 79), SINTKTN (SEQ ID NO: 45475), SNGTKQT (SEQ ID NO: 442), GSGKTAA (SEQ ID NO: 88), MGDKPTR (SEQ ID NO: 2466), QPSGGNT (SEQ ID NO: 2672), ERGANTK (SEQ ID NO: 5192), TTGGHSS (SEQ ID NO: 2743), GTTKTSE (SEQ ID NO: 3064), GTGTSVL (SEQ ID NO: 11958), NQSGTKG (SEQ ID NO: 780), KGPGQMG (SEQ ID NO: 45476), GTPSKAG (SEQ ID NO: 2741), and any amino acid sequence provided in **Table 1**, **Table 2**, **FIG. 2**, or **FIG. 3**, at an amino acid position 452-458 in a parental AAV capsid protein. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in any one of SEQ ID NOS: 46384-46399.

**[00208]** In some embodiments, the parental AAV capsid protein is AAV9 capsid protein (for *e.g.*, provided in SEQ ID NO: 1). In some embodiments, the parental AAV capsid protein is an AAV9 variant capsid protein AAV-PHP.B (SEQ ID NO: 3). In some embodiments, the parental AAV capsid

protein is AAV9 variant capsid protein AAV-PHP.eB (SEQ ID NO: 5). In some embodiments, the parental AAV capsid protein further comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids of an amino acid in an amino acid position 588-589 of the amino acid sequence of the parental AAV (AAV9 VP1 numbering). In some embodiments, delivery is more specific than a delivery of the heterologous nucleic acid by a reference AAV, *e.g.*, AAV9. In some embodiments, methods further comprise reducing or ablating delivery of the heterologous nucleic acid in an off-target *in vivo* environment, such as the liver. In some embodiments, delivery is characterized by an increase in efficiency of transduction (*e.g.*, of the heterologous nucleic acid) in the CNS or PNS than a transduction efficiency in the CNS or PNS of the reference AAV. In some embodiments, the delivery is systemic (*e.g.*, intravenous). In some embodiments, the subject is a human or a non-human primate.

**[00209]** Methods of treating a disease or a condition afflicting a target *in vivo* environment selected from the group consisting of the liver, intestine, heart, lung, reproductive organ, muscle, adipose, pancreas, a brain, or spleen, comprise administering to a subject a rAAV particle comprising an amino acid provided in any one of **FIG. 4-14**, the rAAV particle comprising an rAAV capsid protein comprising a substitution of at least or about three, four, five, six, or seven amino acids of an amino acid sequence provided in any one of SEQ ID NOS: 25469-26205. In some embodiments, methods comprise delivering a rAAV particle an amino acid sequence KDNTPGR (SEQ ID NO: 32538) or>NNLPRNL (SEQ ID NO: 32867), at an amino acid position 452-458 in a parental AAV capsid protein, thereby targeting the lung. In some embodiments, methods comprise delivering a rAAV particle comprising an amino acid sequence RESSPSL (SEQ ID NO: 26474) at an amino acid position 452-458 in a parental AAV capsid protein, thereby targeting the intestine. In some embodiments, methods comprise delivering a rAAV particle an amino acid sequence RVPLSTI (SEQ ID NO: 26933) or RESSPSL (SEQ ID NO: 29065) at an amino acid position 452-458 in a parental AAV capsid protein, thereby targeting the kidney. In some embodiments, methods comprise delivering a rAAV particle comprising an amino acid sequence RESSPSL (SEQ ID NO: 31904) at an amino acid position 452-458 in a parental AAV capsid protein, thereby targeting the stomach. In some embodiments, the rAAV capsid protein comprises an amino acid sequence provided in any one of SEQ ID NOS: 46400-46403. In some embodiments, the parental AAV capsid protein is AAV9 capsid protein (for *e.g.*, provided in SEQ ID NO: 1). In some embodiments, the parental AAV capsid protein is AAV5 capsid protein (for *e.g.*, provided in SEQ ID NO: 2). In some embodiments, the parental AAV capsid protein is an AAV9 variant capsid protein AAV-PHP.B (SEQ ID NO: 3). In some embodiments, the parental AAV capsid protein is AAV9 variant capsid protein AAV-PHP.eB (SEQ ID NO: 5). In some embodiments, the parental AAV capsid protein further comprises an insertion of at least or about three, four, five, six, seven, eight, nine, ten, or eleven amino acids of an amino acid in an amino acid position 588-589 of the amino acid sequence of the parental AAV (AAV9 VP1 numbering). In some embodiments, delivery is more specific than a delivery of the heterologous nucleic acid by a reference

AAV, *e.g.*, AAV9. In some embodiments, methods further comprise reducing or ablating delivery of the heterologous nucleic acid in an off-target *in vivo* environment, such as the liver. In some embodiments, delivery is characterized by an increase in efficiency of transduction (*e.g.*, of the heterologous nucleic acid) in the target *in vivo* environment than a transduction efficiency in the target *in vivo* environment of the reference AAV. In some embodiments, the delivery is systemic (*e.g.*, intravenous or intranasal). In some embodiments, the subject is a human or a non-human primate.

**[00210]** Also provided are methods of modulating a target gene expression product, the methods comprising administering to a subject in need thereof a composition (*e.g.*, rAAV particle, AAV vector, pharmaceutical composition) disclosed herein. For example, methods provided herein comprise administering to a subject a rAAV with a rAAV capsid protein encapsidating a viral vector comprising a heterologous nucleic acid that modulates the expression or the activity of the target gene expression product. In some embodiments, the disease or the condition is characterized by an increased or enhanced expression or activity of a gene or gene expression product thereof, as compared to a normal individual. In some cases, administering the therapeutically effective amount of the composition restores the expression or the activity of the gene or gene expression product thereof to a level that is typical in a normal individual. The term “normal individual” refers to an unaffected individual, *i.e.* an individual that is not afflicted with the disease or the condition characterized by the variation in expression or activity of the gene or gene expression product thereof.

**[00211]** Non-limiting examples of genes involved in central nervous system (CNS) diseases or disorders include Sarcoglycan Alpha (SGCA), glutamic acid decarboxylase 65 (GAD65), glutamic acid decarboxylase 67 (GAD67), CLN2 gene, Nerve Growth Factor (NGF), glial cell derived neurotrophic factor (GDNF), Neurturin, Survival Of Motor Neuron 1, Telomeric (SMN1),  $\beta$ -Glucocerebrosidase (GCase), Frataxin (FXN), Huntingtin (HTN), methyl-CpG binding protein 2 (MECP2), peroxisomal biogenesis factor (PEX), progranulin (GRN), an antitubulin agent, copper-zinc superoxide dismutase (SOD1), Glucosylceramidase Beta (GBA), NPC Intracellular Cholesterol Transporter 1 (NPC1), and NPS3. In some embodiments, the peroxisomal biogenesis factor (PEX) is selected from the group consisting of PEX1, PEX2, PEX3, PEX4, PEX5, PEX6, PEX7, PEX10, PEX11 $\beta$ , PEX12, PEX13, PEX14, PEX16, PEX19, and PEX26. Non-limiting examples of genes implicated in disease or disorder of a particular organ (*e.g.*, lung, heart, liver, muscle, eye) include Cystic Fibrosis Transmembrane Conductance Regulator (CFTR), Factor X (FIX), RPE65, Retinoid Isomerohydrolase (RPE65), Sarcoglycan Alpha (SGCA), and sarco/endoplasmic reticulum Ca<sup>2+</sup>-ATPase (SERCA2a). In some instances, the expression of a gene or expression or activity of a gene expression product is inhibited by the administration of the composition to the subject. In some instances, the expression of a gene or the expression or the activity of a gene expression product is enhanced by the administration of the composition to the subject.

**[00212]** In some cases, the composition is administered at dosage levels sufficient to deliver from about 0.0001 mg/kg to about 100 mg/kg, from about 0.001 mg/kg to about 0.05 mg/kg, from about

0.005 mg/kg to about 0.05 mg/kg, from about 0.001 mg/kg to about 0.005 mg/kg, from about 0.05 mg/kg to about 0.5 mg/kg, from about 0.01 mg/kg to about 50 mg/kg, from about 0.1 mg/kg to about 40 mg/kg, from about 0.5 mg/kg to about 30 mg/kg, from about 0.01 mg/kg to about 10 mg/kg, from about 0.1 mg/kg to about 10 mg/kg, or from about 1 mg/kg to about 25 mg/kg, of subject body weight per day, one or more times a day, to obtain the desired therapeutic effect.

**[00213]** In some cases, the viral genome (vg) concentration of the composition that is administered is between  $1.0 \times 10^{11}$  vg per kilogram (kg) and  $1.0 \times 10^{16}$  vg/kg. In some cases, the concentration of infectious particles of at least or about  $10^7$ ,  $10^8$ ,  $10^9$ ,  $10^{10}$ ,  $10^{11}$ ,  $10^{12}$ ,  $10^{13}$ ,  $10^{14}$ ,  $10^{15}$ ,  $10^{16}$ , or  $10^{17}$ . In some cases the concentration of infectious particles is  $2 \times 10^7$ ,  $2 \times 10^8$ ,  $2 \times 10^9$ ,  $2 \times 10^{10}$ ,  $2 \times 10^{11}$ ,  $2 \times 10^{12}$ ,  $2 \times 10^{13}$ ,  $2 \times 10^{14}$ ,  $2 \times 10^{15}$ ,  $2 \times 10^{16}$ , or  $2 \times 10^{17}$ . In some cases the concentration of the infectious particles  $3 \times 10^7$ ,  $3 \times 10^8$ ,  $3 \times 10^9$ ,  $3 \times 10^{10}$ ,  $3 \times 10^{11}$ ,  $3 \times 10^{12}$ ,  $3 \times 10^{13}$ ,  $3 \times 10^{14}$ ,  $3 \times 10^{15}$ ,  $3 \times 10^{16}$ , or  $3 \times 10^{17}$ . In some cases the concentration of the infectious particles  $4 \times 10^7$ ,  $4 \times 10^8$ ,  $4 \times 10^9$ ,  $4 \times 10^{10}$ ,  $4 \times 10^{11}$ ,  $4 \times 10^{12}$ ,  $4 \times 10^{13}$ ,  $4 \times 10^{14}$ ,  $4 \times 10^{15}$ ,  $4 \times 10^{16}$ , or  $4 \times 10^{17}$ . In some cases the concentration of the infectious particles  $5 \times 10^7$ ,  $5 \times 10^8$ ,  $5 \times 10^9$ ,  $5 \times 10^{10}$ ,  $5 \times 10^{11}$ ,  $5 \times 10^{12}$ ,  $5 \times 10^{13}$ ,  $5 \times 10^{14}$ ,  $5 \times 10^{15}$ ,  $5 \times 10^{16}$ , or  $5 \times 10^{17}$ . In some cases the concentration of the infectious particles  $6 \times 10^7$ ,  $6 \times 10^8$ ,  $6 \times 10^9$ ,  $6 \times 10^{10}$ ,  $6 \times 10^{11}$ ,  $6 \times 10^{12}$ ,  $6 \times 10^{13}$ ,  $6 \times 10^{14}$ ,  $6 \times 10^{15}$ ,  $6 \times 10^{16}$ , or  $6 \times 10^{17}$ . In some cases the concentration of the infectious particles  $7 \times 10^7$ ,  $7 \times 10^8$ ,  $7 \times 10^9$ ,  $7 \times 10^{10}$ ,  $7 \times 10^{11}$ ,  $7 \times 10^{12}$ ,  $7 \times 10^{13}$ ,  $7 \times 10^{14}$ ,  $7 \times 10^{15}$ ,  $7 \times 10^{16}$ , or  $7 \times 10^{17}$ . In some cases the concentration of the infectious particles  $8 \times 10^7$ ,  $8 \times 10^8$ ,  $8 \times 10^9$ ,  $8 \times 10^{10}$ ,  $8 \times 10^{11}$ ,  $8 \times 10^{12}$ ,  $8 \times 10^{13}$ ,  $8 \times 10^{14}$ ,  $8 \times 10^{15}$ ,  $8 \times 10^{16}$ , or  $8 \times 10^{17}$ . In some cases the concentration of the infectious particles  $9 \times 10^7$ ,  $9 \times 10^8$ ,  $9 \times 10^9$ ,  $9 \times 10^{10}$ ,  $9 \times 10^{11}$ ,  $9 \times 10^{12}$ ,  $9 \times 10^{13}$ ,  $9 \times 10^{14}$ ,  $9 \times 10^{15}$ ,  $9 \times 10^{16}$ , or  $9 \times 10^{17}$ .

**[00214]** In some embodiments, the administering of step is performed once. Alternatively, the administering of step is repeated at least twice. The administering of step may be performed once daily. In some cases, the administering of step comprises intravenous administration. In some cases, the administering comprises pulmonary administration. In some cases, the administering comprises intranasal administration (such as a spray). In some cases, the administering of step comprises injecting the composition into a target *in vivo* environment. In some cases, the administering of step does not comprise injecting the composition into the target *in vivo* environment.

**[00215] Subject**

**[00216]** Disclosed herein methods of delivering at least one of an AAV particle and viral vector to a subject, for example – to treat or prevent a disease or condition in a subject. The subject, in some cases, is a mammal. Non-limiting examples of a mammal include a mouse, rat, guinea pig, rabbit, chimpanzee, or farm animal. In some instances, the mammal is a non-human primate. In some instances, the subject is human. The subject of the present disclosure may not be diagnosed with a disease or condition. Alternatively, the subject may be a patient that is diagnosed with a disease or disorder, or suspected of having the disease or the disorder.

**[00217] Disease or Condition**

[00218] Disclosed herein are methods of treating a disease or condition in a subject by administering a composition comprising a rAAV such as those disclosed herein. At least one advantage of the rAAVs disclosed herein, is that the rAAV may be used to treat virtually any disease or condition that would benefit from a transgene therapy, including but not limited to spinal muscular atrophy (SMA), amyotrophic lateral sclerosis (ALS), Parkinson's disease, Pompe disease, Huntington's disease, Alzheimer's disease, Batten disease, lysosomal storage disorders, glioblastoma multiforme, Rett syndrome, Leber's congenital amaurosis, Late infantile neuronal ceroid lipofuscinosis (LINCL), chronic pain, stroke, spinal cord injury, traumatic brain injury and lysosomal storage disorders.

[00219] The disease or the condition may, in some embodiments, be characterized by a reduced or ablated expression or activity of a gene or gene expression product thereof, as compared to a normal individual. In some embodiments, be characterized by an increased or enhanced expression or activity of a gene or gene expression product thereof, as compared to a normal individual.

[00220] In some cases, the disease or condition is localized to a particular *in vivo* environment in the subject, e.g., the brain or the lung. The compositions of the present disclosure are particularly useful for the treatment of the diseases or conditions described herein because they specifically target the *in vivo* environment and deliver a therapeutic nucleic acid engineered to modulate the activity or the expression of a target gene expression product involved with the pathogenesis or pathology of the disease or condition.

[00221] In some instances, the disease or condition comprises a disease or condition of the central nervous system (CNS). Non-limiting examples of disease of the CNS include Absence of the Septum Pellucidum, Acid Lipase Disease, Acid Maltase Deficiency, Acquired Epileptiform Aphasia, Acute Disseminated Encephalomyelitis, Attention Deficit-Hyperactivity Disorder (ADHD), Adie's Pupil, Adie's Syndrome, Adrenoleukodystrophy, Agenesis of the Corpus Callosum, Agnosia, Aicardi Syndrome, Aicardi-Goutieres Syndrome Disorder, AIDS -Neurological Complications, Alexander Disease, Alpers' Disease, Alternating Hemiplegia, Alzheimer's Disease, Amyotrophic Lateral Sclerosis (ALS), Anencephaly, Aneurysm, Angelman Syndrome, Angiomatosis, Anoxia, Antiphospholipid Syndrome, Aphasia, Apraxia, Arachnoid Cysts, Arachnoiditis, Arnold-Chiari Malformation, Arteriovenous Malformation, Asperger Syndrome, Ataxia, Ataxia Telangiectasia, Ataxias and Cerebellar or Spinocerebellar Degeneration, Atrial Fibrillation and Stroke, Attention Deficit-Hyperactivity Disorder, Autism Spectrum Disorder, Autonomic Dysfunction, Back Pain, Barth Syndrome, Batten Disease, Becker's Myotonia, Behcet's Disease, Bell's Palsy, Benign Essential Blepharospasm, Benign Focal Amyotrophy, Benign Intracranial Hypertension, Bernhard-Roth Syndrome, Binswanger's Disease, Blepharospasm, Bloch-Sulzberger Syndrome, Brachial Plexus Birth Injuries, Brachial Plexus Injuries, Bradbury-Eggleston Syndrome, Brain and Spinal Tumors, Brain Aneurysm, Brain Injury, Brown-Sequard Syndrome, Bulbosplinal Muscular Atrophy, Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy (CADASIL), Canavan Disease, Carpal Tunnel Syndrome, Causalgia, Cavemomas, Cavemous Angioma, Cavemous

Malformation, Central Cervical Cord Syndrome, Central Cord Syndrome, Central Pain Syndrome, Central Pontine Myelinolysis, Cephalic Disorders, Ceramidase Deficiency, Cerebellar Degeneration, Cerebellar Hypoplasia, Cerebral Aneurysms, Cerebral Arteriosclerosis, Cerebral Atrophy, Cerebral Beriberi, Cerebral Cavemous Malformation, Cerebral Gigantism, Cerebral Hypoxia, Cerebral Palsy, Cerebro-Oculo-Facio-Skeletal Syndrome (COFS), Charcot-Marie-Tooth Disease, Charcot-Marie-Tooth syndrome, classical rhizomelic chondrodysplasia punctata (RCDP), Chiari Malformation, Cholesterol Ester Storage Disease, Chorea, Choreoacanthocytosis, Chronic Inflammatory Demyelinating Polyneuropathy (CIDP), Chronic Orthostatic Intolerance, Chronic Pain, Cockayne Syndrome Type II, Coffin Lowry Syndrome, Colpocephaly, Coma, Complex Regional Pain Syndrome, Congenital Facial Diplegia, Congenital Myasthenia, Congenital Myopathy, Congenital Vascular Cavernous Malformations, Corticobasal Degeneration, Cranial Arteritis, Craniosynostosis, Cree encephalitis, Creutzfeldt- Jakob Disease, Cumulative Trauma Disorders, Cushing's Syndrome, Cytomegalic Inclusion Body Disease, Cytomegalovirus Infection, Dancing Eyes-Dancing Feet Syndrome, Dandy-Walker Syndrome, Dawson Disease, Deafness, De Morsier's Syndrome, Dejerine-Klumpke Palsy, Dementia, Dementia -Multi -Infarct, Dementia - Semantic, Dementia -Subcortical, Dementia With Lewy Bodies, Dentate Cerebellar Ataxia, Dentatorubral Atrophy, Dermatomyositis, Developmental Dyspraxia, Devic's Syndrome, Diabetic Neuropathy, Diffuse Sclerosis, Dravet Syndrome, Duchenne muscular dystrophy, Dysautonomia, Dysgraphia, Dyslexia, Dysphagia, Dyspraxia, Dyssynergia Cerebellaris Myoclonica, Dyssynergia Cerebellaris Progressiva, Dystonias, Early Infantile Epileptic Encephalopathy, Empty Sella Syndrome, Encephalitis, Encephalitis Lethargica, Encephaloceles, Encephalopathy, Encephalopathy (familial infantile), Encephalotrigeminal Angiomatosis, Epilepsy, Epileptic Hemiplegia, Erb's Palsy, Erb-Duchenne and Dejerine-Klumpke Palsies, Essential Tremor, Extrapontine Myelinolysis, Fabry Disease, Fahr's Syndrome, Fainting, Familial Dysautonomia, Familial Hemangioma, Familial Idiopathic Basal Ganglia Calcification, Familial Periodic Paralysis, Familial Spastic Paralysis, Farber's Disease, Febrile Seizures, Fibromuscular Dysplasia, Fisher Syndrome, Floppy Infant Syndrome, Foot Drop, Friedreich's Ataxia, Frontotemporal Dementia, Gaucher Disease, Generalized Gangliosidoses, Gerstmann's Syndrome, Gerstmann-Straussler-Scheinker Disease, Giant Axonal Neuropathy, Giant Cell Arteritis, Giant Cell Inclusion Disease, glioblastoma, Globoid Cell Leukodystrophy, Glossopharyngeal Neuralgia, Glycogen Storage Disease, Guillain-Barre Syndrome, Hallervorden-Spatz Disease, Head Injury, Headache, Hemicrania Continua, Hemifacial Spasm, Hemiplegia Alterans, Hereditary Neuropathies, Hereditary Spastic Paraplegia, Heredopathia Atactica Polyneuritiformis, Herpes Zoster, Herpes Zoster Oticus, Hirayama Syndrome, Holmes-Adie syndrome, Holoprosencephaly, HTLV-1 Associated Myelopathy, Hughes Syndrome, Huntington's Disease, Hydranencephaly, Hydrocephalus, Hydrocephalus - Normal Pressure, Hydromyelia, Hypercortisolism, Hypersomnia, Hypertonia, Hypotonia, Hypoxia, Immune-Mediated Encephalomyelitis, Inclusion Body Myositis, Incontinentia Pigmenti, Infantile Hypotonia, Infantile



Neuroaxonal Dystrophy, Infantile Phytanic Acid Storage Disease, Infantile Refsum Disease, Infantile Spasms, Inflammatory Myopathies, Iniencephaly, Intestinal Lipodystrophy, Intracranial Cysts, Intracranial Hypertension, Isaacs' Syndrome, Joubert Syndrome, Kearns-Sayre Syndrome, Kennedy's Disease, Kinsbourne syndrome, Kleine-Levin Syndrome, Klippel-Feil Syndrome, Klippel-Trenaunay Syndrome (KTS), Kliiver-Bucy Syndrome, Korsakoff s Amnesic Syndrome, Krabbe Disease, Kugelberg-Welander Disease, Kuru, Lambert-Eaton Myasthenic Syndrome, Landau-Kleffner Syndrome, Lateral Femoral Cutaneous Nerve Entrapment, Lateral Medullary Syndrome, Learning Disabilities, Leigh's Disease, Lennox-Gastaut Syndrome, Lesch-Nyhan Syndrome, Leukodystrophy, Levine-Critchley Syndrome, Lewy Body Dementia, Lipid Storage Diseases, Lipoid Proteinosis, Lissencephaly, Locked-In Syndrome, Lou Gehrig's Disease, Lupus -Neurological Sequelae, Lyme Disease - Neurological Complications, Machado- Joseph Disease, Macrencephaly, Megalencephaly, Melkersson-Rosenthal Syndrome, Meningitis, Meningitis and Encephalitis, Menkes Disease, Meralgia Paresthetica, Metachromatic Leukodystrophy, Microcephaly, Migraine, Miller Fisher Syndrome, Mini Stroke, Mitochondrial Myopathy, Moebius Syndrome, Monomelic Amyotrophy, Motor Neuron Diseases, Moyamoya Disease, Mucopolysaccharidoses, Mucopolysaccharidoses, Multi-Infarct Dementia, Multifocal Motor Neuropathy, Multiple Sclerosis, Multiple System Atrophy, Multiple System Atrophy with Orthostatic Hypotension, Muscular Dystrophy, Myasthenia -Congenital, Myasthenia Gravis, Myelinoclastic Diffuse Sclerosis, Myoclonic Encephalopathy of Infants, Myoclonus, Myopathy, Myopathy- Congenital, Myopathy -Thyrotoxic, Myotonia, Myotonia Congenita, Narcolepsy, Neuroacanthocytosis, Neurodegeneration with Brain Iron Accumulation, Neurofibromatosis, Neuroleptic Malignant Syndrome, Neurological Complications of AIDS, Neurological Complications of Lyme Disease, Neurological Consequences of Cytomegalovirus Infection, Neurological Manifestations of Pompe Disease, Neurological Sequelae Of Lupus, Neuromyelitis Optica, Neuromyotonia, Neuronal Ceroid Lipofuscinosis, Neuronal Migration Disorders, Neuropathy- Hereditary, Neurosarcoidosis, Neurosyphilis, Neurotoxicity, Nevus Cavemosus, Niemann-Pick Disease, O'Sullivan-McLeod Syndrome, Occipital Neuralgia, Ohtahara Syndrome, Olivopontocerebellar Atrophy, Opsoclonus Myoclonus, Orthostatic Hypotension, Overuse Syndrome, Pain -Chronic, Pantothenate Kinase-Associated Neurodegeneration, Paraneoplastic Syndromes, Paresthesia, Parkinson's Disease, Paroxysmal Choreoathetosis, Paroxysmal Hemicrania, Parry -Romberg, Pelizaeus-Merzbacher Disease, Pena Shokeir II Syndrome, Perineural Cysts, Periodic Paralysis, Peripheral Neuropathy, Periventricular Leukomalacia, Persistent Vegetative State, Pervasive Developmental Disorders, Phytanic Acid Storage Disease, Pick's Disease, Pinched Nerve, Piriformis Syndrome, Pituitary Tumors, Polymyositis, Pompe Disease, Porencephaly, Post-Polio Syndrome, Postherpetic Neuralgia, Postinfectious Encephalomyelitis, Postural Hypotension, Postural Orthostatic Tachycardia Syndrome, Postural Tachycardia Syndrome, Primary Dentatum Atrophy, Primary Lateral Sclerosis, Primary Progressive Aphasia, Prion Diseases, Progressive Hemifacial Atrophy, Progressive Locomotor Ataxia, Progressive Multifocal Leukoencephalopathy, Progressive

Sclerosing Poliodystrophy, Progressive Supranuclear Palsy, Prosopagnosia, Pseudo-Torch syndrome, Pseudotoxoplasmosis syndrome, Pseudotumor Cerebri, Psychogenic Movement, Ramsay Hunt Syndrome I, Ramsay Hunt Syndrome II, Rasmussen's Encephalitis, Reflex Sympathetic Dystrophy Syndrome, Refsum Disease, Refsum Disease - Infantile, Repetitive Motion Disorders, Repetitive Stress Injuries, Restless Legs Syndrome, Retrovirus-Associated Myelopathy, Rett Syndrome, Reye's Syndrome, Rheumatic Encephalitis, Riley-Day Syndrome, Sacral Nerve Root Cysts, Saint Vitus Dance, Salivary Gland Disease, Sandhoff Disease, Schilder's Disease, Schizencephaly, Seitelberger Disease, Seizure Disorder, Semantic Dementia, Septo-Optic Dysplasia, Severe Myoclonic Epilepsy of Infancy (SMEI), Shaken Baby Syndrome, Shingles, Shy-Drager Syndrome, Sjogren's Syndrome, Sleep Apnea, Sleeping Sickness, Sotos Syndrome, Spasticity, Spina Bifida, Spinal Cord Infarction, Spinal Cord Injury, Spinal Cord Tumors, Spinal Muscular Atrophy, Spinocerebellar Atrophy, Spinocerebellar Degeneration, Steele-Richardson-Olszewski Syndrome, Stiff-Person Syndrome, Striatonigral Degeneration, Stroke, Sturge-Weber Syndrome, Subacute Sclerosing Panencephalitis, Subcortical Arteriosclerotic Encephalopathy, Short-lasting, Unilateral, Neuralgiform (SUNCT) Headache, Swallowing Disorders, Sydenham Chorea, Syncope, Syphilitic Spinal Sclerosis, Syringohydromyelia, Syringomyelia, Systemic Lupus Erythematosus, Tabes Dorsalis, Tardive Dyskinesia, Tarlov Cysts, Tay-Sachs Disease, Temporal Arteritis, Tethered Spinal Cord Syndrome, Thomsen's Myotonia, Thoracic Outlet Syndrome, Thyrotoxic Myopathy, Tic Douloureux, Todd's Paralysis, Tourette Syndrome, Transient Ischemic Attack, Transmissible Spongiform Encephalopathies, Transverse Myelitis, Traumatic Brain Injury, Tremor, Trigeminal Neuralgia, Tropical Spastic Paraparesis, Troyer Syndrome, Tuberos Sclerosis, Vascular Erectile Tumor, Vasculitis Syndromes of the Central and Peripheral Nervous Systems, Von Economo's Disease, Von Hippel-Lindau Disease (VHL), Von Recklinghausen's Disease, Wallenberg's Syndrome, Werdnig-Hoffman Disease, Wernicke-Korsakoff Syndrome, West Syndrome, Whiplash, Whipple's Disease, Williams Syndrome, Wilson Disease, Wolman's Disease, and X-Linked Spinal and Bulbar Muscular Atrophy.

**[00222]** In some instances, the disease or condition comprises a liver disease or disorder, or is associated with a liver disease or disorder. Non-limiting examples include disorders of bile acid synthesis (*e.g.*, Wilson disease, Progressive familial intrahepatic cholestasis type 3), disorders of carbohydrate metabolism (*e.g.*, Hereditary fructose intolerance, Glycogen storage disease type IV), disorders of amino acids metabolism (*e.g.*, tyrosinemia type I), Urea cycle disorders (*e.g.*, argininosuccinate lyase deficiency, citrin deficiency (CTLN2, NICCD)), disorders of lipid metabolism (*e.g.*, cholesteryl ester storage disease), and others including but not limited to Alpha-1 antitrypsin deficiency, cystic fibrosis, hereditary hemochromatosis, Alström syndrome, and congenital hepatic fibrosis.

**[00223]** In some instances, the disease or condition is a pulmonary disease or disorder (of the lung). In some instances, the pulmonary disease or disorder is selected from the group

consisting of chronic obstructive pulmonary disease (COPD), pulmonary fibrosis (PF), and plasmalogen deficiency disorders.

**[00224]** Provided here, are methods of treating a disease or a condition associated with an aberrant expression or activity of a target gene or gene expression product thereof, the method comprising modulating the expression or the activity of a target gene or gene expression product in a subject by administering a rAAV encapsidating a heterologous nucleic acid of the present disclosure. In some instances, administration is systemic administration. In some instances, the expression or the activity of the target gene or gene expression product is decreased, relative to that in a normal (non-diseased) individual; and administering the rAAV to the subject is sufficient to increase the expression of the activity of the target gene or gene expression product to that of a normal individual. In some instances, the expression or the activity of the gene or gene expression product is increased, relative to that in a normal individual; and administering the rAAV to the subject is sufficient to decrease the expression or the activity of the target gene or gene expression product. In a non-limiting example, a subject diagnosed with Alzheimer's disease, which is caused, in some cases, by a gain-of-function of a Presenilin 1 and/or Presenilin 2 (encoded by the gene PSEN1 and PSEN2, respectively) is administered a rAAV disclosed herein encapsidating a therapeutic nucleic acid that is a silencing RNA (siRNA), or other RNAi with a loss-of-function effect on PSEN1 mRNA.

**[00225] *Formulations, Dosages, and Routes of Administration***

**[00226]** In general, methods disclosed herein comprise administering a therapeutic rAAV composition by systemic administration. In some instances, methods comprise administering a therapeutic rAAV composition by oral administration. In some instances, methods comprise administering a therapeutic rAAV composition by intraperitoneal injection. In some instances, methods comprise administering a therapeutic rAAV composition in the form of an anal suppository. In some instances, methods comprise administering a therapeutic rAAV composition by intravenous ("i.v.") administration. It is conceivable that one may also administer therapeutic rAAV compositions disclosed herein by other routes, such as subcutaneous injection, intramuscular injection, intradermal injection, transdermal injection percutaneous administration, intranasal administration, intralymphatic injection, rectal administration intragastric administration, intraocular administration, intracerebro-ventricularl administration, intrathecally, or any other suitable parenteral administration. In some instances, methods comprise administering a therapeutic rAAV composition by topical administration, such as for example, by brushing or otherwise contacting the rAAV composition to a region of the subject (*e.g.*, eardrum, bladder). In some embodiments, routes for local delivery closer to site of injury or inflammation are preferred over systemic routes. Routes, dosage, time points, and duration of administering therapeutics may be adjusted. In some embodiments, administration of therapeutics is prior to, or after, onset of either, or both, acute and chronic symptoms of the disease or condition.

**[00227]** An effective dose and dosage of pharmaceutical compositions to prevent or treat the disease or condition disclosed herein is defined by an observed beneficial response related to the disease or condition, or symptom of the disease or condition. Beneficial response comprises preventing, alleviating, arresting, or curing the disease or condition, or symptom of the disease or condition. In some embodiments, the beneficial response may be measured by detecting a measurable improvement in the presence, level, or activity, of biomarkers, transcriptomic risk profile, or intestinal microbiome in the subject. An “improvement,” as used herein refers to shift in the presence, level, or activity towards a presence, level, or activity, observed in normal individuals (e.g. individuals who do not suffer from the disease or condition). In instances wherein the therapeutic rAAV composition is not therapeutically effective or is not providing a sufficient alleviation of the disease or condition, or symptom of the disease or condition, then the dosage amount and/or route of administration may be changed, or an additional agent may be administered to the subject, along with the therapeutic rAAV composition. In some embodiments, as a patient is started on a regimen of a therapeutic rAAV composition, the patient is also weaned off (e.g., step-wise decrease in dose) a second treatment regimen.

**[00228]** In some embodiments, pharmaceutical compositions in accordance with the present disclosure may be administered at dosage levels sufficient to deliver from about 0.0001 mg/kg to about 100 mg/kg, from about 0.001 mg/kg to about 0.05 mg/kg, from about 0.005 mg/kg to about 0.05 mg/kg, from about 0.001 mg/kg to about 0.005 mg/kg, from about 0.05 mg/kg to about 0.5 mg/kg, from about 0.01 mg/kg to about 50 mg/kg, from about 0.1 mg/kg to about 40 mg/kg, from about 0.5 mg/kg to about 30 mg/kg, from about 0.01 mg/kg to about 10 mg/kg, from about 0.1 mg/kg to about 10 mg/kg, or from about 1 mg/kg to about 25 mg/kg, of subject body weight per day, one or more times a day, to obtain the desired therapeutic, diagnostic, or prophylactic, effect. It will be understood that the above dosing concentrations may be converted to vg or viral genomes per kg or into total viral genomes administered by one of skill in the art.

**[00229]** In some cases, a dose of the pharmaceutical composition may comprise a concentration of infectious particles of at least or about  $10^7$ ,  $10^8$ ,  $10^9$ ,  $10^{10}$ ,  $10^{11}$ ,  $10^{12}$ ,  $10^{13}$ ,  $10^{14}$ ,  $10^{15}$ ,  $10^{16}$ , or  $10^{17}$ . In some cases the concentration of infectious particles is  $2 \times 10^7$ ,  $2 \times 10^8$ ,  $2 \times 10^9$ ,  $2 \times 10^{10}$ ,  $2 \times 10^{11}$ ,  $2 \times 10^{12}$ ,  $2 \times 10^{13}$ ,  $2 \times 10^{14}$ ,  $2 \times 10^{15}$ ,  $2 \times 10^{16}$ , or  $2 \times 10^{17}$ . In some cases the concentration of the infectious particles is  $3 \times 10^7$ ,  $3 \times 10^8$ ,  $3 \times 10^9$ ,  $3 \times 10^{10}$ ,  $3 \times 10^{11}$ ,  $3 \times 10^{12}$ ,  $3 \times 10^{13}$ ,  $3 \times 10^{14}$ ,  $3 \times 10^{15}$ ,  $3 \times 10^{16}$ , or  $3 \times 10^{17}$ . In some cases the concentration of the infectious particles is  $4 \times 10^7$ ,  $4 \times 10^8$ ,  $4 \times 10^9$ ,  $4 \times 10^{10}$ ,  $4 \times 10^{11}$ ,  $4 \times 10^{12}$ ,  $4 \times 10^{13}$ ,  $4 \times 10^{14}$ ,  $4 \times 10^{15}$ ,  $4 \times 10^{16}$ , or  $4 \times 10^{17}$ . In some cases the concentration of the infectious particles is  $5 \times 10^7$ ,  $5 \times 10^8$ ,  $5 \times 10^9$ ,  $5 \times 10^{10}$ ,  $5 \times 10^{11}$ ,  $5 \times 10^{12}$ ,  $5 \times 10^{13}$ ,  $5 \times 10^{14}$ ,  $5 \times 10^{15}$ ,  $5 \times 10^{16}$ , or  $5 \times 10^{17}$ . In some cases the concentration of the infectious particles is  $6 \times 10^7$ ,  $6 \times 10^8$ ,  $6 \times 10^9$ ,  $6 \times 10^{10}$ ,  $6 \times 10^{11}$ ,  $6 \times 10^{12}$ ,  $6 \times 10^{13}$ ,  $6 \times 10^{14}$ ,  $6 \times 10^{15}$ ,  $6 \times 10^{16}$ , or  $6 \times 10^{17}$ . In some cases the concentration of the infectious particles is  $7 \times 10^7$ ,  $7 \times 10^8$ ,  $7 \times 10^9$ ,  $7 \times 10^{10}$ ,  $7 \times 10^{11}$ ,  $7 \times 10^{12}$ ,  $7 \times 10^{13}$ ,  $7 \times 10^{14}$ ,  $7 \times 10^{15}$ ,  $7 \times 10^{16}$ , or  $7 \times 10^{17}$ . In some cases the concentration of the infectious particles is  $8 \times 10^7$ ,  $8 \times 10^8$ ,  $8 \times 10^9$ ,  $8 \times 10^{10}$ ,  $8 \times 10^{11}$ ,  $8 \times 10^{12}$ ,  $8 \times 10^{13}$ ,  $8 \times 10^{14}$ ,

$8 \times 10^{15}$ ,  $8 \times 10^{16}$ , or  $8 \times 10^{17}$ . In some cases the concentration of the infectious particles is  $9 \times 10^7$ ,  $9 \times 10^8$ ,  $9 \times 10^9$ ,  $9 \times 10^{10}$ ,  $9 \times 10^{11}$ ,  $9 \times 10^{12}$ ,  $9 \times 10^{13}$ ,  $9 \times 10^{14}$ ,  $9 \times 10^{15}$ ,  $9 \times 10^{16}$ , or  $9 \times 10^{17}$ .

**[00230]** Disclosed herein, in some embodiments are formulations of pharmaceutically-acceptable excipients and carrier solutions suitable for delivery of the rAAV compositions described herein, as well as suitable dosing and treatment regimens for using the particular compositions described herein in a variety of treatment regimens. In some embodiments, the amount of therapeutic gene expression product in each therapeutically-useful composition may be prepared in such a way that a suitable dosage will be obtained in any given unit dose of the compound. Factors such as solubility, bioavailability, biological half-life, route of administration, product shelf life, as well as other pharmacological considerations will be contemplated by one skilled in the art of preparing such pharmaceutical formulations, and as such, a variety of dosages and treatment regimens may be desirable. In some instances, the rAAV compositions are suitably formulated pharmaceutical compositions disclosed herein, to be delivered either intraocularly, intravitreally, parenterally, subcutaneously, intravenously, intracerebro-ventricularly, intramuscularly, intrathecally, orally, intraperitoneally, by oral or nasal inhalation, or by direct injection to one or more cells, tissues, or organs by direct injection.

**[00231]** In some embodiments, the pharmaceutical forms of the AAV-based viral compositions suitable for injectable use include sterile aqueous solutions or dispersions and sterile powders for the extemporaneous preparation of sterile injectable solutions or dispersions. The carrier can be a solvent or dispersion medium containing, for example, water, ethanol, polyol (e.g., glycerol, propylene glycol, and liquid polyethylene glycol, and the like), suitable mixtures thereof, and/or vegetable oils. Proper fluidity may be maintained, for example, by the use of a coating, such as lecithin, by the maintenance of the required particle size in the case of dispersion and by the use of surfactants. The prevention of the action of microorganisms can be brought about by various antibacterial and antifungal agents, for example, parabens, chlorobutanol, phenol, sorbic acid, thimerosal, and the like. In many cases, it will be preferable to include isotonic agents, for example, sugars or sodium chloride. Prolonged absorption of the injectable compositions can be brought about by the use in the compositions of agents delaying absorption, for example, aluminum monostearate and gelatin.

**[00232]** In some cases, for administration of an injectable aqueous solution, for example, the solution may be suitably buffered, if necessary, and the liquid diluent first rendered isotonic with sufficient saline or glucose. These particular aqueous solutions are especially suitable for intravenous, intramuscular, subcutaneous and intraperitoneal administration. Some variation in dosage will necessarily occur depending on the condition of the subject being treated. The person responsible for administration will, in any event, determine the appropriate dose for the individual subject. Moreover, for human administration, preparations should meet sterility, pyrogenicity, and the general safety and purity standards as required by FDA Office of Biologics standards.

**[00233]** Disclosed herein are sterile injectable solutions comprising the rAAV compositions disclosed herein, which are prepared by incorporating the rAAV compositions disclosed herein in the required amount in the appropriate solvent with several of the other ingredients enumerated above, as required, followed by filtered sterilization. Generally, dispersions are prepared by incorporating the various sterilized active ingredients into a sterile vehicle which contains the basic dispersion medium and the required other ingredients from those enumerated above. In the case of sterile powders for the preparation of sterile injectable solutions, the preferred methods of preparation are vacuum-drying and freeze-drying techniques which yield a powder of the active ingredient plus any additional desired ingredient from a previously sterile-filtered solution thereof. Injectable solutions may be advantageous for systemic administration, for example by intravenous administration.

**[00234]** Also provided herein are formulations in a neutral or salt form. Pharmaceutically-acceptable salts include the acid addition salts (formed with the free amino groups of the protein) and which are formed with inorganic acids such as, for example, hydrochloric or phosphoric acids, or such organic acids as acetic, oxalic, tartaric, mandelic, and the like. Salts formed with the free carboxyl groups can also be derived from inorganic bases such as, for example, sodium, potassium, ammonium, calcium, or ferric hydroxides, and such organic bases as isopropylamine, trimethylamine, histidine, procaine and the like. Upon formulation, solutions will be administered in a manner compatible with the dosage formulation and in such amount as is therapeutically effective. The formulations are easily administered in a variety of dosage forms such as injectable solutions, drug-release capsules, and the like.

**[00235]** Pulmonary administration may be advantageously achieved via the buccal administration. In some embodiments, formulations may comprise dry particles comprising active ingredients. In such embodiments, dry particles may have a diameter in the range from about 0.5 nm to about 7 nm or from about 1 nm to about 6 nm. In some embodiments, formulations may be in the form of dry powders for administration using devices comprising dry powder reservoirs to which streams of propellant may be directed to disperse such powder. In some embodiments, self-propelling solvent/powder dispensing containers may be used. In such embodiments, active ingredients may be dissolved and/or suspended in low-boiling propellant in sealed containers. Such powders may comprise particles wherein at least 98% of the particles by weight have diameters greater than 0.5 nm and at least 95% of the particles by number have diameters less than 7 nm. Alternatively, at least 95% of the particles by weight have a diameter greater than 1 nm and at least 90% of the particles by number have a diameter less than 6 nm. Dry powder compositions may include a solid fine powder diluent such as sugar and are conveniently provided in a unit dose form. Low boiling propellants generally include liquid propellants having a boiling point of below 65 °F at atmospheric pressure. Generally, propellants may constitute 50% to 99.9% (w/w) of the composition, and active ingredient may constitute 0.1% to 20% (w/w) of the composition. Propellants may further comprise additional

ingredients such as liquid non-ionic and/or solid anionic surfactant and/or solid diluent (which may have particle sizes of the same order as particles comprising active ingredients).

**[00236]** Pharmaceutical compositions formulated for pulmonary delivery may provide active ingredients in the form of droplets of solution and/or suspension. Such formulations may be prepared, packaged, and/or sold as aqueous and/or dilute alcoholic solutions and/or suspensions, optionally sterile, comprising active ingredients, and may conveniently be administered using any nebulization and/or atomization device. Such formulations may further comprise one or more additional ingredients including, but not limited to, a flavoring agent such as saccharin sodium, a volatile oil, a buffering agent, a surface active agent, and/or a preservative such as methylhydroxybenzoate. Droplets provided by this route of administration may have an average diameter in the range from about 0.1  $\mu\text{m}$  to about 200  $\mu\text{m}$ . Formulations described herein useful for pulmonary delivery may also be useful for intranasal delivery. In some embodiments, formulations for intranasal administration comprise a coarse powder comprising the active ingredient and having an average particle size from about 0.2  $\mu\text{m}$  to 500  $\mu\text{m}$ . Such formulations are administered in the manner in which snuff is taken, *e.g.* by rapid inhalation through the nasal passage from a container of the powder held close to the nose.

**[00237]** Formulations suitable for nasal administration may, for example, comprise from about as little as 0.1% (w/w) and as much as 100% (w/w) of active ingredient, and may comprise one or more of the additional ingredients described herein. A pharmaceutical composition may be prepared, packaged, and/or sold in a formulation suitable for buccal administration. Such formulations may, for example, be in the form of tablets and/or lozenges made using conventional methods, and may, for example, comprise 0.1% to 20% (w/w) active ingredient, the balance comprising an orally dissolvable and/or degradable composition and, optionally, one or more of the additional ingredients described herein. Alternately, formulations suitable for buccal administration may comprise powders and/or an aerosolized and/or atomized solutions and/or suspensions comprising active ingredients. Such powdered, aerosolized, and/or atomized formulations, when dispersed, may comprise average particle and/or droplet sizes in the range of from about 0.1  $\mu\text{m}$  to about 200  $\mu\text{m}$ , and may further comprise one or more of any additional ingredients described herein.

**[00238]** Suitable dose and dosage administered to a subject is determined by factors including, but not limited to, the particular therapeutic rAAV composition, disease condition and its severity, the identity (*e.g.*, weight, sex, age) of the subject in need of treatment, and can be determined according to the particular circumstances surrounding the case, including, *e.g.*, the specific agent being administered, the route of administration, the condition being treated, and the subject or host being treated.

**[00239]** The amount of AAV compositions and time of administration of such compositions will be within the purview of the skilled artisan having benefit of the present teachings. It is likely, however, that the administration of therapeutically-effective amounts of the disclosed compositions may be

achieved by a single administration, such as for example, a single injection of sufficient numbers of infectious particles to provide therapeutic benefit to the patient undergoing such treatment. This is made possible, at least in part, by the fact that certain target cells (*e.g.*, neurons) do not divide, obviating the need for multiple or chronic dosing.

**[00240]** Alternatively, in some circumstances, it may be desirable to provide multiple, or successive administrations of the AAV vector compositions, either over a relatively short, or a relatively prolonged period of time, as may be determined by the medical practitioner overseeing the administration of such compositions. For example, the number of infectious particles administered to a mammal may be on the order of about  $10^7$ ,  $10^8$ ,  $10^9$ ,  $10^{10}$ ,  $10^{11}$ ,  $10^{12}$ ,  $10^{13}$ , or even higher, infectious particles/ml given either as a single dose, or divided into two or more administrations as may be required to achieve therapy of the particular disease or disorder being treated. In fact, in certain embodiments, it may be desirable to administer two or more different AAV vector compositions, either alone, or in combination with one or more other therapeutic drugs to achieve the desired effects of a particular therapy regimen. In various embodiments, the daily and unit dosages are altered depending on a number of variables including, but not limited to, the activity of the therapeutic rAAV composition used, the disease or condition to be treated, the mode of administration, the requirements of the individual subject, the severity of the disease or condition being treated, and the judgment of the practitioner.

**[00241]** In some embodiments, the administration of the therapeutic rAAV composition is hourly, once every 2 hours, 3 hours, 4 hours, 5 hours, 6 hours, 7 hours, 8 hours, 9 hours, 10 hours, 11 hours, 12 hours, 13 hours, 14 hours, 15 hours, 16 hours, 17 hours, 18 hours, 19 hours, 20 hours, 21 hours, 22 hours, 23 hours, 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, 7 days, 8 days, 9 days, 10 days, 11 days, 12 days, 13 days, 14 days, 15 days, 1 month, 2 months, 3 months, 4 months, 5 months, 6 months, 7 months, 8 months, 9 months, 10 months, 11 months, 1 year, 2 years, 3 years, 4 years, 5 years, or 10 years. The effective dosage ranges may be adjusted based on subject's response to the treatment. Some routes of administration will require higher concentrations of effective amount of therapeutics than other routes.

**[00242]** Although not anticipated given the advantages of the present disclosure, in certain embodiments wherein the patient's condition does not improve, upon the doctor's discretion the administration of therapeutic rAAV composition is administered chronically, that is, for an extended period of time, including throughout the duration of the patient's life in order to ameliorate or otherwise control or limit the symptoms of the patient's disease or condition. In certain embodiments wherein a patient's status does improve, the dose of therapeutic rAAV composition being administered may be temporarily reduced or temporarily suspended for a certain length of time (*i.e.*, a "drug holiday"). In specific embodiments, the length of the drug holiday is between 2 days and 1 year, including by way of example only, 2 days, 3 days, 4 days, 5 days, 6 days, 7 days, 10 days, 12 days, 15 days, 20 days, 28 days, or more than 28 days. The dose reduction during a drug holiday is,



by way of example only, by 10%-100%, including by way of example only 10%, 15%, 20%, 25%, 30%, 35%, 40%, 45%, 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, and 100%. In certain embodiments, the dose of drug being administered may be temporarily reduced or temporarily suspended for a certain length of time (i.e., a “drug diversion”). In specific embodiments, the length of the drug diversion is between 2 days and 1 year, including by way of example only, 2 days, 3 days, 4 days, 5 days, 6 days, 7 days, 10 days, 12 days, 15 days, 20 days, 28 days, or more than 28 days. The dose reduction during a drug diversion is, by way of example only, by 10%-100%, including by way of example only 10%, 15%, 20%, 25%, 30%, 35%, 40%, 45%, 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, and 100%. After a suitable length of time, the normal dosing schedule is optionally reinstated.

**[00243]** In some embodiments, once improvement of the patient's conditions has occurred, a maintenance dose is administered if necessary. Subsequently, in specific embodiments, the dosage or the frequency of administration, or both, is reduced, as a function of the symptoms, to a level at which the improved disease, disorder or condition is retained. In certain embodiments, however, the patient requires intermittent treatment on a long-term basis upon any recurrence of symptoms.

**[00244]** Toxicity and therapeutic efficacy of such therapeutic regimens are determined by standard pharmaceutical procedures in cell cultures or experimental animals, including, but not limited to, the determination of the LD50 and the ED50. The dose ratio between the toxic and therapeutic effects is the therapeutic index and it is expressed as the ratio between LD50 and ED50. In certain embodiments, the data obtained from cell culture assays and animal studies are used in formulating the therapeutically effective daily dosage range and/or the therapeutically effective unit dosage amount for use in mammals, including humans. In some embodiments, the dosage amount of the therapeutic rAAV composition described herein lies within a range of circulating concentrations that include the ED50 with minimal toxicity. In certain embodiments, the daily dosage range and/or the unit dosage amount varies within this range depending upon the dosage form employed and the route of administration utilized.

## **KITS**

**[00245]** Disclosed herein are kits comprising compositions disclosed herein. Also disclosed herein are kits for the treatment or prevention of a disease or conditions of the central nervous system (CNS), peripheral nervous system (PNS), or target organ or environment (e.g., lung, heart, liver). In some instances, the disease or condition is cancer, a pathogen infection, pulmonary disease or condition, neurological disease, muscular disease, or an immune disorder, such as those described herein. In one embodiment, a kit can include a therapeutic or prophylactic composition containing an effective amount of a composition of a rAAV particle encapsidating a heterologous nucleic acid comprising a therapeutic nucleic acid (e.g., therapeutic nucleic acid) and a recombinant AAV (rAAV) capsid protein of the present disclosure. In another embodiment, a kit can include a therapeutic or prophylactic composition containing an effective amount of cells modified by the rAAV described

herein (“modified cell”), in unit dosage form that express therapeutic nucleic acid. In some embodiments, a kit comprises a sterile container which can contain a therapeutic composition; such containers can be boxes, ampules, bottles, vials, tubes, bags, pouches, blister-packs, or other suitable container forms known in the art. Such containers can be made of plastic, glass, laminated paper, metal foil, or other materials suitable for holding medicaments.

**[00246]** In some cases, rAAV are provided together with instructions for administering the rAAV to a subject having or at risk of developing the disease or condition (*e.g.*, disease of the CNS, PNS, liver, and the like). Instructions can generally include information about the use of the composition for the treatment or prevention of the disease or condition.

**[00247]** In some cases, a kit can include allogenic cells. In some cases, a kit can include cells that can comprise a genomic modification. In some cases, a kit can comprise “off-the-shelf” cells. In some cases, a kit can include cells that can be expanded for clinical use. In some cases, a kit can contain contents for a research purpose.

**[00248]** In some cases, the instructions include at least one of the following: description of the therapeutic rAAV composition; dosage schedule and administration for treatment or prevention of the disease or condition disclosed herein; precautions; warnings; indications; counter-indications; overdose information; adverse reactions; animal pharmacology; clinical studies; and/or references. The instructions can be printed directly on the container (when present), or as a label applied to the container, or as a separate sheet, pamphlet, card, or folder supplied in or with the container. In some cases, instructions provide procedures for administering the rAAV to the subject alone. In some cases, instructions provide procedures for administering the rAAV to the subject at least about 1 hour (hr), 2hr, 3 hr, 4 hr, 5 hr, 6 hr, 7 hr, 8 hr, 9 hr, 10 hr, 11 hr, 12 hr, 13 hr, 14 hr, 15 hr, 16 hr, 17 hr, 18 hr, 19 hr, 20 hr, 21 hr, 22 hr, 23 hr, 24 hr, 25 hr, 26 hr, 27 hr, 28 hr, 29 hr, 30 hr, or up to 2 days, 3 days, 4 days, 5 days, 6 days, or 7 days after or before administering an additional therapeutic agent disclosed herein. In some instances, the instructions provide that the rAAV is formulated for intravenous injection. In some instances, the instructions provide that the rAAV is formulated for intranasal administration.

## **DEFINITIONS**

**[00249]** The terminology used herein is for the purpose of describing particular cases only and is not intended to be limiting. As used herein, the singular forms “a”, “an” and “the” are intended to include the plural forms as well, unless the context clearly indicates otherwise. Furthermore, to the extent that the terms “including”, “includes”, “having”, “has”, “with”, or variants thereof are used in either the detailed description and/or the claims, such terms are intended to be inclusive in a manner similar to the term “comprising.”

**[00250]** The term “about” or “approximately” means within an acceptable error range for the particular value as determined by one of ordinary skill in the art, which will depend in part on how the value is measured or determined, *e.g.*, the limitations of the measurement system. For example,

“about” can mean within 1 or more than 1 standard deviation, per the practice in the given value. Where particular values are described in the application and claims, unless otherwise stated the term “about” should be assumed to mean an acceptable error range for the particular value.

**[00251]** As used herein “consisting essentially of” when used to define compositions and methods, shall mean excluding other elements of any essential significance to the combination for the stated purpose. Thus, a composition consisting essentially of the elements as defined herein would not exclude other materials or steps that do not materially affect the basic and novel characteristic(s) of the claimed disclosure, such as compositions for treating skin disorders like acne, eczema, psoriasis, and rosacea.

**[00252]** The terms “homologous,” “homology,” or “percent homology” are used herein to generally mean an amino acid sequence or a nucleic acid sequence having the same, or similar sequence to a reference sequence. Percent homology of sequences can be determined using the most recent version of BLAST, as of the filing date of this application.

**[00253]** The terms “increased,” or “increase” are used herein to generally mean an increase by a statistically significant amount. In some embodiments, the terms “increased,” or “increase,” mean an increase of at least 10% as compared to a reference level, for example an increase of at least about 10%, at least about 20%, or at least about 30%, or at least about 40%, or at least about 50%, or at least about 60%, or at least about 70%, or at least about 80%, or at least about 90% or up to and including a 100% increase or any increase between 10-100% as compared to a reference level, standard, or control. Other examples of “increase” include an increase of at least 2-fold, at least 5-fold, at least 10-fold, at least 20-fold, at least 50-fold, at least 100-fold, at least 1000-fold or more as compared to a reference level.

**[00254]** The terms, “decreased” or “decrease” are used herein generally to mean a decrease by a statistically significant amount. In some embodiments, “decreased” or “decrease” means a reduction by at least 10% as compared to a reference level, for example a decrease by at least about 20%, or at least about 30%, or at least about 40%, or at least about 50%, or at least about 60%, or at least about 70%, or at least about 80%, or at least about 90% or up to and including a 100% decrease (e.g., absent level or non-detectable level as compared to a reference level), or any decrease between 10-100% as compared to a reference level. In the context of a marker or symptom, by these terms is meant a statistically significant decrease in such level. The decrease can be, for example, at least 10%, at least 20%, at least 30%, at least 40% or more, and is preferably down to a level accepted as within the range of normal for an individual without a given disease.

**[00255]** The terms “subject” is any organism. In some instances, the organism is a mammal. Non-limiting examples of mammal include, any member of the mammalian class: humans, non-human primates such as chimpanzees, and other apes and monkey species; farm animals such as cattle, horses, sheep, goats, swine; domestic animals such as rabbits, dogs, and cats; laboratory animals including rodents, such as rats, mice and guinea pigs, and the like. In one aspect, the mammal is a

human. The term “animal” as used herein comprises human beings and non-human animals. In one embodiment, a “non-human animal” is a mammal, for example a rodent such as rat or a mouse. In some instances, the subject is a patient, which as used herein, may refer to a subject diagnosed with a particular disease or disorder.

**[00256]** The term “gene,” as used herein, refers to a segment of nucleic acid that encodes an individual protein or RNA (also referred to as a “coding sequence” or “coding region”), optionally together with associated regulatory region such as promoter, operator, terminator and the like, which may be located upstream or downstream of the coding sequence.

**[00257]** The term “adeno-associated virus,” or “AAV” as used herein refers to the adeno-associated virus or derivatives thereof. Non-limited examples of AAV’s include AAV type 1 (AAV1), AAV type 2 (AAV2), AAV type 3 (AAV3), AAV type 4 (AAV4), AAV type 5 (AAV5), AAV type 6 (AAV6), AAV type 7 (AAV7), AAV type 8 (AAV8), AAV type 9 (AAV9), AAV type 10 (AAV10), AAV type 11 (AAV11), AAV type 12 (AAV12), avian AAV, bovine AAV, canine AAV, equine AAV, primate AAV, non-primate AAV, and ovine AAV. In some instances, the AAV is described as a “Primate AAV,” which refers to AAV that infect primates. Likewise an AAV may infect bovine animals (*e.g.*, “bovine AAV”, and the like). In some instances, the AAV is wildtype, or naturally occurring. In some instances the AAV is recombinant.

**[00258]** The term “AAV capsid” as used herein refers to a capsid protein or peptide of an adeno-associated virus. In some instances, the AAV capsid protein is configured to encapsidate genetic information (*e.g.*, a transgene, therapeutic nucleic acid, viral genome). In some instances, the AAV capsid of the instant disclosure is a variant AAV capsid, which means in some instances that it is a parental AAV capsid that has been modified in an amino acid sequence of the parental AAV capsid protein.

**[00259]** The term “tropism” as used herein refers to a quality or characteristic of the AAV capsid that may include specificity for, and/or an increase or a decrease in efficiency of, expressing the encapsidated genetic information into one in *in vivo* environment, relative to a second *in vivo* environment. An *in vivo* environment, in some instances, is a cell-type. An *in vivo* environment, in some instances, is a tissue, organ, or organ system.

**[00260]** The term “AAV genome” as used herein refers to nucleic acid polynucleotide encoding genetic information related to the virus. The genome, in some instances, comprises a nucleic acid sequence flanked by AAV inverted terminal repeat (ITR) sequences. The AAV genome may be a recombinant AAV genome generated using recombinatorial genetics methods, and which can include a heterologous nucleic acid (*e.g.*, transgene) that is flanked by the ITR sequences.

**[00261]** The term “AAV particle” or an “AAV vector” as used interchangeably herein refers to an AAV virus or virion comprising an AAV capsid within which is packaged a heterologous DNA polynucleotide, or “genome”, comprising nucleic acid sequence flanked by AAV inverted terminal

repeat (ITR) sequences. In some cases, the AAV particle is modified relative to a parental AAV particle.

**[00262]** The term “gene product” of “gene expression product” refers to an expression product of a polynucleotide sequence such as, for *e.g.*, a polypeptide, peptide, protein or RNA, including but not limited to interfering RNA (*e.g.*, siRNA, miRNA, shRNA) and messenger RNA (mRNA).

**[00263]** The terms “operatively linked” or “operably linked” refers to a location of two or more elements *in cis* with one another, and in some cases, next to one other (*e.g.*, genetic elements such as a promoter, enhancer, termination signal sequence, polyadenylation sequence, and the like) that enables a functional relationship between the two or more elements. In one non-limiting example, a promoter that is operatively linked to a coding region enables the initiation of transcription of the coding sequence.

**[00264]** The term “heterologous” as used herein refers to a genetic element (*e.g.*, coding region) or gene expression product (*e.g.*, RNA, protein) that is derived from a genotypically distinct entity from that of the rest of the entity to which it is being compared.

**[00265]** The term “endogenous” as used herein refers to a genetic element (*e.g.*, coding region) or gene expression product (*e.g.*, RNA, protein) that is naturally occurring in or associated with an organism or a particular cell within the organism.

**[00266]** A “detectable moiety” as used herein refers to a moiety that can be covalently or noncovalently attached to a compound or biomolecule that can be detected for instance, using techniques known in the art. In embodiments, the detectable moiety is covalently attached. The detectable moiety may provide for imaging of the attached compound or biomolecule. The detectable moiety may indicate the contacting between two compounds. Exemplary detectable moieties are fluorophores, antibodies, reactive dyes, radio-labeled moieties, magnetic contrast agents, and quantum dots. Exemplary fluorophores include fluorescein, rhodamine, GFP, coumarin, FITC, Alexa fluor, Cy3, Cy5, BODIPY, and cyanine dyes. Exemplary radionuclides include Fluorine-18, Gallium-68, and Copper-64. Exemplary magnetic contrast agents include gadolinium, iron oxide and iron platinum, and manganese.

**[00267]** The terms “treat,” “treating,” and “treatment” as used herein refers to alleviating or abrogating a disorder, disease, or condition; or one or more of the symptoms associated with the disorder, disease, or condition; or alleviating or eradicating a cause of the disorder, disease, or condition itself. Desirable effects of treatment can include, but are not limited to, preventing occurrence or recurrence of disease, alleviation of symptoms, diminishing any direct or indirect pathological consequences of the disease, preventing metastasis, decreasing the rate of disease progression, amelioration or palliation of the disease state and remission or improved prognosis.

**[00268]** The term “therapeutically effective amount” refers to the amount of a compound or therapy that, when administered, is sufficient to prevent development of, or alleviate to some extent, one or more of the symptoms of a disorder, disease, or condition of the disease; or the amount of a

compound that is sufficient to elicit biological or medical response of a cell, tissue, system, animal, or human that is being sought by a researcher, veterinarian, medical doctor, or clinician.

**[00269]** The term “pharmaceutically acceptable carrier,” “pharmaceutically acceptable excipient,” “physiologically acceptable carrier,” or “physiologically acceptable excipient” refers to a pharmaceutically acceptable material, composition, or vehicle, such as a liquid or solid filler, diluent, excipient, solvent, or encapsulating material. A component can be “pharmaceutically acceptable” in the sense of being compatible with the other ingredients of a pharmaceutical formulation. It can also be suitable for use in contact with the tissue or organ of humans and animals without excessive toxicity, irritation, allergic response, immunogenicity, or other problems or complications, commensurate with a reasonable benefit/risk ratio. See, Remington: The Science and Practice of Pharmacy, 21st Edition; Lippincott Williams & Wilkins: Philadelphia, PA, 2005; Handbook of Pharmaceutical Excipients, 5th Edition; Rowe et al., Eds., The Pharmaceutical Press and the American Pharmaceutical Association: 2005; and Handbook of Pharmaceutical Additives, 3rd Edition; Ash and Ash Eds., Gower Publishing Company: 2007; Pharmaceutical Preformulation and Formulation, Gibson Ed., CRC Press LLC: Boca Raton, FL, 2004).

**[00270]** The term “pharmaceutical composition” refers to a mixture of a compound disclosed herein with other chemical components, such as diluents or carriers. The pharmaceutical composition can facilitate administration of the compound to an organism. Multiple techniques of administering a compound exist in the art including, but not limited to, oral, injection, aerosol, parenteral, and topical administration.

**[00271]** Non-limiting examples of “sample” include any material from which nucleic acids and/or proteins can be obtained. As non-limiting examples, this includes whole blood, peripheral blood, plasma, serum, saliva, mucus, urine, semen, lymph, fecal extract, cheek swab, cells or other bodily fluid or tissue, including but not limited to tissue obtained through surgical biopsy or surgical resection. In some embodiments, the sample is obtained directly from the patient. Alternatively, a sample can be obtained through primary patient derived cell lines, or archived patient samples in the form of preserved samples, or fresh frozen samples.

#### EXAMPLES

##### **[00272] Example 1. Method of Producing an rAAV**

**[00273]** A recombinant AAV (rAAV) is produced. Three plasmid vectors are triple-transfected into immortalized HEK293 cells using a standard transfection protocol (*e.g.*, with PEI). The first vector contains a transgene cassette flanked by inverted terminal repeat (ITR) sequences from a parental AAV virus. The transgene cassette has a promoter sequence and that drives transcription of a heterologous nucleic acid in the nucleus of the target cell. The second vector contains nucleic acids encoding the AAV *Rep* gene, as well as a modified *Cap* gene *e.g.*, AAV2/9 REP-AAP- $\Delta$ Cap). The modified *Cap* gene comprises any one of SEQ ID NOS: 12740-25468, 35472-45474, and 46364-46383, which are the DNA sequences encoding the modified AAV capsid proteins of the present

disclosure. The modified *Cap* gene, in some cases, comprises any one of SEQ ID NOS: 46404-46423, which are the DNA sequences encoding the full-length VP1 protein with the 7-mer substitute at amino acid positions 452-458. The third vector contains nucleic acids encoding helper virus proteins needed for viral assembly, and packaging of the heterologous nucleic acid into the modified capsid structure.

**[00274]** Viral particles are harvested from the media after 72 h post transfection and from the cells and media at 120 h post transfection. Virus present in the media is concentrated by precipitation with 8% poly(ethylene glycol) and 500 mM sodium chloride and the precipitated virus is added to the lysates prepared from the collected cells. The viruses are purified over iodixanol (Optiprep, Sigma) step gradients (15%, 25%, 40% and 60%). Viruses are concentrated and formulated in PBS. Virus titers are determined by measuring the number of DNaseI-resistant vector genome copies (VGs) using qPCR and the linearized genome plasmid as a control.

**[00275] Example 2. Method of Identifying the Modified Capsid Proteins**

**[00276]** *Plasmids.*

**[00277]** First round viral DNA library was generated by amplification of a section of the AAV9-PHP.eB capsid genome between amino acids 450-599 using NNK degenerate primers (Integrated DNA Technologies, Inc., IDT) to substitute amino acids 452-458 with all possible variations. The resulting library inserts were then introduced into the rAAV- $\Delta$ Cap-in-cis-Lox plasmid via Gibson assembly as previously described. The resulting capsid DNA library, rAAV-Cap-in-cis-Lox, contained a diversity of ~1.28 billion variants at the amino acid level. Second round viral DNA library was generated similarly to the first round, but instead of NNK degenerate primers at the 452-458 location, a synthesized oligo pool (Twist Bioscience) was used to only generate selected variants. This second round DNA library contained a diversity of ~82,000 variants at the amino acid level.

**[00278]** The AAV2/9 REP-AAP- $\Delta$ Cap plasmid transfected into HEK293T cells for library viral production was modified from the AAV2/9 REP-AAP plasmid previously used by deletion of the amino acids between 450-592. This modification prevents production of an AAV9 capsid during viral library production after a plausible recombination event between this plasmid co-transfected with rAAV- $\Delta$ Cap-in-cis-Lox containing the library inserts.

**[00279]** Two rAAV genomes were used in this study. The first, pAAV-CAG-mNeonGreen, utilizes a single-stranded (ss) rAAV genome containing the fluorescent protein mNeonGreen under control of the ubiquitous CMV- $\beta$ -Actin-intron- $\beta$ -Globin hybrid promoter (CAG). The second, pAAV-CAG-NLS-GFP (Addgene #104061), utilizes a ssAAV genome containing the fluorescent protein EGFP flanked by two nuclear localization sites, PKKKRKV (SEQ ID NO: 45486), under control of the CAG promoter.

**[00280]** *Viral production*

**[00281]** Recombinant AAVs were described in Challis, R. C. *et al.* Systemic AAV vectors for widespread and targeted gene delivery in rodents. *Nat. Protoc.* **14**, 379 (2019). Briefly, triple

transfection of HEK293T cells (ATCC) using polyethylenimine (PEI) was performed, virus was collected after 120 hours from both cell lysates and media and purified over iodixanol (Optiprep, Sigma).

**[00282]** A modified protocol was used for transfection and purification of viral libraries. First, to prevent mosaic capsid formation, only 10ng of rAAV-Cap-in-cis-Lox library DNA was transfected (per 150mm plate) to decrease the likelihood of multiple library DNAs entering the same cell. Second, virus was collected after 60 hours, instead of 120, to limit secondary transduction of producer cells. Finally, instead of PEG precipitation of the viral particles from the media, as performed in the standard protocol, media was concentrated >60-fold for loading onto iodixanol. This step was performed to prevent aggregation and loss of viral diversity, something that was noticed during PEG precipitation.

**[00283]** *Animals*

**[00284]** All rodent procedures were approved by the Institutional Animal Use and Care Committee (IACUC) of the California Institute of Technology. Transgenic animals, expressing Cre under control of various cell-type specific promoters, as well as C57Bl/6J WT mice (000664) were purchased from the Jackson Laboratory (JAX). Transgenic mice included Syn1-Cre (3966), GFAP-Cre (012886) and Tek-Cre (8863). For round 1 and round 2 selections of viral library, one male and one female mouse, 8-12 weeks of age, of each transgenic line were used, as well as a single male C57Bl/6J. For validation of individual viral variants, male C57Bl/6J mice were used, aged 6-8 weeks. Intravenous administration of rAAV vectors was performed via injection into the retro-orbital sinus.

**[00285]** *Viral library recovery and sequencing*

**[00286]** Round 1 and round 2 viral libraries were injected into C57Bl/6J and Cre-transgenic animals at a dose of  $8 \times 10^{10}$  vg/animal and rAAV genomes were recovered two weeks post injection. Mice were euthanized, and most major organs were recovered, snap frozen on dry ice and placed into long-term storage at  $-80^{\circ}\text{C}$ . Tissues included: brain, spinal cord, DRGs, liver, lungs, heart, stomach, intestines, kidneys, spleen, pancreas, skeletal muscle and adipose tissue. 100mg of each tissue (~250mg for brain hemisphere, <100mg for DRGs) was homogenized in Trizol (Life Technologies, 15596) using a BeadBug (Benchmark Scientific, D1036) and viral DNA isolated according to the manufacturer's recommended protocol. Recovered viral DNA was treated with RNase, underwent restriction digestion with SmaI (found within the ITRs) to improve later rAAV genome recovery by PCR, and purified with a Zymo DNA Clean and Concentrator kit (D4033). Viral genomes flipped by Cre-recombinase in select transgenic lines (or pre-flipped in WT animals) were selectively recovered using the following primers: 5'-CTTCCAGTTCAGCTACGAGTTTGAGAAC-3' (SEQ ID NO: 45487) and 5'-CAAGTAAACCTCTACAAATGTGGTAAAATCG-3' (SEQ ID NO: 45488), after 25 cycles of  $98^{\circ}\text{C}$  for 10s,  $60^{\circ}\text{C}$  for 15s and  $72^{\circ}\text{C}$  for 40s, using Q5 DNA polymerase in five 25 $\mu\text{l}$  reactions with 50% of the total extracted viral DNA as a template.



**[00287]** After Zymo DNA purification, samples from the WT C57Bl/6J animals were serially diluted between 1:10-1:10,000 and each dilution further amplified around the library variable region. This amplification was done using primers: 5'-

ACGCTCTTCCGATCTAATACTTGTACTATCTCTCTAGAACTATT-3' (SEQ ID NO: 45489) and 5'-TGTGCTCTTCCGATCTCACACTGAATTTTAGCGTTTG-3' (SEQ ID NO: 45490) and 10 cycles of 98°C for 10s, 61°C for 15s and 72°C for 20s, to recover 73bp of viral genome around and including the 21bp variable region and add adapters for Illumina next-generation sequencing. After PCR cleanup, these products were further amplified using NEBNext Dual Index Primers for Illumina sequencing (New England Biolabs, E7600), after 10 cycles of 98°C for 10s, 60°C for 15s and 72°C for 20s. The amplification products were run on a 2% low-melting-point agarose gel (ThermoFisher Scientific, 162050) for better separation and recovery of the 210bp band. The dilution series was analyzed for each WT tissue and the highest concentration dilution which resulted in no product was chosen for further amplification of the viral DNA from the transgenic animal tissues. This process was performed to differentiate between viral genomes flipped prior to packaging or due to Cre in the animal. Pre-flipped viral genomes should be avoided to minimize false-positives in the NGS sequencing results.

**[00288]** Using the dilutions resulting in a product that doesn't contain pre-flipped viral genomes, all Cre-flipped viral genomes from transgenic animal tissues were similarly amplified to add Illumina sequencing adapters and subsequently for index labeling. The amplified products now containing unique indices for each tissue from each animal were run on a low-melting-point agarose gel and the correct bands extracted and purified with a Zymoclean Gel DNA Recovery kit.

**[00289]** Packaged viral library DNA was isolated from the injected viral library by digestion of the viral capsid and purification of the contained ssDNA. These viral genomes were amplified by two PCR amplification steps, like the viral DNA extracted from tissue, to add Illumina adapters and then indices and extracted and purified after gel electrophoresis. This viral library DNA, along with the viral DNA extracted from tissue was sent for deep sequencing using an Illumina HiSeq 2500 System (Millard and Muriel Jacobs Genetics and Genomics Laboratory, Caltech).

**[00290]** *NGS data alignment and processing*

**[00291]** Raw fastq files from NGS runs were processed with custom built that align the data to an AAV9 template DNA fragment containing the 21bp diversified region between AA 452-458. The pipeline to process these datasets involved filtering to remove low-quality reads, utilizing a quality score for each sequence and eliminating bias from PCR-induced mutations or high GC-content. The filtered dataset was then aligned by perfect string match algorithm and trimmed to improve the alignment quality. Read counts for each sequence were then pulled out and displayed along with their enrichment score, defined as the relative abundance of the sequence found within the specific tissue over the relative abundance of that sequence within the injected viral library.

**[00292]** *Enrichment quantification.* Enrichment for a specific variant in a target tissue was calculated in reference to the entire library within that tissue and was defined as the prevalence of the variant within the target tissue normalized to the prevalence in the variant within the injected viral library.

$$\text{Enrichment (Var1)} = \log \frac{\text{probability of Var1 in tissue}}{\text{probability of Var1 in injected library}}$$

A positive enrichment score is achieved if the AAV variant is found more prevalently in the tissue than in the injected viral library and a negative one is achieved if the AAV variant is found less prevalently. An enrichment score of 0 means that either the variant was found in exactly the same prevalence in tissue and injected viral library, or that there were no read counts of the specific variant in the target tissue, i.e. the variant could not be detected in the tissue. As the former is unlikely, an enrichment score of 0 is interpreted to mean that the variant is not present in the tissue. Thus, an AAV variant was determined to de-target a tissue if its enrichment score in that tissue was less than or equal to 0. *In vivo* characterization of liver transduction from a number of AAV variants having an enrichment score of 0 relative to their parental AAV vector AAV9 verified that this interpretation was accurate (see, e.g., Fig. 17D, E).

**[00293]** *Tissue preparation and immunohistochemistry*

**[00294]** Mice were euthanized with Euthazol and transcardially perfused with ice-cold 1x PBS and then freshly prepared, ice-cold 4% paraformaldehyde (PFA) in 1x PBS. All organs were excised and post-fixed in 4% PFA at 4° for 48 hours and then sectioned by vibratome. IHC was performed on floating sections with primary and secondary antibodies in PBS containing 10% donkey serum and 0.1% Triton X-100. Primary antibodies used were rabbit anti-NeuN (1:200, Abcam, 177487), rabbit anti-S100 (1:200, Abcam, 868), rabbit anti-Olig2 (1:200, Abcam, 109186) and rabbit anti-Calbindin (1:200, Abcam, 25085). Primary antibody incubations were performed for 16-20 hours at room temperature (RT). The sections were then washed and incubated with secondary Alexa-647 conjugated anti-rabbit FAB fragment antibody (1:200, Jackson ImmunoResearch Laboratories, Inc., 711-607-003) for 6-8 hours at RT. For nuclear staining, floating sections were incubated in PBS containing 0.2% Triton X-100 and DAPI (1:1000, Sigma Aldrich, 10236276001) for 6-8 hours and then washed. Stained sections were then mounted with ProLong Diamond Antifade Mountant (ThermoFisher Scientific, P36970).

**[00295]** *Imaging and Quantification*

**[00296]** All CAG-mNeonGreen expressing tissues were imaged on a Zeiss LSM 880 confocal microscope using a Fluar 5x 0.25 M27 objective, with matched laser powers, gains and gamma across all samples of the same tissue. The acquired images were processed in Zen Black 2.3 SP1 (Zeiss).

**[00297]** All CAG-NLS-GFP expressing tissues were imaged on a Keyence BZ-X all-in-one fluorescence microscope at 48-bit resolution with the following objectives: PlanApo-λ 20x/0.75 (1mm working distance) or PlanApo-λ 10x/0.45 (4mm working distance). For colocalization of GFP expression to antibody staining, in some cases the exposure time for the green (GFP) channel was

adjusted to facilitate imaging of high and low expressing cells while avoiding oversaturation. In all cases in which fluorescent intensity was compared between samples, exposure settings and changes to gamma or contrast were maintained across images. To minimize bias, multiple fields of view per brain region and peripheral organ were acquired for each sample. For brain regions, the fields of view were matched between samples and chosen based upon the antibody staining rather than GFP signal. For peripheral tissues, fields of view were chosen based upon the DAPI or antibody staining to preclude observer bias.

**[00298]** All image processing was performed with the Keyence BZ-X Analyzer. Data analysis was performed with Microsoft Excel 2018 and GraphPad Prism 7. Colocalization between GFP signal and antibody or DAPI staining was performed using the Keyence BZ-X Analyzer with the hybrid cell count automated plugin. Automated counts were validated and routinely monitored by comparison to manual hand-counts and found to be below the margin of error for manual counts.

**[00299]** To compare total cell counts and fluorescent intensity throughout the brain between samples, an entire sagittal section located 1200  $\mu\text{M}$  from midline was imaged using matched exposure conditions with the Keyence BZ-X automated XY stitching module. Stitched images were then deconstructed in the Keyence BZ-X Analyzer suite and run through the hybrid cell count automated plugin to count the total number of cells in the entire sagittal section. Average fluorescent intensity was calculated by creating a mask of all GFP positive cells throughout the sagittal section and measuring the integrated pixel intensity of that mask. The total integrated pixel intensity was divided by the total cell count to obtain the fluorescent intensity per cell measure. In all cases where direct comparisons were made of fluorescent intensity, exposure settings and postprocessing contrast adjustments were matched between samples.

**[00300]** *Statistics*

**[00301]** Microsoft Excel 2018 and GraphPad Prism 7 were used for statistical analysis and data representation. Unless otherwise noted, all experimental groups were  $n = 6$  and determined using preliminary data and experimental power analysis. For the statistical analysis and their graphs, a single data point was defined as two tissue sections per animal with multiple technical replicates per section when possible. Technical replicates are defined as multiple fields of view per section, with the following numbers for each region or tissue of interest: cerebellum = 3, cortex = 4, hippocampus = 3, midbrain = 1, striatum = 3, thalamus = 4, liver = 4, spleen = 2, testi = 2, kidney = 2, lung = 2, spine = 1, DRG = 1, whole sagittal = 1.

**[00302]** **Example 2. Overview of Cre-Dependent Positive and Negative Selection of Viral Libraries**

**[00303]** For the express purpose of engineering AAVs with high efficiency toward specific organs and away from others after systemic administration, an updated version of the CREATE screening method (M-CREATE) was used, which allowed for the selection of large libraries of viral variants *in vivo*. **FIG. 1** shows a schematic of the M-CREATE methods used. With CREATE, a library of AAV capsids with mutations at a specific location was generated by PCR with degenerate primers, viruses packaging a

replication-incompetent version of their own genome with a polyadenylation site flanked by Cre/Lox sites are produced in HEK293 cells, and the viral library is injected into transgenic animals expressing Cre in a specific population of cells. If variants of the library successfully transduce cells expressing Cre, their genome is flipped and the sequence of those variants can be recovered in a Cre-dependent manner.

**[00304]** Selection of variants in multiple transgenic mouse lines expressing Cre in different cell populations: Tek-Cre for endothelial cells throughout the body, hSyn1-Cre for neurons of the CNS and PNS, and GFAP-Cre for astrocytes, was performed. By performing selections in parallel in multiple transgenic lines, both positive and negative selection can be applied thereby recovering target sequences from a specific tissue of interest, that were not recovered from others. Next, the recovered viral DNA from the tissues of interest were sequenced and indexed. The sequences were then ranked based on prevalence in target environment or cell-type of interest. A second-round library was synthesized containing only the top-performing sequences from round 1.

**[00305]** The AA455 loop of AAV9 is the furthest protruding from the surface of the capsid and has previously been implicated in neutralizing antibody binding. The most commonly manipulated loop in AAVs is the AA588 loop, due to it being the site of heparan sulfate binding of AAV2 and amenable to peptide display. The only known receptor for AAV9 is N-linked terminal galactose, but many indications point toward there being others.

**[00306]** Without wishing to be bound by any particular theory, the AA455 loop may also play a role in cell-surface receptor binding, either on its own or by interaction with the AA588 loop. To determine whether variant amino acid sequences at the AA455 loop contribute to desired AAV tropisms, rAAVs were engineered and rounds of selection were performed using the M-CREATE method of a 7 amino acid substitution library of the 455 loop, between AA452-458 (**FIG 1A-1B**) in AAV-PHP.eB, a variant of AAV9 previously engineered at the AA588 loop for increased efficiency in crossing the BBB.

**[00307] Example 3. AAV Capsid Variants with Tropisms Bias Toward the Lung and Against the Liver in Rodents**

**[00308]** *AAV.CAP-A4 exhibits strong Lung-specific transduction*

**[00309]** Highly enriched variants for a number of targets were discovered after two rounds of *in vivo* selection. The results from the second round of selection for lung enrichment yielded several candidate variants, one of which showed significant enrichment in the lung, with detargeting of several peripheral organs

**[00310]** A randomly chosen variant (**FIG. 15A**), as well as a second novel capsid that emerged from this screen that was found to be enriched specifically in gut neurons are provided as a comparison. To directly assess transduction efficiencies, the capsid sequences for the candidate variants were cloned into an AAV9 backbone, and virus was produced for each variant packaging mNeonGreen, a fluorescent reporter, driven by the ubiquitous synthetic promoter CAG. This construct will drive strong expression of the fluorescent promoter in all cell types transduced by the vector, thereby giving

a visual readout of the transduction of each variant across cell and tissue types. Following purification,  $5 \times 10^{11}$  vector genomes (vg) of each variant, including AAV9 as a control, were injected into 2 male c57bl/6 mice. Following two weeks of expression, animals were sacrificed, perfusion fixed, and a panel of organs were sectioned and imaged for fluorescence (**FIG 15B**). The expression pattern confirms the next generation sequencing (NGS) results, with AAV.CAP-A4 (KDNTPGR (SEQ ID NO: 32538) encoded by AACCAACCTCCCAGAAACCTC (SEQ ID NO: 46429)) showing increased transduction throughout the lung. As a comparison, AAV.CAP-A14 shows increased expression in neurons within the intestine and stomach, which is in accordance with the NGS results. **[00311]** Following confirmation that AAV.CAP-A4 showed increased transduction of the lung, transduction efficiencies of AAV.CAP-A4, along with AAV9 and AAV5 as controls, were quantified across time in clinically relevant cell types following low-dose systemic injection. For these experiments, AAV.CAP-A4, AAV5, and AAV9 were injected into age-matched male mice and allowed to express for 3 weeks (n=3) or 6 months (n=3). In addition, a nuclear localization sequence (NLS) was cloned into a CAG-GFP expression cassette to restrict expression of the fluorescent reporter to the nucleus, aiding in co-localization with specific antibody staining. Following tissue preparation, serialized sections of the lungs from each of the variants were stained with antibodies for ciliated airway epithelial cells, clara cells, and alveolar epithelial type II (ATII) cells (**FIG 16A**). Quantification shows that systemically injected AAV.CAP-A4 transduces submucosal cells at ~15 fold greater efficiency than AAV9, and ~30 fold greater than AAV5 (**FIG 16B**). Similarly, transduction of ATII cells is ~30 fold greater than AAV9, and ~60 fold greater than AAV5 (**Fig 16C**). Of the total number of cells transduced by AAV.CAP-A4, approximately 60% of them are ATII cells, with the other 40% being of an unknown, submucosal cell type (**Fig 3D**). These results demonstrate that AAV.CAP-A4 provides unprecedented, non-invasive genetic access to submucosal cells in the lungs following systemic administration which, alone or in conjunction with delivery direct to the airways, may provide sufficient CFTR functionalization to reduce CF disease progression.

**[00312]** **FIG. 4** shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the heart. **FIG. 5** shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the intestine. **FIG. 6** shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the kidney. **FIG. 7** shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the liver. **FIG. 8** shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to muscle. **FIG. 9** shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the pancreas. **FIG. 10** shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant

AAV capsid amino acid sequences with a tropism specific to the spleen. FIG. 11 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the stomach. FIG. 12 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the testicle. FIG. 13 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to lung. FIG. 14 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to adipose tissue.

**[00313] Example 4. AAV Capsid Variants with Tropism Bias Toward Central and Peripheral Nervous System and Against the Liver in Rodents**

**[00314] Engineering AAV-PHP.eB away from peripheral expression**

**[00315]** After the first round of selection, the recovered sequences were analyzed. A second round was synthesized, which contained approximately 82,000 unique variants enriched in the brain compared to peripheral organs. After a second round of selection which narrowed down the top performing variants by a couple orders of magnitude, a small subset of sequences to test were selected (FIG. 4b) that exhibited high levels of enrichment for the brain, and negative enrichment for the liver and other peripheral organs (FIG. 17C). This subset was tested individually in wild-type mice, injecting  $5 \times 10^{11}$  viral genomes packaging CAG-mNeonGreen and allowing for two weeks of expression. The resulting expression in the brains and livers (FIG. 17D) correlated very closely with the next generation sequencing (NGS) enrichments, with variant AAV.CAP-B10 standing out as exhibiting higher fluorescence in the brain than PHP.eB and negligible liver transduction.

**[00316]** The above results match NGS enrichment findings for both brain and periphery. In this case, the insertion/substitution at the AA588 loop to make PHP.eB seems to confer a brain phenotype, while the substitutions at AA455 de-target that phenotype from the liver and other peripheral organs. Of the 82,000 variants that comprised the second round of selection, roughly 39,000 exhibited positive enrichment in the brain and negative enrichment in the liver. These results serve as a validation that the NGS results can be used as an accurate proxy of *in vivo* performance.

**[00317]** For the ~39,000 sequences that exhibited brain enrichment and liver de-targeting, the amino acid makeup was analyzed that resulted in this phenotype. The frequency at which amino acids were selected throughout the 7-mer substitution were analyzed and plotted their deviation from the mean as a heat map of enriched amino-acids at specific positions. These positively enriched amino acids de-target the capsid from the liver, while retaining CNS enrichment.

**[00318] AAV.CAP-B10 exhibits CNS-specific transduction**

**[00319]** To fully characterize the performance of AAV.CAP-B10 in comparison with AAV9 and PHP.eB, nuclear localized CAG-EGFP were packaged and injected  $1 \times 10^{11}$  viral genomes into animals. Expression was measured after three weeks. This dose was chosen as an average dose for previous

experiments utilizing systemic delivery to the brain. The results show an increase in the average number of cells transduced in the brain, as well as the average level of expression per cell, between AAV.CAP-B10 and PHP.eB, while both are very significantly higher than AAV9 (FIG. 18A-5C). In the spinal cord, AAV.CAP-B10 performs at roughly 60% of the efficiency of PHP.eB, yet still almost 20-fold higher than AAV9. Conversely, AAV.CAP-B10 is very significantly reduced in the liver compared to both PHP.eB (~50-fold) and AAV9 (>100-fold), and slightly, yet insignificantly, dimmer in brightness/cell compared to PHP.eB, while both are significantly dimmer than AAV9 (~10-fold) (FIG. 18B-18D). In the rest of the periphery, the results follow the same trend, with PHP.eB being lower than AAV9, and AAV.CAP-B10 being a fraction of PHP.eB (FIG. 18D).

**[00320]** *AAV.CAP-B10 exhibits strong neuronal bias*

**[00321]** To further characterize what expression within the brain looked like for AAV.CAP-B10 compared to PHP.eB, neurons, astrocytes and oligodendrocytes, were stained and quantified for the efficiency of the viruses at targeting those cell-types in various regions of the brain. While AAV.CAP-B10 and PHP.eB transduced neurons at a similar efficiency across brain regions (FIG 19A-19B), astrocytes and oligodendrocytes were targeted roughly 4-5-fold lower levels across the whole brain by AAV.CAP-B10 compared to PHP.eB (FIG. 19C, 19D, 19E, 19F). This result indicates a bias for neurons compared to other cell-types conferred by the AAV.CAP-B10 mutations, an interesting deviation from AAV9, which mostly targets astrocytes in the brain. An interesting indication from the NGS data for AAV.CAP-B10 (FIG. 15C) was the variant's negative enrichment in the cerebellum. When characterizing the expression of AAV.CAP-B10 compared to PHP.eB in the cerebellum, there was indeed a significant, roughly 4-fold, decrease in transduction of purkinje cells (FIG. 22).

**[00322]** FIG. 3 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the central nervous system (CNS), and detargeting the liver. FIG. 2 shows 7-mer variant AAV capsid amino acid sequences and DNA sequences encoding the 7-mer variant AAV capsid amino acid sequences with a tropism specific to the CNS.

**[00323]** **Example 5. AAV Capsid Variants with Tropisms Bias Toward Central and Peripheral Nervous System and Against the Liver in Non-Human Primates**

**[00324]** Of primary concern for the therapeutic applicability of variants engineered in rodents is how well their transduction profiles translate to non-human primates (NHPs). As such, the NHP transduction profiles of a subset of the variants that had been validated in rodents were characterized, along with AAV9 and AAV-PHP.eB as controls. A pool of eight viruses, AAV9, AAV-PHP.eB, AAV.CAP-B1, AAV.CAP-B2, AAV.CAP-B8, AAV.CAP-B10, AAV.CAP-B18 and AAV.CAP-B22, were produced, each packaging an HA tagged frataxin under control of the ubiquitous CAG promoter. The use of frataxin was chosen as it is an endogenous protein expressed throughout the body and previous efforts to characterize NHP transduction of naturally occurring and engineered serotypes has

found deleterious results potentially due to the packaging of an exogenous transgene like GFP. Each packaged FXN contained a separate 12-base RNA barcode to differentiate the contribution of one virus from the rest after sequencing. The eight viruses were pooled at equal ratios and injected into two adult marmosets at  $1.2 \times 10^{14}$  vg/kg total. Following six weeks of expression, brains and livers were recovered, and coronal sections taken for RNA sequencing and immunohistochemistry.

**[00325]** AAV.CAP-B10 showed a greater than 6-fold increase in RNA levels in the brain and greater than 5-fold decrease in liver RNA levels compared to AAV9. Another selected variant, AAV.CAP-B22, showed a greater than 12-fold increase in brain RNA levels with no significant difference in liver RNA levels. Without being bound by any particular theory, these results show that AAV.CAP-B22 and AAV.CAP-B10 are promising variant capsids for the treatment of human disease of the brain. Although a select number of variants were tested in the present example, these finds also suggest that other modified AAV capsid proteins described herein with equal to, or greater, enrichment scores as AAV.CAP-B22 and AAV.CAP-B10 in any target *in vivo* environment, would also provide a promising therapeutic solution for human disease.

**[00326] Example 6. Phase 1A Clinical Trial (Huntington's Disease)**

**[00327]** A phase 1A clinical trial is performed to evaluate the safety, tolerability, pharmacokinetics, and pharmacodynamics of an one-time intravenous injection of test composition comprising viral vector including a modified AAV capsid protein with an amino acid sequence provided in any one of SEQ ID NOS: 2933, 88, 2466, 3943, 2672, 2743, 3064, 11958, 780, 2764, and 2741, or any of the amino acid sequences provided in **Tables 3-4**, or **FIGS. 2-3**, in subjects with late Huntington's Disease (HD). Eligible subjects are men and women between 21 and 65 years of age.

**[00328] Inclusion Criteria:** Eligible subjects are men and women between 21 and 65 years of age. Subjects that (1) sign and date International Classification of Functioning, Disability and Health (ICF); (2) male or female participant aged  $\geq 21$  and  $\leq 65$ ; (3) participants who submit medical report (PCR) attesting Huntington's disease with a number of CAG repeats on chromosome 4, greater than or equal to 40 and less than or equal to 50 (if the participant has not performed the examination and/or if he does not have the report available, a new exam should be done); (4) Score 5 points or more in motor assessment UHDRS scale (Unified Huntington's Disease Rating Scale) at the time of enrollment; (5) Score between 8 and 11 points in the functional capacity of the UHDRS scale at the time of enrollment.

**[00329] Exclusion Criteria:** (1) Any medical observation data (clinical and physical) that medical research judge as a risk for subject if enrollment at the study; (2) any laboratory exam data that medical research judge as a risk for subject if enrollment at the study; (3) history of epilepsy; (4) diagnostic of major cognitive impairment; (5) active decompensated psychiatric disease; (6) current or prior history of neoplasia; (7) current history of gastrointestinal, hepatic, renal, endocrine, pulmonary, hematologic, immune, metabolic pathology or severe and uncontrolled cardiovascular disease; (8) diagnostic of any active infection, be it viral, bacterial, fungal, or caused by another pathogen; (9)



participants who have contraindication to undergo any of the tests performed in this study, for example, have pacemakers or surgical clip; (10) history of alcohol or illegal drugs abusers; (11) history of 1 or more episodes of suicide in the two years before Visit V-4; (12) active smoker or have stopped smoking less than six months prior to enrollment; (13) test positive in at least one of the serological tests: HIV 1 and 2 (Anti-HIV-1,2), HTLV I and II, HBV (HBsAg, anti-HBc), HCV (anti-HCV-Ab) and VDRL (Treponema pallidum); (14) history of drug allergy, including contrasts for imaging, or bovine products; (15) in use or expected use of immunosuppressive drugs or prohibited medicines for the first three months after the first administration of the investigational product; (16) any clinical changes that is interpreted by the medical researcher as a risk to participant's enrollment.

**[00330] Experimental:**

**[00331] Placebo.** One-time injection of placebo at Week 0.

**[00332] Test High Dose.** One-time injection of test composition  $2 \times 10^{10}$  vg at Week 0.

**[00333] Test Middle Dose.** One-time injection of test composition  $6 \times 10^9$  vg at Week 0.

**[00334] Test Low Dose.** One-time injection of test composition  $2 \times 10^9$  vg at Week 0.

**[00335] Test Lowest Dose.** One-time injection of test composition  $2 \times 10^8$  vg at Week 0.

**[00336] Primary Outcome Measures:** Safety of the test composition by periodic monitoring changes at adverse events, vital signs, laboratory tests, ECG and incidence of benign and malignant neoplasms [ Time Frame: five years ]. The safety of the investigational product will be evaluated in detail from periodic evaluations contemplating monitoring changes of: (1) adverse events including type, frequency, intensity, seriousness, severity, and action taken related to the investigational product study; (2) vital signs (BP, HR, axillary temperature), physical and medical examination (BMI, weight, height, medical condition - cardiovascular, pulmonary, digestive, musculoskeletal and peripheral, with emphasis on the neurological assessment and others); (3) laboratory tests included hematologic, biochemical, urologic and serological analysis; (4) electrocardiogram (ECG) of 12 derivations; (5) and incidence and classification of benign and malignant neoplasms in the following organs/systems: CNS, lung, liver, spleen, pancreas, prostate, testicle, urinary, hematological and skeletal system through the laboratory tests, magnetic resonance imaging, computerized tomography and ultrasonography.

**[00337] Secondary Outcome Measures:** Preliminary efficacy of Cellavita HD by global clinical response (CIBIS) and UHDRS improvement [ Time Frame: five years ] will be evaluated by statistical comparison of the results of each UHDRS scale component: motor, cognitive and behavior. The global clinical response will be assessed by statistical comparison between baseline score observed by the Investigator before and after Cellavita HD treatment. Preliminary efficacy of Cellavita HD by comparison of the inflammatory markers [ Time Frame: one year ] will be evaluated by statistical comparison of the inflammatory markers included IL-4, IL-6, IL-10 (interleukin IL) and TNF-alpha (tumoral necrosis factor alpha). Immunological Response of Cellavita HD [ Time Frame: one year ]. The immunological response induced by Cellavita HD will be evaluated by statistical comparison

between baseline results of CD4+ and CD8+ proliferation and the other evaluated times. Preliminary efficacy of Cellavita HD by comparison of the CNS assessment [ Time Frame: one year ]. Will be evaluated by statistical comparison of the CNS assessment through magnetic resonance image at cortical thickness measurements, volumes of different brain structures, especially the basal ganglia, with special attention to caudate and metabolic changes identified in proton spectroscopy. Risk of suicidal ideation by Hamilton Depression Rating Scale (HDRS) [ Time Frame: five years ] will be evaluated by suicidal domain. The classificatory punctuation may correspond to mild depression (score: 8 to 13), moderate depression (score: 19 - 22) and severe depression (score: > 23).

**[00338]** While preferred embodiments of the present examples have been shown and described herein, it will be obvious to those skilled in the art that such embodiments are provided by way of example only. Numerous variations, changes, and substitutions will now occur to those skilled in the art without departing from the disclosure. It should be understood that various alternatives to the embodiments of the disclosure described herein may be employed in practicing the disclosure. It is intended that the following claims define the scope of the disclosure and that methods and structures within the scope of these claims and their equivalents be covered thereby.

## CLAIMS

1. A recombinant AAV (rAAV), the rAAV comprising:
  - a) a variant AAV capsid comprising a variant AAV capsid protein comprising an amino acid substitution of three or more amino acids within a 7-mer peptide sequence at a 3-fold axis of symmetry of a corresponding parental AAV capsid protein, wherein the 7-mer peptide sequence is at an amino acid position that corresponds to amino acid residues 452-458 of AAV9 VP1 (SEQ ID NO: 1), and wherein the amino acid substitution is not ILGTGTS (SEQ ID NO: 45479), QSSQTPR (SEQ ID NO: 45479), or TLAVPFK (SEQ ID NO: 45477); and
  - b) a heterologous polynucleotide comprising a nucleotide sequence encoding a gene product.
2. The rAAV of claim 1, wherein the variant AAV capsid has an increased tropism for a target tissue or a target cell, when measured in a subject, relative to a tropism of the corresponding parental AAV capsid.
3. The rAAV of any of the previous claims, wherein the target tissue or the target cell comprises a tissue or a cell of a central nervous system (CNS) or a peripheral nervous system (PNS), or a combination thereof.
4. The rAAV of any of the previous claims, wherein the variant AAV capsid has a decreased tropism for an off-target tissue comprising liver tissue or an off-target cell comprising a liver cell, when measured in a subject, relative to the tropism of the corresponding parental AAV capsid.
5. The rAAV of any of the previous claims, wherein the three or more amino acids comprise three contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L, Q, S, T, and V at amino acid positions in the parental AAV capsid protein corresponding to amino acid residues 452-454, 453-455, 454-456, 455-457, or 456-458 of AAV9 VP1 (SEQ ID NO: 1).
6. The rAAV of any of the previous claims, wherein the three or more amino acids comprise four contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L, Q, S, T, and V at amino acid positions in the parental AAV capsid protein corresponding to amino acid residues 452-455, 453-456, 454-457, or 455-458 of AAV9 VP1 (SEQ ID NO: 1).

7. The rAAV of any of the previous claims, wherein three or more amino acids comprise at least five contiguous amino acids, each amino acid independently selected from the group consisting of A, D, E, G, K, H, M, N, P, L, Q, S, T, and V at amino acid positions in the parental AAV capsid protein corresponding to amino acid residues 452-456, 453-457, or 454-458 of AAV9 VP1 (SEQ ID NO: 1).
8. The rAAV of any of the previous claims, wherein the three or more amino acids comprise three or more of:
  - a) A, D, E, G, H, M, N, Q, S, T, or V substituted at an amino acid position corresponding to amino acid residue 452 of AAV9 VP1 (SEQ ID NO: 1);
  - b) A, D, E, G, K, N, Q, S, T, or V substituted at an amino acid position corresponding to amino acid residue 453 of AAV9 VP1 (SEQ ID NO: 1);
  - c) A, D, E, G, K, N, Q, S, T, or V substituted at amino acid position corresponding to amino acid residue 454 of AAV9 VP1 (SEQ ID NO: 1);
  - d) A, D, E, G, K, N, P, Q, S, or T substituted at an amino acid position corresponding to amino acid residue 455 of AAV9 VP1 (SEQ ID NO: 1);
  - e) A, D, E, G, H, K, N, P, Q, S, or T substituted at an amino acid position corresponding to amino acid residue 456 of AAV9 VP1 (SEQ ID NO: 1);
  - f) A, D, E, G, K, N, P, S, T, or V substituted at an amino acid position corresponding to amino acid residue 457 of AAV9 VP1 (SEQ ID NO: 1); and
  - g) A, E, G, H, K, L, N, Q, S, T, or V substituted at amino acid position corresponding to amino acid residue 458 of AAV9 VP1 (SEQ ID NO: 1).
9. The rAAV of any of the previous claims, wherein the amino acid substitution comprises an amino acid sequence selected from DGAATKN (SEQ ID NO: 3943), and DGQSSKS (SEQ ID NO: 2764).
10. The rAAV of claim 4 wherein the three or more amino acids comprises three or more of:
  - a) A, D, G, L, N, Q, S, or T substituted at an amino acid at a position corresponding to amino acid residue 452 of AAV9 VP1 (SEQ ID NO: 1);
  - b) A, G, N, P, Q, R, S, or substituted at an amino acid at a position corresponding to amino acid residue 453 of AAV9 VP1 (SEQ ID NO: 1);
  - c) A, D, G, N, S, or T substituted at an amino acid at a position corresponding to amino acid residue 454 of AAV9 VP1 (SEQ ID NO: 1);
  - d) A, D, G, K, N, P, Q, S, or T substituted at an amino acid at a position corresponding to amino acid residue 455 of AAV9 VP1 (SEQ ID NO: 1);
  - e) A, G, K, N, P, R, S, or T substituted at an amino acid at a position corresponding to amino acid residue 456 of AAV9 VP (SEQ ID NO: 1);

- f) A, G, K, N, P, R, S, T, or V substituted at an amino acid at a position corresponding to amino acid residue 457 of AAV9 VP1 (SEQ ID NO: 1); and
- g) A, G, K, L, R, S, T, or V substituted at an amino acid at a position corresponding to amino acid residue 458 of AAV9 VP1 (SEQ ID NO: 1).

11. The rAAV of any of the previous claims, wherein the amino acid substitution comprises an amino acid sequence selected from the group consisting of LQTSSPG (SEQ ID NO: 2933), QQGKQSV (SEQ ID NO: 79), SINTKTN (SEQ ID NO: 45475), SNGTKQT (SEQ ID NO: 442), GSGKTAA (SEQ ID NO: 88), MGDKPTR (SEQ ID NO: 2466), QPSGGNT (SEQ ID NO: 2672), ERGANTK (SEQ ID NO: 5192), TTGGHSS (SEQ ID NO: 2743), GTTKTSE (SEQ ID NO: 3064), GTGTSVL (SEQ ID NO: 11958), NQSGTKG (SEQ ID NO: 780), KGPGQMG (SEQ ID NO: 45476), and GTPSKAG (SEQ ID NO: 2741).

12. The rAAV of any one of claims 2-11 wherein the target tissue or the target cell in the tissue is selected from the group consisting of lung, intestine, kidney, heart, and stomach.

13. The rAAV of any of the previous claims, wherein the three or more amino acids comprise three contiguous amino acids at an amino acid position corresponding to amino acid residues 452-454, 453-455, 454-456, 455-457, or 456-458 of AAV9 VP1, wherein:

- a) 452 is selected from the group consisting of N, K, R, and T;
- b) 453 is selected from the group consisting of L, N, P, and S;
- c) 454 is selected from the group consisting of A, D, G, N, S, and T;
- d) 455 is selected from the group consisting of L, P, S, and T;
- e) 456 is selected from the group consisting of P, R, and S;
- f) 457 is selected from the group consisting of G, N, S, and T; and
- g) 458 is selected from the group consisting of I, L, and R.

14. The rAAV of any of the previous claims, wherein the three or more amino acids comprise:

- a) four contiguous amino acids at an amino acid position corresponding to amino acid residues 452-455, 453-456, 454-457, or 455-458 of AAV9 VP1 (SEQ ID NO: 1);
- b) five contiguous amino acids at an amino acid position corresponding to amino acid residues 452-456, 453-457, or 453-458 of AAV9 VP1 (SEQ ID NO: 1);
- c) six contiguous amino acids at an amino acid position corresponding to amino acid residues 452-457 or 453-458 of AAV9 VP1 (SEQ ID NO: 1); and
- d) seven contiguous amino acids at an amino acid position corresponding to amino acid residues 452-458 of AAV9 VP1 (SEQ ID NO: 1).

15. The rAAV of any one of claims 12-14, wherein the target tissue is lung, and the three or more amino acids are provided in an amino acid sequence comprising KDNTPGR (SEQ ID NO: 32538),>NNLPRNL (SEQ ID NO: 32867), or any amino acid sequence provided in FIG. 13.
16. The rAAV of any one of claims 12-14, wherein the target tissue is intestine, and the three or more amino acids are provided in an amino acid sequence comprising RESSPSL (SEQ ID NO: 26474), KDNTPGR (SEQ ID NO: 26584), or any amino acid sequence provided in FIG. 5.
17. The rAAV of any one of claims 12-14, wherein the tissue is kidney, and the three or more amino acids are provided in an amino acid sequence comprising RVPLSTI (SEQ ID NO: 26933),>NNLPRNL (SEQ ID NO: 27530), KDNTPGR (SEQ ID NO: 28509), or any amino acid sequence provided in FIG. 6.
18. The rAAV of any one of claims 12,-14 wherein the tissue is heart, and the three or more amino acids are provided in an amino acid sequence comprising KDNTPGR (SEQ ID NO: 25633), or any amino acid sequence provided in FIG. 4.
19. The rAAV of any one of claims 12-14, wherein the tissue is stomach, and the three or more amino acids are provided in an amino acid sequence comprising RESSPSL (SEQ ID NO: 31904) or any amino acid sequence of FIG. 12.
20. The rAAV of any of the previous claims, wherein the corresponding parental AAV capsid protein is AAV9 VP1 or a variant thereof.
21. The rAAV of claim 20, wherein the AAV9 VP1 variant has a sequences identity of 90% or more to SEQ ID NO:1.
22. The rAAV of claim 20, wherein the AAV9 VP1 variant has a sequences identity of 95% or more to SEQ ID NO:1.
23. The rAAV of any of the previous claims , wherein the corresponding parental AAV capsid protein further comprises an insertion of an amino acid sequence selected from the group consisting of TLAXPFK (SEQ ID NO: 46424), TLAX (SEQ ID NO: 46425), LAVX (SEQ ID NO: 46426), AVPX (SEQ ID NO: 46427), and VPFX (SEQ ID NO: 46428), at an amino acid position corresponding to 588\_589 of the AAV9 VP1 (SEQ ID NO: 1), wherein X is any amino acid other than V.

24. The rAAV of any of the previous claims, wherein the parental AAV capsid protein is from AAV-PHP.B or AAV-PHP.eB.
25. The rAAV of any of the previous claims, wherein the rAAV is isolated and purified.
26. A pharmaceutical formulation comprising the rAAV of any of the previous claims and a pharmaceutical excipient.
27. The pharmaceutical formulation of claim 26, formulated for intravenous, intraarterial, intranasal, intrathecal, intracisternae magna, or subcutaneous injection.
28. A method of treating a disease or condition in a subject, the method comprising administering to the subject a therapeutically effective amount the rAAV of any one of claim 1-25, or the pharmaceutical formulation of any one of claims 26-27, wherein the gene product is a therapeutic gene product.
29. The method according to claim 28, wherein the administering is by intravenous, intraarterial, intranasal, intrathecal, intracisternae magna, or subcutaneous injection.
30. The method of claim 28, wherein the disease or the condition is selected from the group consisting of pulmonary fibrosis, surfactant protein disorders, peroxisome biogenesis disorders, or chronic obstructive pulmonary disease (COPD).
31. The method of claim 28, wherein the disease or the condition is a central nervous system (CNS) or peripheral nervous system (PNS) disorder.
32. A method of manufacturing an rAAV of any one of claims 1-25, the method comprising:
  - a) introducing into a cell a nucleic acid comprising:
    - a) a first nucleic acid sequence encoding a therapeutic gene expression product enclosed by a 5' and a 3' inverted terminal repeat (ITR) sequence;
    - b) a second nucleic acid sequence encoding a viral genome comprising a 5' ITR sequence, a Replication (Rep) gene, Capsid (Cap) gene, and a 3' ITR, wherein the Cap gene encodes a rAAV capsid protein; and
    - c) a third nucleic acid sequence encoding a first helper virus protein selected from the group consisting of E4orf6, E2a, and VA RNA, and optionally, a second helper virus protein comprising E1a or E1b55k;
  - b) expressing in the cell the AAV capsid protein;

- c) assembling the rAAV of any one of claims 1-23; and
  - d) packaging the first nucleic acid sequence in the rAAV.
33. A variant adeno-associated virus (AAV) capsid comprising:
- a) at least one of a decreased specificity and a decreased transduction efficiency, as measured in a liver of a primate subject when delivered to the primate subject intravenously, relative to a corresponding parental AAV capsid with an AAV capsid protein of SEQ ID NO: 1; and
  - b) at least one of an increased specificity and an increased transduction efficiency, as measured in a central nervous system (CNS) of the primate subject when delivered to the primate subject intravenously, relative to the corresponding parental AAV capsid.
34. A variant adeno-associated virus (AAV) capsid comprising:
- a) a variant AAV capsid protein comprising an amino acid sequence with an amino acid substitution of three or more amino acids within a 7-mer peptide sequence at an amino acid position that corresponds to amino acid residues 452-458 of AAV9 VP1 (SEQ ID NO: 1); and
  - b) at least one of an increased specificity and increased transduction efficiency in a target tissue as measured in the target tissue of a subject when delivered to the subject intranasally or intravenously, relative to a corresponding parental AAV capsid protein of SEQ ID NO: 1 or SEQ ID NO: 2, wherein the target tissue is selected from the group consisting of lung, intestine, kidney, heart, and stomach.



**FIG. 1A**  
**AAV9 3-fold Symmetry**

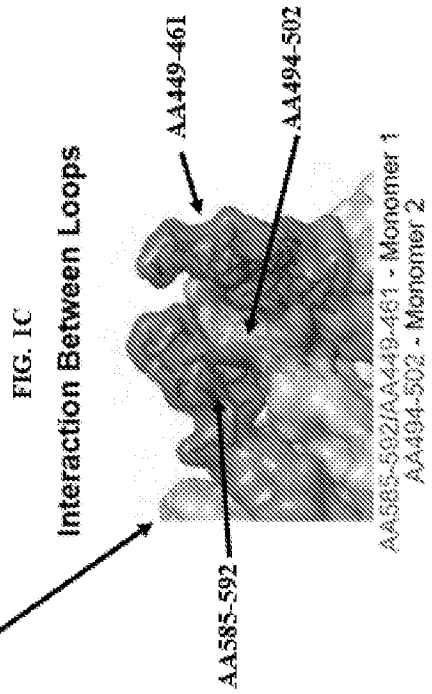
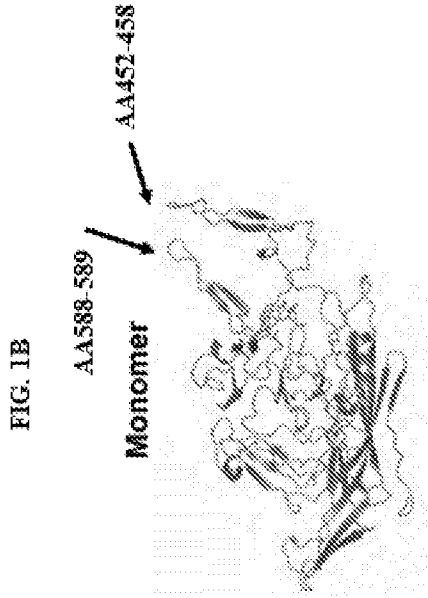
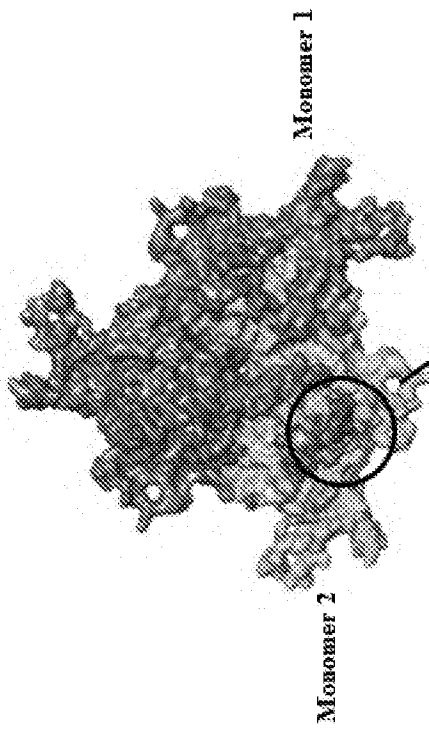




FIG. 2

12740	11	1.912817683
12741	12	1.683542214
12742	13	1.646549793
12743	14	1.624376814
12744	15	1.609487799
12745	16	1.581298365
12746	17	1.560127515
12747	18	1.532606441
12748	19	1.510809312
12749	20	1.497374065
12750	21	1.495179943
12751	22	1.492959081
12752	23	1.465659651
12753	24	1.464822053
12754	25	1.464030027
12755	26	1.458626389
12756	27	1.456753138
12757	28	1.451684533
12758	29	1.44624661
12759	30	1.424823398
12760	31	1.414846289
12761	32	1.414026449
12762	33	1.407667705
12763	34	1.401327526
12764	35	1.397448539
12765	36	1.397202271
12766	37	1.392230734
12767	38	1.381591777
12768	39	1.379179167
12769	40	1.376188618
12770	41	1.367455168
12771	42	1.367065364
12772	43	1.35551795
12773	44	1.352278129
12774	45	1.346786579
12775	46	1.34383415
12776	47	1.341943936
12777	48	1.33902445
12778	49	1.336311796
12779	50	1.329892702
12780	51	1.329439904
12781	52	1.328486458
12782	53	1.327743439
12783	54	1.32517543
12784	55	1.322496095
12785	56	1.320628446
12786	57	1.318377088
12787	58	1.316220587
12788	59	1.315353443
12789	60	1.312609696
12790	61	1.312160906
12791	62	1.310022222
12792	63	1.309518619
12793	64	1.306381891
12794	65	1.301939226
12795	66	1.301709563
12796	67	1.299175819
12797	68	1.290697898
12798	69	1.289568392
12799	70	1.287980477
12800	71	1.286624012
12801	72	1.285052291
12802	73	1.282728968
12803	74	1.278319849
12804	75	1.275593274
12805	76	1.274661346
12806	77	1.273234025
12807	78	1.268647757
12808	79	1.266338552
12809	80	1.263761129
12810	81	1.26298491
12811	82	1.262610679
12812	83	1.262390393
12813	84	1.261678178
12814	85	1.259605169
12815	86	1.257729164
12816	87	1.255488603
12817	88	1.255155632
12818	89	1.254372642
12819	90	1.249837762
12820	91	1.243541237
12821	92	1.239129583
12822	93	1.235336594
12823	94	1.235150906
12824	95	1.234689681
12825	96	1.231576445
12826	97	1.231576445
12827	98	1.231576445
12828	99	1.228870552
12829	100	1.228347475
12830	101	1.227339393
12831	102	1.226613026
12832	103	1.224627586
12833	104	1.224338037
12834	105	1.223797829
12835	106	1.221816608
12836	107	1.221276489
12837	108	1.218666529
12838	109	1.218414999
12839	110	1.218073975
12840	111	1.214638024
12841	112	1.213424183
12842	113	1.21227129
12843	114	1.21147697
12844	115	1.209857196
12845	116	1.209857196
12846	117	1.201953979
12847	118	1.201928042
12848	119	1.201613222
12849	120	1.200542212
12850	121	1.200167981
12851	122	1.199862032
12852	123	1.196814339
12853	124	1.194084635
12854	125	1.193231453
12855	126	1.192382724
12856	127	1.1866093
12857	128	1.186498071
12858	129	1.183884455
12859	130	1.183884455
12860	131	1.182214831
12861	132	1.182091082
12862	133	1.181831686
12863	134	1.180423923
12864	135	1.179440243
12865	136	1.178498002
12866	137	1.176907349
12867	138	1.176383945
12868	139	1.17146908
12869	140	1.171160523
12870	141	1.17062002
12871	142	1.170381985
12872	143	1.167118456
12873	144	1.16589767
12874	145	1.165446767

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
12875	146	1.164629656	12991	262	1.066593068
12876	147	1.164629656	12992	263	1.066143255
12877	148	1.158618564	12993	264	1.064628566
12878	149	1.158555508	12994	265	1.063959494
12879	150	1.156075683	12995	266	1.063310524
12880	151	1.1551881	12996	267	1.062271176
12881	152	1.154529329	12997	268	1.061559334
12882	153	1.154410491	12998	269	1.060180308
12883	154	1.15423934	12999	270	1.060180308
12884	155	1.152891253	13000	271	1.058278087
12885	156	1.152395199	13001	272	1.058174325
12886	157	1.151954067	13002	273	1.058125283
12887	158	1.151892834	13003	274	1.057988332
12888	159	1.151056849	13004	275	1.057945785
12889	160	1.150868679	13005	276	1.057789141
12890	161	1.150162318	13006	277	1.055485186
12891	162	1.148336343	13007	278	1.055485186
12892	163	1.146900889	13008	279	1.053805128
12893	164	1.14614625	13009	280	1.05303845
12894	165	1.144885598	13010	281	1.050984685
12895	166	1.141399815	13011	282	1.049952698
12896	167	1.139806072	13012	283	1.047832222
12897	168	1.139430222	13013	284	1.047290708
12898	169	1.138959329	13014	285	1.046530344
12899	170	1.131873532	13015	286	1.045500965
12900	171	1.131681579	13016	287	1.043964763
12901	172	1.129062555	13017	288	1.04325073
12902	173	1.129038347	13018	289	1.042843706
12903	174	1.128356959	13019	290	1.042520209

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
12904	175	1.126066261	12962	233	1.079288101
12905	176	1.125618303	12963	234	1.07909396
12906	177	1.125121115	12964	235	1.078348069
12907	178	1.121163962	12965	236	1.078149171
12908	179	1.121163962	12966	237	1.077204436
12909	180	1.120878148	12967	238	1.076674485
12910	181	1.120635141	12968	239	1.076674485
12911	182	1.120161744	12969	240	1.075571748
12912	183	1.119817311	12970	241	1.075423516
12913	184	1.119689276	12971	242	1.075038723
12914	185	1.119349674	12972	243	1.074790342
12915	186	1.118536932	12973	244	1.073968592
12916	187	1.118172255	12974	245	1.073123935
12917	188	1.118097331	12975	246	1.073009531
12918	189	1.116069944	12976	247	1.072975919
12919	190	1.112212811	12977	248	1.072859282
12920	191	1.109534948	12978	249	1.072518526
12921	192	1.109004442	12979	250	1.072255397
12922	193	1.106637709	12980	251	1.072063324
12923	194	1.105531225	12981	252	1.071279454
12924	195	1.104703209	12982	253	1.070997353
12925	196	1.101666172	12983	254	1.070832878
12926	197	1.101666172	12984	255	1.070725153
12927	198	1.100297531	12985	256	1.069495901
12928	199	1.100297531	12986	257	1.068547659
12929	200	1.097682866	12987	258	1.067983732
12930	201	1.096877872	12988	259	1.067894444
12931	202	1.096103037	12989	260	1.06738441
12932	203	1.095157891	12990	261	1.066766197

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
12933	204	1.094993728	12991	262	1.066593068
12934	205	1.094738486	12992	263	1.066143255
12935	206	1.094403252	12993	264	1.064628566
12936	207	1.094342123	12994	265	1.063959494
12937	208	1.093830178	12995	266	1.063310524
12938	209	1.090813149	12996	267	1.062271176
12939	210	1.090813149	12997	268	1.061559334
12940	211	1.09046277	12998	269	1.060180308
12941	212	1.089343454	12999	270	1.060180308
12942	213	1.088908942	13000	271	1.058278087
12943	214	1.088683393	13001	272	1.058174325
12944	215	1.08797094	13002	273	1.058125283
12945	216	1.08766987	13003	274	1.057988332
12946	217	1.08674288	13004	275	1.057945785
12947	218	1.086361753	13005	276	1.057789141
12948	219	1.08544841	13006	277	1.055485186
12949	220	1.084523395	13007	278	1.055485186
12950	221	1.084130368	13008	279	1.053805128
12951	222	1.083973724	13009	280	1.05303845
12952	223	1.08351391	13010	281	1.050984685
12953	224	1.082637432	13011	282	1.049952698
12954	225	1.082407829	13012	283	1.047832222
12955	226	1.081928669	13013	284	1.047290708
12956	227	1.081814125	13014	285	1.046530344
12957	228	1.081526988	13015	286	1.045500965
12958	229	1.081190587	13016	287	1.043964763
12959	230	1.081039291	13017	288	1.04325073
12960	231	1.08030877	13018	289	1.042843706
12961	232	1.08030877	13019	290	1.042520209

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
12962	233	1.079288101	12991	262	1.066593068
12963	234	1.07909396	12992	263	1.066143255
12964	235	1.078348069	12993	264	1.064628566
12965	236	1.078149171	12994	265	1.063959494
12966	237	1.077204436	12995	266	1.063310524
12967	238	1.076674485	12996	267	1.062271176
12968	239	1.076674485	12997	268	1.061559334
12969	240	1.075571748	12998	269	1.060180308
12970	241	1.075423516	12999	270	1.060180308
12971	242	1.075038723	13000	271	1.058278087
12972	243	1.074790342	13001	272	1.058174325
12973	244	1.073968592	13002	273	1.058125283
12974	245	1.073123935	13003	274	1.057988332
12975	246	1.073009531	13004	275	1.057945785
12976	247	1.072975919	13005	276	1.057789141
12977	248	1.072859282	13006	277	1.055485186
12978	249	1.072518526	13007	278	1.055485186
12979	250	1.072255397	13008	279	1.053805128
12980	251	1.072063324	13009	280	1.05303845
12981	252	1.071279454	13010	281	1.050984685
12982	253	1.070997353	13011	282	1.049952698
12983	254	1.070832878	13012	283	1.047832222
12984	255	1.070725153	13013	284	1.047290708
12985	256	1.069495901	13014	285	1.046530344
12986	257	1.068547659	13015	286	1.045500965
12987	258	1.067983732	13016	287	1.043964763
12988	259	1.067894444	13017	288	1.04325073
12989	260	1.06738441	13018	289	1.042843706
12990	261	1.066766197	13019	290	1.042520209

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
12991	262	1.066593068	12991	262	1.066593068
12992	263	1.066143255	12992	263	1.066143255
12993	264	1.064628566	12993	264	1.064628566
12994	265	1.063959494	12994	265	1.063959494
12995	266	1.063310524	12995	266	1.063310524
12996	267	1.062271176	12996	267	1.062271176
12997	268	1.061559334	12997	268	1.061559334
12998	269	1.060180308	12998	269	1.060180308
12999	270	1.060180308	12999	270	1.060180308
13000	271	1.058278087	13000	271	1.058278087
13001	272	1.058174325	13001	272	1.058174325
13002	273	1.058125283	13002	273	1.058125283
13003	274	1.057988332	13003	274	1.057988332
13004	275	1.057945785	13004	275	1.057945785
13005	276	1.057789141	13005	276	1.057789141
13006	277	1.055485186	13006	277	1.055485186
13007	278	1.055485186	13007	278	1.055485186
13008	279	1.053805128	13008	279	1.053805128
13009	280	1.05303845	13009	280	1.05303845
13010	281	1.050984685	13010	281	1.050984685
13011	282	1.049952698	13011	282	1.049952698
13012	283	1.047832222	13012	283	1.047832222
13013	284	1.047290708	13013	284	1.047290708
13014	285	1.046530344	13014	285	1.046530344
13015	286	1.045500965	13015	286	1.045500965
13016	287	1.043964763	13016	287	1.043964763
13017	288	1.04325073	13017	288	1.04325073
13018	289	1.042843706	13018	289	1.042843706
13019	290	1.042520209	13019	290	1.042520209

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13136	407	0.971708189	13136	407	0.971708189
13137	408	0.970889691	13137	408	0.970889691
13138	409	0.970663673	13138	409	0.970663673
13139	410	0.970474397	13139	410	0.970474397
13140	411	0.970313577	13140	411	0.970313577
13141	412	0.970054991	13141	412	0.970054991
13142	413	0.969917142	13142	413	0.969917142
13143	414	0.969299039	13143	414	0.969299039
13144	415	0.969299039	13144	415	0.969299039
13145	416	0.969233242	13145	416	0.969233242
13146	417	0.967654831	13146	417	0.967654831
13147	418	0.967063284	13147	418	0.967063284
13148	419	0.966927248	13148	419	0.966927248
13149	420	0.965874412	13149	420	0.965874412
13150	421	0.965620661	13150	421	0.965620661
13151	422	0.965524033	13151	422	0.965524033
13152	423	0.965524033	13152	423	0.965524033
13153	424	0.965057301	13153	424	0.965057301
13154	425	0.964915351	13154	425	0.964915351
13155	426	0.964404717	13155	426	0.964404717
13156	427	0.963714813	13156	427	0.963714813
13157	428	0.963270295	13157	428	0.963270295
13158	429	0.963215567	13158	429	0.963215567
13159	430	0.962731133	13159	430	0.962731133
13160	431	0.962731133	13160	431	0.962731133
13161	432	0.962731133	13161	432	0.962731133
13162	433	0.960808055	13162	433	0.960808055
13163	434	0.960698867	13163	434	0.960698867
13164	435	0.960648182	13164	435	0.960648182

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13107	378	0.986063778	13107	378	0.986063778
13108	379	0.98544732	13108	379	0.98544732
13109	380	0.984596211	13109	380	0.984596211
13110	381	0.980713059	13110	381	0.980713059
13111	382	0.980234234	13111	382	0.980234234
13112	383	0.980064089	13112	383	0.980064089
13113	384	0.979764472	13113	384	0.979764472
13114	385	0.979764472	13114	385	0.979764472
13115	386	0.979764472	13115	386	0.979764472
13116	387	0.979238374	13116	387	0.979238374
13117	388	0.979238374	13117	388	0.979238374
13118	389	0.979096841	13118	389	0.979096841
13119	390	0.978645156	13119	390	0.978645156
13120	391	0.978554176	13120	391	0.978554176
13121	392	0.977289853	13121	392	0.977289853
13122	393	0.976768178	13122	393	0.976768178
13123	394	0.975443099	13123	394	0.975443099
13124	395	0.97496559	13124	395	0.97496559
13125	396	0.974180247	13125	396	0.974180247
13126	397	0.973581082	13126	397	0.973581082
13127	398	0.97329843	13127	398	0.97329843
13128	399	0.97329843	13128	399	0.97329843
13129	400	0.973004889	13129	400	0.973004889
13130	401	0.972510951	13130	401	0.972510951
13131	402	0.972510951	13131	402	0.972510951
13132	403	0.972510951	13132	403	0.972510951
13133	404	0.972510951	13133	404	0.972510951
13134	405	0.972301198	13134	405	0.972301198
13135	406	0.972245084	13135	406	0.972245084

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13078	349	1.005180068	13078	349	1.005180068
13079	350	1.004706894	13079	350	1.004706894
13080	351	1.004332664	13080	351	1.004332664
13081	352	1.003778363	13081	352	1.003778363
13082	353	1.001127524	13082	353	1.001127524
13083	354	1.001127524	13083	354	1.001127524
13084	355	1.000679567	13084	355	1.000679567
13085	356	0.999729954	13085	356	0.999729954
13086	357	0.99871764	13086	357	0.99871764
13087	358	0.995899496	13087	358	0.995899496
13088	359	0.995813181	13088	359	0.995813181
13089	360	0.995756754	13089	360	0.995756754
13090	361	0.995687439	13090	361	0.995687439
13091	362	0.995118742	13091	362	0.995118742
13092	363	0.995004439	13092	363	0.995004439
13093	364	0.993967148	13093	364	0.993967148
13094	365	0.99373959	13094	365	0.99373959
13095	366	0.993216659	13095	366	0.993216659
13096	367	0.993158594	13096	367	0.993158594
13097	368	0.991998929	13097	368	0.991998929
13098	369	0.99124429	13098	369	0.99124429
13099	370	0.990218455	13099	370	0.990218455
13100	371	0.988538397	13100	371	0.988538397
13101	372	0.988538397	13101	372	0.988538397
13102	373	0.988538397	13102	373	0.988538397
13103	374	0.988538397	13103	374	0.988538397
13104	375	0.987097949	13104	375	0.987097949
13105	376	0.987027806	13105	376	0.987027806
13106	377	0.986541637	13106	377	0.986541637

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13049	320	1.021736603	13049	320	1.021736603
13050	321	1.021538657	13050	321	1.021538657
13051	322	1.021271086	13051	322	1.021271086
13052	323	1.02072308	13052	323	1.02072308
13053	324	1.02072308	13053	324	1.02072308
13054	325	1.02072308	13054	325	1.02072308
13055	326	1.02019313	13055	326	1.02019313
13056	327	1.017696626	13056	327	1.017696626
13057	328	1.016855784	13057	328	1.016855784
13058	329	1.015106024	13058	329	1.015106024
13059	330	1.014740219	13059	330	1.014740219
13060	331	1.01428897	13060	331	1.01428897
13061	332	1.013081338	13061	332	1.013081338
13062	333	1.012897743	13062	333	1.012897743
13063	334	1.012632686	13063	334	1.012632686
13064	335	1.010903054	13064	335	1.010903054
13065	336	1.010738859	13065	336	1.010738859
13066	337	1.010563682	13066	337	1.010563682
13067	338	1.010518041	13067	338	1.010518041
13068	339	1.009727696	13068	339	1.009727696
13069	340	1.009727696	13069	340	1.009727696
13070	341	1.009727696	13070	341	1.009727696
13071	342	1.009727696	13071	342	1.009727696
13072	343	1.008488624	13072	343	1.008488624
13073	344	1.006267164	13073	344	1.006267164
13074	345	1.006047212	13074	345	1.006047212
13075	346	1.005797402	13075	346	1.005797402
13076	347	1.005797402	13076	347	1.005797402
13077	348	1.005571736	13077	348	1.005571736

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13020	291	1.042223256	13020	291	1.042223256
13021	292	1.040351443	13021	292	1.040351443
13022	293	1.039247988	13022	293	1.039247988
13023	294	1.039038335	13023	294	1.039038335
13024	295	1.037440684	13024	295	1.037440684
13025	296	1.037001781	13025	296	1.037001781
13026	297	1.0352818	13026	297	1.0352818
13027	298	1.035022132	13027	298	1.035022132
13028	299	1.034295887	13028	299	1.034295887
13029	300	1.032470823	13029	300	1.032470823
13030	301	1.031446946	13030	301	1.031446946
13031	302	1.030531904	13031	302	1.030531904
13032	303	1.030531904	13032	303	1.030531904
13033	304	1.029156248	13033	304	1.029156248
13034	305	1.02861304	13034	305	1.02861304
13035	306	1.027941437	13035	306	1.027941437
13036	307	1.027456463	13036	307	1.027456463
13037	308	1.026665886	13037	308	1.026665886
13038	309	1.02619581	13038	309	1.02619581
13039	310	1.026030207	13039	310	1.026030207
13040	311	1.026030207	13040	311	1.026030207
13041	312	1.026030207	13041	312	1.026030207
13042	313	1.025680205	13042	313	1.025680205
13043	314	1.025261204	13043	314	1.025261204
13044	315	1.024861439	13044	315	1.024861439
13045	316	1.024816367	13045	316	1.024816367
13046	317	1.024816367	13046	317	1.024816367
13047	318	1.023770773	13047	318	1.023770773
13048	319	1.021962152	13048	319	1.021962152

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13281	552	0.913904778	13281	552	0.913904778
13282	553	0.913221866	13282	553	0.913221866
13283	554	0.913221866	13283	554	0.913221866
13284	555	0.913133648	13284	555	0.913133648
13285	556	0.912448228	13285	556	0.912448228
13286	557	0.91232163	13286	557	0.91232163
13287	558	0.91232163	13287	558	0.91232163
13288	559	0.912219069	13288	559	0.912219069
13289	560	0.910802392	13289	560	0.910802392
13290	561	0.910428161	13290	561	0.910428161
13291	562	0.910024783	13291	562	0.910024783
13292	563	0.909357151	13292	563	0.909357151
13293	564	0.909357151	13293	564	0.909357151
13294	565	0.908496309	13294	565	0.908496309
13295	566	0.908270055	13295	566	0.908270055
13296	567	0.908270055	13296	567	0.908270055
13297	568	0.908270055	13297	568	0.908270055
13298	569	0.907738157	13298	569	0.907738157
13299	570	0.907562543	13299	570	0.907562543
13300	571	0.906832176	13300	571	0.906832176
13301	572	0.906696839	13301	572	0.906696839
13302	573	0.906187104	13302	573	0.906187104
13303	574	0.905564162	13303	574	0.905564162
13304	575	0.905329661	13304	575	0.905329661
13305	576	0.905240585	13305	576	0.905240585
13306	577	0.904908513	13306	577	0.904908513
13307	578	0.904739186	13307	578	0.904739186
13308	579	0.904217511	13308	579	0.904217511
13309	580	0.904217511	13309	580	0.904217511

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13252	523	0.924206272	13252	523	0.924206272
13253	524	0.924080408	13253	524	0.924080408
13254	525	0.923670932	13254	525	0.923670932
13255	526	0.923247211	13255	526	0.923247211
13256	527	0.923206087	13256	527	0.923206087
13257	528	0.92257752	13257	528	0.92257752
13258	529	0.921946278	13258	529	0.921946278
13259	530	0.921831218	13259	530	0.921831218
13260	531	0.921591607	13260	531	0.921591607
13261	532	0.921591607	13261	532	0.921591607
13262	533	0.921338448	13262	533	0.921338448
13263	534	0.921148675	13263	534	0.921148675
13264	535	0.921001132	13264	535	0.921001132
13265	536	0.920786613	13265	536	0.920786613
13266	537	0.920786613	13266	537	0.920786613
13267	538	0.920786613	13267	538	0.920786613
13268	539	0.920485124	13268	539	0.920485124
13269	540	0.919606464	13269	540	0.919606464
13270	541	0.919551065	13270	541	0.919551065
13271	542	0.919551065	13271	542	0.919551065
13272	543	0.919066632	13272	543	0.919066632
13273	544	0.918380543	13273	544	0.918380543
13274	545	0.917603843	13274	545	0.917603843
13275	546	0.917182488	13275	546	0.917182488
13276	547	0.916845172	13276	547	0.916845172
13277	548	0.915654894	13277	548	0.915654894
13278	549	0.9156061	13278	549	0.9156061
13279	550	0.915034284	13279	550	0.915034284
13280	551	0.913904778	13280	551	0.913904778

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13223	494	0.933078786	13223	494	0.933078786
13224	495	0.932965924	13224	495	0.932965924
13225	496	0.932723369	13225	496	0.932723369
13226	497	0.931977405	13226	497	0.931977405
13227	498	0.93054645	13227	498	0.93054645
13228	499	0.93054645	13228	499	0.93054645
13229	500	0.93054645	13229	500	0.93054645
13230	501	0.93054645	13230	501	0.93054645
13231	502	0.93054645	13231	502	0.93054645
13232	503	0.93054645	13232	503	0.93054645
13233	504	0.93054645	13233	504	0.93054645
13234	505	0.93054645	13234	505	0.93054645
13235	506	0.93054645	13235	506	0.93054645
13236	507	0.928422756	13236	507	0.928422756
13237	508	0.927969027	13237	508	0.927969027
13238	509	0.927969027	13238	509	0.927969027
13239	510	0.927906354	13239	510	0.927906354
13240	511	0.927906354	13240	511	0.927906354
13241	512	0.927698607	13241	512	0.927698607
13242	513	0.92726874	13242	513	0.92726874
13243	514	0.927058122	13243	514	0.927058122
13244	515	0.926818577	13244	515	0.926818577
13245	516	0.926137331	13245	516	0.926137331
13246	517	0.926045949	13246	517	0.926045949
13247	518	0.925950698	13247	518	0.925950698
13248	519	0.925950698	13248	519	0.925950698
13249	520	0.925525648	13249	520	0.925525648
13250	521	0.92540681	13250	521	0.92540681
13251	522	0.924869317	13251	522	0.924869317

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13194	465	0.947851308	13194	465	0.947851308
13195	466	0.947729572	13195	466	0.947729572
13196	467	0.947145712	13196	467	0.947145712
13197	468	0.946340717	13197	468	0.946340717
13198	469	0.946340717	13198	469	0.946340717
13199	470	0.946340717	13199	470	0.946340717
13200	471	0.94512845	13200	471	0.94512845
13201	472	0.944694101	13201	472	0.944694101
13202	473	0.94404892	13202	473	0.94404892
13203	474	0.943258415	13203	474	0.943258415
13204	475	0.943063007	13204	475	0.943063007
13205	476	0.942128322	13205	476	0.942128322
13206	477	0.941925996	13206	477	0.941925996
13207	478	0.941925996	13207	478	0.941925996
13208	479	0.941182765	13208	479	0.941182765
13209	480	0.940846406	13209	480	0.940846406
13210	481	0.940663584	13210	481	0.940663584
13211	482	0.938979617	13211	482	0.938979617
13212	483	0.938371787	13212	483	0.938371787
13213	484	0.938233278	13213	484	0.938233278
13214	485	0.938013014	13214	485	0.938013014
13215	486	0.937845689	13215	486	0.937845689
13216	487	0.937845689	13216	487	0.937845689
13217	488	0.937385874	13217	488	0.937385874
13218	489	0.93698056	13218	489	0.93698056
13219	490	0.935625975	13219	490	0.935625975
13220	491	0.934512637	13220	491	0.934512637
13221	492	0.93412091	13221	492	0.93412091
13222	493	0.933202693	13222	493	0.933202693

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13165	436	0.95940319	13165	436	0.95940319
13166	437	0.959318192	13166	437	0.959318192
13167	438	0.959191631	13167	438	0.959191631
13168	439	0.957698696	13168	439	0.957698696
13169	440	0.957054	13169	440	0.957054
13170	441	0.956559882	13170	441	0.956559882
13171	442	0.956559882	13171	442	0.956559882
13172	443	0.956353713	13172	443	0.956353713
13173	444	0.956353713	13173	444	0.956353713
13174	445	0.95595103	13174	445	0.95595103
13175	446	0.955630793	13175	446	0.955630793
13176	447	0.954458607	13176	447	0.954458607
13177	448	0.954458607	13177	448	0.954458607
13178	449	0.953776291	13178	449	0.953776291
13179	450	0.953611754	13179	450	0.953611754
13180	451	0.952822845	13180	451	0.952822845
13181	452	0.952822845	13181	452	0.952822845
13182	453	0.952822845	13182	453	0.952822845
13183	454	0.951231049	13183	454	0.951231049
13184	455	0.949851605	13184	455	0.949851605
13185	456	0.949851605	13185	456	0.949851605
13186	457	0.949851605	13186	457	0.949851605
13187	458	0.949431794	13187	458	0.949431794
13188	459	0.949386273	13188	459	0.949386273
13189	460	0.949029855	13189	460	0.949029855
13190	461	0.949029855	13190	461	0.949029855
13191	462	0.948519821	13191	462	0.948519821
13192	463	0.948421174	13192	463	0.948421174
13193	464	0.948037182	13193	464	0.948037182

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13426	697	0.872032828	13427	698	0.871840789
13428	699	0.871679791	13429	700	0.871424998
13430	701	0.871081818	13431	702	0.87096076
13432	703	0.870707748	13433	704	0.869848609
13434	705	0.869848609	13435	706	0.869455405
13436	707	0.869351989	13437	708	0.869108755
13438	709	0.868800854	13439	710	0.868054002
13440	711	0.86775562	13441	712	0.867494704
13442	713	0.86722182	13443	714	0.867060192
13444	715	0.866712896	13445	716	0.866636697
13446	717	0.86642895	13447	718	0.86642895
13448	719	0.865992473	13449	720	0.865605643
13450	721	0.864950499	13451	722	0.864794419
13452	723	0.864794419	13453	724	0.864670671
13454	725	0.864670671			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13397	668	0.880467585	13398	669	0.879393927
13399	670	0.879393927	13400	671	0.879393927
13401	672	0.879393927	13402	673	0.879393927
13403	674	0.878218569	13404	675	0.87815838
13405	676	0.877840099	13406	677	0.877387945
13407	678	0.877300938	13408	679	0.877300938
13409	680	0.877206041	13410	681	0.876388417
13411	682	0.876188787	13412	683	0.876040285
13413	684	0.875834117	13414	685	0.875697782
13415	686	0.875498883	13416	687	0.875277361
13417	688	0.874662268	13418	689	0.874497658
13419	690	0.874065094	13420	691	0.873641598
13421	692	0.873641598	13422	693	0.873251046
13423	694	0.873144978	13424	695	0.87286306
13425	696	0.872032828			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13368	639	0.886342787	13369	640	0.886342787
13370	641	0.885964317	13371	642	0.885624945
13372	643	0.88531891	13373	644	0.885041529
13374	645	0.884558013	13375	646	0.88424643
13376	647	0.884014125	13377	648	0.884014125
13378	649	0.883970308	13379	650	0.883803046
13380	651	0.883803046	13381	652	0.883433905
13382	653	0.883324221	13383	654	0.8831218
13384	655	0.882622897	13385	656	0.882622897
13386	657	0.882622897	13387	658	0.882622897
13388	659	0.882420382	13389	660	0.882358406
13390	661	0.882358406	13391	662	0.881813401
13392	663	0.881697882	13393	664	0.881697882
13394	665	0.881497052	13395	666	0.881328427
13396	667	0.880632999			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13339	610	0.895784344	13340	611	0.895116712
13341	612	0.89502575	13342	613	0.894741619
13343	614	0.894501346	13344	615	0.894501346
13345	616	0.894501346	13346	617	0.893701392
13347	618	0.893634366	13348	619	0.893119952
13349	620	0.892757889	13350	621	0.892583928
13351	622	0.8924564	13352	623	0.892168215
13353	624	0.891293151	13354	625	0.890952088
13355	626	0.89089909	13356	627	0.890837079
13357	628	0.890429227	13358	629	0.889153765
13359	630	0.889153765	13360	631	0.889153765
13361	632	0.888733954	13362	633	0.887994099
13363	634	0.887994099	13364	635	0.887711723
13365	636	0.887711723	13366	637	0.887511818
13367	638	0.887321296			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13310	581	0.904217511	13311	582	0.903272365
13312	583	0.903002701	13313	584	0.902517726
13314	585	0.901752257	13315	586	0.901670322
13316	587	0.901388221	13317	588	0.900583226
13318	589	0.900583226	13319	590	0.900304922
13320	591	0.899597313	13321	592	0.899137986
13322	593	0.899137986	13323	594	0.898361766
13324	595	0.898361766	13325	596	0.898361766
13326	597	0.897877333	13327	598	0.897753936
13328	599	0.897417031	13329	600	0.897046828
13330	601	0.896979102	13331	602	0.896863337
13332	603	0.896768023	13333	604	0.896620329
13334	605	0.896427267	13335	606	0.895784344
13336	607	0.895784344	13337	608	0.895784344
13338	609	0.895784344			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13571	842	0.833636437	13571	842	0.833636437
13572	843	0.833636437	13572	843	0.833636437
13573	844	0.833636437	13573	844	0.833636437
13574	845	0.831012293	13574	845	0.831012293
13575	846	0.830930543	13575	846	0.830930543
13576	847	0.83054536	13576	847	0.83054536
13577	848	0.830243494	13577	848	0.830243494
13578	849	0.830175905	13578	849	0.830175905
13579	850	0.830032313	13579	850	0.830032313
13580	851	0.829876288	13580	851	0.829876288
13581	852	0.829519871	13581	852	0.829519871
13582	853	0.829419952	13582	853	0.829419952
13583	854	0.829419952	13583	854	0.829419952
13584	855	0.829204822	13584	855	0.829204822
13585	856	0.829088809	13585	856	0.829088809
13586	857	0.828966559	13586	857	0.828966559
13587	858	0.828966559	13587	858	0.828966559
13588	859	0.828556911	13588	859	0.828556911
13589	860	0.82840391	13589	860	0.82840391
13590	861	0.82840391	13590	861	0.82840391
13591	862	0.828068483	13591	862	0.828068483
13592	863	0.828068483	13592	863	0.828068483
13593	864	0.828068483	13593	864	0.828068483
13594	865	0.828068483	13594	865	0.828068483
13595	866	0.827687104	13595	866	0.827687104
13596	867	0.827476128	13596	867	0.827476128
13597	868	0.827326963	13597	868	0.827326963
13598	869	0.827326963	13598	869	0.827326963
13599	870	0.827005858	13599	870	0.827005858

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13542	813	0.840736777	13542	813	0.840736777
13543	814	0.840641338	13543	814	0.840641338
13544	815	0.840548431	13544	815	0.840548431
13545	816	0.840369819	13545	816	0.840369819
13546	817	0.840369819	13546	817	0.840369819
13547	818	0.83946598	13547	818	0.83946598
13548	819	0.83946598	13548	819	0.83946598
13549	820	0.83946598	13549	820	0.83946598
13550	821	0.83848894	13550	821	0.83848894
13551	822	0.83848894	13551	822	0.83848894
13552	823	0.83848894	13552	823	0.83848894
13553	824	0.838232188	13553	824	0.838232188
13554	825	0.838001242	13554	825	0.838001242
13555	826	0.83789426	13555	826	0.83789426
13556	827	0.837792397	13556	827	0.837792397
13557	828	0.837792397	13557	828	0.837792397
13558	829	0.837792397	13558	829	0.837792397
13559	830	0.837602624	13559	830	0.837602624
13560	831	0.837514092	13560	831	0.837514092
13561	832	0.837514092	13561	832	0.837514092
13562	833	0.837124765	13562	833	0.837124765
13563	834	0.836749672	13563	834	0.836749672
13564	835	0.835709445	13564	835	0.835709445
13565	836	0.83552879	13565	836	0.83552879
13566	837	0.833636437	13566	837	0.833636437
13567	838	0.833636437	13567	838	0.833636437
13568	839	0.833636437	13568	839	0.833636437
13569	840	0.833636437	13569	840	0.833636437
13570	841	0.833636437	13570	841	0.833636437

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13513	784	0.848054175	13513	784	0.848054175
13514	785	0.847955134	13514	785	0.847955134
13515	786	0.847955134	13515	786	0.847955134
13516	787	0.847955134	13516	787	0.847955134
13517	788	0.847876876	13517	788	0.847876876
13518	789	0.847209244	13518	789	0.847209244
13519	790	0.846864703	13519	790	0.846864703
13520	791	0.846864703	13520	791	0.846864703
13521	792	0.846864703	13521	792	0.846864703
13522	793	0.846491757	13522	793	0.846491757
13523	794	0.846457869	13523	794	0.846457869
13524	795	0.846225564	13524	795	0.846225564
13525	796	0.845970172	13525	796	0.845970172
13526	797	0.845928611	13526	797	0.845928611
13527	798	0.844360302	13527	798	0.844360302
13528	799	0.844186619	13528	799	0.844186619
13529	800	0.844186619	13529	800	0.844186619
13530	801	0.84397727	13530	801	0.84397727
13531	802	0.843181755	13531	802	0.843181755
13532	803	0.842716095	13532	803	0.842716095
13533	804	0.842069604	13533	804	0.842069604
13534	805	0.841988511	13534	805	0.841988511
13535	806	0.841605366	13535	806	0.841605366
13536	807	0.841605366	13536	807	0.841605366
13537	808	0.841605366	13537	808	0.841605366
13538	809	0.841461774	13538	809	0.841461774
13539	810	0.841368887	13539	810	0.841368887
13540	811	0.841146039	13540	811	0.841146039
13541	812	0.841146039	13541	812	0.841146039

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13484	755	0.855912831	13484	755	0.855912831
13485	756	0.855912831	13485	756	0.855912831
13486	757	0.855912831	13486	757	0.855912831
13487	758	0.855125353	13487	758	0.855125353
13488	759	0.855067078	13488	759	0.855067078
13489	760	0.854456281	13489	760	0.854456281
13490	761	0.854012196	13490	761	0.854012196
13491	762	0.853958014	13491	762	0.853958014
13492	763	0.85370642	13492	763	0.85370642
13493	764	0.853380495	13493	764	0.853380495
13494	765	0.853380495	13494	765	0.853380495
13495	766	0.853380495	13495	766	0.853380495
13496	767	0.853380495	13496	767	0.853380495
13497	768	0.853064989	13497	768	0.853064989
13498	769	0.852941592	13498	769	0.852941592
13499	770	0.852463294	13499	770	0.852463294
13500	771	0.852463294	13500	771	0.852463294
13501	772	0.852119842	13501	772	0.852119842
13502	773	0.851829442	13502	773	0.851829442
13503	774	0.851776662	13503	774	0.851776662
13504	775	0.851365204	13504	775	0.851365204
13505	776	0.851365204	13505	776	0.851365204
13506	777	0.851365204	13506	777	0.851365204
13507	778	0.851365204	13507	778	0.851365204
13508	779	0.850971999	13508	779	0.850971999
13509	780	0.850669776	13509	780	0.850669776
13510	781	0.85059586	13510	781	0.85059586
13511	782	0.850388163	13511	782	0.850388163
13512	783	0.848087494	13512	783	0.848087494

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13455	726	0.864486881	13455	726	0.864486881
13456	727	0.864486881	13456	727	0.864486881
13457	728	0.86359966	13457	728	0.86359966
13458	729	0.86359966	13458	729	0.86359966
13459	730	0.862824826	13459	730	0.862824826
13460	731	0.862688234	13460	731	0.862688234
13461	732	0.862600133	13461	732	0.862600133
13462	733	0.862600133	13462	733	0.862600133
13463	734	0.862051372	13463	734	0.862051372
13464	735	0.861465531	13464	735	0.861465531
13465	736	0.861465531	13465	736	0.861465531
13466	737	0.861219958	13466	737	0.861219958
13467	738	0.861219958	13467	738	0.861219958
13468	739	0.861219958	13468	739	0.861219958
13469	740	0.860788683	13469	740	0.860788683
13470	741	0.858283872	13470	741	0.858283872
13471	742	0.858283872	13471	742	0.858283872
13472	743	0.857770117	13472	743	0.857770117
13473	744	0.857770117	13473	744	0.857770117
13474	745	0.857674678	13474	745	0.857674678
13475	746	0.857674678	13475	746	0.857674678
13476	747	0.857439351	13476	747	0.857439351
13477	748	0.856907779	13477	748	0.856907779
13478	749	0.856760236	13478	749	0.856760236
13479	750	0.85649932	13479	750	0.85649932
13480	751	0.855912831	13480	751	0.855912831
13481	752	0.855912831	13481	752	0.855912831
13482	753	0.855912831	13482	753	0.855912831
13483	754	0.855912831	13483	754	0.855912831



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13716	987	0.797920885	13716	987	0.797920885
13717	988	0.797920885	13717	988	0.797920885
13718	989	0.797661217	13718	989	0.797661217
13719	990	0.797612108	13719	990	0.797612108
13720	991	0.797612108	13720	991	0.797612108
13721	992	0.797424264	13721	992	0.797424264
13722	993	0.797207171	13722	993	0.797207171
13723	994	0.797085435	13723	994	0.797085435
13724	995	0.797007541	13724	995	0.797007541
13725	996	0.797007541	13725	996	0.797007541
13726	997	0.796652871	13726	997	0.796652871
13727	998	0.796209939	13727	998	0.796209939
13728	999	0.796131821	13728	999	0.796131821
13729	1000	0.79608143	13729	1000	0.79608143
13730	1001	0.79608143	13730	1001	0.79608143
13731	1002	0.795690551	13731	1002	0.795690551
13732	1003	0.795641118	13732	1003	0.795641118
13733	1004	0.795291445	13733	1004	0.795291445
13734	1005	0.79514228	13734	1005	0.79514228
13735	1006	0.795007034	13735	1006	0.795007034
13736	1007	0.794883848	13736	1007	0.794883848
13737	1008	0.794718371	13737	1008	0.794718371
13738	1009	0.793963732	13738	1009	0.793963732
13739	1010	0.79389193	13739	1010	0.79389193
13740	1011	0.793607315	13740	1011	0.793607315
13741	1012	0.793257275	13741	1012	0.793257275
13742	1013	0.793162894	13742	1013	0.793162894
13743	1014	0.792243752	13743	1014	0.792243752
13744	1015	0.792243752	13744	1015	0.792243752

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13687	958	0.804429166	13687	958	0.804429166
13688	959	0.80401397	13688	959	0.80401397
13689	960	0.803524762	13689	960	0.803524762
13690	961	0.803441651	13690	961	0.803441651
13691	962	0.803147115	13691	962	0.803147115
13692	963	0.802602203	13692	963	0.802602203
13693	964	0.802227973	13693	964	0.802227973
13694	965	0.802227973	13694	965	0.802227973
13695	966	0.802227973	13695	966	0.802227973
13696	967	0.802227973	13696	967	0.802227973
13697	968	0.801747292	13697	968	0.801747292
13698	969	0.801634268	13698	969	0.801634268
13699	970	0.801451753	13699	970	0.801451753
13700	971	0.801451753	13700	971	0.801451753
13701	972	0.801251664	13701	972	0.801251664
13702	973	0.801198594	13702	973	0.801198594
13703	974	0.800998024	13703	974	0.800998024
13704	975	0.800700379	13704	975	0.800700379
13705	976	0.800636177	13705	976	0.800636177
13706	977	0.799903465	13706	977	0.799903465
13707	978	0.799829874	13707	978	0.799829874
13708	979	0.799617349	13708	979	0.799617349
13709	980	0.799617349	13709	980	0.799617349
13710	981	0.799388593	13710	981	0.799388593
13711	982	0.799104787	13711	982	0.799104787
13712	983	0.798360676	13712	983	0.798360676
13713	984	0.797920885	13713	984	0.797920885
13714	985	0.797920885	13714	985	0.797920885
13715	986	0.797920885	13715	986	0.797920885

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13658	929	0.811232327	13658	929	0.811232327
13659	930	0.811232327	13659	930	0.811232327
13660	931	0.810773554	13660	931	0.810773554
13661	932	0.810155341	13661	932	0.810155341
13662	933	0.809869715	13662	933	0.809869715
13663	934	0.809757999	13663	934	0.809757999
13664	935	0.809502757	13664	935	0.809502757
13665	936	0.809502757	13665	936	0.809502757
13666	937	0.809013962	13666	937	0.809013962
13667	938	0.808930564	13667	938	0.808930564
13668	939	0.808812853	13668	939	0.808812853
13669	940	0.808552094	13669	940	0.808552094
13670	941	0.808504952	13670	941	0.808504952
13671	942	0.808330572	13671	942	0.808330572
13672	943	0.80814005	13672	943	0.80814005
13673	944	0.808082332	13673	944	0.808082332
13674	945	0.807700703	13674	945	0.807700703
13675	946	0.807421054	13675	946	0.807421054
13676	947	0.807161541	13676	947	0.807161541
13677	948	0.807038668	13677	948	0.807038668
13678	949	0.806694809	13678	949	0.806694809
13679	950	0.806341939	13679	950	0.806341939
13680	951	0.806239414	13680	951	0.806239414
13681	952	0.805607713	13681	952	0.805607713
13682	953	0.805607713	13682	953	0.805607713
13683	954	0.805607713	13683	954	0.805607713
13684	955	0.805607713	13684	955	0.805607713
13685	956	0.805607713	13685	956	0.805607713
13686	957	0.804946183	13686	957	0.804946183

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13629	900	0.817067335	13629	900	0.817067335
13630	901	0.816262341	13630	901	0.816262341
13631	902	0.816112092	13631	902	0.816112092
13632	903	0.815724847	13632	903	0.815724847
13633	904	0.815411617	13633	904	0.815411617
13634	905	0.815411617	13634	905	0.815411617
13635	906	0.815250856	13635	906	0.815250856
13636	907	0.815250856	13636	907	0.815250856
13637	908	0.815153031	13637	908	0.815153031
13638	909	0.815039948	13638	909	0.815039948
13639	910	0.814976524	13639	910	0.814976524
13640	911	0.814751093	13640	911	0.814751093
13641	912	0.814751093	13641	912	0.814751093
13642	913	0.814562556	13642	913	0.814562556
13643	914	0.814520146	13643	914	0.814520146
13644	915	0.81445312	13644	915	0.81445312
13645	916	0.814445312	13645	916	0.814445312
13646	917	0.814040881	13646	917	0.814040881
13647	918	0.813576643	13647	918	0.813576643
13648	919	0.813433051	13648	919	0.813433051
13649	920	0.813160851	13649	920	0.813160851
13650	921	0.812951838	13650	921	0.812951838
13651	922	0.812447138	13651	922	0.812447138
13652	923	0.812447138	13652	923	0.812447138
13653	924	0.812447138	13653	924	0.812447138
13654	925	0.811780531	13654	925	0.811780531
13655	926	0.811681861	13655	926	0.811681861
13656	927	0.811360042	13656	927	0.811360042
13657	928	0.811360042	13657	928	0.811360042

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13600	871	0.826148415	13600	871	0.826148415
13601	872	0.825811099	13601	872	0.825811099
13602	873	0.825568815	13602	873	0.825568815
13603	874	0.825036265	13603	874	0.825036265
13604	875	0.825036265	13604	875	0.825036265
13605	876	0.824862512	13605	876	0.824862512
13606	877	0.823728148	13606	877	0.823728148
13607	878	0.823233676	13607	878	0.823233676
13608	879	0.822912571	13608	879	0.822912571
13609	880	0.822641052	13609	880	0.822641052
13610	881	0.82245227	13610	881	0.82245227
13611	882	0.822206975	13611	882	0.822206975
13612	883	0.822206975	13612	883	0.822206975
13613	884	0.82140198	13613	884	0.82140198
13614	885	0.820955405	13614	885	0.820955405
13615	886	0.820955405	13615	886	0.820955405
13616	887	0.820474991	13616	887	0.820474991
13617	888	0.819774798	13617	888	0.819774798
13618	889	0.819774798	13618	889	0.819774798
13619	890	0.819721922	13619	890	0.819721922
13620	891	0.819395998	13620	891	0.819395998
13621	892	0.818857505	13621	892	0.818857505
13622	893	0.818787316	13622	893	0.818787316
13623	894	0.818787316	13623	894	0.818787316
13624	895	0.818319679	13624	895	0.818319679
13625	896	0.818124271	13625	896	0.818124271
13626	897	0.817648331	13626	897	0.817648331
13627	898	0.817506936	13627	898	0.817506936
13628	899	0.817246021	13628	899	0.817246021

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13861	1132	0.767117734	13862	1133	0.767044318
13863	1134	0.766689647	13864	1135	0.766689647
13865	1136	0.766689647	13866	1137	0.766689647
13867	1138	0.766401175	13868	1139	0.765563072
13869	1140	0.765563072	13870	1141	0.765563072
13871	1142	0.765450575	13872	1143	0.765313118
13873	1144	0.764920624	13874	1145	0.764920624
13875	1146	0.764920624	13876	1147	0.764439412
13877	1148	0.764439412	13878	1149	0.764215028
13879	1150	0.764085175	13880	1151	0.76359857
13881	1152	0.76359857	13882	1153	0.763055363
13883	1154	0.762954376	13884	1155	0.762573081
13885	1156	0.761754429	13886	1157	0.761754429
13887	1158	0.761754429	13888	1159	0.760795369
13889	1160	0.760529338			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13832	1103	0.773760346	13833	1104	0.773548133
13834	1105	0.772938596	13835	1106	0.772938596
13836	1107	0.772938596	13837	1108	0.772428562
13838	1109	0.771681593	13839	1110	0.771681593
13840	1111	0.771681593	13841	1112	0.77148853
13842	1113	0.771225401	13843	1114	0.770845607
13844	1115	0.770641952	13845	1116	0.770641952
13846	1117	0.769967357	13847	1118	0.76987555
13848	1119	0.769802883	13849	1120	0.769695157
13850	1121	0.769695157	13851	1122	0.769178448
13852	1123	0.769178448	13853	1124	0.769178448
13854	1125	0.768762656	13855	1126	0.768602842
13856	1127	0.768602842	13857	1128	0.768602842
13858	1129	0.768465905	13859	1130	0.767819152
13860	1131	0.767819152			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13803	1074	0.77858887	13804	1075	0.778528049
13805	1076	0.778455467	13806	1077	0.778258105
13807	1078	0.778258105	13808	1079	0.777936287
13809	1080	0.777520495	13810	1081	0.777318074
13811	1082	0.777318074	13812	1083	0.777318074
13813	1084	0.776962532	13814	1085	0.776449484
13815	1086	0.776283628	13816	1087	0.776097116
13817	1088	0.776097116	13818	1089	0.775885832
13819	1090	0.77564449	13820	1091	0.77564449
13821	1092	0.77564449	13822	1093	0.775439682
13823	1094	0.775210412	13824	1095	0.775210412
13825	1096	0.775041722	13826	1097	0.775041722
13827	1098	0.774793766	13828	1099	0.774658577
13829	1100	0.774050747	13830	1101	0.773933544
13831	1102	0.773933544			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13774	1045	0.784787869	13775	1046	0.784010434
13776	1047	0.78386482	13777	1048	0.783662462
13778	1049	0.783662462	13779	1050	0.783418887
13780	1051	0.783226933	13781	1052	0.783100372
13782	1053	0.782816835	13783	1054	0.782483914
13784	1055	0.782483914	13785	1056	0.782483914
13786	1057	0.782208259	13787	1058	0.781840991
13788	1059	0.781412904	13789	1060	0.780784129
13790	1061	0.780557993	13791	1062	0.780077845
13792	1063	0.780009295	13793	1064	0.779902313
13794	1065	0.779278774	13795	1066	0.779278774
13796	1067	0.779278774	13797	1068	0.779278774
13798	1069	0.779278774	13799	1070	0.779278774
13800	1071	0.779278774	13801	1072	0.779278774
13802	1073	0.77858887			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13745	1016	0.792243752	13746	1017	0.792243752
13747	1018	0.792243752	13748	1019	0.791281859
13749	1020	0.791232588	13750	1021	0.790972025
13751	1022	0.790530556	13752	1023	0.790170743
13753	1024	0.789619608	13754	1025	0.789619608
13755	1026	0.789432774	13756	1027	0.789217297
13757	1028	0.788966042	13758	1029	0.788669291
13759	1030	0.788669291	13760	1031	0.788499981
13761	1032	0.788439688	13762	1033	0.788178563
13763	1034	0.788178563	13764	1035	0.788107582
13765	1036	0.787455451	13766	1037	0.787336417
13767	1038	0.785712884	13768	1039	0.785489424
13769	1040	0.785489424	13770	1041	0.785124011
13771	1042	0.784993258	13772	1043	0.784993258
13773	1044	0.78483782			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14006	1277	0.73755444	14007	1278	0.737421851
14008	1279	0.737421851	14009	1280	0.736726424
14010	1281	0.736726424	14011	1282	0.736726424
14012	1283	0.736726424	14013	1284	0.736281222
14014	1285	0.736230371	14015	1286	0.736083501
14016	1287	0.735971785	14017	1288	0.735705755
14018	1289	0.735392185	14019	1290	0.735281183
14020	1291	0.734933051	14021	1292	0.734933051
14022	1293	0.734800503	14023	1294	0.734646797
14024	1295	0.734251805	14025	1296	0.734251805
14026	1297	0.733992137	14027	1298	0.733933524
14028	1299	0.733452244	14029	1300	0.733265892
14030	1301	0.733265892	14031	1302	0.732966275
14032	1303	0.732735941	14033	1304	0.732553349
14034	1305	0.732553349			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13977	1248	0.742555967	13978	1249	0.742045933
13979	1250	0.741718369	13980	1251	0.741490214
13981	1252	0.741091229	13982	1253	0.740882384
13983	1254	0.74081131	13984	1255	0.740753913
13985	1256	0.740214752	13986	1257	0.740214752
13987	1258	0.740214752	13988	1259	0.740214752
13989	1260	0.740214752	13990	1261	0.739802903
13991	1262	0.739731934	13992	1263	0.739731934
13993	1264	0.739731934	13994	1265	0.739631414
13995	1266	0.739631414	13996	1267	0.739631414
13997	1268	0.739215224	13998	1269	0.739215224
13999	1270	0.739215224	14000	1271	0.739080329
14001	1272	0.738660924	14002	1273	0.738217992
14003	1274	0.738064775	14004	1275	0.738064775
14005	1276	0.737749497			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13948	1219	0.746768362	13949	1220	0.746768362
13950	1221	0.746486261	13951	1222	0.746182665
13952	1223	0.746022023	13953	1224	0.746022023
13954	1225	0.745855019	13955	1226	0.745855019
13956	1227	0.745769012	13957	1228	0.745500348
13958	1229	0.745500348	13959	1230	0.745500348
13960	1231	0.745214534	13961	1232	0.745115164
13962	1233	0.745115164	13963	1234	0.745115164
13964	1235	0.744782308	13965	1236	0.74447097
13966	1237	0.744236026	13967	1238	0.744236026
13968	1239	0.744236026	13969	1240	0.743939072
13970	1241	0.743806456	13971	1242	0.743731325
13972	1243	0.743459806	13973	1244	0.742934768
13974	1245	0.742934768	13975	1246	0.742873318
13976	1247	0.74255967			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13919	1190	0.754455191	13920	1191	0.754455191
13921	1192	0.754455191	13922	1193	0.754455191
13923	1194	0.752554555	13924	1195	0.75239203
13925	1196	0.75219911	13926	1197	0.752126528
13927	1198	0.752049121	13928	1199	0.75196639
13929	1200	0.751877768	13930	1201	0.751569503
13931	1202	0.751319477	13932	1203	0.751319477
13933	1204	0.751177481	13934	1205	0.751022015
13935	1206	0.750662202	13936	1207	0.750662202
13937	1208	0.750560147	13938	1209	0.749315551
13939	1210	0.749315551	13940	1211	0.749026439
13941	1212	0.748464827	13942	1213	0.748464827
13943	1214	0.748115013	13944	1215	0.747276606
13945	1216	0.747276606	13946	1217	0.747094091
13947	1218	0.746902053			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
13890	1161	0.759952663	13891	1162	0.759534716
13892	1163	0.759475992	13893	1164	0.759307694
13894	1165	0.759002818	13895	1166	0.75886431
13896	1167	0.758733989	13897	1168	0.758183063
13898	1169	0.758089475	13899	1170	0.757481645
13900	1171	0.757144329	13901	1172	0.757144329
13902	1173	0.757095287	13903	1174	0.757048001
13904	1175	0.757048001	13905	1176	0.756874665
13906	1177	0.756723052	13907	1178	0.756470482
13908	1179	0.756364181	13909	1180	0.755905257
13910	1181	0.754455191	13911	1182	0.754455191
13912	1183	0.754455191	13913	1184	0.754455191
13914	1185	0.754455191	13915	1186	0.754455191
13916	1187	0.754455191	13917	1188	0.754455191
13918	1189	0.754455191			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14151	1422	0.711420559	14152	1423	0.7111117174
14153	1424	0.710989497	14154	1425	0.710874619
14155	1426	0.710676266	14156	1427	0.710511041
14157	1428	0.710438362	14158	1429	0.710251528
14159	1430	0.710251528	14160	1431	0.709642846
14161	1432	0.7086977	14162	1433	0.7086977
14163	1434	0.7086977	14164	1435	0.7086977
14165	1436	0.708225897	14166	1437	0.707829979
14167	1438	0.707556321	14168	1439	0.707556321
14169	1440	0.707202709	14170	1441	0.707202709
14171	1442	0.707030541	14172	1443	0.707030541
14173	1444	0.706813556	14174	1445	0.706813556
14175	1446	0.706728107	14176	1447	0.706531638
14177	1448	0.706531638	14178	1449	0.70629163
14179	1450	0.706150511			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14122	1393	0.716365141	14123	1394	0.716365141
14124	1395	0.716250838	14125	1396	0.715996939
14126	1397	0.715996939	14127	1398	0.715996939
14128	1399	0.715780495	14129	1400	0.715702602
14130	1401	0.715702602	14131	1402	0.715201892
14132	1403	0.714660647	14133	1404	0.714337968
14134	1405	0.714160596	14135	1406	0.713971072
14136	1407	0.71383734	14137	1408	0.71383734
14138	1409	0.713550203	14139	1410	0.713550203
14140	1411	0.713062506	14141	1412	0.713062506
14142	1413	0.713062506	14143	1414	0.712716316
14144	1415	0.712490689	14145	1416	0.712214274
14146	1417	0.712214274	14147	1418	0.712051342
14148	1419	0.712051342	14149	1420	0.711810936
14150	1421	0.711642081			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14093	1364	0.72084659	14094	1365	0.720596923
14095	1366	0.720550527	14096	1367	0.719693084
14097	1368	0.719693084	14098	1369	0.719693084
14099	1370	0.719693084	14100	1371	0.719693084
14101	1372	0.719693084	14102	1373	0.719693084
14103	1374	0.719693084	14104	1375	0.719693084
14105	1376	0.718791123	14106	1377	0.718739638
14107	1378	0.718410087	14108	1379	0.718243018
14109	1380	0.717938357	14110	1381	0.717565924
14111	1382	0.717471624	14112	1383	0.717471624
14113	1384	0.717313383	14114	1385	0.716992799
14115	1386	0.716839003	14116	1387	0.71666663
14117	1388	0.71666663	14118	1389	0.71666663
14119	1390	0.71666663	14120	1391	0.716472097
14121	1392	0.716365141			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14064	1335	0.726426467	14065	1336	0.726002558
14066	1337	0.725924102	14067	1338	0.725924102
14068	1339	0.725810009	14069	1340	0.725810009
14070	1341	0.725491495	14071	1342	0.725296962
14072	1343	0.725296962	14073	1344	0.725115059
14074	1345	0.725000211	14075	1346	0.724863318
14076	1347	0.72478452	14077	1348	0.724491967
14078	1349	0.724491967	14079	1350	0.724491967
14080	1351	0.723889199	14081	1352	0.723889199
14082	1353	0.723720574	14083	1354	0.723420957
14084	1355	0.723162832	14085	1356	0.723046726
14086	1357	0.722740778	14087	1358	0.722566046
14088	1359	0.722485985	14089	1360	0.721366668
14090	1361	0.721031435	14091	1362	0.720932157
14092	1363	0.72084659			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14035	1306	0.732553349	14036	1307	0.73240505
14037	1308	0.73240505	14038	1309	0.732282212
14039	1310	0.732178796	14040	1311	0.731712064
14041	1312	0.731712064	14042	1313	0.730974095
14043	1314	0.730974095	14044	1315	0.730974095
14045	1316	0.730974095	14046	1317	0.730186616
14047	1318	0.730095845	14048	1319	0.730095845
14049	1320	0.730042132	14050	1321	0.729981421
14051	1322	0.72934447	14052	1323	0.728901086
14053	1324	0.728901086	14054	1325	0.728574672
14055	1326	0.728441758	14056	1327	0.728369622
14057	1328	0.727471701	14058	1329	0.727302945
14059	1330	0.727302945	14060	1331	0.727016942
14061	1332	0.726426467	14062	1333	0.726426467
14063	1334	0.726426467			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14296	1567	0.687508401	14297	1568	0.687508401
14298	1569	0.686190359	14299	1570	0.685374272
14300	1571	0.685216604	14301	1572	0.685216604
14302	1573	0.685128699	14303	1574	0.685128699
14304	1575	0.685033782	14305	1576	0.684930978
14306	1577	0.684930978	14307	1578	0.684697424
14308	1579	0.68456402	14309	1580	0.68456402
14310	1581	0.68456402	14311	1582	0.684255244
14312	1583	0.684255244	14313	1584	0.683874116
14314	1585	0.68352402	14315	1586	0.683099282
14316	1587	0.683099282	14317	1588	0.683099282
14318	1589	0.682761966	14319	1590	0.682637758
14320	1591	0.682368761	14321	1592	0.682368761
14322	1593	0.681639467	14323	1594	0.681137219
14324	1595	0.681026274			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14267	1538	0.690621637	14268	1539	0.690337691
14269	1540	0.690337691	14270	1541	0.690101212
14271	1542	0.690101212	14272	1543	0.689901214
14273	1544	0.689901214	14274	1545	0.689812356
14275	1546	0.689729861	14276	1547	0.689729861
14277	1548	0.68923522	14278	1549	0.687508401
14279	1550	0.687508401	14280	1551	0.687508401
14281	1552	0.687508401	14282	1553	0.687508401
14283	1554	0.687508401	14284	1555	0.687508401
14285	1556	0.687508401	14286	1557	0.687508401
14287	1558	0.687508401	14288	1559	0.687508401
14289	1560	0.687508401	14290	1561	0.687508401
14291	1562	0.687508401	14292	1563	0.687508401
14293	1564	0.687508401	14294	1565	0.687508401
14295	1566	0.687508401			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14238	1509	0.695860475	14239	1510	0.695860475
14240	1511	0.69567719	14241	1512	0.695333739
14242	1513	0.695333739	14243	1514	0.695018003
14244	1515	0.694869501	14245	1516	0.694457261
14246	1517	0.694457261	14247	1518	0.694457261
14248	1519	0.694267985	14249	1520	0.694088746
14250	1521	0.693974443	14251	1522	0.693364146
14252	1523	0.693185534	14253	1524	0.693185534
14254	1525	0.693017496	14255	1526	0.693017496
14256	1527	0.692937153	14257	1528	0.692307284
14258	1529	0.691962743	14259	1530	0.691962743
14260	1531	0.69157359	14261	1532	0.691173355
14262	1533	0.690968933	14263	1534	0.690968933
14264	1535	0.690968933	14265	1536	0.690786111
14266	1537	0.690701757			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14209	1480	0.701842854	14210	1481	0.701519116
14211	1482	0.701209679	14212	1483	0.701209679
14213	1484	0.700538213	14214	1485	0.700387929
14215	1486	0.700097528	14216	1487	0.700097528
14217	1488	0.699742858	14218	1489	0.698937863
14219	1490	0.698937863	14220	1491	0.698597373
14221	1492	0.698232266	14222	1493	0.697973835
14223	1494	0.697973835	14224	1495	0.697973835
14225	1496	0.697973835	14226	1497	0.697550339
14227	1498	0.697550339	14228	1499	0.69741669
14229	1500	0.69741669	14230	1501	0.697159787
14231	1502	0.697159787	14232	1503	0.697159787
14233	1504	0.697159787	14234	1505	0.696798477
14235	1506	0.696463244	14236	1507	0.696151363
14237	1508	0.696052175			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14180	1451	0.706150511	14181	1452	0.705991807
14182	1453	0.705606623	14183	1454	0.705606623
14184	1455	0.705606623	14185	1456	0.70531796
14186	1457	0.70531796	14187	1458	0.705237168
14188	1459	0.705093576	14189	1460	0.705093576
14190	1461	0.704767407	14191	1462	0.704767407
14192	1463	0.70454174	14193	1464	0.704376326
14194	1465	0.704150072	14195	1466	0.704002579
14196	1467	0.704002579	14197	1468	0.703898817
14198	1469	0.703898817	14199	1470	0.703302668
14200	1471	0.703302668	14201	1472	0.703302668
14202	1473	0.702815518	14203	1474	0.702748368
14204	1475	0.702748368	14205	1476	0.702659745
14206	1477	0.702357522	14207	1478	0.702231658
14208	1479	0.701842854			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14441	1712	0.660185274	14441	1712	0.660185274
14442	1713	0.660185274	14442	1713	0.660185274
14443	1714	0.659618186	14443	1714	0.659618186
14444	1715	0.659618186	14444	1715	0.659618186
14445	1716	0.659618186	14445	1716	0.659618186
14446	1717	0.659479678	14446	1717	0.659479678
14447	1718	0.659479678	14447	1718	0.659479678
14448	1719	0.659251642	14448	1719	0.659251642
14449	1720	0.659071698	14449	1720	0.659071698
14450	1721	0.658926083	14450	1721	0.658926083
14451	1722	0.65880583	14451	1722	0.65880583
14452	1723	0.65880583	14452	1723	0.65880583
14453	1724	0.657545178	14453	1724	0.657545178
14454	1725	0.657545178	14454	1725	0.657545178
14455	1726	0.657545178	14455	1726	0.657545178
14456	1727	0.657545178	14456	1727	0.657545178
14457	1728	0.657545178	14457	1728	0.657545178
14458	1729	0.657545178	14458	1729	0.657545178
14459	1730	0.657545178	14459	1730	0.657545178
14460	1731	0.657545178	14460	1731	0.657545178
14461	1732	0.657545178	14461	1732	0.657545178
14462	1733	0.657545178	14462	1733	0.657545178
14463	1734	0.657545178	14463	1734	0.657545178
14464	1735	0.6566687	14464	1735	0.6566687
14465	1736	0.6566687	14465	1736	0.6566687
14466	1737	0.656612214	14466	1737	0.656612214
14467	1738	0.656547945	14467	1738	0.656547945
14468	1739	0.656388601	14468	1739	0.656388601
14469	1740	0.656388601	14469	1740	0.656388601

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14412	1683	0.663374721	14412	1683	0.663374721
14413	1684	0.663374721	14413	1684	0.663374721
14414	1685	0.66294021	14414	1685	0.66294021
14415	1686	0.662841518	14415	1686	0.662841518
14416	1687	0.662684817	14416	1687	0.662684817
14417	1688	0.662565979	14417	1688	0.662565979
14418	1689	0.662565979	14418	1689	0.662565979
14419	1690	0.662397681	14419	1690	0.662397681
14420	1691	0.662397681	14420	1691	0.662397681
14421	1692	0.662140929	14421	1692	0.662140929
14422	1693	0.662140929	14422	1693	0.662140929
14423	1694	0.661954297	14423	1694	0.661954297
14424	1695	0.661701138	14424	1695	0.661701138
14425	1696	0.661701138	14425	1696	0.661701138
14426	1697	0.661701138	14426	1697	0.661701138
14427	1698	0.661475471	14427	1698	0.661475471
14428	1699	0.661422833	14428	1699	0.661422833
14429	1700	0.661338167	14429	1700	0.661338167
14430	1701	0.661179462	14430	1701	0.661179462
14431	1702	0.661179462	14431	1702	0.661179462
14432	1703	0.661179462	14432	1703	0.661179462
14433	1704	0.660774148	14433	1704	0.660774148
14434	1705	0.660774148	14434	1705	0.660774148
14435	1706	0.660774148	14435	1706	0.660774148
14436	1707	0.660774148	14436	1707	0.660774148
14437	1708	0.660450168	14437	1708	0.660450168
14438	1709	0.660450168	14438	1709	0.660450168
14439	1710	0.660450168	14439	1710	0.660450168
14440	1711	0.660185274	14440	1711	0.660185274

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14383	1654	0.670134305	14383	1654	0.670134305
14384	1655	0.669779634	14384	1655	0.669779634
14385	1656	0.669283581	14385	1656	0.669283581
14386	1657	0.669283581	14386	1657	0.669283581
14387	1658	0.668668578	14387	1658	0.668668578
14388	1659	0.668540562	14388	1659	0.668540562
14389	1660	0.668540562	14389	1660	0.668540562
14390	1661	0.66843452	14390	1661	0.66843452
14391	1662	0.66843452	14391	1662	0.66843452
14392	1663	0.668345242	14392	1663	0.668345242
14393	1664	0.667838874	14393	1664	0.667838874
14394	1665	0.667305015	14394	1665	0.667305015
14395	1666	0.666319102	14395	1666	0.666319102
14396	1667	0.666145349	14396	1667	0.666145349
14397	1668	0.666145349	14397	1668	0.666145349
14398	1669	0.666145349	14398	1669	0.666145349
14399	1670	0.665663068	14399	1670	0.665663068
14400	1671	0.665514107	14400	1671	0.665514107
14401	1672	0.665514107	14401	1672	0.665514107
14402	1673	0.665232006	14402	1673	0.665232006
14403	1674	0.665232006	14403	1674	0.665232006
14404	1675	0.665232006	14404	1675	0.665232006
14405	1676	0.664844416	14405	1676	0.664844416
14406	1677	0.664844416	14406	1677	0.664844416
14407	1678	0.664494038	14407	1678	0.664494038
14408	1679	0.664494038	14408	1679	0.664494038
14409	1680	0.663374721	14409	1680	0.663374721
14410	1681	0.663374721	14410	1681	0.663374721
14411	1682	0.663374721	14411	1682	0.663374721

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14354	1625	0.675273945	14354	1625	0.675273945
14355	1626	0.674858153	14355	1626	0.674858153
14356	1627	0.674858153	14356	1627	0.674858153
14357	1628	0.67477158	14357	1628	0.67477158
14358	1629	0.67477158	14358	1629	0.67477158
14359	1630	0.673720117	14359	1630	0.673720117
14360	1631	0.673631998	14360	1631	0.673631998
14361	1632	0.673631998	14361	1632	0.673631998
14362	1633	0.673631998	14362	1633	0.673631998
14363	1634	0.67342194	14363	1634	0.67342194
14364	1635	0.673267962	14364	1635	0.673267962
14365	1636	0.673150251	14365	1636	0.673150251
14366	1637	0.673150251	14366	1637	0.673150251
14367	1638	0.672268435	14367	1638	0.672268435
14368	1639	0.672268435	14368	1639	0.672268435
14369	1640	0.672268435	14369	1640	0.672268435
14370	1641	0.672268435	14370	1641	0.672268435
14371	1642	0.671714134	14371	1642	0.671714134
14372	1643	0.671617806	14372	1643	0.671617806
14373	1644	0.671480956	14373	1644	0.671480956
14374	1645	0.671480956	14374	1645	0.671480956
14375	1646	0.671271202	14375	1646	0.671271202
14376	1647	0.671117985	14376	1647	0.671117985
14377	1648	0.670909139	14377	1648	0.670909139
14378	1649	0.670909139	14378	1649	0.670909139
14379	1650	0.670909139	14379	1650	0.670909139
14380	1651	0.670607651	14380	1651	0.670607651
14381	1652	0.670134305	14381	1652	0.670134305
14382	1653	0.670134305	14382	1653	0.670134305

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14325	1596	0.680668977	14325	1596	0.680668977
14326	1597	0.680408061	14326	1597	0.680408061
14327	1598	0.680329816	14327	1598	0.680329816
14328	1599	0.680269992	14328	1599	0.680269992
14329	1600	0.680269992	14329	1600	0.680269992
14330	1601	0.680126447	14330	1601	0.680126447
14331	1602	0.680126447	14331	1602	0.680126447
14332	1603	0.679821572	14332	1603	0.679821572
14333	1604	0.679821572	14333	1604	0.679821572
14334	1605	0.679490429	14334	1605	0.679490429
14335	1606	0.678412896	14335	1606	0.678412896
14336	1607	0.678066845	14336	1607	0.678066845
14337	1608	0.677920937	14337	1608	0.677920937
14338	1609	0.677920937	14338	1609	0.677920937
14339	1610	0.677920937	14339	1610	0.677920937
14340	1611	0.677693419	14340	1611	0.677693419
14341	1612	0.677693419	14341	1612	0.677693419
14342	1613	0.677289236	14342	1613	0.677289236
14343	1614	0.676941104	14343	1614	0.676941104
14344	1615	0.676784536	14344	1615	0.676784536
14345	1616	0.676372035	14345	1616	0.676372035
14346	1617	0.676227391	14346	1617	0.676227391
14347	1618	0.676227391	14347	1618	0.676227391
14348	1619	0.676168475	14348	1619	0.676168475
14349	1620	0.675926529	14349	1620	0.675926529
14350	1621	0.675787599	14350	1621	0.675787599
14351	1622	0.675738183	14351	1622	0.675738183
14352	1623	0.675738183	14352	1623	0.675738183
14353	1624	0.675738183	14353	1624	0.675738183

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14586	1857	0.638290378	14587	1858	0.638290378
14588	1859	0.638173774	14589	1860	0.638082698
14590	1861	0.637634344	14591	1862	0.637634344
14592	1863	0.637341792	14593	1864	0.637341792
14594	1865	0.637341792	14595	1866	0.636983019
14596	1867	0.636655702	14597	1868	0.636080224
14598	1869	0.636080224	14599	1870	0.636080224
14600	1871	0.635825928	14601	1872	0.635372199
14602	1873	0.635268783	14603	1874	0.635168957
14604	1875	0.63497935	14605	1876	0.634802051
14606	1877	0.634717648	14607	1878	0.634717648
14608	1879	0.634635898	14609	1880	0.634479874
14610	1881	0.634262889	14611	1882	0.634064082
14612	1883	0.634064082	14613	1884	0.634064082
14614	1885	0.634064082			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14557	1828	0.641481246	14558	1829	0.641481246
14559	1830	0.641307979	14560	1831	0.641307979
14561	1832	0.641098327	14562	1833	0.641098327
14563	1834	0.641098327	14564	1835	0.640976076
14565	1836	0.640976076	14566	1837	0.640511838
14567	1838	0.640511838	14568	1839	0.640511838
14569	1840	0.640511838	14570	1841	0.640511838
14571	1842	0.640511838	14572	1843	0.640152769
14573	1844	0.640083751	14574	1845	0.640083751
14575	1846	0.640083751	14576	1847	0.639981888
14577	1848	0.639816411	14578	1849	0.63968775
14579	1850	0.639500675	14580	1851	0.639203722
14581	1852	0.639061772	14582	1853	0.638659834
14583	1854	0.638659834	14584	1855	0.638659834
14585	1856	0.638659834			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14528	1799	0.646549793	14529	1800	0.646361011
14530	1801	0.646361011	14531	1802	0.645784067
14532	1803	0.645784067	14533	1804	0.645645954
14534	1805	0.645310721	14535	1806	0.645310721
14536	1807	0.645104553	14537	1808	0.644580201
14538	1809	0.644580201	14539	1810	0.644580201
14540	1811	0.644042707	14541	1812	0.644042707
14542	1813	0.643914275	14543	1814	0.643304739
14544	1815	0.643304739	14545	1816	0.643304739
14546	1817	0.643304739	14547	1818	0.643304739
14548	1819	0.643304739	14549	1820	0.642638131
14550	1821	0.642638131	14551	1822	0.642638131
14552	1823	0.64222842	14553	1824	0.642033012
14554	1825	0.641750911	14555	1826	0.641750911
14556	1827	0.641557072			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14499	1770	0.652581758	14500	1771	0.651792849
14501	1772	0.651792849	14502	1773	0.651792849
14503	1774	0.650914599	14504	1775	0.650705753
14505	1776	0.650612165	14506	1777	0.650524835
14507	1778	0.650366593	14508	1779	0.650366593
14509	1780	0.64971984	14510	1781	0.649576248
14511	1782	0.649350699	14512	1783	0.649219789
14513	1784	0.64911201	14514	1785	0.648821609
14515	1786	0.648651465	14516	1787	0.64799986
14517	1788	0.64799986	14518	1789	0.64799986
14519	1790	0.64799986	14520	1791	0.647142417
14521	1792	0.647007186	14522	1793	0.647007186
14523	1794	0.647007186	14524	1795	0.646821312
14525	1796	0.646821312	14526	1797	0.646699576
14527	1798	0.646549793			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14470	1741	0.656288174	14471	1742	0.656288174
14472	1743	0.656168649	14473	1744	0.655845393
14474	1745	0.655845393	14475	1746	0.655482017
14476	1747	0.655482017	14477	1748	0.655323718
14478	1749	0.655203962	14479	1750	0.654921034
14480	1751	0.654752278	14481	1752	0.654659489
14482	1753	0.654659489	14483	1754	0.654152235
14484	1755	0.654084646	14485	1756	0.654084646
14486	1757	0.653785029	14487	1758	0.653785029
14488	1759	0.653428612	14489	1760	0.653428612
14490	1761	0.653428612	14491	1762	0.653428612
14492	1763	0.653428612	14493	1764	0.65299755
14494	1765	0.65299755	14495	1766	0.652900273
14496	1767	0.652900273	14497	1768	0.652746295
14498	1769	0.652581758			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14731	2002	0.611787687	14731	2002	0.611787687
14732	2003	0.611787687	14732	2003	0.611787687
14733	2004	0.611787687	14733	2004	0.611787687
14734	2005	0.611787687	14734	2005	0.611787687
14735	2006	0.611245158	14735	2006	0.611245158
14736	2007	0.611189073	14736	2007	0.611189073
14737	2008	0.611189073	14737	2008	0.611189073
14738	2009	0.610767018	14738	2009	0.610767018
14739	2010	0.610548615	14739	2010	0.610548615
14740	2011	0.610548615	14740	2011	0.610548615
14741	2012	0.610211299	14741	2012	0.610211299
14742	2013	0.609962918	14742	2013	0.609962918
14743	2014	0.609861766	14743	2014	0.609861766
14744	2015	0.609621625	14744	2015	0.609621625
14745	2016	0.609313068	14745	2016	0.609313068
14746	2017	0.609313068	14746	2017	0.609313068
14747	2018	0.609313068	14747	2018	0.609313068
14748	2019	0.609123295	14748	2019	0.609123295
14749	2020	0.609123295	14749	2020	0.609123295
14750	2021	0.608901999	14750	2021	0.608901999
14751	2022	0.608776968	14751	2022	0.608776968
14752	2023	0.608776968	14752	2023	0.608776968
14753	2024	0.608327155	14753	2024	0.608327155
14754	2025	0.608327155	14754	2025	0.608327155
14755	2026	0.608327155	14755	2026	0.608327155
14756	2027	0.608327155	14756	2027	0.608327155
14757	2028	0.608327155	14757	2028	0.608327155
14758	2029	0.607719325	14758	2029	0.607719325
14759	2030	0.607614613	14759	2030	0.607614613

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14702	1973	0.616152493	14702	1973	0.616152493
14703	1974	0.616152493	14703	1974	0.616152493
14704	1975	0.616152493	14704	1975	0.616152493
14705	1976	0.615776643	14705	1976	0.615776643
14706	1977	0.615665342	14706	1977	0.615665342
14707	1978	0.615665342	14707	1978	0.615665342
14708	1979	0.61546039	14708	1979	0.61546039
14709	1980	0.61546039	14709	1980	0.61546039
14710	1981	0.61546039	14710	1981	0.61546039
14711	1982	0.615141329	14711	1982	0.615141329
14712	1983	0.614957734	14712	1983	0.614957734
14713	1984	0.614957734	14713	1984	0.614957734
14714	1985	0.614692678	14714	1985	0.614692678
14715	1986	0.614276488	14715	1986	0.614276488
14716	1987	0.614276488	14716	1987	0.614276488
14717	1988	0.614276488	14717	1988	0.614276488
14718	1989	0.614276488	14718	1989	0.614276488
14719	1990	0.613964606	14719	1990	0.613964606
14720	1991	0.61383625	14720	1991	0.61383625
14721	1992	0.613528349	14721	1992	0.613528349
14722	1993	0.613528349	14722	1993	0.613528349
14723	1994	0.61330091	14723	1994	0.61330091
14724	1995	0.61330091	14724	1995	0.61330091
14725	1996	0.612702955	14725	1996	0.612702955
14726	1997	0.612578032	14726	1997	0.612578032
14727	1998	0.612578032	14727	1998	0.612578032
14728	1999	0.612578032	14728	1999	0.612578032
14729	2000	0.612408551	14729	2000	0.612408551
14730	2001	0.611787687	14730	2001	0.611787687

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14673	1944	0.620916282	14673	1944	0.620916282
14674	1945	0.620561611	14674	1945	0.620561611
14675	1946	0.620561611	14675	1946	0.620561611
14676	1947	0.620176428	14676	1947	0.620176428
14677	1948	0.620176428	14677	1948	0.620176428
14678	1949	0.620176428	14678	1949	0.620176428
14679	1950	0.620040562	14679	1950	0.620040562
14680	1951	0.619756617	14680	1951	0.619756617
14681	1952	0.619756617	14681	1952	0.619756617
14682	1953	0.619577932	14682	1953	0.619577932
14683	1954	0.619455128	14683	1954	0.619455128
14684	1955	0.619297289	14684	1955	0.619297289
14685	1956	0.619200186	14685	1956	0.619200186
14686	1957	0.618792589	14686	1957	0.618792589
14687	1958	0.618792589	14687	1958	0.618792589
14688	1959	0.618792589	14688	1959	0.618792589
14689	1960	0.618351457	14689	1960	0.618351457
14690	1961	0.618235444	14690	1961	0.618235444
14691	1962	0.618036636	14691	1962	0.618036636
14692	1963	0.618036636	14692	1963	0.618036636
14693	1964	0.618036636	14693	1964	0.618036636
14694	1965	0.617872473	14694	1965	0.617872473
14695	1966	0.617872473	14695	1966	0.617872473
14696	1967	0.617617231	14696	1967	0.617617231
14697	1968	0.617617231	14697	1968	0.617617231
14698	1969	0.617350547	14698	1969	0.617350547
14699	1970	0.617350547	14699	1970	0.617350547
14700	1971	0.616927327	14700	1971	0.616927327
14701	1972	0.616679229	14701	1972	0.616679229

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14644	1915	0.629516454	14644	1915	0.629516454
14645	1916	0.629516454	14645	1916	0.629516454
14646	1917	0.627968166	14646	1917	0.627968166
14647	1918	0.626810561	14647	1918	0.626810561
14648	1919	0.626668611	14648	1919	0.626668611
14649	1920	0.626510944	14649	1920	0.626510944
14650	1921	0.626510944	14650	1921	0.626510944
14651	1922	0.626510944	14651	1922	0.626510944
14652	1923	0.626334795	14652	1923	0.626334795
14653	1924	0.626136713	14653	1924	0.626136713
14654	1925	0.625656033	14654	1925	0.625656033
14655	1926	0.625656033	14655	1926	0.625656033
14656	1927	0.62519508	14656	1927	0.62519508
14657	1928	0.624821333	14657	1928	0.624821333
14658	1929	0.62460912	14658	1929	0.62460912
14659	1930	0.623936577	14659	1930	0.623936577
14660	1931	0.62352609	14660	1931	0.62352609
14661	1932	0.623176276	14661	1932	0.623176276
14662	1933	0.623176276	14662	1933	0.623176276
14663	1934	0.622985587	14663	1934	0.622985587
14664	1935	0.622783071	14664	1935	0.622783071
14665	1936	0.622783071	14665	1936	0.622783071
14666	1937	0.622492671	14666	1937	0.622492671
14667	1938	0.622233787	14667	1938	0.622233787
14668	1939	0.621829625	14668	1939	0.621829625
14669	1940	0.621243928	14669	1940	0.621243928
14670	1941	0.621243928	14670	1941	0.621243928
14671	1942	0.620916282	14671	1942	0.620916282
14672	1943	0.620916282	14672	1943	0.620916282

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14615	1886	0.633940545	14615	1886	0.633940545
14616	1887	0.633411498	14616	1887	0.633411498
14617	1888	0.633411498	14617	1888	0.633411498
14618	1889	0.632922703	14618	1889	0.632922703
14619	1890	0.632542909	14619	1890	0.632542909
14620	1891	0.632542909	14620	1891	0.632542909
14621	1892	0.632383095	14621	1892	0.632383095
14622	1893	0.632239312	14622	1893	0.632239312
14623	1894	0.631693373	14623	1894	0.631693373
14624	1895	0.631392459	14624	1895	0.631392459
14625	1896	0.631329795	14625	1896	0.631329795
14626	1897	0.631329795	14626	1897	0.631329795
14627	1898	0.631164633	14627	1898	0.631164633
14628	1899	0.629516454	14628	1899	0.629516454
14629	1900	0.629516454	14629	1900	0.629516454
14630	1901	0.629516454	14630	1901	0.629516454
14631	1902	0.629516454	14631	1902	0.629516454
14632	1903	0.629516454	14632	1903	0.629516454
14633	1904	0.629516454	14633	1904	0.629516454
14634	1905	0.629516454	14634	1905	0.629516454
14635	1906	0.629516454	14635	1906	0.629516454
14636	1907	0.629516454	14636	1907	0.629516454
14637	1908	0.629516454	14637	1908	0.629516454
14638	1909	0.629516454	14638	1909	0.629516454
14639	1910	0.629516454	14639	1910	0.629516454
14640	1911	0.629516454	14640	1911	0.629516454
14641	1912	0.629516454	14641	1912	0.629516454
14642	1913	0.629516454	14642	1913	0.629516454
14643	1914	0.629516454	14643	1914	0.629516454



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14876	2147	0.587654007	14876	2147	0.587654007
14877	2148	0.587507311	14877	2148	0.587507311
14878	2149	0.587227392	14878	2149	0.587227392
14879	2150	0.587227392	14879	2150	0.587227392
14880	2151	0.587227392	14880	2151	0.587227392
14881	2152	0.587227392	14881	2152	0.587227392
14882	2153	0.587227392	14882	2153	0.587227392
14883	2154	0.587227392	14883	2154	0.587227392
14884	2155	0.587112606	14884	2155	0.587112606
14885	2156	0.586964103	14885	2156	0.586964103
14886	2157	0.586964103	14886	2157	0.586964103
14887	2158	0.586838239	14887	2158	0.586838239
14888	2159	0.586838239	14888	2159	0.586838239
14889	2160	0.586838239	14889	2160	0.586838239
14890	2161	0.586481822	14890	2161	0.586481822
14891	2162	0.586481822	14891	2162	0.586481822
14892	2163	0.586481822	14892	2163	0.586481822
14893	2164	0.586481822	14893	2164	0.586481822
14894	2165	0.586481822	14894	2165	0.586481822
14895	2166	0.58605076	14895	2166	0.58605076
14896	2167	0.58566317	14896	2167	0.58566317
14897	2168	0.585312792	14897	2168	0.585312792
14898	2169	0.585312792	14898	2169	0.585312792
14899	2170	0.585312792	14899	2170	0.585312792
14900	2171	0.584994511	14900	2171	0.584994511
14901	2172	0.584846059	14901	2172	0.584846059
14902	2173	0.584846059	14902	2173	0.584846059
14903	2174	0.58470411	14903	2174	0.58470411
14904	2175	0.584438079	14904	2175	0.584438079

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14847	2118	0.591727893	14847	2118	0.591727893
14848	2119	0.591553932	14848	2119	0.591553932
14849	2120	0.591426405	14849	2120	0.591426405
14850	2121	0.591426405	14850	2121	0.591426405
14851	2122	0.591251954	14851	2122	0.591251954
14852	2123	0.590598388	14852	2123	0.590598388
14853	2124	0.590598388	14853	2124	0.590598388
14854	2125	0.590598388	14854	2125	0.590598388
14855	2126	0.590598388	14855	2126	0.590598388
14856	2127	0.590598388	14856	2127	0.590598388
14857	2128	0.590007913	14857	2128	0.590007913
14858	2129	0.589869094	14858	2129	0.589869094
14859	2130	0.589869094	14859	2130	0.589869094
14860	2131	0.589771947	14860	2131	0.589771947
14861	2132	0.589644942	14861	2132	0.589644942
14862	2133	0.589644942	14862	2133	0.589644942
14863	2134	0.589644942	14863	2134	0.589644942
14864	2135	0.589644942	14864	2135	0.589644942
14865	2136	0.589399231	14865	2136	0.589399231
14866	2137	0.589221859	14866	2137	0.589221859
14867	2138	0.588982908	14867	2138	0.588982908
14868	2139	0.588982908	14868	2139	0.588982908
14869	2140	0.588643571	14869	2140	0.588643571
14870	2141	0.588123769	14870	2141	0.588123769
14871	2142	0.588123769	14871	2142	0.588123769
14872	2143	0.588123769	14872	2143	0.588123769
14873	2144	0.587744307	14873	2144	0.587744307
14874	2145	0.587744307	14874	2145	0.587744307
14875	2146	0.587654007	14875	2146	0.587654007

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14818	2089	0.594754348	14818	2089	0.594754348
14819	2090	0.594754348	14819	2090	0.594754348
14820	2091	0.594754348	14820	2091	0.594754348
14821	2092	0.594754348	14821	2092	0.594754348
14822	2093	0.594754348	14822	2093	0.594754348
14823	2094	0.594754348	14823	2094	0.594754348
14824	2095	0.594754348	14824	2095	0.594754348
14825	2096	0.594754348	14825	2096	0.594754348
14826	2097	0.594754348	14826	2097	0.594754348
14827	2098	0.594754348	14827	2098	0.594754348
14828	2099	0.594754348	14828	2099	0.594754348
14829	2100	0.594086716	14829	2100	0.594086716
14830	2101	0.594086716	14830	2101	0.594086716
14831	2102	0.593995755	14831	2102	0.593995755
14832	2103	0.593711624	14832	2103	0.593711624
14833	2104	0.593603898	14833	2104	0.593603898
14834	2105	0.593304281	14834	2105	0.593304281
14835	2106	0.593087189	14835	2106	0.593087189
14836	2107	0.593087189	14836	2107	0.593087189
14837	2108	0.593087189	14837	2108	0.593087189
14838	2109	0.593087189	14838	2109	0.593087189
14839	2110	0.592793647	14839	2110	0.592793647
14840	2111	0.592793647	14840	2111	0.592793647
14841	2112	0.592671397	14841	2112	0.592671397
14842	2113	0.592374646	14842	2113	0.592374646
14843	2114	0.592089956	14843	2114	0.592089956
14844	2115	0.591727893	14844	2115	0.591727893
14845	2116	0.591727893	14845	2116	0.591727893
14846	2117	0.591727893	14846	2117	0.591727893

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14789	2060	0.603187515	14789	2060	0.603187515
14790	2061	0.602242369	14790	2061	0.602242369
14791	2062	0.601972705	14791	2062	0.601972705
14792	2063	0.601972705	14792	2063	0.601972705
14793	2064	0.60168736	14793	2064	0.60168736
14794	2065	0.601226815	14794	2065	0.601226815
14795	2066	0.601226815	14795	2066	0.601226815
14796	2067	0.601063822	14796	2067	0.601063822
14797	2068	0.600871273	14797	2068	0.600871273
14798	2069	0.600871273	14798	2069	0.600871273
14799	2070	0.600871273	14799	2070	0.600871273
14800	2071	0.600192369	14800	2071	0.600192369
14801	2072	0.600005857	14801	2072	0.600005857
14802	2073	0.599553231	14802	2073	0.599553231
14803	2074	0.599553231	14803	2074	0.599553231
14804	2075	0.599553231	14804	2075	0.599553231
14805	2076	0.599274926	14805	2076	0.599274926
14806	2077	0.598805092	14806	2077	0.598805092
14807	2078	0.598567318	14807	2078	0.598567318
14808	2079	0.59810799	14808	2079	0.59810799
14809	2080	0.59810799	14809	2080	0.59810799
14810	2081	0.59810799	14810	2081	0.59810799
14811	2082	0.59810799	14811	2082	0.59810799
14812	2083	0.596275521	14812	2083	0.596275521
14813	2084	0.596275521	14813	2084	0.596275521
14814	2085	0.595949106	14814	2085	0.595949106
14815	2086	0.595949106	14815	2086	0.595949106
14816	2087	0.595738028	14816	2087	0.595738028
14817	2088	0.595738028	14817	2088	0.595738028

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14760	2031	0.607240059	14760	2031	0.607240059
14761	2032	0.607135674	14761	2032	0.607135674
14762	2033	0.607075585	14762	2033	0.607075585
14763	2034	0.606532547	14763	2034	0.606532547
14764	2035	0.606532547	14764	2035	0.606532547
14765	2036	0.606532547	14765	2036	0.606532547
14766	2037	0.606392655	14766	2037	0.606392655
14767	2038	0.606392655	14767	2038	0.606392655
14768	2039	0.606035358	14768	2039	0.606035358
14769	2040	0.606035358	14769	2040	0.606035358
14770	2041	0.605516178	14770	2041	0.605516178
14771	2042	0.605516178	14771	2042	0.605516178
14772	2043	0.605516178	14772	2043	0.605516178
14773	2044	0.605516178	14773	2044	0.605516178
14774	2045	0.605157108	14774	2045	0.605157108
14775	2046	0.605157108	14775	2046	0.605157108
14776	2047	0.60469287	14776	2047	0.60469287
14777	2048	0.604534166	14777	2048	0.604534166
14778	2049	0.604405734	14778	2049	0.604405734
14779	2050	0.604134723	14779	2050	0.604134723
14780	2051	0.604134723	14780	2051	0.604134723
14781	2052	0.603878517	14781	2052	0.603878517
14782	2053	0.603187515	14782	2053	0.603187515
14783	2054	0.603187515	14783	2054	0.603187515
14784	2055	0.603187515	14784	2055	0.603187515
14785	2056	0.603187515	14785	2056	0.603187515
14786	2057	0.603187515	14786	2057	0.603187515
14787	2058	0.603187515	14787	2058	0.603187515
14788	2059	0.603187515	14788	2059	0.603187515

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15021	2292	0.566464708	15021	2292	0.566464708
15022	2293	0.566464708	15022	2293	0.566464708
15023	2294	0.566464708	15023	2294	0.566464708
15024	2295	0.566464708	15024	2295	0.566464708
15025	2296	0.565954674	15025	2296	0.565954674
15026	2297	0.565954674	15026	2297	0.565954674
15027	2298	0.565847374	15027	2298	0.565847374
15028	2299	0.565562747	15028	2299	0.565562747
15029	2300	0.565398955	15029	2300	0.565398955
15030	2301	0.565398955	15030	2301	0.565398955
15031	2302	0.565162475	15031	2302	0.565162475
15032	2303	0.565162475	15032	2303	0.565162475
15033	2304	0.564791124	15033	2304	0.564791124
15034	2305	0.564398276	15034	2305	0.564398276
15035	2306	0.564123493	15035	2306	0.564123493
15036	2307	0.564123493	15036	2307	0.564123493
15037	2308	0.564123493	15037	2308	0.564123493
15038	2309	0.563920504	15038	2309	0.563920504
15039	2310	0.563920504	15039	2310	0.563920504
15040	2311	0.563764423	15040	2311	0.563764423
15041	2312	0.563764423	15041	2312	0.563764423
15042	2313	0.563640675	15042	2313	0.563640675
15043	2314	0.563540155	15043	2314	0.563540155
15044	2315	0.563540155	15044	2315	0.563540155
15045	2316	0.563386776	15045	2316	0.563386776
15046	2317	0.562569664	15046	2317	0.562569664
15047	2318	0.562569664	15047	2318	0.562569664
15048	2319	0.562569664	15048	2319	0.562569664
15049	2320	0.562569664	15049	2320	0.562569664

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14992	2263	0.571185347	14992	2263	0.571185347
14993	2264	0.571185347	14993	2264	0.571185347
14994	2265	0.571002832	14994	2265	0.571002832
14995	2266	0.570810794	14995	2266	0.570810794
14996	2267	0.570710967	14996	2267	0.570710967
14997	2268	0.570395002	14997	2268	0.570395002
14998	2269	0.570395002	14998	2269	0.570395002
14999	2270	0.570395002	14999	2270	0.570395002
15000	2271	0.570395002	15000	2271	0.570395002
15001	2272	0.569930764	15001	2272	0.569930764
15002	2273	0.569930764	15002	2273	0.569930764
15003	2274	0.569831349	15003	2274	0.569831349
15004	2275	0.569677752	15004	2275	0.569677752
15005	2276	0.569677752	15005	2276	0.569677752
15006	2277	0.569677752	15006	2277	0.569677752
15007	2278	0.569409089	15007	2278	0.569409089
15008	2279	0.569409089	15008	2279	0.569409089
15009	2280	0.569409089	15009	2280	0.569409089
15010	2281	0.568818614	15010	2281	0.568818614
15011	2282	0.568818614	15011	2282	0.568818614
15012	2283	0.568818614	15012	2283	0.568818614
15013	2284	0.568818614	15013	2284	0.568818614
15014	2285	0.568144767	15014	2285	0.568144767
15015	2286	0.567998416	15015	2286	0.567998416
15016	2287	0.567368547	15016	2287	0.567368547
15017	2288	0.567368547	15017	2288	0.567368547
15018	2289	0.56715571	15018	2289	0.56715571
15019	2290	0.56693447	15019	2290	0.56693447
15020	2291	0.56693447	15020	2291	0.56693447

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14963	2234	0.575534642	14963	2234	0.575534642
14964	2235	0.575358422	14964	2235	0.575358422
14965	2236	0.575358422	14965	2236	0.575358422
14966	2237	0.575158792	14966	2237	0.575158792
14967	2238	0.575158792	14967	2238	0.575158792
14968	2239	0.574930756	14968	2239	0.574930756
14969	2240	0.574667786	14969	2240	0.574667786
14970	2241	0.574520593	14970	2241	0.574520593
14971	2242	0.574187991	14971	2242	0.574187991
14972	2243	0.573792369	14972	2243	0.573792369
14973	2244	0.573792369	14973	2244	0.573792369
14974	2245	0.573792369	14974	2245	0.573792369
14975	2246	0.573719027	14975	2246	0.573719027
14976	2247	0.573565049	14976	2247	0.573565049
14977	2248	0.573565049	14977	2248	0.573565049
14978	2249	0.573565049	14978	2249	0.573565049
14979	2250	0.573565049	14979	2250	0.573565049
14980	2251	0.573400512	14980	2251	0.573400512
14981	2252	0.573400512	14981	2252	0.573400512
14982	2253	0.573313939	14982	2253	0.573313939
14983	2254	0.573313939	14983	2254	0.573313939
14984	2255	0.573035098	14984	2255	0.573035098
14985	2256	0.573035098	14985	2256	0.573035098
14986	2257	0.572831443	14986	2257	0.572831443
14987	2258	0.572723664	14987	2258	0.572723664
14988	2259	0.572611603	14988	2259	0.572611603
14989	2260	0.572114982	14989	2260	0.572114982
14990	2261	0.571833065	14990	2261	0.571833065
14991	2262	0.571758565	14991	2262	0.571758565

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14934	2205	0.580467057	14934	2205	0.580467057
14935	2206	0.580298431	14935	2206	0.580298431
14936	2207	0.580298431	14936	2207	0.580298431
14937	2208	0.580223868	14937	2208	0.580223868
14938	2209	0.580031091	14938	2209	0.580031091
14939	2210	0.578363932	14939	2210	0.578363932
14940	2211	0.578363932	14940	2211	0.578363932
14941	2212	0.578363932	14941	2212	0.578363932
14942	2213	0.578363932	14942	2213	0.578363932
14943	2214	0.578363932	14943	2214	0.578363932
14944	2215	0.578363932	14944	2215	0.578363932
14945	2216	0.578363932	14945	2216	0.578363932
14946	2217	0.578363932	14946	2217	0.578363932
14947	2218	0.578363932	14947	2218	0.578363932
14948	2219	0.578363932	14948	2219	0.578363932
14949	2220	0.578363932	14949	2220	0.578363932
14950	2221	0.578363932	14950	2221	0.578363932
14951	2222	0.578363932	14951	2222	0.578363932
14952	2223	0.576810104	14952	2223	0.576810104
14953	2224	0.576643951	14953	2224	0.576643951
14954	2225	0.576438011	14954	2225	0.576438011
14955	2226	0.576357949	14955	2226	0.576357949
14956	2227	0.576072135	14956	2227	0.576072135
14957	2228	0.576072135	14957	2228	0.576072135
14958	2229	0.575957862	14958	2229	0.575957862
14959	2230	0.575691342	14959	2230	0.575691342
14960	2231	0.575691342	14960	2231	0.575691342
14961	2232	0.575691342	14961	2232	0.575691342
14962	2233	0.575534642	14962	2233	0.575534642

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
14905	2176	0.584438079	14905	2176	0.584438079
14906	2177	0.584438079	14906	2177	0.584438079
14907	2178	0.584438079	14907	2178	0.584438079
14908	2179	0.584438079	14908	2179	0.584438079
14909	2180	0.584193475	14909	2180	0.584193475
14910	2181	0.584078415	14910	2181	0.584078415
14911	2182	0.584078415	14911	2182	0.584078415
14912	2183	0.583967809	14912	2183	0.583967809
14913	2184	0.583758964	14913	2184	0.583758964
14914	2185	0.583473337	14914	2185	0.583473337
14915	2186	0.582773051	14915	2186	0.582773051
14916	2187	0.582773051	14916	2187	0.582773051
14917	2188	0.582403909	14917	2188	0.582403909
14918	2189	0.582241587	14918	2189	0.582241587
14919	2190	0.581953163	14919	2190	0.581953163
14920	2191	0.581824464	14920	2191	0.581824464
14921	2192	0.581824464	14921	2192	0.581824464
14922	2193	0.581390386	14922	2193	0.581390386
14923	2194	0.581390386	14923	2194	0.581390386
14924	2195	0.581390386	14924	2195	0.581390386
14925	2196	0.581390386	14925	2196	0.581390386
14926	2197	0.581211775	14926	2197	0.581211775
14927	2198	0.581211775	14927	2198	0.581211775
14928	2199	0.58105307	14928	2199	0.58105307
14929	2200	0.580911121	14929	2200	0.580911121
14930	2201	0.580783406	14930	2201	0.580783406
14931	2202	0.580783406	14931	2202	0.580783406
14932	2203	0.580562896	14932	2203	0.580562896
14933	2204	0.580562896	14933	2204	0.580562896

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15166	2437	0.546394726	15167	2438	0.546029414
15168	2439	0.545571418	15169	2440	0.545195568
15170	2441	0.544940176	15171	2442	0.544086259
15172	2443	0.544086259	15173	2444	0.543601825
15174	2445	0.543601825	15175	2446	0.543601825
15176	2447	0.543601825	15177	2448	0.543601825
15178	2449	0.543601825	15179	2450	0.543601825
15180	2451	0.543071875	15181	2452	0.542947274
15182	2453	0.542947274	15183	2454	0.542746072
15184	2455	0.542366278	15185	2456	0.542366278
15186	2457	0.54201391	15187	2458	0.541847098
15188	2459	0.541380365	15189	2460	0.541380365
15190	2461	0.541380365	15191	2462	0.541039609
15192	2463	0.540958515	15193	2464	0.540958515
15194	2465	0.540826771			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15137	2408	0.550335208	15138	2409	0.550335208
15139	2410	0.550335208	15140	2411	0.549942003
15141	2412	0.549832843	15142	2413	0.54963978
15143	2414	0.54963978	15144	2415	0.549474366
15145	2416	0.549205703	15146	2417	0.549205703
15147	2418	0.548996857	15148	2419	0.548908952
15149	2420	0.548908952	15150	2421	0.548693261
15151	2422	0.548400708	15152	2423	0.548211514
15153	2424	0.548211514	15154	2425	0.548079128
15155	2426	0.548079128	15156	2427	0.547906068
15157	2428	0.547329698	15158	2429	0.547329698
15159	2430	0.547329698	15160	2431	0.547329698
15161	2432	0.547329698	15162	2433	0.546542219
15163	2434	0.546542219	15164	2435	0.546542219
15165	2436	0.546542219			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15108	2379	0.553681467	15109	2380	0.553361663
15110	2381	0.55128108	15111	2382	0.5529822
15112	2383	0.552809827	15113	2384	0.552809827
15114	2385	0.552350499	15115	2386	0.552350499
15116	2387	0.552350499	15117	2388	0.552350499
15118	2389	0.552350499	15119	2390	0.552034993
15120	2391	0.552034993	15121	2392	0.552034993
15122	2393	0.551911596	15123	2394	0.551911596
15124	2395	0.551629678	15125	2396	0.551629678
15126	2397	0.551629678	15127	2398	0.551380442
15128	2399	0.551380442	15129	2400	0.551288654
15130	2401	0.550867758	15131	2402	0.550867758
15132	2403	0.550746667	15133	2404	0.550670441
15134	2405	0.550335208	15135	2406	0.550335208
15136	2407	0.550335208			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15079	2350	0.559478588	15080	2351	0.559058776
15081	2352	0.559058776	15082	2353	0.55893538
15083	2354	0.55893538	15084	2355	0.55893538
15085	2356	0.55893538	15086	2357	0.55893538
15087	2358	0.558709244	15088	2359	0.558709244
15089	2360	0.558160546	15090	2361	0.558160546
15091	2362	0.558160546	15092	2363	0.558160546
15093	2364	0.557749476	15094	2365	0.557430025
15095	2366	0.556409356	15096	2367	0.556409356
15097	2368	0.556229486	15098	2369	0.555877784
15099	2370	0.554882836	15100	2371	0.554882836
15101	2372	0.554882836	15102	2373	0.554882836
15103	2374	0.554882836	15104	2375	0.554882836
15105	2376	0.554882836	15106	2377	0.554882836
15107	2378	0.553969493			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15050	2321	0.562569664	15051	2322	0.562569664
15052	2323	0.562569664	15053	2324	0.562569664
15054	2325	0.562569664	15055	2326	0.561973515
15056	2327	0.561973515	15057	2328	0.561895817
15058	2329	0.561895817	15059	2330	0.561658238
15060	2331	0.561658238	15061	2332	0.561658238
15062	2333	0.561658238	15063	2334	0.561658238
15064	2335	0.561570137	15065	2336	0.561570137
15066	2337	0.561463181	15067	2338	0.561161902
15068	2339	0.56094004	15069	2340	0.56094004
15070	2341	0.560435535	15071	2342	0.560189963
15072	2343	0.560189963	15073	2344	0.559992242
15074	2345	0.559478588	15075	2346	0.559478588
15076	2347	0.559478588	15077	2348	0.559478588
15078	2349	0.559478588			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15311	2582	0.525427856	15311	2582	0.525427856
15312	2583	0.525009259	15312	2583	0.525009259
15313	2584	0.525009259	15313	2584	0.525009259
15314	2585	0.525009259	15314	2585	0.525009259
15315	2586	0.524781104	15315	2586	0.524781104
15316	2587	0.524411963	15316	2587	0.524411963
15317	2588	0.524006269	15317	2588	0.524006269
15318	2589	0.524006269	15318	2589	0.524006269
15319	2590	0.524006269	15319	2590	0.524006269
15320	2591	0.523712728	15320	2591	0.523712728
15321	2592	0.523398439	15321	2592	0.523398439
15322	2593	0.523398439	15322	2593	0.523398439
15323	2594	0.523398439	15323	2594	0.523398439
15324	2595	0.523398439	15324	2595	0.523398439
15325	2596	0.523266415	15325	2596	0.523266415
15326	2597	0.523061123	15326	2597	0.523061123
15327	2598	0.523061123	15327	2598	0.523061123
15328	2599	0.522698152	15328	2599	0.522698152
15329	2600	0.522506114	15329	2600	0.522506114
15330	2601	0.522506114	15330	2601	0.522506114
15331	2602	0.522506114	15331	2602	0.522506114
15332	2603	0.522306484	15332	2603	0.522306484
15333	2604	0.521882576	15333	2604	0.521882576
15334	2605	0.521882576	15334	2605	0.521882576
15335	2606	0.521882576	15335	2606	0.521882576
15336	2607	0.521422274	15336	2607	0.521422274
15337	2608	0.521325431	15337	2608	0.521325431
15338	2609	0.521068528	15338	2609	0.521068528
15339	2610	0.520707218	15339	2610	0.520707218

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15282	2553	0.529002317	15282	2553	0.529002317
15283	2554	0.529002317	15283	2554	0.529002317
15284	2555	0.529002317	15284	2555	0.529002317
15285	2556	0.528676147	15285	2556	0.528676147
15286	2557	0.528676147	15286	2557	0.528676147
15287	2558	0.528676147	15287	2558	0.528676147
15288	2559	0.528676147	15288	2559	0.528676147
15289	2560	0.528489875	15289	2560	0.528489875
15290	2561	0.528285067	15290	2561	0.528285067
15291	2562	0.528058813	15291	2562	0.528058813
15292	2563	0.528058813	15292	2563	0.528058813
15293	2564	0.527624041	15293	2564	0.527624041
15294	2565	0.527526916	15294	2565	0.527526916
15295	2566	0.527211409	15295	2566	0.527211409
15296	2567	0.527211409	15296	2567	0.527211409
15297	2568	0.527211409	15297	2568	0.527211409
15298	2569	0.527211409	15298	2569	0.527211409
15299	2570	0.526854112	15299	2570	0.526854112
15300	2571	0.526854112	15300	2571	0.526854112
15301	2572	0.526446132	15301	2572	0.526446132
15302	2573	0.526446132	15302	2573	0.526446132
15303	2574	0.526446132	15303	2574	0.526446132
15304	2575	0.526446132	15304	2575	0.526446132
15305	2576	0.526140399	15305	2576	0.526140399
15306	2577	0.526140399	15306	2577	0.526140399
15307	2578	0.525975862	15307	2578	0.525975862
15308	2579	0.525975862	15308	2579	0.525975862
15309	2580	0.525975862	15309	2580	0.525975862
15310	2581	0.525975862	15310	2581	0.525975862

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15253	2524	0.532606441	15253	2524	0.532606441
15254	2525	0.532606441	15254	2525	0.532606441
15255	2526	0.532606441	15255	2526	0.532606441
15256	2527	0.532606441	15256	2527	0.532606441
15257	2528	0.532606441	15257	2528	0.532606441
15258	2529	0.532606441	15258	2529	0.532606441
15259	2530	0.532606441	15259	2530	0.532606441
15260	2531	0.532606441	15260	2531	0.532606441
15261	2532	0.532606441	15261	2532	0.532606441
15262	2533	0.532606441	15262	2533	0.532606441
15263	2534	0.532606441	15263	2534	0.532606441
15264	2535	0.532606441	15264	2535	0.532606441
15265	2536	0.532606441	15265	2536	0.532606441
15266	2537	0.530939282	15266	2537	0.530939282
15267	2538	0.530636848	15267	2538	0.530636848
15268	2539	0.530326675	15268	2539	0.530326675
15269	2540	0.530200371	15269	2540	0.530200371
15270	2541	0.530200371	15270	2541	0.530200371
15271	2542	0.530200371	15271	2542	0.530200371
15272	2543	0.530059252	15272	2543	0.530059252
15273	2544	0.530059252	15273	2544	0.530059252
15274	2545	0.530059252	15274	2545	0.530059252
15275	2546	0.530059252	15275	2546	0.530059252
15276	2547	0.530059252	15276	2547	0.530059252
15277	2548	0.529515364	15277	2548	0.529515364
15278	2549	0.529515364	15278	2549	0.529515364
15279	2550	0.529278498	15279	2550	0.529278498
15280	2551	0.529278498	15280	2551	0.529278498
15281	2552	0.529278498	15281	2552	0.529278498

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15224	2495	0.538435985	15224	2495	0.538435985
15225	2496	0.538435985	15225	2496	0.538435985
15226	2497	0.538435985	15226	2497	0.538435985
15227	2498	0.538435985	15227	2498	0.538435985
15228	2499	0.538435985	15228	2499	0.538435985
15229	2500	0.538308842	15229	2500	0.538308842
15230	2501	0.538069337	15230	2501	0.538069337
15231	2502	0.537646666	15231	2502	0.537646666
15232	2503	0.537458944	15232	2503	0.537458944
15233	2504	0.537458944	15233	2504	0.537458944
15234	2505	0.536572628	15234	2505	0.536572628
15235	2506	0.536572628	15235	2506	0.536572628
15236	2507	0.536572628	15236	2507	0.536572628
15237	2508	0.536094769	15237	2508	0.536094769
15238	2509	0.535960083	15238	2509	0.535960083
15239	2510	0.535329299	15239	2510	0.535329299
15240	2511	0.535329299	15240	2511	0.535329299
15241	2512	0.535168658	15241	2512	0.535168658
15242	2513	0.535168658	15242	2513	0.535168658
15243	2514	0.535025915	15243	2514	0.535025915
15244	2515	0.534898238	15244	2515	0.534898238
15245	2516	0.534898238	15245	2516	0.534898238
15246	2517	0.53467945	15246	2517	0.53467945
15247	2518	0.534585007	15247	2518	0.534585007
15248	2519	0.534585007	15248	2519	0.534585007
15249	2520	0.534498795	15249	2520	0.534498795
15250	2521	0.534280025	15250	2521	0.534280025
15251	2522	0.534217925	15251	2522	0.534217925
15252	2523	0.532606441	15252	2523	0.532606441

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15195	2466	0.540826771	15195	2466	0.540826771
15196	2467	0.540826771	15196	2467	0.540826771
15197	2468	0.540575371	15197	2468	0.540575371
15198	2469	0.540575371	15198	2469	0.540575371
15199	2470	0.540338891	15199	2470	0.540338891
15200	2471	0.53990568	15200	2471	0.53990568
15201	2472	0.53990568	15201	2472	0.53990568
15202	2473	0.539706782	15202	2473	0.539706782
15203	2474	0.539611343	15203	2474	0.539611343
15204	2475	0.539518436	15204	2475	0.539518436
15205	2476	0.539518436	15205	2476	0.539518436
15206	2477	0.539518436	15206	2477	0.539518436
15207	2478	0.539518436	15207	2478	0.539518436
15208	2479	0.539339824	15208	2479	0.539339824
15209	2480	0.539339824	15209	2480	0.539339824
15210	2481	0.539339824	15210	2481	0.539339824
15211	2482	0.539170211	15211	2482	0.539170211
15212	2483	0.539170211	15212	2483	0.539170211
15213	2484	0.539170211	15213	2484	0.539170211
15214	2485	0.539170211	15214	2485	0.539170211
15215	2486	0.53885539	15215	2486	0.53885539
15216	2487	0.53885539	15216	2487	0.53885539
15217	2488	0.53885539	15217	2488	0.53885539
15218	2489	0.53885539	15218	2489	0.53885539
15219	2490	0.53885539	15219	2490	0.53885539
15220	2491	0.53885539	15220	2491	0.53885539
15221	2492	0.538569388	15221	2492	0.538569388
15222	2493	0.538569388	15222	2493	0.538569388
15223	2494	0.538435985	15223	2494	0.538435985

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15448	2719	0.504577718	15449	2720	0.504577718
15450	2721	0.504577718	15451	2722	0.504035188
15452	2723	0.503864004	15453	2724	0.503864004
15454	2725	0.503864004	15455	2726	0.503864004
15456	2727	0.503864004	15457	2728	0.503864004
15458	2729	0.50339917	15459	2730	0.503222663
15460	2731	0.503222663	15461	2732	0.503222663
15462	2733	0.503222663	15463	2734	0.503222663
15464	2735	0.503222663	15465	2736	0.503222663
15466	2737	0.503222663	15467	2738	0.503222663
15468	2739	0.503222663			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15421	2692	0.508839719	15422	2693	0.508472761
15423	2694	0.508472761	15424	2695	0.508163985
15425	2696	0.507983966	15426	2697	0.507983966
15427	2698	0.507983966	15428	2699	0.507983966
15429	2700	0.507300576	15430	2701	0.507300576
15431	2702	0.507300576	15432	2703	0.506845579
15433	2704	0.506845579	15434	2705	0.506670707
15435	2706	0.506520873	15436	2707	0.506520873
15437	2708	0.506277502	15438	2709	0.506277502
15439	2710	0.506277502	15440	2711	0.505548208
15441	2712	0.505548208	15442	2713	0.505256833
15443	2714	0.505168193	15444	2715	0.504577718
15445	2716	0.504577718	15446	2717	0.504577718
15447	2718	0.504577718			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15394	2665	0.511417142	15395	2666	0.511417142
15396	2667	0.511417142	15397	2668	0.511417142
15398	2669	0.511417142	15399	2670	0.511417142
15400	2671	0.511417142	15401	2672	0.511417142
15402	2673	0.511417142	15403	2674	0.511417142
15404	2675	0.511417142	15405	2676	0.511417142
15406	2677	0.511417142	15407	2678	0.5107046
15408	2679	0.510590701	15409	2680	0.510518911
15410	2681	0.510330046	15411	2682	0.510330046
15412	2683	0.510330046	15413	2684	0.510202332
15414	2685	0.510202332	15415	2686	0.510040613
15416	2687	0.509829226	15417	2688	0.509829226
15418	2689	0.509697162	15419	2690	0.508942523
15420	2691	0.508839719			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15367	2638	0.516369242	15368	2639	0.516216025
15369	2640	0.516216025	15370	2641	0.516216025
15371	2642	0.516216025	15372	2643	0.516216025
15373	2644	0.51603734	15374	2645	0.515871483
15375	2646	0.515573102	15376	2647	0.515573102
15377	2648	0.515573102	15378	2649	0.515573102
15379	2650	0.515263885	15380	2651	0.514877674
15381	2652	0.514381621	15382	2653	0.514381621
15383	2654	0.514381621	15384	2655	0.513721097
15385	2656	0.513490151	15386	2657	0.513490151
15387	2658	0.513301286	15388	2659	0.513301286
15389	2660	0.513010885	15390	2661	0.512798048
15391	2662	0.51263536	15392	2663	0.512506966
15393	2664	0.512317235			

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain
15340	2611	0.520707218	15341	2612	0.520707218
15342	2613	0.520371985	15343	2614	0.520371985
15344	2615	0.520371985	15345	2616	0.520017314
15346	2617	0.519769216	15347	2618	0.519769216
15348	2619	0.519769216	15349	2620	0.519585931
15350	2621	0.519444995	15351	2622	0.519103971
15352	2623	0.518926744	15353	2624	0.518866663
15354	2625	0.518366002	15355	2626	0.518366002
15356	2627	0.518366002	15357	2628	0.518366002
15358	2629	0.518366002	15359	2630	0.518366002
15360	2631	0.518366002	15361	2632	0.518366002
15362	2633	0.517542695	15363	2634	0.517542695
15364	2635	0.517366475	15365	2636	0.517366475
15366	2637	0.516437943			

FIG. 3

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15469	2740	1.805607713	0
15470	2741	1.782483914	0
15471	2742	1.756796407	0
15472	2743	1.7086977	0
15473	2744	1.621547524	0
15474	2745	1.611787687	0
15475	2746	1.611787687	0
15476	2747	1.599553231	0
15477	2748	1.593175811	0
15478	2749	1.559758687	0
15479	2750	1.534699431	-1.140781313
15480	2751	1.532606441	0
15481	2752	1.532606441	0
15482	2753	1.514877674	0
15483	2754	1.511287094	0
15484	2755	1.497844335	0
15485	2756	1.496394268	-1.222750977
15486	2757	1.486848951	0
15487	2758	1.480843526	0
15488	2759	1.45728072	-1.321740616
15489	2760	1.455309339	0
15490	2761	1.445456265	0
15491	2762	1.445456265	0
15492	2763	1.444470352	0
15493	2764	1.444085169	0
15494	2765	1.442429811	0
15495	2766	1.435696428	0
15496	2767	1.432491288	0
15497	2768	1.429944099	0
15498	2769	1.417512639	-0.925181513
15499	2770	1.4131306	-1.199559314
15500	2771	1.411817991	0
15501	2772	1.407667705	0
15502	2773	1.404438734	0
15503	2774	1.403779635	-1.39768257
15504	2775	1.397907867	0
15505	2776	1.397404629	0
15506	2777	1.39473782	0
15507	2778	1.39394168	0
15508	2779	1.386478405	0
15509	2780	1.3821136	-1.271968999
15510	2781	1.379456849	0
15511	2782	1.379378065	0
15512	2783	1.374998588	-0.4875688
15513	2784	1.374075258	0
15514	2785	1.370525897	0
15515	2786	1.365741816	0
15516	2787	1.358399326	-1.4875688
15517	2788	1.345977191	0
15518	2789	1.345519798	0
15519	2790	1.340720915	0
15520	2791	1.340124766	0
15521	2792	1.339481843	0
15522	2793	1.338270728	0
15523	2794	1.336311796	0
15524	2795	1.333449878	0
15525	2796	1.333375379	0
15526	2797	1.333323519	-1.222750977
15527	2798	1.332155836	0
15528	2799	1.329708103	0
15529	2800	1.327984093	-0.761827075
15530	2801	1.322187153	0
15531	2802	1.317363058	-0.588238962
15532	2803	1.315218569	-1.002828148
15533	2804	1.314723879	0
15534	2805	1.312609696	0
15535	2806	1.311982783	0
15536	2807	1.310757692	0
15537	2808	1.310757692	0
15538	2809	1.310757692	0
15539	2810	1.310757692	0
15540	2811	1.3080933	0
15541	2812	1.305958809	-0.540814312
15542	2813	1.302995926	-0.237691326
15543	2814	1.300494616	0
15544	2815	1.300354931	0
15545	2816	1.300033826	0
15546	2817	1.297920467	0
15547	2818	1.297077994	0
15548	2819	1.295614353	-1.155224741
15549	2820	1.294022734	0
15550	2821	1.29166475	-0.839051407
15551	2822	1.288127945	0
15552	2823	1.281422818	-0.34186017
15553	2824	1.280794468	0
15554	2825	1.280509778	0
15555	2826	1.277333936	0
15556	2827	1.276699466	0
15557	2828	1.276082366	-0.365765777
15558	2829	1.275355537	0
15559	2830	1.2748016	0
15560	2831	1.273774125	0
15561	2832	1.273412515	0
15562	2833	1.272412699	0
15563	2834	1.270886179	-1.103564569
15564	2835	1.269696909	0
15565	2836	1.269365006	0
15566	2837	1.269365006	0
15567	2838	1.268005711	-0.288568261
15568	2839	1.265117594	0
15569	2840	1.262245265	0
15570	2841	1.260221627	0
15571	2842	1.259605169	0
15572	2843	1.259605169	0
15573	2844	1.259605169	0
15574	2845	1.258899573	0
15575	2846	1.258823361	0
15576	2847	1.258728692	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15658	2929	1.196814339	0
15659	2930	1.196814339	0
15660	2931	1.194252122	-0.418437792
15661	2932	1.194039285	-0.280347931
15662	2933	1.193787885	0
15663	2934	1.193787885	0
15664	2935	1.192947043	0
15665	2936	1.19018376	0
15666	2937	1.19018376	0
15667	2938	1.189567302	-1.275060076
15668	2939	1.188964402	0
15669	2940	1.188110752	-0.874028991
15670	2941	1.187911944	0
15671	2942	1.187797521	0
15672	2943	1.187372783	0
15673	2944	1.185818955	0
15674	2945	1.184720865	-0.593202381
15675	2946	1.184151796	0
15676	2947	1.183412885	0
15677	2948	1.183143371	0
15678	2949	1.182971112	0
15679	2950	1.182918442	0
15680	2951	1.182727878	0
15681	2952	1.182358423	0
15682	2953	1.18198333	0
15683	2954	1.181730073	0
15684	2955	1.181662995	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15631	2902	1.20809535	0
15632	2903	1.20809535	0
15633	2904	1.20809535	0
15634	2905	1.206752862	0
15635	2906	1.206392899	0
15636	2907	1.206392899	0
15637	2908	1.206392899	0
15638	2909	1.205563013	0
15639	2910	1.205247507	0
15640	2911	1.205247507	0
15641	2912	1.204842192	0
15642	2913	1.204138197	-0.992128303
15643	2914	1.204032696	0
15644	2915	1.203803867	-1.479949403
15645	2916	1.20261275	0
15646	2917	1.201905775	0
15647	2918	1.201613222	0
15648	2919	1.201613222	0
15649	2920	1.201193816	0
15650	2921	1.20114649	0
15651	2922	1.201087123	0
15652	2923	1.199784611	0
15653	2924	1.199173359	-1.310532394
15654	2925	1.197893332	0
15655	2926	1.197671782	0
15656	2927	1.196814339	0
15657	2928	1.196814339	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15604	2875	1.227750038	0
15605	2876	1.226980694	0
15606	2877	1.225972568	0
15607	2878	1.225899313	0
15608	2879	1.225236267	0
15609	2880	1.224737021	-0.454899683
15610	2881	1.224152427	0
15611	2882	1.221452573	0
15612	2883	1.22135728	0
15613	2884	1.22119441	0
15614	2885	1.22085258	0
15615	2886	1.220636459	0
15616	2887	1.219410538	0
15617	2888	1.217725334	0
15618	2889	1.21700042	-1.327238088
15619	2890	1.217640668	-0.501504578
15620	2891	1.217489984	-1.399998813
15621	2892	1.216336479	0
15622	2893	1.213249064	0
15623	2894	1.21309304	-1.284203456
15624	2895	1.21227129	0
15625	2896	1.211882137	0
15626	2897	1.21079284	0
15627	2898	1.210678521	0
15628	2899	1.210387146	0
15629	2900	1.210125444	0
15630	2901	1.209731112	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15577	2848	1.256882311	-0.312927607
15578	2849	1.2544439328	-0.995072683
15579	2850	1.25385284	-0.016414393
15580	2851	1.253295695	0
15581	2852	1.25321837	0
15582	2853	1.25321837	-1.262561531
15583	2854	1.251779832	0
15584	2855	1.249305212	0
15585	2856	1.248282139	-1.134441135
15586	2857	1.247181519	0
15587	2858	1.244671744	-1.418097035
15588	2859	1.239545375	0
15589	2860	1.237566809	0
15590	2861	1.236655971	0
15591	2862	1.235471489	0
15592	2863	1.234023181	-1.37381423
15593	2864	1.231576445	0
15594	2865	1.231576445	0
15595	2866	1.231576445	0
15596	2867	1.231576445	0
15597	2868	1.231576445	0
15598	2869	1.231576445	0
15599	2870	1.231576445	0
15600	2871	1.231576445	0
15601	2872	1.231576445	0
15602	2873	1.229452752	-1.136564829
15603	2874	1.229410384	-1.429037021

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15766	3037	1.142176034	0	1.142176034	0
15767	3038	1.141671334	0	1.141671334	0
15768	3039	1.141615292	0	1.141615292	0
15769	3040	1.141399815	0	1.141399815	0
15770	3041	1.141399815	0	1.141399815	0
15771	3042	1.141399815	-1.233050933	1.141399815	-1.233050933
15772	3043	1.141271799	0	1.141271799	0
15773	3044	1.140495976	0	1.140495976	0
15774	3045	1.140495976	0	1.140495976	0
15775	3046	1.140129328	0	1.140129328	0
15776	3047	1.140061464	-0.385478274	1.140061464	-0.385478274
15777	3048	1.139658378	0	1.139658378	0
15778	3049	1.138544088	0	1.138544088	0
15779	3050	1.137020338	0	1.137020338	0
15780	3051	1.136790126	0	1.136790126	0
15781	3052	1.135795938	0	1.135795938	0
15782	3053	1.134666432	0	1.134666432	0
15783	3054	1.134666432	0	1.134666432	0
15784	3055	1.134666432	0	1.134666432	0
15785	3056	1.134666432	0	1.134666432	0
15786	3057	1.134666432	0	1.134666432	0
15787	3058	1.134666432	-1.186538804	1.134666432	-1.186538804
15788	3059	1.133289904	0	1.133289904	0
15789	3060	1.132500371	0	1.132500371	0
15790	3061	1.131062308	0	1.131062308	0
15791	3062	1.130415555	0	1.130415555	0
15792	3063	1.12995433	-1.268855764	1.12995433	-1.268855764

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15739	3010	1.153019634	0	1.153019634	0
15740	3011	1.152395199	0	1.152395199	0
15741	3012	1.152395199	0	1.152395199	0
15742	3013	1.151925438	-0.137740187	1.151925438	-0.137740187
15743	3014	1.15176073	0	1.15176073	0
15744	3015	1.151699772	0	1.151699772	0
15745	3016	1.151170108	0	1.151170108	0
15746	3017	1.150753252	0	1.150753252	0
15747	3018	1.150041294	-1.472193938	1.150041294	-1.472193938
15748	3019	1.149906399	0	1.149906399	0
15749	3020	1.14870951	0	1.14870951	0
15750	3021	1.148089405	0	1.148089405	0
15751	3022	1.14725556	0	1.14725556	0
15752	3023	1.146862711	0	1.146862711	0
15753	3024	1.145324501	0	1.145324501	0
15754	3025	1.145324501	-0.554515589	1.145324501	-0.554515589
15755	3026	1.145095961	-1.284203456	1.145095961	-1.284203456
15756	3027	1.14442627	0	1.14442627	0
15757	3028	1.144260414	-0.191793944	1.144260414	-0.191793944
15758	3029	1.143154543	0	1.143154543	0
15759	3030	1.142938958	-1.239784316	1.142938958	-1.239784316
15760	3031	1.142635362	0	1.142635362	0
15761	3032	1.142635362	0	1.142635362	0
15762	3033	1.142398883	0	1.142398883	0
15763	3034	1.142353261	0	1.142353261	0
15764	3035	1.142353261	0	1.142353261	0
15765	3036	1.142176034	0	1.142176034	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15712	2983	1.169215701	0	1.169215701	0
15713	2984	1.16829461	-1.498752967	1.16829461	-1.498752967
15714	2985	1.168090188	0	1.168090188	0
15715	2986	1.167335549	0	1.167335549	0
15716	2987	1.167022469	0	1.167022469	0
15717	2988	1.166309714	0	1.166309714	0
15718	2989	1.165647932	0	1.165647932	0
15719	2990	1.164629656	0	1.164629656	0
15720	2991	1.164629656	0	1.164629656	0
15721	2992	1.164629656	0	1.164629656	0
15722	2993	1.164629656	0	1.164629656	0
15723	2994	1.164629656	0	1.164629656	0
15724	2995	1.162249954	0	1.162249954	0
15725	2996	1.161940517	0	1.161940517	0
15726	2997	1.161685275	0	1.161685275	0
15727	2998	1.161538579	0	1.161538579	0
15728	2999	1.160220537	0	1.160220537	0
15729	3000	1.159934535	0	1.159934535	0
15730	3001	1.158800112	0	1.158800112	0
15731	3002	1.158618564	0	1.158618564	0
15732	3003	1.157474725	0	1.157474725	0
15733	3004	1.156155348	0	1.156155348	0
15734	3005	1.155855732	0	1.155855732	0
15735	3006	1.155019343	-0.167233649	1.155019343	-0.167233649
15736	3007	1.154616659	0	1.154616659	0
15737	3008	1.154561261	0	1.154561261	0
15738	3009	1.153816787	0	1.153816787	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15685	2956	1.18160247	0	1.18160247	0
15686	2957	1.18166942	0	1.18166942	0
15687	2958	1.180966452	0	1.180966452	0
15688	2959	1.180423923	0	1.180423923	0
15689	2960	1.180423923	0	1.180423923	0
15690	2961	1.180423923	0	1.180423923	0
15691	2962	1.179658646	0	1.179658646	0
15692	2963	1.179188376	-0.225225596	1.179188376	-0.225225596
15693	2964	1.178964108	0	1.178964108	0
15694	2965	1.178763139	0	1.178763139	0
15695	2966	1.178498002	0	1.178498002	0
15696	2967	1.178445357	0	1.178445357	0
15697	2968	1.177891586	0	1.177891586	0
15698	2969	1.177891586	0	1.177891586	0
15699	2970	1.177891586	0	1.177891586	0
15700	2971	1.176059118	0	1.176059118	0
15701	2972	1.17509509	0	1.17509509	0
15702	2973	1.17509509	0	1.17509509	0
15703	2974	1.174613877	0	1.174613877	0
15704	2975	1.174433559	0	1.174433559	0
15705	2976	1.173584498	0	1.173584498	0
15706	2977	1.173584498	0	1.173584498	0
15707	2978	1.171677185	0	1.171677185	0
15708	2979	1.171210001	0	1.171210001	0
15709	2980	1.170878605	0	1.170878605	0
15710	2981	1.170878605	-1.441811309	1.170878605	-1.441811309
15711	2982	1.169621601	0	1.169621601	0



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
15874	3145	1.101242677	0	0
15875	3146	1.101057831	-0.19587883	0
15876	3147	1.100960576	0	0
15877	3148	1.100900578	0	0
15878	3149	1.100808165	0	0
15879	3150	1.100740312	0	0
15880	3151	1.100740312	0	0
15881	3152	1.100512156	0	0
15882	3153	1.100512156	-0.247145416	0
15883	3154	1.100297531	0	0
15884	3155	1.099904326	0	0
15885	3156	1.099236694	0	0
15886	3157	1.099213691	0	0
15887	3158	1.09895088	0	0
15888	3159	1.09895088	0	0
15889	3160	1.09895088	-0.154717091	0
15890	3161	1.098609856	0	0
15891	3162	1.098609856	0	0
15892	3163	1.098237167	0	0
15893	3164	1.097546531	-0.259870878	0
15894	3165	1.096877872	0	0
15895	3166	1.096632577	0	0
15896	3167	1.096576383	0	0
15897	3168	1.096390174	0	0
15898	3169	1.095913843	0	0
15899	3170	1.095913843	-1.215746075	0
15900	3171	1.095472711	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
15847	3118	1.108068664	0	0
15848	3119	1.1079638	0	0
15849	3120	1.107514186	0	0
15850	3121	1.106637709	0	0
15851	3122	1.106637709	0	0
15852	3123	1.106637709	0	0
15853	3124	1.106637709	0	0
15854	3125	1.106637709	0	0
15855	3126	1.106637709	0	0
15856	3127	1.106637709	0	0
15857	3128	1.106637709	0	0
15858	3129	1.106637709	0	0
15859	3130	1.106637709	0	0
15860	3131	1.106637709	-0.76929364	0
15861	3132	1.105748672	-1.338028568	0
15862	3133	1.105531225	0	0
15863	3134	1.104801366	0	0
15864	3135	1.104333754	0	0
15865	3136	1.10409052	0	0
15866	3137	1.103789866	0	0
15867	3138	1.103408739	0	0
15868	3139	1.103092428	0	0
15869	3140	1.103033585	0	0
15870	3141	1.102737668	0	0
15871	3142	1.101730374	0	0
15872	3143	1.101463075	0	0
15873	3144	1.101242677	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
15820	3091	1.117633093	0	0
15821	3092	1.117633093	0	0
15822	3093	1.117633093	0	0
15823	3094	1.117633093	0	0
15824	3095	1.11703143	0	0
15825	3096	1.117057487	0	0
15826	3097	1.116441612	0	0
15827	3098	1.115070876	0	0
15828	3099	1.114695352	0	0
15829	3100	1.114640527	0	0
15830	3101	1.114463046	0	0
15831	3102	1.114036431	0	0
15832	3103	1.113899393	0	0
15833	3104	1.113126755	-0.714112671	0
15834	3105	1.112996453	0	0
15835	3106	1.112886658	0	0
15836	3107	1.112711857	0	0
15837	3108	1.112711857	0	0
15838	3109	1.112262323	0	0
15839	3110	1.112100605	0	0
15840	3111	1.111966542	0	0
15841	3112	1.111889218	0	0
15842	3113	1.111002514	0	0
15843	3114	1.109940344	-1.243112259	0
15844	3115	1.109842849	0	0
15845	3116	1.109582089	0	0
15846	3117	1.108068664	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
15793	3064	1.129433906	0	0
15794	3065	1.128506124	0	0
15795	3066	1.127284479	0	0
15796	3067	1.127069251	0	0
15797	3068	1.126841095	0	0
15798	3069	1.126634337	0	0
15799	3070	1.126416357	0	0
15800	3071	1.126274007	0	0
15801	3072	1.126066261	0	0
15802	3073	1.125942864	0	0
15803	3074	1.125685133	0	0
15804	3075	1.123750018	-0.576090072	0
15805	3076	1.123236971	0	0
15806	3077	1.123236971	0	0
15807	3078	1.123236971	0	0
15808	3079	1.122431976	0	0
15809	3080	1.122431976	0	0
15810	3081	1.122431976	0	0
15811	3082	1.122431976	0	0
15812	3083	1.122212691	0	0
15813	3084	1.120680786	-1.278129308	0
15814	3085	1.120635141	-1.363887067	0
15815	3086	1.119943176	-1.301932223	0
15816	3087	1.119704454	0	0
15817	3088	1.119602686	0	0
15818	3089	1.118872165	0	0
15819	3090	1.117633093	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15982	3253	1.070997353	-0.343324908
15983	3254	1.070208443	0
15984	3255	1.069997569	-1.439708184
15985	3256	1.069914902	0
15986	3257	1.069792651	0
15987	3258	1.069273471	0
15988	3259	1.069100549	0
15989	3260	1.06902776	0
15990	3261	1.068849148	0
15991	3262	1.068606864	0
15992	3263	1.068606864	0
15993	3264	1.068373209	0
15994	3265	1.068259474	0
15995	3266	1.067983732	0
15996	3267	1.067549698	-1.454220567
15997	3268	1.06738441	0
15998	3269	1.06722359	0
15999	3270	1.066593068	0
16000	3271	1.066480571	0
16001	3272	1.066480571	0
16002	3273	1.066209052	0
16003	3274	1.065764826	0
16004	3275	1.065704352	0
16005	3276	1.065245024	0
16006	3277	1.065245024	-1.371353631
16007	3278	1.065083245	0
16008	3279	1.064926743	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15955	3226	1.077599501	0
15956	3227	1.077313624	0
15957	3228	1.077024864	0
15958	3229	1.077024864	0
15959	3230	1.076674485	0
15960	3231	1.076674485	0
15961	3232	1.076240408	0
15962	3233	1.076169785	0
15963	3234	1.075878345	0
15964	3235	1.075380015	0
15965	3236	1.075352431	0
15966	3237	1.075229245	-0.58321816
15967	3238	1.074790342	0
15968	3239	1.074578128	0
15969	3240	1.074453025	0
15970	3241	1.074370531	0
15971	3242	1.073968592	0
15972	3243	1.073968592	-1.441811309
15973	3244	1.073637449	0
15974	3245	1.073508291	0
15975	3246	1.073286633	0
15976	3247	1.073009531	-0.754229894
15977	3248	1.072255397	0
15978	3249	1.07219088	0
15979	3250	1.071875603	0
15980	3251	1.071572006	0
15981	3252	1.071279454	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15928	3199	1.08797094	0
15929	3200	1.087841223	0
15930	3201	1.087841223	0
15931	3202	1.08766987	0
15932	3203	1.087487355	0
15933	3204	1.087084172	0
15934	3205	1.087084172	0
15935	3206	1.086620595	0
15936	3207	1.086196549	0
15937	3208	1.086081954	0
15938	3209	1.086081954	0
15939	3210	1.085933384	0
15940	3211	1.085444841	0
15941	3212	1.084448882	-1.366390212
15942	3213	1.084361314	0
15943	3214	1.083973724	0
15944	3215	1.083774826	-1.42874303
15945	3216	1.083289526	0
15946	3217	1.082637432	0
15947	3218	1.082637432	0
15948	3219	1.081691875	0
15949	3220	1.081655421	0
15950	3221	1.081655421	0
15951	3222	1.08030877	0
15952	3223	1.079715066	0
15953	3224	1.078808615	0
15954	3225	1.078715027	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
15901	3172	1.095356698	0
15902	3173	1.095356698	0
15903	3174	1.095219805	-1.047527439
15904	3175	1.094993728	0
15905	3176	1.094448046	0
15906	3177	1.0941114589	0
15907	3178	1.093943438	0
15908	3179	1.093273747	0
15909	3180	1.093273747	-0.76929364
15910	3181	1.092809509	0
15911	3182	1.092701931	0
15912	3183	1.092581644	0
15913	3184	1.092581644	0
15914	3185	1.092529455	0
15915	3186	1.092468753	0
15916	3187	1.092262584	0
15917	3188	1.092207993	0
15918	3189	1.091914452	0
15919	3190	1.091697359	0
15920	3191	1.091200739	0
15921	3192	1.091125543	0
15922	3193	1.090422165	0
15923	3194	1.089902751	0
15924	3195	1.089902751	-0.033431452
15925	3196	1.089299495	0
15926	3197	1.088366413	-1.376260966
15927	3198	1.088154303	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16090	3361	1.044761321	0	1.044761321	0
16091	3362	1.044654339	0	1.044654339	0
16092	3363	1.044489802	0	1.044489802	0
16093	3364	1.044489802	-1.20502221	1.044489802	-1.20502221
16094	3365	1.044055725	0	1.044055725	0
16095	3366	1.044055725	-1.313361685	1.044055725	-1.313361685
16096	3367	1.043903314	0	1.043903314	0
16097	3368	1.043585963	0	1.043585963	0
16098	3369	1.043336297	0	1.043336297	0
16099	3370	1.04325073	0	1.04325073	0
16100	3371	1.043181404	0	1.043181404	0
16101	3372	1.043075928	0	1.043075928	0
16102	3373	1.042968629	0	1.042968629	0
16103	3374	1.042843706	0	1.042843706	0
16104	3375	1.04232374	0	1.04232374	0
16105	3376	1.042121225	0	1.042121225	0
16106	3377	1.042121225	0	1.042121225	0
16107	3378	1.041912379	0	1.041912379	0
16108	3379	1.041912379	0	1.041912379	0
16109	3380	1.041586577	0	1.041586577	0
16110	3381	1.041244747	0	1.041244747	0
16111	3382	1.040699265	0	1.040699265	0
16112	3383	1.04050803	0	1.04050803	0
16113	3384	1.039903444	-1.481866821	1.039903444	-1.481866821
16114	3385	1.039690919	0	1.039690919	0
16115	3386	1.039690919	0	1.039690919	0
16116	3387	1.039690919	0	1.039690919	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16063	3334	1.052349473	0	1.052349473	0
16064	3335	1.052280047	0	1.052280047	0
16065	3336	1.051590143	-0.874028991	1.051590143	-0.874028991
16066	3337	1.051248133	0	1.051248133	0
16067	3338	1.051185206	0	1.051185206	0
16068	3339	1.050984685	0	1.050984685	0
16069	3340	1.050984685	0	1.050984685	0
16070	3341	1.050156353	0	1.050156353	0
16071	3342	1.050056435	0	1.050056435	0
16072	3343	1.049616253	0	1.049616253	0
16073	3344	1.049616253	0	1.049616253	0
16074	3345	1.049236237	0	1.049236237	0
16075	3346	1.049236237	0	1.049236237	0
16076	3347	1.049098388	0	1.049098388	0
16077	3348	1.048185948	0	1.048185948	0
16078	3349	1.047516257	0	1.047516257	0
16079	3350	1.047290708	0	1.047290708	0
16080	3351	1.047052019	0	1.047052019	0
16081	3352	1.046885015	0	1.046885015	0
16082	3353	1.046850817	0	1.046850817	0
16083	3354	1.046746572	-1.525514685	1.046746572	-1.525514685
16084	3355	1.046530344	-0.992128303	1.046530344	-0.992128303
16085	3356	1.04624453	0	1.04624453	0
16086	3357	1.045939868	0	1.045939868	0
16087	3358	1.045939868	0	1.045939868	0
16088	3359	1.045939868	0	1.045939868	0
16089	3360	1.045408296	0	1.045408296	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16036	3307	1.058787822	-1.243112259	1.058787822	-1.243112259
16037	3308	1.058511641	0	1.058511641	0
16038	3309	1.057500478	0	1.057500478	0
16039	3310	1.055485186	0	1.055485186	0
16040	3311	1.055485186	0	1.055485186	0
16041	3312	1.055485186	0	1.055485186	0
16042	3313	1.055485186	0	1.055485186	0
16043	3314	1.055485186	0	1.055485186	0
16044	3315	1.055485186	0	1.055485186	0
16045	3316	1.055485186	0	1.055485186	0
16046	3317	1.055485186	0	1.055485186	0
16047	3318	1.055485186	0	1.055485186	0
16048	3319	1.055485186	0	1.055485186	0
16049	3320	1.055485186	0	1.055485186	0
16050	3321	1.055485186	0	1.055485186	0
16051	3322	1.055485186	0	1.055485186	0
16052	3323	1.055485186	0	1.055485186	0
16053	3324	1.055485186	0	1.055485186	0
16054	3325	1.055485186	0	1.055485186	0
16055	3326	1.055485186	0	1.055485186	0
16056	3327	1.055485186	0	1.055485186	0
16057	3328	1.055485186	0	1.055485186	0
16058	3329	1.055485186	0	1.055485186	0
16059	3330	1.053765206	-1.528961485	1.053765206	-1.528961485
16060	3331	1.052812597	-1.036998572	1.052812597	-1.036998572
16061	3332	1.052655896	0	1.052655896	0
16062	3333	1.052415955	0	1.052415955	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16009	3280	1.064628566	0	1.064628566	0
16010	3281	1.064215018	0	1.064215018	0
16011	3282	1.064085358	0	1.064085358	0
16012	3283	1.063918354	0	1.063918354	0
16013	3284	1.063603077	0	1.063603077	0
16014	3285	1.063603077	0	1.063603077	0
16015	3286	1.063454116	0	1.063454116	0
16016	3287	1.063454116	0	1.063454116	0
16017	3288	1.063381667	0	1.063381667	0
16018	3289	1.062934674	0	1.062934674	0
16019	3290	1.062547041	0	1.062547041	0
16020	3291	1.062434046	0	1.062434046	0
16021	3292	1.062271176	0	1.062271176	0
16022	3293	1.061559334	0	1.061559334	0
16023	3294	1.061089064	0	1.061089064	0
16024	3295	1.060880218	0	1.060880218	0
16025	3296	1.060781526	0	1.060781526	0
16026	3297	1.060505988	0	1.060505988	0
16027	3298	1.060505988	-0.423517317	1.060505988	-0.423517317
16028	3299	1.060032814	-0.626443314	1.060032814	-0.626443314
16029	3300	1.060032814	-0.92747331	1.060032814	-0.92747331
16030	3301	1.059894305	0	1.059894305	0
16031	3302	1.059469567	0	1.059469567	0
16032	3303	1.059469567	0	1.059469567	0
16033	3304	1.059362841	0	1.059362841	0
16034	3305	1.059030467	0	1.059030467	0
16035	3306	1.059030467	0	1.059030467	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16117	3388	1.03933855	0
16118	3389	1.039017072	0
16119	3390	1.038970098	0
16120	3391	1.038451847	-1.318965562
16121	3392	1.03811109	0
16122	3393	1.037756419	0
16123	3394	1.037756419	0
16124	3395	1.03731217	0
16125	3396	1.037196401	0
16126	3397	1.037196401	0
16127	3398	1.037001781	0
16128	3399	1.036843076	0
16129	3400	1.036180031	0
16130	3401	1.036056635	-1.329960946
16131	3402	1.035830498	0
16132	3403	1.0352818	0
16133	3404	1.035078336	0
16134	3405	1.035044026	-1.065360216
16135	3406	1.035022132	0
16136	3407	1.034995798	0
16137	3408	1.03470158	-1.155224741
16138	3409	1.03455128	0
16139	3410	1.034295887	0
16140	3411	1.034087042	-0.188631794
16141	3412	1.033765937	0
16142	3413	1.033765937	-0.194556776
16143	3414	1.033093914	0
16144	3415	1.032535988	0
16145	3416	1.032398366	0
16146	3417	1.032004091	0
16147	3418	1.032004091	0
16148	3419	1.032004091	0
16149	3420	1.031616846	-0.920561315
16150	3421	1.031446946	-0.394686276
16151	3422	1.031351507	-1.171163942
16152	3423	1.031011417	0
16153	3424	1.031011417	-1.466285079
16154	3425	1.029724324	0
16155	3426	1.029156248	0
16156	3427	1.029156248	0
16157	3428	1.028926158	0
16158	3429	1.028750933	0
16159	3430	1.02865562	-0.985179443
16160	3431	1.028501697	0
16161	3432	1.028211102	0
16162	3433	1.028211102	0
16163	3434	1.028046938	0
16164	3435	1.027989013	0
16165	3436	1.027989013	0
16166	3437	1.027791696	0
16167	3438	1.027456463	0
16168	3439	1.027456463	0
16169	3440	1.027456463	0
16170	3441	1.027456463	0
16171	3442	1.026840005	-0.320817567
16172	3443	1.026761035	0
16173	3444	1.026761035	0
16174	3445	1.026595621	0
16175	3446	1.026595621	0
16176	3447	1.02652149	0
16177	3448	1.02619581	0
16178	3449	1.025521963	0
16179	3450	1.025521963	0
16180	3451	1.025521963	0
16181	3452	1.025399816	0
16182	3453	1.025102557	0
16183	3454	1.024995864	0
16184	3455	1.024780213	-1.592708584
16185	3456	1.024704852	-1.103564569
16186	3457	1.024450953	0
16187	3458	1.024450953	0
16188	3459	1.024450953	0
16189	3460	1.0238862	0
16190	3461	1.0238862	0
16191	3462	1.0238862	-1.358837074
16192	3463	1.023770773	0
16193	3464	1.023770773	-0.102038049
16194	3465	1.02351598	0
16195	3466	1.02351598	0
16196	3467	1.023300503	0
16197	3468	1.023017298	0
16198	3469	1.022955962	0
16199	3470	1.022955962	0
16200	3471	1.022955962	-1.112612698
16201	3472	1.022860711	0
16202	3473	1.022790169	0
16203	3474	1.022692673	0
16204	3475	1.022583017	0
16205	3476	1.022484926	0
16206	3477	1.022425086	0
16207	3478	1.022316823	-0.958349876
16208	3479	1.022178004	0
16209	3480	1.021876585	0
16210	3481	1.021237342	-0.05218341
16211	3482	1.02072308	0
16212	3483	1.02072308	0
16213	3484	1.02072308	0
16214	3485	1.02072308	-0.503025751
16215	3486	1.02072308	-1.281177001
16216	3487	1.02072308	-1.385912352
16217	3488	1.019946861	0
16218	3489	1.019946861	-0.31772649
16219	3490	1.019909032	-0.707254185
16220	3491	1.019135164	0
16221	3492	1.018968353	0
16222	3493	1.018968353	0
16223	3494	1.018968353	0
16224	3495	1.018762379	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16306	3577	1.004332664	0	1.004332664	0
16307	3578	1.004332664	-0.858234723	1.003940524	0
16308	3579	1.003689741	0	1.003689741	0
16309	3580	1.003689741	0	1.003689741	0
16310	3581	1.003689741	0	1.003689741	0
16311	3582	1.003689741	0	1.003689741	0
16312	3583	1.003567387	0	1.003567387	0
16313	3584	1.003456186	0	1.003456186	0
16314	3585	1.003456186	0	1.003456186	0
16315	3586	1.003387518	0	1.003387518	0
16316	3587	1.003387518	-0.040410768	1.003387518	0
16317	3588	1.003307175	0	1.003307175	0
16318	3589	1.003097117	-1.468263644	1.003097117	-1.468263644
16319	3590	1.003097117	-1.468263644	1.003097117	-1.468263644
16320	3591	1.002872849	0	1.002872849	0
16321	3592	1.002872849	-1.299027232	1.002872849	-1.299027232
16322	3593	1.002326681	0	1.002326681	0
16323	3594	1.002040867	0	1.002040867	0
16324	3595	1.001902358	-1.175058986	1.001902358	-1.175058986
16325	3596	1.001902358	-1.175058986	1.001902358	-1.175058986
16326	3597	1.001847747	-0.808888002	1.001847747	-0.808888002
16327	3598	1.001722041	0	1.001722041	0
16328	3599	1.001609806	0	1.001609806	0
16329	3600	1.001127524	0	1.001127524	0
16330	3601	1.001127524	0	1.001127524	0
16331	3602	1.001127524	0	1.001127524	0
16332	3603	1.001127524	0	1.001127524	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16279	3550	1.008909044	0	1.008909044	0
16280	3551	1.008859974	0	1.008859974	0
16281	3552	1.008586317	0	1.008586317	0
16282	3553	1.008488624	0	1.008488624	0
16283	3554	1.008488624	0	1.008488624	0
16284	3555	1.008232705	0	1.008232705	0
16285	3556	1.008151308	0	1.008151308	0
16286	3557	1.007843552	0	1.007843552	0
16287	3558	1.007758103	0	1.007758103	0
16288	3559	1.00744793	0	1.00744793	0
16289	3560	1.00738648	0	1.00738648	0
16290	3561	1.007180507	0	1.007180507	0
16291	3562	1.007180507	0	1.007180507	0
16292	3563	1.007063304	0	1.007063304	0
16293	3564	1.006934796	0	1.006934796	0
16294	3565	1.006498726	0	1.006498726	0
16295	3566	1.006267164	0	1.006267164	0
16296	3567	1.006182415	0	1.006182415	0
16297	3568	1.006123572	0	1.006123572	0
16298	3569	1.005797402	0	1.005797402	0
16299	3570	1.005797402	0	1.005797402	0
16300	3571	1.00561113	0	1.00561113	0
16301	3572	1.005571736	0	1.005571736	0
16302	3573	1.005318577	0	1.005318577	0
16303	3574	1.005075683	0	1.005075683	0
16304	3575	1.004745295	0	1.004745295	0
16305	3576	1.004706894	0	1.004706894	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16252	3523	1.013883656	0	1.013883656	0
16253	3524	1.013844262	-0.414636503	1.013844262	-0.414636503
16254	3525	1.013786552	-1.278129308	1.013786552	-1.278129308
16255	3526	1.013693883	0	1.013693883	0
16256	3527	1.013520685	0	1.013520685	0
16257	3528	1.01336198	0	1.01336198	0
16258	3529	1.013287507	0	1.013287507	0
16259	3530	1.013287507	0	1.013287507	0
16260	3531	1.013081338	0	1.013081338	0
16261	3532	1.012733206	0	1.012733206	0
16262	3533	1.012450554	0	1.012450554	0
16263	3534	1.012289913	0	1.012289913	0
16264	3535	1.011904615	0	1.011904615	0
16265	3536	1.011706262	0	1.011706262	0
16266	3537	1.01162005	0	1.01162005	0
16267	3538	1.011468357	0	1.011468357	0
16268	3539	1.011468357	0	1.011468357	0
16269	3540	1.011369643	0	1.011369643	0
16270	3541	1.011006915	0	1.011006915	0
16271	3542	1.010440238	0	1.010440238	0
16272	3543	1.010406812	0	1.010406812	0
16273	3544	1.009727696	0	1.009727696	0
16274	3545	1.009727696	0	1.009727696	0
16275	3546	1.009727696	0	1.009727696	0
16276	3547	1.009727696	0	1.009727696	0
16277	3548	1.009027785	-1.441811309	1.009027785	-1.441811309
16278	3549	1.008992227	-1.42030719	1.008992227	-1.42030719

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16225	3496	1.018682538	0	1.018682538	0
16226	3497	1.018640129	0	1.018640129	0
16227	3498	1.01850162	0	1.01850162	0
16228	3499	1.018022795	0	1.018022795	0
16229	3500	1.017901144	0	1.017901144	0
16230	3501	1.017901144	0	1.017901144	0
16231	3502	1.017696626	0	1.017696626	0
16232	3503	1.017696626	0	1.017696626	0
16233	3504	1.017395137	0	1.017395137	0
16234	3505	1.017183578	0	1.017183578	0
16235	3506	1.016855784	0	1.016855784	0
16236	3507	1.016855784	0	1.016855784	0
16237	3508	1.016732597	0	1.016732597	0
16238	3509	1.016732597	0	1.016732597	0
16239	3510	1.01656712	0	1.01656712	0
16240	3511	1.01656712	0	1.01656712	0
16241	3512	1.016387326	0	1.016387326	0
16242	3513	1.015976645	0	1.015976645	0
16243	3514	1.015976645	0	1.015976645	0
16244	3515	1.015976645	0	1.015976645	0
16245	3516	1.015613674	0	1.015613674	0
16246	3517	1.01555724	0	1.01555724	0
16247	3518	1.015056529	0	1.015056529	0
16248	3519	1.014867335	-1.351150245	1.014867335	-1.351150245
16249	3520	1.014691115	0	1.014691115	0
16250	3521	1.014448335	0	1.014448335	0
16251	3522	1.014092501	0	1.014092501	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16414	3685	0.988538397	0
16415	3686	0.987584951	0
16416	3687	0.987522503	0
16417	3688	0.987488107	0
16418	3689	0.987411822	0
16419	3690	0.987274074	0
16420	3691	0.987220355	0
16421	3692	0.986908772	0
16422	3693	0.986864813	0
16423	3694	0.986769374	0
16424	3695	0.986662392	-0.491328949
16425	3696	0.986541637	0
16426	3697	0.986541637	0
16427	3698	0.9862466	0
16428	3699	0.985849258	0
16429	3700	0.985285239	0
16430	3701	0.985197654	0
16431	3702	0.985105221	0
16432	3703	0.985040704	0
16433	3704	0.984904112	0
16434	3705	0.984756418	0
16435	3706	0.984756418	-1.363887067
16436	3707	0.984677976	0
16437	3708	0.984421831	0
16438	3709	0.984231309	0
16439	3710	0.984129278	-1.422506154
16440	3711	0.983966834	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16387	3658	0.99333728	0
16388	3659	0.99333728	0
16389	3660	0.993101953	-0.977099312
16390	3661	0.992992738	0
16391	3662	0.992838377	0
16392	3663	0.992516695	0
16393	3664	0.992203351	0
16394	3665	0.991502876	0
16395	3666	0.991131207	0
16396	3667	0.991027197	0
16397	3668	0.991027197	0
16398	3669	0.99093121	0
16399	3670	0.990544379	0
16400	3671	0.990314655	0
16401	3672	0.99005426	0
16402	3673	0.989983638	0
16403	3674	0.989983638	0
16404	3675	0.989860451	0
16405	3676	0.989860451	0
16406	3677	0.988538397	0
16407	3678	0.988538397	0
16408	3679	0.988538397	0
16409	3680	0.988538397	0
16410	3681	0.988538397	0
16411	3682	0.988538397	0
16412	3683	0.988538397	0
16413	3684	0.988538397	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16360	3631	0.996810923	0
16361	3632	0.996707186	0
16362	3633	0.99656625	0
16363	3634	0.996507326	0
16364	3635	0.996507326	0
16365	3636	0.995899496	0
16366	3637	0.995899496	0
16367	3638	0.995756754	0
16368	3639	0.995756754	0
16369	3640	0.995716981	0
16370	3641	0.995487257	0
16371	3642	0.995487257	0
16372	3643	0.995487257	-1.015142666
16373	3644	0.995118742	-1.243112259
16374	3645	0.995004439	0
16375	3646	0.994584357	0
16376	3647	0.994584357	0
16377	3648	0.994487729	0
16378	3649	0.99421553	0
16379	3650	0.99421553	0
16380	3651	0.993828285	0
16381	3652	0.993653821	0
16382	3653	0.993598196	0
16383	3654	0.993530342	0
16384	3655	0.993490497	0
16385	3656	0.99333728	0
16386	3657	0.99333728	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16333	3604	1.001127524	0
16334	3605	1.001127524	-1.259379872
16335	3606	1.000584316	-0.216017594
16336	3607	1.000519694	0
16337	3608	1.00043762	0
16338	3609	1.000329922	0
16339	3610	1.000262395	0
16340	3611	0.999898098	0
16341	3612	0.999369244	0
16342	3613	0.999369244	0
16343	3614	0.999369244	0
16344	3615	0.999262262	-1.271968999
16345	3616	0.99900383	0
16346	3617	0.998757562	0
16347	3618	0.99866227	0
16348	3619	0.99866227	0
16349	3620	0.998446685	0
16350	3621	0.998189782	0
16351	3622	0.998107083	-1.431192333
16352	3623	0.997828473	0
16353	3624	0.997759433	0
16354	3625	0.997734581	0
16355	3626	0.997493239	0
16356	3627	0.997214935	0
16357	3628	0.997138569	-0.766819021
16358	3629	0.996890471	0
16359	3630	0.996810923	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16441	3712	0.983791962	0
16442	3713	0.983791962	-0.964690054
16443	3714	0.98333687	0
16444	3715	0.9832528	0
16445	3716	0.982934519	-1.495056821
16446	3717	0.982669463	0
16447	3718	0.98257545	0
16448	3719	0.981698972	0
16449	3720	0.981698972	0
16450	3721	0.981698972	0
16451	3722	0.981698972	0
16452	3723	0.981505134	0
16453	3724	0.981438056	0
16454	3725	0.981383466	-1.009502399
16455	3726	0.981299988	0
16456	3727	0.981156443	0
16457	3728	0.981082514	-0.718757576
16458	3729	0.980985259	0
16459	3730	0.980851568	0
16460	3731	0.980420507	0
16461	3732	0.980234234	0
16462	3733	0.980105229	0
16463	3734	0.979764472	0
16464	3735	0.979764472	0
16465	3736	0.979764472	0
16466	3737	0.979764472	0
16467	3738	0.979764472	-0.669909008
16468	3739	0.979479783	0
16469	3740	0.979442892	-1.411398273
16470	3741	0.979330395	0
16471	3742	0.979330395	-1.281177001
16472	3743	0.979238374	0
16473	3744	0.979238374	0
16474	3745	0.979175997	0
16475	3746	0.979096841	0
16476	3747	0.978851129	0
16477	3748	0.978851129	0
16478	3749	0.978758579	0
16479	3750	0.978723414	0
16480	3751	0.978723414	0
16481	3752	0.978554176	0
16482	3753	0.978319232	0
16483	3754	0.978163877	0
16484	3755	0.977880329	0
16485	3756	0.977880329	0
16486	3757	0.977402031	-1.324498051
16487	3758	0.977198471	0
16488	3759	0.977198471	0
16489	3760	0.977058579	0
16490	3761	0.976878784	0
16491	3762	0.976878784	0
16492	3763	0.97630394	0
16493	3764	0.97630394	0
16494	3765	0.97630394	0
16495	3766	0.97630394	0
16496	3767	0.97630394	0
16497	3768	0.97630394	0
16498	3769	0.975888149	0
16499	3770	0.975443099	0
16500	3771	0.975256185	0
16501	3772	0.97496559	0
16502	3773	0.974829255	0
16503	3774	0.974750112	0
16504	3775	0.974451935	0
16505	3776	0.974451935	0
16506	3777	0.974451935	-0.673000085
16507	3778	0.974012144	0
16508	3779	0.97381514	0
16509	3780	0.97329843	0
16510	3781	0.973044679	0
16511	3782	0.973004889	0
16512	3783	0.97274413	0
16513	3784	0.972510951	0
16514	3785	0.972510951	0
16515	3786	0.972245084	0
16516	3787	0.972204029	0
16517	3788	0.972111508	-0.309585187
16518	3789	0.971939135	0
16519	3790	0.971939135	0
16520	3791	0.971505057	0
16521	3792	0.971164301	0
16522	3793	0.970663673	0
16523	3794	0.970663673	0
16524	3795	0.970663673	0
16525	3796	0.970533975	0
16526	3797	0.970313577	0
16527	3798	0.969856184	0
16528	3799	0.969631413	0
16529	3800	0.969570558	0
16530	3801	0.969375237	0
16531	3802	0.969375237	0
16532	3803	0.969175852	0
16533	3804	0.968335011	0
16534	3805	0.968335011	0
16535	3806	0.968335011	0
16536	3807	0.968335011	0
16537	3808	0.968335011	0
16538	3809	0.968335011	0
16539	3810	0.967576418	0
16540	3811	0.967576418	0
16541	3812	0.967530016	0
16542	3813	0.967349098	0
16543	3814	0.967269257	0
16544	3815	0.967269257	-1.259379872
16545	3816	0.967063284	0
16546	3817	0.966758622	0
16547	3818	0.966544103	0
16548	3819	0.966413351	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16630	3901	0.954027546	-1.284203456
16631	3902	0.953887292	0
16632	3903	0.953776291	0
16633	3904	0.953611754	0
16634	3905	0.953449532	0
16635	3906	0.953409333	0
16636	3907	0.953409333	0
16637	3908	0.953409333	0
16638	3909	0.953289577	0
16639	3910	0.953210434	0
16640	3911	0.953180142	-0.131235996
16641	3912	0.952822845	0
16642	3913	0.952822845	0
16643	3914	0.952822845	0
16644	3915	0.952822845	0
16645	3916	0.952822845	0
16646	3917	0.952822845	0
16647	3918	0.952822845	0
16648	3919	0.952822845	-1.358837074
16649	3920	0.952374887	0
16650	3921	0.952374887	0
16651	3922	0.952374887	0
16652	3923	0.952374887	-0.635491443
16653	3924	0.952326224	0
16654	3925	0.952265699	0
16655	3926	0.952188375	-1.262561531
16656	3927	0.952086128	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16603	3874	0.958575173	0
16604	3875	0.958575173	0
16605	3876	0.958575173	0
16606	3877	0.958575173	0
16607	3878	0.958575173	0
16608	3879	0.958575173	0
16609	3880	0.958575173	0
16610	3881	0.958067523	0
16611	3882	0.958029234	0
16612	3883	0.957984698	0
16613	3884	0.957984698	0
16614	3885	0.957577941	0
16615	3886	0.957504163	0
16616	3887	0.956998785	0
16617	3888	0.956875389	0
16618	3889	0.95595103	0
16619	3890	0.95595103	0
16620	3891	0.955689485	0
16621	3892	0.955630793	0
16622	3893	0.955114641	0
16623	3894	0.9550586	0
16624	3895	0.954619308	0
16625	3896	0.954458607	0
16626	3897	0.954458607	0
16627	3898	0.954458607	0
16628	3899	0.954027546	0
16629	3900	0.954027546	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16576	3847	0.96354671	-0.404594565
16577	3848	0.963270295	0
16578	3849	0.963170925	0
16579	3850	0.963102484	0
16580	3851	0.963102484	0
16581	3852	0.962731133	0
16582	3853	0.962731133	0
16583	3854	0.962209458	0
16584	3855	0.962209458	0
16585	3856	0.961994833	-0.227931489
16586	3857	0.961954914	0
16587	3858	0.961910419	0
16588	3859	0.961386151	0
16589	3860	0.960698867	0
16590	3861	0.960509673	0
16591	3862	0.960509673	0
16592	3863	0.96021712	0
16593	3864	0.960101693	0
16594	3865	0.959956079	0
16595	3866	0.959913524	0
16596	3867	0.959835826	0
16597	3868	0.959835826	0
16598	3869	0.95940319	-1.243112259
16599	3870	0.959249021	0
16600	3871	0.959249021	-1.33266684
16601	3872	0.959191631	0
16602	3873	0.959066179	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16549	3820	0.966262002	0
16550	3821	0.966084775	-0.458279424
16551	3822	0.966018768	0
16552	3823	0.965874412	-0.352624931
16553	3824	0.965710867	0
16554	3825	0.965710867	0
16555	3826	0.965620661	0
16556	3827	0.965524033	0
16557	3828	0.965308556	0
16558	3829	0.965308556	0
16559	3830	0.965308556	0
16560	3831	0.965123946	0
16561	3832	0.965057301	0
16562	3833	0.96476055	0
16563	3834	0.96476055	0
16564	3835	0.96476055	0
16565	3836	0.964626239	0
16566	3837	0.964626239	-0.94097578
16567	3838	0.964404717	0
16568	3839	0.964404717	0
16569	3840	0.964038069	0
16570	3841	0.963970205	0
16571	3842	0.963970205	0
16572	3843	0.963871513	0
16573	3844	0.963827837	0
16574	3845	0.963714813	0
16575	3846	0.963714813	0



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16738	4009	0.942780906	0	0.942780906	0
16739	4010	0.942780906	0	0.942780906	0
16740	4011	0.942511242	0	0.942511242	0
16741	4012	0.942253209	0	0.942253209	0
16742	4013	0.942128322	0	0.942128322	0
16743	4014	0.941925996	0	0.941925996	0
16744	4015	0.941925996	0	0.941925996	0
16745	4016	0.941769154	0	0.941769154	0
16746	4017	0.941182765	0	0.941182765	0
16747	4018	0.941182765	0	0.941182765	0
16748	4019	0.941182765	0	0.941182765	0
16749	4020	0.941182765	0	0.941182765	0
16750	4021	0.941113747	0	0.941113747	-0.319393649
16751	4022	0.941011883	0	0.941011883	0
16752	4023	0.940765615	0	0.940765615	0
16753	4024	0.940765615	0	0.940765615	0
16754	4025	0.940530671	0	0.940530671	0
16755	4026	0.940530671	0	0.940530671	0
16756	4027	0.940233717	0	0.940233717	0
16757	4028	0.940233717	0	0.940233717	0
16758	4029	0.940176434	0	0.940176434	0
16759	4030	0.940091768	0	0.940091768	-1.080083473
16760	4031	0.939953918	0	0.939953918	0
16761	4032	0.939886476	0	0.939886476	0
16762	4033	0.939689829	0	0.939689829	0
16763	4034	0.939689829	0	0.939689829	0
16764	4035	0.939391857	0	0.939391857	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16711	3982	0.945159605	-1.545796712	0.945159605	-1.545796712
16712	3983	0.945072703	0	0.945072703	0
16713	3984	0.94494427	0	0.94494427	0
16714	3985	0.944853915	0	0.944853915	0
16715	3986	0.944694101	0	0.944694101	0
16716	3987	0.944632911	-1.385912352	0.944632911	-1.385912352
16717	3988	0.944589527	0	0.944589527	0
16718	3989	0.944512106	-1.134441135	0.944512106	-1.134441135
16719	3990	0.944334734	0	0.944334734	0
16720	3991	0.944334734	0	0.944334734	0
16721	3992	0.944334734	0	0.944334734	0
16722	3993	0.944334734	0	0.944334734	0
16723	3994	0.944334734	0	0.944334734	0
16724	3995	0.944334734	0	0.944334734	0
16725	3996	0.944334734	0	0.944334734	0
16726	3997	0.944334734	0	0.944334734	0
16727	3998	0.944334734	-0.520292644	0.944334734	-0.520292644
16728	3999	0.944089023	0	0.944089023	0
16729	4000	0.943910411	0	0.943910411	0
16730	4001	0.943910411	-1.233050933	0.943910411	-1.233050933
16731	4002	0.943511427	0	0.943511427	0
16732	4003	0.943511427	0	0.943511427	0
16733	4004	0.943258415	0	0.943258415	0
16734	4005	0.943063007	0	0.943063007	0
16735	4006	0.942780906	0	0.942780906	0
16736	4007	0.942780906	0	0.942780906	0
16737	4008	0.942780906	0	0.942780906	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16684	3955	0.948037182	-0.591223815	0.948037182	-0.591223815
16685	3956	0.948037182	-0.989163824	0.948037182	-0.989163824
16686	3957	0.947851308	0	0.947851308	0
16687	3958	0.947729572	0	0.947729572	0
16688	3959	0.947579789	0	0.947579789	0
16689	3960	0.94731666	0	0.94731666	0
16690	3961	0.94731666	0	0.94731666	0
16691	3962	0.947145712	0	0.947145712	0
16692	3963	0.947025724	0	0.947025724	0
16693	3964	0.946936866	0	0.946936866	0
16694	3965	0.946733211	0	0.946733211	0
16695	3966	0.946733211	0	0.946733211	0
16696	3967	0.94667595	-0.790952701	0.94667595	-0.790952701
16697	3968	0.946663327	0	0.946663327	0
16698	3969	0.946340717	0	0.946340717	0
16699	3970	0.946340717	0	0.946340717	0
16700	3971	0.946340717	0	0.946340717	0
16701	3972	0.946340717	0	0.946340717	0
16702	3973	0.946340717	0	0.946340717	0
16703	3974	0.946058616	0	0.946058616	0
16704	3975	0.946019136	0	0.946019136	0
16705	3976	0.945894142	0	0.945894142	0
16706	3977	0.945610196	0	0.945610196	0
16707	3978	0.945610196	0	0.945610196	0
16708	3979	0.945610196	0	0.945610196	0
16709	3980	0.945523606	0	0.945523606	0
16710	3981	0.945269707	0	0.945269707	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16657	3928	0.951944594	0	0.951944594	0
16658	3929	0.951735749	-1.506052205	0.951735749	-1.506052205
16659	3930	0.951642161	0	0.951642161	0
16660	3931	0.951589053	0	0.951589053	0
16661	3932	0.951396589	0	0.951396589	0
16662	3933	0.951396589	0	0.951396589	0
16663	3934	0.951396589	0	0.951396589	0
16664	3935	0.951396589	0	0.951396589	0
16665	3936	0.951022036	0	0.951022036	0
16666	3937	0.950749836	0	0.950749836	0
16667	3938	0.950749836	0	0.950749836	0
16668	3939	0.95048478	0	0.95048478	0
16669	3940	0.949785808	0	0.949785808	0
16670	3941	0.949569687	0	0.949569687	0
16671	3942	0.949569687	0	0.949569687	0
16672	3943	0.949490645	0	0.949490645	0
16673	3944	0.949386273	0	0.949386273	0
16674	3945	0.949029855	0	0.949029855	0
16675	3946	0.949029855	0	0.949029855	0
16676	3947	0.949029855	0	0.949029855	0
16677	3948	0.949029855	0	0.949029855	0
16678	3949	0.949029855	0	0.949029855	0
16679	3950	0.949029855	-0.913537532	0.949029855	-0.913537532
16680	3951	0.948590952	0	0.948590952	0
16681	3952	0.948519821	0	0.948519821	0
16682	3953	0.948037182	0	0.948037182	0
16683	3954	0.948037182	0	0.948037182	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
16846	4117	0.93054645	0	0
16847	4118	0.93054645	0	0
16848	4119	0.93054645	0	0
16849	4120	0.93054645	0	0
16850	4121	0.93054645	0	0
16851	4122	0.93054645	0	0
16852	4123	0.93054645	0	0
16853	4124	0.93054645	0	0
16854	4125	0.93054645	-0.028930951	0
16855	4126	0.93054645	-0.329960946	0
16856	4127	0.928576857	0	0
16857	4128	0.928502707	-0.609122527	0
16858	4129	0.928290369	0	0
16859	4130	0.928290369	0	0
16860	4131	0.928242495	0	0
16861	4132	0.928242495	-1.101272772	0
16862	4133	0.927969027	0	0
16863	4134	0.927969027	0	0
16864	4135	0.927906354	0	0
16865	4136	0.927771396	0	0
16866	4137	0.927698607	0	0
16867	4138	0.92726874	0	0
16868	4139	0.92726874	0	0
16869	4140	0.92726874	0	0
16870	4141	0.927166709	0	0
16871	4142	0.926881496	0	0
16872	4143	0.926686029	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
16819	4090	0.933078786	0	0
16820	4091	0.932965924	-1.077663999	0
16821	4092	0.932862693	0	0
16822	4093	0.932814311	0	0
16823	4094	0.932814311	0	0
16824	4095	0.932639439	0	0
16825	4096	0.932078354	0	0
16826	4097	0.93054645	0	0
16827	4098	0.93054645	0	0
16828	4099	0.93054645	0	0
16829	4100	0.93054645	0	0
16830	4101	0.93054645	0	0
16831	4102	0.93054645	0	0
16832	4103	0.93054645	0	0
16833	4104	0.93054645	0	0
16834	4105	0.93054645	0	0
16835	4106	0.93054645	0	0
16836	4107	0.93054645	0	0
16837	4108	0.93054645	0	0
16838	4109	0.93054645	0	0
16839	4110	0.93054645	0	0
16840	4111	0.93054645	0	0
16841	4112	0.93054645	0	0
16842	4113	0.93054645	0	0
16843	4114	0.93054645	0	0
16844	4115	0.93054645	-1.460294715	0
16845	4116	0.93054645	-1.182745815	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
16792	4063	0.936009345	0	0
16793	4064	0.936009345	0	0
16794	4065	0.935875283	0	0
16795	4066	0.935747643	0	0
16796	4067	0.935747643	0	0
16797	4068	0.935625975	0	0
16798	4069	0.935625975	-0.754229894	0
16799	4070	0.935509869	0	0
16800	4071	0.935509869	0	0
16801	4072	0.935363074	0	0
16802	4073	0.935191355	0	0
16803	4074	0.935191355	0	0
16804	4075	0.935094078	0	0
16805	4076	0.934586428	-1.456254737	0
16806	4077	0.934441494	0	0
16807	4078	0.934372858	0	0
16808	4079	0.934180734	0	0
16809	4080	0.93412091	0	0
16810	4081	0.933952698	0	0
16811	4082	0.933659685	0	0
16812	4083	0.933572904	0	0
16813	4084	0.933572904	0	0
16814	4085	0.93349083	0	0
16815	4086	0.93341309	-1.304817911	0
16816	4087	0.933269308	0	0
16817	4088	0.933269308	0	0
16818	4089	0.933269308	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
16765	4036	0.939146622	0	0
16766	4037	0.938979617	0	0
16767	4038	0.938979617	0	0
16768	4039	0.93866434	0	0
16769	4040	0.93866434	0	0
16770	4041	0.93866434	-0.929298079	0
16771	4042	0.938515379	0	0
16772	4043	0.938371787	0	0
16773	4044	0.938371787	0	0
16774	4045	0.938188192	0	0
16775	4046	0.938188192	0	0
16776	4047	0.938099588	0	0
16777	4048	0.937845689	0	0
16778	4049	0.937845689	0	0
16779	4050	0.937532571	0	0
16780	4051	0.937532571	-1.393012692	0
16781	4052	0.937385874	0	0
16782	4053	0.937385874	0	0
16783	4054	0.937177029	0	0
16784	4055	0.937177029	0	0
16785	4056	0.936855924	0	0
16786	4057	0.936795399	0	0
16787	4058	0.936620598	0	0
16788	4059	0.936620598	-0.676069317	0
16789	4060	0.936298779	0	0
16790	4061	0.936150327	-0.271968999	0
16791	4062	0.936009345	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16954	4225	0.915306483	0
16955	4226	0.915034284	0
16956	4227	0.914941376	0
16957	4228	0.914866246	0
16958	4229	0.914752183	-1.175058986
16959	4230	0.914669688	-1.114845579
16960	4231	0.914445963	0
16961	4232	0.914156034	0
16962	4233	0.913904778	0
16963	4234	0.913904778	0
16964	4235	0.913732951	0
16965	4236	0.913732951	0
16966	4237	0.913608028	0
16967	4238	0.913608028	0
16968	4239	0.913608028	-1.087262058
16969	4240	0.913513111	-1.142874303
16970	4241	0.913287444	0
16971	4242	0.913133648	-1.18464645
16972	4243	0.912817683	0
16973	4244	0.912817683	0
16974	4245	0.912817683	0
16975	4246	0.912817683	0
16976	4247	0.912817683	0
16977	4248	0.912505057	0
16978	4249	0.912394187	0
16979	4250	0.912394187	0
16980	4251	0.912394187	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16927	4198	0.918196011	0
16928	4199	0.918196011	0
16929	4200	0.918137192	0
16930	4201	0.91810163	0
16931	4202	0.917957322	0
16932	4203	0.917709225	0
16933	4204	0.917581473	0
16934	4205	0.917503593	0
16935	4206	0.917182488	0
16936	4207	0.917182488	0
16937	4208	0.916902569	0
16938	4209	0.916902569	-1.413642694
16939	4210	0.916845172	0
16940	4211	0.916758165	0
16941	4212	0.916610672	0
16942	4213	0.916438196	-1.466285079
16943	4214	0.916306011	0
16944	4215	0.916306011	0
16945	4216	0.915823193	0
16946	4217	0.915722673	0
16947	4218	0.915722673	0
16948	4219	0.915722673	-1.299027232
16949	4220	0.915654894	0
16950	4221	0.915540541	0
16951	4222	0.915306483	0
16952	4223	0.915306483	0
16953	4224	0.915306483	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16900	4171	0.921591607	0
16901	4172	0.921338448	0
16902	4173	0.921286089	0
16903	4174	0.921206424	0
16904	4175	0.920786613	0
16905	4176	0.920786613	0
16906	4177	0.920607927	0
16907	4178	0.920422577	0
16908	4179	0.920327285	0
16909	4180	0.920258113	-0.186538804
16910	4181	0.920164414	0
16911	4182	0.920116922	0
16912	4183	0.919822584	0
16913	4184	0.919643087	-1.50965633
16914	4185	0.919551065	0
16915	4186	0.919551065	0
16916	4187	0.91934855	0
16917	4188	0.91914699	0
16918	4189	0.918964577	0
16919	4190	0.918902469	0
16920	4191	0.918647226	0
16921	4192	0.91850053	-1.643036862
16922	4193	0.918425817	0
16923	4194	0.918425817	0
16924	4195	0.918425817	-0.510054948
16925	4196	0.918380543	0
16926	4197	0.918311993	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16873	4144	0.92639049	0
16874	4145	0.926225076	-0.732222329
16875	4146	0.926137331	0
16876	4147	0.925851329	0
16877	4148	0.925851329	0
16878	4149	0.925639115	0
16879	4150	0.925525648	0
16880	4151	0.924556086	0
16881	4152	0.924556086	0
16882	4153	0.924556086	0
16883	4154	0.924386141	0
16884	4155	0.924206272	0
16885	4156	0.924206272	0
16886	4157	0.924206272	0
16887	4158	0.924015583	0
16888	4159	0.923367865	0
16889	4160	0.923367865	0
16890	4161	0.923367865	-0.911170799
16891	4162	0.923247211	0
16892	4163	0.923122432	0
16893	4164	0.923036848	0
16894	4165	0.922993312	-1.014207694
16895	4166	0.922859621	-1.483775811
16896	4167	0.922273924	0
16897	4168	0.922273924	0
16898	4169	0.922145908	-1.542481471
16899	4170	0.92205834	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17062	4333	0.902352249	-0.465789025
17063	4334	0.902315211	-1.105085742
17064	4335	0.901901268	0
17065	4336	0.901752257	0
17066	4337	0.901720124	0
17067	4338	0.901670322	0
17068	4339	0.901582754	0
17069	4340	0.901508242	0
17070	4341	0.901508242	0
17071	4342	0.901162672	0
17072	4343	0.901162672	0
17073	4344	0.901035852	0
17074	4345	0.901035852	0
17075	4346	0.901035852	0
17076	4347	0.901035852	0
17077	4348	0.900954577	0
17078	4349	0.900954577	0
17079	4350	0.900583226	0
17080	4351	0.900583226	0
17081	4352	0.900583226	0
17082	4353	0.900583226	-1.080083473
17083	4354	0.900261646	0
17084	4355	0.900202433	0
17085	4356	0.900202433	0
17086	4357	0.900202433	0
17087	4358	0.900116494	0
17088	4359	0.900033834	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17035	4306	0.905435729	-1.07523097
17036	4307	0.905042382	0
17037	4308	0.904992345	-0.970939004
17038	4309	0.90484105	0
17039	4310	0.904699793	0
17040	4311	0.904699793	0
17041	4312	0.904217511	0
17042	4313	0.904217511	0
17043	4314	0.904217511	0
17044	4315	0.904217511	0
17045	4316	0.904217511	0
17046	4317	0.904217511	0
17047	4318	0.904217511	0
17048	4319	0.904217511	0
17049	4320	0.904217511	-0.031778794
17050	4321	0.903674303	0
17051	4322	0.90356296	0
17052	4323	0.903488217	0
17053	4324	0.903394204	0
17054	4325	0.903394204	0
17055	4326	0.903394204	0
17056	4327	0.903272365	0
17057	4328	0.903002701	0
17058	4329	0.902875023	0
17059	4330	0.902875023	0
17060	4331	0.902875023	0
17061	4332	0.902517726	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17008	4279	0.909357151	0
17009	4280	0.909357151	0
17010	4281	0.909357151	-1.351150245
17011	4282	0.909006772	0
17012	4283	0.9088272	0
17013	4284	0.908644608	0
17014	4285	0.908644608	-0.73507954
17015	4286	0.908270055	0
17016	4287	0.908270055	-0.329960946
17017	4288	0.908105581	0
17018	4289	0.907882465	0
17019	4290	0.907882465	0
17020	4291	0.907738157	0
17021	4292	0.907683567	0
17022	4293	0.907683567	-1.318965562
17023	4294	0.907562543	0
17024	4295	0.907422651	0
17025	4296	0.907422651	0
17026	4297	0.907422651	0
17027	4298	0.907344195	0
17028	4299	0.90729399	0
17029	4300	0.907065354	0
17030	4301	0.907065354	0
17031	4302	0.907065354	-1.182745815
17032	4303	0.906696839	0
17033	4304	0.90641277	0
17034	4305	0.906046122	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
16981	4252	0.91232163	-0.813072565
16982	4253	0.912219069	0
16983	4254	0.912150051	0
16984	4255	0.912063044	0
16985	4256	0.911797014	0
16986	4257	0.911797014	0
16987	4258	0.911661106	0
16988	4259	0.911661106	-1.399998813
16989	4260	0.91108397	0
16990	4261	0.91108397	0
16991	4262	0.910992913	0
16992	4263	0.910992913	0
16993	4264	0.910992913	-0.850116833
16994	4265	0.910802392	0
16995	4266	0.910651621	0
16996	4267	0.910651621	-0.018862556
16997	4268	0.910476467	0
16998	4269	0.910343064	0
16999	4270	0.910238073	-1.42030719
17000	4271	0.910153291	0
17001	4272	0.910024783	0
17002	4273	0.909762844	0
17003	4274	0.90962935	0
17004	4275	0.909357151	0
17005	4276	0.909357151	0
17006	4277	0.909357151	0
17007	4278	0.909357151	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17170	4441	0.891352729	0
17171	4442	0.891352729	-1.42030719
17172	4443	0.891293151	0
17173	4444	0.891200718	0
17174	4445	0.890952088	0
17175	4446	0.89089909	0
17176	4447	0.89089909	-0.520875982
17177	4448	0.890837079	0
17178	4449	0.890674938	0
17179	4450	0.890501809	0
17180	4451	0.890501809	0
17181	4452	0.890429227	0
17182	4453	0.890429227	-0.481228622
17183	4454	0.890251855	0
17184	4455	0.890251855	0
17185	4456	0.890251855	0
17186	4457	0.890251855	0
17187	4458	0.890117793	-1.381113469
17188	4459	0.890012903	0
17189	4460	0.890012903	0
17190	4461	0.890012903	0
17191	4462	0.889928599	0
17192	4463	0.889752379	0
17193	4464	0.889752379	0
17194	4465	0.88952639	0
17195	4466	0.889494254	0
17196	4467	0.889153765	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17143	4414	0.894117184	0
17144	4415	0.894117184	0
17145	4416	0.893823643	0
17146	4417	0.893823643	0
17147	4418	0.893222127	0
17148	4419	0.892950438	0
17149	4420	0.892950438	0
17150	4421	0.892913914	0
17151	4422	0.892757889	0
17152	4423	0.892757889	0
17153	4424	0.892757889	0
17154	4425	0.892757889	-1.284203456
17155	4426	0.8924564	0
17156	4427	0.8924564	-1.067021
17157	4428	0.892388748	0
17158	4429	0.892088198	0
17159	4430	0.892088198	0
17160	4431	0.891983055	0
17161	4432	0.891983055	0
17162	4433	0.891838747	0
17163	4434	0.891628384	0
17164	4435	0.891628384	0
17165	4436	0.891628384	0
17166	4437	0.891628384	0
17167	4438	0.891628384	0
17168	4439	0.891628384	0
17169	4440	0.891628384	-1.271968999

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17116	4387	0.895784344	0
17117	4388	0.895784344	0
17118	4389	0.895784344	0
17119	4390	0.895784344	0
17120	4391	0.895784344	0
17121	4392	0.895784344	0
17122	4393	0.895784344	0
17123	4394	0.895784344	0
17124	4395	0.895784344	0
17125	4396	0.895784344	0
17126	4397	0.895245851	-0.351473261
17127	4398	0.895218487	0
17128	4399	0.895188195	0
17129	4400	0.894970296	0
17130	4401	0.894970296	0
17131	4402	0.894741619	0
17132	4403	0.894741619	0
17133	4404	0.894633894	0
17134	4405	0.89457123	0
17135	4406	0.894501346	-1.178919407
17136	4407	0.894422918	0
17137	4408	0.894422918	0
17138	4409	0.894334277	0
17139	4410	0.894334277	0
17140	4411	0.894334277	0
17141	4412	0.89423329	0
17142	4413	0.89423329	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17089	4360	0.899512216	0
17090	4361	0.899137986	0
17091	4362	0.898832037	0
17092	4363	0.898699083	0
17093	4364	0.898699083	0
17094	4365	0.898699083	0
17095	4366	0.898699083	0
17096	4367	0.898577244	0
17097	4368	0.898520066	0
17098	4369	0.898361766	0
17099	4370	0.898361766	-1.351150245
17100	4371	0.898361766	0
17101	4372	0.898094426	0
17102	4373	0.897877333	0
17103	4374	0.897417031	-1.37381423
17104	4375	0.897305517	0
17105	4376	0.897122694	0
17106	4377	0.897122694	0
17107	4378	0.896863337	0
17108	4379	0.896768023	0
17109	4380	0.8966620329	0
17110	4381	0.896392174	0
17111	4382	0.896360713	0
17112	4383	0.895784344	0
17113	4384	0.895784344	0
17114	4385	0.895784344	0
17115	4386	0.895784344	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17278	4549	0.879393927	0
17279	4550	0.879393927	0
17280	4551	0.879393927	0
17281	4552	0.879393927	0
17282	4553	0.879393927	0
17283	4554	0.879393927	0
17284	4555	0.879393927	0
17285	4556	0.878322917	0
17286	4557	0.878091694	0
17287	4558	0.877934113	0
17288	4559	0.877934113	0
17289	4560	0.877840099	0
17290	4561	0.877840099	0
17291	4562	0.877733143	0
17292	4563	0.877610375	0
17293	4564	0.877610375	0
17294	4565	0.877610375	-1.212200794
17295	4566	0.877387945	0
17296	4567	0.877387945	-0.763330693
17297	4568	0.877300938	0
17298	4569	0.877300938	0
17299	4570	0.877300938	0
17300	4571	0.877300938	0
17301	4572	0.877206041	0
17302	4573	0.877206041	-1.123664044
17303	4574	0.877102131	0
17304	4575	0.877102131	-0.006654556

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17251	4522	0.88224177	0
17252	4523	0.88224177	0
17253	4524	0.882133965	0
17254	4525	0.881328427	0
17255	4526	0.881061087	0
17256	4527	0.881061087	0
17257	4528	0.880953335	0
17258	4529	0.880953335	0
17259	4530	0.880858666	-0.818981424
17260	4531	0.880774833	0
17261	4532	0.880774833	0
17262	4533	0.880774833	0
17263	4534	0.880572475	0
17264	4535	0.880572475	0
17265	4536	0.880572475	0
17266	4537	0.880467585	0
17267	4538	0.879393927	0
17268	4539	0.879393927	0
17269	4540	0.879393927	0
17270	4541	0.879393927	0
17271	4542	0.879393927	0
17272	4543	0.879393927	0
17273	4544	0.879393927	0
17274	4545	0.879393927	0
17275	4546	0.879393927	0
17276	4547	0.879393927	0
17277	4548	0.879393927	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17224	4495	0.887080756	0
17225	4496	0.886965878	0
17226	4497	0.886640964	0
17227	4498	0.886342787	0
17228	4499	0.885964317	0
17229	4500	0.885964317	0
17230	4501	0.885734105	0
17231	4502	0.88531891	0
17232	4503	0.88523471	0
17233	4504	0.885108411	-0.459719871
17234	4505	0.885041529	0
17235	4506	0.884997805	0
17236	4507	0.884788959	0
17237	4508	0.884503333	0
17238	4509	0.884014125	0
17239	4510	0.884014125	0
17240	4511	0.883970308	0
17241	4512	0.883803046	-1.293158298
17242	4513	0.883324221	0
17243	4514	0.8831218	0
17244	4515	0.8831218	0
17245	4516	0.882904815	0
17246	4517	0.882854459	-0.523780972
17247	4518	0.882622897	0
17248	4519	0.882420382	0
17249	4520	0.882420382	0
17250	4521	0.882420382	-0.804055746

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17197	4468	0.889153765	0
17198	4469	0.889153765	0
17199	4470	0.889153765	0
17200	4471	0.889153765	0
17201	4472	0.889153765	0
17202	4473	0.889153765	0
17203	4474	0.889153765	0
17204	4475	0.889153765	0
17205	4476	0.889153765	0
17206	4477	0.889153765	0
17207	4478	0.889153765	0
17208	4479	0.888620561	0
17209	4480	0.888537307	0
17210	4481	0.888537307	-0.429962036
17211	4482	0.888423244	0
17212	4483	0.888142601	-1.361369411
17213	4484	0.888142601	-1.361369411
17214	4485	0.887994099	0
17215	4486	0.887868235	0
17216	4487	0.887794469	0
17217	4488	0.887794469	0
17218	4489	0.887794469	0
17219	4490	0.887511818	0
17220	4491	0.887321296	0
17221	4492	0.887321296	0
17222	4493	0.887247568	0
17223	4494	0.887247568	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17305	4576	0.876987858	0
17306	4577	0.876987858	0
17307	4578	0.876861591	0
17308	4579	0.876861591	0
17309	4580	0.876564637	0
17310	4581	0.876564637	0
17311	4582	0.876564637	0
17312	4583	0.876564637	0
17313	4584	0.876388417	0
17314	4585	0.876388417	-0.173265614
17315	4586	0.876188787	0
17316	4587	0.876188787	-0.289343095
17317	4588	0.876188787	-0.782258617
17318	4589	0.876078686	0
17319	4590	0.875960752	0
17320	4591	0.875697782	0
17321	4592	0.875391185	0
17322	4593	0.875217987	0
17323	4594	0.875029122	0
17324	4595	0.875029122	0
17325	4596	0.874595044	0
17326	4597	0.874430508	0
17327	4598	0.874065094	0
17328	4599	0.874065094	0
17329	4600	0.873753666	0
17330	4601	0.873641598	0
17331	4602	0.873641598	0
17332	4603	0.873641598	0
17333	4604	0.873403564	-0.320157043
17334	4605	0.873295409	0
17335	4606	0.873251046	0
17336	4607	0.873144978	0
17337	4608	0.873144978	0
17338	4609	0.873144978	0
17339	4610	0.872921461	0
17340	4611	0.872921461	-1.052697673
17341	4612	0.872820696	0
17342	4613	0.872554503	0
17343	4614	0.872554503	0
17344	4615	0.872554503	0
17345	4616	0.872554503	0
17346	4617	0.872554503	0
17347	4618	0.872554503	0
17348	4619	0.872554503	-1.108112197
17349	4620	0.872215343	0
17350	4621	0.872215343	0
17351	4622	0.872143434	0
17352	4623	0.872032828	0
17353	4624	0.872032828	0
17354	4625	0.872032828	0
17355	4626	0.871679791	0
17356	4627	0.871679791	0
17357	4628	0.871608671	0
17358	4629	0.871424998	0
17359	4630	0.871424998	0
17360	4631	0.871152798	0
17361	4632	0.87096076	0
17362	4633	0.87096076	0
17363	4634	0.870818017	0
17364	4635	0.870707748	0
17365	4636	0.870620003	0
17366	4637	0.870439085	0
17367	4638	0.870439085	0
17368	4639	0.870359244	0
17369	4640	0.870359244	0
17370	4641	0.870180005	0
17371	4642	0.869848609	0
17372	4643	0.869848609	0
17373	4644	0.869848609	0
17374	4645	0.869351989	0
17375	4646	0.869351989	0
17376	4647	0.869276793	0
17377	4648	0.869276793	0
17378	4649	0.869174762	0
17379	4650	0.869174762	0
17380	4651	0.869174762	0
17381	4652	0.869028412	0
17382	4653	0.869028412	0
17383	4654	0.868800854	0
17384	4655	0.868800854	0
17385	4656	0.868632097	0
17386	4657	0.868632097	0
17387	4658	0.868398543	0
17388	4659	0.868185706	0
17389	4660	0.867964466	0
17390	4661	0.867964466	0
17391	4662	0.867812055	0
17392	4663	0.867812055	0
17393	4664	0.86775562	0
17394	4665	0.867716226	0
17395	4666	0.867687168	0
17396	4667	0.867494704	0
17397	4668	0.867494704	0
17398	4669	0.867494704	0
17399	4670	0.867494704	0
17400	4671	0.867494704	0
17401	4672	0.867494704	0
17402	4673	0.867494704	0
17403	4674	0.867494704	0
17404	4675	0.867494704	-0.818981424
17405	4676	0.867159471	0
17406	4677	0.867159471	0
17407	4678	0.867159471	0
17408	4679	0.867060192	0
17409	4680	0.866877737	0
17410	4681	0.866877737	0
17411	4682	0.866877737	0
17412	4683	0.866877737	-1.070323636

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17494	4765	0.860088772	-0.26572005
17495	4766	0.859965376	0
17496	4767	0.859832989	0
17497	4768	0.859832989	0
17498	4769	0.859615279	0
17499	4770	0.859537007	0
17500	4771	0.859483094	0
17501	4772	0.859190541	0
17502	4773	0.859190541	0
17503	4774	0.859190541	0
17504	4775	0.858904539	0
17505	4776	0.858853225	0
17506	4777	0.858853225	0
17507	4778	0.858664442	0
17508	4779	0.858664442	0
17509	4780	0.858578859	0
17510	4781	0.858460021	0
17511	4782	0.858460021	0
17512	4783	0.858460021	0
17513	4784	0.858460021	-0.013867204
17514	4785	0.858351325	0
17515	4786	0.858283872	-1.262561531
17516	4787	0.857995783	0
17517	4788	0.857995783	0
17518	4789	0.857995783	0
17519	4790	0.857995783	0
17520	4791	0.857995783	-0.028930951

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17467	4738	0.862191897	0
17468	4739	0.862089069	0
17469	4740	0.862051372	0
17470	4741	0.861830637	0
17471	4742	0.86166516	0
17472	4743	0.86166516	0
17473	4744	0.86166516	0
17474	4745	0.8615365	0
17475	4746	0.861465531	0
17476	4747	0.861219958	0
17477	4748	0.861219958	0
17478	4749	0.861219958	0
17479	4750	0.861219958	-0.242164018
17480	4751	0.861219958	-1.212200794
17481	4752	0.861022237	0
17482	4753	0.860910522	0
17483	4754	0.860910522	0
17484	4755	0.860788683	0
17485	4756	0.86072527	0
17486	4757	0.860508583	0
17487	4758	0.860508583	0
17488	4759	0.860508583	-1.098968817
17489	4760	0.860312025	0
17490	4761	0.860258917	0
17491	4762	0.860258917	0
17492	4763	0.860166484	0
17493	4764	0.860166484	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17440	4711	0.864486881	0
17441	4712	0.86359966	0
17442	4713	0.86359966	0
17443	4714	0.86359966	0
17444	4715	0.86359966	0
17445	4716	0.86359966	0
17446	4717	0.86359966	0
17447	4718	0.86359966	0
17448	4719	0.86359966	0
17449	4720	0.86359966	0
17450	4721	0.86359966	0
17451	4722	0.86359966	0
17452	4723	0.86359966	0
17453	4724	0.86359966	0
17454	4725	0.86359966	0
17455	4726	0.86359966	0
17456	4727	0.86359966	-1.313361685
17457	4728	0.86359966	-0.61439168
17458	4729	0.863065144	0
17459	4730	0.863036007	-1.234744091
17460	4731	0.862878839	0
17461	4732	0.862762062	0
17462	4733	0.862688234	0
17463	4734	0.862688234	0
17464	4735	0.862600133	0
17465	4736	0.862360588	0
17466	4737	0.862360588	-0.649958781

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17413	4684	0.866776664	0
17414	4685	0.866712896	0
17415	4686	0.866712896	0
17416	4687	0.866712896	0
17417	4688	0.866712896	-1.268855764
17418	4689	0.86642895	0
17419	4690	0.86642895	0
17420	4691	0.86642895	0
17421	4692	0.866192471	0
17422	4693	0.866192471	-1.047527439
17423	4694	0.866088461	0
17424	4695	0.866088461	0
17425	4696	0.866088461	0
17426	4697	0.865992473	0
17427	4698	0.865542815	-1.474145827
17428	4699	0.865428271	0
17429	4700	0.865428271	0
17430	4701	0.865428271	0
17431	4702	0.865428271	-0.847376796
17432	4703	0.865279718	0
17433	4704	0.865279718	0
17434	4705	0.865153488	0
17435	4706	0.865153488	-0.550255868
17436	4707	0.865044901	0
17437	4708	0.864950499	0
17438	4709	0.864670671	0
17439	4710	0.864570151	0



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17602	4873	0.851365204	0	0.851365204	0
17603	4874	0.851365204	0	0.851365204	0
17604	4875	0.851365204	0	0.851365204	0
17605	4876	0.851365204	0	0.851365204	0
17606	4877	0.851365204	-0.20502221	0.851365204	-0.630990942
17607	4878	0.851365204	0	0.850862839	0
17608	4879	0.850781867	0	0.850669776	0
17610	4881	0.850504362	0	0.850388163	0
17611	4882	0.850388163	0	0.850104551	0
17612	4883	0.850104551	0	0.850026853	0
17613	4884	0.849938948	0	0.849723257	0
17614	4885	0.849723257	0	0.849430704	0
17615	4886	0.84924151	0	0.849011298	0
17616	4887	0.849011298	0	0.848787781	-1.353727668
17617	4888	0.848787781	0	0.8485912831	0
17618	4889	0.8485912831	0	0.848380495	0
17619	4890	0.848380495	0	0.848177662	0
17620	4891	0.848177662	0	0.8479662	0
17621	4892	0.8479662	0	0.847754	0
17622	4893	0.847754	-0.4875688	0.84754	0
17623	4894	0.84754	0	0.847326	0
17624	4895	0.847326	0	0.847112	0
17625	4896	0.847112	0	0.846901	0
17626	4897	0.846901	0	0.846687	0
17627	4898	0.846687	0	0.846473	0
17628	4899	0.846473	0	0.846259	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17575	4846	0.853380495	0	0.853380495	0
17576	4847	0.853380495	-0.458279424	0.853380495	-0.458279424
17577	4848	0.853064989	-1.310532394	0.853064989	-1.310532394
17578	4849	0.852941592	0	0.852941592	0
17579	4850	0.852941592	0	0.852941592	0
17580	4851	0.852941592	0	0.852941592	0
17581	4852	0.852659674	0	0.852659674	0
17582	4853	0.852659674	0	0.852659674	0
17583	4854	0.852659674	0	0.852659674	0
17584	4855	0.852659674	0	0.852659674	0
17585	4856	0.852463294	0	0.852463294	0
17586	4857	0.852463294	0	0.852463294	0
17587	4858	0.852463294	0	0.852463294	0
17588	4859	0.852463294	0	0.852463294	0
17589	4860	0.852410438	0	0.852410438	0
17590	4861	0.85231865	0	0.85231865	0
17591	4862	0.85231865	0	0.85231865	0
17592	4863	0.85231865	0	0.85231865	0
17593	4864	0.852119842	0	0.852119842	0
17594	4865	0.852119842	0	0.852119842	0
17595	4866	0.852119842	0	0.852119842	0
17596	4867	0.851989639	0	0.851989639	0
17597	4868	0.851897754	0	0.851897754	0
17598	4869	0.851897754	0	0.851897754	0
17599	4870	0.851829442	0	0.851829442	0
17600	4871	0.851776662	0	0.851776662	0
17601	4872	0.851365204	0	0.851365204	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17548	4819	0.855912831	0	0.855912831	0
17549	4820	0.855912831	0	0.855912831	0
17550	4821	0.855912831	0	0.855912831	0
17551	4822	0.855295497	0	0.855295497	0
17552	4823	0.855220729	0	0.855220729	0
17553	4824	0.855125353	0	0.855125353	0
17554	4825	0.854999488	0	0.854999488	0
17555	4826	0.854825736	0	0.854825736	0
17556	4827	0.854711463	0	0.854711463	0
17557	4828	0.854711463	0	0.854711463	0
17558	4829	0.854711463	-0.684549534	0.854711463	-0.684549534
17559	4830	0.854570344	0	0.854570344	0
17560	4831	0.854570344	0	0.854570344	0
17561	4832	0.854391658	0	0.854391658	0
17562	4833	0.854321036	0	0.854321036	0
17563	4834	0.854321036	0	0.854321036	0
17564	4835	0.854158104	0	0.854158104	0
17565	4836	0.854158104	0	0.854158104	0
17566	4837	0.853958014	0	0.853958014	0
17567	4838	0.853958014	0	0.853958014	0
17568	4839	0.853839823	0	0.853839823	0
17569	4840	0.85370642	0	0.85370642	0
17570	4841	0.853633065	0	0.853633065	0
17571	4842	0.853633065	-1.406874331	0.853633065	-1.406874331
17572	4843	0.853380495	0	0.853380495	0
17573	4844	0.853380495	0	0.853380495	0
17574	4845	0.853380495	0	0.853380495	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17521	4792	0.857821821	0	0.857821821	0
17522	4793	0.857770117	0	0.857770117	0
17523	4794	0.857674678	0	0.857674678	0
17524	4795	0.857674678	0	0.857674678	0
17525	4796	0.857588568	0	0.857588568	0
17526	4797	0.857588568	0	0.857588568	0
17527	4798	0.857439351	0	0.857439351	0
17528	4799	0.857439351	0	0.857439351	0
17529	4800	0.857439351	0	0.857439351	0
17530	4801	0.857439351	-0.609122527	0.857439351	-0.609122527
17531	4802	0.857314536	0	0.857314536	0
17532	4803	0.857314536	0	0.857314536	0
17533	4804	0.857259482	0	0.857259482	0
17534	4805	0.857117533	0	0.857117533	0
17535	4806	0.857002655	0	0.857002655	0
17536	4807	0.857002655	0	0.857002655	0
17537	4808	0.857002655	0	0.857002655	0
17538	4809	0.857002655	0	0.857002655	0
17539	4810	0.856907779	0	0.856907779	0
17540	4811	0.856760236	0	0.856760236	0
17541	4812	0.856566397	0	0.856566397	0
17542	4813	0.856444729	0	0.856444729	0
17543	4814	0.855912831	0	0.855912831	0
17544	4815	0.855912831	0	0.855912831	0
17545	4816	0.855912831	0	0.855912831	0
17546	4817	0.855912831	0	0.855912831	0
17547	4818	0.855912831	0	0.855912831	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17710	4981	0.842591279	0
17711	4982	0.842591279	-0.275603284
17712	4983	0.842410361	0
17713	4984	0.842410361	0
17714	4985	0.842410361	0
17715	4986	0.842410361	0
17716	4987	0.842410361	-0.147030263
17717	4988	0.84219424	0
17718	4989	0.842124547	0
17719	4990	0.842069604	0
17720	4991	0.841856767	0
17721	4992	0.841856767	0
17722	4993	0.841792441	-1.450123419
17723	4994	0.841605366	0
17724	4995	0.841605366	0
17725	4996	0.841461774	0
17726	4997	0.841255834	0
17727	4998	0.841255834	0
17728	4999	0.841255834	0
17729	5000	0.841255834	0
17730	5001	0.841255834	0
17731	5002	0.841255834	0
17732	5003	0.841146039	-1.361369411
17733	5004	0.841092319	0
17734	5005	0.840935676	0
17735	5006	0.840935676	0
17736	5007	0.840935676	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17683	4954	0.844294505	0
17684	4955	0.844294505	0
17685	4956	0.844294505	-1.031636844
17686	4957	0.844186619	-1.212200794
17687	4958	0.84397727	0
17688	4959	0.84397727	0
17689	4960	0.843776068	0
17690	4961	0.843776068	0
17691	4962	0.843776068	0
17692	4963	0.843776068	0
17693	4964	0.843396274	0
17694	4965	0.843396274	0
17695	4966	0.843396274	0
17696	4967	0.843242078	0
17697	4968	0.84312959	0
17698	4969	0.84312959	0
17699	4970	0.843043905	0
17700	4971	0.843043905	0
17701	4972	0.843043905	0
17702	4973	0.843043905	-1.262561531
17703	4974	0.842877094	0
17704	4975	0.842877094	0
17705	4976	0.842779816	0
17706	4977	0.842716095	0
17707	4978	0.842716095	0
17708	4979	0.842637681	0
17709	4980	0.842637681	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17656	4927	0.846601414	0
17657	4928	0.846601414	0
17658	4929	0.846537221	0
17659	4930	0.846537221	0
17660	4931	0.846225564	0
17661	4932	0.846225564	0
17662	4933	0.845870893	0
17663	4934	0.845645344	0
17664	4935	0.84553566	0
17665	4936	0.84537484	0
17666	4937	0.84537484	0
17667	4938	0.84537484	0
17668	4939	0.84537484	0
17669	4940	0.84537484	-1.290193819
17670	4941	0.845116254	0
17671	4942	0.845116254	0
17672	4943	0.845116254	0
17673	4944	0.845116254	0
17674	4945	0.844991188	0
17675	4946	0.844991188	-0.02606431
17676	4947	0.844868817	-0.309585187
17677	4948	0.844631821	0
17678	4949	0.844631821	0
17679	4950	0.844631821	0
17680	4951	0.844360302	0
17681	4952	0.844360302	0
17682	4953	0.844294505	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17629	4900	0.848359694	0
17630	4901	0.848359694	0
17631	4902	0.848359694	0
17632	4903	0.848359694	0
17633	4904	0.848359694	0
17634	4905	0.848087494	0
17635	4906	0.848011562	0
17636	4907	0.848011562	-1.443904299
17637	4908	0.847919456	0
17638	4909	0.847876876	0
17639	4910	0.847876876	0
17640	4911	0.847876876	0
17641	4912	0.847761079	0
17642	4913	0.847679514	0
17643	4914	0.847679514	0
17644	4915	0.847424721	0
17645	4916	0.847424721	-1.316172662
17646	4917	0.847209244	0
17647	4918	0.847209244	0
17648	4919	0.847209244	0
17649	4920	0.847209244	0
17650	4921	0.847000398	0
17651	4922	0.847000398	0
17652	4923	0.846949187	0
17653	4924	0.846864703	0
17654	4925	0.84669891	-1.243112259
17655	4926	0.846601414	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17818	5089	0.833636437	0
17819	5090	0.833636437	0
17820	5091	0.833636437	0
17821	5092	0.833636437	0
17822	5093	0.833636437	0
17823	5094	0.833636437	0
17824	5095	0.833636437	0
17825	5096	0.833636437	0
17826	5097	0.833636437	0
17827	5098	0.833636437	0
17828	5099	0.833636437	0
17829	5100	0.833636437	0
17830	5101	0.833636437	0
17831	5102	0.833636437	0
17832	5103	0.833636437	0
17833	5104	0.833636437	0
17834	5105	0.833636437	0
17835	5106	0.833636437	0
17836	5107	0.833636437	0
17837	5108	0.833636437	0
17838	5109	0.833636437	0
17839	5110	0.833636437	0
17840	5111	0.833636437	0
17841	5112	0.833636437	0
17842	5113	0.833636437	0
17843	5114	0.833636437	-0.790952701
17844	5115	0.833636437	-0.620690985

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17791	5062	0.836198654	0
17792	5063	0.836198654	0
17793	5064	0.836055911	0
17794	5065	0.836055911	0
17795	5066	0.835990342	0
17796	5067	0.835928234	0
17797	5068	0.835869318	0
17798	5069	0.83576013	0
17799	5070	0.835661123	-0.377073491
17800	5071	0.83552879	-1.485676446
17801	5072	0.835449778	0
17802	5073	0.835278384	0
17803	5074	0.833636437	0
17804	5075	0.833636437	0
17805	5076	0.833636437	0
17806	5077	0.833636437	0
17807	5078	0.833636437	0
17808	5079	0.833636437	0
17809	5080	0.833636437	0
17810	5081	0.833636437	0
17811	5082	0.833636437	0
17812	5083	0.833636437	0
17813	5084	0.833636437	0
17814	5085	0.833636437	0
17815	5086	0.833636437	0
17816	5087	0.833636437	0
17817	5088	0.833636437	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17764	5035	0.838357075	0
17765	5036	0.838357075	0
17766	5037	0.838232188	0
17767	5038	0.838001242	0
17768	5039	0.838001242	-1.121476158
17769	5040	0.837792397	0
17770	5041	0.837792397	0
17771	5042	0.837792397	0
17772	5043	0.837695293	0
17773	5044	0.837695293	-0.55113058
17774	5045	0.837602624	0
17775	5046	0.837429426	0
17776	5047	0.837429426	0
17777	5048	0.837429426	-1.182745815
17778	5049	0.837348378	-1.493196885
17779	5050	0.837270721	0
17780	5051	0.837270721	0
17781	5052	0.837124765	0
17782	5053	0.836990079	0
17783	5054	0.836926562	0
17784	5055	0.836865407	0
17785	5056	0.836865407	-0.022496841
17786	5057	0.836749672	0
17787	5058	0.836749672	0
17788	5059	0.836641947	0
17789	5060	0.836641947	0
17790	5061	0.836541427	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17737	5008	0.840935676	0
17738	5009	0.840815021	0
17739	5010	0.840736777	0
17740	5011	0.840736777	0
17741	5012	0.840736777	0
17742	5013	0.840736777	-1.385912352
17743	5014	0.840548431	0
17744	5015	0.840369819	-1.409142192
17745	5016	0.840200206	0
17746	5017	0.840200206	0
17747	5018	0.840200206	-0.098087895
17748	5019	0.840118564	0
17749	5020	0.840118564	0
17750	5021	0.840038928	0
17751	5022	0.839885386	0
17752	5023	0.839739036	0
17753	5024	0.839668402	0
17754	5025	0.839668402	-1.281177001
17755	5026	0.83946598	0
17756	5027	0.83946598	0
17757	5028	0.839276704	0
17758	5029	0.839276704	0
17759	5030	0.839276704	0
17760	5031	0.839099332	0
17761	5032	0.838932777	-1.036998572
17762	5033	0.838879492	0
17763	5034	0.838776076	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
17926	5197	0.825441958	0	0
17927	5198	0.825441958	0	0
17928	5199	0.825441958	0	0
17929	5200	0.825311048	0	0
17930	5201	0.825244012	0	0
17931	5202	0.825244012	0	0
17932	5203	0.825203269	0	0
17933	5204	0.825175887	0	0
17934	5205	0.825036265	0	0
17935	5206	0.825036265	0	0
17936	5207	0.825036265	0	0
17937	5208	0.824588308	0	0
17938	5209	0.824428435	-1.281177001	0
17939	5210	0.824091119	0	0
17940	5211	0.824091119	0	0
17941	5212	0.824091119	0	0
17942	5213	0.824091119	0	0
17943	5214	0.824091119	0	0
17944	5215	0.824091119	0	0
17945	5216	0.823728148	0	0
17946	5217	0.823728148	0	0
17947	5218	0.823728148	0	0
17948	5219	0.823728148	0	0
17949	5220	0.823728148	-1.249692605	0
17950	5221	0.823233676	0	0
17951	5222	0.823233676	0	0
17952	5223	0.823233676	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
17899	5170	0.827687104	0	0
17900	5171	0.827618403	0	0
17901	5172	0.827476128	0	0
17902	5173	0.827476128	0	0
17903	5174	0.827476128	0	0
17904	5175	0.827476128	0	0
17905	5176	0.827476128	-0.852160576	0
17906	5177	0.827249638	0	0
17907	5178	0.827249638	0	0
17908	5179	0.827249638	0	0
17909	5180	0.827249638	0	0
17910	5181	0.827005858	0	0
17911	5182	0.827005858	0	0
17912	5183	0.827005858	0	0
17913	5184	0.826832729	0	0
17914	5185	0.826742729	0	0
17915	5186	0.826742729	0	0
17916	5187	0.826650316	0	0
17917	5188	0.826457852	0	0
17918	5189	0.826457852	0	0
17919	5190	0.826457852	-0.610140803	0
17920	5191	0.825983473	0	0
17921	5192	0.825811099	0	0
17922	5193	0.825811099	0	0
17923	5194	0.825568815	0	0
17924	5195	0.825568815	0	0
17925	5196	0.825568815	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
17872	5143	0.830175905	0	0
17873	5144	0.830032313	-0.907596338	0
17874	5145	0.829706143	0	0
17875	5146	0.829519871	0	0
17876	5147	0.829519871	-1.151146829	0
17877	5148	0.829419952	0	0
17878	5149	0.829419952	-1.441811309	0
17879	5150	0.829315063	0	0
17880	5151	0.829315063	0	0
17881	5152	0.829088809	0	0
17882	5153	0.828837554	0	0
17883	5154	0.828837554	0	0
17884	5155	0.828837554	-1.385912352	0
17885	5156	0.828701219	0	0
17886	5157	0.828701219	0	0
17887	5158	0.828701219	0	0
17888	5159	0.828556911	0	0
17889	5160	0.828556911	0	0
17890	5161	0.828455924	0	0
17891	5162	0.82840391	0	0
17892	5163	0.828241405	0	0
17893	5164	0.828241405	0	0
17894	5165	0.828127342	0	0
17895	5166	0.828127342	0	0
17896	5167	0.828068483	0	0
17897	5168	0.828068483	0	0
17898	5169	0.828008352	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
17845	5116	0.832141446	0	0
17846	5117	0.831902724	0	0
17847	5118	0.831902724	0	0
17848	5119	0.831792296	0	0
17849	5120	0.831710516	-1.479949403	0
17850	5121	0.831621146	0	0
17851	5122	0.831523077	0	0
17852	5123	0.831470375	0	0
17853	5124	0.831470375	0	0
17854	5125	0.83135667	0	0
17855	5126	0.83135667	-1.406874331	0
17856	5127	0.831230367	0	0
17857	5128	0.831161818	0	0
17858	5129	0.831161818	0	0
17859	5130	0.831161818	0	0
17860	5131	0.831089248	0	0
17861	5132	0.831089248	0	0
17862	5133	0.831089248	0	0
17863	5134	0.830930543	0	0
17864	5135	0.830750749	0	0
17865	5136	0.830750749	-0.158689875	0
17866	5137	0.830651583	0	0
17867	5138	0.83054536	0	0
17868	5139	0.830431297	0	0
17869	5140	0.830308493	0	0
17870	5141	0.830308493	0	0
17871	5142	0.830175905	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18034	5305	0.817648331	0
18035	5306	0.817648331	0
18036	5307	0.817648331	0
18037	5308	0.817648331	-0.11550013
18038	5309	0.817506936	0
18039	5310	0.817506936	0
18040	5311	0.817399238	0
18041	5312	0.817246021	0
18042	5313	0.817246021	0
18043	5314	0.817142259	-1.33266684
18044	5315	0.817067335	0
18045	5316	0.816603097	0
18046	5317	0.816603097	0
18047	5318	0.816603097	0
18048	5319	0.816603097	0
18049	5320	0.816603097	0
18050	5321	0.816603097	0
18051	5322	0.816603097	-0.841844307
18052	5323	0.816223635	0
18053	5324	0.81617501	0
18054	5325	0.816112092	0
18055	5326	0.816027492	0
18056	5327	0.81590767	0
18057	5328	0.81590767	0
18058	5329	0.81590767	0
18059	5330	0.815724847	0
18060	5331	0.815591934	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18007	5278	0.819395998	0
18008	5279	0.819395998	0
18009	5280	0.819395998	0
18010	5281	0.819395998	0
18011	5282	0.819395998	0
18012	5283	0.819395998	0
18013	5284	0.819395998	0
18014	5285	0.818995911	0
18015	5286	0.818995911	0
18016	5287	0.818995911	-1.383519539
18017	5288	0.81891318	0
18018	5289	0.81891318	0
18019	5290	0.818787316	0
18020	5291	0.818787316	0
18021	5292	0.818696087	0
18022	5293	0.818696087	0
18023	5294	0.818696087	0
18024	5295	0.81857269	0
18025	5296	0.81857269	0
18026	5297	0.818319679	0
18027	5298	0.818124271	0
18028	5299	0.818124271	0
18029	5300	0.818124271	0
18030	5301	0.818124271	0
18031	5302	0.817923812	0
18032	5303	0.817923812	-0.721337185
18033	5304	0.81784217	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17980	5251	0.82140198	0
17981	5252	0.82140198	0
17982	5253	0.82140198	0
17983	5254	0.82140198	0
17984	5255	0.82140198	-1.381113469
17985	5256	0.821107843	0
17986	5257	0.821047309	0
17987	5258	0.820955405	0
17988	5259	0.820799212	0
17989	5260	0.820799212	0
17990	5261	0.82067146	0
17991	5262	0.820474991	0
17992	5263	0.82033097	0
17993	5264	0.820133966	0
17994	5265	0.820133966	0
17995	5266	0.82003326	0
17996	5267	0.82003326	0
17997	5268	0.819956739	0
17998	5269	0.819956739	0
17999	5270	0.819848152	0
18000	5271	0.819848152	0
18001	5272	0.819848152	0
18002	5273	0.819848152	0
18003	5274	0.819774798	0
18004	5275	0.819774798	0
18005	5276	0.819721922	0
18006	5277	0.819395998	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
17953	5224	0.822912571	0
17954	5225	0.822571011	0
17955	5226	0.822571011	0
17956	5227	0.822571011	0
17957	5228	0.822571011	0
17958	5229	0.82245227	0
17959	5230	0.82245227	0
17960	5231	0.82245227	0
17961	5232	0.822355426	0
17962	5233	0.822355426	0
17963	5234	0.822206975	0
17964	5235	0.822206975	0
17965	5236	0.822206975	0
17966	5237	0.822206975	-0.137270425
17967	5238	0.821950678	0
17968	5239	0.821950678	0
17969	5240	0.821950678	0
17970	5241	0.821950678	0
17971	5242	0.821875326	0
17972	5243	0.821818171	0
17973	5244	0.821818171	0
17974	5245	0.821818171	0
17975	5246	0.821818171	0
17976	5247	0.821818171	0
17977	5248	0.821737213	0
17978	5249	0.821737213	0
17979	5250	0.821643322	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18142	5413	0.809869715	0	0.809869715	0
18143	5414	0.809869715	0	0.809869715	0
18144	5415	0.809502757	0	0.809502757	0
18145	5416	0.809502757	0	0.809502757	0
18146	5417	0.809502757	0	0.809502757	0
18147	5418	0.809502757	0	0.809502757	0
18148	5419	0.809502757	0	0.809502757	0
18149	5420	0.809502757	0	0.809502757	0
18150	5421	0.809502757	0	0.809502757	-0.017349078
18151	5422	0.809502757	0	0.809502757	-0.694042688
18152	5423	0.809241998	0	0.809241998	0
18153	5424	0.80919398	0	0.80919398	0
18154	5425	0.80919398	0	0.80919398	0
18155	5426	0.80919398	0	0.80919398	0
18156	5427	0.809124287	0	0.809124287	0
18157	5428	0.809124287	0	0.809124287	0
18158	5429	0.809124287	0	0.809124287	0
18159	5430	0.809124287	0	0.809124287	0
18160	5431	0.809013962	0	0.809013962	0
18161	5432	0.808930564	0	0.808930564	-0.985179443
18162	5433	0.808812853	0	0.808812853	0
18163	5434	0.808812853	0	0.808812853	0
18164	5435	0.808733754	0	0.808733754	0
18165	5436	0.808703197	0	0.808703197	0
18166	5437	0.808634168	0	0.808634168	0
18167	5438	0.808552094	0	0.808552094	0
18168	5439	0.808504952	0	0.808504952	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18115	5386	0.811780531	0	0.811780531	0
18116	5387	0.811548907	0	0.811548907	0
18117	5388	0.811548907	0	0.811548907	0
18118	5389	0.811548907	0	0.811548907	0
18119	5390	0.811548907	0	0.811548907	0
18120	5391	0.811360042	0	0.811360042	0
18121	5392	0.811360042	0	0.811360042	0
18122	5393	0.811360042	0	0.811360042	0
18123	5394	0.811360042	0	0.811360042	0
18124	5395	0.811360042	0	0.811360042	0
18125	5396	0.811232327	0	0.811232327	0
18126	5397	0.811070609	0	0.811070609	0
18127	5398	0.810859222	0	0.810859222	0
18128	5399	0.810859222	0	0.810859222	0
18129	5400	0.810859222	0	0.810859222	-0.058441548
18130	5401	0.810383977	0	0.810383977	0
18131	5402	0.810313008	0	0.810313008	0
18132	5403	0.810313008	0	0.810313008	0
18133	5404	0.810313008	0	0.810313008	0
18134	5405	0.810252618	0	0.810252618	0
18135	5406	0.81004904	0	0.81004904	0
18136	5407	0.81004904	0	0.81004904	0
18137	5408	0.809972519	0	0.809972519	0
18138	5409	0.809972519	0	0.809972519	0
18139	5410	0.809869715	0	0.809869715	0
18140	5411	0.809869715	0	0.809869715	0
18141	5412	0.809869715	0	0.809869715	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18088	5359	0.813275154	0	0.813275154	0
18089	5360	0.813275154	0	0.813275154	0
18090	5361	0.813275154	0	0.813275154	0
18091	5362	0.813275154	0	0.813275154	0
18092	5363	0.813160851	0	0.813160851	0
18093	5364	0.813160851	0	0.813160851	0
18094	5365	0.813160851	0	0.813160851	0
18095	5366	0.813074278	0	0.813074278	0
18096	5367	0.812951838	0	0.812951838	0
18097	5368	0.812951838	0	0.812951838	-0.344336071
18098	5369	0.812869398	0	0.812869398	0
18099	5370	0.812447138	0	0.812447138	0
18100	5371	0.812447138	0	0.812447138	0
18101	5372	0.812447138	0	0.812447138	0
18102	5373	0.812447138	0	0.812447138	0
18103	5374	0.812447138	0	0.812447138	0
18104	5375	0.812447138	0	0.812447138	0
18105	5376	0.812447138	0	0.812447138	0
18106	5377	0.812447138	0	0.812447138	0
18107	5378	0.812447138	0	0.812447138	0
18108	5379	0.812447138	0	0.812447138	0
18109	5380	0.812447138	0	0.812447138	0
18110	5381	0.812447138	0	0.812447138	0
18111	5382	0.812447138	0	0.812447138	0
18112	5383	0.812447138	0	0.812447138	0
18113	5384	0.812447138	0	0.812447138	0
18114	5385	0.812041823	0	0.812041823	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18061	5332	0.815538215	0	0.815538215	0
18062	5333	0.815411617	-0.591223815	0.815411617	0
18063	5334	0.815153031	0	0.815153031	0
18064	5335	0.815153031	0	0.815153031	0
18065	5336	0.815153031	0	0.815153031	0
18066	5337	0.814935938	0	0.814935938	0
18067	5338	0.814751093	0	0.814751093	0
18068	5339	0.814751093	0	0.814751093	0
18069	5340	0.814751093	0	0.814751093	0
18070	5341	0.814520146	0	0.814520146	0
18071	5342	0.814331282	0	0.814331282	0
18072	5343	0.814331282	0	0.814331282	0
18073	5344	0.814040881	0	0.814040881	0
18074	5345	0.814040881	0	0.814040881	0
18075	5346	0.813828043	0	0.813828043	0
18076	5347	0.813828043	0	0.813828043	0
18077	5348	0.813665356	0	0.813665356	0
18078	5349	0.813665356	0	0.813665356	0
18079	5350	0.813536961	0	0.813536961	0
18080	5351	0.813536961	0	0.813536961	0
18081	5352	0.813536961	-0.947572785	0.813536961	0
18082	5353	0.813536961	-1.42469404	0.813536961	0
18083	5354	0.813433051	0	0.813433051	0
18084	5355	0.81334723	0	0.81334723	0
18085	5356	0.813275154	0	0.813275154	0
18086	5357	0.813275154	0	0.813275154	0
18087	5358	0.813275154	0	0.813275154	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18250	5521	0.803351633	0
18251	5522	0.803351633	0
18252	5523	0.803351633	0
18253	5524	0.803147115	0
18254	5525	0.80290182	0
18255	5526	0.80290182	0
18256	5527	0.802846773	0
18257	5528	0.80275987	0
18258	5529	0.80275987	0
18259	5530	0.80275987	0
18260	5531	0.802602203	0
18261	5532	0.802602203	0
18262	5533	0.802462917	0
18263	5534	0.802227973	0
18264	5535	0.802227973	0
18265	5536	0.802227973	-1.236430674
18266	5537	0.802003589	0
18267	5538	0.801955089	0
18268	5539	0.801879841	0
18269	5540	0.801879841	0
18270	5541	0.801879841	0
18271	5542	0.801747292	0
18272	5543	0.801747292	0
18273	5544	0.801634268	0
18274	5545	0.801451753	0
18275	5546	0.801451753	0
18276	5547	0.801451753	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18223	5494	0.804760309	0
18224	5495	0.804760309	0
18225	5496	0.804672741	0
18226	5497	0.804672741	0
18227	5498	0.804672741	0
18228	5499	0.804672741	0
18229	5500	0.804564989	0
18230	5501	0.804564989	-1.268855764
18231	5502	0.80450123	0
18232	5503	0.80450123	0
18233	5504	0.804429166	0
18234	5505	0.804429166	0
18235	5506	0.804347061	-0.010447545
18236	5507	0.804252659	0
18237	5508	0.804252659	-1.155224741
18238	5509	0.804102358	0
18239	5510	0.80401397	0
18240	5511	0.80401397	0
18241	5512	0.80401397	0
18242	5513	0.803860047	0
18243	5514	0.803860047	0
18244	5515	0.803860047	0
18245	5516	0.803673213	0
18246	5517	0.803673213	0
18247	5518	0.803673213	0
18248	5519	0.803524762	0
18249	5520	0.803388523	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18196	5467	0.806578204	0
18197	5468	0.806578204	0
18198	5469	0.806484191	0
18199	5470	0.806341939	0
18200	5471	0.806286829	0
18201	5472	0.806286829	0
18202	5473	0.805607713	0
18203	5474	0.805607713	0
18204	5475	0.805607713	0
18205	5476	0.805607713	0
18206	5477	0.805607713	0
18207	5478	0.805607713	0
18208	5479	0.805607713	0
18209	5480	0.805607713	0
18210	5481	0.805607713	0
18211	5482	0.805607713	0
18212	5483	0.805607713	0
18213	5484	0.805607713	0
18214	5485	0.805607713	0
18215	5486	0.805607713	0
18216	5487	0.805607713	-1.371353631
18217	5488	0.804946183	0
18218	5489	0.804832879	0
18219	5490	0.804832879	0
18220	5491	0.804832879	-0.61953132
18221	5492	0.804760309	0
18222	5493	0.804760309	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18169	5440	0.808504952	0
18170	5441	0.808330572	0
18171	5442	0.80814005	0
18172	5443	0.807974446	0
18173	5444	0.807974446	0
18174	5445	0.807974446	0
18175	5446	0.807974446	0
18176	5447	0.807974446	0
18177	5448	0.807700703	0
18178	5449	0.807700703	0
18179	5450	0.807700703	0
18180	5451	0.807700703	0
18181	5452	0.807700703	0
18182	5453	0.807700703	0
18183	5454	0.807483718	0
18184	5455	0.807483718	0
18185	5456	0.807421054	0
18186	5457	0.807421054	-1.203208869
18187	5458	0.807307498	0
18188	5459	0.807307498	0
18189	5460	0.807207326	0
18190	5461	0.807207326	0
18191	5462	0.807161541	0
18192	5463	0.807161541	0
18193	5464	0.807038668	0
18194	5465	0.80684326	0
18195	5466	0.80684326	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18358	5629	0.795847876	0
18359	5630	0.795847876	-1.381113469
18360	5631	0.795641118	0
18361	5632	0.795546387	0
18362	5633	0.795546387	0
18363	5634	0.795456796	0
18364	5635	0.795291445	0
18365	5636	0.795073042	0
18366	5637	0.794883848	0
18367	5638	0.794883848	0
18368	5639	0.794718371	0
18369	5640	0.794718371	0
18370	5641	0.794572414	0
18371	5642	0.794484313	0
18372	5643	0.794442716	-1.42030719
18373	5644	0.794326703	0
18374	5645	0.794222318	-1.466285079
18375	5646	0.794127896	0
18376	5647	0.794127896	0
18377	5648	0.793963732	0
18378	5649	0.793825883	0
18379	5650	0.79370849	0
18380	5651	0.79370849	-1.296102679
18381	5652	0.793519214	-1.356289885
18382	5653	0.793441806	-1.082489543
18383	5654	0.793373257	0
18384	5655	0.793373257	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18331	5602	0.797424264	0
18332	5603	0.797333187	0
18333	5604	0.797333187	0
18334	5605	0.797119603	0
18335	5606	0.797085435	0
18336	5607	0.797007541	-1.259379872
18337	5608	0.79691363	0
18338	5609	0.79691363	0
18339	5610	0.79691363	0
18340	5611	0.796859039	0
18341	5612	0.796823349	0
18342	5613	0.796652871	0
18343	5614	0.796652871	0
18344	5615	0.796652871	0
18345	5616	0.796652871	0
18346	5617	0.796652871	-1.117067039
18347	5618	0.796464334	0
18348	5619	0.796419692	0
18349	5620	0.796209939	0
18350	5621	0.796209939	0
18351	5622	0.796209939	-1.464297457
18352	5623	0.79608143	0
18353	5624	0.795984468	0
18354	5625	0.795847876	0
18355	5626	0.795847876	0
18356	5627	0.795847876	0
18357	5628	0.795847876	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18304	5575	0.799829874	0
18305	5576	0.799710316	-1.363887067
18306	5577	0.799482161	0
18307	5578	0.799267535	0
18308	5579	0.799267535	0
18309	5580	0.799267535	0
18310	5581	0.799267535	0
18311	5582	0.799104787	0
18312	5583	0.799104787	0
18313	5584	0.799104787	0
18314	5585	0.798874331	0
18315	5586	0.798874331	0
18316	5587	0.798522817	0
18317	5588	0.798522817	0
18318	5589	0.798360676	0
18319	5590	0.798360676	0
18320	5591	0.79826735	0
18321	5592	0.797920885	0
18322	5593	0.797920885	0
18323	5594	0.797920885	0
18324	5595	0.797920885	0
18325	5596	0.797920885	0
18326	5597	0.797920885	0
18327	5598	0.797661217	0
18328	5599	0.797612108	0
18329	5600	0.797612108	0
18330	5601	0.797540091	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18277	5548	0.801451753	0
18278	5549	0.801451753	0
18279	5550	0.801451753	0
18280	5551	0.801451753	-0.169306657
18281	5552	0.801310772	0
18282	5553	0.801251664	0
18283	5554	0.801251664	0
18284	5555	0.801251664	0
18285	5556	0.801251664	0
18286	5557	0.801174042	0
18287	5558	0.801107212	0
18288	5559	0.801107212	0
18289	5560	0.801107212	0
18290	5561	0.800912592	0
18291	5562	0.800787525	0
18292	5563	0.800700379	0
18293	5564	0.800700379	-0.531162926
18294	5565	0.800212681	0
18295	5566	0.800212681	0
18296	5567	0.800212681	0
18297	5568	0.800212681	0
18298	5569	0.800212681	0
18299	5570	0.800212681	0
18300	5571	0.800212681	0
18301	5572	0.800212681	0
18302	5573	0.800212681	0
18303	5574	0.799829874	0



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18466	5737	0.788439688	0
18467	5738	0.788439688	0
18468	5739	0.788439688	-0.060339415
18469	5740	0.788313458	0
18470	5741	0.788313458	-0.129771257
18471	5742	0.788178563	0
18472	5743	0.788178563	0
18473	5744	0.788107582	0
18474	5745	0.787878946	0
18475	5746	0.787878946	0
18476	5747	0.787878946	0
18477	5748	0.787623554	0
18478	5749	0.787623554	0
18479	5750	0.78753165	0
18480	5751	0.78753165	0
18481	5752	0.78753165	0
18482	5753	0.787336417	0
18483	5754	0.787336417	0
18484	5755	0.787336417	0
18485	5756	0.787336417	0
18486	5757	0.787211314	0
18487	5758	0.786893033	0
18488	5759	0.786893033	0
18489	5760	0.786639874	0
18490	5761	0.786639874	0
18491	5762	0.786639874	0
18492	5763	0.786639874	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18439	5710	0.790367747	0
18440	5711	0.790055865	0
18441	5712	0.789927509	0
18442	5713	0.789783153	0
18443	5714	0.789783153	0
18444	5715	0.789619608	0
18445	5716	0.789619608	0
18446	5717	0.789432774	0
18447	5718	0.789432774	0
18448	5719	0.789217297	0
18449	5720	0.789054304	0
18450	5721	0.788966042	0
18451	5722	0.788966042	0
18452	5723	0.788966042	0
18453	5724	0.788966042	0
18454	5725	0.788872756	0
18455	5726	0.788872756	0
18456	5727	0.788872756	0
18457	5728	0.788824092	0
18458	5729	0.788824092	0
18459	5730	0.788669291	0
18460	5731	0.788669291	0
18461	5732	0.788669291	0
18462	5733	0.788669291	0
18463	5734	0.788669291	0
18464	5735	0.788669291	0
18465	5736	0.788669291	-0.610140803

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18412	5683	0.792243752	0
18413	5684	0.792243752	0
18414	5685	0.792243752	0
18415	5686	0.792243752	0
18416	5687	0.792243752	0
18417	5688	0.792243752	0
18418	5689	0.792243752	0
18419	5690	0.792243752	0
18420	5691	0.792243752	-1.422506154
18421	5692	0.791281859	0
18422	5693	0.791281859	0
18423	5694	0.791177998	0
18424	5695	0.791048993	0
18425	5696	0.791048993	0
18426	5697	0.791048993	0
18427	5698	0.791048993	-1.385912352
18428	5699	0.790972025	0
18429	5700	0.790884456	0
18430	5701	0.790884456	0
18431	5702	0.790783937	0
18432	5703	0.790783937	0
18433	5704	0.790783937	0
18434	5705	0.790601805	0
18435	5706	0.790530556	0
18436	5707	0.790530556	0
18437	5708	0.790530556	0
18438	5709	0.790452844	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18385	5656	0.793373257	0
18386	5657	0.793373257	-1.108112197
18387	5658	0.793312127	0
18388	5659	0.79320778	0
18389	5660	0.79320778	0
18390	5661	0.792913443	0
18391	5662	0.792243752	0
18392	5663	0.792243752	0
18393	5664	0.792243752	0
18394	5665	0.792243752	0
18395	5666	0.792243752	0
18396	5667	0.792243752	0
18397	5668	0.792243752	0
18398	5669	0.792243752	0
18399	5670	0.792243752	0
18400	5671	0.792243752	0
18401	5672	0.792243752	0
18402	5673	0.792243752	0
18403	5674	0.792243752	0
18404	5675	0.792243752	0
18405	5676	0.792243752	0
18406	5677	0.792243752	0
18407	5678	0.792243752	0
18408	5679	0.792243752	0
18409	5680	0.792243752	0
18410	5681	0.792243752	0
18411	5682	0.792243752	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18574	5845	0.782208259	0
18575	5846	0.782064509	-1.539140728
18576	5847	0.781976264	0
18577	5848	0.781976264	0
18578	5849	0.781840991	0
18579	5850	0.781840991	0
18580	5851	0.781778318	0
18581	5852	0.781778318	0
18582	5853	0.781607437	0
18583	5854	0.781607437	0
18584	5855	0.781607437	0
18585	5856	0.781607437	0
18586	5857	0.781607437	0
18587	5858	0.781412904	0
18588	5859	0.781327337	0
18589	5860	0.781327337	-0.371970089
18590	5861	0.781107386	0
18591	5862	0.781107386	0
18592	5863	0.780985238	0
18593	5864	0.780930086	0
18594	5865	0.780930086	0
18595	5866	0.780784129	0
18596	5867	0.780784129	0
18597	5868	0.780700362	0
18598	5869	0.780661879	0
18599	5870	0.780557993	0
18600	5871	0.780557993	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18547	5818	0.783810584	0
18548	5819	0.783744567	0
18549	5820	0.783744567	0
18550	5821	0.783744567	0
18551	5822	0.783744567	0
18552	5823	0.783662462	0
18553	5824	0.783557572	0
18554	5825	0.783557572	0
18555	5826	0.783226933	0
18556	5827	0.783226933	0
18557	5828	0.783100372	0
18558	5829	0.783051991	0
18559	5830	0.782943729	0
18560	5831	0.782943729	0
18561	5832	0.782943729	0
18562	5833	0.782943729	0
18563	5834	0.782870126	0
18564	5835	0.782816835	0
18565	5836	0.78274483	0
18566	5837	0.78274483	0
18567	5838	0.78274483	0
18568	5839	0.782483914	0
18569	5840	0.782483914	0
18570	5841	0.782483914	-0.478023482
18571	5842	0.782483914	-1.080083473
18572	5843	0.782259531	0
18573	5844	0.782208259	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18520	5791	0.785051958	0
18521	5792	0.785051958	0
18522	5793	0.784993258	0
18523	5794	0.784993258	0
18524	5795	0.784993258	-1.304817911
18525	5796	0.784903388	0
18526	5797	0.784903388	-1.077663999
18527	5798	0.784903388	-1.378693995
18528	5799	0.78483782	0
18529	5800	0.784787869	0
18530	5801	0.784787869	0
18531	5802	0.784716796	-1.589733953
18532	5803	0.784418414	0
18533	5804	0.784418414	0
18534	5805	0.784418414	0
18535	5806	0.784418414	0
18536	5807	0.784418414	0
18537	5808	0.784418414	0
18538	5809	0.784010434	0
18539	5810	0.784010434	0
18540	5811	0.784010434	0
18541	5812	0.784010434	0
18542	5813	0.783948653	0
18543	5814	0.783948653	0
18544	5815	0.78386482	0
18545	5816	0.78386482	0
18546	5817	0.78386482	-1.321740616

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18493	5764	0.786639874	0
18494	5765	0.786639874	0
18495	5766	0.786639874	0
18496	5767	0.786302558	0
18497	5768	0.786302558	0
18498	5769	0.786302558	0
18499	5770	0.786211787	0
18500	5771	0.786211787	0
18501	5772	0.786054177	0
18502	5773	0.785922032	0
18503	5774	0.785922032	-0.187795808
18504	5775	0.785863655	0
18505	5776	0.785712884	0
18506	5777	0.785712884	0
18507	5778	0.785712884	0
18508	5779	0.785712884	0
18509	5780	0.785712884	0
18510	5781	0.785712884	0
18511	5782	0.785712884	0
18512	5783	0.785554816	0
18513	5784	0.785554816	-1.485676446
18514	5785	0.785489424	0
18515	5786	0.785489424	0
18516	5787	0.785489424	0
18517	5788	0.785331757	0
18518	5789	0.785331757	0
18519	5790	0.785124011	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18682	5953	0.77564449	0
18683	5954	0.77564449	0
18684	5955	0.77564449	0
18685	5956	0.77564449	0
18686	5957	0.77564449	0
18687	5958	0.77564449	0
18688	5959	0.77564449	0
18689	5960	0.77564449	0
18690	5961	0.77564449	0
18691	5962	0.77564449	0
18692	5963	0.77564449	-1.125840964
18693	5964	0.77564449	-1.329960946
18694	5965	0.77564449	-1.572998995
18695	5966	0.77564449	-1.125840964
18696	5967	0.775210412	0
18697	5968	0.775210412	0
18698	5969	0.775210412	0
18699	5970	0.775210412	0
18700	5971	0.775210412	0
18701	5972	0.775041722	0
18702	5973	0.775041722	0
18703	5974	0.775041722	0
18704	5975	0.775041722	0
18705	5976	0.774896351	0
18706	5977	0.77483095	0
18707	5978	0.774658577	0
18708	5979	0.774658577	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18655	5926	0.777457831	0
18656	5927	0.777457831	0
18657	5928	0.777318074	0
18658	5929	0.777318074	0
18659	5930	0.777318074	0
18660	5931	0.777318074	0
18661	5932	0.777155081	0
18662	5933	0.777155081	0
18663	5934	0.777062981	0
18664	5935	0.777062981	0
18665	5936	0.777062981	0
18666	5937	0.776731585	0
18667	5938	0.776731585	0
18668	5939	0.776731585	0
18669	5940	0.776731585	0
18670	5941	0.776283628	0
18671	5942	0.776283628	0
18672	5943	0.776097116	0
18673	5944	0.776097116	0
18674	5945	0.776097116	0
18675	5946	0.776097116	0
18676	5947	0.776097116	0
18677	5948	0.776097116	-1.262561531
18678	5949	0.775994869	0
18679	5950	0.775930304	0
18680	5951	0.775930304	-1.462300698
18681	5952	0.77564449	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18628	5899	0.77868507	0
18629	5900	0.778640575	0
18630	5901	0.778640575	0
18631	5902	0.778528049	0
18632	5903	0.778528049	-0.235307014
18633	5904	0.778455467	0
18634	5905	0.778455467	0
18635	5906	0.778455467	0
18636	5907	0.778455467	0
18637	5908	0.778455467	0
18638	5909	0.778455467	0
18639	5910	0.778455467	0
18640	5911	0.778367348	0
18641	5912	0.778367348	0
18642	5913	0.778258105	0
18643	5914	0.778119109	0
18644	5915	0.778034377	0
18645	5916	0.777936287	0
18646	5917	0.777936287	0
18647	5918	0.777936287	-0.284203456
18648	5919	0.777821409	0
18649	5920	0.777778619	0
18650	5921	0.777685031	0
18651	5922	0.777685031	0
18652	5923	0.777685031	0
18653	5924	0.777685031	-1.084882356
18654	5925	0.777520495	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18601	5872	0.780557993	0
18602	5873	0.780557993	-1.002828148
18603	5874	0.780390925	0
18604	5875	0.780160591	0
18605	5876	0.780160591	0
18606	5877	0.780077845	0
18607	5878	0.780077845	0
18608	5879	0.780077845	0
18609	5880	0.780077845	0
18610	5881	0.780077845	-0.781459547
18611	5882	0.780009295	0
18612	5883	0.779278774	0
18613	5884	0.779278774	0
18614	5885	0.779278774	0
18615	5886	0.779278774	0
18616	5887	0.779278774	0
18617	5888	0.779278774	0
18618	5889	0.779278774	0
18619	5890	0.779278774	0
18620	5891	0.779278774	0
18621	5892	0.779278774	0
18622	5893	0.779278774	0
18623	5894	0.779278774	0
18624	5895	0.779278774	0
18625	5896	0.779278774	0
18626	5897	0.779278774	0
18627	5898	0.779278774	-0.754229894

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18790	6061	0.769178448	0
18791	6062	0.769178448	0
18792	6063	0.769178448	-1.366390212
18793	6064	0.768813341	0
18794	6065	0.768762656	0
18795	6066	0.768762656	-0.031013902
18796	6067	0.76869563	0
18797	6068	0.76869563	0
18798	6069	0.768602842	0
18799	6070	0.768602842	0
18800	6071	0.768602842	0
18801	6072	0.768602842	0
18802	6073	0.768465905	-1.51323079
18803	6074	0.768243475	0
18804	6075	0.768243475	0
18805	6076	0.768070553	0
18806	6077	0.768070553	-0.622770612
18807	6078	0.767997764	0
18808	6079	0.767997764	0
18809	6080	0.767819152	0
18810	6081	0.767819152	0
18811	6082	0.767819152	0
18812	6083	0.767645191	0
18813	6084	0.767576868	0
18814	6085	0.767576868	0
18815	6086	0.767576868	0
18816	6087	0.767517664	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18763	6034	0.770845607	0
18764	6035	0.770845607	0
18765	6036	0.770845607	0
18766	6037	0.770845607	0
18767	6038	0.770845607	0
18768	6039	0.770584691	0
18769	6040	0.770482636	0
18770	6041	0.770394392	0
18771	6042	0.770394392	0
18772	6043	0.770394392	0
18773	6044	0.770249458	0
18774	6045	0.770249458	0
18775	6046	0.770249458	0
18776	6047	0.770087014	0
18777	6048	0.770087014	0
18778	6049	0.770087014	0
18779	6050	0.770087014	-1.406874331
18780	6051	0.76987555	0
18781	6052	0.76987555	0
18782	6053	0.769802883	0
18783	6054	0.769802883	0
18784	6055	0.769802883	0
18785	6056	0.769695157	0
18786	6057	0.769178448	0
18787	6058	0.769178448	0
18788	6059	0.769178448	0
18789	6060	0.769178448	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18736	6007	0.772938596	0
18737	6008	0.772938596	0
18738	6009	0.772938596	0
18739	6010	0.772553413	0
18740	6011	0.77236678	0
18741	6012	0.77236678	0
18742	6013	0.77236678	-1.404594565
18743	6014	0.77236678	-1.404594565
18744	6015	0.772287968	0
18745	6016	0.772183958	0
18746	6017	0.772183958	0
18747	6018	0.772183958	0
18748	6019	0.772040366	0
18749	6020	0.772040366	0
18750	6021	0.771945923	0
18751	6022	0.771829287	0
18752	6023	0.771681593	0
18753	6024	0.77148853	0
18754	6025	0.77148853	0
18755	6026	0.771323116	0
18756	6027	0.771323116	0
18757	6028	0.771323116	0
18758	6029	0.771225401	0
18759	6030	0.771225401	0
18760	6031	0.771115104	0
18761	6032	0.770845607	0
18762	6033	0.770845607	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18709	5980	0.774658577	0
18710	5981	0.774472304	0
18711	5982	0.774393521	0
18712	5983	0.774393521	-1.299027232
18713	5984	0.774199249	0
18714	5985	0.774199249	0
18715	5986	0.774199249	0
18716	5987	0.774199249	0
18717	5988	0.774199249	0
18718	5989	0.774199249	0
18719	5990	0.774050747	0
18720	5991	0.773933544	0
18721	5992	0.773760346	0
18722	5993	0.773760346	-1.246414895
18723	5994	0.773638507	0
18724	5995	0.773638507	0
18725	5996	0.773638507	0
18726	5997	0.773548133	0
18727	5998	0.773478428	0
18728	5999	0.773478428	0
18729	6000	0.773377943	-1.518537917
18730	6001	0.773282048	0
18731	6002	0.772938596	0
18732	6003	0.772938596	0
18733	6004	0.772938596	0
18734	6005	0.772938596	0
18735	6006	0.772938596	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
18898	6169	0.762573081	0	0
18899	6170	0.762573081	0	0
18900	6171	0.762573081	0	0
18901	6172	0.762573081	-1.151146829	0
18902	6173	0.762573081	-1.327238088	0
18903	6174	0.76242412	0	0
18904	6175	0.762351672	0	0
18905	6176	0.762351672	0	0
18906	6177	0.762280528	0	0
18907	6178	0.762280528	0	0
18908	6179	0.762280528	0	0
18909	6180	0.762142019	0	0
18910	6181	0.762008329	0	0
18911	6182	0.762008329	-1.358837074	0
18912	6183	0.761943212	0	0
18913	6184	0.761943212	0	0
18914	6185	0.761754429	0	0
18915	6186	0.761754429	0	0
18916	6187	0.761754429	0	0
18917	6188	0.761754429	0	0
18918	6189	0.761754429	0	0
18919	6190	0.761754429	0	0
18920	6191	0.761754429	-0.176533672	0
18921	6192	0.761754429	-0.498752967	0
18922	6193	0.761754429	-0.720601716	0
18923	6194	0.761517045	0	0
18924	6195	0.761517045	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
18871	6142	0.764348431	0	0
18872	6143	0.764348431	0	0
18873	6144	0.764215028	0	0
18874	6145	0.764215028	0	0
18875	6146	0.764215028	-1.371353631	0
18876	6147	0.764085175	0	0
18877	6148	0.764000509	0	0
18878	6149	0.764000509	0	0
18879	6150	0.763896747	0	0
18880	6151	0.763896747	0	0
18881	6152	0.763795217	0	0
18882	6153	0.76359857	0	0
18883	6154	0.76359857	0	0
18884	6155	0.76359857	0	0
18885	6156	0.76359857	0	0
18886	6157	0.76359857	-0.358606128	0
18887	6158	0.763318651	0	0
18888	6159	0.763318651	0	0
18889	6160	0.763229115	0	0
18890	6161	0.763229115	0	0
18891	6162	0.763229115	0	0
18892	6163	0.763055363	0	0
18893	6164	0.763055363	0	0
18894	6165	0.762888358	0	0
18895	6166	0.762573081	0	0
18896	6167	0.762573081	0	0
18897	6168	0.762573081	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
18844	6115	0.765736201	0	0
18845	6116	0.765736201	0	0
18846	6117	0.765736201	0	0
18847	6118	0.765736201	-1.006654556	0
18848	6119	0.765611993	0	0
18849	6120	0.765450575	0	0
18850	6121	0.765450575	0	0
18851	6122	0.765450575	0	0
18852	6123	0.765450575	0	0
18853	6124	0.765371605	0	0
18854	6125	0.765313118	0	0
18855	6126	0.765232282	-1.42469404	0
18856	6127	0.764920624	0	0
18857	6128	0.764920624	0	0
18858	6129	0.764920624	0	0
18859	6130	0.764920624	0	0
18860	6131	0.764920624	-0.261503566	0
18861	6132	0.764920624	-1.215746075	0
18862	6133	0.764920624	-1.340684812	0
18863	6134	0.764555518	0	0
18864	6135	0.764555518	0	0
18865	6136	0.764555518	0	0
18866	6137	0.764439412	0	0
18867	6138	0.764439412	0	0
18868	6139	0.764348431	0	0
18869	6140	0.764348431	0	0
18870	6141	0.764348431	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
18817	6088	0.767420168	0	0
18818	6089	0.767310511	-1.493196885	0
18819	6090	0.767229479	0	0
18820	6091	0.767117734	0	0
18821	6092	0.766689647	0	0
18822	6093	0.766689647	0	0
18823	6094	0.766689647	0	0
18824	6095	0.766689647	0	0
18825	6096	0.766689647	0	0
18826	6097	0.766689647	0	0
18827	6098	0.766689647	0	0
18828	6099	0.766689647	0	0
18829	6100	0.766689647	0	0
18830	6101	0.766689647	0	0
18831	6102	0.766689647	0	0
18832	6103	0.766354414	-1.460294715	0
18833	6104	0.76628956	0	0
18834	6105	0.76628956	0	0
18835	6106	0.76628956	0	0
18836	6107	0.766193594	0	0
18837	6108	0.766193594	0	0
18838	6109	0.766193594	0	0
18839	6110	0.766193594	-0.33595131	0
18840	6111	0.766037063	0	0
18841	6112	0.766037063	0	0
18842	6113	0.765914813	0	0
18843	6114	0.765914813	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19006	6277	0.757048001	0
19007	6278	0.756958336	0
19008	6279	0.756958336	0
19009	6280	0.756874665	0
19010	6281	0.756874665	-0.533595955
19011	6282	0.756796407	0
19012	6283	0.756796407	0
19013	6284	0.756796407	0
19014	6285	0.756723052	0
19015	6286	0.756723052	-1.406874331
19016	6287	0.756654155	0
19017	6288	0.756654155	-1.42030719
19018	6289	0.75658932	0
19019	6290	0.756528199	0
19020	6291	0.756470482	0
19021	6292	0.756470482	-1.458279424
19022	6293	0.756415892	0
19023	6294	0.756415892	0
19024	6295	0.756364181	0
19025	6296	0.756141773	0
19026	6297	0.756141773	0
19027	6298	0.756031579	0
19028	6299	0.755965782	0
19029	6300	0.755965782	0
19030	6301	0.754455191	0
19031	6302	0.754455191	0
19032	6303	0.754455191	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18979	6250	0.758089475	0
18980	6251	0.758089475	0
18981	6252	0.758089475	0
18982	6253	0.758000472	0
18983	6254	0.757915723	0
18984	6255	0.757915723	0
18985	6256	0.757915723	0
18986	6257	0.757915723	0
18987	6258	0.757834931	0
18988	6259	0.757757826	0
18989	6260	0.757684161	0
18990	6261	0.75761371	0
18991	6262	0.75761371	0
18992	6263	0.75761371	0
18993	6264	0.757360181	0
18994	6265	0.757360181	0
18995	6266	0.757360181	0
18996	6267	0.757360181	0
18997	6268	0.757360181	0
18998	6269	0.757360181	0
18999	6270	0.757360181	-1.299027232
19000	6271	0.757248091	0
19001	6272	0.757144329	0
19002	6273	0.757144329	0
19003	6274	0.757144329	0
19004	6275	0.757144329	0
19005	6276	0.757048001	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18952	6223	0.759918086	0
18953	6224	0.759918086	0
18954	6225	0.759850223	0
18955	6226	0.759784024	0
18956	6227	0.759656384	0
18957	6228	0.759656384	0
18958	6229	0.759475992	0
18959	6230	0.759475992	0
18960	6231	0.759307694	0
18961	6232	0.759307694	0
18962	6233	0.759307694	0
18963	6234	0.759150312	0
18964	6235	0.759002818	0
18965	6236	0.759002818	-1.103564569
18966	6237	0.75886431	0
18967	6238	0.758733989	0
18968	6239	0.758733989	0
18969	6240	0.758733989	0
18970	6241	0.758733989	0
18971	6242	0.758733989	0
18972	6243	0.758733989	0
18973	6244	0.758495169	0
18974	6245	0.758495169	0
18975	6246	0.758281599	0
18976	6247	0.758281599	0
18977	6248	0.758281599	0
18978	6249	0.758281599	-1.479949403

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
18925	6196	0.761404051	0
18926	6197	0.761404051	0
18927	6198	0.761294615	0
18928	6199	0.761294615	0
18929	6200	0.761294615	0
18930	6201	0.761294615	0
18931	6202	0.76108577	0
18932	6203	0.76108577	0
18933	6204	0.76108577	0
18934	6205	0.760937318	0
18935	6206	0.760937318	0
18936	6207	0.760795369	0
18937	6208	0.760795369	0
18938	6209	0.760795369	0
18939	6210	0.760795369	0
18940	6211	0.760795369	0
18941	6212	0.760529338	0
18942	6213	0.760529338	0
18943	6214	0.760529338	0
18944	6215	0.760529338	0
18945	6216	0.760284734	0
18946	6217	0.760284734	0
18947	6218	0.760284734	0
18948	6219	0.760059068	0
18949	6220	0.760059068	-0.887392952
18950	6221	0.760059068	-1.012331689
18951	6222	0.759918086	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19114	6385	0.75196639	0
19115	6386	0.75196639	0
19116	6387	0.75187768	0
19117	6388	0.75187768	0
19118	6389	0.75178260	0
19119	6390	0.75178260	0
19120	6391	0.75178260	0
19121	6392	0.75178260	-0.860907313
19122	6393	0.751680137	0
19123	6394	0.751680137	0
19124	6395	0.751569503	0
19125	6396	0.751569503	0
19126	6397	0.751569503	0
19127	6398	0.751569503	0
19128	6399	0.751449681	0
19129	6400	0.751449681	0
19130	6401	0.751449681	0
19131	6402	0.751449681	0
19132	6403	0.751449681	0
19133	6404	0.751449681	-1.287208966
19134	6405	0.751319477	0
19135	6406	0.751319477	0
19136	6407	0.751319477	0
19137	6408	0.751319477	0
19138	6409	0.751319477	0
19139	6410	0.751250051	0
19140	6411	0.751177481	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19087	6358	0.754455191	0
19088	6359	0.754455191	0
19089	6360	0.754455191	0
19090	6361	0.754455191	0
19091	6362	0.754455191	0
19092	6363	0.754455191	0
19093	6364	0.754455191	0
19094	6365	0.754455191	-1.159264719
19095	6366	0.75273521	0
19096	6367	0.752693345	0
19097	6368	0.75264939	0
19098	6369	0.752603186	0
19099	6370	0.752554555	0
19100	6371	0.752449208	0
19101	6372	0.752449208	0
19102	6373	0.75239203	-1.450123419
19103	6374	0.752267305	0
19104	6375	0.752267305	0
19105	6376	0.75219911	0
19106	6377	0.75219911	0
19107	6378	0.75219911	0
19108	6379	0.75219911	0
19109	6380	0.752126528	0
19110	6381	0.752126528	0
19111	6382	0.752049121	0
19112	6383	0.752049121	0
19113	6384	0.752049121	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19060	6331	0.754455191	0
19061	6332	0.754455191	0
19062	6333	0.754455191	0
19063	6334	0.754455191	0
19064	6335	0.754455191	0
19065	6336	0.754455191	0
19066	6337	0.754455191	0
19067	6338	0.754455191	0
19068	6339	0.754455191	0
19069	6340	0.754455191	0
19070	6341	0.754455191	0
19071	6342	0.754455191	0
19072	6343	0.754455191	0
19073	6344	0.754455191	0
19074	6345	0.754455191	0
19075	6346	0.754455191	0
19076	6347	0.754455191	0
19077	6348	0.754455191	0
19078	6349	0.754455191	0
19079	6350	0.754455191	0
19080	6351	0.754455191	0
19081	6352	0.754455191	0
19082	6353	0.754455191	0
19083	6354	0.754455191	-1.38113469
19084	6355	0.754455191	0
19085	6356	0.754455191	0
19086	6357	0.754455191	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19033	6304	0.754455191	0
19034	6305	0.754455191	0
19035	6306	0.754455191	0
19036	6307	0.754455191	0
19037	6308	0.754455191	0
19038	6309	0.754455191	0
19039	6310	0.754455191	0
19040	6311	0.754455191	0
19041	6312	0.754455191	0
19042	6313	0.754455191	0
19043	6314	0.754455191	0
19044	6315	0.754455191	0
19045	6316	0.754455191	0
19046	6317	0.754455191	0
19047	6318	0.754455191	0
19048	6319	0.754455191	0
19049	6320	0.754455191	0
19050	6321	0.754455191	0
19051	6322	0.754455191	0
19052	6323	0.754455191	0
19053	6324	0.754455191	0
19054	6325	0.754455191	0
19055	6326	0.754455191	0
19056	6327	0.754455191	0
19057	6328	0.754455191	0
19058	6329	0.754455191	0
19059	6330	0.754455191	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
19222	6493	0.746486261		0
19223	6494	0.746486261		0
19224	6495	0.746260712		0
19225	6496	0.746260712		0
19226	6497	0.746182665		0
19227	6498	0.746182665		0
19228	6499	0.746022023		0
19229	6500	0.746022023		0
19230	6501	0.746022023		0
19231	6502	0.745855019		0
19232	6503	0.745855019		0
19233	6504	0.745855019	-1.310532394	0
19234	6505	0.745716576		0
19235	6506	0.745716576		0
19236	6507	0.745681266		0
19237	6508	0.74565587		0
19238	6509	0.745500348		0
19239	6510	0.745500348		0
19240	6511	0.745500348	-0.515007048	0
19241	6512	0.745115164		0
19242	6513	0.745115164		0
19243	6514	0.744909873		0
19244	6515	0.744909873		0
19245	6516	0.744909873		0
19246	6517	0.744909873		0
19247	6518	0.744909873		0
19248	6519	0.744782308		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
19195	6466	0.747615766		0
19196	6467	0.747615766		0
19197	6468	0.747450289		0
19198	6469	0.747450289		0
19199	6470	0.747276606		0
19200	6471	0.747276606		0
19201	6472	0.747276606		0
19202	6473	0.747276606		0
19203	6474	0.747276606		0
19204	6475	0.747094091		0
19205	6476	0.747031173		0
19206	6477	0.747031173		0
19207	6478	0.747031173		0
19208	6479	0.746902053	-1.190298953	0
19209	6480	0.746822402		0
19210	6481	0.746768362		0
19211	6482	0.746768362	-1.358837074	0
19212	6483	0.746486261		0
19213	6484	0.746486261		0
19214	6485	0.746486261		0
19215	6486	0.746486261		0
19216	6487	0.746486261		0
19217	6488	0.746486261		0
19218	6489	0.746486261		0
19219	6490	0.746486261		0
19220	6491	0.746486261		0
19221	6492	0.746486261		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
19168	6439	0.748922702		0
19169	6440	0.748922702		0
19170	6441	0.748814923		0
19171	6442	0.748778058		0
19172	6443	0.748702862	-0.052412047	0
19173	6444	0.748464827		0
19174	6445	0.748464827		0
19175	6446	0.748464827		0
19176	6447	0.748464827		0
19177	6448	0.748464827	-0.290193819	0
19178	6449	0.748294882		0
19179	6450	0.748294882		0
19180	6451	0.748206241		0
19181	6452	0.748206241		0
19182	6453	0.748206241		0
19183	6454	0.748206241		0
19184	6455	0.748115013		0
19185	6456	0.747924324		0
19186	6457	0.747924324		0
19187	6458	0.747924324		0
19188	6459	0.747924324		0
19189	6460	0.747924324		0
19190	6461	0.747721808		0
19191	6462	0.747615766		0
19192	6463	0.747615766		0
19193	6464	0.747615766		0
19194	6465	0.747615766		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
19141	6412	0.751177481		0
19142	6413	0.751022015		0
19143	6414	0.751022015		0
19144	6415	0.750851066		0
19145	6416	0.750662202		0
19146	6417	0.750662202		0
19147	6418	0.750662202		0
19148	6419	0.750662202		0
19149	6420	0.750338625	-0.02081306	0
19150	6421	0.750218138		0
19151	6422	0.750218138		0
19152	6423	0.750090385		0
19153	6424	0.750090385		0
19154	6425	0.74995469		0
19155	6426	0.74995469		0
19156	6427	0.74995469		0
19157	6428	0.749656308		0
19158	6429	0.749656308		0
19159	6430	0.749656308		0
19160	6431	0.749491771		0
19161	6432	0.749491771		0
19162	6433	0.749315551		0
19163	6434	0.749315551		0
19164	6435	0.749315551		0
19165	6436	0.749315551		0
19166	6437	0.749126357		0
19167	6438	0.748922702		0



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
19330	6601	0.740666906	0	0
19331	6602	0.740666906	0	0
19332	6603	0.740666906	-0.086922898	0
19333	6604	0.740604079	0	0
19334	6605	0.740604079	0	0
19335	6606	0.740519413	0	0
19336	6607	0.740214752	0	0
19337	6608	0.740214752	0	0
19338	6609	0.740214752	0	0
19339	6610	0.740214752	0	0
19340	6611	0.740214752	0	0
19341	6612	0.740214752	0	0
19342	6613	0.740214752	0	0
19343	6614	0.740214752	0	0
19344	6615	0.740214752	0	0
19345	6616	0.740214752	0	0
19346	6617	0.740214752	0	0
19347	6618	0.740214752	0	0
19348	6619	0.740214752	0	0
19349	6620	0.740214752	-0.08572374	0
19350	6621	0.740214752	-1.219262649	0
19351	6622	0.739928938	0	0
19352	6623	0.739855682	-1.208626334	0
19353	6624	0.739802903	0	0
19354	6625	0.739802903	0	0
19355	6626	0.739802903	0	0
19356	6627	0.739802903	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
19303	6574	0.741866063	0	0
19304	6575	0.741866063	-0.669909008	0
19305	6576	0.741718369	0	0
19306	6577	0.741718369	0	0
19307	6578	0.741718369	0	0
19308	6579	0.741490214	0	0
19309	6580	0.741490214	0	0
19310	6581	0.741490214	0	0
19311	6582	0.741490214	0	0
19312	6583	0.741490214	0	0
19313	6584	0.741490214	0	0
19314	6585	0.741253734	0	0
19315	6586	0.741253734	0	0
19316	6587	0.741253734	0	0
19317	6588	0.741253734	-0.09328493	0
19318	6589	0.741253734	-0.64958743	0
19319	6590	0.741091229	0	0
19320	6591	0.741091229	0	0
19321	6592	0.740882384	0	0
19322	6593	0.740882384	0	0
19323	6594	0.740882384	0	0
19324	6595	0.740882384	-1.239784316	0
19325	6596	0.740753913	0	0
19326	6597	0.740753913	0	0
19327	6598	0.740753913	0	0
19328	6599	0.740753913	-1.031636844	0
19329	6600	0.740753913	-1.33266684	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
19276	6547	0.743290193	0	0
19277	6548	0.74317418	0	0
19278	6549	0.74317418	0	0
19279	6550	0.74317418	0	0
19280	6551	0.743089827	0	0
19281	6552	0.743025729	0	0
19282	6553	0.743025729	0	0
19283	6554	0.743025729	-1.012331689	0
19284	6555	0.742873318	0	0
19285	6556	0.742829023	0	0
19286	6557	0.742795578	0	0
19287	6558	0.742795578	0	0
19288	6559	0.742555967	0	0
19289	6560	0.742555967	0	0
19290	6561	0.742555967	0	0
19291	6562	0.742555967	0	0
19292	6563	0.742555967	0	0
19293	6564	0.742555967	0	0
19294	6565	0.742555967	0	0
19295	6566	0.742555967	0	0
19296	6567	0.742151408	-0.533595955	0
19297	6568	0.742045933	0	0
19298	6569	0.742045933	0	0
19299	6570	0.742045933	0	0
19300	6571	0.742045933	-1.278129308	0
19301	6572	0.741866063	0	0
19302	6573	0.741866063	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
19249	6520	0.744695353	0	0
19250	6521	0.744695353	0	0
19251	6522	0.744695353	0	0
19252	6523	0.744695353	0	0
19253	6524	0.744584437	0	0
19254	6525	0.744516668	0	0
19255	6526	0.744516668	0	0
19256	6527	0.744516668	0	0
19257	6528	0.744516668	0	0
19258	6529	0.74447097	0	0
19259	6530	0.7444236026	0	0
19260	6531	0.7444236026	0	0
19261	6532	0.7444236026	0	0
19262	6533	0.7444236026	0	0
19263	6534	0.7444236026	0	0
19264	6535	0.7444236026	0	0
19265	6536	0.7444236026	0	0
19266	6537	0.7444236026	0	0
19267	6538	0.743939072	0	0
19268	6539	0.743624343	0	0
19269	6540	0.743624343	0	0
19270	6541	0.743459806	0	0
19271	6542	0.743459806	0	0
19272	6543	0.743459806	0	0
19273	6544	0.743459806	0	0
19274	6545	0.743366219	0	0
19275	6546	0.743290193	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19438	6709	0.73532018	0	0.735150036	0
19439	6710	0.735150036	0	0.735150036	0
19440	6711	0.735150036	0	0.735150036	0
19441	6712	0.735150036	0	0.735150036	0
19442	6713	0.734992711	0	0.734933051	0
19443	6714	0.734933051	0	0.734933051	0
19444	6715	0.734933051	0	0.734933051	0
19445	6716	0.734933051	-0.084882356	0.734800503	0
19446	6717	0.734800503	0	0.734800503	0
19447	6718	0.734800503	0	0.734800503	0
19448	6719	0.734800503	0	0.734800503	0
19449	6720	0.734800503	0	0.734251805	0
19450	6721	0.734251805	0	0.734251805	0
19451	6722	0.734251805	0	0.734251805	0
19452	6723	0.734251805	0	0.734251805	0
19453	6724	0.734251805	0	0.734251805	0
19454	6725	0.734251805	0	0.734251805	0
19455	6726	0.734251805	-0.593202381	0.733992137	-1.504238865
19456	6727	0.734251805	-1.468263644	0.733933524	0
19457	6728	0.733992137	0	0.733840736	0
19458	6729	0.733933524	0	0.733840736	0
19459	6730	0.733840736	0	0.733840736	0
19460	6731	0.733840736	0	0.733840736	0
19461	6732	0.733840736	0	0.733840736	0
19462	6733	0.733840736	-1.003787915	0.733671585	0
19463	6734	0.733671585	0	0.733671585	0
19464	6735	0.733671585	0	0.733671585	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19411	6682	0.736726424	0	0.736726424	0
19412	6683	0.736726424	0	0.736726424	0
19413	6684	0.736726424	0	0.736726424	0
19414	6685	0.736726424	0	0.736726424	0
19415	6686	0.736726424	0	0.736726424	0
19416	6687	0.736726424	0	0.736726424	0
19417	6688	0.736726424	0	0.736726424	0
19418	6689	0.736726424	0	0.736726424	0
19419	6690	0.736726424	-0.280742924	0.735971785	0
19420	6691	0.736726424	-1.125840964	0.735971785	0
19421	6692	0.736726424	-1.368879012	0.735971785	0
19422	6693	0.736281222	0	0.735569847	0
19423	6694	0.735971785	0	0.735569847	0
19424	6695	0.735971785	0	0.735569847	0
19425	6696	0.735813081	0	0.735569847	0
19426	6697	0.735813081	0	0.735569847	0
19427	6698	0.735705755	0	0.735569847	0
19428	6699	0.735569847	0	0.735569847	0
19429	6700	0.735569847	0	0.735569847	0
19430	6701	0.735569847	0	0.735569847	0
19431	6702	0.735569847	0	0.735569847	0
19432	6703	0.735569847	0	0.735569847	0
19433	6704	0.735392185	0	0.735392185	0
19434	6705	0.735392185	0	0.735392185	0
19435	6706	0.735392185	0	0.735392185	0
19436	6707	0.735392185	0	0.735392185	0
19437	6708	0.735392185	-1.338028568	0.735392185	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19384	6655	0.738308555	0	0.738308555	0
19385	6656	0.738308555	0	0.738308555	0
19386	6657	0.738308555	0	0.738308555	0
19387	6658	0.738217992	0	0.738217992	0
19388	6659	0.738064775	0	0.738064775	0
19389	6660	0.738064775	0	0.738064775	0
19390	6661	0.738064775	0	0.738064775	0
19391	6662	0.738064775	0	0.738064775	0
19392	6663	0.738064775	0	0.738064775	0
19393	6664	0.738064775	0	0.738064775	0
19394	6665	0.737940103	0	0.737940103	0
19395	6666	0.737749497	0	0.737749497	0
19396	6667	0.737749497	0	0.737749497	0
19397	6668	0.737641692	0	0.737641692	0
19398	6669	0.737641692	0	0.737641692	0
19399	6670	0.73755444	0	0.73755444	0
19400	6671	0.737421851	0	0.737421851	0
19401	6672	0.737421851	0	0.737421851	0
19402	6673	0.737421851	-0.063693057	0.737325864	0
19403	6674	0.737325864	0	0.737325864	0
19404	6675	0.737325864	-1.383519539	0.737325864	0
19405	6676	0.737253161	0	0.737253161	0
19406	6677	0.737112635	-0.671457297	0.737112635	0
19407	6678	0.737081095	-0.465434354	0.737081095	0
19408	6679	0.736726424	0	0.736726424	0
19409	6680	0.736726424	0	0.736726424	0
19410	6681	0.736726424	0	0.736726424	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19357	6628	0.739731934	0	0.739731934	0
19358	6629	0.739731934	-1.38113469	0.739731934	0
19359	6630	0.739631414	0	0.739631414	0
19360	6631	0.739631414	0	0.739631414	0
19361	6632	0.739631414	0	0.739631414	0
19362	6633	0.739631414	-0.18508388	0.739631414	0
19363	6634	0.739478035	0	0.739478035	0
19364	6635	0.739478035	0	0.739478035	0
19365	6636	0.739478035	0	0.739478035	0
19366	6637	0.73936652	0	0.73936652	0
19367	6638	0.739215224	0	0.739215224	0
19368	6639	0.739215224	0	0.739215224	0
19369	6640	0.739215224	0	0.739215224	0
19370	6641	0.739215224	0	0.739215224	0
19371	6642	0.739080329	0	0.739080329	0
19372	6643	0.739080329	0	0.739080329	0
19373	6644	0.73899824	0	0.73899824	0
19374	6645	0.738850117	0	0.738850117	0
19375	6646	0.738660924	0	0.738660924	0
19376	6647	0.738660924	0	0.738660924	0
19377	6648	0.738660924	0	0.738660924	0
19378	6649	0.738660924	0	0.738660924	0
19379	6650	0.738660924	0	0.738660924	0
19380	6651	0.738660924	0	0.738660924	0
19381	6652	0.738410826	0	0.738410826	0
19382	6653	0.738308555	0	0.738308555	0
19383	6654	0.738308555	0	0.738308555	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19546	6817	0.730260382	0	0.730260382	0
19547	6818	0.730260382	0	0.730260382	0
19548	6819	0.730095845	0	0.730095845	0
19549	6820	0.730095845	0	0.730095845	0
19550	6821	0.730095845	0	0.730095845	0
19551	6822	0.730042132	0	0.730042132	0
19552	6823	0.729981421	0	0.729981421	0
19553	6824	0.72991225	0	0.72991225	0
19554	6825	0.729832716	0	0.729832716	0
19555	6826	0.729832716	0	0.729832716	0
19556	6827	0.729832716	0	0.729832716	0
19557	6828	0.729832716	-0.150463439	0.729832716	0
19558	6829	0.729740303	0	0.729740303	0
19559	6830	0.729740303	0	0.729740303	0
19560	6831	0.729631607	0	0.729631607	0
19561	6832	0.729631607	0	0.729631607	0
19562	6833	0.729631607	0	0.729631607	0
19563	6834	0.729631607	0	0.729631607	0
19564	6835	0.729631607	0	0.729631607	0
19565	6836	0.729501909	0	0.729501909	0
19566	6837	0.729501909	0	0.729501909	0
19567	6838	0.72934447	0	0.72934447	0
19568	6839	0.72934447	0	0.72934447	0
19569	6840	0.72934447	0	0.72934447	0
19570	6841	0.72934447	0	0.72934447	0
19571	6842	0.729219367	0	0.729219367	0
19572	6843	0.729219367	0	0.729219367	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19519	6790	0.731791206	0	0.731791206	0
19520	6791	0.731791206	0	0.731791206	0
19521	6792	0.731712064	0	0.731712064	0
19522	6793	0.731712064	-0.139343434	0.731712064	0
19523	6794	0.731646898	0	0.731646898	0
19524	6795	0.731646898	0	0.731646898	0
19525	6796	0.731592308	-1.495056821	0.731592308	0
19526	6797	0.730974095	0	0.730974095	0
19527	6798	0.730974095	0	0.730974095	0
19528	6799	0.730974095	0	0.730974095	0
19529	6800	0.730974095	0	0.730974095	0
19530	6801	0.730974095	0	0.730974095	0
19531	6802	0.730974095	0	0.730974095	0
19532	6803	0.730974095	0	0.730974095	0
19533	6804	0.730974095	0	0.730974095	0
19534	6805	0.730974095	0	0.730974095	0
19535	6806	0.730974095	0	0.730974095	0
19536	6807	0.730974095	0	0.730974095	0
19537	6808	0.730974095	0	0.730974095	0
19538	6809	0.730974095	0	0.730974095	0
19539	6810	0.730974095	0	0.730974095	0
19540	6811	0.730974095	0	0.730974095	0
19541	6812	0.730974095	0	0.730974095	0
19542	6813	0.730974095	0	0.730974095	0
19543	6814	0.730974095	-1.44598725	0.730974095	0
19544	6815	0.730454914	0	0.730454914	0
19545	6816	0.730372995	0	0.730372995	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19492	6763	0.732966275	0	0.732966275	0
19493	6764	0.732883085	0	0.732883085	0
19494	6765	0.732883085	-1.481866821	0.732883085	0
19495	6766	0.732735941	0	0.732735941	0
19496	6767	0.732735941	0	0.732735941	0
19497	6768	0.732735941	0	0.732735941	0
19498	6769	0.732735941	0	0.732735941	0
19499	6770	0.732735941	0	0.732735941	0
19500	6771	0.732553349	0	0.732553349	0
19501	6772	0.73240505	0	0.73240505	0
19502	6773	0.73240505	0	0.73240505	0
19503	6774	0.73240505	0	0.73240505	0
19504	6775	0.73240505	0	0.73240505	0
19505	6776	0.73240505	0	0.73240505	0
19506	6777	0.732282212	0	0.732282212	0
19507	6778	0.732178796	0	0.732178796	0
19508	6779	0.732178796	0	0.732178796	0
19509	6780	0.732178796	0	0.732178796	0
19510	6781	0.732178796	0	0.732178796	0
19511	6782	0.732178796	0	0.732178796	0
19512	6783	0.732178796	0	0.732178796	0
19513	6784	0.732014322	0	0.732014322	0
19514	6785	0.732014322	0	0.732014322	0
19515	6786	0.731889363	0	0.731889363	0
19516	6787	0.731889363	0	0.731889363	0
19517	6788	0.731889363	0	0.731889363	0
19518	6789	0.731791206	0	0.731791206	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19465	6736	0.733671585	0	0.733671585	0
19466	6737	0.733671585	0	0.733671585	0
19467	6738	0.733671585	0	0.733671585	0
19468	6739	0.733521284	0	0.733521284	0
19469	6740	0.733521284	0	0.733521284	0
19470	6741	0.733265892	0	0.733265892	0
19471	6742	0.733265892	0	0.733265892	0
19472	6743	0.733265892	0	0.733265892	0
19473	6744	0.733265892	0	0.733265892	0
19474	6745	0.733265892	0	0.733265892	0
19475	6746	0.733265892	0	0.733265892	0
19476	6747	0.733265892	0	0.733265892	0
19477	6748	0.733265892	0	0.733265892	0
19478	6749	0.733265892	0	0.733265892	0
19479	6750	0.733265892	0	0.733265892	0
19480	6751	0.733265892	0	0.733265892	0
19481	6752	0.733265892	0	0.733265892	0
19482	6753	0.733265892	0	0.733265892	0
19483	6754	0.733057046	0	0.733057046	0
19484	6755	0.733057046	0	0.733057046	0
19485	6756	0.733057046	0	0.733057046	0
19486	6757	0.733057046	0	0.733057046	0
19487	6758	0.732966275	0	0.732966275	0
19488	6759	0.732966275	0	0.732966275	0
19489	6760	0.732966275	0	0.732966275	0
19490	6761	0.732966275	0	0.732966275	0
19491	6762	0.732966275	0	0.732966275	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19654	6925	0.724491967	0
19655	6926	0.724491967	0
19656	6927	0.724491967	0
19657	6928	0.724491967	0
19658	6929	0.724231208	0
19659	6930	0.724170387	0
19660	6931	0.724170387	0
19661	6932	0.724170387	0
19662	6933	0.724072562	0
19663	6934	0.724072562	0
19664	6935	0.723997327	0
19665	6936	0.723889199	0
19666	6937	0.723889199	0
19667	6938	0.723889199	0
19668	6939	0.723889199	0
19669	6940	0.723889199	0
19670	6941	0.723720574	0
19671	6942	0.723720574	0
19672	6943	0.723641243	0
19673	6944	0.723420957	0
19674	6945	0.723420957	0
19675	6946	0.723420957	0
19676	6947	0.723420957	0
19677	6948	0.723420957	0
19678	6949	0.723420957	0
19679	6950	0.723420957	-0.588238962
19680	6951	0.723162832	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19627	6898	0.726426467	-1.476088982
19628	6899	0.726103452	0
19629	6900	0.726059819	0
19630	6901	0.726002558	-1.136564829
19631	6902	0.725810009	0
19632	6903	0.725810009	-0.974030081
19633	6904	0.725731039	0
19634	6905	0.725628865	0
19635	6906	0.725628865	0
19636	6907	0.725628865	0
19637	6908	0.725491495	0
19638	6909	0.725296962	0
19639	6910	0.725296962	0
19640	6911	0.725296962	0
19641	6912	0.725296962	0
19642	6913	0.725296962	0
19643	6914	0.725115059	0
19644	6915	0.725115059	0
19645	6916	0.725115059	0
19646	6917	0.725000211	0
19647	6918	0.724863318	0
19648	6919	0.72478452	0
19649	6920	0.72478452	0
19650	6921	0.72478452	0
19651	6922	0.72478452	0
19652	6923	0.724491967	0
19653	6924	0.724491967	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19600	6871	0.727471701	0
19601	6872	0.727471701	0
19602	6873	0.727471701	0
19603	6874	0.727471701	0
19604	6875	0.727471701	-1.044919056
19605	6876	0.727302945	0
19606	6877	0.727302945	0
19607	6878	0.727181106	0
19608	6879	0.727181106	0
19609	6880	0.727181106	0
19610	6881	0.727181106	0
19611	6882	0.727181106	0
19612	6883	0.727181106	-0.4875688
19613	6884	0.727016942	0
19614	6885	0.727016942	0
19615	6886	0.727016942	-1.293158298
19616	6887	0.726911441	0
19617	6888	0.726911441	0
19618	6889	0.726911441	-1.378693995
19619	6890	0.726837926	0
19620	6891	0.726837926	0
19621	6892	0.726426467	0
19622	6893	0.726426467	0
19623	6894	0.726426467	0
19624	6895	0.726426467	0
19625	6896	0.726426467	0
19626	6897	0.726426467	-0.506052205

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19573	6844	0.729219367	0
19574	6845	0.729149325	0
19575	6846	0.729149325	0
19576	6847	0.729149325	0
19577	6848	0.728901086	0
19578	6849	0.728901086	0
19579	6850	0.728901086	0
19580	6851	0.728901086	0
19581	6852	0.728901086	0
19582	6853	0.728694329	0
19583	6854	0.728574672	0
19584	6855	0.728441758	0
19585	6856	0.728441758	0
19586	6857	0.728441758	0
19587	6858	0.728441758	0
19588	6859	0.728369622	0
19589	6860	0.728126252	0
19590	6861	0.728126252	0
19591	6862	0.728126252	0
19592	6863	0.728126252	-1.435471131
19593	6864	0.727896162	0
19594	6865	0.727832711	0
19595	6866	0.727720937	0
19596	6867	0.727720937	0
19597	6868	0.727720937	0
19598	6869	0.727720937	0
19599	6870	0.727720937	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19762	7033	0.718358845	0
19763	7034	0.718243018	0
19764	7035	0.718243018	0
19765	7036	0.718105169	0
19766	7037	0.718105169	0
19767	7038	0.718105169	0
19768	7039	0.718025925	0
19769	7040	0.71784108	0
19770	7041	0.71784108	0
19771	7042	0.717732384	0
19772	7043	0.717732384	0
19773	7044	0.717732384	0
19774	7045	0.717732384	0
19775	7046	0.717610133	0
19776	7047	0.717471624	0
19777	7048	0.717471624	0
19778	7049	0.717313383	0
19779	7050	0.717313383	0
19780	7051	0.717130868	0
19781	7052	0.717130868	0
19782	7053	0.717130868	0
19783	7054	0.717130868	0
19784	7055	0.717130868	0
19785	7056	0.717130868	0
19786	7057	0.71692799	0
19787	7058	0.71692799	0
19788	7059	0.71691803	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19735	7006	0.719693084	0
19736	7007	0.719693084	0
19737	7008	0.719693084	0
19738	7009	0.719693084	0
19739	7010	0.719693084	0
19740	7011	0.719693084	0
19741	7012	0.719693084	0
19742	7013	0.719693084	0
19743	7014	0.719693084	0
19744	7015	0.719693084	0
19745	7016	0.719693084	0
19746	7017	0.719693084	-0.93875432
19747	7018	0.719693084	-1.169203242
19748	7019	0.718879036	0
19749	7020	0.718879036	0
19750	7021	0.718879036	0
19751	7022	0.718837332	0
19752	7023	0.718837332	0
19753	7024	0.718837332	0
19754	7025	0.718791123	0
19755	7026	0.718739638	0
19756	7027	0.718542635	0
19757	7028	0.718457537	0
19758	7029	0.718457537	0
19759	7030	0.718457537	0
19760	7031	0.718358845	0
19761	7032	0.718358845	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19708	6979	0.721148009	0
19709	6980	0.721031435	0
19710	6981	0.721031435	0
19711	6982	0.720932157	0
19712	6983	0.720932157	0
19713	6984	0.720932157	0
19714	6985	0.720932157	0
19715	6986	0.72084659	0
19716	6987	0.72084659	0
19717	6988	0.72084659	0
19718	6989	0.720772078	0
19719	6990	0.720772078	0
19720	6991	0.720706608	0
19721	6992	0.719693084	0
19722	6993	0.719693084	0
19723	6994	0.719693084	0
19724	6995	0.719693084	0
19725	6996	0.719693084	0
19726	6997	0.719693084	0
19727	6998	0.719693084	0
19728	6999	0.719693084	0
19729	7000	0.719693084	0
19730	7001	0.719693084	0
19731	7002	0.719693084	0
19732	7003	0.719693084	0
19733	7004	0.719693084	0
19734	7005	0.719693084	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19681	6952	0.723046726	0
19682	6953	0.723046726	-1.236430674
19683	6954	0.722938139	0
19684	6955	0.722886441	-1.558810255
19685	6956	0.722740778	0
19686	6957	0.722740778	0
19687	6958	0.722740778	0
19688	6959	0.722740778	0
19689	6960	0.722740778	0
19690	6961	0.722740778	0
19691	6962	0.722566046	0
19692	6963	0.722270507	0
19693	6964	0.722270507	0
19694	6965	0.722270507	0
19695	6966	0.722270507	0
19696	6967	0.722085898	0
19697	6968	0.721925966	0
19698	6969	0.721925966	0
19699	6970	0.721925966	0
19700	6971	0.721786074	0
19701	6972	0.721662677	0
19702	6973	0.721662677	0
19703	6974	0.721662677	-1.4688263644
19704	6975	0.721454931	0
19705	6976	0.721454931	0
19706	6977	0.721366668	0
19707	6978	0.721286827	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19870	7141	0.712663887	0
19871	7142	0.712663887	0
19872	7143	0.712592744	0
19873	7144	0.712592744	0
19874	7145	0.712592744	0
19875	7146	0.712592744	0
19876	7147	0.712592744	0
19877	7148	0.712592744	-1.393012692
19878	7149	0.712592744	-1.694042688
19879	7150	0.712490689	0
19880	7151	0.712331985	0
19881	7152	0.712331985	0
19882	7153	0.712051342	0
19883	7154	0.712051342	0
19884	7155	0.712051342	0
19885	7156	0.712051342	0
19886	7157	0.712051342	-0.423517317
19887	7158	0.712051342	-1.361369411
19888	7159	0.71190284	0
19889	7160	0.71190284	0
19890	7161	0.711810936	0
19891	7162	0.711810936	0
19892	7163	0.711810936	0
19893	7164	0.711810936	0
19894	7165	0.711420559	0
19895	7166	0.711420559	0
19896	7167	0.711420559	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19843	7114	0.714160596	0
19844	7115	0.714160596	0
19845	7116	0.714160596	0
19846	7117	0.714026534	0
19847	7118	0.713921644	-0.908313588
19848	7119	0.71383734	0
19849	7120	0.71383734	0
19850	7121	0.71383734	0
19851	7122	0.71383734	0
19852	7123	0.71383734	0
19853	7124	0.71383734	0
19854	7125	0.71383734	-0.697937732
19855	7126	0.71366112	0
19856	7127	0.71366112	0
19857	7128	0.71366112	0
19858	7129	0.713550203	0
19859	7130	0.713550203	0
19860	7131	0.713473964	0
19861	7132	0.713418339	0
19862	7133	0.713418339	0
19863	7134	0.713062506	0
19864	7135	0.713062506	0
19865	7136	0.713062506	0
19866	7137	0.713062506	0
19867	7138	0.713062506	0
19868	7139	0.713062506	0
19869	7140	0.713062506	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19816	7087	0.715537125	0
19817	7088	0.715537125	0
19818	7089	0.715537125	0
19819	7090	0.715537125	0
19820	7091	0.715537125	-1.147030263
19821	7092	0.715537125	-1.147030263
19822	7093	0.71535733	0
19823	7094	0.71535733	0
19824	7095	0.71526147	0
19825	7096	0.71526147	0
19826	7097	0.71526147	0
19827	7098	0.71526147	-1.42030719
19828	7099	0.715161275	0
19829	7100	0.714946649	0
19830	7101	0.714946649	0
19831	7102	0.714946649	0
19832	7103	0.714946649	0
19833	7104	0.714946649	0
19834	7105	0.714946649	0
19835	7106	0.714946649	0
19836	7107	0.714946649	-0.964690054
19837	7108	0.71474582	-1.615799443
19838	7109	0.714660647	0
19839	7110	0.714660647	0
19840	7111	0.714583679	0
19841	7112	0.714450029	0
19842	7113	0.714288461	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
19789	7060	0.71691803	0
19790	7061	0.71691803	0
19791	7062	0.71691803	0
19792	7063	0.71666663	0
19793	7064	0.71666663	0
19794	7065	0.71666663	0
19795	7066	0.71666663	0
19796	7067	0.71666663	0
19797	7068	0.71666663	0
19798	7069	0.716523038	0
19799	7070	0.716523038	0
19800	7071	0.716472097	0
19801	7072	0.716472097	0
19802	7073	0.716472097	0
19803	7074	0.716472097	0
19804	7075	0.716365141	0
19805	7076	0.716365141	0
19806	7077	0.716250838	0
19807	7078	0.716250838	0
19808	7079	0.716250838	-1.404594565
19809	7080	0.716250838	-1.404594565
19810	7081	0.716153583	0
19811	7082	0.715996939	0
19812	7083	0.715996939	0
19813	7084	0.715996939	-0.674844226
19814	7085	0.715996939	-1.37381423
19815	7086	0.715702602	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
19978	7249	0.707829979	0	0
19979	7250	0.707829979	0	0
19980	7251	0.707711787	0	0
19981	7252	0.707711787	0	0
19982	7253	0.707711787	0	0
19983	7254	0.707711787	0	0
19984	7255	0.707711787	0	0
19985	7256	0.707711787	-1.293158298	0
19986	7257	0.707556321	0	0
19987	7258	0.707342646	0	0
19988	7259	0.707342646	0	0
19989	7260	0.707342646	0	0
19990	7261	0.707342646	0	0
19991	7262	0.707342646	-0.678103487	0
19992	7263	0.707202709	0	0
19993	7264	0.707030541	0	0
19994	7265	0.707030541	0	0
19995	7266	0.707030541	0	0
19996	7267	0.707030541	0	0
19997	7268	0.707030541	0	0
19998	7269	0.707030541	0	0
19999	7270	0.706891899	0	0
20000	7271	0.706891899	0	0
20001	7272	0.706891899	0	0
20002	7273	0.706813556	0	0
20003	7274	0.706813556	0	0
20004	7275	0.706813556	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
19951	7222	0.7086977	0	0
19952	7223	0.7086977	0	0
19953	7224	0.7086977	0	0
19954	7225	0.7086977	0	0
19955	7226	0.7086977	0	0
19956	7227	0.7086977	0	0
19957	7228	0.7086977	0	0
19958	7229	0.7086977	0	0
19959	7230	0.7086977	0	0
19960	7231	0.7086977	0	0
19961	7232	0.7086977	0	0
19962	7233	0.7086977	0	0
19963	7234	0.7086977	0	0
19964	7235	0.7086977	0	0
19965	7236	0.7086977	0	0
19966	7237	0.7086977	0	0
19967	7238	0.7086977	0	0
19968	7239	0.7086977	0	0
19969	7240	0.7086977	0	0
19970	7241	0.7086977	0	0
19971	7242	0.7086977	0	0
19972	7243	0.7086977	0	0
19973	7244	0.7086977	0	0
19974	7245	0.7086977	0	0
19975	7246	0.7086977	-0.852839692	0
19976	7247	0.708111212	0	0
19977	7248	0.707922866	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
19924	7195	0.710100915	0	0
19925	7196	0.709976919	0	0
19926	7197	0.709976919	0	0
19927	7198	0.709976919	0	0
19928	7199	0.709976919	0	0
19929	7200	0.709976919	0	0
19930	7201	0.709976919	0	0
19931	7202	0.709976919	0	0
19932	7203	0.709976919	0	0
19933	7204	0.709873058	0	0
19934	7205	0.709874796	0	0
19935	7206	0.709874796	0	0
19936	7207	0.709874796	0	0
19937	7208	0.709874796	0	0
19938	7209	0.709642846	0	0
19939	7210	0.709642846	0	0
19940	7211	0.709533686	0	0
19941	7212	0.709533686	0	0
19942	7213	0.709533686	-1.363887067	0
19943	7214	0.70944713	0	0
19944	7215	0.70944713	0	0
19945	7216	0.709376816	0	0
19946	7217	0.709376816	0	0
19947	7218	0.709376816	0	0
19948	7219	0.709376816	-0.454220567	0
19949	7220	0.709318564	0	0
19950	7221	0.709269517	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
19897	7168	0.711420559	-1.248056842	0
19898	7169	0.711186501	0	0
19899	7170	0.711186501	0	0
19900	7171	0.711186501	0	0
19901	7172	0.711186501	0	0
19902	7173	0.711117174	0	0
19903	7174	0.711117174	0	0
19904	7175	0.710989497	0	0
19905	7176	0.710989497	0	0
19906	7177	0.710989497	0	0
19907	7178	0.710874619	0	0
19908	7179	0.710874619	0	0
19909	7180	0.710821394	0	0
19910	7181	0.710676266	0	0
19911	7182	0.710676266	0	0
19912	7183	0.710676266	0	0
19913	7184	0.710676266	0	0
19914	7185	0.710676266	0	0
19915	7186	0.710676266	0	0
19916	7187	0.710438362	0	0
19917	7188	0.710438362	0	0
19918	7189	0.710438362	0	0
19919	7190	0.710251528	0	0
19920	7191	0.710251528	0	0
19921	7192	0.710251528	0	0
19922	7193	0.710251528	0	0
19923	7194	0.710100915	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20086	7357	0.702748368	-0.304153683
20087	7358	0.702659745	0
20088	7359	0.702659745	0
20089	7360	0.702659745	0
20090	7361	0.702537391	0
20091	7362	0.702537391	0
20092	7363	0.702537391	-1.278129308
20093	7364	0.702456914	0
20094	7365	0.702357522	0
20095	7366	0.702357522	0
20096	7367	0.702357522	0
20097	7368	0.702357522	0
20098	7369	0.702231658	0
20099	7370	0.702231658	0
20100	7371	0.702231658	0
20101	7372	0.702067121	0
20102	7373	0.702067121	0
20103	7374	0.702067121	0
20104	7375	0.702067121	0
20105	7376	0.702067121	0
20106	7377	0.702067121	0
20107	7378	0.702067121	0
20108	7379	0.702067121	0
20109	7380	0.701926139	-0.801619305
20110	7381	0.701842854	0
20111	7382	0.701842854	0
20112	7383	0.701842854	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20059	7330	0.703898817	0
20060	7331	0.703898817	0
20061	7332	0.703898817	0
20062	7333	0.703898817	0
20063	7334	0.703898817	0
20064	7335	0.703898817	0
20065	7336	0.703821849	0
20066	7337	0.703821849	0
20067	7338	0.703821849	-1.144957254
20068	7339	0.7037153	-1.545796712
20069	7340	0.703302668	0
20070	7341	0.703302668	0
20071	7342	0.703302668	0
20072	7343	0.703302668	0
20073	7344	0.703302668	0
20074	7345	0.703302668	0
20075	7346	0.703302668	0
20076	7347	0.703302668	0
20077	7348	0.703302668	0
20078	7349	0.703302668	0
20079	7350	0.703302668	0
20080	7351	0.703302668	-0.381113469
20081	7352	0.702910529	0
20082	7353	0.702815518	0
20083	7354	0.702748368	0
20084	7355	0.702748368	0
20085	7356	0.702748368	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20032	7303	0.705093576	0
20033	7304	0.704969828	0
20034	7305	0.704767407	0
20035	7306	0.704767407	0
20036	7307	0.704767407	0
20037	7308	0.704767407	0
20038	7309	0.704767407	0
20039	7310	0.704767407	0
20040	7311	0.704767407	0
20041	7312	0.704608818	0
20042	7313	0.70454174	0
20043	7314	0.70454174	0
20044	7315	0.704376326	0
20045	7316	0.704376326	0
20046	7317	0.704376326	0
20047	7318	0.704376326	0
20048	7319	0.704376326	0
20049	7320	0.704249876	0
20050	7321	0.704249876	-0.054312682
20051	7322	0.704150072	0
20052	7323	0.704150072	0
20053	7324	0.704150072	0
20054	7325	0.704002579	0
20055	7326	0.704002579	0
20056	7327	0.704002579	0
20057	7328	0.704002579	-1.316172662
20058	7329	0.703898817	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20005	7276	0.706813556	0
20006	7277	0.706728107	0
20007	7278	0.706531638	0
20008	7279	0.706531638	0
20009	7280	0.706531638	0
20010	7281	0.706531638	0
20011	7282	0.70629163	0
20012	7283	0.70629163	0
20013	7284	0.706237102	0
20014	7285	0.706150511	0
20015	7286	0.706150511	0
20016	7287	0.706150511	0
20017	7288	0.706150511	-0.253326889
20018	7289	0.706150511	-0.70562456
20019	7290	0.705991807	0
20020	7291	0.705991807	0
20021	7292	0.7059048	0
20022	7293	0.7059048	0
20023	7294	0.7059048	-0.966783044
20024	7295	0.705606623	0
20025	7296	0.705606623	0
20026	7297	0.705606623	0
20027	7298	0.705606623	0
20028	7299	0.705606623	0
20029	7300	0.705606623	0
20030	7301	0.70531796	-0.981158169
20031	7302	0.70531796	-1.157249428



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
20194	7465	0.697159787	0	0
20195	7466	0.697159787	0	0
20196	7467	0.697159787	0	0
20197	7468	0.697159787	0	0
20198	7469	0.697159787	0	0
20199	7470	0.697011942	0	0
20200	7471	0.697011942	0	0
20201	7472	0.69691587	0	0
20202	7473	0.69691587	0	0
20203	7474	0.696848427	0	0
20204	7475	0.696798477	0	0
20205	7476	0.696798477	0	0
20206	7477	0.696798477	-0.915891437	0
20207	7478	0.696729437	0	0
20208	7479	0.696683978	0	0
20209	7480	0.696463244	0	0
20210	7481	0.696463244	0	0
20211	7482	0.696463244	0	0
20212	7483	0.696463244	0	0
20213	7484	0.696463244	0	0
20214	7485	0.696211989	0	0
20215	7486	0.696151363	0	0
20216	7487	0.696151363	-0.248602781	0
20217	7488	0.696151363	-1.42469404	0
20218	7489	0.696052175	0	0
20219	7490	0.696052175	0	0
20220	7491	0.696052175	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
20167	7438	0.698339249	0	0
20168	7439	0.698339249	0	0
20169	7440	0.698339249	-0.121476158	0
20170	7441	0.698276585	0	0
20171	7442	0.697973835	0	0
20172	7443	0.697973835	0	0
20173	7444	0.697973835	0	0
20174	7445	0.697973835	0	0
20175	7446	0.697973835	0	0
20176	7447	0.697973835	0	0
20177	7448	0.697973835	0	0
20178	7449	0.697973835	0	0
20179	7450	0.697973835	0	0
20180	7451	0.697973835	0	0
20181	7452	0.697973835	-0.437594825	0
20182	7453	0.697757714	-0.474794512	0
20183	7454	0.697687644	0	0
20184	7455	0.697632274	0	0
20185	7456	0.697632274	0	0
20186	7457	0.697550339	-0.513739034	0
20187	7458	0.697550339	-1.358837074	0
20188	7459	0.69741669	0	0
20189	7460	0.69741669	0	0
20190	7461	0.69741669	0	0
20191	7462	0.697312305	0	0
20192	7463	0.697312305	0	0
20193	7464	0.697312305	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
20140	7411	0.69968568	0	0
20141	7412	0.69968568	0	0
20142	7413	0.699606523	0	0
20143	7414	0.699606523	0	0
20144	7415	0.699606523	0	0
20145	7416	0.699606523	-1.37381423	0
20146	7417	0.699152382	0	0
20147	7418	0.699152382	0	0
20148	7419	0.699152382	0	0
20149	7420	0.699152382	0	0
20150	7421	0.699090274	0	0
20151	7422	0.698937863	0	0
20152	7423	0.698937863	0	0
20153	7424	0.698937863	0	0
20154	7425	0.698937863	0	0
20155	7426	0.698789412	0	0
20156	7427	0.698731105	0	0
20157	7428	0.698731105	0	0
20158	7429	0.698731105	0	0
20159	7430	0.698597373	0	0
20160	7431	0.698597373	0	0
20161	7432	0.698597373	0	0
20162	7433	0.698597373	0	0
20163	7434	0.698597373	0	0
20164	7435	0.698503785	0	0
20165	7436	0.698434625	0	0
20166	7437	0.698339249	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
20113	7384	0.701842854	0	0
20114	7385	0.701697142	0	0
20115	7386	0.701519116	0	0
20116	7387	0.701519116	-0.066072759	0
20117	7388	0.701134444	0	0
20118	7389	0.701010872	0	0
20119	7390	0.701010872	0	0
20120	7391	0.701010872	0	0
20121	7392	0.701010872	0	0
20122	7393	0.701010872	0	0
20123	7394	0.700872363	0	0
20124	7395	0.700770332	0	0
20125	7396	0.700770332	0	0
20126	7397	0.700770332	0	0
20127	7398	0.700770332	0	0
20128	7399	0.700770332	0	0
20129	7400	0.700770332	0	0
20130	7401	0.700538213	0	0
20131	7402	0.700097528	0	0
20132	7403	0.700097528	0	0
20133	7404	0.700097528	0	0
20134	7405	0.700097528	0	0
20135	7406	0.700097528	0	0
20136	7407	0.700097528	0	0
20137	7408	0.700097528	0	0
20138	7409	0.700097528	0	0
20139	7410	0.699742858	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20302	7573	0.691808382	0
20303	7574	0.691664361	0
20304	7575	0.691664361	0
20305	7576	0.691664361	0
20306	7577	0.691664361	0
20307	7578	0.691664361	0
20308	7579	0.691529675	0
20309	7580	0.691529675	0
20310	7581	0.691403445	0
20311	7582	0.691403445	-0.694042688
20312	7583	0.691403445	-1.472193938
20313	7584	0.691284899	-1.485676446
20314	7585	0.691173355	0
20315	7586	0.691173355	0
20316	7587	0.691173355	0
20317	7588	0.690968933	0
20318	7589	0.690968933	0
20319	7590	0.690968933	0
20320	7591	0.690968933	0
20321	7592	0.690968933	0
20322	7593	0.690875042	-0.933714096
20323	7594	0.690786111	0
20324	7595	0.690621637	0
20325	7596	0.690621637	0
20326	7597	0.69047288	0
20327	7598	0.690337691	0
20328	7599	0.690337691	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20275	7546	0.693185534	0
20276	7547	0.693017496	0
20277	7548	0.692937153	0
20278	7549	0.692709595	0
20279	7550	0.692709595	0
20280	7551	0.692709595	0
20281	7552	0.692709595	0
20282	7553	0.692709595	0
20283	7554	0.692709595	0
20284	7555	0.692500347	0
20285	7556	0.692500347	-1.363887067
20286	7557	0.692434289	0
20287	7558	0.692307284	0
20288	7559	0.692307284	0
20289	7560	0.692307284	0
20290	7561	0.692307284	0
20291	7562	0.692307284	0
20292	7563	0.692128599	0
20293	7564	0.692128599	0
20294	7565	0.692128599	0
20295	7566	0.691962743	0
20296	7567	0.691962743	0
20297	7568	0.691962743	0
20298	7569	0.691858633	-0.043754727
20299	7570	0.691808382	0
20300	7571	0.691808382	0
20301	7572	0.691808382	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20248	7519	0.694457261	0
20249	7520	0.694457261	0
20250	7521	0.694457261	-1.395353908
20251	7522	0.694207163	0
20252	7523	0.694088746	0
20253	7524	0.694088746	0
20254	7525	0.694088746	0
20255	7526	0.694088746	0
20256	7527	0.693974443	0
20257	7528	0.693918768	0
20258	7529	0.69375735	0
20259	7530	0.69375735	0
20260	7531	0.69375735	0
20261	7532	0.69375735	0
20262	7533	0.69375735	0
20263	7534	0.69375735	0
20264	7535	0.69375735	-1.26572005
20265	7536	0.693554362	-0.757284733
20266	7537	0.693457734	0
20267	7538	0.693457734	0
20268	7539	0.693185534	0
20269	7540	0.693185534	0
20270	7541	0.693185534	0
20271	7542	0.693185534	0
20272	7543	0.693185534	0
20273	7544	0.693185534	0
20274	7545	0.693185534	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20221	7492	0.696052175	0
20222	7493	0.695974449	0
20223	7494	0.695860475	0
20224	7495	0.695860475	0
20225	7496	0.695860475	0
20226	7497	0.695860475	0
20227	7498	0.695860475	0
20228	7499	0.69567719	0
20229	7500	0.69567719	0
20230	7501	0.69567719	0
20231	7502	0.69567719	0
20232	7503	0.69567719	0
20233	7504	0.695588532	-0.55113058
20234	7505	0.695333739	0
20235	7506	0.695333739	0
20236	7507	0.695333739	0
20237	7508	0.695333739	0
20238	7509	0.695333739	0
20239	7510	0.695333739	0
20240	7511	0.695333739	-1.167233649
20241	7512	0.69514119	0
20242	7513	0.695018003	0
20243	7514	0.695018003	0
20244	7515	0.694869501	0
20245	7516	0.694869501	0
20246	7517	0.694726758	-1.378693995
20247	7518	0.694457261	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20410	7681	0.687508401	0
20411	7682	0.687508401	0
20412	7683	0.687508401	0
20413	7684	0.687508401	0
20414	7685	0.687508401	0
20415	7686	0.687508401	0
20416	7687	0.687508401	0
20417	7688	0.687508401	0
20418	7689	0.687508401	0
20419	7690	0.687508401	0
20420	7691	0.687508401	0
20421	7692	0.687508401	0
20422	7693	0.687508401	0
20423	7694	0.687508401	0
20424	7695	0.687508401	0
20425	7696	0.687508401	0
20426	7697	0.687508401	0
20427	7698	0.687508401	0
20428	7699	0.687508401	0
20429	7700	0.687508401	0
20430	7701	0.687508401	0
20431	7702	0.687508401	0
20432	7703	0.687508401	0
20433	7704	0.687508401	0
20434	7705	0.687508401	0
20435	7706	0.687508401	-0.515007048
20436	7707	0.687508401	-1.147030263

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20383	7654	0.687508401	0
20384	7655	0.687508401	0
20385	7656	0.687508401	0
20386	7657	0.687508401	0
20387	7658	0.687508401	0
20388	7659	0.687508401	0
20389	7660	0.687508401	0
20390	7661	0.687508401	0
20391	7662	0.687508401	0
20392	7663	0.687508401	0
20393	7664	0.687508401	0
20394	7665	0.687508401	0
20395	7666	0.687508401	0
20396	7667	0.687508401	0
20397	7668	0.687508401	0
20398	7669	0.687508401	0
20399	7670	0.687508401	0
20400	7671	0.687508401	0
20401	7672	0.687508401	0
20402	7673	0.687508401	0
20403	7674	0.687508401	0
20404	7675	0.687508401	0
20405	7676	0.687508401	0
20406	7677	0.687508401	0
20407	7678	0.687508401	0
20408	7679	0.687508401	0
20409	7680	0.687508401	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20356	7627	0.68958141	0
20357	7628	0.689451556	0
20358	7629	0.689451556	0
20359	7630	0.689337012	0
20360	7631	0.689337012	0
20361	7632	0.689284659	0
20362	7633	0.68923522	-0.747363435
20363	7634	0.689144164	0
20364	7635	0.689102144	0
20365	7636	0.689062229	0
20366	7637	0.689024265	0
20367	7638	0.689024265	0
20368	7639	0.688920742	0
20369	7640	0.688776415	-1.65986707
20370	7641	0.687508401	0
20371	7642	0.687508401	0
20372	7643	0.687508401	0
20373	7644	0.687508401	0
20374	7645	0.687508401	0
20375	7646	0.687508401	0
20376	7647	0.687508401	0
20377	7648	0.687508401	0
20378	7649	0.687508401	0
20379	7650	0.687508401	0
20380	7651	0.687508401	0
20381	7652	0.687508401	0
20382	7653	0.687508401	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20329	7600	0.690337691	0
20330	7601	0.690214294	0
20331	7602	0.690214294	0
20332	7603	0.690214294	0
20333	7604	0.690214294	0
20334	7605	0.690101212	0
20335	7606	0.690101212	0
20336	7607	0.690101212	-0.87143618
20337	7608	0.689997202	0
20338	7609	0.689997202	0
20339	7610	0.689997202	0
20340	7611	0.689997202	0
20341	7612	0.689901214	0
20342	7613	0.689901214	0
20343	7614	0.689901214	0
20344	7615	0.689901214	0
20345	7616	0.689812356	0
20346	7617	0.689812356	0
20347	7618	0.689812356	-1.098968817
20348	7619	0.689729861	0
20349	7620	0.689729861	0
20350	7621	0.689729861	0
20351	7622	0.68965307	-0.653041083
20352	7623	0.68965307	-1.431192333
20353	7624	0.68958141	0
20354	7625	0.68958141	0
20355	7626	0.68958141	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20518	7789	0.682146673	0
20519	7790	0.682146673	0
20520	7791	0.682146673	0
20521	7792	0.682146673	0
20522	7793	0.682068316	0
20523	7794	0.682068316	0
20524	7795	0.681904524	0
20525	7796	0.681904524	0
20526	7797	0.681904524	0
20527	7798	0.681904524	0
20528	7799	0.681904524	0
20529	7800	0.681904524	0
20530	7801	0.681904524	0
20531	7802	0.681775057	0
20532	7803	0.681730562	-1.180836825
20533	7804	0.681639467	0
20534	7805	0.681545454	-0.354320292
20535	7806	0.681348092	0
20536	7807	0.681348092	0
20537	7808	0.681348092	0
20538	7809	0.681348092	0
20539	7810	0.681348092	0
20540	7811	0.681348092	-1.278129308
20541	7812	0.681026274	0
20542	7813	0.681026274	0
20543	7814	0.681026274	0
20544	7815	0.680668977	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20491	7762	0.68352402	0
20492	7763	0.68352402	0
20493	7764	0.68352402	0
20494	7765	0.683391835	0
20495	7766	0.683391835	0
20496	7767	0.683391835	-1.452176825
20497	7768	0.683250578	0
20498	7769	0.683099282	0
20499	7770	0.683099282	0
20500	7771	0.682936838	0
20501	7772	0.682936838	0
20502	7773	0.682936838	0
20503	7774	0.682936838	0
20504	7775	0.682936838	0
20505	7776	0.682936838	-1.105844335
20506	7777	0.682761966	0
20507	7778	0.682761966	0
20508	7779	0.682761966	0
20509	7780	0.682761966	0
20510	7781	0.682761966	0
20511	7782	0.682761966	0
20512	7783	0.682761966	-0.390658787
20513	7784	0.682573183	0
20514	7785	0.682368761	0
20515	7786	0.682146673	0
20516	7787	0.682146673	0
20517	7788	0.682146673	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20464	7735	0.68456402	0
20465	7736	0.68456402	0
20466	7737	0.68456402	0
20467	7738	0.684417324	0
20468	7739	0.684417324	0
20469	7740	0.684417324	0
20470	7741	0.684417324	0
20471	7742	0.684417324	0
20472	7743	0.684255244	0
20473	7744	0.684255244	0
20474	7745	0.684255244	0
20475	7746	0.684167658	0
20476	7747	0.684075225	0
20477	7748	0.684075225	0
20478	7749	0.684075225	0
20479	7750	0.683977532	0
20480	7751	0.683977532	0
20481	7752	0.683874116	0
20482	7753	0.683874116	0
20483	7754	0.683874116	0
20484	7755	0.68376446	0
20485	7756	0.68376446	0
20486	7757	0.68364798	0
20487	7758	0.68364798	0
20488	7759	0.68364798	0
20489	7760	0.68364798	0
20490	7761	0.68364798	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20437	7708	0.687508401	-1.271968999
20438	7709	0.687508401	-1.5507226
20439	7710	0.687508401	-0.985179443
20440	7711	0.685960113	0
20441	7712	0.685960113	-1.574547284
20442	7713	0.685687457	0
20443	7714	0.685573901	0
20444	7715	0.685573901	0
20445	7716	0.685573901	0
20446	7717	0.685511641	0
20447	7718	0.685445241	0
20448	7719	0.685445241	0
20449	7720	0.685374272	0
20450	7721	0.685374272	0
20451	7722	0.685298246	0
20452	7723	0.685298246	0
20453	7724	0.685216604	0
20454	7725	0.685128699	0
20455	7726	0.685128699	0
20456	7727	0.685033782	0
20457	7728	0.685033782	0
20458	7729	0.685033782	0
20459	7730	0.685033782	0
20460	7731	0.685033782	0
20461	7732	0.684930978	0
20462	7733	0.684930978	0
20463	7734	0.684697424	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20626	7897	0.677042967	0
20627	7898	0.677000764	0
20628	7899	0.676941104	-1.142874303
20629	7900	0.676850333	0
20630	7901	0.676850333	0
20631	7902	0.676850333	0
20632	7903	0.676850333	0
20633	7904	0.676850333	0
20634	7905	0.676850333	0
20635	7906	0.676850333	0
20636	7907	0.676695532	0
20637	7908	0.676695532	0
20638	7909	0.676695532	0
20639	7910	0.676568415	0
20640	7911	0.676568415	0
20641	7912	0.676568415	0
20642	7913	0.676568415	-0.82697703
20643	7914	0.676372035	0
20644	7915	0.676372035	0
20645	7916	0.676372035	0
20646	7917	0.676372035	0
20647	7918	0.676372035	0
20648	7919	0.676227391	0
20649	7920	0.676168475	0
20650	7921	0.676168475	-1.112612698
20651	7922	0.676116417	0
20652	7923	0.676028583	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20599	7870	0.678066845	0
20600	7871	0.678066845	0
20601	7872	0.678066845	0
20602	7873	0.678066845	0
20603	7874	0.678066845	-1.0943223912
20604	7875	0.677821134	0
20605	7876	0.677821134	0
20606	7877	0.677821134	0
20607	7878	0.677821134	0
20608	7879	0.677821134	0
20609	7880	0.677821134	0
20610	7881	0.677821134	0
20611	7882	0.677821134	-1.560409868
20612	7883	0.677693419	0
20613	7884	0.677693419	-1.077663999
20614	7885	0.677615161	0
20615	7886	0.677289236	0
20616	7887	0.677289236	0
20617	7888	0.677289236	0
20618	7889	0.677289236	0
20619	7890	0.677289236	0
20620	7891	0.677289236	0
20621	7892	0.677289236	0
20622	7893	0.677289236	0
20623	7894	0.677289236	0
20624	7895	0.677289236	0
20625	7896	0.677289236	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20572	7843	0.67912947	0
20573	7844	0.67912947	0
20574	7845	0.678734477	0
20575	7846	0.678734477	0
20576	7847	0.678734477	0
20577	7848	0.678734477	0
20578	7849	0.678734477	0
20579	7850	0.678734477	0
20580	7851	0.678734477	0
20581	7852	0.678734477	0
20582	7853	0.678734477	0
20583	7854	0.678734477	0
20584	7855	0.678734477	-1.000902227
20585	7856	0.678522677	0
20586	7857	0.678412896	0
20587	7858	0.678412896	0
20588	7859	0.678412896	0
20589	7860	0.678412896	0
20590	7861	0.678300399	0
20591	7862	0.678300399	0
20592	7863	0.678300399	0
20593	7864	0.678300399	0
20594	7865	0.678300399	0
20595	7866	0.678300399	0
20596	7867	0.678300399	0
20597	7868	0.678066845	0
20598	7869	0.678066845	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20545	7816	0.680668977	0
20546	7817	0.680668977	0
20547	7818	0.680269992	0
20548	7819	0.680269992	0
20549	7820	0.680126447	0
20550	7821	0.680126447	-1.07523097
20551	7822	0.680052519	0
20552	7823	0.679821572	0
20553	7824	0.679821572	0
20554	7825	0.679821572	0
20555	7826	0.679821572	0
20556	7827	0.679821572	0
20557	7828	0.679821572	0
20558	7829	0.679821572	0
20559	7830	0.679821572	0
20560	7831	0.679821572	0
20561	7832	0.679821572	-0.802534573
20562	7833	0.679821572	-1.006654556
20563	7834	0.679575861	0
20564	7835	0.679575861	0
20565	7836	0.679575861	0
20566	7837	0.679490429	0
20567	7838	0.679490429	0
20568	7839	0.679490429	-0.061931211
20569	7840	0.679490429	-1.340684812
20570	7841	0.679313922	0
20571	7842	0.67912947	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20734	8005	0.672268435	0
20735	8006	0.672268435	0
20736	8007	0.672268435	0
20737	8008	0.672268435	0
20738	8009	0.672268435	0
20739	8010	0.672268435	0
20740	8011	0.672268435	-1.190298953
20741	8012	0.671920303	0
20742	8013	0.671785617	-0.331895446
20743	8014	0.671714134	0
20744	8015	0.671714134	0
20745	8016	0.671617806	0
20746	8017	0.671617806	0
20747	8018	0.671480956	0
20748	8019	0.671480956	0
20749	8020	0.671480956	0
20750	8021	0.671480956	0
20751	8022	0.671480956	0
20752	8023	0.671480956	0
20753	8024	0.671388405	0
20754	8025	0.671388405	0
20755	8026	0.671271202	0
20756	8027	0.671271202	0
20757	8028	0.671271202	0
20758	8029	0.671271202	0
20759	8030	0.671271202	0
20760	8031	0.671271202	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20707	7978	0.67342194	0
20708	7979	0.67342194	0
20709	7980	0.67342194	0
20710	7981	0.67342194	0
20711	7982	0.673150251	0
20712	7983	0.673150251	0
20713	7984	0.672982148	0
20714	7985	0.672982148	0
20715	7986	0.672982148	0
20716	7987	0.672982148	0
20717	7988	0.672867875	0
20718	7989	0.672867875	0
20719	7990	0.672867875	0
20720	7991	0.672785144	0
20721	7992	0.672785144	0
20722	7993	0.672785144	0
20723	7994	0.672785144	0
20724	7995	0.672268435	0
20725	7996	0.672268435	0
20726	7997	0.672268435	0
20727	7998	0.672268435	0
20728	7999	0.672268435	0
20729	8000	0.672268435	0
20730	8001	0.672268435	0
20731	8002	0.672268435	0
20732	8003	0.672268435	0
20733	8004	0.672268435	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20680	7951	0.67477158	0
20681	7952	0.67477158	0
20682	7953	0.67477158	0
20683	7954	0.674639475	0
20684	7955	0.674639475	0
20685	7956	0.674639475	0
20686	7957	0.674639475	0
20687	7958	0.674639475	0
20688	7959	0.674639475	0
20689	7960	0.674543424	0
20690	7961	0.674413103	0
20691	7962	0.674413103	0
20692	7963	0.674226189	0
20693	7964	0.674226189	-1.345949052
20694	7965	0.67414444	0
20695	7966	0.67414444	0
20696	7967	0.673935594	0
20697	7968	0.673935594	0
20698	7969	0.673935594	0
20699	7970	0.673935594	0
20700	7971	0.673631998	0
20701	7972	0.673631998	0
20702	7973	0.673631998	0
20703	7974	0.673631998	0
20704	7975	0.673631998	0
20705	7976	0.67342194	0
20706	7977	0.67342194	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20653	7924	0.676028583	0
20654	7925	0.676028583	0
20655	7926	0.676028583	0
20656	7927	0.675926529	0
20657	7928	0.675926529	-1.5507226
20658	7929	0.675848789	0
20659	7930	0.675848789	0
20660	7931	0.675848789	0
20661	7932	0.675848789	0
20662	7933	0.675738183	0
20663	7934	0.675738183	0
20664	7935	0.675738183	0
20665	7936	0.675609178	0
20666	7937	0.675273945	0
20667	7938	0.675273945	0
20668	7939	0.675273945	0
20669	7940	0.675273945	0
20670	7941	0.675273945	0
20671	7942	0.675273945	0
20672	7943	0.675273945	0
20673	7944	0.675273945	0
20674	7945	0.675273945	0
20675	7946	0.674964728	0
20676	7947	0.674919274	-1.515007048
20677	7948	0.674858153	0
20678	7949	0.674858153	0
20679	7950	0.674858153	-1.44598725

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20842	8113	0.667305015	0	0.667305015	0
20843	8114	0.667305015	0	0.667305015	0
20844	8115	0.667305015	0	0.667305015	0
20845	8116	0.667305015	0	0.667305015	0
20846	8117	0.667305015	0	0.667305015	0
20847	8118	0.667305015	0	0.667305015	0
20848	8119	0.667305015	0	0.667305015	0
20849	8120	0.667305015	0	0.667305015	0
20850	8121	0.667305015	0	0.667305015	0
20851	8122	0.667305015	0	0.667305015	0
20852	8123	0.667305015	0	0.667305015	0
20853	8124	0.667305015	0	0.667305015	0
20854	8125	0.667305015	0	0.667305015	0
20855	8126	0.667305015	0	0.667305015	0
20856	8127	0.667305015	0	0.667305015	0
20857	8128	0.667305015	-0.417111122	0.667305015	-0.417111122
20858	8129	0.667305015	-1.121476158	0.667305015	-1.121476158
20859	8130	0.667305015	-1.246414895	0.667305015	-1.246414895
20860	8131	0.667305015	-1.371353631	0.667305015	-1.371353631
20861	8132	0.666823802	0	0.666823802	0
20862	8133	0.666785834	0	0.666785834	0
20863	8134	0.666688557	0	0.666688557	0
20864	8135	0.666688557	0	0.666688557	0
20865	8136	0.666688557	0	0.666688557	0
20866	8137	0.666624836	0	0.666624836	0
20867	8138	0.666624836	-0.755250563	0.666624836	-0.755250563
20868	8139	0.666546422	0	0.666546422	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20815	8086	0.668668578	0	0.668668578	0
20816	8087	0.668540562	0	0.668540562	0
20817	8088	0.668540562	0	0.668540562	0
20818	8089	0.668540562	-0.591966834	0.668540562	-0.591966834
20819	8090	0.66843452	0	0.66843452	0
20820	8091	0.668345242	0	0.668345242	0
20821	8092	0.668345242	0	0.668345242	0
20822	8093	0.668345242	0	0.668345242	0
20823	8094	0.668345242	0	0.668345242	0
20824	8095	0.668345242	0	0.668345242	0
20825	8096	0.668345242	-0.038406843	0.668345242	-0.038406843
20826	8097	0.668203246	0	0.668203246	0
20827	8098	0.668203246	0	0.668203246	0
20828	8099	0.668203246	0	0.668203246	0
20829	8100	0.668203246	0	0.668203246	0
20830	8101	0.668203246	-0.554515589	0.668203246	-0.554515589
20831	8102	0.66809536	0	0.66809536	0
20832	8103	0.66809536	0	0.66809536	0
20833	8104	0.66809536	0	0.66809536	0
20834	8105	0.66809536	-0.485202066	0.66809536	-0.485202066
20835	8106	0.66809536	-1.388292053	0.66809536	-1.388292053
20836	8107	0.668010611	0	0.668010611	0
20837	8108	0.668010611	0	0.668010611	0
20838	8109	0.668010611	0	0.668010611	0
20839	8110	0.668010611	0	0.668010611	0
20840	8111	0.667942278	0	0.667942278	0
20841	8112	0.667305015	0	0.667305015	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20788	8059	0.669910269	0	0.669910269	0
20789	8060	0.669779634	0	0.669779634	0
20790	8061	0.669779634	0	0.669779634	0
20791	8062	0.669633677	0	0.669633677	0
20792	8063	0.669633677	0	0.669633677	0
20793	8064	0.669633677	0	0.669633677	0
20794	8065	0.669633677	0	0.669633677	0
20795	8066	0.669633677	0	0.669633677	0
20796	8067	0.669633677	0	0.669633677	0
20797	8068	0.669503979	0	0.669503979	0
20798	8069	0.669503979	0	0.669503979	0
20799	8070	0.669503979	0	0.669503979	0
20800	8071	0.669283581	0	0.669283581	0
20801	8072	0.669283581	0	0.669283581	0
20802	8073	0.669283581	0	0.669283581	0
20803	8074	0.669283581	0	0.669283581	0
20804	8075	0.669283581	-1.466285079	0.669283581	-1.466285079
20805	8076	0.669024995	0	0.669024995	0
20806	8077	0.669024995	0	0.669024995	0
20807	8078	0.669024995	0	0.669024995	0
20808	8079	0.669024995	0	0.669024995	0
20809	8080	0.668826188	0	0.668826188	0
20810	8081	0.668826188	0	0.668826188	0
20811	8082	0.668826188	0	0.668826188	0
20812	8083	0.668826188	0	0.668826188	0
20813	8084	0.668826188	0	0.668826188	0
20814	8085	0.668826188	-0.92747331	0.668826188	-0.92747331

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20761	8032	0.671117985	0	0.671117985	0
20762	8033	0.671117985	0	0.671117985	0
20763	8034	0.670909139	0	0.670909139	0
20764	8035	0.670909139	0	0.670909139	0
20765	8036	0.670909139	0	0.670909139	0
20766	8037	0.670909139	0	0.670909139	0
20767	8038	0.670909139	0	0.670909139	0
20768	8039	0.670909139	-0.216017594	0.670909139	-0.216017594
20769	8040	0.670721984	0	0.670721984	0
20770	8041	0.670721984	0	0.670721984	0
20771	8042	0.670721984	0	0.670721984	0
20772	8043	0.670721984	0	0.670721984	0
20773	8044	0.670721984	0	0.670721984	0
20774	8045	0.670721984	0	0.670721984	0
20775	8046	0.670607651	0	0.670607651	0
20776	8047	0.670607651	0	0.670607651	0
20777	8048	0.670607651	0	0.670607651	0
20778	8049	0.670475062	0	0.670475062	0
20779	8050	0.670475062	0	0.670475062	0
20780	8051	0.670475062	0	0.670475062	0
20781	8052	0.670400498	0	0.670400498	0
20782	8053	0.670400498	-0.590106898	0.670400498	-0.590106898
20783	8054	0.670134305	0	0.670134305	0
20784	8055	0.670134305	0	0.670134305	0
20785	8056	0.670134305	0	0.670134305	0
20786	8057	0.670134305	0	0.670134305	0
20787	8058	0.670134305	-0.106412412	0.670134305	-0.106412412

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20950	8221	0.662397681	0
20951	8222	0.662397681	0
20952	8223	0.662397681	0
20953	8224	0.662397681	0
20954	8225	0.662397681	0
20955	8226	0.662397681	0
20956	8227	0.662397681	0
20957	8228	0.662397681	-0.598109716
20958	8229	0.662240299	0
20959	8230	0.662140929	0
20960	8231	0.662140929	0
20961	8232	0.662140929	0
20962	8233	0.662140929	0
20963	8234	0.662140929	0
20964	8235	0.662140929	-0.320817567
20965	8236	0.66202248	0
20966	8237	0.66202248	-0.068975592
20967	8238	0.661701138	0
20968	8239	0.661701138	0
20969	8240	0.661701138	0
20970	8241	0.661701138	0
20971	8242	0.661701138	0
20972	8243	0.661701138	0
20973	8244	0.661701138	0
20974	8245	0.661701138	0
20975	8246	0.661701138	0
20976	8247	0.661701138	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20923	8194	0.664027305	0
20924	8195	0.664027305	0
20925	8196	0.663885356	0
20926	8197	0.663885356	0
20927	8198	0.663885356	0
20928	8199	0.663730555	0
20929	8200	0.663730555	0
20930	8201	0.663730555	0
20931	8202	0.663374721	0
20932	8203	0.663374721	0
20933	8204	0.663374721	0
20934	8205	0.663374721	0
20935	8206	0.663374721	0
20936	8207	0.663374721	0
20937	8208	0.663374721	0
20938	8209	0.663374721	0
20939	8210	0.663374721	0
20940	8211	0.663374721	0
20941	8212	0.663374721	-1.171163942
20942	8213	0.663374721	-1.472193938
20943	8214	0.663008073	0
20944	8215	0.66294021	0
20945	8216	0.66294021	-1.125840964
20946	8217	0.662841518	0
20947	8218	0.662684817	0
20948	8219	0.662684817	0
20949	8220	0.662565979	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20896	8167	0.665232006	0
20897	8168	0.665232006	0
20898	8169	0.665232006	0
20899	8170	0.665117129	0
20900	8171	0.664844416	0
20901	8172	0.664844416	0
20902	8173	0.664844416	0
20903	8174	0.664844416	0
20904	8175	0.664844416	0
20905	8176	0.664844416	0
20906	8177	0.664844416	0
20907	8178	0.664590666	0
20908	8179	0.664590666	0
20909	8180	0.664590666	-0.678103487
20910	8181	0.664494038	0
20911	8182	0.664494038	0
20912	8183	0.664374824	-0.967200434
20913	8184	0.66427856	0
20914	8185	0.66427856	0
20915	8186	0.66427856	0
20916	8187	0.66427856	0
20917	8188	0.664132653	0
20918	8189	0.664132653	-0.023278448
20919	8190	0.664132653	-0.206922845
20920	8191	0.664132653	-1.008555191
20921	8192	0.664027305	0
20922	8193	0.664027305	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20869	8140	0.666447573	0
20870	8141	0.666447573	0
20871	8142	0.666447573	0
20872	8143	0.666447573	0
20873	8144	0.666447573	0
20874	8145	0.666447573	0
20875	8146	0.666145349	0
20876	8147	0.666145349	0
20877	8148	0.666145349	0
20878	8149	0.666145349	-0.444599726
20879	8150	0.666033288	0
20880	8151	0.665897252	0
20881	8152	0.665897252	0
20882	8153	0.665897252	0
20883	8154	0.665789151	-1.282692865
20884	8155	0.665728627	0
20885	8156	0.665728627	0
20886	8157	0.665728627	0
20887	8158	0.665728627	-0.691688782
20888	8159	0.665663068	-1.248056842
20889	8160	0.665514107	0
20890	8161	0.665514107	0
20891	8162	0.665514107	0
20892	8163	0.665514107	-0.131235996
20893	8164	0.665514107	-0.490257938
20894	8165	0.665232006	0
20895	8166	0.665232006	0



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21058	8329	0.657545178	0
21059	8330	0.657545178	0
21060	8331	0.657545178	0
21061	8332	0.657545178	0
21062	8333	0.657545178	0
21063	8334	0.657545178	0
21064	8335	0.657545178	0
21065	8336	0.657545178	0
21066	8337	0.657545178	0
21067	8338	0.657545178	0
21068	8339	0.657545178	0
21069	8340	0.657545178	0
21070	8341	0.657545178	0
21071	8342	0.657545178	0
21072	8343	0.657545178	0
21073	8344	0.657545178	0
21074	8345	0.657545178	0
21075	8346	0.657545178	0
21076	8347	0.657545178	-1.256174732
21077	8348	0.657545178	-1.343324908
21078	8349	0.657545178	-1.176993486
21079	8350	0.6566687	0
21080	8351	0.656612214	0
21081	8352	0.656547945	0
21082	8353	0.656547945	-1.464297457
21083	8354	0.656474167	0
21084	8355	0.656474167	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21031	8302	0.659358518	0
21032	8303	0.659358518	0
21033	8304	0.659251642	0
21034	8305	0.659251642	0
21035	8306	0.659251642	0
21036	8307	0.659071698	0
21037	8308	0.659071698	0
21038	8309	0.658926083	-1.321740616
21039	8310	0.65880583	0
21040	8311	0.65880583	0
21041	8312	0.65880583	-1.361369411
21042	8313	0.658704843	0
21043	8314	0.658544705	0
21044	8315	0.658219025	0
21045	8316	0.657545178	0
21046	8317	0.657545178	0
21047	8318	0.657545178	0
21048	8319	0.657545178	0
21049	8320	0.657545178	0
21050	8321	0.657545178	0
21051	8322	0.657545178	0
21052	8323	0.657545178	0
21053	8324	0.657545178	0
21054	8325	0.657545178	0
21055	8326	0.657545178	0
21056	8327	0.657545178	0
21057	8328	0.657545178	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21004	8275	0.660450168	0
21005	8276	0.660356155	0
21006	8277	0.660356155	0
21007	8278	0.660185274	0
21008	8279	0.660185274	0
21009	8280	0.660185274	0
21010	8281	0.660185274	0
21011	8282	0.660185274	0
21012	8283	0.660185274	0
21013	8284	0.660185274	0
21014	8285	0.660185274	0
21015	8286	0.659964652	0
21016	8287	0.659964652	0
21017	8288	0.659964652	0
21018	8289	0.659964652	0
21019	8290	0.659778059	0
21020	8291	0.659778059	0
21021	8292	0.659778059	0
21022	8293	0.659778059	0
21023	8294	0.659778059	0
21024	8295	0.659778059	-0.635491443
21025	8296	0.659618186	0
21026	8297	0.659618186	0
21027	8298	0.659618186	0
21028	8299	0.659479678	0
21029	8300	0.659479678	0
21030	8301	0.659479678	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
20977	8248	0.661701138	0
20978	8249	0.661701138	0
20979	8250	0.661338167	0
20980	8251	0.661338167	0
20981	8252	0.661338167	0
20982	8253	0.661179462	0
20983	8254	0.661179462	0
20984	8255	0.661033506	0
20985	8256	0.661033506	0
20986	8257	0.661033506	0
20987	8258	0.660964837	0
20988	8259	0.660964837	-0.227931489
20989	8260	0.660774148	0
20990	8261	0.660774148	0
20991	8262	0.660774148	0
20992	8263	0.660774148	0
20993	8264	0.660774148	0
20994	8265	0.660774148	0
20995	8266	0.660774148	0
20996	8267	0.660550688	0
20997	8268	0.660550688	0
20998	8269	0.660450168	0
20999	8270	0.660450168	0
21000	8271	0.660450168	0
21001	8272	0.660450168	0
21002	8273	0.660450168	0
21003	8274	0.660450168	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21166	8437	0.653113563	0
21167	8438	0.65299755	0
21168	8439	0.65299755	0
21169	8440	0.65299755	0
21170	8441	0.65299755	0
21171	8442	0.652900273	0
21172	8443	0.652746295	0
21173	8444	0.652746295	0
21174	8445	0.652746295	0
21175	8446	0.652746295	0
21176	8447	0.652746295	0
21177	8448	0.652746295	0
21178	8449	0.652581758	0
21179	8450	0.652465652	0
21180	8451	0.652465652	0
21181	8452	0.652465652	0
21182	8453	0.652465652	0
21183	8454	0.652465652	0
21184	8455	0.652312651	0
21185	8456	0.652312651	0
21186	8457	0.652312651	0
21187	8458	0.652216344	0
21188	8459	0.652216344	0
21189	8460	0.652216344	0
21190	8461	0.651792849	0
21191	8462	0.651792849	0
21192	8463	0.651792849	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21139	8410	0.654084646	0
21140	8411	0.654084646	0
21141	8412	0.654084646	-0.360910083
21142	8413	0.653941053	0
21143	8414	0.653941053	0
21144	8415	0.653941053	0
21145	8416	0.653941053	0
21146	8417	0.653785029	0
21147	8418	0.653785029	0
21148	8419	0.653785029	0
21149	8420	0.653785029	0
21150	8421	0.653701839	0
21151	8422	0.653650134	0
21152	8423	0.653428612	0
21153	8424	0.653428612	0
21154	8425	0.653428612	0
21155	8426	0.653428612	0
21156	8427	0.653428612	0
21157	8428	0.653428612	0
21158	8429	0.653428612	0
21159	8430	0.653428612	0
21160	8431	0.653428612	0
21161	8432	0.653428612	0
21162	8433	0.653180372	0
21163	8434	0.653113563	0
21164	8435	0.653113563	0
21165	8436	0.653113563	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21112	8383	0.654921034	0
21113	8384	0.654921034	0
21114	8385	0.654921034	0
21115	8386	0.654921034	0
21116	8387	0.654921034	0
21117	8388	0.654921034	0
21118	8389	0.654921034	0
21119	8390	0.654659489	0
21120	8391	0.654659489	0
21121	8392	0.654659489	0
21122	8393	0.654659489	0
21123	8394	0.654659489	0
21124	8395	0.654659489	0
21125	8396	0.654560324	0
21126	8397	0.654560324	0
21127	8398	0.654340038	0
21128	8399	0.654340038	0
21129	8400	0.654340038	0
21130	8401	0.654340038	0
21131	8402	0.654340038	0
21132	8403	0.654340038	0
21133	8404	0.654340038	0
21134	8405	0.654340038	0
21135	8406	0.654340038	0
21136	8407	0.654152235	0
21137	8408	0.654084646	0
21138	8409	0.654084646	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21085	8356	0.656388601	0
21086	8357	0.656288174	0
21087	8358	0.656168649	0
21088	8359	0.656168649	0
21089	8360	0.656168649	0
21090	8361	0.656099937	0
21091	8362	0.656024005	0
21092	8363	0.656024005	0
21093	8364	0.655845393	0
21094	8365	0.655845393	0
21095	8366	0.655845393	0
21096	8367	0.655739377	0
21097	8368	0.655739377	0
21098	8369	0.655619257	0
21099	8370	0.655619257	0
21100	8371	0.655619257	0
21101	8372	0.655619257	0
21102	8373	0.655619257	0
21103	8374	0.655482017	0
21104	8375	0.655482017	0
21105	8376	0.655323718	0
21106	8377	0.655323718	0
21107	8378	0.655323718	0
21108	8379	0.655323718	0
21109	8380	0.655139108	0
21110	8381	0.655139108	0
21111	8382	0.655070559	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
21274	8545	0.648821609		0
21275	8546	0.648821609		0
21276	8547	0.648821609		0
21277	8548	0.648821609	-1.371353631	0
21278	8549	0.648726713		0
21279	8550	0.648726713	-0.009720692	0
21280	8551	0.648651465		0
21281	8552	0.648590335		0
21282	8553	0.648539691		0
21283	8554	0.64799986		0
21284	8555	0.64799986		0
21285	8556	0.64799986		0
21286	8557	0.64799986		0
21287	8558	0.64799986		0
21288	8559	0.64799986		0
21289	8560	0.64799986		0
21290	8561	0.64799986		0
21291	8562	0.64799986		0
21292	8563	0.64799986		0
21293	8564	0.64799986		0
21294	8565	0.64799986	-0.186538804	0
21295	8566	0.64799986	-0.446176115	0
21296	8567	0.64799986	-1.4875688	0
21297	8568	0.647444851		0
21298	8569	0.647326013		0
21299	8570	0.647245221		0
21300	8571	0.647245221		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
21247	8518	0.64999204		0
21248	8519	0.649892214		0
21249	8520	0.649892214		0
21250	8521	0.64971984		0
21251	8522	0.64971984		0
21252	8523	0.64971984		0
21253	8524	0.64971984		0
21254	8525	0.64971984		0
21255	8526	0.649513083		0
21256	8527	0.649513083		0
21257	8528	0.649513083		0
21258	8529	0.649350699		0
21259	8530	0.649350699		0
21260	8531	0.649350699		0
21261	8532	0.649350699		0
21262	8533	0.649219789		0
21263	8534	0.64911201		0
21264	8535	0.64911201		0
21265	8536	0.64911201		0
21266	8537	0.64911201		0
21267	8538	0.64911201		0
21268	8539	0.64911201		0
21269	8540	0.648945006		0
21270	8541	0.648945006		0
21271	8542	0.648945006		0
21272	8543	0.648945006		0
21273	8544	0.648945006		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
21220	8491	0.651056132		0
21221	8492	0.651056132		0
21222	8493	0.651056132		0
21223	8494	0.651056132		0
21224	8495	0.651056132		0
21225	8496	0.650914599		0
21226	8497	0.650914599		0
21227	8498	0.650914599		0
21228	8499	0.650914599		0
21229	8500	0.650914599		0
21230	8501	0.650914599		0
21231	8502	0.650785594		0
21232	8503	0.650705753		0
21233	8504	0.650705753		0
21234	8505	0.650705753		0
21235	8506	0.650705753		0
21236	8507	0.650705753		0
21237	8508	0.650366593		0
21238	8509	0.650366593		0
21239	8510	0.650366593		0
21240	8511	0.650366593		0
21241	8512	0.650366593		0
21242	8513	0.650163224		0
21243	8514	0.650102985		0
21244	8515	0.650102985		0
21245	8516	0.650102985		0
21246	8517	0.650102985		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
21193	8464	0.651792849		0
21194	8465	0.651792849		0
21195	8466	0.651792849		0
21196	8467	0.651792849		0
21197	8468	0.651792849		0
21198	8469	0.651792849		0
21199	8470	0.651792849		0
21200	8471	0.651792849		0
21201	8472	0.651792849		0
21202	8473	0.651792849		0
21203	8474	0.651792849		0
21204	8475	0.651792849		0
21205	8476	0.651792849	-0.70562456	0
21206	8477	0.651792849	-1.404594565	0
21207	8478	0.651384869		0
21208	8479	0.651384869	-1.153190571	0
21209	8480	0.651296228		0
21210	8481	0.651296228		0
21211	8482	0.651296228		0
21212	8483	0.651158379		0
21213	8484	0.651158379		0
21214	8485	0.651158379		0
21215	8486	0.651158379		0
21216	8487	0.651158379		0
21217	8488	0.651158379		0
21218	8489	0.651158379		0
21219	8490	0.651158379		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21382	8653	0.644042707	0
21383	8654	0.644042707	0
21384	8655	0.644042707	0
21385	8656	0.644042707	0
21386	8657	0.643914275	0
21387	8658	0.643914275	0
21388	8659	0.643914275	0
21389	8660	0.643823919	0
21390	8661	0.643823919	0
21391	8662	0.643756893	0
21392	8663	0.643756893	0
21393	8664	0.643304739	0
21394	8665	0.643304739	0
21395	8666	0.643304739	0
21396	8667	0.643304739	0
21397	8668	0.643304739	0
21398	8669	0.643304739	0
21399	8670	0.643304739	0
21400	8671	0.643304739	0
21401	8672	0.643304739	0
21402	8673	0.643304739	0
21403	8674	0.643304739	0
21404	8675	0.643304739	0
21405	8676	0.643304739	0
21406	8677	0.643304739	0
21407	8678	0.643304739	0
21408	8679	0.643304739	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21355	8626	0.644989141	0
21356	8627	0.644989141	-0.235307014
21357	8628	0.644864146	0
21358	8629	0.644864146	0
21359	8630	0.644864146	0
21360	8631	0.644864146	0
21361	8632	0.644864146	0
21362	8633	0.644864146	0
21363	8634	0.644864146	0
21364	8635	0.644756421	0
21365	8636	0.644580201	0
21366	8637	0.644580201	0
21367	8638	0.644580201	0
21368	8639	0.644580201	0
21369	8640	0.644580201	0
21370	8641	0.644383732	0
21371	8642	0.644383732	0
21372	8643	0.644383732	0
21373	8644	0.644383732	0
21374	8645	0.644239711	0
21375	8646	0.644239711	0
21376	8647	0.644239711	0
21377	8648	0.644239711	0
21378	8649	0.644239711	0
21379	8650	0.644239711	0
21380	8651	0.64412961	0
21381	8652	0.64412961	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21328	8599	0.64590687	0
21329	8600	0.64590687	0
21330	8601	0.64590687	0
21331	8602	0.64590687	-1.443904299
21332	8603	0.645784067	0
21333	8604	0.645784067	0
21334	8605	0.645784067	0
21335	8606	0.645784067	0
21336	8607	0.645784067	0
21337	8608	0.645784067	0
21338	8609	0.645784067	0
21339	8610	0.645645954	0
21340	8611	0.645645954	0
21341	8612	0.645645954	0
21342	8613	0.645645954	-1.393012692
21343	8614	0.645310721	0
21344	8615	0.645310721	0
21345	8616	0.645310721	0
21346	8617	0.645310721	0
21347	8618	0.645310721	0
21348	8619	0.645310721	0
21349	8620	0.645310721	-1.335355978
21350	8621	0.644989141	0
21351	8622	0.644989141	0
21352	8623	0.644989141	0
21353	8624	0.644989141	0
21354	8625	0.644989141	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21301	8572	0.647245221	0
21302	8573	0.647142417	0
21303	8574	0.647142417	0
21304	8575	0.647142417	0
21305	8576	0.647142417	0
21306	8577	0.647142417	-0.876606414
21307	8578	0.647007186	0
21308	8579	0.647007186	0
21309	8580	0.646922205	0
21310	8581	0.646821312	0
21311	8582	0.646821312	0
21312	8583	0.646821312	0
21313	8584	0.646821312	0
21314	8585	0.646821312	0
21315	8586	0.646699576	0
21316	8587	0.646549793	0
21317	8588	0.646549793	0
21318	8589	0.646549793	0
21319	8590	0.646549793	0
21320	8591	0.646361011	0
21321	8592	0.646361011	0
21322	8593	0.646115716	0
21323	8594	0.646115716	0
21324	8595	0.646115716	0
21325	8596	0.646115716	0
21326	8597	0.646115716	0
21327	8598	0.646115716	-1.313361685

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21490	8761	0.639500675	0	0.639500675	0
21491	8762	0.639500675	-1.060339415	0.639500675	-1.060339415
21492	8763	0.639203722	0	0.639203722	0
21493	8764	0.639203722	0	0.639203722	0
21494	8765	0.639203722	0	0.639203722	0
21495	8766	0.639203722	0	0.639203722	0
21496	8767	0.639203722	0	0.639203722	0
21497	8768	0.639203722	0	0.639203722	0
21498	8769	0.639203722	0	0.639203722	0
21499	8770	0.639061772	0	0.639061772	0
21500	8771	0.639061772	0	0.639061772	0
21501	8772	0.639061772	0	0.639061772	0
21502	8773	0.639061772	0	0.639061772	0
21503	8774	0.639061772	0	0.639061772	0
21504	8775	0.639061772	0	0.639061772	0
21505	8776	0.639061772	-0.779053477	0.639061772	-0.779053477
21506	8777	0.639061772	-0.536015429	0.639061772	-0.536015429
21507	8778	0.638978582	0	0.638978582	0
21508	8779	0.638978582	0	0.638978582	0
21509	8780	0.638659834	0	0.638659834	0
21510	8781	0.638659834	0	0.638659834	0
21511	8782	0.638659834	0	0.638659834	0
21512	8783	0.638659834	0	0.638659834	0
21513	8784	0.638659834	0	0.638659834	0
21514	8785	0.638659834	0	0.638659834	0
21515	8786	0.638659834	0	0.638659834	0
21516	8787	0.638659834	0	0.638659834	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21463	8734	0.640511838	0	0.640511838	0
21464	8735	0.640511838	0	0.640511838	0
21465	8736	0.640511838	-1.318965562	0.640511838	-1.318965562
21466	8737	0.640511838	-1.415875575	0.640511838	-1.415875575
21467	8738	0.640152769	0	0.640152769	0
21468	8739	0.640152769	0	0.640152769	0
21469	8740	0.640083751	0	0.640083751	0
21470	8741	0.640083751	0	0.640083751	0
21471	8742	0.640083751	0	0.640083751	0
21472	8743	0.640083751	0	0.640083751	0
21473	8744	0.640083751	0	0.640083751	0
21474	8745	0.639981888	0	0.639981888	0
21475	8746	0.639981888	0	0.639981888	0
21476	8747	0.639981888	0	0.639981888	0
21477	8748	0.639981888	-0.437594825	0.639981888	-0.437594825
21478	8749	0.639816411	0	0.639816411	0
21479	8750	0.639816411	0	0.639816411	0
21480	8751	0.639816411	0	0.639816411	0
21481	8752	0.639816411	0	0.639816411	0
21482	8753	0.63968775	0	0.63968775	0
21483	8754	0.639500675	0	0.639500675	0
21484	8755	0.639500675	0	0.639500675	0
21485	8756	0.639500675	0	0.639500675	0
21486	8757	0.639500675	0	0.639500675	0
21487	8758	0.639500675	0	0.639500675	0
21488	8759	0.639500675	0	0.639500675	0
21489	8760	0.639500675	0	0.639500675	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21436	8707	0.641481246	0	0.641481246	0
21437	8708	0.641481246	-1.378693995	0.641481246	-1.378693995
21438	8709	0.641307979	0	0.641307979	0
21439	8710	0.641187258	0	0.641187258	0
21440	8711	0.641187258	0	0.641187258	0
21441	8712	0.641098327	0	0.641098327	0
21442	8713	0.641098327	0	0.641098327	0
21443	8714	0.641098327	0	0.641098327	0
21444	8715	0.641098327	0	0.641098327	0
21445	8716	0.641098327	0	0.641098327	0
21446	8717	0.641098327	0	0.641098327	0
21447	8718	0.641098327	-0.995072683	0.641098327	-0.995072683
21448	8719	0.640976076	0	0.640976076	0
21449	8720	0.640976076	0	0.640976076	0
21450	8721	0.640839484	0	0.640839484	0
21451	8722	0.640797465	0	0.640797465	0
21452	8723	0.640511838	0	0.640511838	0
21453	8724	0.640511838	0	0.640511838	0
21454	8725	0.640511838	0	0.640511838	0
21455	8726	0.640511838	0	0.640511838	0
21456	8727	0.640511838	0	0.640511838	0
21457	8728	0.640511838	0	0.640511838	0
21458	8729	0.640511838	0	0.640511838	0
21459	8730	0.640511838	0	0.640511838	0
21460	8731	0.640511838	0	0.640511838	0
21461	8732	0.640511838	0	0.640511838	0
21462	8733	0.640511838	0	0.640511838	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21409	8680	0.643304739	0	0.643304739	0
21410	8681	0.643304739	0	0.643304739	0
21411	8682	0.643304739	-1.395353908	0.643304739	-1.395353908
21412	8683	0.642821921	0	0.642821921	0
21413	8684	0.64274472	0	0.64274472	0
21414	8685	0.64274472	0	0.64274472	0
21415	8686	0.642638131	0	0.642638131	0
21416	8687	0.642638131	0	0.642638131	0
21417	8688	0.642638131	0	0.642638131	0
21418	8689	0.642638131	0	0.642638131	0
21419	8690	0.642481431	0	0.642481431	0
21420	8691	0.642481431	0	0.642481431	0
21421	8692	0.642481431	-1.246414895	0.642481431	-1.246414895
21422	8693	0.642371775	0	0.642371775	0
21423	8694	0.64222842	0	0.64222842	0
21424	8695	0.64222842	0	0.64222842	0
21425	8696	0.64222842	0	0.64222842	0
21426	8697	0.642105581	0	0.642105581	0
21427	8698	0.642033012	0	0.642033012	0
21428	8699	0.642033012	0	0.642033012	0
21429	8700	0.641750911	0	0.641750911	0
21430	8701	0.641750911	0	0.641750911	0
21431	8702	0.641750911	0	0.641750911	0
21432	8703	0.641750911	0	0.641750911	0
21433	8704	0.641750911	0	0.641750911	0
21434	8705	0.641557072	0	0.641557072	0
21435	8706	0.641481246	0	0.641481246	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21517	8788	0.638659834	0
21518	8789	0.638659834	0
21519	8790	0.638659834	0
21520	8791	0.638659834	0
21521	8792	0.638659834	0
21522	8793	0.638659834	0
21523	8794	0.638659834	-0.496908826
21524	8795	0.638361861	0
21525	8796	0.638361861	0
21526	8797	0.638290378	0
21527	8798	0.638290378	0
21528	8799	0.638290378	0
21529	8800	0.638290378	-0.57298995
21530	8801	0.638173774	0
21531	8802	0.638173774	0
21532	8803	0.638173774	0
21533	8804	0.638173774	0
21534	8805	0.638173774	0
21535	8806	0.638173774	0
21536	8807	0.638173774	0
21537	8808	0.638173774	-0.821905977
21538	8809	0.637949622	0
21539	8810	0.637949622	0
21540	8811	0.637949622	0
21541	8812	0.637949622	0
21542	8813	0.637949622	0
21543	8814	0.637820617	0
21544	8815	0.637736784	0
21545	8816	0.637736784	0
21546	8817	0.637736784	0
21547	8818	0.637736784	0
21548	8819	0.637736784	0
21549	8820	0.637634344	0
21550	8821	0.637634344	0
21551	8822	0.637574097	0
21552	8823	0.637341792	0
21553	8824	0.637341792	0
21554	8825	0.637341792	0
21555	8826	0.637341792	0
21556	8827	0.637341792	0
21557	8828	0.637341792	0
21558	8829	0.637341792	0
21559	8830	0.637341792	0
21560	8831	0.637341792	0
21561	8832	0.637341792	0
21562	8833	0.637341792	0
21563	8834	0.637341792	0
21564	8835	0.637122506	0
21565	8836	0.637069592	-1.182745815
21566	8837	0.636983019	0
21567	8838	0.636983019	0
21568	8839	0.636815693	0
21569	8840	0.636815693	0
21570	8841	0.636815693	0
21571	8842	0.636815693	0
21572	8843	0.636655702	0
21573	8844	0.636655702	0
21574	8845	0.636655702	0
21575	8846	0.636655702	0
21576	8847	0.636655702	0
21577	8848	0.636655702	-1.383519539
21578	8849	0.636578309	0
21579	8850	0.636355879	0
21580	8851	0.636355879	0
21581	8852	0.636355879	0
21582	8853	0.636355879	0
21583	8854	0.636355879	0
21584	8855	0.636355879	0
21585	8856	0.636355879	0
21586	8857	0.636355879	-0.288359416
21587	8858	0.636147033	0
21588	8859	0.636080224	0
21589	8860	0.636080224	0
21590	8861	0.636080224	0
21591	8862	0.636080224	0
21592	8863	0.635950564	0
21593	8864	0.635950564	0
21594	8865	0.635950564	0
21595	8866	0.635950564	0
21596	8867	0.635950564	0
21597	8868	0.635825928	0
21598	8869	0.635825928	0
21599	8870	0.635825928	0
21600	8871	0.635825928	0
21601	8872	0.635825928	0
21602	8873	0.635825928	0
21603	8874	0.635590602	0
21604	8875	0.635590602	0
21605	8876	0.635590602	0
21606	8877	0.635590602	0
21607	8878	0.635590602	0
21608	8879	0.635590602	0
21609	8880	0.635590602	0
21610	8881	0.635372199	0
21611	8882	0.635372199	0
21612	8883	0.635268783	0
21613	8884	0.635268783	0
21614	8885	0.635268783	0
21615	8886	0.635168957	0
21616	8887	0.63497935	0
21617	8888	0.63497935	0
21618	8889	0.63497935	0
21619	8890	0.63497935	0
21620	8891	0.63497935	-0.210554698
21621	8892	0.63497935	-1.023468055
21622	8893	0.634717648	0
21623	8894	0.634717648	0
21624	8895	0.634717648	-0.141829069

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21706	8977	0.631329795	0
21707	8978	0.631216239	0
21708	8979	0.6311116067	0
21709	8980	0.630875749	0
21710	8981	0.629516454	0
21711	8982	0.629516454	0
21712	8983	0.629516454	0
21713	8984	0.629516454	0
21714	8985	0.629516454	0
21715	8986	0.629516454	0
21716	8987	0.629516454	0
21717	8988	0.629516454	0
21718	8989	0.629516454	0
21719	8990	0.629516454	0
21720	8991	0.629516454	0
21721	8992	0.629516454	0
21722	8993	0.629516454	0
21723	8994	0.629516454	0
21724	8995	0.629516454	0
21725	8996	0.629516454	0
21726	8997	0.629516454	0
21727	8998	0.629516454	0
21728	8999	0.629516454	0
21729	9000	0.629516454	0
21730	9001	0.629516454	0
21731	9002	0.629516454	0
21732	9003	0.629516454	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21679	8950	0.632109265	0
21680	8951	0.631991073	0
21681	8952	0.631991073	0
21682	8953	0.631991073	0
21683	8954	0.631991073	0
21684	8955	0.631991073	0
21685	8956	0.631991073	0
21686	8957	0.631991073	0
21687	8958	0.631991073	0
21688	8959	0.631991073	0
21689	8960	0.631883187	0
21690	8961	0.631883187	0
21691	8962	0.631784316	0
21692	8963	0.631693373	0
21693	8964	0.631693373	0
21694	8965	0.631693373	0
21695	8966	0.631693373	0
21696	8967	0.631693373	-1.123664044
21697	8968	0.631609444	0
21698	8969	0.631609444	0
21699	8970	0.631609444	0
21700	8971	0.631609444	-0.839751318
21701	8972	0.631531745	0
21702	8973	0.631531745	0
21703	8974	0.631392459	0
21704	8975	0.631392459	-1.489452944
21705	8976	0.631329795	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21652	8923	0.633150739	0
21653	8924	0.633150739	-1.201387925
21654	8925	0.633150739	-1.502417921
21655	8926	0.633033028	0
21656	8927	0.632922703	0
21657	8928	0.632922703	0
21658	8929	0.632922703	0
21659	8930	0.632922703	0
21660	8931	0.632922703	0
21661	8932	0.632922703	0
21662	8933	0.632922703	0
21663	8934	0.63281909	0
21664	8935	0.632721594	-1.256174732
21665	8936	0.632542909	0
21666	8937	0.632542909	0
21667	8938	0.632383095	0
21668	8939	0.632383095	0
21669	8940	0.632383095	0
21670	8941	0.632383095	0
21671	8942	0.632383095	0
21672	8943	0.632383095	0
21673	8944	0.632239312	0
21674	8945	0.632239312	0
21675	8946	0.632239312	0
21676	8947	0.632239312	0
21677	8948	0.632109265	0
21678	8949	0.632109265	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21625	8896	0.634479874	0
21626	8897	0.634479874	0
21627	8898	0.634479874	0
21628	8899	0.634479874	0
21629	8900	0.634262889	0
21630	8901	0.634262889	0
21631	8902	0.634262889	-0.043489671
21632	8903	0.634064082	0
21633	8904	0.634064082	0
21634	8905	0.634064082	0
21635	8906	0.63388126	0
21636	8907	0.633712569	0
21637	8908	0.633712569	0
21638	8909	0.633712569	-0.184435679
21639	8910	0.633712569	-1.138678188
21640	8911	0.633556432	0
21641	8912	0.633556432	0
21642	8913	0.633411498	0
21643	8914	0.633411498	0
21644	8915	0.633411498	0
21645	8916	0.633276603	0
21646	8917	0.633276603	-0.64247076
21647	8918	0.633150739	0
21648	8919	0.633150739	0
21649	8920	0.633150739	0
21650	8921	0.633150739	0
21651	8922	0.633150739	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21814	9085	0.626939031	-0.353727668
21815	9086	0.626810561	0
21816	9087	0.626810561	0
21817	9088	0.626668611	0
21818	9089	0.626668611	0
21819	9090	0.626668611	0
21820	9091	0.626668611	-0.009502399
21821	9092	0.626510944	0
21822	9093	0.626510944	0
21823	9094	0.626510944	0
21824	9095	0.626510944	0
21825	9096	0.626510944	0
21826	9097	0.626510944	0
21827	9098	0.626510944	-0.98617897
21828	9099	0.626334795	0
21829	9100	0.626334795	-0.032112609
21830	9101	0.626334795	-0.961531535
21831	9102	0.626238744	0
21832	9103	0.626136713	0
21833	9104	0.626136713	0
21834	9105	0.626136713	0
21835	9106	0.626136713	0
21836	9107	0.626136713	0
21837	9108	0.62591233	0
21838	9109	0.62591233	0
21839	9110	0.62591233	0
21840	9111	0.62591233	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21787	9058	0.627648518	0
21788	9059	0.627648518	0
21789	9060	0.627581954	0
21790	9061	0.627510471	0
21791	9062	0.627433503	0
21792	9063	0.627433503	-1.44598725
21793	9064	0.627350392	0
21794	9065	0.627350392	0
21795	9066	0.627350392	0
21796	9067	0.627350392	0
21797	9068	0.627350392	-1.128007025
21798	9069	0.627260374	0
21799	9070	0.627260374	0
21800	9071	0.627260374	0
21801	9072	0.627260374	0
21802	9073	0.627260374	0
21803	9074	0.627162549	0
21804	9075	0.627055856	0
21805	9076	0.627055856	0
21806	9077	0.627055856	0
21807	9078	0.627055856	0
21808	9079	0.626939031	0
21809	9080	0.626939031	0
21810	9081	0.626939031	0
21811	9082	0.626939031	0
21812	9083	0.626939031	0
21813	9084	0.626939031	-0.052697673

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21760	9031	0.629516454	0
21761	9032	0.629516454	0
21762	9033	0.629516454	0
21763	9034	0.629516454	0
21764	9035	0.629516454	0
21765	9036	0.629516454	0
21766	9037	0.629516454	0
21767	9038	0.629516454	0
21768	9039	0.629516454	0
21769	9040	0.629516454	0
21770	9041	0.629516454	0
21771	9042	0.629516454	0
21772	9043	0.629516454	0
21773	9044	0.629516454	0
21774	9045	0.629516454	0
21775	9046	0.629516454	0
21776	9047	0.629516454	0
21777	9048	0.629516454	-0.028930951
21778	9049	0.629516454	-0.545560747
21779	9050	0.629516454	-1.20502221
21780	9051	0.629516454	-1.460294715
21781	9052	0.629516454	-1.476088982
21782	9053	0.629516454	-1.560409868
21783	9054	0.627968166	0
21784	9055	0.627823296	-0.836804083
21785	9056	0.627710653	0
21786	9057	0.627648518	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21733	9004	0.629516454	0
21734	9005	0.629516454	0
21735	9006	0.629516454	0
21736	9007	0.629516454	0
21737	9008	0.629516454	0
21738	9009	0.629516454	0
21739	9010	0.629516454	0
21740	9011	0.629516454	0
21741	9012	0.629516454	0
21742	9013	0.629516454	0
21743	9014	0.629516454	0
21744	9015	0.629516454	0
21745	9016	0.629516454	0
21746	9017	0.629516454	0
21747	9018	0.629516454	0
21748	9019	0.629516454	0
21749	9020	0.629516454	0
21750	9021	0.629516454	0
21751	9022	0.629516454	0
21752	9023	0.629516454	0
21753	9024	0.629516454	0
21754	9025	0.629516454	0
21755	9026	0.629516454	0
21756	9027	0.629516454	0
21757	9028	0.629516454	0
21758	9029	0.629516454	0
21759	9030	0.629516454	0



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21922	9193	0.622492671	0
21923	9194	0.622492671	0
21924	9195	0.622492671	0
21925	9196	0.622492671	0
21926	9197	0.622492671	0
21927	9198	0.622492671	0
21928	9199	0.62233787	0
21929	9200	0.62233787	0
21930	9201	0.62233787	0
21931	9202	0.62233787	0
21932	9203	0.62233787	0
21933	9204	0.62233787	0
21934	9205	0.622176091	0
21935	9206	0.622176091	0
21936	9207	0.622176091	0
21937	9208	0.622176091	-1.378693995
21938	9209	0.622092436	0
21939	9210	0.622092436	0
21940	9211	0.621829625	0
21941	9212	0.621829625	0
21942	9213	0.621829625	0
21943	9214	0.621829625	0
21944	9215	0.621829625	0
21945	9216	0.621829625	0
21946	9217	0.621829625	0
21947	9218	0.621829625	0
21948	9219	0.621829625	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21895	9166	0.623839321	0
21896	9167	0.623839321	0
21897	9168	0.623839321	0
21898	9169	0.623738615	0
21899	9170	0.62352609	0
21900	9171	0.62352609	0
21901	9172	0.62352609	0
21902	9173	0.62352609	0
21903	9174	0.62352609	0
21904	9175	0.62352609	0
21905	9176	0.623297334	0
21906	9177	0.623297334	0
21907	9178	0.623297334	0
21908	9179	0.623176276	0
21909	9180	0.623176276	0
21910	9181	0.623050412	0
21911	9182	0.623050412	0
21912	9183	0.623050412	0
21913	9184	0.622783071	0
21914	9185	0.622783071	0
21915	9186	0.622783071	0
21916	9187	0.622783071	0
21917	9188	0.622783071	0
21918	9189	0.622783071	-1.540814312
21919	9190	0.622611786	0
21920	9191	0.622492671	0
21921	9192	0.622492671	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21868	9139	0.624821333	0
21869	9140	0.624752664	0
21870	9141	0.62460912	0
21871	9142	0.62460912	0
21872	9143	0.62460912	0
21873	9144	0.62460912	0
21874	9145	0.624456655	0
21875	9146	0.624376814	0
21876	9147	0.624376814	0
21877	9148	0.624376814	0
21878	9149	0.624376814	0
21879	9150	0.624376814	0
21880	9151	0.624294413	0
21881	9152	0.624121422	0
21882	9153	0.624121422	0
21883	9154	0.624121422	0
21884	9155	0.624121422	0
21885	9156	0.624121422	0
21886	9157	0.624121422	0
21887	9158	0.624121422	0
21888	9159	0.624121422	0
21889	9160	0.624121422	0
21890	9161	0.623936577	0
21891	9162	0.623936577	0
21892	9163	0.623839321	0
21893	9164	0.623839321	0
21894	9165	0.623839321	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21841	9112	0.625656033	0
21842	9113	0.625656033	0
21843	9114	0.625656033	0
21844	9115	0.625656033	0
21845	9116	0.625656033	0
21846	9117	0.625656033	0
21847	9118	0.625656033	0
21848	9119	0.625656033	0
21849	9120	0.625513712	0
21850	9121	0.625513712	0
21851	9122	0.625360494	0
21852	9123	0.625360494	0
21853	9124	0.625360494	0
21854	9125	0.625360494	0
21855	9126	0.62519508	0
21856	9127	0.62519508	-1.431192333
21857	9128	0.62519508	-1.431192333
21858	9129	0.625015953	0
21859	9130	0.625015953	0
21860	9131	0.625015953	0
21861	9132	0.625015953	0
21862	9133	0.625015953	0
21863	9134	0.625015953	0
21864	9135	0.62488805	0
21865	9136	0.624821333	0
21866	9137	0.624821333	0
21867	9138	0.624821333	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22030	9301	0.618792589	0
22031	9302	0.618792589	0
22032	9303	0.618792589	0
22033	9304	0.618792589	0
22034	9305	0.618792589	0
22035	9306	0.618792589	0
22036	9307	0.618792589	0
22037	9308	0.618792589	0
22038	9309	0.618792589	-1.039654816
22039	9310	0.618481155	0
22040	9311	0.618427482	0
22041	9312	0.618351457	0
22042	9313	0.618351457	0
22043	9314	0.618351457	0
22044	9315	0.618351457	0
22045	9316	0.618351457	0
22046	9317	0.618351457	0
22047	9318	0.618351457	0
22048	9319	0.618235444	0
22049	9320	0.618235444	0
22050	9321	0.618235444	0
22051	9322	0.618235444	0
22052	9323	0.618235444	0
22053	9324	0.618235444	0
22054	9325	0.618235444	0
22055	9326	0.618235444	0
22056	9327	0.618235444	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22003	9274	0.619756617	0
22004	9275	0.619756617	-0.955144736
22005	9276	0.619577932	0
22006	9277	0.619577932	0
22007	9278	0.619577932	0
22008	9279	0.619577932	0
22009	9280	0.619455128	0
22010	9281	0.619455128	0
22011	9282	0.619455128	0
22012	9283	0.619297289	0
22013	9284	0.619297289	0
22014	9285	0.619297289	0
22015	9286	0.619297289	0
22016	9287	0.619297289	0
22017	9288	0.619200186	0
22018	9289	0.619200186	0
22019	9290	0.619134418	0
22020	9291	0.618792589	0
22021	9292	0.618792589	0
22022	9293	0.618792589	0
22023	9294	0.618792589	0
22024	9295	0.618792589	0
22025	9296	0.618792589	0
22026	9297	0.618792589	0
22027	9298	0.618792589	0
22028	9299	0.618792589	0
22029	9300	0.618792589	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21976	9247	0.620561611	0
21977	9248	0.620561611	0
21978	9249	0.620561611	0
21979	9250	0.620561611	0
21980	9251	0.620561611	0
21981	9252	0.620561611	0
21982	9253	0.620561611	0
21983	9254	0.620561611	0
21984	9255	0.620561611	0
21985	9256	0.620561611	0
21986	9257	0.620561611	0
21987	9258	0.620561611	-1.418097035
21988	9259	0.620256093	0
21989	9260	0.620176428	0
21990	9261	0.620040562	0
21991	9262	0.620040562	0
21992	9263	0.620040562	0
21993	9264	0.620040562	0
21994	9265	0.620040562	0
21995	9266	0.620040562	-1.268855764
21996	9267	0.61992899	0
21997	9268	0.61992899	0
21998	9269	0.61992899	0
21999	9270	0.619756617	0
22000	9271	0.619756617	0
22001	9272	0.619756617	0
22002	9273	0.619756617	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
21949	9220	0.621829625	0
21950	9221	0.621829625	0
21951	9222	0.621829625	-1.483775811
21952	9223	0.621547524	0
21953	9224	0.621547524	0
21954	9225	0.621547524	0
21955	9226	0.621448832	0
21956	9227	0.621448832	0
21957	9228	0.621448832	0
21958	9229	0.621243928	0
21959	9230	0.621243928	0
21960	9231	0.621243928	0
21961	9232	0.621243928	0
21962	9233	0.621243928	0
21963	9234	0.621243928	0
21964	9235	0.621243928	0
21965	9236	0.621243928	0
21966	9237	0.621243928	0
21967	9238	0.621028344	0
21968	9239	0.621028344	0
21969	9240	0.621028344	0
21970	9241	0.621028344	0
21971	9242	0.621028344	0
21972	9243	0.621028344	-1.316172662
21973	9244	0.620916282	0
21974	9245	0.620916282	0
21975	9246	0.620847614	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22138	9409	0.614576104	-0.839751318
22139	9410	0.614510546	0
22140	9411	0.614468526	0
22141	9412	0.614276488	0
22142	9413	0.614276488	0
22143	9414	0.614276488	0
22144	9415	0.614276488	0
22145	9416	0.614276488	0
22146	9417	0.614276488	0
22147	9418	0.614276488	0
22148	9419	0.614276488	-0.449936263
22149	9420	0.613964606	0
22150	9421	0.613964606	0
22151	9422	0.61383625	0
22152	9423	0.613722187	0
22153	9424	0.613528349	0
22154	9425	0.613528349	0
22155	9426	0.613528349	0
22156	9427	0.613528349	0
22157	9428	0.613528349	0
22158	9429	0.613528349	0
22159	9430	0.613528349	0
22160	9431	0.613528349	0
22161	9432	0.613528349	0
22162	9433	0.613528349	0
22163	9434	0.61330091	0
22164	9435	0.61330091	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22111	9382	0.616152493	-0.820446163
22112	9383	0.61572817	0
22113	9384	0.61572817	0
22114	9385	0.615665342	0
22115	9386	0.615580676	0
22116	9387	0.615580676	0
22117	9388	0.61546039	0
22118	9389	0.61546039	0
22119	9390	0.61546039	0
22120	9391	0.615276015	0
22121	9392	0.615276015	0
22122	9393	0.615276015	0
22123	9394	0.615141329	0
22124	9395	0.614957734	0
22125	9396	0.614957734	0
22126	9397	0.614957734	0
22127	9398	0.614957734	0
22128	9399	0.614793197	0
22129	9400	0.614793197	-1.506052205
22130	9401	0.614692678	0
22131	9402	0.614692678	0
22132	9403	0.614692678	0
22133	9404	0.614692678	0
22134	9405	0.614692678	0
22135	9406	0.614576104	0
22136	9407	0.614576104	0
22137	9408	0.614576104	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22084	9355	0.616679229	0
22085	9356	0.616606538	0
22086	9357	0.616606538	0
22087	9358	0.616606538	0
22088	9359	0.616551477	0
22089	9360	0.616152493	0
22090	9361	0.616152493	0
22091	9362	0.616152493	0
22092	9363	0.616152493	0
22093	9364	0.616152493	0
22094	9365	0.616152493	0
22095	9366	0.616152493	0
22096	9367	0.616152493	0
22097	9368	0.616152493	0
22098	9369	0.616152493	0
22099	9370	0.616152493	0
22100	9371	0.616152493	0
22101	9372	0.616152493	0
22102	9373	0.616152493	0
22103	9374	0.616152493	0
22104	9375	0.616152493	0
22105	9376	0.616152493	0
22106	9377	0.616152493	0
22107	9378	0.616152493	0
22108	9379	0.616152493	0
22109	9380	0.616152493	0
22110	9381	0.616152493	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22057	9328	0.618235444	-1.318965562
22058	9329	0.61815109	0
22059	9330	0.618036636	0
22060	9331	0.618036636	0
22061	9332	0.618036636	0
22062	9333	0.618036636	0
22063	9334	0.617872473	0
22064	9335	0.617872473	0
22065	9336	0.617872473	-1.402302768
22066	9337	0.617617231	0
22067	9338	0.617617231	0
22068	9339	0.617427955	0
22069	9340	0.617350547	0
22070	9341	0.617350547	0
22071	9342	0.617350547	0
22072	9343	0.617350547	0
22073	9344	0.617166016	0
22074	9345	0.617166016	0
22075	9346	0.617166016	0
22076	9347	0.616927327	0
22077	9348	0.616927327	0
22078	9349	0.616927327	0
22079	9350	0.616927327	0
22080	9351	0.616779633	0
22081	9352	0.616779633	0
22082	9353	0.616779633	-1.062857071
22083	9354	0.616679229	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22246	9517	0.610211299	0
22247	9518	0.610211299	0
22248	9519	0.610211299	0
22249	9520	0.610211299	0
22250	9521	0.610211299	0
22251	9522	0.610211299	0
22252	9523	0.610211299	-1.089628791
22253	9524	0.610053974	0
22254	9525	0.610053974	0
22255	9526	0.610053974	0
22256	9527	0.609962918	0
22257	9528	0.609962918	0
22258	9529	0.609962918	0
22259	9530	0.609962918	0
22260	9531	0.609962918	0
22261	9532	0.609962918	0
22262	9533	0.609962918	0
22263	9534	0.609962918	0
22264	9535	0.609861766	0
22265	9536	0.609621625	0
22266	9537	0.609621625	0
22267	9538	0.609621625	0
22268	9539	0.609621625	0
22269	9540	0.609621625	0
22270	9541	0.609398165	0
22271	9542	0.609313068	0
22272	9543	0.609313068	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22219	9490	0.611120055	0
22220	9491	0.611120055	0
22221	9492	0.611033048	0
22222	9493	0.611033048	0
22223	9494	0.611033048	0
22224	9495	0.610919966	0
22225	9496	0.610919966	0
22226	9497	0.610919966	-1.348557435
22227	9498	0.610767018	0
22228	9499	0.610767018	0
22229	9500	0.610767018	0
22230	9501	0.610767018	0
22231	9502	0.610767018	-0.164185956
22232	9503	0.610548615	0
22233	9504	0.610548615	0
22234	9505	0.610548615	0
22235	9506	0.610548615	0
22236	9507	0.610400164	0
22237	9508	0.610400164	0
22238	9509	0.610400164	0
22239	9510	0.610211299	0
22240	9511	0.610211299	0
22241	9512	0.610211299	0
22242	9513	0.610211299	0
22243	9514	0.610211299	0
22244	9515	0.610211299	0
22245	9516	0.610211299	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22192	9463	0.611787687	0
22193	9464	0.611787687	0
22194	9465	0.611787687	0
22195	9466	0.611787687	0
22196	9467	0.611787687	0
22197	9468	0.611787687	0
22198	9469	0.611787687	0
22199	9470	0.611787687	0
22200	9471	0.611787687	0
22201	9472	0.611787687	0
22202	9473	0.611787687	0
22203	9474	0.611787687	0
22204	9475	0.611787687	0
22205	9476	0.611787687	0
22206	9477	0.611787687	0
22207	9478	0.611787687	0
22208	9479	0.611787687	0
22209	9480	0.611787687	0
22210	9481	0.611787687	0
22211	9482	0.611787687	0
22212	9483	0.611787687	0
22213	9484	0.611787687	0
22214	9485	0.611189073	0
22215	9486	0.611189073	0
22216	9487	0.611189073	0
22217	9488	0.611120055	0
22218	9489	0.611120055	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22165	9436	0.613237754	0
22166	9437	0.613126038	0
22167	9438	0.613126038	0
22168	9439	0.613126038	0
22169	9440	0.613126038	0
22170	9441	0.613126038	0
22171	9442	0.613126038	0
22172	9443	0.613126038	0
22173	9444	0.612874783	0
22174	9445	0.612874783	0
22175	9446	0.612874783	0
22176	9447	0.612874783	0
22177	9448	0.612874783	0
22178	9449	0.612874783	0
22179	9450	0.612874783	-0.103564569
22180	9451	0.612702955	0
22181	9452	0.612702955	0
22182	9453	0.612702955	0
22183	9454	0.612702955	0
22184	9455	0.612702955	0
22185	9456	0.612578032	0
22186	9457	0.612578032	0
22187	9458	0.612578032	0
22188	9459	0.612408551	0
22189	9460	0.612408551	0
22190	9461	0.612348429	0
22191	9462	0.611787687	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22354	9625	0.606263994	0
22355	9626	0.606263994	0
22356	9627	0.606263994	0
22357	9628	0.606263994	-1.149093423
22358	9629	0.606203461	0
22359	9630	0.606203461	0
22360	9631	0.606035358	0
22361	9632	0.606035358	0
22362	9633	0.606035358	0
22363	9634	0.606035358	0
22364	9635	0.606035358	0
22365	9636	0.606035358	0
22366	9637	0.606035358	0
22367	9638	0.606035358	0
22368	9639	0.606035358	0
22369	9640	0.606035358	-0.228503306
22370	9641	0.605749732	0
22371	9642	0.605749732	0
22372	9643	0.605749732	0
22373	9644	0.605749732	0
22374	9645	0.605749732	0
22375	9646	0.605749732	-0.353727668
22376	9647	0.605516178	0
22377	9648	0.605516178	0
22378	9649	0.605516178	0
22379	9650	0.605321645	0
22380	9651	0.605157108	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22327	9598	0.607466313	0
22328	9599	0.607466313	0
22329	9600	0.607466313	0
22330	9601	0.607466313	0
22331	9602	0.607240059	0
22332	9603	0.607240059	0
22333	9604	0.607135674	-1.165255083
22334	9605	0.606852469	0
22335	9606	0.606852469	0
22336	9607	0.606852469	0
22337	9608	0.606852469	0
22338	9609	0.606852469	0
22339	9610	0.606852469	0
22340	9611	0.606852469	0
22341	9612	0.606852469	0
22342	9613	0.606852469	0
22343	9614	0.606852469	0
22344	9615	0.606852469	0
22345	9616	0.606852469	0
22346	9617	0.606852469	-0.197722971
22347	9618	0.606852469	-0.37381423
22348	9619	0.606653571	0
22349	9620	0.606532547	0
22350	9621	0.606392655	0
22351	9622	0.606392655	0
22352	9623	0.606392655	0
22353	9624	0.606392655	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22300	9571	0.608327155	0
22301	9572	0.608327155	0
22302	9573	0.608327155	0
22303	9574	0.608327155	0
22304	9575	0.608327155	0
22305	9576	0.608327155	0
22306	9577	0.608327155	0
22307	9578	0.608327155	0
22308	9579	0.608327155	0
22309	9580	0.608327155	0
22310	9581	0.608327155	0
22311	9582	0.608327155	0
22312	9583	0.608327155	0
22313	9584	0.608327155	-0.226211509
22314	9585	0.608327155	-1.226211509
22315	9586	0.607944348	0
22316	9587	0.607857394	-1.393012692
22317	9588	0.607719325	0
22318	9589	0.607719325	0
22319	9590	0.607719325	0
22320	9591	0.607719325	0
22321	9592	0.607719325	0
22322	9593	0.607466313	0
22323	9594	0.607466313	0
22324	9595	0.607466313	0
22325	9596	0.607466313	0
22326	9597	0.607466313	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22273	9544	0.609313068	0
22274	9545	0.609123295	0
22275	9546	0.609123295	0
22276	9547	0.609123295	0
22277	9548	0.609123295	0
22278	9549	0.609123295	0
22279	9550	0.609123295	0
22280	9551	0.609123295	0
22281	9552	0.609123295	-0.464297457
22282	9553	0.608901999	0
22283	9554	0.608901999	0
22284	9555	0.608901999	0
22285	9556	0.608901999	0
22286	9557	0.608901999	0
22287	9558	0.608901999	-1.304817911
22288	9559	0.608901999	-0.70275792
22289	9560	0.608776968	0
22290	9561	0.608776968	0
22291	9562	0.608776968	0
22292	9563	0.608776968	0
22293	9564	0.608776968	0
22294	9565	0.608776968	0
22295	9566	0.60869661	0
22296	9567	0.608327155	0
22297	9568	0.608327155	0
22298	9569	0.608327155	0
22299	9570	0.608327155	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22462	9733	0.602364208	0
22463	9734	0.602307486	0
22464	9735	0.602307486	0
22465	9736	0.602242369	0
22466	9737	0.602242369	0
22467	9738	0.602166846	0
22468	9739	0.602166846	0
22469	9740	0.602166846	0
22470	9741	0.602166846	-0.223771646
22471	9742	0.602078206	0
22472	9743	0.602078206	0
22473	9744	0.601972705	0
22474	9745	0.601972705	0
22475	9746	0.601972705	0
22476	9747	0.601972705	0
22477	9748	0.601972705	0
22478	9749	0.601972705	0
22479	9750	0.601972705	0
22480	9751	0.601972705	0
22481	9752	0.601972705	0
22482	9753	0.601972705	-0.264750642
22483	9754	0.601845028	0
22484	9755	0.601845028	0
22485	9756	0.601845028	0
22486	9757	0.601845028	0
22487	9758	0.601845028	0
22488	9759	0.601845028	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22435	9706	0.603187515	0
22436	9707	0.603187515	0
22437	9708	0.603187515	0
22438	9709	0.603187515	0
22439	9710	0.603187515	0
22440	9711	0.603187515	0
22441	9712	0.603187515	0
22442	9713	0.603187515	0
22443	9714	0.603187515	0
22444	9715	0.603187515	0
22445	9716	0.603187515	0
22446	9717	0.603187515	0
22447	9718	0.603187515	0
22448	9719	0.603187515	0
22449	9720	0.603187515	0
22450	9721	0.603187515	0
22451	9722	0.603187515	0
22452	9723	0.603187515	0
22453	9724	0.603187515	0
22454	9725	0.603187515	0
22455	9726	0.603187515	0
22456	9727	0.603187515	0
22457	9728	0.603187515	0
22458	9729	0.603187515	0
22459	9730	0.603187515	0
22460	9731	0.603187515	-0.771263233
22461	9732	0.602414061	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22408	9679	0.604405734	0
22409	9680	0.604405734	0
22410	9681	0.604405734	0
22411	9682	0.604405734	0
22412	9683	0.604299666	0
22413	9684	0.604299666	0
22414	9685	0.604210589	0
22415	9686	0.604210589	0
22416	9687	0.604134723	0
22417	9688	0.604069332	0
22418	9689	0.604069332	-1.516776071
22419	9690	0.604012386	0
22420	9691	0.60396235	0
22421	9692	0.603878517	0
22422	9693	0.603187515	0
22423	9694	0.603187515	0
22424	9695	0.603187515	0
22425	9696	0.603187515	0
22426	9697	0.603187515	0
22427	9698	0.603187515	0
22428	9699	0.603187515	0
22429	9700	0.603187515	0
22430	9701	0.603187515	0
22431	9702	0.603187515	0
22432	9703	0.603187515	0
22433	9704	0.603187515	0
22434	9705	0.603187515	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22381	9652	0.605157108	0
22382	9653	0.605157108	0
22383	9654	0.605157108	0
22384	9655	0.605016126	0
22385	9656	0.605016126	0
22386	9657	0.604893979	0
22387	9658	0.604893979	0
22388	9659	0.604893979	0
22389	9660	0.604893979	0
22390	9661	0.604893979	0
22391	9662	0.604781129	0
22392	9663	0.60469287	0
22393	9664	0.60469287	0
22394	9665	0.60469287	0
22395	9666	0.60469287	0
22396	9667	0.60469287	0
22397	9668	0.60469287	0
22398	9669	0.60469287	0
22399	9670	0.604534166	0
22400	9671	0.604534166	0
22401	9672	0.604534166	0
22402	9673	0.604534166	0
22403	9674	0.604534166	0
22404	9675	0.604534166	0
22405	9676	0.604534166	0
22406	9677	0.604534166	0
22407	9678	0.604534166	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22570	9841	0.598702507	0	0.598702507	0
22571	9842	0.598702507	0	0.598702507	0
22572	9843	0.598702507	0	0.598702507	0
22573	9844	0.598702507	0	0.598702507	0
22574	9845	0.598702507	0	0.598702507	0
22575	9846	0.598567318	0	0.598567318	0
22576	9847	0.598567318	0	0.598567318	0
22577	9848	0.598567318	0	0.598567318	0
22578	9849	0.598567318	0	0.598567318	0
22579	9850	0.598567318	0	0.598567318	0
22580	9851	0.598567318	0	0.598567318	0
22581	9852	0.598567318	-1.402302768	0.598567318	-1.402302768
22582	9853	0.598567318	-1.402302768	0.598567318	-1.402302768
22583	9854	0.59848222	0	0.59848222	0
22584	9855	0.59848222	0	0.59848222	0
22585	9856	0.598423726	-0.963113666	0.598423726	-0.963113666
22586	9857	0.598381045	0	0.598381045	0
22587	9858	0.59810799	0	0.59810799	0
22588	9859	0.59810799	0	0.59810799	0
22589	9860	0.59810799	0	0.59810799	0
22590	9861	0.59810799	0	0.59810799	0
22591	9862	0.59810799	0	0.59810799	0
22592	9863	0.59810799	0	0.59810799	0
22593	9864	0.59810799	0	0.59810799	0
22594	9865	0.59810799	0	0.59810799	0
22595	9866	0.59810799	-1.060339415	0.59810799	-1.060339415
22596	9867	0.59810799	-1.361369411	0.59810799	-1.361369411

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22543	9814	0.599553231	0	0.599553231	0
22544	9815	0.599553231	0	0.599553231	0
22545	9816	0.599553231	0	0.599553231	0
22546	9817	0.599553231	0	0.599553231	0
22547	9818	0.599553231	0	0.599553231	0
22548	9819	0.599553231	0	0.599553231	0
22549	9820	0.599553231	0	0.599553231	0
22550	9821	0.599553231	0	0.599553231	0
22551	9822	0.599553231	0	0.599553231	0
22552	9823	0.599333945	0	0.599333945	0
22553	9824	0.599172438	0	0.599172438	0
22554	9825	0.599172438	0	0.599172438	0
22555	9826	0.599172438	0	0.599172438	0
22556	9827	0.599172438	0	0.599172438	0
22557	9828	0.599172438	0	0.599172438	0
22558	9829	0.599172438	0	0.599172438	0
22559	9830	0.598950462	0	0.598950462	0
22560	9831	0.598950462	0	0.598950462	0
22561	9832	0.598950462	0	0.598950462	0
22562	9833	0.598950462	0	0.598950462	0
22563	9834	0.598950462	0	0.598950462	0
22564	9835	0.598950462	0	0.598950462	0
22565	9836	0.598950462	-0.837648193	0.598950462	-0.837648193
22566	9837	0.598805092	0	0.598805092	0
22567	9838	0.598702507	0	0.598702507	0
22568	9839	0.598702507	0	0.598702507	0
22569	9840	0.598702507	0	0.598702507	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22516	9787	0.600871273	0	0.600871273	0
22517	9788	0.600871273	0	0.600871273	0
22518	9789	0.600871273	0	0.600871273	0
22519	9790	0.600871273	-0.320817567	0.600871273	-0.320817567
22520	9791	0.600640326	0	0.600640326	0
22521	9792	0.600640326	0	0.600640326	0
22522	9793	0.600640326	0	0.600640326	0
22523	9794	0.600640326	0	0.600640326	0
22524	9795	0.600640326	0	0.600640326	0
22525	9796	0.600640326	-1.358837074	0.600640326	-1.358837074
22526	9797	0.600552758	-0.057894647	0.600552758	-0.057894647
22527	9798	0.600358225	0	0.600358225	0
22528	9799	0.600358225	0	0.600358225	0
22529	9800	0.600358225	0	0.600358225	0
22530	9801	0.600358225	0	0.600358225	0
22531	9802	0.600358225	0	0.600358225	0
22532	9803	0.600358225	-0.271968999	0.600358225	-0.271968999
22533	9804	0.600192369	-1.589733953	0.600192369	-1.589733953
22534	9805	0.600132676	-0.155224741	0.600132676	-0.155224741
22535	9806	0.600005857	0	0.600005857	0
22536	9807	0.600005857	0	0.600005857	0
22537	9808	0.600005857	0	0.600005857	0
22538	9809	0.600005857	0	0.600005857	0
22539	9810	0.600005857	0	0.600005857	0
22540	9811	0.599868051	0	0.599868051	0
22541	9812	0.599868051	0	0.599868051	0
22542	9813	0.599868051	0	0.599868051	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22489	9760	0.60168736	0	0.60168736	0
22490	9761	0.60168736	0	0.60168736	0
22491	9762	0.60168736	0	0.60168736	0
22492	9763	0.60168736	0	0.60168736	0
22493	9764	0.601487731	0	0.601487731	0
22494	9765	0.601487731	0	0.601487731	0
22495	9766	0.601487731	0	0.601487731	0
22496	9767	0.601487731	0	0.601487731	0
22497	9768	0.601487731	0	0.601487731	0
22498	9769	0.601487731	0	0.601487731	0
22499	9770	0.601487731	0	0.601487731	0
22500	9771	0.601366572	0	0.601366572	0
22501	9772	0.601366572	0	0.601366572	0
22502	9773	0.601366572	0	0.601366572	0
22503	9774	0.601226815	0	0.601226815	0
22504	9775	0.601226815	0	0.601226815	0
22505	9776	0.601226815	0	0.601226815	0
22506	9777	0.601226815	0	0.601226815	0
22507	9778	0.601226815	0	0.601226815	0
22508	9779	0.601226815	0	0.601226815	0
22509	9780	0.601226815	0	0.601226815	0
22510	9781	0.601226815	0	0.601226815	0
22511	9782	0.601226815	0	0.601226815	0
22512	9783	0.601226815	0	0.601226815	0
22513	9784	0.601063822	-1.437594825	0.601063822	-1.437594825
22514	9785	0.600871273	0	0.600871273	0
22515	9786	0.600871273	0	0.600871273	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22678	9949	0.594754348	0
22679	9950	0.594754348	0
22680	9951	0.594754348	0
22681	9952	0.594754348	0
22682	9953	0.594754348	0
22683	9954	0.594754348	0
22684	9955	0.594754348	0
22685	9956	0.594754348	0
22686	9957	0.594754348	0
22687	9958	0.594754348	0
22688	9959	0.594754348	0
22689	9960	0.594754348	0
22690	9961	0.594754348	0
22691	9962	0.594754348	0
22692	9963	0.594754348	0
22693	9964	0.594754348	0
22694	9965	0.594754348	0
22695	9966	0.594754348	0
22696	9967	0.594336958	0
22697	9968	0.594086716	0
22698	9969	0.593995755	0
22699	9970	0.593995755	0
22700	9971	0.593995755	0
22701	9972	0.593995755	0
22702	9973	0.593995755	0
22703	9974	0.593876098	0
22704	9975	0.593876098	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22651	9922	0.595590334	0
22652	9923	0.595590334	0
22653	9924	0.595590334	0
22654	9925	0.595481201	0
22655	9926	0.595481201	0
22656	9927	0.595481201	0
22657	9928	0.595397271	0
22658	9929	0.595397271	0
22659	9930	0.595397271	0
22660	9931	0.595330718	0
22661	9932	0.595330718	-1.525514685
22662	9933	0.594754348	0
22663	9934	0.594754348	0
22664	9935	0.594754348	0
22665	9936	0.594754348	0
22666	9937	0.594754348	0
22667	9938	0.594754348	0
22668	9939	0.594754348	0
22669	9940	0.594754348	0
22670	9941	0.594754348	0
22671	9942	0.594754348	0
22672	9943	0.594754348	0
22673	9944	0.594754348	0
22674	9945	0.594754348	0
22675	9946	0.594754348	0
22676	9947	0.594754348	0
22677	9948	0.594754348	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22624	9895	0.596847337	0
22625	9896	0.596847337	0
22626	9897	0.596847337	0
22627	9898	0.596847337	0
22628	9899	0.596516194	0
22629	9900	0.596516194	0
22630	9901	0.596516194	0
22631	9902	0.596516194	0
22632	9903	0.596516194	0
22633	9904	0.596387036	0
22634	9905	0.596275521	0
22635	9906	0.596275521	-0.501504578
22636	9907	0.596275521	-0.70562456
22637	9908	0.596275521	-0.08237527
22638	9909	0.596275521	-1.103564569
22639	9910	0.596092699	0
22640	9911	0.595949106	0
22641	9912	0.595949106	0
22642	9913	0.595949106	0
22643	9914	0.595949106	0
22644	9915	0.595949106	-1.50965633
22645	9916	0.595738028	0
22646	9917	0.595738028	0
22647	9918	0.595738028	0
22648	9919	0.595738028	0
22649	9920	0.595590334	0
22650	9921	0.595590334	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22597	9868	0.59774743	0
22598	9869	0.59774743	-1.507858006
22599	9870	0.597547248	0
22600	9871	0.597547248	0
22601	9872	0.597547248	0
22602	9873	0.597547248	0
22603	9874	0.597547248	-1.015142666
22604	9875	0.597547248	-1.617202658
22605	9876	0.597331771	0
22606	9877	0.597331771	0
22607	9878	0.597331771	0
22608	9879	0.597331771	0
22609	9880	0.597331771	0
22610	9881	0.597331771	-0.572998995
22611	9882	0.597147161	0
22612	9883	0.597147161	0
22613	9884	0.597147161	0
22614	9885	0.597147161	0
22615	9886	0.597147161	-0.304338292
22616	9887	0.59706443	0
22617	9888	0.596847337	0
22618	9889	0.596847337	0
22619	9890	0.596847337	0
22620	9891	0.596847337	0
22621	9892	0.596847337	0
22622	9893	0.596847337	0
22623	9894	0.596847337	0



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
22786	10057	0.590998844		0
22787	10058	0.590998844		0
22788	10059	0.590953059	-1.61156239	0
22789	10060	0.590598388		0
22790	10061	0.590598388		0
22791	10062	0.590598388		0
22792	10063	0.590598388		0
22793	10064	0.590598388		0
22794	10065	0.590598388		0
22795	10066	0.590598388		0
22796	10067	0.590598388		0
22797	10068	0.590598388		0
22798	10069	0.590598388		0
22799	10070	0.590598388		0
22800	10071	0.590598388		0
22801	10072	0.590598388		0
22802	10073	0.590598388		0
22803	10074	0.590598388		0
22804	10075	0.590598388		0
22805	10076	0.590598388		0
22806	10077	0.590598388	-0.125840964	0
22807	10078	0.590598388	-0.544970271	0
22808	10079	0.590222538		0
22809	10080	0.590222538		0
22810	10081	0.590102335		0
22811	10082	0.590102335		0
22812	10083	0.590102335		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
22759	10030	0.591979294		0
22760	10031	0.591979294		0
22761	10032	0.591883918		0
22762	10033	0.591727893		0
22763	10034	0.591727893		0
22764	10035	0.591727893		0
22765	10036	0.591727893		0
22766	10037	0.591727893		0
22767	10038	0.591727893		0
22768	10039	0.591727893		0
22769	10040	0.591727893		0
22770	10041	0.591553932		0
22771	10042	0.591553932		0
22772	10043	0.591426405		0
22773	10044	0.591426405		0
22774	10045	0.591426405		0
22775	10046	0.591426405		0
22776	10047	0.591426405		0
22777	10048	0.591426405	-0.942082264	0
22778	10049	0.591251954		0
22779	10050	0.591251954		0
22780	10051	0.59113822		0
22781	10052	0.59113822		0
22782	10053	0.59113822		0
22783	10054	0.59113822		0
22784	10055	0.59113822		0
22785	10056	0.59113822		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
22732	10003	0.592671397		0
22733	10004	0.592671397	-0.843927258	0
22734	10005	0.592604371		0
22735	10006	0.592374646		0
22736	10007	0.592374646		0
22737	10008	0.592374646		0
22738	10009	0.592374646		0
22739	10010	0.592374646		0
22740	10011	0.592374646		0
22741	10012	0.592374646		0
22742	10013	0.592374646		0
22743	10014	0.592374646		0
22744	10015	0.592374646		0
22745	10016	0.592374646		0
22746	10017	0.592374646		0
22747	10018	0.592374646		0
22748	10019	0.592374646	-1.212200794	0
22749	10020	0.592374646	-1.212200794	0
22750	10021	0.592089956		0
22751	10022	0.592089956		0
22752	10023	0.591979294		0
22753	10024	0.591979294		0
22754	10025	0.591979294		0
22755	10026	0.591979294		0
22756	10027	0.591979294		0
22757	10028	0.591979294		0
22758	10029	0.591979294		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
22705	9976	0.593876098		0
22706	9977	0.593876098	-0.229381556	0
22707	9978	0.593711624		0
22708	9979	0.593711624		0
22709	9980	0.593711624		0
22710	9981	0.593711624		0
22711	9982	0.593711624		0
22712	9983	0.593711624		0
22713	9984	0.593711624		0
22714	9985	0.59347135		0
22715	9986	0.59347135		0
22716	9987	0.59347135		0
22717	9988	0.59347135		0
22718	9989	0.59347135		0
22719	9990	0.59347135		0
22720	9991	0.593304281		0
22721	9992	0.593304281		0
22722	9993	0.593304281		0
22723	9994	0.593087189		0
22724	9995	0.593087189		0
22725	9996	0.592793647		0
22726	9997	0.592793647		0
22727	9998	0.592793647		0
22728	9999	0.592793647		0
22729	10000	0.592793647		0
22730	10001	0.592671397		0
22731	10002	0.592671397		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22813	10084	0.590007913	0
22814	10085	0.590007913	0
22815	10086	0.590007913	0
22816	10087	0.590007913	0
22817	10088	0.590007913	0
22818	10089	0.590007913	0
22819	10090	0.590007913	0
22820	10091	0.589869094	0
22821	10092	0.589869094	0
22822	10093	0.589869094	0
22823	10094	0.589869094	0
22824	10095	0.589869094	0
22825	10096	0.589869094	0
22826	10097	0.589869094	0
22827	10098	0.589771947	0
22828	10099	0.589771947	0
22829	10100	0.589644942	0
22830	10101	0.589644942	0
22831	10102	0.589644942	0
22832	10103	0.589644942	0
22833	10104	0.589644942	0
22834	10105	0.589644942	0
22835	10106	0.589471813	0
22836	10107	0.589221859	0
22837	10108	0.589221859	0
22838	10109	0.589221859	0
22839	10110	0.589221859	0
22840	10111	0.589221859	0
22841	10112	0.589221859	0
22842	10113	0.589221859	0
22843	10114	0.589221859	0
22844	10115	0.589221859	0
22845	10116	0.589221859	0
22846	10117	0.589221859	0
22847	10118	0.589221859	-1.324498051
22848	10119	0.589221859	-1.324498051
22849	10120	0.5890501	0
22850	10121	0.588982908	0
22851	10122	0.588982908	0
22852	10123	0.588982908	0
22853	10124	0.588982908	0
22854	10125	0.588829365	0
22855	10126	0.588829365	0
22856	10127	0.588829365	0
22857	10128	0.588829365	0
22858	10129	0.588829365	0
22859	10130	0.588829365	0
22860	10131	0.588643571	0
22861	10132	0.588643571	0
22862	10133	0.588643571	0
22863	10134	0.588643571	0
22864	10135	0.588643571	0
22865	10136	0.588643571	0
22866	10137	0.588643571	-1.348557435
22867	10138	0.588535228	0
22868	10139	0.588535228	0
22869	10140	0.588535228	0
22870	10141	0.588535228	-1.149093423
22871	10142	0.588123769	0
22872	10143	0.588123769	0
22873	10144	0.588123769	0
22874	10145	0.588123769	0
22875	10146	0.588123769	0
22876	10147	0.588123769	0
22877	10148	0.588123769	0
22878	10149	0.588123769	0
22879	10150	0.588123769	0
22880	10151	0.588123769	0
22881	10152	0.588123769	0
22882	10153	0.588123769	0
22883	10154	0.588123769	0
22884	10155	0.588123769	0
22885	10156	0.587654007	0
22886	10157	0.587654007	0
22887	10158	0.587654007	0
22888	10159	0.587654007	0
22889	10160	0.587654007	0
22890	10161	0.587654007	0
22891	10162	0.587654007	0
22892	10163	0.587507311	0
22893	10164	0.587507311	0
22894	10165	0.587507311	0
22895	10166	0.587507311	0
22896	10167	0.587507311	0
22897	10168	0.587507311	0
22898	10169	0.587507311	0
22899	10170	0.587507311	0
22900	10171	0.587393248	0
22901	10172	0.587393248	0
22902	10173	0.587393248	0
22903	10174	0.587227392	0
22904	10175	0.587227392	0
22905	10176	0.587227392	0
22906	10177	0.587227392	0
22907	10178	0.587227392	0
22908	10179	0.587227392	0
22909	10180	0.587227392	0
22910	10181	0.587227392	0
22911	10182	0.587227392	0
22912	10183	0.587227392	0
22913	10184	0.587227392	0
22914	10185	0.587227392	0
22915	10186	0.587227392	0
22916	10187	0.587227392	0
22917	10188	0.587227392	0
22918	10189	0.587227392	-0.158370188
22919	10190	0.587067519	0
22920	10191	0.586964103	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23002	10273	0.584078415	0
23003	10274	0.584078415	-1.304817911
23004	10275	0.583967809	0
23005	10276	0.583967809	0
23006	10277	0.583967809	0
23007	10278	0.583967809	0
23008	10279	0.583758964	0
23009	10280	0.583758964	0
23010	10281	0.583758964	0
23011	10282	0.583758964	0
23012	10283	0.583758964	0
23013	10284	0.583758964	0
23014	10285	0.583758964	0
23015	10286	0.583758964	0
23016	10287	0.583758964	0
23017	10288	0.583758964	0
23018	10289	0.583758964	0
23019	10290	0.583758964	0
23020	10291	0.583758964	-0.727900955
23021	10292	0.583565125	0
23022	10293	0.583473337	0
23023	10294	0.583473337	0
23024	10295	0.583473337	0
23025	10296	0.583473337	0
23026	10297	0.583384733	-1.53746067
23027	10298	0.583216434	0
23028	10299	0.583216434	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22975	10246	0.585312792	0
22976	10247	0.584994511	0
22977	10248	0.584994511	0
22978	10249	0.584994511	0
22979	10250	0.584994511	0
22980	10251	0.584846059	0
22981	10252	0.584846059	0
22982	10253	0.584846059	0
22983	10254	0.584846059	0
22984	10255	0.584846059	0
22985	10256	0.584846059	0
22986	10257	0.584846059	-1.249692605
22987	10258	0.58470411	0
22988	10259	0.58470411	0
22989	10260	0.58470411	0
22990	10261	0.58470411	0
22991	10262	0.58470411	-0.736501127
22992	10263	0.584438079	0
22993	10264	0.584438079	0
22994	10265	0.584438079	0
22995	10266	0.584438079	0
22996	10267	0.584438079	0
22997	10268	0.584078415	0
22998	10269	0.584078415	0
22999	10270	0.584078415	0
23000	10271	0.584078415	0
23001	10272	0.584078415	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22948	10219	0.586154176	0
22949	10220	0.58605076	0
22950	10221	0.58605076	-0.874028991
22951	10222	0.585851953	0
22952	10223	0.585851953	0
22953	10224	0.585851953	0
22954	10225	0.585851953	0
22955	10226	0.585851953	0
22956	10227	0.585851953	0
22957	10228	0.585851953	-0.145146119
22958	10229	0.585851953	-1.186538804
22959	10230	0.58573753	0
22960	10231	0.58566317	0
22961	10232	0.58566317	0
22962	10233	0.585572304	0
22963	10234	0.585312792	0
22964	10235	0.585312792	0
22965	10236	0.585312792	0
22966	10237	0.585312792	0
22967	10238	0.585312792	0
22968	10239	0.585312792	0
22969	10240	0.585312792	0
22970	10241	0.585312792	0
22971	10242	0.585312792	0
22972	10243	0.585312792	0
22973	10244	0.585312792	0
22974	10245	0.585312792	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
22921	10192	0.586964103	0
22922	10193	0.586964103	0
22923	10194	0.586964103	-1.301932223
22924	10195	0.586838239	0
22925	10196	0.586838239	0
22926	10197	0.586838239	0
22927	10198	0.586838239	0
22928	10199	0.586764474	0
22929	10200	0.586764474	0
22930	10201	0.586481822	0
22931	10202	0.586481822	0
22932	10203	0.586481822	0
22933	10204	0.586481822	0
22934	10205	0.586481822	0
22935	10206	0.586481822	0
22936	10207	0.586481822	0
22937	10208	0.586481822	0
22938	10209	0.586481822	0
22939	10210	0.586481822	0
22940	10211	0.586481822	0
22941	10212	0.586481822	0
22942	10213	0.586481822	-1.151146829
22943	10214	0.586481822	-1.151146829
22944	10215	0.586481822	-1.327238088
22945	10216	0.586154176	0
22946	10217	0.586154176	0
22947	10218	0.586154176	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23110	10381	0.578363932	0
23111	10382	0.578363932	0
23112	10383	0.578363932	0
23113	10384	0.578363932	0
23114	10385	0.578363932	0
23115	10386	0.578363932	0
23116	10387	0.578363932	0
23117	10388	0.578363932	0
23118	10389	0.578363932	0
23119	10390	0.578363932	0
23120	10391	0.578363932	0
23121	10392	0.578363932	0
23122	10393	0.578363932	0
23123	10394	0.578363932	0
23124	10395	0.578363932	0
23125	10396	0.578363932	0
23126	10397	0.578363932	0
23127	10398	0.578363932	0
23128	10399	0.578363932	0
23129	10400	0.578363932	0
23130	10401	0.578363932	0
23131	10402	0.578363932	0
23132	10403	0.578363932	0
23133	10404	0.578363932	0
23134	10405	0.578363932	0
23135	10406	0.578363932	0
23136	10407	0.578363932	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23083	10354	0.580783406	0
23084	10355	0.580783406	0
23085	10356	0.580783406	0
23086	10357	0.580783406	0
23087	10358	0.580783406	0
23088	10359	0.580783406	0
23089	10360	0.580667887	0
23090	10361	0.580562896	-1.42030719
23091	10362	0.580467057	0
23092	10363	0.580467057	0
23093	10364	0.580298431	0
23094	10365	0.580298431	0
23095	10366	0.580298431	0
23096	10367	0.580298431	0
23097	10368	0.580223868	0
23098	10369	0.580154839	0
23099	10370	0.580090751	0
23100	10371	0.580031091	0
23101	10372	0.579975416	0
23102	10373	0.579975416	0
23103	10374	0.579923339	0
23104	10375	0.579923339	-1.268855764
23105	10376	0.578363932	0
23106	10377	0.578363932	0
23107	10378	0.578363932	0
23108	10379	0.578363932	0
23109	10380	0.578363932	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23056	10327	0.581953163	0
23057	10328	0.581953163	0
23058	10329	0.581953163	0
23059	10330	0.581824464	0
23060	10331	0.581824464	0
23061	10332	0.581824464	0
23062	10333	0.581824464	0
23063	10334	0.581824464	-1.523780972
23064	10335	0.581592902	0
23065	10336	0.581592902	0
23066	10337	0.581592902	0
23067	10338	0.581592902	0
23068	10339	0.581488366	0
23069	10340	0.581488366	-0.225898052
23070	10341	0.581390386	0
23071	10342	0.581390386	0
23072	10343	0.581390386	0
23073	10344	0.581390386	0
23074	10345	0.581390386	0
23075	10346	0.581211775	0
23076	10347	0.581211775	0
23077	10348	0.581211775	0
23078	10349	0.58105307	0
23079	10350	0.58105307	0
23080	10351	0.58105307	0
23081	10352	0.580911121	0
23082	10353	0.580911121	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23029	10300	0.583216434	0
23030	10301	0.583216434	0
23031	10302	0.583216434	0
23032	10303	0.582984129	0
23033	10304	0.582984129	0
23034	10305	0.582984129	0
23035	10306	0.582984129	0
23036	10307	0.582984129	0
23037	10308	0.582773051	0
23038	10309	0.582773051	0
23039	10310	0.582773051	0
23040	10311	0.582773051	0
23041	10312	0.582773051	0
23042	10313	0.582773051	0
23043	10314	0.582580416	0
23044	10315	0.582580416	0
23045	10316	0.582580416	0
23046	10317	0.582403909	0
23047	10318	0.582403909	0
23048	10319	0.582403909	0
23049	10320	0.582403909	0
23050	10321	0.582403909	-1.155224741
23051	10322	0.582241587	0
23052	10323	0.582091804	0
23053	10324	0.582091804	0
23054	10325	0.582091804	0
23055	10326	0.582091804	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23218	10489	0.575449193	0
23219	10490	0.575358422	0
23220	10491	0.575358422	0
23221	10492	0.575358422	0
23222	10493	0.575358422	-0.083088983
23223	10494	0.575158792	0
23224	10495	0.575158792	0
23225	10496	0.575158792	0
23226	10497	0.575158792	0
23227	10498	0.575158792	0
23228	10499	0.575048691	0
23229	10500	0.574930756	0
23230	10501	0.574930756	0
23231	10502	0.574930756	0
23232	10503	0.574930756	0
23233	10504	0.574930756	0
23234	10505	0.574930756	0
23235	10506	0.574930756	0
23236	10507	0.574804121	0
23237	10508	0.574804121	0
23238	10509	0.574667786	0
23239	10510	0.574667786	0
23240	10511	0.574667786	0
23241	10512	0.574667786	0
23242	10513	0.574667786	0
23243	10514	0.574520593	0
23244	10515	0.574520593	-0.335738785

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23191	10462	0.576438011	0
23192	10463	0.576270942	0
23193	10464	0.576270942	0
23194	10465	0.576176046	0
23195	10466	0.576176046	0
23196	10467	0.576176046	0
23197	10468	0.576176046	0
23198	10469	0.576176046	0
23199	10470	0.576072135	0
23200	10471	0.576072135	0
23201	10472	0.576072135	-1.103564569
23202	10473	0.575957862	0
23203	10474	0.575957862	0
23204	10475	0.575957862	0
23205	10476	0.575957862	0
23206	10477	0.575957862	-1.383519539
23207	10478	0.575831595	0
23208	10479	0.575831595	0
23209	10480	0.575831595	-1.361369411
23210	10481	0.575691342	0
23211	10482	0.575691342	0
23212	10483	0.575691342	0
23213	10484	0.575691342	0
23214	10485	0.575691342	0
23215	10486	0.575534642	0
23216	10487	0.575534642	0
23217	10488	0.575534642	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23164	10435	0.578363932	0
23165	10436	0.578363932	0
23166	10437	0.578363932	0
23167	10438	0.578363932	0
23168	10439	0.578363932	0
23169	10440	0.578363932	0
23170	10441	0.578363932	0
23171	10442	0.578363932	0
23172	10443	0.578363932	0
23173	10444	0.578363932	0
23174	10445	0.578363932	0
23175	10446	0.578363932	0
23176	10447	0.578363932	0
23177	10448	0.578363932	0
23178	10449	0.578363932	-0.314166679
23179	10450	0.578363932	-0.343324908
23180	10451	0.578363932	-0.858234723
23181	10452	0.578363932	-0.955144736
23182	10453	0.578363932	-1.034325983
23183	10454	0.578363932	-1.478023482
23184	10455	0.578363932	-0.495056821
23185	10456	0.578363932	-1.460294715
23186	10457	0.576703148	0
23187	10458	0.576580379	0
23188	10459	0.576511927	0
23189	10460	0.576438011	0
23190	10461	0.576438011	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23137	10408	0.578363932	0
23138	10409	0.578363932	0
23139	10410	0.578363932	0
23140	10411	0.578363932	0
23141	10412	0.578363932	0
23142	10413	0.578363932	0
23143	10414	0.578363932	0
23144	10415	0.578363932	0
23145	10416	0.578363932	0
23146	10417	0.578363932	0
23147	10418	0.578363932	0
23148	10419	0.578363932	0
23149	10420	0.578363932	0
23150	10421	0.578363932	0
23151	10422	0.578363932	0
23152	10423	0.578363932	0
23153	10424	0.578363932	0
23154	10425	0.578363932	0
23155	10426	0.578363932	0
23156	10427	0.578363932	0
23157	10428	0.578363932	0
23158	10429	0.578363932	0
23159	10430	0.578363932	0
23160	10431	0.578363932	0
23161	10432	0.578363932	0
23162	10433	0.578363932	0
23163	10434	0.578363932	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23326	10597	0.571977133	0
23327	10598	0.571891465	0
23328	10599	0.571833065	0
23329	10600	0.571833065	0
23330	10601	0.571833065	-1.429037021
23331	10602	0.571524507	0
23332	10603	0.571524507	0
23333	10604	0.571524507	0
23334	10605	0.571524507	0
23335	10606	0.571524507	0
23336	10607	0.571524507	0
23337	10608	0.571524507	0
23338	10609	0.571524507	0
23339	10610	0.571524507	0
23340	10611	0.571524507	0
23341	10612	0.571524507	0
23342	10613	0.571524507	0
23343	10614	0.571524507	0
23344	10615	0.571524507	0
23345	10616	0.571273252	0
23346	10617	0.571273252	0
23347	10618	0.571185347	0
23348	10619	0.571185347	0
23349	10620	0.571185347	0
23350	10621	0.571185347	0
23351	10622	0.571185347	0
23352	10623	0.571185347	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23299	10570	0.573035098	0
23300	10571	0.573035098	0
23301	10572	0.573035098	-0.671678031
23302	10573	0.573035098	-0.340684812
23303	10574	0.572723664	0
23304	10575	0.572723664	-0.236991416
23305	10576	0.572611603	0
23306	10577	0.572611603	0
23307	10578	0.572611603	0
23308	10579	0.572373568	0
23309	10580	0.572373568	0
23310	10581	0.572373568	0
23311	10582	0.572373568	0
23312	10583	0.572373568	0
23313	10584	0.572373568	0
23314	10585	0.572373568	0
23315	10586	0.572373568	0
23316	10587	0.572373568	0
23317	10588	0.572373568	0
23318	10589	0.572114982	0
23319	10590	0.571977133	0
23320	10591	0.571977133	0
23321	10592	0.571977133	0
23322	10593	0.571977133	0
23323	10594	0.571977133	0
23324	10595	0.571977133	0
23325	10596	0.571977133	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23272	10543	0.573792369	0
23273	10544	0.573792369	0
23274	10545	0.573792369	0
23275	10546	0.573792369	0
23276	10547	0.573565049	0
23277	10548	0.573565049	0
23278	10549	0.573565049	0
23279	10550	0.573565049	0
23280	10551	0.573565049	0
23281	10552	0.573565049	0
23282	10553	0.573565049	0
23283	10554	0.573565049	0
23284	10555	0.573565049	0
23285	10556	0.573565049	0
23286	10557	0.573565049	0
23287	10558	0.573565049	0
23288	10559	0.573565049	-1.084882356
23289	10560	0.573400512	0
23290	10561	0.573400512	0
23291	10562	0.573313939	0
23292	10563	0.573313939	-1.363887067
23293	10564	0.573224292	0
23294	10565	0.573035098	0
23295	10566	0.573035098	0
23296	10567	0.573035098	0
23297	10568	0.573035098	0
23298	10569	0.573035098	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23245	10516	0.574361189	0
23246	10517	0.574361189	0
23247	10518	0.574361189	0
23248	10519	0.574361189	0
23249	10520	0.574361189	0
23250	10521	0.574361189	0
23251	10522	0.574361189	0
23252	10523	0.574361189	0
23253	10524	0.574361189	0
23254	10525	0.574361189	0
23255	10526	0.574361189	0
23256	10527	0.574361189	0
23257	10528	0.574361189	0
23258	10529	0.574361189	0
23259	10530	0.574361189	0
23260	10531	0.574247365	0
23261	10532	0.574187991	0
23262	10533	0.574187991	0
23263	10534	0.573999126	0
23264	10535	0.573999126	0
23265	10536	0.573999126	0
23266	10537	0.573999126	0
23267	10538	0.573999126	0
23268	10539	0.573999126	0
23269	10540	0.573999126	0
23270	10541	0.573999126	0
23271	10542	0.573999126	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23434	10705	0.568818614	0	0.568818614	0
23435	10706	0.568818614	0	0.568818614	0
23436	10707	0.568818614	0	0.568818614	0
23437	10708	0.568493178	0	0.568493178	0
23438	10709	0.568425409	0	0.568425409	0
23439	10710	0.568425409	0	0.568425409	0
23440	10711	0.568321993	0	0.568321993	0
23441	10712	0.568321993	0	0.568321993	0
23442	10713	0.568321993	0	0.568321993	0
23443	10714	0.568321993	0	0.568321993	0
23444	10715	0.568246797	0	0.568246797	0
23445	10716	0.568246797	0	0.568246797	0
23446	10717	0.568144767	0	0.568144767	0
23447	10718	0.568144767	0	0.568144767	0
23448	10719	0.568144767	0	0.568144767	0
23449	10720	0.568144767	0	0.568144767	0
23450	10721	0.568144767	0	0.568144767	0
23451	10722	0.568144767	0	0.568144767	0
23452	10723	0.568144767	-0.810461942	0.568144767	0
23453	10724	0.567998416	0	0.567998416	0
23454	10725	0.567998416	0	0.567998416	0
23455	10726	0.567770858	0	0.567770858	0
23456	10727	0.567770858	0	0.567770858	0
23457	10728	0.567770858	0	0.567770858	0
23458	10729	0.567770858	0	0.567770858	0
23459	10730	0.567770858	0	0.567770858	0
23460	10731	0.567770858	0	0.567770858	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23407	10678	0.569409089	0	0.569409089	0
23408	10679	0.569409089	0	0.569409089	0
23409	10680	0.569409089	0	0.569409089	0
23410	10681	0.569409089	0	0.569409089	0
23411	10682	0.569409089	0	0.569409089	0
23412	10683	0.569409089	0	0.569409089	0
23413	10684	0.569409089	0	0.569409089	0
23414	10685	0.569409089	-0.251765613	0.569409089	0
23415	10686	0.569409089	-0.816037044	0.569409089	0
23416	10687	0.569268427	0	0.569268427	0
23417	10688	0.569268427	0	0.569268427	0
23418	10689	0.569268427	0	0.569268427	0
23419	10690	0.569268427	-1.110368277	0.569268427	0
23420	10691	0.569181888	0	0.569181888	0
23421	10692	0.568818614	0	0.568818614	0
23422	10693	0.568818614	0	0.568818614	0
23423	10694	0.568818614	0	0.568818614	0
23424	10695	0.568818614	0	0.568818614	0
23425	10696	0.568818614	0	0.568818614	0
23426	10697	0.568818614	0	0.568818614	0
23427	10698	0.568818614	0	0.568818614	0
23428	10699	0.568818614	0	0.568818614	0
23429	10700	0.568818614	0	0.568818614	0
23430	10701	0.568818614	0	0.568818614	0
23431	10702	0.568818614	0	0.568818614	0
23432	10703	0.568818614	0	0.568818614	0
23433	10704	0.568818614	0	0.568818614	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23380	10651	0.570395002	0	0.570395002	0
23381	10652	0.570395002	-0.042294912	0.570395002	0
23382	10653	0.570051822	0	0.570051822	0
23383	10654	0.570051822	0	0.570051822	0
23384	10655	0.570051822	-1.450123419	0.570051822	0
23385	10656	0.569930764	0	0.569930764	0
23386	10657	0.569930764	0	0.569930764	0
23387	10658	0.569930764	0	0.569930764	0
23388	10659	0.569930764	0	0.569930764	0
23389	10660	0.569930764	0	0.569930764	0
23390	10661	0.569930764	0	0.569930764	0
23391	10662	0.569930764	0	0.569930764	0
23392	10663	0.569831349	0	0.569831349	0
23393	10664	0.569677752	0	0.569677752	0
23394	10665	0.569677752	0	0.569677752	0
23395	10666	0.569677752	0	0.569677752	0
23396	10667	0.569677752	0	0.569677752	0
23397	10668	0.569677752	0	0.569677752	0
23398	10669	0.569677752	0	0.569677752	0
23399	10670	0.569677752	0	0.569677752	0
23400	10671	0.569677752	0	0.569677752	0
23401	10672	0.569677752	0	0.569677752	0
23402	10673	0.569677752	0	0.569677752	0
23403	10674	0.569677752	0	0.569677752	0
23404	10675	0.569677752	-1.130162337	0.569677752	0
23405	10676	0.569518524	0	0.569518524	0
23406	10677	0.569409089	0	0.569409089	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23353	10624	0.571113438	0	0.571113438	0
23354	10625	0.571002832	0	0.571002832	0
23355	10626	0.571002832	0	0.571002832	0
23356	10627	0.571002832	0	0.571002832	0
23357	10628	0.571002832	0	0.571002832	0
23358	10629	0.571002832	0	0.571002832	0
23359	10630	0.570810794	0	0.570810794	0
23360	10631	0.570810794	0	0.570810794	0
23361	10632	0.570810794	0	0.570810794	0
23362	10633	0.570810794	0	0.570810794	0
23363	10634	0.570710967	0	0.570710967	0
23364	10635	0.570710967	0	0.570710967	0
23365	10636	0.570395002	0	0.570395002	0
23366	10637	0.570395002	0	0.570395002	0
23367	10638	0.570395002	0	0.570395002	0
23368	10639	0.570395002	0	0.570395002	0
23369	10640	0.570395002	0	0.570395002	0
23370	10641	0.570395002	0	0.570395002	0
23371	10642	0.570395002	0	0.570395002	0
23372	10643	0.570395002	0	0.570395002	0
23373	10644	0.570395002	0	0.570395002	0
23374	10645	0.570395002	0	0.570395002	0
23375	10646	0.570395002	0	0.570395002	0
23376	10647	0.570395002	0	0.570395002	0
23377	10648	0.570395002	0	0.570395002	0
23378	10649	0.570395002	0	0.570395002	0
23379	10650	0.570395002	0	0.570395002	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23542	10813	0.564123493	0
23543	10814	0.564123493	0
23544	10815	0.564123493	0
23545	10816	0.564123493	0
23546	10817	0.564123493	0
23547	10818	0.564123493	0
23548	10819	0.564123493	0
23549	10820	0.563982006	-1.612979339
23550	10821	0.563920504	0
23551	10822	0.563920504	0
23552	10823	0.563920504	0
23553	10824	0.563920504	0
23554	10825	0.563764423	0
23555	10826	0.563764423	0
23556	10827	0.563764423	0
23557	10828	0.563764423	0
23558	10829	0.563764423	0
23559	10830	0.563764423	0
23560	10831	0.563764423	-0.731505079
23561	10832	0.563540155	0
23562	10833	0.563540155	0
23563	10834	0.563540155	0
23564	10835	0.563540155	0
23565	10836	0.563540155	0
23566	10837	0.563540155	0
23567	10838	0.563540155	0
23568	10839	0.563540155	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23515	10786	0.5656829	0
23516	10787	0.5656829	0
23517	10788	0.565562747	0
23518	10789	0.565562747	0
23519	10790	0.565514045	0
23520	10791	0.565398955	0
23521	10792	0.565398955	0
23522	10793	0.565398955	0
23523	10794	0.565398955	0
23524	10795	0.565398955	0
23525	10796	0.564791124	0
23526	10797	0.564791124	0
23527	10798	0.564791124	0
23528	10799	0.564791124	0
23529	10800	0.564791124	0
23530	10801	0.564791124	0
23531	10802	0.564791124	0
23532	10803	0.564791124	0
23533	10804	0.564791124	0
23534	10805	0.564791124	-1.415875575
23535	10806	0.56451282	0
23536	10807	0.564398276	0
23537	10808	0.564398276	0
23538	10809	0.564398276	0
23539	10810	0.564398276	-1.324498051
23540	10811	0.564123493	0
23541	10812	0.564123493	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23488	10759	0.566464708	0
23489	10760	0.566464708	0
23490	10761	0.566464708	0
23491	10762	0.566464708	0
23492	10763	0.566464708	0
23493	10764	0.566464708	0
23494	10765	0.566464708	0
23495	10766	0.566464708	0
23496	10767	0.566464708	0
23497	10768	0.566464708	0
23498	10769	0.566464708	0
23499	10770	0.566464708	0
23500	10771	0.566464708	0
23501	10772	0.566464708	0
23502	10773	0.566464708	-0.393012692
23503	10774	0.565954674	0
23504	10775	0.565847374	0
23505	10776	0.565847374	0
23506	10777	0.565847374	0
23507	10778	0.565847374	0
23508	10779	0.565847374	0
23509	10780	0.565847374	0
23510	10781	0.565847374	0
23511	10782	0.565847374	-1.371353631
23512	10783	0.5656829	0
23513	10784	0.5656829	0
23514	10785	0.5656829	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23461	10732	0.567770858	0
23462	10733	0.567770858	0
23463	10734	0.567770858	0
23464	10735	0.567770858	0
23465	10736	0.567770858	0
23466	10737	0.567770858	0
23467	10738	0.567770858	-1.522040311
23468	10739	0.567533084	0
23469	10740	0.567368547	0
23470	10741	0.567368547	0
23471	10742	0.567368547	0
23472	10743	0.567368547	-1.20502221
23473	10744	0.56715571	0
23474	10745	0.56715571	0
23475	10746	0.56715571	0
23476	10747	0.56715571	0
23477	10748	0.56715571	-1.02071062
23478	10749	0.567024006	0
23479	10750	0.56693447	0
23480	10751	0.56693447	0
23481	10752	0.56693447	0
23482	10753	0.566464708	0
23483	10754	0.566464708	0
23484	10755	0.566464708	0
23485	10756	0.566464708	0
23486	10757	0.566464708	0
23487	10758	0.566464708	0



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23650	10921	0.56094004	-1.376260966
23651	10922	0.56094004	-1.376260966
23652	10923	0.56094004	-1.376260966
23653	10924	0.560849684	0
23654	10925	0.560800642	0
23655	10926	0.560635165	0
23656	10927	0.560635165	0
23657	10928	0.560635165	0
23658	10929	0.560635165	0
23659	10930	0.560635165	0
23660	10931	0.560635165	0
23661	10932	0.560635165	0
23662	10933	0.560635165	0
23663	10934	0.560635165	0
23664	10935	0.560635165	-0.824810968
23665	10936	0.560635165	-1.301932223
23666	10937	0.56035951	0
23667	10938	0.56035951	0
23668	10939	0.56035951	0
23669	10940	0.56035951	0
23670	10941	0.56035951	0
23671	10942	0.56035951	0
23672	10943	0.560189963	0
23673	10944	0.560189963	0
23674	10945	0.560189963	0
23675	10946	0.560189963	0
23676	10947	0.560189963	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23623	10894	0.561463181	0
23624	10895	0.561463181	0
23625	10896	0.561463181	0
23626	10897	0.561463181	0
23627	10898	0.561463181	0
23628	10899	0.561463181	0
23629	10900	0.561463181	0
23630	10901	0.561463181	0
23631	10902	0.561463181	0
23632	10903	0.561463181	0
23633	10904	0.561463181	0
23634	10905	0.561463181	-0.243112259
23635	10906	0.561330592	0
23636	10907	0.561330592	0
23637	10908	0.561330592	0
23638	10909	0.561161902	0
23639	10910	0.561161902	0
23640	10911	0.561161902	0
23641	10912	0.561161902	0
23642	10913	0.561161902	0
23643	10914	0.561161902	0
23644	10915	0.561161902	-1.439708184
23645	10916	0.56094004	0
23646	10917	0.56094004	0
23647	10918	0.56094004	0
23648	10919	0.56094004	0
23649	10920	0.56094004	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23596	10867	0.562569664	0
23597	10868	0.562569664	0
23598	10869	0.562569664	0
23599	10870	0.562569664	0
23600	10871	0.562569664	0
23601	10872	0.562569664	0
23602	10873	0.562569664	0
23603	10874	0.562569664	0
23604	10875	0.562569664	0
23605	10876	0.562569664	0
23606	10877	0.562569664	-0.426870959
23607	10878	0.562569664	-0.874028991
23608	10879	0.562569664	-1.175058986
23609	10880	0.561895817	0
23610	10881	0.561895817	0
23611	10882	0.561895817	0
23612	10883	0.561895817	0
23613	10884	0.56179483	0
23614	10885	0.56179483	0
23615	10886	0.56179483	0
23616	10887	0.56179483	0
23617	10888	0.56179483	0
23618	10889	0.561658238	0
23619	10890	0.561658238	0
23620	10891	0.561658238	0
23621	10892	0.561658238	0
23622	10893	0.561658238	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23569	10840	0.563386776	0
23570	10841	0.563386776	0
23571	10842	0.563386776	0
23572	10843	0.563386776	0
23573	10844	0.563386776	0
23574	10845	0.563386776	0
23575	10846	0.563386776	0
23576	10847	0.563386776	0
23577	10848	0.563386776	0
23578	10849	0.563190529	0
23579	10850	0.563123965	0
23580	10851	0.562569664	0
23581	10852	0.562569664	0
23582	10853	0.562569664	0
23583	10854	0.562569664	0
23584	10855	0.562569664	0
23585	10856	0.562569664	0
23586	10857	0.562569664	0
23587	10858	0.562569664	0
23588	10859	0.562569664	0
23589	10860	0.562569664	0
23590	10861	0.562569664	0
23591	10862	0.562569664	0
23592	10863	0.562569664	0
23593	10864	0.562569664	0
23594	10865	0.562569664	0
23595	10866	0.562569664	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23758	11029	0.557749476	-0.526666661
23759	11030	0.557634447	0
23760	11031	0.557430025	0
23761	11032	0.557430025	0
23762	11033	0.557430025	0
23763	11034	0.557430025	0
23764	11035	0.557430025	0
23765	11036	0.557430025	0
23766	11037	0.557430025	0
23767	11038	0.557430025	0
23768	11039	0.557430025	-0.3148972
23769	11040	0.557174633	0
23770	11041	0.557174633	0
23771	11042	0.557174633	0
23772	11043	0.557174633	0
23773	11044	0.557174633	0
23774	11045	0.557174633	0
23775	11046	0.557174633	0
23776	11047	0.556965787	0
23777	11048	0.556965787	0
23778	11049	0.556965787	0
23779	11050	0.556965787	0
23780	11051	0.556965787	0
23781	11052	0.556965787	-1.443904299
23782	11053	0.556791826	0
23783	11054	0.556791826	0
23784	11055	0.556644682	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23731	11002	0.558709244	0
23732	11003	0.558709244	-1.479949403
23733	11004	0.558507011	0
23734	11005	0.558507011	0
23735	11006	0.558507011	0
23736	11007	0.558507011	0
23737	11008	0.558507011	0
23738	11009	0.558507011	-1.077663999
23739	11010	0.558507011	-0.600542744
23740	11011	0.558413705	0
23741	11012	0.558160546	0
23742	11013	0.558160546	0
23743	11014	0.558160546	0
23744	11015	0.558160546	0
23745	11016	0.558160546	0
23746	11017	0.558160546	0
23747	11018	0.558160546	0
23748	11019	0.558160546	0
23749	11020	0.558160546	0
23750	11021	0.558160546	-0.468263644
23751	11022	0.558160546	-1.070323636
23752	11023	0.557874543	0
23753	11024	0.557874543	0
23754	11025	0.557749476	0
23755	11026	0.557749476	0
23756	11027	0.557749476	0
23757	11028	0.557749476	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23704	10975	0.559478588	0
23705	10976	0.559478588	0
23706	10977	0.559478588	0
23707	10978	0.559478588	0
23708	10979	0.559478588	0
23709	10980	0.559478588	-1.399998813
23710	10981	0.559136489	0
23711	10982	0.559058776	0
23712	10983	0.559058776	0
23713	10984	0.559058776	0
23714	10985	0.559058776	0
23715	10986	0.559058776	0
23716	10987	0.559058776	0
23717	10988	0.559058776	0
23718	10989	0.55893538	0
23719	10990	0.55893538	0
23720	10991	0.55893538	0
23721	10992	0.55893538	0
23722	10993	0.55893538	0
23723	10994	0.558841792	-1.562003611
23724	10995	0.558709244	0
23725	10996	0.558709244	0
23726	10997	0.558709244	0
23727	10998	0.558709244	0
23728	10999	0.558709244	0
23729	11000	0.558709244	0
23730	11001	0.558709244	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23677	10948	0.560189963	0
23678	10949	0.560189963	0
23679	10950	0.560189963	0
23680	10951	0.560189963	0
23681	10952	0.560189963	0
23682	10953	0.560189963	-1.212200794
23683	10954	0.559992242	0
23684	10955	0.559992242	0
23685	10956	0.559880526	0
23686	10957	0.559880526	0
23687	10958	0.559880526	0
23688	10959	0.559880526	0
23689	10960	0.559880526	0
23690	10961	0.559880526	0
23691	10962	0.559880526	-1.159264719
23692	10963	0.559758687	-1.617202658
23693	10964	0.559478588	0
23694	10965	0.559478588	0
23695	10966	0.559478588	0
23696	10967	0.559478588	0
23697	10968	0.559478588	0
23698	10969	0.559478588	0
23699	10970	0.559478588	0
23700	10971	0.559478588	0
23701	10972	0.559478588	0
23702	10973	0.559478588	0
23703	10974	0.559478588	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23866	11137	0.553681467	0
23867	11138	0.553681467	0
23868	11139	0.553681467	0
23869	11140	0.553681467	0
23870	11141	0.553681467	0
23871	11142	0.553681467	0
23872	11143	0.553681467	0
23873	11144	0.553681467	-0.021791703
23874	11145	0.553614822	0
23875	11146	0.553540348	0
23876	11147	0.553540348	0
23877	11148	0.553540348	0
23878	11149	0.553540348	0
23879	11150	0.553540348	0
23880	11151	0.553540348	0
23881	11152	0.553361663	0
23882	11153	0.553361663	0
23883	11154	0.553361663	0
23884	11155	0.553253211	0
23885	11156	0.553128108	0
23886	11157	0.553128108	0
23887	11158	0.553128108	0
23888	11159	0.553128108	0
23889	11160	0.553128108	0
23890	11161	0.5529822	0
23891	11162	0.5529822	0
23892	11163	0.5529822	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23839	11110	0.554882836	0
23840	11111	0.554882836	0
23841	11112	0.554882836	0
23842	11113	0.554882836	0
23843	11114	0.554882836	0
23844	11115	0.554882836	0
23845	11116	0.554882836	0
23846	11117	0.554882836	0
23847	11118	0.554882836	0
23848	11119	0.554882836	0
23849	11120	0.554882836	0
23850	11121	0.554882836	0
23851	11122	0.554882836	-0.667835999
23852	11123	0.554882836	-1.006654556
23853	11124	0.554882836	-1.307684552
23854	11125	0.554882836	-1.404594565
23855	11126	0.554190733	0
23856	11127	0.554037082	0
23857	11128	0.553969493	0
23858	11129	0.553969493	0
23859	11130	0.553890162	0
23860	11131	0.553890162	0
23861	11132	0.553890162	0
23862	11133	0.55379574	0
23863	11134	0.55379574	0
23864	11135	0.55379574	0
23865	11136	0.55379574	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23812	11083	0.555877784	0
23813	11084	0.55573024	0
23814	11085	0.554882836	0
23815	11086	0.554882836	0
23816	11087	0.554882836	0
23817	11088	0.554882836	0
23818	11089	0.554882836	0
23819	11090	0.554882836	0
23820	11091	0.554882836	0
23821	11092	0.554882836	0
23822	11093	0.554882836	0
23823	11094	0.554882836	0
23824	11095	0.554882836	0
23825	11096	0.554882836	0
23826	11097	0.554882836	0
23827	11098	0.554882836	0
23828	11099	0.554882836	0
23829	11100	0.554882836	0
23830	11101	0.554882836	0
23831	11102	0.554882836	0
23832	11103	0.554882836	0
23833	11104	0.554882836	0
23834	11105	0.554882836	0
23835	11106	0.554882836	0
23836	11107	0.554882836	0
23837	11108	0.554882836	0
23838	11109	0.554882836	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23785	11056	0.556644682	0
23786	11057	0.556644682	0
23787	11058	0.556644682	0
23788	11059	0.556644682	0
23789	11060	0.556644682	0
23790	11061	0.556644682	-1.039654816
23791	11062	0.556409356	0
23792	11063	0.556409356	0
23793	11064	0.556409356	-1.579159304
23794	11065	0.556229486	0
23795	11066	0.556229486	0
23796	11067	0.556229486	0
23797	11068	0.556229486	0
23798	11069	0.556229486	0
23799	11070	0.556229486	0
23800	11071	0.556229486	0
23801	11072	0.556087537	0
23802	11073	0.556087537	0
23803	11074	0.556087537	0
23804	11075	0.556087537	0
23805	11076	0.556087537	0
23806	11077	0.556087537	-0.779053477
23807	11078	0.555972659	0
23808	11079	0.555972659	0
23809	11080	0.555972659	0
23810	11081	0.555972659	0
23811	11082	0.555972659	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23974	11245	0.550335208	0
23975	11246	0.550335208	0
23976	11247	0.550335208	0
23977	11248	0.550335208	0
23978	11249	0.550335208	0
23979	11250	0.550335208	0
23980	11251	0.550335208	0
23981	11252	0.550335208	0
23982	11253	0.550335208	0
23983	11254	0.550335208	0
23984	11255	0.550335208	-0.2507797
23985	11256	0.549942003	0
23986	11257	0.549942003	0
23987	11258	0.549942003	0
23988	11259	0.549942003	0
23989	11260	0.549942003	0
23990	11261	0.549942003	0
23991	11262	0.549832843	0
23992	11263	0.549832843	0
23993	11264	0.549751871	0
23994	11265	0.54963978	0
23995	11266	0.54963978	0
23996	11267	0.54963978	0
23997	11268	0.54963978	0
23998	11269	0.54963978	0
23999	11270	0.54963978	0
24000	11271	0.54963978	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23947	11218	0.551089847	0
23948	11219	0.551089847	0
23949	11220	0.551089847	0
23950	11221	0.551089847	0
23951	11222	0.550959643	0
23952	11223	0.550867758	0
23953	11224	0.550867758	0
23954	11225	0.550867758	0
23955	11226	0.550867758	0
23956	11227	0.550867758	0
23957	11228	0.550867758	0
23958	11229	0.550867758	0
23959	11230	0.550867758	0
23960	11231	0.550867758	-0.296635883
23961	11232	0.550867758	-1.338028568
23962	11233	0.550746667	0
23963	11234	0.550746667	0
23964	11235	0.550746667	0
23965	11236	0.550746667	0
23966	11237	0.550746667	0
23967	11238	0.550746667	0
23968	11239	0.550335208	0
23969	11240	0.550335208	0
23970	11241	0.550335208	0
23971	11242	0.550335208	0
23972	11243	0.550335208	0
23973	11244	0.550335208	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23920	11191	0.551911596	0
23921	11192	0.551911596	0
23922	11193	0.551911596	-0.623165604
23923	11194	0.551629678	0
23924	11195	0.551629678	0
23925	11196	0.551629678	0
23926	11197	0.551629678	0
23927	11198	0.551629678	0
23928	11199	0.551629678	0
23929	11200	0.551629678	0
23930	11201	0.551629678	0
23931	11202	0.551629678	0
23932	11203	0.551629678	0
23933	11204	0.551629678	0
23934	11205	0.551629678	0
23935	11206	0.551629678	0
23936	11207	0.551380442	0
23937	11208	0.551380442	0
23938	11209	0.551380442	0
23939	11210	0.551288654	0
23940	11211	0.551288654	0
23941	11212	0.551288654	0
23942	11213	0.551288654	0
23943	11214	0.551288654	0
23944	11215	0.551288654	-0.431669842
23945	11216	0.551211686	0
23946	11217	0.551089847	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
23893	11164	0.5529822	0
23894	11165	0.552809827	0
23895	11166	0.552809827	0
23896	11167	0.552809827	0
23897	11168	0.552809827	0
23898	11169	0.552809827	0
23899	11170	0.552809827	0
23900	11171	0.552809827	-1.448060258
23901	11172	0.552676424	0
23902	11173	0.55260307	0
23903	11174	0.55260307	0
23904	11175	0.55260307	0
23905	11176	0.55260307	0
23906	11177	0.55260307	-0.707904327
23907	11178	0.552350499	0
23908	11179	0.552350499	0
23909	11180	0.552350499	0
23910	11181	0.552350499	0
23911	11182	0.552350499	0
23912	11183	0.552350499	0
23913	11184	0.552350499	-0.458279424
23914	11185	0.552148549	0
23915	11186	0.552034993	0
23916	11187	0.552034993	0
23917	11188	0.552034993	0
23918	11189	0.552034993	0
23919	11190	0.552034993	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24001	11272	0.54963978	0
24002	11273	0.54963978	-0.181358292
24003	11274	0.54963978	-1.222750977
24004	11275	0.549474366	0
24005	11276	0.549474366	0
24006	11277	0.549474366	0
24007	11278	0.549474366	0
24008	11279	0.549205703	0
24009	11280	0.549205703	0
24010	11281	0.549205703	0
24011	11282	0.549205703	0
24012	11283	0.549205703	0
24013	11284	0.549205703	0
24014	11285	0.549205703	0
24015	11286	0.549205703	0
24016	11287	0.549205703	0
24017	11288	0.549205703	-1.313361685
24018	11289	0.548908952	0
24019	11290	0.548829853	0
24020	11291	0.548693261	0
24021	11292	0.548693261	0
24022	11293	0.548693261	0
24023	11294	0.548693261	0
24024	11295	0.548693261	0
24025	11296	0.548693261	0
24026	11297	0.548693261	0
24027	11298	0.548529407	0
24028	11299	0.548529407	0
24029	11300	0.548529407	0
24030	11301	0.548400708	0
24031	11302	0.548400708	0
24032	11303	0.548400708	0
24033	11304	0.548400708	0
24034	11305	0.548400708	0
24035	11306	0.548400708	0
24036	11307	0.548400708	0
24037	11308	0.548296947	-0.601512152
24038	11309	0.548211514	0
24039	11310	0.548211514	0
24040	11311	0.548211514	0
24041	11312	0.548211514	0
24042	11313	0.548211514	0
24043	11314	0.548211514	0
24044	11315	0.548211514	0
24045	11316	0.548211514	-1.039654816
24046	11317	0.548079128	0
24047	11318	0.548079128	0
24048	11319	0.548079128	0
24049	11320	0.548079128	0
24050	11321	0.548079128	-1.411398273
24051	11322	0.548079128	-1.411398273
24052	11323	0.547981303	0
24053	11324	0.547906068	0
24054	11325	0.547906068	0
24055	11326	0.547846408	0
24056	11327	0.547329698	0
24057	11328	0.547329698	0
24058	11329	0.547329698	0
24059	11330	0.547329698	0
24060	11331	0.547329698	0
24061	11332	0.547329698	0
24062	11333	0.547329698	0
24063	11334	0.547329698	0
24064	11335	0.547329698	0
24065	11336	0.547329698	0
24066	11337	0.547329698	0
24067	11338	0.547329698	0
24068	11339	0.547329698	0
24069	11340	0.547329698	0
24070	11341	0.547329698	0
24071	11342	0.547329698	0
24072	11343	0.547329698	0
24073	11344	0.547329698	0
24074	11345	0.547329698	0
24075	11346	0.547329698	0
24076	11347	0.547329698	0
24077	11348	0.547329698	0
24078	11349	0.547329698	0
24079	11350	0.547329698	0
24080	11351	0.547329698	0
24081	11352	0.547329698	0
24082	11353	0.547329698	0
24083	11354	0.547329698	0
24084	11355	0.547329698	-0.889268957
24085	11356	0.546795182	0
24086	11357	0.546731084	0
24087	11358	0.546649519	0
24088	11359	0.546649519	0
24089	11360	0.546649519	0
24090	11361	0.546649519	0
24091	11362	0.546649519	0
24092	11363	0.546649519	-0.175466966
24093	11364	0.546542219	0
24094	11365	0.546542219	0
24095	11366	0.546542219	0
24096	11367	0.546542219	0
24097	11368	0.546542219	0
24098	11369	0.546542219	-0.135386282
24099	11370	0.546394726	0
24100	11371	0.546394726	0
24101	11372	0.546394726	0
24102	11373	0.546394726	0
24103	11374	0.546394726	0
24104	11375	0.546394726	0
24105	11376	0.546298119	-1.097426029
24106	11377	0.546179248	0
24107	11378	0.546179248	0
24108	11379	0.546179248	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24190	11461	0.543601825	0
24191	11462	0.543601825	0
24192	11463	0.543601825	0
24193	11464	0.543601825	0
24194	11465	0.543601825	0
24195	11466	0.543601825	0
24196	11467	0.543601825	0
24197	11468	0.543601825	0
24198	11469	0.543601825	0
24199	11470	0.543601825	0
24200	11471	0.543601825	0
24201	11472	0.543601825	0
24202	11473	0.543601825	0
24203	11474	0.543601825	-0.591966834
24204	11475	0.543601825	-1.495056821
24205	11476	0.543156623	0
24206	11477	0.543071875	0
24207	11478	0.543071875	0
24208	11479	0.543071875	0
24209	11480	0.543071875	0
24210	11481	0.542947274	0
24211	11482	0.542947274	0
24212	11483	0.542947274	0
24213	11484	0.542860075	0
24214	11485	0.542746072	0
24215	11486	0.542746072	0
24216	11487	0.542746072	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24163	11434	0.544344844	0
24164	11435	0.544344844	0
24165	11436	0.544344844	0
24166	11437	0.544344844	0
24167	11438	0.544344844	0
24168	11439	0.544344844	0
24169	11440	0.544344844	0
24170	11441	0.544344844	0
24171	11442	0.544344844	0
24172	11443	0.544188314	0
24173	11444	0.544188314	0
24174	11445	0.544188314	0
24175	11446	0.544086259	0
24176	11447	0.544086259	0
24177	11448	0.544086259	0
24178	11449	0.544086259	0
24179	11450	0.544086259	0
24180	11451	0.543601825	0
24181	11452	0.543601825	0
24182	11453	0.543601825	0
24183	11454	0.543601825	0
24184	11455	0.543601825	0
24185	11456	0.543601825	0
24186	11457	0.543601825	0
24187	11458	0.543601825	0
24188	11459	0.543601825	0
24189	11460	0.543601825	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24136	11407	0.545195568	0
24137	11408	0.545195568	0
24138	11409	0.545195568	0
24139	11410	0.545195568	0
24140	11411	0.545195568	0
24141	11412	0.545195568	0
24142	11413	0.545195568	0
24143	11414	0.545195568	0
24144	11415	0.545195568	0
24145	11416	0.544940176	0
24146	11417	0.544940176	0
24147	11418	0.544840898	0
24148	11419	0.544840898	0
24149	11420	0.544840898	0
24150	11421	0.544840898	0
24151	11422	0.544840898	0
24152	11423	0.544840898	0
24153	11424	0.544840898	0
24154	11425	0.544615349	0
24155	11426	0.544615349	0
24156	11427	0.544615349	0
24157	11428	0.544615349	0
24158	11429	0.544615349	0
24159	11430	0.544615349	-1.155224741
24160	11431	0.544459268	0
24161	11432	0.544344844	0
24162	11433	0.544344844	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24109	11380	0.546179248	0
24110	11381	0.546179248	0
24111	11382	0.546179248	-1.527241504
24112	11383	0.546029414	0
24113	11384	0.546029414	0
24114	11385	0.546029414	0
24115	11386	0.546029414	-1.474145827
24116	11387	0.545834707	0
24117	11388	0.545834707	0
24118	11389	0.545834707	0
24119	11390	0.545834707	-0.568544654
24120	11391	0.545668914	0
24121	11392	0.545668914	0
24122	11393	0.545668914	0
24123	11394	0.545571418	0
24124	11395	0.545571418	0
24125	11396	0.545571418	0
24126	11397	0.545571418	0
24127	11398	0.545571418	0
24128	11399	0.545571418	0
24129	11400	0.545571418	0
24130	11401	0.545571418	0
24131	11402	0.545571418	0
24132	11403	0.545571418	0
24133	11404	0.545571418	0
24134	11405	0.545195568	0
24135	11406	0.545195568	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
24298	11569	0.540575371	0	0
24299	11570	0.540575371	0	0
24300	11571	0.540575371	-1.460294715	0
24301	11572	0.540575371	-0.381113469	0
24302	11573	0.540338891	0	0
24303	11574	0.540338891	0	0
24304	11575	0.540338891	0	0
24305	11576	0.540338891	0	0
24306	11577	0.540338891	0	0
24307	11578	0.540225838	0	0
24308	11579	0.540225838	0	0
24309	11580	0.540225838	0	0
24310	11581	0.53990568	0	0
24311	11582	0.53990568	0	0
24312	11583	0.53990568	0	0
24313	11584	0.53990568	0	0
24314	11585	0.53990568	0	0
24315	11586	0.53990568	0	0
24316	11587	0.53990568	0	0
24317	11588	0.53990568	0	0
24318	11589	0.53990568	0	0
24319	11590	0.53990568	0	0
24320	11591	0.53990568	0	0
24321	11592	0.53990568	0	0
24322	11593	0.53990568	0	0
24323	11594	0.539668296	0	0
24324	11595	0.539518436	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
24271	11542	0.541380365	0	0
24272	11543	0.541380365	0	0
24273	11544	0.541380365	0	0
24274	11545	0.541380365	-1.515007048	0
24275	11546	0.541094551	0	0
24276	11547	0.541039609	0	0
24277	11548	0.541039609	0	0
24278	11549	0.540958515	0	0
24279	11550	0.540958515	0	0
24280	11551	0.540958515	0	0
24281	11552	0.540958515	0	0
24282	11553	0.540958515	0	0
24283	11554	0.540958515	0	0
24284	11555	0.540958515	0	0
24285	11556	0.540826771	0	0
24286	11557	0.540826771	0	0
24287	11558	0.540826771	0	0
24288	11559	0.540826771	0	0
24289	11560	0.540826771	0	0
24290	11561	0.540826771	0	0
24291	11562	0.540826771	0	0
24292	11563	0.540575371	0	0
24293	11564	0.540575371	0	0
24294	11565	0.540575371	0	0
24295	11566	0.540575371	0	0
24296	11567	0.540575371	0	0
24297	11568	0.540575371	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
24244	11515	0.541847098	0	0
24245	11516	0.541847098	0	0
24246	11517	0.541847098	0	0
24247	11518	0.541847098	0	0
24248	11519	0.541847098	0	0
24249	11520	0.541847098	0	0
24250	11521	0.541749821	0	0
24251	11522	0.541749821	0	0
24252	11523	0.541686099	0	0
24253	11524	0.541380365	0	0
24254	11525	0.541380365	0	0
24255	11526	0.541380365	0	0
24256	11527	0.541380365	0	0
24257	11528	0.541380365	0	0
24258	11529	0.541380365	0	0
24259	11530	0.541380365	0	0
24260	11531	0.541380365	0	0
24261	11532	0.541380365	0	0
24262	11533	0.541380365	0	0
24263	11534	0.541380365	0	0
24264	11535	0.541380365	0	0
24265	11536	0.541380365	0	0
24266	11537	0.541380365	0	0
24267	11538	0.541380365	0	0
24268	11539	0.541380365	0	0
24269	11540	0.541380365	0	0
24270	11541	0.541380365	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
24217	11488	0.542746072	0	0
24218	11489	0.542746072	0	0
24219	11490	0.542590662	0	0
24220	11491	0.542590662	0	0
24221	11492	0.542590662	0	0
24222	11493	0.542366278	0	0
24223	11494	0.542366278	0	0
24224	11495	0.542366278	0	0
24225	11496	0.542366278	0	0
24226	11497	0.542366278	0	0
24227	11498	0.542366278	0	0
24228	11499	0.542366278	0	0
24229	11500	0.542366278	0	0
24230	11501	0.542366278	0	0
24231	11502	0.542366278	0	0
24232	11503	0.542366278	0	0
24233	11504	0.542366278	0	0
24234	11505	0.542151759	0	0
24235	11506	0.542151759	0	0
24236	11507	0.54201391	0	0
24237	11508	0.54201391	0	0
24238	11509	0.54201391	0	0
24239	11510	0.54201391	0	0
24240	11511	0.54201391	0	0
24241	11512	0.54201391	0	0
24242	11513	0.54201391	0	0
24243	11514	0.541847098	0	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24406	11677	0.536572628	0
24407	11678	0.536572628	0
24408	11679	0.536572628	0
24409	11680	0.536572628	0
24410	11681	0.536572628	0
24411	11682	0.536572628	-1.163267462
24412	11683	0.53639943	0
24413	11684	0.53639943	0
24414	11685	0.53639943	0
24415	11686	0.536240726	0
24416	11687	0.536240726	0
24417	11688	0.536240726	0
24418	11689	0.536094769	0
24419	11690	0.536094769	0
24420	11691	0.536094769	0
24421	11692	0.535960083	0
24422	11693	0.535960083	0
24423	11694	0.535960083	0
24424	11695	0.535960083	0
24425	11696	0.535960083	0
24426	11697	0.535960083	0
24427	11698	0.535960083	0
24428	11699	0.535835411	-0.349855775
24429	11700	0.535835411	-0.035461818
24430	11701	0.535719677	0
24431	11702	0.535719677	0
24432	11703	0.535719677	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24379	11650	0.537746081	0
24380	11651	0.537646666	0
24381	11652	0.537646666	0
24382	11653	0.537458944	0
24383	11654	0.537458944	0
24384	11655	0.537458944	0
24385	11656	0.537458944	0
24386	11657	0.537458944	0
24387	11658	0.537458944	0
24388	11659	0.537458944	0
24389	11660	0.537458944	0
24390	11661	0.537458944	0
24391	11662	0.537458944	-0.262317614
24392	11663	0.537202193	0
24393	11664	0.537202193	0
24394	11665	0.536971247	0
24395	11666	0.536971247	0
24396	11667	0.536971247	0
24397	11668	0.536971247	0
24398	11669	0.536971247	0
24399	11670	0.536971247	0
24400	11671	0.536971247	0
24401	11672	0.536829759	0
24402	11673	0.536762401	0
24403	11674	0.536762401	0
24404	11675	0.536762401	0
24405	11676	0.536572628	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24352	11623	0.53885539	0
24353	11624	0.53885539	0
24354	11625	0.53885539	0
24355	11626	0.53885539	0
24356	11627	0.538638406	0
24357	11628	0.538569388	0
24358	11629	0.538569388	0
24359	11630	0.538435985	0
24360	11631	0.538435985	0
24361	11632	0.538435985	0
24362	11633	0.538435985	0
24363	11634	0.538435985	0
24364	11635	0.538435985	0
24365	11636	0.538435985	0
24366	11637	0.538435985	-0.216921433
24367	11638	0.538435985	-1.296102679
24368	11639	0.53830842	0
24369	11640	0.538069337	0
24370	11641	0.538069337	0
24371	11642	0.538069337	0
24372	11643	0.538069337	0
24373	11644	0.538069337	0
24374	11645	0.538069337	-0.370255541
24375	11646	0.538069337	-0.722438059
24376	11647	0.537746081	0
24377	11648	0.537746081	0
24378	11649	0.537746081	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24325	11596	0.539518436	0
24326	11597	0.539518436	0
24327	11598	0.539518436	0
24328	11599	0.539518436	0
24329	11600	0.539339824	0
24330	11601	0.539339824	0
24331	11602	0.539339824	0
24332	11603	0.539339824	0
24333	11604	0.539339824	0
24334	11605	0.539339824	0
24335	11606	0.539339824	0
24336	11607	0.539339824	0
24337	11608	0.539339824	0
24338	11609	0.539339824	0
24339	11610	0.539339824	0
24340	11611	0.539339824	0
24341	11612	0.539170211	0
24342	11613	0.539170211	0
24343	11614	0.539170211	0
24344	11615	0.539170211	0
24345	11616	0.53885539	0
24346	11617	0.53885539	0
24347	11618	0.53885539	0
24348	11619	0.53885539	0
24349	11620	0.53885539	0
24350	11621	0.53885539	0
24351	11622	0.53885539	0



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24514	11785	0.532606441	0
24515	11786	0.532606441	0
24516	11787	0.532606441	0
24517	11788	0.532606441	0
24518	11789	0.532606441	0
24519	11790	0.532606441	0
24520	11791	0.532606441	0
24521	11792	0.532606441	0
24522	11793	0.532606441	0
24523	11794	0.532606441	0
24524	11795	0.532606441	0
24525	11796	0.532606441	0
24526	11797	0.532606441	0
24527	11798	0.532606441	0
24528	11799	0.532606441	0
24529	11800	0.532606441	0
24530	11801	0.532606441	0
24531	11802	0.532606441	0
24532	11803	0.532606441	0
24533	11804	0.532606441	0
24534	11805	0.532606441	0
24535	11806	0.532606441	0
24536	11807	0.532606441	0
24537	11808	0.532606441	0
24538	11809	0.532606441	0
24539	11810	0.532606441	0
24540	11811	0.532606441	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24487	11758	0.534498795	-0.786706442
24488	11759	0.534419782	0
24489	11760	0.534419782	0
24490	11761	0.534419782	0
24491	11762	0.534347103	0
24492	11763	0.534280025	0
24493	11764	0.534280025	0
24494	11765	0.533924483	0
24495	11766	0.532606441	0
24496	11767	0.532606441	0
24497	11768	0.532606441	0
24498	11769	0.532606441	0
24499	11770	0.532606441	0
24500	11771	0.532606441	0
24501	11772	0.532606441	0
24502	11773	0.532606441	0
24503	11774	0.532606441	0
24504	11775	0.532606441	0
24505	11776	0.532606441	0
24506	11777	0.532606441	0
24507	11778	0.532606441	0
24508	11779	0.532606441	0
24509	11780	0.532606441	0
24510	11781	0.532606441	0
24511	11782	0.532606441	0
24512	11783	0.532606441	0
24513	11784	0.532606441	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24460	11731	0.535025915	0
24461	11732	0.535025915	0
24462	11733	0.535025915	0
24463	11734	0.535025915	0
24464	11735	0.535025915	0
24465	11736	0.535025915	0
24466	11737	0.534898238	0
24467	11738	0.534898238	0
24468	11739	0.534898238	0
24469	11740	0.534898238	0
24470	11741	0.534898238	0
24471	11742	0.534898238	0
24472	11743	0.53478336	0
24473	11744	0.53478336	0
24474	11745	0.53478336	0
24475	11746	0.53467945	0
24476	11747	0.53467945	0
24477	11748	0.53467945	0
24478	11749	0.53467945	0
24479	11750	0.534585007	0
24480	11751	0.534585007	0
24481	11752	0.534585007	0
24482	11753	0.534585007	-1.466285079
24483	11754	0.534498795	0
24484	11755	0.534498795	0
24485	11756	0.534498795	0
24486	11757	0.534498795	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24433	11704	0.535719677	0
24434	11705	0.535719677	0
24435	11706	0.535611951	0
24436	11707	0.535611951	0
24437	11708	0.535611951	0
24438	11709	0.535511432	0
24439	11710	0.535511432	0
24440	11711	0.535511432	0
24441	11712	0.535329299	0
24442	11713	0.535329299	0
24443	11714	0.535329299	0
24444	11715	0.535329299	0
24445	11716	0.535329299	0
24446	11717	0.535329299	0
24447	11718	0.535329299	0
24448	11719	0.535329299	0
24449	11720	0.535329299	0
24450	11721	0.535168658	0
24451	11722	0.535168658	0
24452	11723	0.535168658	0
24453	11724	0.535168658	0
24454	11725	0.535168658	0
24455	11726	0.535168658	0
24456	11727	0.535025915	0
24457	11728	0.535025915	0
24458	11729	0.535025915	0
24459	11730	0.535025915	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24622	11893	0.529278498	0	0.529278498	0
24623	11894	0.529278498	0	0.529278498	0
24624	11895	0.529278498	0	0.529278498	0
24625	11896	0.529278498	0	0.529278498	0
24626	11897	0.529145909	0	0.529145909	0
24627	11898	0.529002317	0	0.529002317	0
24628	11899	0.529002317	0	0.529002317	0
24629	11900	0.529002317	0	0.529002317	0
24630	11901	0.529002317	0	0.529002317	0
24631	11902	0.529002317	0	0.529002317	0
24632	11903	0.529002317	0	0.529002317	0
24633	11904	0.529002317	0	0.529002317	0
24634	11905	0.528846292	0	0.528846292	0
24635	11906	0.528846292	-1.491328949	0.528846292	0
24636	11907	0.528676147	0	0.528676147	0
24637	11908	0.528676147	0	0.528676147	0
24638	11909	0.528676147	0	0.528676147	0
24639	11910	0.528676147	0	0.528676147	0
24640	11911	0.528676147	0	0.528676147	0
24641	11912	0.528676147	0	0.528676147	0
24642	11913	0.528489875	0	0.528489875	0
24643	11914	0.528489875	0	0.528489875	0
24644	11915	0.528489875	0	0.528489875	0
24645	11916	0.528489875	0	0.528489875	0
24646	11917	0.528489875	0	0.528489875	0
24647	11918	0.528489875	0	0.528489875	0
24648	11919	0.528489875	-0.850116833	0.528489875	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24595	11866	0.530059252	0	0.530059252	0
24596	11867	0.530059252	0	0.530059252	0
24597	11868	0.530059252	0	0.530059252	0
24598	11869	0.530059252	0	0.530059252	0
24599	11870	0.530059252	-0.756777083	0.530059252	0
24600	11871	0.529900548	0	0.529900548	0
24601	11872	0.529900548	0	0.529900548	0
24602	11873	0.529900548	0	0.529900548	0
24603	11874	0.529900548	0	0.529900548	0
24604	11875	0.529900548	0	0.529900548	0
24605	11876	0.529900548	0	0.529900548	0
24606	11877	0.529900548	0	0.529900548	0
24607	11878	0.529900548	0	0.529900548	0
24608	11879	0.529900548	0	0.529900548	0
24609	11880	0.529900548	0	0.529900548	0
24610	11881	0.529720753	0	0.529720753	0
24611	11882	0.529720753	0	0.529720753	0
24612	11883	0.529720753	0	0.529720753	0
24613	11884	0.529720753	0	0.529720753	0
24614	11885	0.529720753	0	0.529720753	0
24615	11886	0.529621588	0	0.529621588	0
24616	11887	0.529515364	0	0.529515364	0
24617	11888	0.529515364	0	0.529515364	0
24618	11889	0.529515364	0	0.529515364	0
24619	11890	0.529401301	0	0.529401301	0
24620	11891	0.529401301	0	0.529401301	0
24621	11892	0.529278498	0	0.529278498	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24568	11839	0.532606441	-0.329960946	0.532606441	0
24569	11840	0.532606441	-0.807082201	0.532606441	0
24570	11841	0.532606441	-0.93875432	0.532606441	0
24571	11842	0.532606441	-1.271968999	0.532606441	0
24572	11843	0.531207746	0	0.531207746	0
24573	11844	0.531000914	0	0.531000914	0
24574	11845	0.530872728	0	0.530872728	0
24575	11846	0.530872728	0	0.530872728	0
24576	11847	0.53080064	0	0.53080064	0
24577	11848	0.53080064	0	0.53080064	0
24578	11849	0.530636848	0	0.530636848	0
24579	11850	0.530636848	0	0.530636848	0
24580	11851	0.530636848	0	0.530636848	0
24581	11852	0.530543281	0	0.530543281	0
24582	11853	0.530440379	0	0.530440379	0
24583	11854	0.530440379	0	0.530440379	0
24584	11855	0.530326675	0	0.530326675	0
24585	11856	0.530326675	0	0.530326675	0
24586	11857	0.530326675	0	0.530326675	0
24587	11858	0.530326675	0	0.530326675	0
24588	11859	0.530326675	0	0.530326675	0
24589	11860	0.530326675	0	0.530326675	0
24590	11861	0.530326675	0	0.530326675	0
24591	11862	0.530326675	0	0.530326675	0
24592	11863	0.530326675	-0.12812073	0.530326675	0
24593	11864	0.530200371	0	0.530200371	0
24594	11865	0.530200371	0	0.530200371	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24541	11812	0.532606441	0	0.532606441	0
24542	11813	0.532606441	0	0.532606441	0
24543	11814	0.532606441	0	0.532606441	0
24544	11815	0.532606441	0	0.532606441	0
24545	11816	0.532606441	0	0.532606441	0
24546	11817	0.532606441	0	0.532606441	0
24547	11818	0.532606441	0	0.532606441	0
24548	11819	0.532606441	0	0.532606441	0
24549	11820	0.532606441	0	0.532606441	0
24550	11821	0.532606441	0	0.532606441	0
24551	11822	0.532606441	0	0.532606441	0
24552	11823	0.532606441	0	0.532606441	0
24553	11824	0.532606441	0	0.532606441	0
24554	11825	0.532606441	0	0.532606441	0
24555	11826	0.532606441	0	0.532606441	0
24556	11827	0.532606441	0	0.532606441	0
24557	11828	0.532606441	0	0.532606441	0
24558	11829	0.532606441	0	0.532606441	0
24559	11830	0.532606441	0	0.532606441	0
24560	11831	0.532606441	0	0.532606441	0
24561	11832	0.532606441	0	0.532606441	0
24562	11833	0.532606441	0	0.532606441	0
24563	11834	0.532606441	0	0.532606441	0
24564	11835	0.532606441	0	0.532606441	0
24565	11836	0.532606441	0	0.532606441	0
24566	11837	0.532606441	0	0.532606441	0
24567	11838	0.532606441	-0.2507797	0.532606441	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24730	12001	0.525975862	0
24731	12002	0.525975862	0
24732	12003	0.525975862	0
24733	12004	0.525975862	0
24734	12005	0.525975862	0
24735	12006	0.525802733	0
24736	12007	0.525802733	0
24737	12008	0.525802733	0
24738	12009	0.525802733	0
24739	12010	0.525802733	0
24740	12011	0.525802733	0
24741	12012	0.525802733	-1.411398273
24742	12013	0.525712733	0
24743	12014	0.525712733	0
24744	12015	0.525712733	0
24745	12016	0.525427856	0
24746	12017	0.525427856	0
24747	12018	0.525427856	0
24748	12019	0.525427856	0
24749	12020	0.525427856	0
24750	12021	0.525427856	0
24751	12022	0.525427856	0
24752	12023	0.525427856	0
24753	12024	0.525427856	0
24754	12025	0.525427856	0
24755	12026	0.525427856	0
24756	12027	0.525427856	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24703	11974	0.526854112	0
24704	11975	0.526854112	0
24705	11976	0.526854112	0
24706	11977	0.526854112	0
24707	11978	0.526854112	0
24708	11979	0.526854112	0
24709	11980	0.526854112	0
24710	11981	0.526854112	0
24711	11982	0.526446132	0
24712	11983	0.526446132	0
24713	11984	0.526446132	0
24714	11985	0.526446132	0
24715	11986	0.526446132	0
24716	11987	0.526446132	0
24717	11988	0.526446132	0
24718	11989	0.526446132	0
24719	11990	0.526446132	0
24720	11991	0.526446132	0
24721	11992	0.526446132	-1.454220567
24722	11993	0.526219642	0
24723	11994	0.526140399	0
24724	11995	0.526140399	0
24725	11996	0.526140399	0
24726	11997	0.526140399	0
24727	11998	0.525975862	0
24728	11999	0.525975862	0
24729	12000	0.525975862	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24676	11947	0.527807558	-1.084882356
24677	11948	0.527526916	0
24678	11949	0.527526916	0
24679	11950	0.527526916	0
24680	11951	0.527526916	0
24681	11952	0.527526916	0
24682	11953	0.527526916	0
24683	11954	0.527526916	0
24684	11955	0.527526916	0
24685	11956	0.527526916	0
24686	11957	0.527526916	0
24687	11958	0.527526916	0
24688	11959	0.527526916	0
24689	11960	0.527425929	0
24690	11961	0.527425929	0
24691	11962	0.527425929	0
24692	11963	0.527211409	0
24693	11964	0.527211409	0
24694	11965	0.527211409	0
24695	11966	0.527211409	0
24696	11967	0.527211409	0
24697	11968	0.527211409	0
24698	11969	0.527211409	-1.3335355978
24699	11970	0.526978356	0
24700	11971	0.526854112	0
24701	11972	0.526854112	0
24702	11973	0.526854112	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24649	11920	0.528285067	0
24650	11921	0.528285067	0
24651	11922	0.528285067	0
24652	11923	0.528285067	0
24653	11924	0.528285067	0
24654	11925	0.528285067	0
24655	11926	0.528285067	0
24656	11927	0.528285067	0
24657	11928	0.528285067	0
24658	11929	0.528285067	-0.732222329
24659	11930	0.528285067	-1.431192333
24660	11931	0.528038813	0
24661	11932	0.528038813	0
24662	11933	0.528038813	0
24663	11934	0.528038813	0
24664	11935	0.528038813	-1.409142192
24665	11936	0.528038813	-1.409142192
24666	11937	0.527978037	0
24667	11938	0.527807558	0
24668	11939	0.527807558	0
24669	11940	0.527807558	0
24670	11941	0.527807558	0
24671	11942	0.527807558	0
24672	11943	0.527807558	0
24673	11944	0.527807558	0
24674	11945	0.527807558	0
24675	11946	0.527807558	-0.863033606

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24838	12109	0.521882576	0	0.521882576	0
24839	12110	0.521882576	0	0.521882576	0
24840	12111	0.521882576	0	0.521882576	0
24841	12112	0.521882576	0	0.521882576	0
24842	12113	0.521882576	0	0.521882576	0
24843	12114	0.521882576	0	0.521882576	0
24844	12115	0.521882576	0	0.521882576	0
24845	12116	0.521882576	0	0.521882576	0
24846	12117	0.521882576	0	0.521882576	0
24847	12118	0.521882576	0	0.521882576	0
24848	12119	0.521882576	0	0.521882576	0
24849	12120	0.521882576	0	0.521882576	0
24850	12121	0.521882576	0	0.521882576	0
24851	12122	0.521882576	0	0.521882576	0
24852	12123	0.521882576	0	0.521882576	0
24853	12124	0.521882576	0	0.521882576	0
24854	12125	0.521882576	0	0.521882576	0
24855	12126	0.521882576	0	0.521882576	0
24856	12127	0.521882576	0	0.521882576	0
24857	12128	0.521882576	0	0.521882576	0
24858	12129	0.521882576	0	0.521882576	0
24859	12130	0.521882576	0	0.521882576	0
24860	12131	0.521882576	0	0.521882576	0
24861	12132	0.521882576	0	0.521882576	0
24862	12133	0.521882576	0	0.521882576	0
24863	12134	0.521882576	-0.562533561	0.521882576	-0.562533561
24864	12135	0.521882576	-0.914716079	0.521882576	-0.914716079

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24811	12082	0.523061123	0	0.523061123	0
24812	12083	0.523061123	0	0.523061123	0
24813	12084	0.523061123	-0.545560747	0.523061123	-0.545560747
24814	12085	0.522846604	0	0.522846604	0
24815	12086	0.522846604	0	0.522846604	0
24816	12087	0.522846604	0	0.522846604	0
24817	12088	0.522846604	0	0.522846604	0
24818	12089	0.522846604	0	0.522846604	0
24819	12090	0.522698152	0	0.522698152	0
24820	12091	0.522698152	0	0.522698152	0
24821	12092	0.522698152	0	0.522698152	0
24822	12093	0.522698152	0	0.522698152	0
24823	12094	0.522698152	0	0.522698152	0
24824	12095	0.522698152	0	0.522698152	0
24825	12096	0.522698152	0	0.522698152	0
24826	12097	0.522506114	0	0.522506114	0
24827	12098	0.522506114	0	0.522506114	0
24828	12099	0.522506114	0	0.522506114	0
24829	12100	0.522506114	0	0.522506114	0
24830	12101	0.522506114	0	0.522506114	0
24831	12102	0.522506114	0	0.522506114	0
24832	12103	0.522506114	-1.366390212	0.522506114	-1.366390212
24833	12104	0.522387276	0	0.522387276	0
24834	12105	0.522306484	0	0.522306484	0
24835	12106	0.522306484	0	0.522306484	0
24836	12107	0.521882576	0	0.521882576	0
24837	12108	0.521882576	0	0.521882576	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24784	12055	0.524006269	0	0.524006269	0
24785	12056	0.524006269	0	0.524006269	0
24786	12057	0.524006269	0	0.524006269	0
24787	12058	0.524006269	0	0.524006269	0
24788	12059	0.524006269	-0.465434354	0.524006269	-0.465434354
24789	12060	0.524006269	-0.289343095	0.524006269	-0.289343095
24790	12061	0.523651598	0	0.523651598	0
24791	12062	0.523558312	0	0.523558312	0
24792	12063	0.523558312	0	0.523558312	0
24793	12064	0.523558312	0	0.523558312	0
24794	12065	0.523558312	0	0.523558312	0
24795	12066	0.523558312	0	0.523558312	0
24796	12067	0.523398439	0	0.523398439	0
24797	12068	0.523398439	0	0.523398439	0
24798	12069	0.523398439	0	0.523398439	0
24799	12070	0.523398439	-0.105085742	0.523398439	-0.105085742
24800	12071	0.523266415	0	0.523266415	0
24801	12072	0.523266415	0	0.523266415	0
24802	12073	0.523266415	0	0.523266415	0
24803	12074	0.523061123	0	0.523061123	0
24804	12075	0.523061123	0	0.523061123	0
24805	12076	0.523061123	0	0.523061123	0
24806	12077	0.523061123	0	0.523061123	0
24807	12078	0.523061123	0	0.523061123	0
24808	12079	0.523061123	0	0.523061123	0
24809	12080	0.523061123	0	0.523061123	0
24810	12081	0.523061123	0	0.523061123	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24757	12028	0.52511842	0	0.52511842	0
24758	12029	0.52511842	-1.495056821	0.52511842	-1.495056821
24759	12030	0.525009259	0	0.525009259	0
24760	12031	0.525009259	0	0.525009259	0
24761	12032	0.525009259	0	0.525009259	0
24762	12033	0.525009259	0	0.525009259	0
24763	12034	0.524919612	0	0.524919612	0
24764	12035	0.524781104	0	0.524781104	0
24765	12036	0.524781104	0	0.524781104	0
24766	12037	0.524637511	0	0.524637511	0
24767	12038	0.524538819	0	0.524538819	0
24768	12039	0.524538819	0	0.524538819	0
24769	12040	0.524538819	0	0.524538819	0
24770	12041	0.524538819	0	0.524538819	0
24771	12042	0.524538819	0	0.524538819	0
24772	12043	0.524538819	0	0.524538819	0
24773	12044	0.524538819	0	0.524538819	0
24774	12045	0.524538819	-0.639058564	0.524538819	-0.639058564
24775	12046	0.524538819	-1.338028568	0.524538819	-1.338028568
24776	12047	0.524006269	0	0.524006269	0
24777	12048	0.524006269	0	0.524006269	0
24778	12049	0.524006269	0	0.524006269	0
24779	12050	0.524006269	0	0.524006269	0
24780	12051	0.524006269	0	0.524006269	0
24781	12052	0.524006269	0	0.524006269	0
24782	12053	0.524006269	0	0.524006269	0
24783	12054	0.524006269	0	0.524006269	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24946	12217	0.519333251	0
24947	12218	0.51924248	0
24948	12219	0.51924248	0
24949	12220	0.51924248	0
24950	12221	0.51924248	0
24951	12222	0.51924248	0
24952	12223	0.51924248	0
24953	12224	0.519103971	0
24954	12225	0.519103971	0
24955	12226	0.519103971	0
24956	12227	0.519103971	-0.816037044
24957	12228	0.519003265	0
24958	12229	0.519003265	0
24959	12230	0.518926744	0
24960	12231	0.518926744	0
24961	12232	0.518818157	-1.630990942
24962	12233	0.518366002	0
24963	12234	0.518366002	0
24964	12235	0.518366002	0
24965	12236	0.518366002	0
24966	12237	0.518366002	0
24967	12238	0.518366002	0
24968	12239	0.518366002	0
24969	12240	0.518366002	0
24970	12241	0.518366002	0
24971	12242	0.518366002	0
24972	12243	0.518366002	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24919	12190	0.519925409	0
24920	12191	0.519769216	0
24921	12192	0.519769216	0
24922	12193	0.519769216	0
24923	12194	0.519769216	0
24924	12195	0.519769216	0
24925	12196	0.519769216	0
24926	12197	0.519769216	0
24927	12198	0.519769216	-0.059496942
24928	12199	0.519769216	-0.439708184
24929	12200	0.519769216	-1.138678188
24930	12201	0.519585931	0
24931	12202	0.519585931	0
24932	12203	0.519585931	0
24933	12204	0.519585931	0
24934	12205	0.519444995	0
24935	12206	0.519444995	0
24936	12207	0.519444995	0
24937	12208	0.519444995	0
24938	12209	0.519444995	0
24939	12210	0.519444995	0
24940	12211	0.519444995	0
24941	12212	0.519444995	0
24942	12213	0.519444995	0
24943	12214	0.519444995	0
24944	12215	0.519444995	0
24945	12216	0.519444995	-1.252945762

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24892	12163	0.520707218	0
24893	12164	0.520707218	0
24894	12165	0.520707218	0
24895	12166	0.520707218	0
24896	12167	0.520613326	0
24897	12168	0.520613326	0
24898	12169	0.520613326	-0.933714096
24899	12170	0.520371985	0
24900	12171	0.520371985	0
24901	12172	0.520371985	0
24902	12173	0.520371985	0
24903	12174	0.520371985	0
24904	12175	0.520371985	0
24905	12176	0.520371985	0
24906	12177	0.520371985	0
24907	12178	0.520177452	0
24908	12179	0.52012073	0
24909	12180	0.520017314	0
24910	12181	0.520017314	0
24911	12182	0.520017314	0
24912	12183	0.520017314	0
24913	12184	0.520017314	0
24914	12185	0.520017314	0
24915	12186	0.520017314	0
24916	12187	0.520017314	0
24917	12188	0.519925409	0
24918	12189	0.519925409	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24865	12136	0.521882576	-1.215746075
24866	12137	0.521882576	-1.437594825
24867	12138	0.521422274	0
24868	12139	0.521325431	0
24869	12140	0.521325431	0
24870	12141	0.521325431	0
24871	12142	0.521325431	0
24872	12143	0.521325431	0
24873	12144	0.521325431	-1.415875575
24874	12145	0.521176979	0
24875	12146	0.521176979	0
24876	12147	0.521176979	0
24877	12148	0.521176979	0
24878	12149	0.521176979	0
24879	12150	0.521176979	0
24880	12151	0.521176979	0
24881	12152	0.520920683	0
24882	12153	0.520920683	0
24883	12154	0.520920683	0
24884	12155	0.520920683	0
24885	12156	0.520920683	0
24886	12157	0.520920683	0
24887	12158	0.520920683	0
24888	12159	0.520920683	0
24889	12160	0.520707218	0
24890	12161	0.520707218	0
24891	12162	0.520707218	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
24973	12244	0.518366002	0
24974	12245	0.518366002	0
24975	12246	0.518366002	0
24976	12247	0.518366002	0
24977	12248	0.518366002	0
24978	12249	0.518366002	0
24979	12250	0.518366002	0
24980	12251	0.518366002	0
24981	12252	0.518366002	0
24982	12253	0.518366002	0
24983	12254	0.518366002	0
24984	12255	0.518366002	0
24985	12256	0.518366002	0
24986	12257	0.518366002	0
24987	12258	0.518366002	0
24988	12259	0.518366002	0
24989	12260	0.518366002	0
24990	12261	0.517965915	0
24991	12262	0.517827509	0
24992	12263	0.517666091	0
24993	12264	0.517666091	0
24994	12265	0.517666091	0
24995	12266	0.517542695	0
24996	12267	0.517542695	0
24997	12268	0.517542695	0
24998	12269	0.517542695	0
24999	12270	0.517542695	0
25000	12271	0.517542695	0
25001	12272	0.517542695	0
25002	12273	0.517542695	0
25003	12274	0.517366475	0
25004	12275	0.517366475	0
25005	12276	0.517366475	0
25006	12277	0.517366475	0
25007	12278	0.517366475	0
25008	12279	0.517366475	0
25009	12280	0.517366475	0
25010	12281	0.517366475	0
25011	12282	0.517366475	0
25012	12283	0.517366475	-0.287208966
25013	12284	0.517246686	0
25014	12285	0.517094275	0
25015	12286	0.517094275	0
25016	12287	0.517094275	0
25017	12288	0.517094275	0
25018	12289	0.517094275	0
25019	12290	0.517094275	0
25020	12291	0.517094275	0
25021	12292	0.516893816	0
25022	12293	0.516893816	0
25023	12294	0.516893816	0
25024	12295	0.516893816	-0.943185935
25025	12296	0.516893816	-1.42030719
25026	12297	0.516812174	0
25027	12298	0.516618336	0
25028	12299	0.516618336	0
25029	12300	0.516618336	0
25030	12301	0.516618336	0
25031	12302	0.516618336	0
25032	12303	0.516618336	0
25033	12304	0.516618336	0
25034	12305	0.516618336	0
25035	12306	0.516618336	0
25036	12307	0.516618336	0
25037	12308	0.516618336	0
25038	12309	0.516618336	0
25039	12310	0.516618336	0
25040	12311	0.516618336	0
25041	12312	0.516618336	-0.090676547
25042	12313	0.516369242	0
25043	12314	0.516369242	0
25044	12315	0.516369242	0
25045	12316	0.516369242	0
25046	12317	0.516216025	0
25047	12318	0.516216025	0
25048	12319	0.516216025	0
25049	12320	0.516216025	0
25050	12321	0.516216025	0
25051	12322	0.516216025	0
25052	12323	0.516216025	0
25053	12324	0.51603734	0
25054	12325	0.51603734	0
25055	12326	0.51603734	0
25056	12327	0.51603734	0
25057	12328	0.51603734	0
25058	12329	0.515936376	0
25059	12330	0.515936376	0
25060	12331	0.515573102	0
25061	12332	0.515573102	0
25062	12333	0.515573102	0
25063	12334	0.515573102	0
25064	12335	0.515573102	0
25065	12336	0.515573102	0
25066	12337	0.515573102	0
25067	12338	0.515573102	0
25068	12339	0.515573102	0
25069	12340	0.515573102	0
25070	12341	0.515573102	0
25071	12342	0.515573102	0
25072	12343	0.515573102	0
25073	12344	0.515573102	0
25074	12345	0.515573102	0
25075	12346	0.515573102	0
25076	12347	0.515573102	0
25077	12348	0.515573102	0
25078	12349	0.515573102	0
25079	12350	0.515573102	0
25080	12351	0.515263885	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
25162	12433	0.512403055		0
25163	12434	0.512317235		0
25164	12435	0.512245158		0
25165	12436	0.512245158		0
25166	12437	0.512245158		0
25167	12438	0.512245158		0
25168	12439	0.512130855		0
25169	12440	0.512044282	-0.761827075	0
25170	12441	0.511417142		0
25171	12442	0.511417142		0
25172	12443	0.511417142		0
25173	12444	0.511417142		0
25174	12445	0.511417142		0
25175	12446	0.511417142		0
25176	12447	0.511417142		0
25177	12448	0.511417142		0
25178	12449	0.511417142		0
25179	12450	0.511417142		0
25180	12451	0.511417142		0
25181	12452	0.511417142		0
25182	12453	0.511417142		0
25183	12454	0.511417142		0
25184	12455	0.511417142		0
25185	12456	0.511417142		0
25186	12457	0.511417142		0
25187	12458	0.511417142		0
25188	12459	0.511417142		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
25135	12406	0.513143961		0
25136	12407	0.513010885		0
25137	12408	0.513010885		0
25138	12409	0.513010885		0
25139	12410	0.513010885		0
25140	12411	0.512798048		0
25141	12412	0.512798048		0
25142	12413	0.512798048		0
25143	12414	0.512798048		0
25144	12415	0.512798048		0
25145	12416	0.512798048		0
25146	12417	0.512798048	-0.042987015	0
25147	12418	0.51263536		0
25148	12419	0.51263536		0
25149	12420	0.51263536		0
25150	12421	0.51263536		0
25151	12422	0.51263536		0
25152	12423	0.51263536		0
25153	12424	0.51263536		0
25154	12425	0.51263536		0
25155	12426	0.51263536		0
25156	12427	0.512506966		0
25157	12428	0.512506966		0
25158	12429	0.512506966		0
25159	12430	0.512506966		0
25160	12431	0.512506966		0
25161	12432	0.512403055		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
25108	12379	0.514381621		0
25109	12380	0.514381621	-0.086073837	0
25110	12381	0.514381621	-0.187531478	0
25111	12382	0.514123035	-1.506052205	0
25112	12383	0.514009953		0
25113	12384	0.514009953		0
25114	12385	0.514009953		0
25115	12386	0.514009953		0
25116	12387	0.514009953		0
25117	12388	0.514009953		0
25118	12389	0.513721097		0
25119	12390	0.513721097		0
25120	12391	0.513721097		0
25121	12392	0.513721097		0
25122	12393	0.513721097	-0.320817567	0
25123	12394	0.513490151		0
25124	12395	0.513490151		0
25125	12396	0.513490151		0
25126	12397	0.513490151		0
25127	12398	0.513490151		0
25128	12399	0.513301286		0
25129	12400	0.513301286		0
25130	12401	0.513301286		0
25131	12402	0.513301286		0
25132	12403	0.513301286		0
25133	12404	0.513301286		0
25134	12405	0.513301286		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver	Log 10 enrichment in the liver
25081	12352	0.51519364		0
25082	12353	0.515082096		0
25083	12354	0.515082096		0
25084	12355	0.515082096		0
25085	12356	0.515082096		0
25086	12357	0.515082096		0
25087	12358	0.515082096		0
25088	12359	0.515082096		0
25089	12360	0.514877674		0
25090	12361	0.514877674		0
25091	12362	0.514877674		0
25092	12363	0.514877674		0
25093	12364	0.514877674		0
25094	12365	0.514877674		0
25095	12366	0.514877674		0
25096	12367	0.514877674	-1.523780972	0
25097	12368	0.514765613		0
25098	12369	0.514694852		0
25099	12370	0.514694852		0
25100	12371	0.514694852		0
25101	12372	0.514694852	-1.121476158	0
25102	12373	0.514610498		0
25103	12374	0.514381621		0
25104	12375	0.514381621		0
25105	12376	0.514381621		0
25106	12377	0.514381621		0
25107	12378	0.514381621		0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
25270	12541	0.509125345	0
25271	12542	0.509125345	0
25272	12543	0.509125345	0
25273	12544	0.508942523	0
25274	12545	0.508942523	0
25275	12546	0.508942523	0
25276	12547	0.508839719	0
25277	12548	0.508839719	0
25278	12549	0.508839719	0
25279	12550	0.508839719	0
25280	12551	0.508839719	0
25281	12552	0.508839719	0
25282	12553	0.508839719	0
25283	12554	0.508839719	0
25284	12555	0.508839719	0
25285	12556	0.508839719	0
25286	12557	0.508839719	0
25287	12558	0.508839719	-0.575576418
25288	12559	0.508728004	-1.511447237
25289	12560	0.508472761	0
25290	12561	0.508472761	0
25291	12562	0.508472761	0
25292	12563	0.508472761	0
25293	12564	0.508472761	0
25294	12565	0.508472761	0
25295	12566	0.508472761	0
25296	12567	0.508163985	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
25243	12514	0.509829226	0
25244	12515	0.509829226	0
25245	12516	0.509829226	0
25246	12517	0.509829226	0
25247	12518	0.509829226	0
25248	12519	0.509829226	-1.563591526
25249	12520	0.509697162	0
25250	12521	0.509697162	0
25251	12522	0.509541137	0
25252	12523	0.509541137	0
25253	12524	0.509541137	0
25254	12525	0.509541137	0
25255	12526	0.509541137	0
25256	12527	0.509353981	0
25257	12528	0.509353981	0
25258	12529	0.509353981	0
25259	12530	0.509125345	0
25260	12531	0.509125345	0
25261	12532	0.509125345	0
25262	12533	0.509125345	0
25263	12534	0.509125345	0
25264	12535	0.509125345	0
25265	12536	0.509125345	0
25266	12537	0.509125345	0
25267	12538	0.509125345	0
25268	12539	0.509125345	0
25269	12540	0.509125345	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
25216	12487	0.510433462	0
25217	12488	0.510330046	0
25218	12489	0.510330046	0
25219	12490	0.510330046	0
25220	12491	0.510202332	0
25221	12492	0.510202332	0
25222	12493	0.510202332	0
25223	12494	0.510202332	0
25224	12495	0.510202332	-0.424451485
25225	12496	0.510040613	0
25226	12497	0.510040613	0
25227	12498	0.510040613	0
25228	12499	0.510040613	0
25229	12500	0.510040613	0
25230	12501	0.510040613	0
25231	12502	0.510040613	0
25232	12503	0.510040613	0
25233	12504	0.510040613	0
25234	12505	0.510040613	-1.324498051
25235	12506	0.509942456	0
25236	12507	0.509829226	0
25237	12508	0.509829226	0
25238	12509	0.509829226	0
25239	12510	0.509829226	0
25240	12511	0.509829226	0
25241	12512	0.509829226	0
25242	12513	0.509829226	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
25189	12460	0.511417142	0
25190	12461	0.511417142	0
25191	12462	0.511417142	0
25192	12463	0.511417142	0
25193	12464	0.511417142	0
25194	12465	0.511417142	0
25195	12466	0.511417142	0
25196	12467	0.511417142	0
25197	12468	0.511417142	0
25198	12469	0.511417142	0
25199	12470	0.511417142	0
25200	12471	0.511417142	0
25201	12472	0.511417142	0
25202	12473	0.511417142	0
25203	12474	0.511417142	0
25204	12475	0.511417142	0
25205	12476	0.511417142	0
25206	12477	0.511417142	0
25207	12478	0.511417142	0
25208	12479	0.511417142	0
25209	12480	0.511417142	0
25210	12481	0.511417142	0
25211	12482	0.511417142	0
25212	12483	0.511417142	-0.448060258
25213	12484	0.511417142	-1.05012025
25214	12485	0.511417142	-1.101272772
25215	12486	0.510590701	-1.545796712



DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
25378	12649	0.505548208	0
25379	12650	0.505548208	0
25380	12651	0.505548208	0
25381	12652	0.505548208	0
25382	12653	0.505548208	0
25383	12654	0.505548208	-1.299027232
25384	12655	0.505376788	0
25385	12656	0.505376788	0
25386	12657	0.505376788	0
25387	12658	0.505376788	0
25388	12659	0.505256833	0
25389	12660	0.505256833	0
25390	12661	0.505168193	0
25391	12662	0.505168193	0
25392	12663	0.504965654	0
25393	12664	0.504577718	0
25394	12665	0.504577718	0
25395	12666	0.504577718	0
25396	12667	0.504577718	0
25397	12668	0.504577718	0
25398	12669	0.504577718	0
25399	12670	0.504577718	0
25400	12671	0.504577718	0
25401	12672	0.504577718	0
25402	12673	0.504577718	0
25403	12674	0.504577718	0
25404	12675	0.504577718	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
25351	12622	0.506670707	0
25352	12623	0.506670707	0
25353	12624	0.506670707	0
25354	12625	0.506670707	0
25355	12626	0.506670707	-1.26572005
25356	12627	0.506520873	0
25357	12628	0.506520873	0
25358	12629	0.506520873	-1.474145827
25359	12630	0.506453723	-0.660149171
25360	12631	0.506277502	0
25361	12632	0.506277502	0
25362	12633	0.506277502	0
25363	12634	0.506277502	0
25364	12635	0.506088309	0
25365	12636	0.506008673	0
25366	12637	0.506008673	0
25367	12638	0.505813265	0
25368	12639	0.505813265	0
25369	12640	0.505813265	0
25370	12641	0.505813265	-1.495056821
25371	12642	0.505664813	0
25372	12643	0.505664813	0
25373	12644	0.505548208	0
25374	12645	0.505548208	0
25375	12646	0.505548208	0
25376	12647	0.505548208	0
25377	12648	0.505548208	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
25324	12595	0.507300576	0
25325	12596	0.507300576	0
25326	12597	0.507300576	0
25327	12598	0.507300576	0
25328	12599	0.507300576	0
25329	12600	0.507300576	0
25330	12601	0.507300576	0
25331	12602	0.507300576	0
25332	12603	0.507300576	0
25333	12604	0.507300576	0
25334	12605	0.507300576	0
25335	12606	0.507300576	0
25336	12607	0.507300576	0
25337	12608	0.507300576	0
25338	12609	0.507300576	0
25339	12610	0.507300576	-0.482140048
25340	12611	0.506944451	0
25341	12612	0.506845579	0
25342	12613	0.506845579	0
25343	12614	0.506845579	0
25344	12615	0.506845579	0
25345	12616	0.506845579	0
25346	12617	0.506845579	0
25347	12618	0.506845579	-1.406874331
25348	12619	0.506670707	0
25349	12620	0.506670707	0
25350	12621	0.506670707	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
25297	12568	0.508163985	0
25298	12569	0.508163985	0
25299	12570	0.508163985	0
25300	12571	0.508163985	0
25301	12572	0.508163985	0
25302	12573	0.508163985	0
25303	12574	0.508163985	0
25304	12575	0.507983966	0
25305	12576	0.507983966	0
25306	12577	0.507983966	0
25307	12578	0.507983966	0
25308	12579	0.507983966	0
25309	12580	0.507983966	0
25310	12581	0.507983966	0
25311	12582	0.507983966	0
25312	12583	0.507866064	0
25313	12584	0.507866064	-0.121617645
25314	12585	0.507782857	0
25315	12586	0.507782857	0
25316	12587	0.507782857	0
25317	12588	0.507782857	0
25318	12589	0.507782857	0
25319	12590	0.507782857	0
25320	12591	0.507782857	0
25321	12592	0.507782857	0
25322	12593	0.507300576	0
25323	12594	0.507300576	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
25459	12730	0.503534993	0
25460	12731	0.503534993	0
25461	12732	0.503534993	0
25462	12733	0.503534993	-0.56988576
25463	12734	0.50339917	0
25464	12735	0.50339917	0
25465	12736	0.503222663	0
25466	12737	0.503222663	0
25467	12738	0.503222663	0
25468	12739	0.503222663	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
25432	12703	0.503864004	0
25433	12704	0.503864004	0
25434	12705	0.503864004	0
25435	12706	0.503864004	0
25436	12707	0.503864004	0
25437	12708	0.503864004	0
25438	12709	0.503864004	0
25439	12710	0.503864004	0
25440	12711	0.503730313	0
25441	12712	0.503730313	0
25442	12713	0.503730313	0
25443	12714	0.503730313	0
25444	12715	0.503730313	0
25445	12716	0.503730313	0
25446	12717	0.503730313	0
25447	12718	0.503730313	0
25448	12719	0.503730313	0
25449	12720	0.503534993	0
25450	12721	0.503534993	0
25451	12722	0.503534993	0
25452	12723	0.503534993	0
25453	12724	0.503534993	0
25454	12725	0.503534993	0
25455	12726	0.503534993	0
25456	12727	0.503534993	0
25457	12728	0.503534993	0
25458	12729	0.503534993	0

DNA SEQ ID NO	AA SEQ ID NO	Log 10 enrichment in the brain	Log 10 enrichment in the liver
25405	12676	0.504577718	0
25406	12677	0.504577718	0
25407	12678	0.504577718	0
25408	12679	0.504577718	0
25409	12680	0.504577718	0
25410	12681	0.504577718	0
25411	12682	0.504577718	0
25412	12683	0.504577718	0
25413	12684	0.504577718	0
25414	12685	0.504577718	0
25415	12686	0.504577718	0
25416	12687	0.504577718	0
25417	12688	0.504577718	-0.288568261
25418	12689	0.504577718	-0.434696297
25419	12690	0.504577718	-0.454899683
25420	12691	0.504577718	-0.755929679
25421	12692	0.504577718	-0.755929679
25422	12693	0.504577718	-0.932020938
25423	12694	0.504577718	-1.233050933
25424	12695	0.504577718	-1.409142192
25425	12696	0.504140141	0
25426	12697	0.504093284	0
25427	12698	0.504035188	0
25428	12699	0.50396126	0
25429	12700	0.50396126	0
25430	12701	0.50396126	0
25431	12702	0.503864004	0



DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score	DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score	DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score	DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score
35576	25573	2.427234043	2.446808511	35604	25601	2.24	4.952380952	35632	25629	2.102857143	3.207482993	35660	25657	2.009846154	1.162637363
35577	25574	2.421052632	1.210526316	35605	25602	2.231	4.928571429	35633	25630	2.102857143	4.506122449	35661	25658	2.003960396	1.659123055
35578	25575	2.406153846	3.159340659	35606	25603	2.229230769	3.791208791	35634	25631	2.102857143	8.448979592	35662	25659	1.988387097	3.656682028
35579	25576	2.392	4.107142857	35607	25604	2.227368421	3.977443609	35635	25632	2.102857143	3.473469388	35663	25660	1.967524752	1.106082037
35580	25577	2.381176471	2.06162465	35608	25605	2.227368421	1.210526316	35636	25633	2.098245614	5.015037594	35664	25661	1.955	6.058035714
35581	25578	2.377846154	4.650549451	35609	25606	2.223333333	1.642857143	35637	25634	2.096744186	1.833887043	35665	25662	1.951515152	1.360750361
35582	25579	2.376666667	3.285714286	35610	25607	2.208	3.942857143	35638	25635	2.096744186	1.400885936	35666	25663	1.948235294	3.18907563
35583	25580	2.374193548	3.126728111	35611	25608	2.208	4.130612245	35639	25636	2.093793103	1.302955665	35667	25664	1.945142857	5.444897959
35584	25581	2.372631579	2.421052632	35612	25609	2.197777778	3.468253968	35640	25637	2.089491525	2.840193705	35668	25665	1.942222222	1.533333333
35585	25582	2.372631579	2.161654135	35613	25610	2.194698795	1.108433735	35641	25638	2.080952381	1.603741497	35669	25666	1.936842105	2.507518797
35586	25583	2.365714286	5.444897959	35614	25611	2.180740741	3.042328042	35642	25639	2.074181818	4.898701299	35670	25667	1.934358974	1.347985348
35587	25584	2.365714286	5.867346939	35615	25612	2.180740741	1.46031746	35643	25640	2.072911392	1.788426763	35671	25668	1.930491803	1.238875878
35588	25585	2.3575	3.799107143	35616	25613	2.174545455	1.672727273	35644	25641	2.07	5.75	35672	25669	1.921777778	1.606349206
35589	25586	2.353488372	1.146179402	35617	25614	2.174545455	9.409090909	35645	25642	2.067809524	4.412244898	35673	25670	1.9136	1.927619048
35590	25587	2.345098039	1.0952238095	35618	25615	2.169552239	1.275053305	35646	25643	2.065306122	3.956268222	35674	25671	1.912631579	3.328947368
35591	25588	2.335384615	1.432234432	35619	25616	2.162	1.560714286	35647	25644	2.062068966	3.115763547	35675	25672	1.910769231	2.337912088
35592	25589	2.330666667	2.19047619	35620	25617	2.16	2	35648	25645	2.059701493	1.275053305	35676	25673	1.908148148	2.85978836
35593	25590	2.306133333	2.891428571	35621	25618	2.151384615	7.683516484	35649	25646	2.056470588	2.512605042	35677	25674	1.904561404	3.343358396
35594	25591	2.3	1.93622449	35622	25619	2.146666667	1.861904762	35650	25647	2.056470588	1.546218487	35678	25675	1.898412698	1.98185941
35595	25592	2.2816	2.497142857	35623	25620	2.146666667	2.628571429	35651	25648	2.053052632	2.006015038	35679	25676	1.892571429	1.689795918
35596	25593	2.28056338	1.342052314	35624	25621	2.139534884	1.833887043	35652	25649	2.044444444	3.285714286	35680	25677	1.888421053	4.107142857
35597	25594	2.274909091	1.135064935	35625	25622	2.137647059	1.691176471	35653	25650	2.044444444	4.137566138	35681	25678	1.887179487	4.886446886
35598	25595	2.269333333	2.40952381	35626	25623	2.136774194	2.755760369	35654	25651	2.037142857	1.87755102	35682	25679	1.886	1.013095238
35599	25596	2.268737864	1.882108183	35627	25624	2.130526316	3.285714286	35655	25652	2.033684211	1.268170426	35683	25680	1.884878049	4.24738676
35600	25597	2.252413793	1.07635468	35628	25625	2.130526316	2.593984962	35656	25653	2.033684211	1.556390977	35684	25681	1.881818182	1.642857143
35601	25598	2.251940299	1.176972281	35629	25626	2.123076923	1.074175824	35657	25654	2.024	7.721428571	35685	25682	1.88	1.928571429
35602	25599	2.248888889	1.277777778	35630	25627	2.118787879	1.692640693	35658	25655	2.020983607	2.585480094	35686	25683	1.874716981	3.781671159
35603	25600	2.248888889	2.920634921	35631	25628	2.116	2.053571429	35659	25656	2.019512195	1.682926829	35687	25684	1.874074074	2.646825397

DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score	DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score	DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score
35688	25685	1.861647059	1.58487395	35716	25713	1.736338028	2.822937626	35744	25741	1.666415094	1.859838275
35689	25686	1.84	1.449579832	35717	25714	1.734857143	1.971428571	35745	25742	1.664761905	6.727891156
35690	25687	1.84	1.1115902965	35718	25715	1.734857143	1.595918367	35746	25743	1.660487805	2.591173055
35691	25688	1.84	2.324041812	35719	25716	1.734857143	2.534693878	35747	25744	1.656	1.38
35692	25689	1.84	1.25170068	35720	25717	1.731764706	9.277310924	35748	25745	1.656	1.204761905
35693	25690	1.84	2.503401361	35721	25718	1.728484848	4.779220779	35749	25746	1.656	1.642857143
35694	25691	1.84	2.527472527	35722	25719	1.728484848	1.692640693	35750	25747	1.656	1.807142857
35695	25692	1.84	1.216931217	35723	25720	1.721290323	2.437788018	35751	25748	1.656	3.203571429
35696	25693	1.84	1.971428571	35724	25721	1.72	1.142857143	35752	25749	1.656	2.628571429
35697	25694	1.815789474	1.815789474	35725	25722	1.717333333	1.226666667	35753	25750	1.652244898	2.145772595
35698	25695	1.815466667	2.497142857	35726	25723	1.717333333	1.401904762	35754	25751	1.645384615	1.200549451
35699	25696	1.812121212	1.045454545	35727	25724	1.713103448	5.21182266	35755	25752	1.642857143	8.331632653
35700	25697	1.806545455	2.24025974	35728	25725	1.708571429	4.869897959	35756	25753	1.641846154	1.567032967
35701	25698	1.801666667	3.62797619	35729	25726	1.708571429	1.25170068	35757	25754	1.64	2
35702	25699	1.792	1.142857143	35730	25727	1.708571429	2.229591837	35758	25755	1.635555556	2.418650794
35703	25700	1.788888889	2.236111111	35731	25728	1.708571429	3.051020408	35759	25756	1.635555556	2.068783069
35704	25701	1.785882353	5.991596639	35732	25729	1.703703704	4.867724868	35760	25757	1.635555556	4.244047619
35705	25702	1.781587302	2.920634921	35733	25730	1.702	4.764285714	35761	25758	1.635555556	4.654761905
35706	25703	1.771851852	1.095238095	35734	25731	1.6928	1.095238095	35762	25759	1.635555556	2.19047619
35707	25704	1.771851852	2.068783069	35735	25732	1.690810811	2.752895753	35763	25760	1.63364486	3.285714286
35708	25705	1.767843137	6.635854342	35736	25733	1.689795918	1.139941691	35764	25761	1.632	2.942857143
35709	25706	1.7664	1.84	35737	25734	1.688470588	2.628571429	35765	25762	1.627692308	1.769230769
35710	25707	1.762253521	4.6277666	35738	25735	1.687819549	2.939849624	35766	25763	1.627692308	3.412087912
35711	25708	1.75375	2.310267857	35739	25736	1.686666667	2.327380952	35767	25764	1.627692308	4.549450549
35712	25709	1.745641026	4.844322344	35740	25737	1.684507042	2.915492958	35768	25765	1.626046512	1.910299003
35713	25710	1.745154639	1.82916053	35741	25738	1.683404255	4.474164134	35769	25766	1.626046512	2.139534884
35714	25711	1.743157895	6.398496241	35742	25739	1.670526316	4.323308271	35770	25767	1.626046512	3.132890365
35715	25712	1.740540541	6.837837838	35743	25740	1.668837209	1.299003322	35771	25768	1.623529412	3.672268908
35772	25769	1.623529412	4.058823529	35772	25769	1.623529412	4.058823529	35780	25777	1.6	4.571428571
35773	25770	1.623529412	4.831932773	35773	25770	1.623529412	4.831932773	35781	25778	1.598688525	2.962529274
35774	25771	1.620952381	6.102040816	35774	25771	1.620952381	6.102040816	35782	25779	1.596144578	3.008605852
35775	25772	1.616969697	6.272727273	35775	25772	1.616969697	6.272727273	35783	25780	1.591351351	3.196911197
35776	25773	1.614693878	2.413994169	35776	25773	1.614693878	2.413994169	35784	25781	1.590508475	1.169491525
35777	25774	1.614693878	1.542274052	35777	25774	1.614693878	1.542274052	35785	25782	1.58976	1.182857143
35778	25775	1.614693878	4.626822157	35778	25775	1.614693878	4.626822157	35786	25783	1.587945205	2.565557773
35779	25776	1.601882353	1.005042017	35779	25776	1.601882353	1.005042017	35787	25784	1.58745098	4.509803922
35780	25777			35780	25777			35788	25785	1.5824	4.008571429
35781	25778	1.598688525	2.962529274	35781	25778	1.598688525	2.962529274	35789	25786	1.577142857	1.733124019
35782	25779	1.596144578	3.008605852	35782	25779	1.596144578	3.008605852	35790	25787	1.577142857	1.329931973
35783	25780	1.591351351	3.196911197	35783	25780	1.591351351	3.196911197	35791	25788	1.577142857	1.25170068
35784	25781	1.590508475	1.169491525	35784	25781	1.590508475	1.169491525	35792	25789	1.577142857	1.267346939
35785	25782	1.58976	1.182857143	35785	25782	1.58976	1.182857143	35793	25790	1.577142857	1.689795918
35786	25783	1.587945205	2.565557773	35786	25783	1.587945205	2.565557773	35794	25791	1.577142857	2.413994169
35787	25784	1.58745098	4.509803922	35787	25784	1.58745098	4.509803922	35795	25792	1.567407407	2.494708995
35788	25785	1.5824	4.008571429	35788	25785	1.5824	4.008571429	35796	25793	1.562264151	1.425876011
35789	25786	1.577142857	1.733124019	35789	25786	1.577142857	1.733124019	35797	25794	1.561212121	3.484848485
35790	25787	1.577142857	1.329931973	35790	25787	1.577142857	1.329931973	35798	25795	1.560506329	1.164556962
35791	25788	1.577142857	1.25170068	35791	25788	1.577142857	1.25170068	35799	25796	1.553027523	2.712975098
35792	25789	1.577142857	1.267346939	35792	25789	1.577142857	1.267346939				
35793	25790	1.577142857	1.689795918	35793	25790	1.577142857	1.689795918				
35794	25791	1.577142857	2.413994169	35794	25791	1.577142857	2.413994169				
35795	25792	1.567407407	2.494708995	35795	25792	1.567407407	2.494708995				
35796	25793	1.562264151	1.425876011	35796	25793	1.562264151	1.425876011				
35797	25794	1.561212121	3.484848485	35797	25794	1.561212121	3.484848485				
35798	25795	1.560506329	1.164556962	35798	25795	1.560506329	1.164556962				
35799	25796	1.553027523	2.712975098	35799	25796	1.553027523	2.712975098				

DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score	DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score	DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score
35800	25797	1.5525	1.026785714	35828	25825	1.505454545	1.493506494	35856	25853	1.448510638	6.082066869
35801	25798	1.551372549	2.254901961	35829	25826	1.505454545	4.032467532	35857	25854	1.445714286	4.224489796
35802	25799	1.549473684	5.187969925	35830	25827	1.502040816	1.810495627	35858	25855	1.445714286	4.576530612
35803	25800	1.548514851	1.26874116	35831	25828	1.495	6.229166667	35859	25856	1.444301075	1.837173579
35804	25801	1.547272727	1.642857143	35832	25829	1.492444444	1.788888889	35860	25857	1.443137255	2.995798319
35805	25802	1.546382979	1.013677812	35833	25830	1.491891892	2.752895753	35861	25858	1.440963855	1.425129088
35806	25803	1.541621622	2.575289575	35834	25831	1.486153846	6.445054945	35862	25859	1.44	2.085714286
35807	25804	1.537534247	2.520547945	35835	25832	1.486153846	1.642857143	35863	25860	1.4375	3.901785714
35808	25805	1.533333333	1.711309524	35836	25833	1.486153846	4.549450549	35864	25861	1.436712329	1.350293542
35809	25806	1.533333333	2.555555556	35837	25834	1.484912281	1.268170426	35865	25862	1.435757576	1.493506494
35810	25807	1.533333333	3.230952381	35838	25835	1.482222222	3.285714286	35866	25863	1.433766234	1.706864564
35811	25808	1.533333333	1.87755102	35839	25836	1.48097561	5.048780488	35867	25864	1.433488372	2.941860465
35812	25809	1.533333333	1.697619048	35840	25837	1.48097561	1.362369338	35868	25865	1.431111111	8.214285714
35813	25810	1.529638554	1.425129088	35841	25838	1.478571429	1.87755102	35869	25866	1.431111111	4.472222222
35814	25811	1.525853659	3.285714286	35842	25839	1.472	1.774285714	35870	25867	1.431111111	1.135802469
35815	25812	1.524571429	1.971428571	35843	25840	1.472	1.117142857	35871	25868	1.431111111	2.555555556
35816	25813	1.52344086	5.016897081	35844	25841	1.472	6.352380952	35872	25869	1.431111111	2.555555556
35817	25814	1.521975309	1.176366843	35845	25842	1.472	1.971428571	35873	25870	1.428059701	2.452025586
35818	25815	1.52	2.142857143	35846	25843	1.472	5.585714286	35874	25871	1.426516854	2.399678973
35819	25816	1.516756757	1.50965251	35847	25844	1.467341772	1.081374322	35875	25872	1.426	2.546428571
35820	25817	1.516483516	1.083202512	35848	25845	1.466666667	2.857142857	35876	25873	1.426	2.464285714
35821	25818	1.516483516	4.982731554	35849	25846	1.465762712	1.615012107	35877	25874	1.424516129	2.013824885
35822	25819	1.514166667	1.950892857	35850	25847	1.464736842	1.426691729	35878	25875	1.424516129	2.755760369
35823	25820	1.511428571	4.459183673	35851	25848	1.464489796	3.151603499	35879	25876	1.419428571	1.157823129
35824	25821	1.510736842	1.62556391	35852	25849	1.461917808	2.160469667	35880	25877	1.418333333	1.026785714
35825	25822	1.507047619	1.314285714	35853	25850	1.456666667	1.163690476	35881	25878	1.415384615	2.852433281
35826	25823	1.505454545	1.593073593	35854	25851	1.455824176	1.227629513	35882	25879	1.413658537	1.162020906
35827	25824	1.505454545	1.792207792	35855	25852	1.44969697	2.356421356	35883	25880	1.413333333	1.952380952
35884	25881	1.411506849	2.56555773	35884	25881	1.411506849	2.56555773	35903	25900	1.38	1.916666667
35885	25882	1.410666667	4.326190476	35885	25882	1.410666667	4.326190476	35904	25901	1.38	2.558163265
35886	25883	1.408395062	1.703703704	35886	25883	1.408395062	1.703703704	35905	25902	1.38	9.035714286
35887	25884	1.408163265	2.179300292	35887	25884	1.408163265	2.179300292	35906	25903	1.38	7.275510204
35888	25885	1.407058824	2.029411765	35888	25885	1.407058824	2.029411765	35907	25904	1.38	1.525510204
35889	25886	1.407058824	1.739495798	35889	25886	1.407058824	1.739495798	35908	25905	1.377177914	1.471516214
35890	25887	1.402772277	1.236209335	35890	25887	1.402772277	1.236209335	35909	25906	1.374945055	1.624803768
35891	25888	1.401904762	3.755102041	35891	25888	1.401904762	3.755102041	35910	25907	1.373521127	1.573440644
35892	25889	1.3984	1.945142857	35892	25889	1.3984	1.945142857	35911	25908	1.373134328	1.275053305
35893	25890	1.397037037	1.399470899	35893	25890	1.397037037	1.399470899				
35894	25891	1.395862069	2.719211823	35894	25891	1.395862069	2.719211823				
35895	25892	1.39483871	2.80875576	35895	25892	1.39483871	2.80875576				
35896	25893	1.393939394	1.692640693	35896	25893	1.393939394	1.692640693				
35897	25894	1.393398058	1.435506241	35897	25894	1.393398058	1.435506241				
35898	25895	1.392432432	5.283783784	35898	25895	1.392432432	5.283783784				
35899	25896	1.392432432	2.575289575	35899	25896	1.392432432	2.575289575				
35900	25897	1.390222222	2.044444444	35900	25897	1.390222222	2.044444444				
35901	25898	1.388070175	1.037593985	35901	25898	1.388070175	1.037593985				
35902	25899	1.385974026	1.237476809	35902	25899	1.385974026	1.237476809				

DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score	DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score	DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score
35912	25909	1.373134328	5.051172708	35940	25937	1.355789474	2.19047619	35968	25965	1.297266187	2.08016444
35913	25910	1.373134328	1.324093817	35941	25938	1.351836735	2.346938776	35969	25966	1.295510204	2.246355685
35914	25911	1.372698413	1.616780045	35942	25939	1.351836735	2.816326531	35970	25967	1.294814815	2.312169312
35915	25912	1.372202339	3.564164649	35943	25940	1.351504425	2.587863464	35971	25968	1.294065934	1.588697017
35916	25913	1.371153846	2.148351648	35944	25941	1.349333333	2.226984127	35972	25969	1.290746269	3.089552239
35917	25914	1.370612245	2.548104956	35945	25942	1.349333333	1.533333333	35973	25970	1.288	4.6
35918	25915	1.370212766	1.118541033	35946	25943	1.347605634	1.203219316	35974	25971	1.288	1.519642857
35919	25916	1.370212766	7.200607903	35947	25944	1.346341463	2.724738676	35975	25972	1.288	1.916666667
35920	25917	1.370212766	1.607902736	35948	25945	1.346341463	2.885017422	35976	25973	1.286504065	1.709639954
35921	25918	1.36962406	2.791621912	35949	25946	1.3432	1.544285714	35977	25974	1.284528302	1.425876011
35922	25919	1.369302326	1.260797342	35950	25947	1.342702703	4.706563707	35978	25975	1.28372093	2.139534884
35923	25920	1.369302326	2.139534884	35951	25948	1.33952	1.156571429	35979	25976	1.282424242	3.683982684
35924	25921	1.368205128	2.232600733	35952	25949	1.338181818	1.941558442	35980	25977	1.278644068	1.280871671
35925	25922	1.366857143	9.857142857	35953	25950	1.338181818	2.19047619	35981	25978	1.278315789	2.282706767
35926	25923	1.365773196	3.488954345	35954	25951	1.338181818	4.107142857	35982	25979	1.277777778	4.426587302
35927	25924	1.36516129	1.589861751	35955	25952	1.332413793	1.019704433	35983	25980	1.276396396	1.598455598
35928	25925	1.36516129	1.837173579	35956	25953	1.33106383	2.097264438	35984	25981	1.273846154	1.642857143
35929	25926	1.363571429	1.584183673	35957	25954	1.3248	3.811428571	35985	25982	1.273846154	2.401098901
35930	25927	1.362962963	3.529100529	35958	25955	1.32	1.142857143	35986	25983	1.272666667	1.095238095
35931	25928	1.362962963	1.886243386	35959	25956	1.32	3.571428571	35987	25984	1.271272727	1.015584416
35932	25929	1.3616	2.825714286	35960	25957	1.319245283	3.037735849	35988	25985	1.270927835	1.083946981
35933	25930	1.36	1.857142857	35961	25958	1.318666667	3.011904762	35989	25986	1.27047619	2.738095238
35934	25931	1.36	5	35962	25959	1.317837838	1.953667954	35990	25987	1.27047619	1.642857143
35935	25932	1.358095238	2.659863946	35963	25960	1.307951807	1.148020654	35991	25988	1.262745098	1.739495798
35936	25933	1.358095238	4.459183673	35964	25961	1.307368421	1.729323308	35992	25989	1.262745098	1.030812325
35937	25934	1.357669903	1.850208044	35965	25962	1.304303797	2.620253165	35993	25990	1.26214876	1.357733176
35938	25935	1.355789474	1.12406015	35966	25963	1.302153846	1.87032967	35994	25991	1.258947368	1.959899749
35939	25936	1.355789474	1.296992481	35967	25964	1.301463415	1.763066202	35995	25992	1.258947368	1.971428571

DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score	DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score
35996	25993	1.257333333	3.55952381	36000	25997	1.252765957	3.844984802
35997	25994	1.257333333	1.478571429	36001	25998	1.25025641	3.412087912
35998	25995	1.255193798	1.782945736	36002	25999	1.248571429	5.163265306
35999	25996	1.253333333	3	36003	26000	1.248571429	2.757653061
36000	25997	1.252765957	3.844984802	36004	26001	1.247457627	2.394673123
36001	25998	1.25025641	3.412087912	36005	26002	1.246451613	2.119815668
36002	25999	1.248571429	5.163265306	36006	26003	1.245538462	2.527472527
36003	26000	1.248571429	2.757653061	36007	26004	1.244705882	2.705882353
36004	26001	1.247457627	2.394673123	36008	26005	1.243943662	1.249496982
36005	26002	1.246451613	2.119815668	36009	26006	1.240930233	1.528239203
36006	26003	1.245538462	2.527472527	36010	26007	1.240449438	1.033707965
36007	26004	1.244705882	2.705882353	36011	26008	1.238461538	1.200549451
36008	26005	1.243943662	1.249496982	36012	26009	1.23625	1.283482143
36009	26006	1.240930233	1.528239203	36013	26010	1.23625	2.207589286
36010	26007	1.240449438	1.033707965	36014	26011	1.235428571	3.285714286
36011	26008	1.238461538	1.200549451	36015	26012	1.234146341	1.722996516
36012	26009	1.23625	1.283482143	36016	26013	1.233882353	1.816806723
36013	26010	1.23625	2.207589286	36017	26014	1.233636364	3.50974026
36014	26011	1.235428571	3.285714286	36018	26015	1.232621359	2.041608877
36015	26012	1.234146341	1.722996516	36019	26016	1.226666667	2.38961039
36016	26013	1.233882353	1.816806723	36020	26017	1.226666667	1.325814536
36017	26014	1.233636364	3.50974026	36021	26018	1.226666667	1.684981685
36018	26015	1.232621359	2.041608877	36022	26019	1.226666667	1.314285714
36019	26016	1.226666667	2.38961039	36023	26020	1.226666667	1.236555914

DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score	DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score	DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score
36024	26021	1.226666667	1.46031746	36052	26049	1.180377358	2.23180593	36108	26105	1.113684211	1.815789474
36025	26022	1.226666667	4.015873016	36053	26050	1.179487179	3.36996337	36109	26106	1.110630631	1.184041184
36026	26023	1.226666667	4.107142857	36054	26051	1.179487179	2.527472527	36110	26107	1.10984127	1.616780045
36027	26024	1.217647059	5.025210084	36055	26052	1.17875	2.720982143	36111	26108	1.107572816	1.531206657
36028	26025	1.2144	4.205714286	36056	26053	1.178426966	1.476725522	36112	26109	1.104	1.567032967
36029	26026	1.2144	1.314285714	36057	26054	1.1776	2.497142857	36113	26110	1.104	3.285714286
36030	26027	1.213617021	2.272036474	36058	26055	1.1776	3.417142857	36114	26111	1.098507463	1.373134328
36031	26028	1.209863014	1.485322896	36059	26056	1.174939759	1.385542169	36115	26112	1.096923077	3.222527473
36032	26029	1.2075	1.334821429	36060	26057	1.174468085	3.565349544	36116	26113	1.095238095	3.950680272
36033	26030	1.2075	1.129464286	36061	26058	1.173793103	2.379310345	36117	26114	1.093333333	2.142857143
36034	26031	1.206222222	2.847619048	36062	26059	1.170909091	1.374025974	36118	26115	1.093333333	1.142857143
36035	26032	1.204363636	3.464935065	36063	26060	1.170909091	4.838961039	36119	26116	1.093069307	1.301272984
36036	26033	1.203076923	2.527472527	36064	26061	1.170909091	1.493506494	36120	26117	1.087883212	1.726798749
36037	26034	1.203076923	1.769230769	36065	26062	1.170909091	4.405844156	36121	26118	1.087272727	5.924242424
36038	26035	1.200842105	1.798496241	36066	26063	1.170909091	1.792207792	36122	26119	1.080634921	4.328798186
36039	26036	1.2	3.714285714	36067	26064	1.170909091	2.875	36123	26120	1.079669421	2.145218418
36040	26037	1.2	2.514285714	36068	26065	1.170909091	1.493506494	36124	26121	1.07862069	2.15270936
36041	26038	1.196	7.392857143	36069	26066	1.170909091	2.150649351	36125	26122	1.07862069	2.804187192
36042	26039	1.196	1.04047619	36070	26067	1.168253968	1.616780045	36126	26123	1.077368421	1.988721805
36043	26040	1.194805195	1.194805195	36071	26068	1.167692308	6.192307692	36127	26124	1.076226415	1.797843666
36044	26041	1.194385965	2.305764411	36072	26069	1.166829268	2.484320557	36128	26125	1.073333333	1.212585034
36045	26042	1.194385965	2.536340852	36073	26070	1.163333333	1.861904762	36129	26126	1.073333333	1.56462585
36046	26043	1.191949686	1.260557053	36074	26071	1.162105263	4.669172932	36130	26127	1.073333333	2.646825397
36047	26044	1.190588235	1.224089636	36075	26072	1.162105263	3.458646617	36131	26128	1.071392405	4.533453888
36048	26045	1.188923077	1.263736264	36076	26073	1.161165049	2.360610264	36132	26129	1.071044776	1.83901919
36049	26046	1.186542056	1.873164219	36077	26074	1.160615385	2.78021978	36133	26130	1.069767442	2.648947951
36050	26047	1.185777778	4.088888889	36078	26075	1.160615385	1.718681319	36134	26131	1.069401709	1.432234432
36051	26048	1.184367816	1.775041051	36079	26076	1.16	1.42857143	36135	26132	1.067857143	1.701530612



DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score
36193	26190	1.013033708	2.731942215
36194	26191	1.013033708	1.845906902
36195	26192	1.010196078	1.224089636
36196	26193	1.009756098	2.203832753
36197	26194	1.009032258	3.444700461
36198	26195	1.007619048	3.911564626
36199	26196	1.005866667	1.139047619
36200	26197	1.005581395	1.681063123
36201	26198	1.005185185	1.642857143
36202	26199	1.004540541	1.687258687
36203	26200	1.003636364	4.281385281
36204	26201	1.003636364	9.25974026
36205	26202	1.003636364	9.25974026
36206	26203	1.003636364	2.38961039
36207	26204	1.000701754	1.786967419
36208	26205	1.000701754	1.412280702

DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score
36174	26171	1.02557377	1.885245902
36175	26172	1.025142857	3.520408163
36176	26173	1.024	2.4
36177	26174	1.022222222	10.31349206
36178	26175	1.022222222	1.861904762
36179	26176	1.022222222	5.841269841
36180	26177	1.022222222	1.616780045
36181	26178	1.022222222	1.049603175
36182	26179	1.022222222	2.555555556
36183	26180	1.019759036	1.385542169
36184	26181	1.01787234	2.446808511
36185	26182	1.01787234	1.607902736
36186	26183	1.01787234	3.495440729
36187	26184	1.01787234	1.817629179
36188	26185	1.016842105	2.593984962
36189	26186	1.016842105	3.458646617
36190	26187	1.016842105	2.334586466
36191	26188	1.015172414	4.022167488
36192	26189	1.015172414	3.0591133

DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score
36155	26152	1.042666667	4.819047619
36156	26153	1.042666667	2.738095238
36157	26154	1.041509434	2.169811321
36158	26155	1.041052632	1.729323308
36159	26156	1.04	1.142857143
36160	26157	1.037948718	2.948717949
36161	26158	1.037446809	2.446808511
36162	26159	1.037446809	1.013677812
36163	26160	1.035	3.422619048
36164	26161	1.035	4.928571429
36165	26162	1.035	2.854464286
36166	26163	1.035	1.505952381
36167	26164	1.035	1.711309524
36168	26165	1.032195122	2.644599303
36169	26166	1.0304	7.885714286
36170	26167	1.0304	1.445714286
36171	26168	1.029724771	1.296199214
36172	26169	1.028661417	2.457817773
36173	26170	1.02557377	1.023419204

DNA SEQ ID NO	AA SEQ ID NO	Heart 1 Enrichment Score	Heart 2 Enrichment Score
36136	26133	1.0672	1.708571429
36137	26134	1.066666667	1.142857143
36138	26135	1.065263158	3.156015038
36139	26136	1.063111111	3.212698413
36140	26137	1.063111111	1.216931217
36141	26138	1.061538462	2.085164835
36142	26139	1.059393939	2.090909091
36143	26140	1.059393939	2.24025974
36144	26141	1.055294118	1.594537815
36145	26142	1.055294118	2.174369748
36146	26143	1.051428571	1.779761905
36147	26144	1.051428571	2.464285714
36148	26145	1.051428571	1.783673469
36149	26146	1.051428571	3.227040816
36150	26147	1.049122807	1.556390977
36151	26148	1.045894737	2.593984962
36152	26149	1.044324324	1.554054054
36153	26150	1.044324324	4.884169884
36154	26151	1.042666667	2.738095238

FIG. 5

DNA SEQ ID NO	AA SEQ ID NO	Intestine 1 Enrichment	Intestine 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Intestine 1 Enrichment	Intestine 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Intestine 1 Enrichment	Intestine 2 Enrichment
36209	26206	227.125	48.80128205	36235	26232	40.38218391	10.39846743	36261	26258	31.83955224	13.04477612
36210	26207	146.05	245.3333333	36236	26233	40.1097561	17.57723577	36262	26259	31.39189189	21.96396396
36211	26208	105.2692308	60.15384615	36237	26234	40.1097561	31.41463415	36263	26260	30.94047619	16.79365079
36212	26209	95.69642857	43.80952381	36238	26235	40.05833333	27.08888889	36264	26261	30.77941176	11.7254902
36213	26210	82.14285714	48.19047619	36239	26236	39.80769231	17.98717949	36265	26262	30.68684211	4.357894737
36214	26211	80.40725806	6.924731183	36240	26237	39.79605263	34.70175439	36266	26263	30.64805825	19.35275081
36215	26212	80.02083333	1.277777778	36241	26238	38.64534884	6.775193798	36267	26264	30.53888889	48.38518519
36216	26213	76.02777778	48.55555556	36242	26239	37	4.666666667	36268	26265	30.46276596	42.73758865
36217	26214	73.05882353	42.39215686	36243	26240	36.19117647	51.41176471	36269	26266	30.35465116	67.03875969
36218	26215	63.25	74.47619048	36244	26241	36.05932203	42.10169492	36270	26267	30.01838235	9.019607843
36219	26216	61.83461538	2.123076923	36245	26242	35.0175	8.893333333	36271	26268	30.01219512	46.56097561
36220	26217	58.77777778	50.54320988	36246	26243	35.01111111	30.32592593	36272	26269	29.98214286	30.66666667
36221	26218	55.13611111	3.918518519	36247	26244	34.7875	25.04444444	36273	26270	29.55925926	10.790123346
36222	26219	52.42954545	12.96363636	36248	26245	34.7875	13.99166667	36274	26271	29.51102941	10.82352941
36223	26220	50.14247312	21.2688172	36249	26246	34.3597561	22.43902439	36275	26272	29.49193548	24.97849462
36224	26221	49.28571429	6.571428571	36250	26247	34.3525641	42.06837607	36276	26273	29.45987654	12.11522634
36225	26222	48.58163265	49.75510204	36251	26248	34.32575758	13.93939394	36277	26274	29.44	36.18666667
36226	26223	48.39583333	65.16666667	36252	26249	34.18636364	13.66060606	36278	26275	29.2242268	18.81099656
36227	26224	48.36388889	5.111111111	36253	26250	33.97727273	32.06060606	36279	26276	29.18125	15.33333333
36228	26225	46.359375	25.39583333	36254	26251	33.6375	41.01666667	36280	26277	28.75	37.56666667
36229	26226	44.72222222	50.54320988	36255	26252	33.31034483	43.88505747	36281	26278	28.75	49.13636364
36230	26227	43.484375	13.03333333	36256	26253	32.75757576	14.63636364	36282	26279	28.45258621	28.81609195
36231	26228	42.80555556	28.39506173	36257	26254	32.29292929	25.24579125	36283	26280	28.40671642	29.52238806
36232	26229	42.5	17.33333333	36258	26255	32.24509804	12.32679739	36284	26281	28.23888889	42.25185185
36233	26230	41.75	27	36259	26256	32.2	15.33333333	36285	26282	27.92857143	54.76190476
36234	26231	40.99193548	25.72043011	36260	26257	32.11153846	11.79487179	36286	26283	27.79166667	41.61904762





DNA SEQ ID NO	AA SEQ ID NO	Intestine 1 Enrichment	Intestine 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Intestine 1 Enrichment	Intestine 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Intestine 1 Enrichment	Intestine 2 Enrichment
36537	26534	11.68157895	19.69122807	36565	26562	10.86111111	1.277777778	36593	26590	9.814655172	14.54022989
36538	26535	11.6796875	8.305555556	36566	26563	10.83653846	2.358974359	36594	26591	9.807459677	10.75806452
36539	26536	11.6402439	10.47154472	36567	26564	10.74131944	9.583333333	36595	26592	9.787234043	63.29078014
36540	26537	11.6	32.8	36568	26565	10.71590909	5.343434343	36596	26593	9.775	20.08666667
36541	26538	11.56686047	18.00775194	36569	26566	10.71078431	15.63398693	36597	26594	9.775	23.21904762
36542	26539	11.56534091	9.931818182	36570	26567	10.67857143	29.43452381	36598	26595	9.75	8.666666667
36543	26540	11.55582524	4.614886731	36571	26568	10.565625	10.54166667	36599	26596	9.741176471	10.82352941
36544	26541	11.5	27.83589744	36572	26569	10.56009615	1.695512821	36600	26597	9.725308642	6.057613169
36545	26542	11.5	23.13939394	36573	26570	10.54166667	29.60185185	36601	26598	9.715517241	12.68965517
36546	26543	11.5	10.62706271	36574	26571	10.5225	6.9	36602	26599	9.703125	11.30833333
36547	26544	11.44132653	25.34693878	36575	26572	10.46311475	23	36603	26600	9.699494949	17.96632997
36548	26545	11.43611111	7.496296296	36576	26573	10.41509434	7.522012579	36604	26601	9.679166667	2.044444444
36549	26546	11.41015625	5.989583333	36577	26574	10.39893617	38.82269504	36605	26602	9.655660377	21.40880503
36550	26547	11.40254237	6.237288136	36578	26575	10.35	26.57777778	36606	26603	9.651785714	6.43452381
36551	26548	11.375	1.5	36579	26576	10.33445946	8.702702703	36607	26604	9.614754098	15.58469945
36552	26549	11.32920792	2.732673267	36580	26577	10.22222222	8.518518519	36608	26605	9.611940299	4.119402985
36553	26550	11.30172414	27.49425287	36581	26578	10.22222222	17.52380952	36609	26606	9.61013986	19.08624709
36554	26551	11.2125	3.066666667	36582	26579	10.20343137	8.117647059	36610	26607	9.583333333	25.8245614
36555	26552	11.20762712	31.44632768	36583	26580	10.18859649	23.67251462	36611	26608	9.5234375	12.33854167
36556	26553	11.18055556	28.96296296	36584	26581	10.17307692	12.08974359	36612	26609	9.4875	13.03333333
36557	26554	11.155	39.86666667	36585	26582	10.12323944	15.11737089	36613	26610	9.459677419	9.562724014
36558	26555	11.12295082	28.15300546	36586	26583	10.09593023	28.52713178	36614	26611	9.43359375	29.46875
36559	26556	11.12226277	28.54014599	36587	26584	10.08333333	24.22222222	36615	26612	9.421686747	23.8313253
36560	26557	11.05769231	28.6025641	36588	26585	10.02022059	7.328431373	36616	26613	9.384	12.144
36561	26558	11.03629032	15.08602151	36589	26586	9.974489796	20.65306122	36617	26614	9.381578947	11.06766917
36562	26559	11.02083333	18.84722222	36590	26587	9.966666667	18.4	36618	26615	9.364285714	35.7047619
36563	26560	10.93442623	8.295081967	36591	26588	9.926886792	13.3081761	36619	26616	9.34375	2.601190476
36564	26561	10.93309859	28.07511737	36592	26589	9.91875	27.98333333	36620	26617	9.330188679	7.522012579



DNA SEQ ID NO	AA SEQ ID NO	Intestine 1 Enrichment	Intestine 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Intestine 1 Enrichment	Intestine 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Intestine 1 Enrichment	Intestine 2 Enrichment
36761	26758	5.543413174	2.387225549	36789	26786	4.778169014	14.03755869	36817	26814	4.177350427	5.373219373
36762	26759	5.485632184	7.049808429	36790	26787	4.768292683	9.723577236	36818	26815	4.12007874	11.71128609
36763	26760	5.48255814	24.42635659	36791	26788	4.701257862	17.7442348	36819	26816	4.107142857	16.56547619
36764	26761	5.447368421	25.01754386	36792	26789	4.657024793	13.93939394	36820	26817	4.074503311	15.13024283
36765	26762	5.436363636	11.29090909	36793	26790	4.64893617	11.09219858	36821	26818	4.03358209	15.33333333
36766	26763	5.41954023	21.50191571	36794	26791	4.638655462	15.33333333	36822	26819	4.02919708	10.52068127
36767	26764	5.39380531	15.19764012	36795	26792	4.6	2.146666667	36823	26820	4.007575758	13.47474747
36768	26765	5.360169492	15.33333333	36796	26793	4.6	20.15238095	36824	26821	3.86882716	13.81893004
36769	26766	5.340504451	2.09297725	36797	26794	4.566176471	4.058823529	36825	26822	3.859589041	9.662100457
36770	26767	5.339285714	10.95238095	36798	26795	4.560344828	3.172413793	36826	26823	3.822972973	11.43783784
36771	26768	5.31512605	3.736694678	36799	26796	4.55039712	6.067146283	36827	26824	3.820205479	11.13242009
36772	26769	5.313291139	21.73839662	36800	26797	4.533653846	1.474358974	36828	26825	3.73540146	4.476885645
36773	26770	5.307692308	5.111111111	36801	26798	4.526595745	11.9893617	36829	26826	3.72972973	3.522522523
36774	26771	5.302777778	10.73333333	36802	26799	4.512658228	5.434599156	36830	26827	3.706325301	8.036144578
36775	26772	5.29	23.92	36803	26800	4.486742424	18.58585859	36831	26828	3.62037037	21.86419753
36776	26773	5.278688525	41.72677596	36804	26801	4.477099237	8.661577608	36832	26829	3.581140351	14.52631579
36777	26774	5.239919355	1.360215054	36805	26802	4.405844156	8.463203463	36833	26830	3.574324324	16.16216216
36778	26775	5.163265306	26.59863946	36806	26803	4.38559322	7.536723164	36834	26831	3.538461538	28.30769231
36779	26776	5.116525424	12.47457627	36807	26804	4.371900826	12.67217631	36835	26832	3.529100529	16.14462081
36780	26777	5.111111111	26.77248677	36808	26805	4.3125	6.426470588	36836	26833	3.528409091	45.12878788
36781	26778	5.106	8.096	36809	26806	4.300420168	6.056022409	36837	26834	3.508027523	6.119266055
36782	26779	5.100806452	26.70967742	36810	26807	4.291666667	11.33333333	36838	26835	3.47754491	12.11976048
36783	26780	5.090163934	30.66666667	36811	26808	4.264583333	12.65	36839	26836	3.473958333	4.791666667
36784	26781	4.983333333	39.86666667	36812	26809	4.259259259	9.512345679	36840	26837	3.45	12.44705882
36785	26782	4.956896552	43.09195402	36813	26810	4.241803279	13.95081967	36841	26838	3.45	30.66666667
36786	26783	4.938235294	11.00392157	36814	26811	4.224489796	21.59183673	36842	26839	3.375621891	7.781094527
36787	26784	4.810096154	7.224358974	36815	26812	4.216666667	12.13888889	36843	26840	3.354166667	26.83333333
36788	26785	4.799586777	8.743801653	36816	26813	4.2046875	7.1875	36844	26841	3.25	13.46666667
36845	26842	3.242021277	1.631205674	36817	26814	4.177350427	5.373219373	36845	26842	3.242021277	1.631205674
36846	26843	3.114583333	3.274305556	36818	26815	4.12007874	11.71128609	36846	26843	3.114583333	3.274305556
36847	26844	2.970833333	30.15555556	36819	26816	4.107142857	16.56547619	36847	26844	2.970833333	30.15555556
36848	26845	2.946517413	5.873963516	36820	26817	4.074503311	15.13024283	36848	26845	2.946517413	5.873963516
36849	26846	2.78343949	14.94267516	36821	26818	4.03358209	15.33333333	36849	26846	2.78343949	14.94267516
36850	26847	2.762987013	11.54978355	36822	26819	4.02919708	10.52068127	36850	26847	2.762987013	11.54978355
36851	26848	2.728813559	3.118644068	36823	26820	4.007575758	13.47474747	36851	26848	2.728813559	3.118644068
36852	26849	2.662751678	12.14317673	36824	26821	3.86882716	13.81893004	36852	26849	2.662751678	12.14317673
36853	26850	2.613636364	14.4969697	36825	26822	3.859589041	9.662100457	36853	26850	2.613636364	14.4969697
36854	26851	2.603773585	17.06918239	36826	26823	3.822972973	11.43783784	36854	26851	2.603773585	17.06918239
36855	26852	2.5875	5.466666667	36827	26824	3.820205479	11.13242009	36855	26852	2.5875	5.466666667
36856	26853	2.570588235	11.99607843	36828	26825	3.73540146	4.476885645	36856	26853	2.570588235	11.99607843
36857	26854	2.520547945	2.310502283	36829	26826	3.72972973	3.522522523	36857	26854	2.520547945	2.310502283
36858	26855	2.430059524	3.924603175	36830	26827	3.706325301	8.036144578	36858	26855	2.430059524	3.924603175
36859	26856	2.421052632	1.614035088	36831	26828	3.62037037	21.86419753	36859	26856	2.421052632	1.614035088
36860	26857	2.395833333	1.916666667	36832	26829	3.581140351	14.52631579	36860	26857	2.395833333	1.916666667
36861	26858	2.392	7.728	36833	26830	3.574324324	16.16216216	36861	26858	2.392	7.728
36862	26859	2.388461538	21.23076923	36834	26831	3.538461538	28.30769231	36862	26859	2.388461538	21.23076923
36863	26860	2.140277778	6.388888889	36835	26832	3.529100529	16.14462081	36863	26860	2.140277778	6.388888889
36864	26861	2.12962963	10.22222222	36836	26833	3.528409091	45.12878788	36864	26861	2.12962963	10.22222222
36865	26862	2.101724138	6.133333333	36837	26834	3.508027523	6.119266055	36865	26862	2.101724138	6.133333333
36866	26863	2.100961538	1.081196581	36838	26835	3.47754491	12.11976048	36866	26863	2.100961538	1.081196581
36867	26864	2.096354167	3.833333333	36839	26836	3.473958333	4.791666667	36867	26864	2.096354167	3.833333333
36868	26865	1.651282051	6.526495726	36840	26837	3.45	12.44705882	36868	26865	1.651282051	6.526495726
36869	26866	1.515909091	6.83030303	36841	26838	3.45	30.66666667	36869	26866	1.515909091	6.83030303
36870	26867	1.419753086	12.49382716	36842	26839	3.375621891	7.781094527	36870	26867	1.419753086	12.49382716
36871	26868	1.384259259	40.60493827	36843	26840	3.354166667	26.83333333	36871	26868	1.384259259	40.60493827
36872	26869	1.339805825	13.69579288	36844	26841	3.25	13.46666667	36872	26869	1.339805825	13.69579288

36873	26870	1.337209302	4.724806202
36874	26871	1.326923077	20.05128205
36875	26872	1.173469388	1.87755102
36876	26873	1.10106383	11.25531915



FIG. 6

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
36877	26874	376.1089744	36904	26901	16.29166667	36931	26928	11.2195122	36958	26955	9.583333333
36878	26875	335.3333333	36905	26902	15.63398693	36932	26929	11.15151515	36959	26956	9.517241379
36879	26876	312.1770833	36906	26903	15.33333333	36933	26930	10.95238095	36960	26957	9.326460481
36880	26877	63.52380952	36907	26904	15.33333333	36934	26931	10.95238095	36961	26958	9.2
36881	26878	50.66666667	36908	26905	15.33333333	36935	26932	10.69767442	36962	26959	9.2
36882	26879	42.77192982	36909	26906	15.33333333	36936	26933	10.36036036	36963	26960	9.2
36883	26880	40.88888889	36910	26907	15.33333333	36937	26934	10.22222222	36964	26961	9.2
36884	26881	38.33333333	36911	26908	15.33333333	36938	26935	10.22222222	36965	26962	9.2
36885	26882	36.24242424	36912	26909	15.33333333	36939	26936	10.22222222	36966	26963	9.2
36886	26883	35.77777778	36913	26910	14.91891892	36940	26937	10.22222222	36967	26964	9.042735043
36887	26884	30.66666667	36914	26911	14.88235294	36941	26938	10.22222222	36968	26965	9.019607843
36888	26885	30.66666667	36915	26912	14.48148148	36942	26939	10.22222222	36969	26966	8.903225806
36889	26886	30.66666667	36916	26913	13.74712644	36943	26940	10.22222222	36970	26967	8.784722222
36890	26887	30.66666667	36917	26914	13.62962963	36944	26941	10.22222222	36971	26968	8.761904762
36891	26888	29.76470588	36918	26915	13.14285714	36945	26942	10.09756098	36972	26969	8.761904762
36892	26889	28.75	36919	26916	13.14285714	36946	26943	10.07619048	36973	26970	8.761904762
36893	26890	25.875	36920	26917	13.14285714	36947	26944	10.0625	36974	26971	8.761904762
36894	26891	25.19047619	36921	26918	12.77777778	36948	26945	10.04597701	36975	26972	8.761904762
36895	26892	23	36922	26919	12.77777778	36949	26946	10.02564103	36976	26973	8.724137931
36896	26893	20.44444444	36923	26920	12.54545455	36950	26947	9.757575758	36977	26974	8.699763593
36897	26894	19.93333333	36924	26921	12.54545455	36951	26948	9.711111111	36978	26975	8.679245283
36898	26895	19.71428571	36925	26922	12.20987654	36952	26949	9.684210526	36979	26976	8.666666667
36899	26896	18.4	36926	26923	12	36953	26950	9.583333333	36980	26977	8.666666667
36900	26897	18.28205128	36927	26924	11.92592593	36954	26951	9.583333333	36981	26978	8.625
36901	26898	17.25	36928	26925	11.81944444	36955	26952	9.583333333	36982	26979	8.586666667
36902	26899	16.61111111	36929	26926	11.5	36956	26953	9.583333333	36983	26980	8.518518519
36903	26900	16.51282051	36930	26927	11.2745098	36957	26954	9.583333333	36984	26981	8.408602151
36985	26982	8.363636364	37000	26997	8	36999	26996	8	37000	26997	8
36986	26983	8.343137255	37001	26998	7.973333333	37000	26998	7.973333333	37001	26998	7.973333333
36987	26984	8.305555556	37002	26999	7.973333333	37002	26999	7.973333333	37002	26999	7.973333333
36988	26985	8.227642276	37003	27000	7.931034483	37003	27000	7.931034483	37003	27000	7.931034483
36989	26986	8.214285714	37004	27001	7.863247863	37004	27001	7.863247863	37004	27001	7.863247863
36990	26987	8.177777778	37005	27002	7.853658537	37005	27002	7.853658537	37005	27002	7.853658537
36991	26988	8.177777778	37006	27003	7.811320755	37006	27003	7.811320755	37006	27003	7.811320755
36992	26989	8.177777778	37007	27004	7.777777778	37007	27004	7.777777778	37007	27004	7.777777778
36993	26990	8.161290323	37008	27005	7.666666667	37008	27005	7.666666667	37008	27005	7.666666667
36994	26991	8.161290323	37009	27006	7.666666667	37009	27006	7.666666667	37009	27006	7.666666667
36995	26992	8.117647059	37010	27007	7.666666667	37010	27007	7.666666667	37010	27007	7.666666667
36996	26993	8.070175439	37011	27008	7.666666667	37011	27008	7.666666667	37011	27008	7.666666667

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37128	27125	6.084656085	37129	27126	6.075471698
37130	27127	6.052631579	37131	27128	6.052631579
37132	27129	6.040404040	37133	27130	6.040404040
37134	27131	6	37135	27132	6
37136	27133	5.983739837	37137	27134	5.97740113
37138	27135	5.97740113	37139	27136	5.97740113
37140	27137	5.97740113	37141	27138	5.97740113
37142	27139	5.962962963	37143	27140	5.962962963
37144	27141	5.945578231	37145	27142	5.935483871
37146	27143	5.935483871	37147	27144	5.914285714
37148	27145	5.897435897	37149	27146	5.841269841
37150	27147	5.841269841	37151	27148	5.841269841
37152	27149	5.841269841	37153	27150	5.801801802
37154	27151	5.786163522	37155	27152	5.75
37156	27153	5.75	37157	27154	5.75

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37099	27096	6.31372549	37100	27097	6.31372549
37101	27098	6.290598291	37102	27099	6.290598291
37103	27100	6.284153005	37104	27101	6.278215223
37105	27102	6.272727273	37106	27103	6.272727273
37107	27104	6.272727273	37108	27105	6.24691358
37109	27106	6.24691358	37110	27107	6.24691358
37111	27108	6.24691358	37112	27109	6.24691358
37113	27110	6.229166667	37114	27111	6.229166667
37115	27112	6.19858156	37116	27113	6.19858156
37117	27114	6.187134503	37118	27115	6.133333333
37119	27116	6.133333333	37120	27117	6.133333333
37121	27118	6.133333333	37122	27119	6.133333333
37123	27120	6.133333333	37124	27121	6.133333333
37125	27122	6.133333333	37126	27123	6.133333333
37127	27124	6.133333333	37128	27125	6.133333333

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37070	27067	6.731707317	37071	27068	6.721461187
37072	27069	6.708333333	37073	27070	6.683760684
37074	27071	6.666666667	37075	27072	6.666666667
37076	27073	6.644444444	37077	27074	6.630630631
37078	27075	6.571428571	37079	27076	6.571428571
37080	27077	6.571428571	37081	27078	6.571428571
37082	27079	6.571428571	37083	27080	6.552706553
37084	27081	6.516666667	37085	27082	6.487179487
37086	27083	6.487179487	37087	27084	6.481099656
37088	27085	6.474074074	37089	27086	6.46875
37090	27087	6.456140351	37091	27088	6.456140351
37092	27089	6.456140351	37093	27090	6.44
37094	27091	6.418604651	37095	27092	6.374531835
37096	27093	6.372294372	37097	27094	6.357723577
37098	27095	6.344827586			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37041	27038	7.263157895	37042	27039	7.240740741
37043	27040	7.215686275	37044	27041	7.215686275
37045	27042	7.155555556	37046	27043	7.119047619
37047	27044	7.098765432	37048	27045	7.094527363
37049	27046	7.076923077	37050	27047	7.076923077
37051	27048	7.059628543	37052	27049	7.045045045
37053	27050	7.021806854	37054	27051	7.016949153
37055	27052	6.96969697	37056	27053	6.96969697
37057	27054	6.96969697	37058	27055	6.9
37059	27056	6.9	37060	27057	6.884353741
37061	27058	6.859649123	37062	27059	6.814814815
37063	27060	6.814814815	37064	27061	6.814814815
37065	27062	6.814814815	37066	27063	6.814814815
37067	27064	6.79047619	37068	27065	6.764705882
37069	27066	6.731707317			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37012	27009	7.666666667	37013	27010	7.666666667
37014	27011	7.666666667	37015	27012	7.666666667
37016	27013	7.666666667	37017	27014	7.666666667
37018	27015	7.666666667	37019	27016	7.666666667
37020	27017	7.666666667	37021	27018	7.666666667
37022	27019	7.666666667	37023	27020	7.666666667
37024	27021	7.666666667	37025	27022	7.666666667
37026	27023	7.666666667	37027	27024	7.666666667
37028	27025	7.666666667	37029	27026	7.666666667
37030	27027	7.666666667	37031	27028	7.666666667
37032	27029	7.544973545	37033	27030	7.484126984
37034	27031	7.479674797	37035	27032	7.36
37036	27033	7.333333333	37037	27034	7.333333333
37038	27035	7.301587302	37039	27036	7.283333333
37040	27037	7.263157895			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37273	27270	5.1111111111
37274	27271	5.1111111111
37275	27272	5.1111111111
37276	27273	5.1111111111
37277	27274	5.1111111111
37278	27275	5.1111111111
37279	27276	5.1111111111
37280	27277	5.1111111111
37281	27278	5.1111111111
37282	27279	5.1111111111
37283	27280	5.1111111111
37284	27281	5.1111111111
37285	27282	5.1111111111
37286	27283	5.1111111111
37287	27284	5.1111111111
37288	27285	5.1111111111
37289	27286	5.1111111111
37290	27287	5.1111111111
37291	27288	5.1111111111
37292	27289	5.1111111111
37293	27290	5.048780488
37294	27291	5.038095238
37295	27292	5.027322404
37296	27293	5.022988506
37297	27294	5.022988506
37298	27295	5.022988506
37299	27296	5.018181818
37300	27297	5.012820513
37301	27298	5.009900999

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37244	27241	5.245614035
37245	27242	5.238888889
37246	27243	5.235772358
37247	27244	5.235772358
37248	27245	5.235772358
37249	27246	5.235772358
37250	27247	5.231372549
37251	27248	5.219858156
37252	27249	5.219858156
37253	27250	5.219858156
37254	27251	5.219858156
37255	27252	5.202380952
37256	27253	5.18627451
37257	27254	5.183098592
37258	27255	5.175
37259	27256	5.170542636
37260	27257	5.164912281
37261	27258	5.164912281
37262	27259	5.142276423
37263	27260	5.1111111111
37264	27261	5.1111111111
37265	27262	5.1111111111
37266	27263	5.1111111111
37267	27264	5.1111111111
37268	27265	5.1111111111
37269	27266	5.1111111111
37270	27267	5.1111111111
37271	27268	5.1111111111
37272	27269	5.1111111111

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37215	27212	5.457627119
37216	27213	5.455128205
37217	27214	5.447368421
37218	27215	5.440860215
37219	27216	5.430555556
37220	27217	5.430555556
37221	27218	5.425641026
37222	27219	5.411764706
37223	27220	5.411764706
37224	27221	5.411764706
37225	27222	5.411764706
37226	27223	5.395061728
37227	27224	5.390625
37228	27225	5.366666667
37229	27226	5.366666667
37230	27227	5.366666667
37231	27228	5.348837209
37232	27229	5.333333333
37233	27230	5.333333333
37234	27231	5.319727891
37235	27232	5.307692308
37236	27233	5.304504505
37237	27234	5.287356322
37238	27235	5.287356322
37239	27236	5.278688525
37240	27237	5.278688525
37241	27238	5.251141553
37242	27239	5.245614035
37243	27240	5.245614035

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37186	27183	5.597883598
37187	27184	5.586563307
37188	27185	5.575757576
37189	27186	5.575757576
37190	27187	5.575757576
37191	27188	5.575757576
37192	27189	5.575757576
37193	27190	5.575757576
37194	27191	5.575757576
37195	27192	5.56043956
37196	27193	5.555555556
37197	27194	5.551724138
37198	27195	5.551724138
37199	27196	5.551724138
37200	27197	5.542168675
37201	27198	5.537037037
37202	27199	5.537037037
37203	27200	5.537037037
37204	27201	5.530054645
37205	27202	5.530054645
37206	27203	5.510416667
37207	27204	5.504273504
37208	27205	5.492537313
37209	27206	5.476190476
37210	27207	5.476190476
37211	27208	5.476190476
37212	27209	5.476190476
37213	27210	5.476190476
37214	27211	5.476190476

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37157	27154	5.75
37158	27155	5.75
37159	27156	5.75
37160	27157	5.75
37161	27158	5.75
37162	27159	5.75
37163	27160	5.75
37164	27161	5.75
37165	27162	5.717514124
37166	27163	5.705426357
37167	27164	5.695238095
37168	27165	5.695238095
37169	27166	5.679012346
37170	27167	5.679012346
37171	27168	5.679012346
37172	27169	5.679012346
37173	27170	5.649122807
37174	27171	5.649122807
37175	27172	5.649122807
37176	27173	5.637254902
37177	27174	5.632653061
37178	27175	5.632653061
37179	27176	5.622222222
37180	27177	5.622222222
37181	27178	5.622222222
37182	27179	5.609756098
37183	27180	5.609756098
37184	27181	5.609756098
37185	27182	5.609756098

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37418	27415	4.6	37418	27415	4.6
37419	27416	4.6	37419	27416	4.6
37420	27417	4.58008658	37420	27417	4.58008658
37421	27418	4.58008658	37421	27418	4.58008658
37422	27419	4.577114428	37422	27419	4.577114428
37423	27420	4.567375887	37423	27420	4.567375887
37424	27421	4.567375887	37424	27421	4.567375887
37425	27422	4.567375887	37425	27422	4.567375887
37426	27423	4.567375887	37426	27423	4.567375887
37427	27424	4.558558559	37427	27424	4.558558559
37428	27425	4.549450549	37428	27425	4.549450549
37429	27426	4.543209877	37429	27426	4.543209877
37430	27427	4.543209877	37430	27427	4.543209877
37431	27428	4.543209877	37431	27428	4.543209877
37432	27429	4.535211268	37432	27429	4.535211268
37433	27430	4.530303030	37433	27430	4.530303030
37434	27431	4.524590164	37434	27431	4.524590164
37435	27432	4.524590164	37435	27432	4.524590164
37436	27433	4.519298246	37436	27433	4.519298246
37437	27434	4.509803922	37437	27434	4.509803922
37438	27435	4.509803922	37438	27435	4.509803922
37439	27436	4.509803922	37439	27436	4.509803922
37440	27437	4.509803922	37440	27437	4.509803922
37441	27438	4.509803922	37441	27438	4.509803922
37442	27439	4.509803922	37442	27439	4.509803922
37443	27440	4.509803922	37443	27440	4.509803922
37444	27441	4.494252874	37444	27441	4.494252874
37445	27442	4.487804878	37445	27442	4.487804878
37446	27443	4.487804878	37446	27443	4.487804878

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37389	27386	4.685185185	37389	27386	4.685185185
37390	27387	4.685185185	37390	27387	4.685185185
37391	27388	4.680701754	37391	27388	4.680701754
37392	27389	4.677966102	37392	27389	4.677966102
37393	27390	4.677966102	37393	27390	4.677966102
37394	27391	4.666666667	37394	27391	4.666666667
37395	27392	4.666666667	37395	27392	4.666666667
37396	27393	4.654761905	37396	27393	4.654761905
37397	27394	4.646464646	37397	27394	4.646464646
37398	27395	4.635658915	37398	27395	4.635658915
37399	27396	4.635658915	37399	27396	4.635658915
37400	27397	4.628930818	37400	27397	4.628930818
37401	27398	4.624338624	37401	27398	4.624338624
37402	27399	4.624338624	37402	27399	4.624338624
37403	27400	4.621004566	37403	27400	4.621004566
37404	27401	4.6	37404	27401	4.6
37405	27402	4.6	37405	27402	4.6
37406	27403	4.6	37406	27403	4.6
37407	27404	4.6	37407	27404	4.6
37408	27405	4.6	37408	27405	4.6
37409	27406	4.6	37409	27406	4.6
37410	27407	4.6	37410	27407	4.6
37411	27408	4.6	37411	27408	4.6
37412	27409	4.6	37412	27409	4.6
37413	27410	4.6	37413	27410	4.6
37414	27411	4.6	37414	27411	4.6
37415	27412	4.6	37415	27412	4.6
37416	27413	4.6	37416	27413	4.6
37417	27414	4.6	37417	27414	4.6

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37360	27357	4.791666667	37360	27357	4.791666667
37361	27358	4.791666667	37361	27358	4.791666667
37362	27359	4.791666667	37362	27359	4.791666667
37363	27360	4.791666667	37363	27360	4.791666667
37364	27361	4.791666667	37364	27361	4.791666667
37365	27362	4.791666667	37365	27362	4.791666667
37366	27363	4.781362007	37366	27363	4.781362007
37367	27364	4.775956284	37367	27364	4.775956284
37368	27365	4.77037037	37368	27365	4.77037037
37369	27366	4.77037037	37369	27366	4.77037037
37370	27367	4.77037037	37370	27367	4.77037037
37371	27368	4.75862069	37371	27368	4.75862069
37372	27369	4.75862069	37372	27369	4.75862069
37373	27370	4.75862069	37373	27370	4.75862069
37374	27371	4.751173709	37374	27371	4.751173709
37375	27372	4.751173709	37375	27372	4.751173709
37376	27373	4.746031746	37376	27373	4.746031746
37377	27374	4.739393939	37377	27374	4.739393939
37378	27375	4.717948718	37378	27375	4.717948718
37379	27376	4.717948718	37379	27376	4.717948718
37380	27377	4.717948718	37380	27377	4.717948718
37381	27378	4.717948718	37381	27378	4.717948718
37382	27379	4.717948718	37382	27379	4.717948718
37383	27380	4.717948718	37383	27380	4.717948718
37384	27381	4.717948718	37384	27381	4.717948718
37385	27382	4.702222222	37385	27382	4.702222222
37386	27383	4.693877551	37386	27383	4.693877551
37387	27384	4.693877551	37387	27384	4.693877551
37388	27385	4.693877551	37388	27385	4.693877551

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37331	27328	4.893617021	37331	27328	4.893617021
37332	27329	4.878787879	37332	27329	4.878787879
37333	27330	4.878787879	37333	27330	4.878787879
37334	27331	4.878787879	37334	27331	4.878787879
37335	27332	4.878787879	37335	27332	4.878787879
37336	27333	4.878787879	37336	27333	4.878787879
37337	27334	4.878787879	37337	27334	4.878787879
37338	27335	4.869369369	37338	27335	4.869369369
37339	27336	4.861788618	37339	27336	4.861788618
37340	27337	4.861788618	37340	27337	4.861788618
37341	27338	4.855555556	37341	27338	4.855555556
37342	27339	4.842105263	37342	27339	4.842105263
37343	27340	4.842105263	37343	27340	4.842105263
37344	27341	4.842105263	37344	27341	4.842105263
37345	27342	4.842105263	37345	27342	4.842105263
37346	27343	4.827160494	37346	27343	4.827160494
37347	27344	4.827160494	37347	27344	4.827160494
37348	27345	4.827160494	37348	27345	4.827160494
37349	27346	4.827160494	37349	27346	4.827160494
37350	27347	4.823970037	37350	27347	4.823970037
37351	27348	4.819047619	37351	27348	4.819047619
37352	27349	4.810457516	37352	27349	4.810457516
37353	27350	4.810457516	37353	27350	4.810457516
37354	27351	4.810457516	37354	27351	4.810457516
37355	27352	4.791666667	37355	27352	4.791666667
37356	27353	4.791666667	37356	27353	4.791666667
37357	27354	4.791666667	37357	27354	4.791666667
37358	27355	4.791666667	37358	27355	4.791666667
37359	27356	4.791666667	37359	27356	4.791666667

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37302	27299	5.006802721	37302	27299	5.006802721
37303	27300	5	37303	27300	5
37304	27301	5	37304	27301	5
37305	27302	4.992248062	37305	27302	4.992248062
37306	27303	4.992248062	37306	27303	4.992248062
37307	27304	4.987951807	37307	27304	4.987951807
37308	27305	4.983333333	37308	27305	4.983333333
37309	27306	4.983333333	37309	27306	4.983333333
37310	27307	4.983333333	37310	27307	4.983333333
37311	27308	4.972972973	37311	27308	4.972972973
37312	27309	4.972972973	37312	27309	4.972972973
37313	27310	4.972972973	37313	27310	4.972972973
37314	27311	4.972972973	37314	27311	4.972972973
37315	27312	4.972972973	37315	27312	4.972972973
37316	27313	4.96713615	37316	27313	4.96713615
37317	27314	4.960784314	37317	27314	4.960784314
37318	27315	4.960784314	37318	27315	4.960784314
37319	27316	4.956228956	37319	27316	4.956228956
37320	27317	4.953846154	37320	27317	4.953846154
37321	27318	4.946236559	37321	27318	4.946236559
37322	27319	4.940740741	37322	27319	4.940740741
37323	27320	4.928571429	37323	27320	4.928571429
37324	27321	4.918238994	37324	27321	4.918238994
37325	27322	4.906666667	37325	27322	4.906666667
37326	27323	4.906666667	37326	27323	4.906666667
37327	27324	4.906666667	37327	27324	4.906666667
37328	27325	4.906666667	37328	27325	4.906666667
37329	27326	4.906666667	37329	27326	4.906666667
37330	27327	4.900343643	37330	27327	4.900343643

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37563	27560	4.121863799	37564	27561	4.119402985
37565	27562	4.113821138	37566	27563	4.113821138
37567	27564	4.113821138	37568	27565	4.088888889
37569	27566	4.088888889	37570	27567	4.088888889
37571	27568	4.088888889	37572	27569	4.088888889
37573	27570	4.088888889	37574	27571	4.088888889
37575	27572	4.088888889	37576	27573	4.088888889
37577	27574	4.088888889	37578	27575	4.088888889
37579	27576	4.088888889	37580	27577	4.072916667
37581	27578	4.072916667	37582	27579	4.072916667
37583	27580	4.072916667	37584	27581	4.072916667
37585	27582	4.068027211	37586	27583	4.064257028
37587	27584	4.058823529	37588	27585	4.058823529
37589	27586	4.058823529	37590	27587	4.050314465
37591	27588	4.046296296			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37534	27531	4.209150327	37535	27532	4.206489676
37536	27533	4.204301075	37537	27534	4.204301075
37538	27535	4.204301075	37539	27536	4.204301075
37540	27537	4.204301075	37541	27538	4.198412698
37542	27539	4.193732194	37543	27540	4.192708333
37544	27541	4.181818182	37545	27542	4.181818182
37546	27543	4.181818182	37547	27544	4.171568627
37548	27545	4.164609053	37549	27546	4.164609053
37550	27547	4.161904762	37551	27548	4.15819209
37552	27549	4.152777778	37553	27550	4.152777778
37554	27551	4.152777778	37555	27552	4.152777778
37556	27553	4.152777778	37557	27554	4.152777778
37558	27555	4.15037594	37559	27556	4.144144144
37560	27557	4.128205128	37561	27558	4.128205128
37562	27559	4.121863799			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37505	27502	4.293333333	37506	27503	4.293333333
37507	27504	4.293333333	37508	27505	4.293333333
37509	27506	4.293333333	37510	27507	4.282282282
37511	27508	4.279069767	37512	27509	4.279069767
37513	27510	4.279069767	37514	27511	4.279069767
37515	27512	4.279069767	37516	27513	4.279069767
37517	27514	4.279069767	37518	27515	4.273224044
37519	27516	4.273224044	37520	27517	4.266666667
37521	27518	4.259259259	37522	27519	4.259259259
37523	27520	4.259259259	37524	27521	4.259259259
37525	27522	4.246153846	37526	27523	4.236842105
37527	27524	4.229888507	37528	27525	4.229888507
37529	27526	4.229888507	37530	27527	4.224489796
37531	27528	4.216666667	37532	27529	4.212454212
37533	27530	4.211267606			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37476	27473	4.380952381	37477	27474	4.380952381
37478	27475	4.380952381	37479	27476	4.380952381
37480	27477	4.380952381	37481	27478	4.380952381
37482	27479	4.380952381	37483	27480	4.380952381
37484	27481	4.380952381	37485	27482	4.380952381
37486	27483	4.380952381	37487	27484	4.380952381
37488	27485	4.380952381	37489	27486	4.348258706
37490	27487	4.348258706	37491	27488	4.344444444
37492	27489	4.344444444	37493	27490	4.344444444
37494	27491	4.339622642	37495	27492	4.339622642
37496	27493	4.333333333	37497	27494	4.333333333
37498	27495	4.319248826	37499	27496	4.3125
37500	27497	4.304093567	37501	27498	4.304093567
37502	27499	4.300813008	37503	27500	4.300813008
37504	27501	4.293333333			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37447	27444	4.487804878	37448	27445	4.482051282
37449	27446	4.479400749	37450	27447	4.479400749
37451	27448	4.472222222	37452	27449	4.472222222
37453	27450	4.472222222	37454	27451	4.472222222
37455	27452	4.460606061	37456	27453	4.457364341
37457	27454	4.451612903	37458	27455	4.451612903
37459	27456	4.451612903	37460	27457	4.451612903
37461	27458	4.438596491	37462	27459	4.438596491
37463	27460	4.438596491	37464	27461	4.42962963
37465	27462	4.42962963	37466	27463	4.423076923
37467	27464	4.414141414	37468	27465	4.414141414
37469	27466	4.410958904	37470	27467	4.408333333
37471	27468	4.406130268	37472	27469	4.406130268
37473	27470	4.380952381	37474	27471	4.380952381
37475	27472	4.380952381			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37708	27705	3.8333333333	37708	27705	3.8333333333
37709	27706	3.8333333333	37709	27706	3.8333333333
37710	27707	3.8333333333	37710	27707	3.8333333333
37711	27708	3.8333333333	37711	27708	3.8333333333
37712	27709	3.8333333333	37712	27709	3.8333333333
37713	27710	3.8333333333	37713	27710	3.8333333333
37714	27711	3.8333333333	37714	27711	3.8333333333
37715	27712	3.8333333333	37715	27712	3.8333333333
37716	27713	3.8333333333	37716	27713	3.8333333333
37717	27714	3.8333333333	37717	27714	3.8333333333
37718	27715	3.8333333333	37718	27715	3.8333333333
37719	27716	3.8333333333	37719	27716	3.8333333333
37720	27717	3.8333333333	37720	27717	3.8333333333
37721	27718	3.8333333333	37721	27718	3.8333333333
37722	27719	3.8333333333	37722	27719	3.8333333333
37723	27720	3.8333333333	37723	27720	3.8333333333
37724	27721	3.8333333333	37724	27721	3.8333333333
37725	27722	3.8333333333	37725	27722	3.8333333333
37726	27723	3.8333333333	37726	27723	3.8333333333
37727	27724	3.8333333333	37727	27724	3.8333333333
37728	27725	3.804511278	37728	27725	3.804511278
37729	27726	3.798165138	37729	27726	3.798165138
37730	27727	3.793814433	37730	27727	3.793814433
37731	27728	3.792114695	37731	27728	3.792114695
37732	27729	3.790262172	37732	27729	3.790262172
37733	27730	3.788235294	37733	27730	3.788235294
37734	27731	3.78600823	37734	27731	3.78600823
37735	27732	3.783549784	37735	27732	3.783549784
37736	27733	3.7833333333	37736	27733	3.7833333333

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37679	27676	3.8333333333	37679	27676	3.8333333333
37680	27677	3.8333333333	37680	27677	3.8333333333
37681	27678	3.8333333333	37681	27678	3.8333333333
37682	27679	3.8333333333	37682	27679	3.8333333333
37683	27680	3.8333333333	37683	27680	3.8333333333
37684	27681	3.8333333333	37684	27681	3.8333333333
37685	27682	3.8333333333	37685	27682	3.8333333333
37686	27683	3.8333333333	37686	27683	3.8333333333
37687	27684	3.8333333333	37687	27684	3.8333333333
37688	27685	3.8333333333	37688	27685	3.8333333333
37689	27686	3.8333333333	37689	27686	3.8333333333
37690	27687	3.8333333333	37690	27687	3.8333333333
37691	27688	3.8333333333	37691	27688	3.8333333333
37692	27689	3.8333333333	37692	27689	3.8333333333
37693	27690	3.8333333333	37693	27690	3.8333333333
37694	27691	3.8333333333	37694	27691	3.8333333333
37695	27692	3.8333333333	37695	27692	3.8333333333
37696	27693	3.8333333333	37696	27693	3.8333333333
37697	27694	3.8333333333	37697	27694	3.8333333333
37698	27695	3.8333333333	37698	27695	3.8333333333
37699	27696	3.8333333333	37699	27696	3.8333333333
37700	27697	3.8333333333	37700	27697	3.8333333333
37701	27698	3.8333333333	37701	27698	3.8333333333
37702	27699	3.8333333333	37702	27699	3.8333333333
37703	27700	3.8333333333	37703	27700	3.8333333333
37704	27701	3.8333333333	37704	27701	3.8333333333
37705	27702	3.8333333333	37705	27702	3.8333333333
37706	27703	3.8333333333	37706	27703	3.8333333333
37707	27704	3.8333333333	37707	27704	3.8333333333

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37650	27647	3.914893617	37650	27647	3.914893617
37651	27648	3.914893617	37651	27648	3.914893617
37652	27649	3.908496732	37652	27649	3.908496732
37653	27650	3.908496732	37653	27650	3.908496732
37654	27651	3.908496732	37654	27651	3.908496732
37655	27652	3.905660377	37655	27652	3.905660377
37656	27653	3.905660377	37656	27653	3.905660377
37657	27654	3.903030303	37657	27654	3.903030303
37658	27655	3.903030303	37658	27655	3.903030303
37659	27656	3.898305085	37659	27656	3.898305085
37660	27657	3.898305085	37660	27657	3.898305085
37661	27658	3.898305085	37661	27658	3.898305085
37662	27659	3.898305085	37662	27659	3.898305085
37663	27660	3.898305085	37663	27660	3.898305085
37664	27661	3.898305085	37664	27661	3.898305085
37665	27662	3.888888889	37665	27662	3.888888889
37666	27663	3.887323944	37666	27663	3.887323944
37667	27664	3.884444444	37667	27664	3.884444444
37668	27665	3.878431373	37668	27665	3.878431373
37669	27666	3.877394636	37669	27666	3.877394636
37670	27667	3.877394636	37670	27667	3.877394636
37671	27668	3.875457875	37671	27668	3.875457875
37672	27669	3.873684211	37672	27669	3.873684211
37673	27670	3.870550162	37673	27670	3.870550162
37674	27671	3.861728395	37674	27671	3.861728395
37675	27672	3.8333333333	37675	27672	3.8333333333
37676	27673	3.8333333333	37676	27673	3.8333333333
37677	27674	3.8333333333	37677	27674	3.8333333333
37678	27675	3.8333333333	37678	27675	3.8333333333

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37621	27618	3.986666667	37621	27618	3.986666667
37622	27619	3.984251969	37622	27619	3.984251969
37623	27620	3.982683983	37623	27620	3.982683983
37624	27621	3.975308642	37624	27621	3.975308642
37625	27622	3.975308642	37625	27622	3.975308642
37626	27623	3.975308642	37626	27623	3.975308642
37627	27624	3.975308642	37627	27624	3.975308642
37628	27625	3.975308642	37628	27625	3.975308642
37629	27626	3.975308642	37629	27626	3.975308642
37630	27627	3.965517241	37630	27627	3.965517241
37631	27628	3.965517241	37631	27628	3.965517241
37632	27629	3.961111111	37632	27629	3.961111111
37633	27630	3.956989247	37633	27630	3.956989247
37634	27631	3.956989247	37634	27631	3.956989247
37635	27632	3.956989247	37635	27632	3.956989247
37636	27633	3.949494949	37636	27633	3.949494949
37637	27634	3.947194719	37637	27634	3.947194719
37638	27635	3.942857143	37638	27635	3.942857143
37639	27636	3.942857143	37639	27636	3.942857143
37640	27637	3.942857143	37640	27637	3.942857143
37641	27638	3.936936937	37641	27638	3.936936937
37642	27639	3.931623932	37642	27639	3.931623932
37643	27640	3.931623932	37643	27640	3.931623932
37644	27641	3.926829268	37644	27641	3.926829268
37645	27642	3.92248062	37645	27642	3.92248062
37646	27643	3.92248062	37646	27643	3.92248062
37647	27644	3.92248062	37647	27644	3.92248062
37648	27645	3.92248062	37648	27645	3.92248062
37649	27646	3.919799499	37649	27646	3.919799499

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37592	27589	4.044989775	37592	27589	4.044989775
37593	27590	4.035087719	37593	27590	4.035087719
37594	27591	4.035087719	37594	27591	4.035087719
37595	27592	4.035087719	37595	27592	4.035087719
37596	27593	4.035087719	37596	27593	4.035087719
37597	27594	4.035087719	37597	27594	4.035087719
37598	27595	4.035087719	37598	27595	4.035087719
37599	27596	4.035087719	37599	27596	4.035087719
37600	27597	4.021857923	37600	27597	4.021857923
37601	27598	4.019417476	37601	27598	4.019417476
37602	27599	4.015873016	37602	27599	4.015873016
37603	27600	4.015873016	37603	27600	4.015873016
37604	27601	4.015873016	37604	27601	4.015873016
37605	27602	4.01025641	37605	27602	4.01025641
37606	27603	4.01025641	37606	27603	4.01025641
37607	27604	4.01025641	37607	27604	4.01025641
37608	27605	4	37608	27605	4
37609	27606	4	37609	27606	4
37610	27607	4	37610	27607	4
37611	27608	4	37611	27608	4
37612	27609	4	37612	27609	4
37613	27610	4	37613	27610	4
37614	27611	4	37614	27611	4
37615	27612	4	37615	27612	4
37616	27613	4	37616	27613	4
37617	27614	4	37617	27614	4
37618	27615	4	37618	27615	4
37619	27616	4	37619	27616	4
37620	27617	3.986666667	37620	27617	3.986666667

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37737	27734	3.780821918
37738	27735	3.770491803
37739	27736	3.770491803
37740	27737	3.766081871
37741	27738	3.766081871
37742	27739	3.766081871
37743	27740	3.761006289
37744	27741	3.761006289
37745	27742	3.761006289
37746	27743	3.761006289
37747	27744	3.755102041
37748	27745	3.75177305
37749	27746	3.748148148
37750	27747	3.748148148
37751	27748	3.748148148
37752	27749	3.744186047
37753	27750	3.739837398
37754	27751	3.735042735
37755	27752	3.72972973
37756	27753	3.72972973
37757	27754	3.72972973
37758	27755	3.72972973
37759	27756	3.723809524
37760	27757	3.721682848
37761	27758	3.717171717
37762	27759	3.717171717
37763	27760	3.717171717
37764	27761	3.717171717
37765	27762	3.717171717

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37766	27763	3.717171717
37767	27764	3.712280702
37768	27765	3.709677419
37769	27766	3.701149425
37770	27767	3.701149425
37771	27768	3.701149425
37772	27769	3.694779116
37773	27770	3.694779116
37774	27771	3.691358025
37775	27772	3.691358025
37776	27773	3.691358025
37777	27774	3.691358025
37778	27775	3.68
37779	27776	3.68
37780	27777	3.68
37781	27778	3.68
37782	27779	3.68
37783	27780	3.68
37784	27781	3.68
37785	27782	3.671361502
37786	27783	3.666666667
37787	27784	3.661691542
37788	27785	3.659090909
37789	27786	3.650793651
37790	27787	3.650793651
37791	27788	3.650793651
37792	27789	3.650793651
37793	27790	3.650793651
37794	27791	3.650793651

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37795	27792	3.647849462
37796	27793	3.635738832
37797	27794	3.631578947
37798	27795	3.631578947
37799	27796	3.624242424
37800	27797	3.624242424
37801	27798	3.624242424
37802	27799	3.622047244
37803	27800	3.62037037
37804	27801	3.62037037
37805	27802	3.617977528
37806	27803	3.617977528
37807	27804	3.616352201
37808	27805	3.607843137
37809	27806	3.607843137
37810	27807	3.607843137
37811	27808	3.607843137
37812	27809	3.607843137
37813	27810	3.607843137
37814	27811	3.607843137
37815	27812	3.607843137
37816	27813	3.607843137
37817	27814	3.601010101
37818	27815	3.596707819
37819	27816	3.588652482
37820	27817	3.588652482
37821	27818	3.588652482
37822	27819	3.584415584
37823	27820	3.582554517

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37824	27821	3.577777778
37825	27822	3.577777778
37826	27823	3.577777778
37827	27824	3.577777778
37828	27825	3.577777778
37829	27826	3.577777778
37830	27827	3.577777778
37831	27828	3.570776256
37832	27829	3.565891473
37833	27830	3.55952381
37834	27831	3.55952381
37835	27832	3.55952381
37836	27833	3.555555556
37837	27834	3.555555556
37838	27835	3.555555556
37839	27836	3.550877193
37840	27837	3.549382716
37841	27838	3.538461538
37842	27839	3.538461538
37843	27840	3.538461538
37844	27841	3.538461538
37845	27842	3.538461538
37846	27843	3.538461538
37847	27844	3.538461538
37848	27845	3.538461538
37849	27846	3.538461538
37850	27847	3.538461538
37851	27848	3.538461538
37852	27849	3.538461538

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37853	27850	3.538461538
37854	27851	3.538461538
37855	27852	3.538461538
37856	27853	3.538461538
37857	27854	3.538461538
37858	27855	3.526666667
37859	27856	3.524904215
37860	27857	3.522522523
37861	27858	3.520987654
37862	27859	3.519125683
37863	27860	3.513888889
37864	27861	3.513888889
37865	27862	3.510040161
37866	27863	3.504761905
37867	27864	3.504761905
37868	27865	3.504761905
37869	27866	3.504761905
37870	27867	3.504761905
37871	27868	3.504761905
37872	27869	3.5
37873	27870	3.497076023
37874	27871	3.497076023
37875	27872	3.495098039
37876	27873	3.491749175
37877	27874	3.490514905
37878	27875	3.487581699
37879	27876	3.484848485
37880	27877	3.484848485
37881	27878	3.484848485

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37882	27879	3.484848485	37998	27995	3.307189542
37883	27880	3.484848485	37999	27996	3.307189542
37884	27881	3.484848485	38000	27997	3.307189542
37885	27882	3.484848485	38001	27998	3.302564103
37886	27883	3.471698113	38002	27999	3.302564103
37887	27884	3.471698113	38003	28000	3.300925926
37888	27885	3.471698113	38004	28001	3.297491039
37889	27886	3.462365591	38005	28002	3.285714286
37890	27887	3.462365591	38006	28003	3.285714286
37891	27888	3.462365591	38007	28004	3.285714286
37892	27889	3.462365591	38008	28005	3.285714286
37893	27890	3.462365591	38009	28006	3.285714286
37894	27891	3.462365591	38010	28007	3.285714286
37895	27892	3.462365591	38011	28008	3.285714286
37896	27893	3.462365591	38012	28009	3.285714286
37897	27894	3.462365591	38013	28010	3.285714286
37898	27895	3.455399061	38014	28011	3.285714286
37899	27896	3.453453453	38015	28012	3.285714286
37900	27897	3.45	38016	28013	3.285714286
37901	27898	3.45	38017	28014	3.285714286
37902	27899	3.45	38018	28015	3.285714286
37903	27900	3.45	38019	28016	3.285714286
37904	27901	3.45	38020	28017	3.285714286
37905	27902	3.45	38021	28018	3.285714286
37906	27903	3.445692884	38022	28019	3.275080906
37907	27904	3.445692884	38023	28020	3.27340824
37908	27905	3.444444444	38024	28021	3.27340824
37909	27906	3.436781609	38025	28022	3.267759563
37910	27907	3.436781609	38026	28023	3.262411348

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37969	27966	3.350140056	37978	27975	3.333333333
37970	27967	3.348659004	37979	27976	3.333333333
37971	27968	3.345454545	37980	27977	3.333333333
37972	27969	3.345454545	37981	27978	3.333333333
37973	27970	3.345454545	37982	27979	3.333333333
37974	27971	3.341880342	37983	27980	3.333333333
37975	27972	3.341880342	37984	27981	3.333333333
37976	27973	3.341880342	37985	27982	3.328947368
37977	27974	3.333333333	37986	27983	3.325301205
37978	27975	3.333333333	37987	27984	3.322222222
37979	27976	3.333333333	37988	27985	3.322222222
37980	27977	3.333333333	37989	27986	3.319587629
37981	27978	3.333333333	37990	27987	3.319587629
37982	27979	3.333333333	37991	27988	3.315315315
37983	27980	3.333333333	37992	27989	3.315315315
37984	27981	3.333333333	37993	27990	3.315315315
37985	27982	3.328947368	37994	27991	3.315315315
37986	27983	3.325301205	37995	27992	3.310606061
37987	27984	3.322222222	37996	27993	3.307189542
37988	27985	3.322222222	37997	27994	3.307189542

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37940	27937	3.407407407	37948	27945	3.378531073
37941	27938	3.407407407	37949	27946	3.378531073
37942	27939	3.407407407	37950	27947	3.373333333
37943	27940	3.407407407	37951	27948	3.373333333
37944	27941	3.407407407	37952	27949	3.373333333
37945	27942	3.407407407	37953	27950	3.36996337
37946	27943	3.389473684	37954	27951	3.365853659
37947	27944	3.382352941	37955	27952	3.365853659
37948	27945	3.378531073	37956	27953	3.365853659
37949	27946	3.378531073	37957	27954	3.360730594
37950	27947	3.373333333	37958	27955	3.360730594
37951	27948	3.373333333	37959	27956	3.354166667
37952	27949	3.373333333	37960	27957	3.354166667
37953	27950	3.36996337	37961	27958	3.354166667
37954	27951	3.365853659	37962	27959	3.354166667
37955	27952	3.365853659	37963	27960	3.354166667
37956	27953	3.365853659	37964	27961	3.354166667
37957	27954	3.360730594	37965	27962	3.354166667
37958	27955	3.360730594	37966	27963	3.354166667
37959	27956	3.354166667	37967	27964	3.354166667
37960	27957	3.354166667	37968	27965	3.354166667

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37911	27908	3.436781609	37918	27915	3.407407407
37912	27909	3.434666667	37919	27916	3.407407407
37913	27910	3.432835821	37920	27917	3.407407407
37914	27911	3.429824561	37921	27918	3.407407407
37915	27912	3.429824561	37922	27919	3.407407407
37916	27913	3.42745098	37923	27920	3.407407407
37917	27914	3.425531915	37924	27921	3.407407407
37918	27915	3.407407407	37925	27922	3.407407407
37919	27916	3.407407407	37926	27923	3.407407407
37920	27917	3.407407407	37927	27924	3.407407407
37921	27918	3.407407407	37928	27925	3.407407407
37922	27919	3.407407407	37929	27926	3.407407407
37923	27920	3.407407407	37930	27927	3.407407407
37924	27921	3.407407407	37931	27928	3.407407407
37925	27922	3.407407407	37932	27929	3.407407407
37926	27923	3.407407407	37933	27930	3.407407407
37927	27924	3.407407407	37934	27931	3.407407407
37928	27925	3.407407407	37935	27932	3.407407407
37929	27926	3.407407407	37936	27933	3.407407407
37930	27927	3.407407407	37937	27934	3.407407407
37931	27928	3.407407407	37938	27935	3.407407407
37932	27929	3.407407407	37939	27936	3.407407407

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
37882	27879	3.484848485	37894	27891	3.462365591
37883	27880	3.484848485	37895	27892	3.462365591
37884	27881	3.484848485	37896	27893	3.462365591
37885	27882	3.484848485	37897	27894	3.462365591
37886	27883	3.471698113	37898	27895	3.455399061
37887	27884	3.471698113	37899	27896	3.453453453
37888	27885	3.471698113	37900	27897	3.45
37889	27886	3.462365591	37901	27898	3.45
37890	27887	3.462365591	37902	27899	3.45
37891	27888	3.462365591	37903	27900	3.45
37892	27889	3.462365591	37904	27901	3.45
37893	27890	3.462365591	37905	27902	3.45
37894	27891	3.462365591	37906	27903	3.445692884
37895	27892	3.462365591	37907	27904	3.445692884
37896	27893	3.462365591	37908	27905	3.444444444
37897	27894	3.462365591	37909	27906	3.436781609
37898	27895	3.455399061	37910	27907	3.436781609
37899	27896	3.453453453			
37900	27897	3.45			
37901	27898	3.45			
37902	27899	3.45			
37903	27900	3.45			
37904	27901	3.45			
37905	27902	3.45			
37906	27903	3.445692884			
37907	27904	3.445692884			
37908	27905	3.444444444			
37909	27906	3.436781609			
37910	27907	3.436781609			



DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38143	28140	3.066666667	38144	28141	3.066666667
38145	28142	3.066666667	38146	28143	3.066666667
38147	28144	3.066666667	38148	28145	3.066666667
38149	28146	3.066666667	38150	28147	3.066666667
38151	28148	3.066666667	38152	28149	3.066666667
38153	28150	3.066666667	38154	28151	3.066666667
38155	28152	3.066666667	38156	28153	3.066666667
38157	28154	3.066666667	38158	28155	3.066666667
38159	28156	3.066666667	38160	28157	3.066666667
38161	28158	3.066666667	38162	28159	3.066666667
38163	28160	3.066666667	38164	28161	3.066666667
38165	28162	3.066666667	38166	28163	3.066666667
38167	28164	3.066666667	38168	28165	3.066666667
38169	28166	3.066666667	38170	28167	3.066666667
38171	28168	3.066666667			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38114	28111	3.129251701	38115	28112	3.129251701
38116	28113	3.129251701	38117	28114	3.129251701
38118	28115	3.12345679	38119	28116	3.12345679
38120	28117	3.12345679	38121	28118	3.118644068
38122	28119	3.118644068	38123	28120	3.114583333
38124	28121	3.111111111	38125	28122	3.108108108
38126	28123	3.108108108	38127	28124	3.105485232
38128	28125	3.105485232	38129	28126	3.103174603
38130	28127	3.103174603	38131	28128	3.101123596
38132	28129	3.09929078	38133	28130	3.09929078
38134	28131	3.097643098	38135	28132	3.090439276
38136	28133	3.089552239	38137	28134	3.066666667
38138	28135	3.066666667	38139	28136	3.066666667
38140	28137	3.066666667	38141	28138	3.066666667
38142	28139	3.066666667			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38085	28082	3.178861789	38086	28083	3.176190476
38087	28084	3.172413793	38088	28085	3.172413793
38089	28086	3.172413793	38090	28087	3.172413793
38091	28088	3.172413793	38092	28089	3.166666667
38093	28090	3.164021164	38094	28091	3.164021164
38095	28092	3.164021164	38096	28093	3.161512027
38097	28094	3.156862745	38098	28095	3.156862745
38099	28096	3.156862745	38100	28097	3.156862745
38101	28098	3.156862745	38102	28099	3.156862745
38103	28100	3.152647975	38104	28101	3.150684932
38105	28102	3.145299145	38106	28103	3.145299145
38107	28104	3.145299145	38108	28105	3.145299145
38109	28106	3.145299145	38110	28107	3.140562249
38111	28108	3.139107612	38112	28109	3.136363636
38113	28110	3.136363636			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38056	28053	3.228070175	38057	28054	3.228070175
38058	28055	3.228070175	38059	28056	3.228070175
38060	28057	3.221288515	38061	28058	3.218106996
38062	28059	3.218106996	38063	28060	3.218106996
38064	28061	3.215053763	38065	28062	3.209302326
38066	28063	3.209302326	38067	28064	3.2039801
38068	28065	3.2039801	38069	28066	3.201465201
38070	28067	3.194444444	38071	28068	3.194444444
38072	28069	3.194444444	38073	28070	3.194444444
38074	28071	3.194444444	38075	28072	3.194444444
38076	28073	3.188118812	38077	28074	3.186147186
38078	28075	3.186147186	38079	28076	3.186147186
38080	28077	3.184615385	38081	28078	3.182389937
38082	28079	3.182389937	38083	28080	3.182389937
38084	28081	3.178861789			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38027	28024	3.262411348	38028	28025	3.262411348
38029	28026	3.262411348	38030	28027	3.262411348
38031	28028	3.262411348	38032	28029	3.25984252
38033	28030	3.258333333	38034	28031	3.258333333
38035	28032	3.258333333	38036	28033	3.258333333
38037	28034	3.256637168	38038	28035	3.252525253
38039	28036	3.247058824	38040	28037	3.243589744
38041	28038	3.23943662	38042	28039	3.23943662
38043	28040	3.237037037	38044	28041	3.234375
38045	28042	3.234375	38046	28043	3.228070175
38047	28044	3.228070175	38048	28045	3.228070175
38049	28046	3.228070175	38050	28047	3.228070175
38051	28048	3.228070175	38052	28049	3.228070175
38053	28050	3.228070175	38054	28051	3.228070175
38055	28052	3.228070175			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38288	28285	2.920634921
38289	28286	2.920634921
38290	28287	2.920634921
38291	28288	2.920634921
38292	28289	2.920634921
38293	28290	2.920634921
38294	28291	2.920634921
38295	28292	2.920634921
38296	28293	2.920634921
38297	28294	2.920634921
38298	28295	2.920634921
38299	28296	2.920634921
38300	28297	2.920634921
38301	28298	2.920634921
38302	28299	2.920634921
38303	28300	2.913333333
38304	28301	2.911392405
38305	28302	2.911392405
38306	28303	2.911392405
38307	28304	2.905263158
38308	28305	2.905263158
38309	28306	2.900900901
38310	28307	2.900900901
38311	28308	2.900900901
38312	28309	2.900900901
38313	28310	2.896296296
38314	28311	2.896296296
38315	28312	2.893081761
38316	28313	2.893081761

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38259	28256	2.948717949
38260	28257	2.948717949
38261	28258	2.948717949
38262	28259	2.948717949
38263	28260	2.948717949
38264	28261	2.948717949
38265	28262	2.948717949
38266	28263	2.948717949
38267	28264	2.948717949
38268	28265	2.944
38269	28266	2.942760943
38270	28267	2.942760943
38271	28268	2.940639269
38272	28269	2.940639269
38273	28270	2.938888889
38274	28271	2.936170213
38275	28272	2.936170213
38276	28273	2.936170213
38277	28274	2.936170213
38278	28275	2.936170213
38279	28276	2.936170213
38280	28277	2.931372549
38281	28278	2.927272727
38282	28279	2.920634921
38283	28280	2.920634921
38284	28281	2.920634921
38285	28282	2.920634921
38286	28283	2.920634921
38287	28284	2.920634921

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38230	28227	2.987012987
38231	28228	2.981481481
38232	28229	2.981481481
38233	28230	2.981481481
38234	28231	2.981481481
38235	28232	2.981481481
38236	28233	2.975124378
38237	28234	2.972789116
38238	28235	2.971576227
38239	28236	2.971576227
38240	28237	2.967741935
38241	28238	2.967741935
38242	28239	2.967741935
38243	28240	2.967741935
38244	28241	2.967741935
38245	28242	2.967741935
38246	28243	2.967741935
38247	28244	2.967741935
38248	28245	2.967741935
38249	28246	2.962121212
38250	28247	2.959064327
38251	28248	2.955823293
38252	28249	2.955823293
38253	28250	2.955823293
38254	28251	2.955823293
38255	28252	2.95412844
38256	28253	2.948717949
38257	28254	2.948717949
38258	28255	2.948717949

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38201	28198	3.011904762
38202	28199	3.011904762
38203	28200	3.011904762
38204	28201	3.011904762
38205	28202	3.006535948
38206	28203	3.006535948
38207	28204	3.006535948
38208	28205	3.006535948
38209	28206	3
38210	28207	3
38211	28208	3
38212	28209	3
38213	28210	3
38214	28211	3
38215	28212	3
38216	28213	3
38217	28214	3
38218	28215	2.996168582
38219	28216	2.991869919
38220	28217	2.991869919
38221	28218	2.991869919
38222	28219	2.991869919
38223	28220	2.991869919
38224	28221	2.991869919
38225	28222	2.991869919
38226	28223	2.991869919
38227	28224	2.991869919
38228	28225	2.988700565
38229	28226	2.987012987

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38172	28169	3.066666667
38173	28170	3.066666667
38174	28171	3.066666667
38175	28172	3.066666667
38176	28173	3.066666667
38177	28174	3.066666667
38178	28175	3.066666667
38179	28176	3.066666667
38180	28177	3.066666667
38181	28178	3.066666667
38182	28179	3.066666667
38183	28180	3.066666667
38184	28181	3.066666667
38185	28182	3.066666667
38186	28183	3.066666667
38187	28184	3.066666667
38188	28185	3.066666667
38189	28186	3.031007752
38190	28187	3.031007752
38191	28188	3.028806584
38192	28189	3.028806584
38193	28190	3.026315789
38194	28191	3.026315789
38195	28192	3.026315789
38196	28193	3.023474178
38197	28194	3.023474178
38198	28195	3.020202020
38199	28196	3.016393443
38200	28197	3.011904762







DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38868	28865	2.358974359
38869	28866	2.358974359
38870	28867	2.358974359
38871	28868	2.358974359
38872	28869	2.358974359
38873	28870	2.358974359
38874	28871	2.358974359
38875	28872	2.358974359
38876	28873	2.358974359
38877	28874	2.358974359
38878	28875	2.358974359
38879	28876	2.358974359
38880	28877	2.358974359
38881	28878	2.358974359
38882	28879	2.358974359
38883	28880	2.350364964
38884	28881	2.348348348
38885	28882	2.346938776
38886	28883	2.345098039
38887	28884	2.342592593
38888	28885	2.342592593
38889	28886	2.342592593
38890	28887	2.340350877
38891	28888	2.338983051
38892	28889	2.338983051
38893	28890	2.338983051
38894	28891	2.338983051
38895	28892	2.338983051
38896	28893	2.338983051

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38839	28836	2.379310345
38840	28837	2.379310345
38841	28838	2.379310345
38842	28839	2.375586854
38843	28840	2.375586854
38844	28841	2.373015873
38845	28842	2.373015873
38846	28843	2.36969697
38847	28844	2.368563686
38848	28845	2.368563686
38849	28846	2.358974359
38850	28847	2.358974359
38851	28848	2.358974359
38852	28849	2.358974359
38853	28850	2.358974359
38854	28851	2.358974359
38855	28852	2.358974359
38856	28853	2.358974359
38857	28854	2.358974359
38858	28855	2.358974359
38859	28856	2.358974359
38860	28857	2.358974359
38861	28858	2.358974359
38862	28859	2.358974359
38863	28860	2.358974359
38864	28861	2.358974359
38865	28862	2.358974359
38866	28863	2.358974359
38867	28864	2.358974359

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38810	28807	2.401606426
38811	28808	2.4
38812	28809	2.395833333
38813	28810	2.395833333
38814	28811	2.395833333
38815	28812	2.395833333
38816	28813	2.395833333
38817	28814	2.395833333
38818	28815	2.395833333
38819	28816	2.391437309
38820	28817	2.38961039
38821	28818	2.38961039
38822	28819	2.38961039
38823	28820	2.387978142
38824	28821	2.387978142
38825	28822	2.385185185
38826	28823	2.385185185
38827	28824	2.385185185
38828	28825	2.385185185
38829	28826	2.385185185
38830	28827	2.385185185
38831	28828	2.385185185
38832	28829	2.381877023
38833	28830	2.379310345
38834	28831	2.379310345
38835	28832	2.379310345
38836	28833	2.379310345
38837	28834	2.379310345
38838	28835	2.379310345

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38781	28778	2.439393939
38782	28779	2.439393939
38783	28780	2.439393939
38784	28781	2.433862434
38785	28782	2.433862434
38786	28783	2.433862434
38787	28784	2.430894309
38788	28785	2.430894309
38789	28786	2.430894309
38790	28787	2.430894309
38791	28788	2.429042904
38792	28789	2.427777778
38793	28790	2.426160338
38794	28791	2.421052632
38795	28792	2.421052632
38796	28793	2.421052632
38797	28794	2.421052632
38798	28795	2.421052632
38799	28796	2.421052632
38800	28797	2.421052632
38801	28798	2.421052632
38802	28799	2.421052632
38803	28800	2.40952381
38804	28801	2.405228758
38805	28802	2.405228758
38806	28803	2.405228758
38807	28804	2.405228758
38808	28805	2.405228758
38809	28806	2.401606426

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38752	28749	2.464285714
38753	28750	2.463186078
38754	28751	2.46090535
38755	28752	2.46090535
38756	28753	2.46090535
38757	28754	2.46090535
38758	28755	2.453333333
38759	28756	2.453333333
38760	28757	2.453333333
38761	28758	2.453333333
38762	28759	2.453333333
38763	28760	2.453333333
38764	28761	2.453333333
38765	28762	2.453333333
38766	28763	2.453333333
38767	28764	2.453333333
38768	28765	2.453333333
38769	28766	2.453333333
38770	28767	2.453333333
38771	28768	2.449704142
38772	28769	2.449074074
38773	28770	2.449074074
38774	28771	2.446808511
38775	28772	2.444444444
38776	28773	2.444444444
38777	28774	2.444444444
38778	28775	2.444444444
38779	28776	2.439393939
38780	28777	2.439393939

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38897	28894	2.336507937	39013	29010	2.243902439
38898	28895	2.333333333	39014	29011	2.243902439
38899	28896	2.333333333	39015	29012	2.243902439
38900	28897	2.333333333	39016	29013	2.243902439
38901	28898	2.333333333	39017	29014	2.243902439
38902	28899	2.333333333	39018	29015	2.243902439
38903	28900	2.333333333	39019	29016	2.239700375
38904	28901	2.333333333	39020	29017	2.236111111
38905	28902	2.333333333	39021	29018	2.236111111
38906	28903	2.329113924	39022	29019	2.236111111
38907	28904	2.327380952	39023	29020	2.236111111
38908	28905	2.327380952	39024	29021	2.236111111
38909	28906	2.326436782	39025	29022	2.236111111
38910	28907	2.323232323	39026	29023	2.236111111
38911	28908	2.323232323	39027	29024	2.236111111
38912	28909	2.323232323	39028	29025	2.236111111
38913	28910	2.323232323	39029	29026	2.230303030
38914	28911	2.323232323	39030	29027	2.230303030
38915	28912	2.323232323	39031	29028	2.230303030
38916	28913	2.323232323	39032	29029	2.230303030
38917	28914	2.323232323	39033	29030	2.225806452
38918	28915	2.323232323	39034	29031	2.225806452
38919	28916	2.320175439	39035	29032	2.222222222
38920	28917	2.317829457	39036	29033	2.222222222
38921	28918	2.317829457	39037	29034	2.222222222
38922	28919	2.317829457	39038	29035	2.222222222
38923	28920	2.315972222	39039	29036	2.222222222
38924	28921	2.314465409	39040	29037	2.222222222
38925	28922	2.314465409	39041	29038	2.222222222

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38984	28981	2.271604938	38984	28981	2.271604938
38985	28982	2.271604938	38985	28982	2.271604938
38986	28983	2.271604938	38986	28983	2.271604938
38987	28984	2.271604938	38987	28984	2.271604938
38988	28985	2.271604938	38988	28985	2.271604938
38989	28986	2.267605634	38989	28986	2.267605634
38990	28987	2.266666667	38990	28987	2.266666667
38991	28988	2.266009852	38991	28988	2.266009852
38992	28989	2.265151515	38992	28989	2.265151515
38993	28990	2.263982103	38993	28990	2.263982103
38994	28991	2.263982103	38994	28991	2.263982103
38995	28992	2.262295082	38995	28992	2.262295082
38996	28993	2.259649123	38996	28993	2.259649123
38997	28994	2.258397933	38997	28994	2.258397933
38998	28995	2.254901961	38998	28995	2.254901961
38999	28996	2.254901961	38999	28996	2.254901961
39000	28997	2.254901961	39000	28997	2.254901961
39001	28998	2.254901961	39001	28998	2.254901961
39002	28999	2.254901961	39002	28999	2.254901961
39003	29000	2.254901961	39003	29000	2.254901961
39004	29001	2.254901961	39004	29001	2.254901961
39005	29002	2.254901961	39005	29002	2.254901961
39006	29003	2.254901961	39006	29003	2.254901961
39007	29004	2.254901961	39007	29004	2.254901961
39008	29005	2.248888889	39008	29005	2.248888889
39009	29006	2.248888889	39009	29006	2.248888889
39010	29007	2.248888889	39010	29007	2.248888889
39011	29008	2.247126437	39011	29008	2.247126437
39012	29009	2.247126437	39012	29009	2.247126437

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38955	28952	2.3	38955	28952	2.3
38956	28953	2.3	38956	28953	2.3
38957	28954	2.292834891	38957	28954	2.292834891
38958	28955	2.291187739	38958	28955	2.291187739
38959	28956	2.291187739	38959	28956	2.291187739
38960	28957	2.291187739	38960	28957	2.291187739
38961	28958	2.291187739	38961	28958	2.291187739
38962	28959	2.29004329	38962	28959	2.29004329
38963	28960	2.288557214	38963	28960	2.288557214
38964	28961	2.288557214	38964	28961	2.288557214
38965	28962	2.288557214	38965	28962	2.288557214
38966	28963	2.288557214	38966	28963	2.288557214
38967	28964	2.286549708	38967	28964	2.286549708
38968	28965	2.283687943	38968	28965	2.283687943
38969	28966	2.283687943	38969	28966	2.283687943
38970	28967	2.283687943	38970	28967	2.283687943
38971	28968	2.283687943	38971	28968	2.283687943
38972	28969	2.279279279	38972	28969	2.279279279
38973	28970	2.279279279	38973	28970	2.279279279
38974	28971	2.277227723	38974	28971	2.277227723
38975	28972	2.277227723	38975	28972	2.277227723
38976	28973	2.271604938	38976	28973	2.271604938
38977	28974	2.271604938	38977	28974	2.271604938
38978	28975	2.271604938	38978	28975	2.271604938
38979	28976	2.271604938	38979	28976	2.271604938
38980	28977	2.271604938	38980	28977	2.271604938
38981	28978	2.271604938	38981	28978	2.271604938
38982	28979	2.271604938	38982	28979	2.271604938
38983	28980	2.271604938	38983	28980	2.271604938

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38926	28923	2.314465409	38926	28923	2.314465409
38927	28924	2.310502283	38927	28924	2.310502283
38928	28925	2.310502283	38928	28925	2.310502283
38929	28926	2.310502283	38929	28926	2.310502283
38930	28927	2.310502283	38930	28927	2.310502283
38931	28928	2.308243728	38931	28928	2.308243728
38932	28929	2.308243728	38932	28929	2.308243728
38933	28930	2.306784661	38933	28930	2.306784661
38934	28931	2.306784661	38934	28931	2.306784661
38935	28932	2.306784661	38935	28932	2.306784661
38936	28933	2.305010893	38936	28933	2.305010893
38937	28934	2.3	38937	28934	2.3
38938	28935	2.3	38938	28935	2.3
38939	28936	2.3	38939	28936	2.3
38940	28937	2.3	38940	28937	2.3
38941	28938	2.3	38941	28938	2.3
38942	28939	2.3	38942	28939	2.3
38943	28940	2.3	38943	28940	2.3
38944	28941	2.3	38944	28941	2.3
38945	28942	2.3	38945	28942	2.3
38946	28943	2.3	38946	28943	2.3
38947	28944	2.3	38947	28944	2.3
38948	28945	2.3	38948	28945	2.3
38949	28946	2.3	38949	28946	2.3
38950	28947	2.3	38950	28947	2.3
38951	28948	2.3	38951	28948	2.3
38952	28949	2.3	38952	28949	2.3
38953	28950	2.3	38953	28950	2.3
38954	28951	2.3	38954	28951	2.3

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
38897	28894	2.336507937	38897	28894	2.336507937
38898	28895	2.333333333	38898	28895	2.333333333
38899	28896	2.333333333	38899	28896	2.333333333
38900	28897	2.333333333	38900	28897	2.333333333
38901	28898	2.333333333	38901	28898	2.333333333
38902	28899	2.333333333	38902	28899	2.333333333
38903	28900	2.333333333	38903	28900	2.333333333
38904	28901	2.333333333	38904	28901	2.333333333
38905	28902	2.333333333	38905	28902	2.333333333
38906	28903	2.329113924	38906	28903	2.329113924
38907	28904	2.327380952	38907	28904	2.327380952
38908	28905	2.327380952	38908	28905	2.327380952
38909	28906	2.326436782	38909	28906	2.326436782
38910	28907	2.323232323	38910	28907	2.323232323
38911	28908	2.323232323	38911	28908	2.323232323
38912	28909	2.323232323	38912	28909	2.323232323
38913	28910	2.323232323	38913	28910	2.323232323
38914	28911	2.323232323	38914	28911	2.323232323
38915	28912	2.323232323	38915	28912	2.323232323
38916	28913	2.323232323	38916	28913	2.323232323
38917	28914	2.323232323	38917	28914	2.323232323
38918	28915	2.323232323	38918	28915	2.323232323
38919	28916	2.320175439	38919	28916	2.320175439
38920	28917	2.317829457	38920	28917	2.317829457
38921	28918	2.317829457	38921	28918	2.317829457
38922	28919	2.317829457	38922	28919	2.317829457
38923	28920	2.315972222	38923	28920	2.315972222
38924	28921	2.314465409	38924	28921	2.314465409
38925	28922	2.314465409	38925	28922	2.314465409







DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39448	29445	1.916666667
39449	29446	1.916666667
39450	29447	1.916666667
39451	29448	1.916666667
39452	29449	1.916666667
39453	29450	1.900826446
39454	29451	1.899705015
39455	29452	1.899705015
39456	29453	1.898412698
39457	29454	1.896907216
39458	29455	1.895131086
39459	29456	1.894117647
39460	29457	1.893004115
39461	29458	1.893004115
39462	29459	1.893004115
39463	29460	1.887179487
39464	29461	1.887179487
39465	29462	1.887179487
39466	29463	1.887179487
39467	29464	1.887179487
39468	29465	1.887179487
39469	29466	1.887179487
39470	29467	1.885245902
39471	29468	1.885245902
39472	29469	1.883040936
39473	29470	1.883040936
39474	29471	1.883040936
39475	29472	1.87755102
39476	29473	1.87755102

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39419	29416	1.916666667
39420	29417	1.916666667
39421	29418	1.916666667
39422	29419	1.916666667
39423	29420	1.916666667
39424	29421	1.916666667
39425	29422	1.916666667
39426	29423	1.916666667
39427	29424	1.916666667
39428	29425	1.916666667
39429	29426	1.916666667
39430	29427	1.916666667
39431	29428	1.916666667
39432	29429	1.916666667
39433	29430	1.916666667
39434	29431	1.916666667
39435	29432	1.916666667
39436	29433	1.916666667
39437	29434	1.916666667
39438	29435	1.916666667
39439	29436	1.916666667
39440	29437	1.916666667
39441	29438	1.916666667
39442	29439	1.916666667
39443	29440	1.916666667
39444	29441	1.916666667
39445	29442	1.916666667
39446	29443	1.916666667
39447	29444	1.916666667

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39390	29387	1.947089947
39391	29388	1.943661972
39392	29389	1.943661972
39393	29390	1.943661972
39394	29391	1.943661972
39395	29392	1.94092827
39396	29393	1.94092827
39397	29394	1.94092827
39398	29395	1.938697318
39399	29396	1.938697318
39400	29397	1.936842105
39401	29398	1.935275081
39402	29399	1.933933934
39403	29400	1.932773109
39404	29401	1.930864198
39405	29402	1.93006993
39406	29403	1.916666667
39407	29404	1.916666667
39408	29405	1.916666667
39409	29406	1.916666667
39410	29407	1.916666667
39411	29408	1.916666667
39412	29409	1.916666667
39413	29410	1.916666667
39414	29411	1.916666667
39415	29412	1.916666667
39416	29413	1.916666667
39417	29414	1.916666667
39418	29415	1.916666667

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39361	29358	1.978494624
39362	29359	1.978494624
39363	29360	1.971428571
39364	29361	1.971428571
39365	29362	1.971428571
39366	29363	1.96941896
39367	29364	1.968468468
39368	29365	1.965811966
39369	29366	1.965811966
39370	29367	1.965811966
39371	29368	1.965811966
39372	29369	1.965811966
39373	29370	1.965811966
39374	29371	1.965811966
39375	29372	1.965811966
39376	29373	1.965811966
39377	29374	1.965811966
39378	29375	1.96124031
39379	29376	1.959899749
39380	29377	1.957446809
39381	29378	1.957446809
39382	29379	1.957446809
39383	29380	1.957446809
39384	29381	1.954248366
39385	29382	1.954248366
39386	29383	1.95329087
39387	29384	1.951515152
39388	29385	1.951515152
39389	29386	1.951515152

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39332	29329	2
39333	29330	2
39334	29331	2
39335	29332	2
39336	29333	2
39337	29334	2
39338	29335	2
39339	29336	1.994579946
39340	29337	1.994579946
39341	29338	1.993333333
39342	29339	1.991341991
39343	29340	1.991341991
39344	29341	1.991341991
39345	29342	1.991341991
39346	29343	1.991341991
39347	29344	1.987654321
39348	29345	1.987654321
39349	29346	1.987654321
39350	29347	1.987654321
39351	29348	1.987654321
39352	29349	1.987654321
39353	29350	1.987654321
39354	29351	1.987654321
39355	29352	1.987654321
39356	29353	1.987654321
39357	29354	1.984313725
39358	29355	1.978494624
39359	29356	1.978494624
39360	29357	1.978494624

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39477	29474	1.87755102	39593	29590	1.782945736
39478	29475	1.874074074	39594	29591	1.782945736
39479	29476	1.874074074	39595	29592	1.782945736
39480	29477	1.874074074	39596	29593	1.782945736
39481	29478	1.869918699	39597	29594	1.782945736
39482	29479	1.869918699	39598	29595	1.782945736
39483	29480	1.869918699	39599	29596	1.782945736
39484	29481	1.869918699	39600	29597	1.782945736
39485	29482	1.869918699	39601	29598	1.782945736
39486	29483	1.869918699	39602	29599	1.782945736
39487	29484	1.869918699	39603	29600	1.782945736
39488	29485	1.869918699	39604	29601	1.782945736
39489	29486	1.869918699	39605	29602	1.777777778
39490	29487	1.864864865	39606	29603	1.777777778
39491	29488	1.864864865	39607	29604	1.777777778
39492	29489	1.864864865	39608	29605	1.777777778
39493	29490	1.861904762	39609	29606	1.775438596
39494	29491	1.858585859	39610	29607	1.774104683
39495	29492	1.858585859	39611	29608	1.774104683
39496	29493	1.858585859	39612	29609	1.774104683
39497	29494	1.858585859	39613	29610	1.774104683
39498	29495	1.858585859	39614	29611	1.769230769
39499	29496	1.858585859	39615	29612	1.769230769
39500	29497	1.858585859	39616	29613	1.769230769
39501	29498	1.858585859	39617	29614	1.769230769
39502	29499	1.858585859	39618	29615	1.769230769
39503	29500	1.858585859	39619	29616	1.769230769
39504	29501	1.858585859	39620	29617	1.769230769
39505	29502	1.858585859	39621	29618	1.769230769

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39506	29503	1.858585859	39570	29567	1.803921569
39507	29504	1.850574713	39571	29568	1.803921569
39508	29505	1.850574713	39572	29569	1.803921569
39509	29506	1.850574713	39573	29570	1.803921569
39510	29507	1.848699764	39574	29571	1.803921569
39511	29508	1.847389558	39575	29572	1.803921569
39512	29509	1.847389558	39576	29573	1.803921569
39513	29510	1.847389558	39577	29574	1.803921569
39514	29511	1.847389558	39578	29575	1.803921569
39515	29512	1.845679012	39579	29576	1.803921569
39516	29513	1.844611529	39580	29577	1.792207792
39517	29514	1.84	39581	29578	1.792207792
39518	29515	1.84	39582	29579	1.792207792
39519	29516	1.84	39583	29580	1.790754258
39520	29517	1.84	39584	29581	1.788888889
39521	29518	1.84	39585	29582	1.788888889
39522	29519	1.84	39586	29583	1.788888889
39523	29520	1.84	39587	29584	1.788888889
39524	29521	1.84	39588	29585	1.788888889
39525	29522	1.84	39589	29586	1.787321063
39526	29523	1.84	39590	29587	1.782945736
39527	29524	1.84	39591	29588	1.782945736
39528	29525	1.84	39592	29589	1.782945736
39529	29526	1.84	39593	29590	1.782945736
39530	29527	1.84	39594	29591	1.782945736
39531	29528	1.84	39595	29592	1.782945736
39532	29529	1.834757835	39596	29593	1.782945736
39533	29530	1.834757835	39597	29594	1.782945736
39534	29531	1.833333333	39598	29595	1.782945736

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39535	29532	1.833333333	39599	29596	1.782945736
39536	29533	1.830845771	39600	29597	1.782945736
39537	29534	1.828746177	39601	29598	1.782945736
39538	29535	1.825396825	39602	29599	1.782945736
39539	29536	1.825396825	39603	29600	1.782945736
39540	29537	1.825396825	39604	29601	1.782945736
39541	29538	1.825396825	39605	29602	1.777777778
39542	29539	1.825396825	39606	29603	1.777777778
39543	29540	1.825396825	39607	29604	1.777777778
39544	29541	1.825396825	39608	29605	1.777777778
39545	29542	1.825396825	39609	29606	1.775438596
39546	29543	1.821782178	39610	29607	1.774104683
39547	29544	1.821782178	39611	29608	1.774104683
39548	29545	1.81920904	39612	29609	1.774104683
39549	29546	1.81920904	39613	29610	1.774104683
39550	29547	1.81920904	39614	29611	1.769230769
39551	29548	1.81920904	39615	29612	1.769230769
39552	29549	1.81920904	39616	29613	1.769230769
39553	29550	1.813620072	39617	29614	1.769230769
39554	29551	1.811023622	39618	29615	1.769230769
39555	29552	1.803921569	39619	29616	1.769230769
39556	29553	1.803921569	39620	29617	1.769230769
39557	29554	1.803921569	39621	29618	1.769230769
39558	29555	1.803921569			
39559	29556	1.803921569			
39560	29557	1.803921569			
39561	29558	1.803921569			
39562	29559	1.803921569			
39563	29560	1.803921569			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39564	29561	1.803921569			
39565	29562	1.803921569			
39566	29563	1.803921569			
39567	29564	1.803921569			
39568	29565	1.803921569			
39569	29566	1.803921569			
39570	29567	1.803921569			
39571	29568	1.803921569			
39572	29569	1.803921569			
39573	29570	1.803921569			
39574	29571	1.803921569			
39575	29572	1.803921569			
39576	29573	1.803921569			
39577	29574	1.803921569			
39578	29575	1.803921569			
39579	29576	1.803921569			
39580	29577	1.792207792			
39581	29578	1.792207792			
39582	29579	1.792207792			
39583	29580	1.790754258			
39584	29581	1.788888889			
39585	29582	1.788888889			
39586	29583	1.788888889			
39587	29584	1.788888889			
39588	29585	1.788888889			
39589	29586	1.787321063			
39590	29587	1.782945736			
39591	29588	1.782945736			
39592	29589	1.782945736			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39477	29474	1.87755102			
39478	29475	1.874074074			
39479	29476	1.874074074			
39480	29477	1.874074074			
39481	29478	1.869918699			
39482	29479	1.869918699			
39483	29480	1.869918699			
39484	29481	1.869918699			
39485	29482	1.869918699			
39486	29483	1.869918699			
39487	29484	1.869918699			
39488	29485	1.869918699			
39489	29486	1.869918699			
39490	29487	1.864864865			
39491	29488	1.864864865			
39492	29489	1.864864865			
39493	29490	1.861904762			
39494	29491	1.858585859			
39495	29492	1.858585859			
39496	29493	1.858585859			
39497	29494	1.858585859			
39498	29495	1.858585859			
39499	29496	1.858585859			
39500	29497	1.858585859			
39501	29498	1.858585859			
39502	29499	1.858585859			
39503	29500	1.858585859			
39504	29501	1.858585859			
39505	29502	1.858585859			



DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39767	29764	1.680365297	39883	29880	1.604651163
39768	29765	1.680365297	39884	29881	1.604651163
39769	29766	1.677083333	39885	29882	1.604651163
39770	29767	1.674329502	39886	29883	1.60199005
39771	29768	1.672727273	39887	29884	1.60199005
39772	29769	1.672727273	39888	29885	1.60199005
39773	29770	1.672727273	39889	29886	1.60199005
39774	29771	1.672727273	39890	29887	1.6
39775	29772	1.672727273	39891	29888	1.597222222
39776	29773	1.672727273	39892	29889	1.597222222
39777	29774	1.672727273	39893	29890	1.597222222
39778	29775	1.672727273	39894	29891	1.597222222
39779	29776	1.672727273	39895	29892	1.597222222
39780	29777	1.672727273	39896	29893	1.597222222
39781	29778	1.672727273	39897	29894	1.597222222
39782	29779	1.672727273	39898	29895	1.594666667
39783	29780	1.669966997	39899	29896	1.593073593
39784	29781	1.669966997	39900	29897	1.593073593
39785	29782	1.666666667	39901	29898	1.590123457
39786	29783	1.666666667	39902	29899	1.586206897
39787	29784	1.666666667	39903	29900	1.586206897
39788	29785	1.666666667	39904	29901	1.586206897
39789	29786	1.666666667	39905	29902	1.586206897
39790	29787	1.666666667	39906	29903	1.586206897
39791	29788	1.666666667	39907	29904	1.586206897
39792	29789	1.666666667	39908	29905	1.586206897
39793	29790	1.666666667	39909	29906	1.586206897
39794	29791	1.666666667	39910	29907	1.586206897
39795	29792	1.666666667	39911	29908	1.586206897

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39825	29822	1.638676845	39861	29858	1.614035088
39826	29823	1.637540453	39862	29859	1.614035088
39827	29824	1.635555556	39863	29860	1.614035088
39828	29825	1.635555556	39864	29861	1.614035088
39829	29826	1.633879781	39865	29862	1.614035088
39830	29827	1.631205674	39866	29863	1.614035088
39831	29828	1.631205674	39867	29864	1.614035088
39832	29829	1.631205674	39868	29865	1.614035088
39833	29830	1.631205674	39869	29866	1.614035088
39834	29831	1.631205674	39870	29867	1.614035088
39835	29832	1.631205674	39871	29868	1.614035088
39836	29833	1.628318584	39872	29869	1.614035088
39837	29834	1.628318584	39873	29870	1.614035088
39838	29835	1.626262626	39874	29871	1.614035088
39839	29836	1.626262626	39875	29872	1.614035088
39840	29837	1.626262626	39876	29873	1.614035088
39841	29838	1.626262626	39877	29874	1.614035088
39842	29839	1.626262626	39878	29875	1.614035088
39843	29840	1.626262626	39879	29876	1.614035088
39844	29841	1.626262626	39880	29877	1.614035088
39845	29842	1.626262626	39881	29878	1.614035088
39846	29843	1.626262626	39882	29879	1.614035088
39847	29844	1.626262626			
39848	29845	1.623529412			
39849	29846	1.623529412			
39850	29847	1.621794872			
39851	29848	1.621794872			
39852	29849	1.620596206			
39853	29850	1.614035088			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39796	29793	1.666666667	39854	29851	1.614035088
39797	29794	1.662650602	39855	29852	1.614035088
39798	29795	1.662650602	39856	29853	1.614035088
39799	29796	1.661740558	39857	29854	1.614035088
39800	29797	1.657657658	39858	29855	1.614035088
39801	29798	1.657657658	39859	29856	1.614035088
39802	29799	1.657657658	39860	29857	1.614035088
39803	29800	1.657657658	39861	29858	1.614035088
39804	29801	1.657657658	39862	29859	1.614035088
39805	29802	1.657657658	39863	29860	1.614035088
39806	29803	1.657657658	39864	29861	1.614035088
39807	29804	1.657657658	39865	29862	1.614035088
39808	29805	1.657657658	39866	29863	1.614035088
39809	29806	1.653594771	39867	29864	1.614035088
39810	29807	1.653594771	39868	29865	1.614035088
39811	29808	1.651282051	39869	29866	1.614035088
39812	29809	1.651282051	39870	29867	1.614035088
39813	29810	1.64874552	39871	29868	1.614035088
39814	29811	1.642857143	39872	29869	1.614035088
39815	29812	1.642857143	39873	29870	1.614035088
39816	29813	1.642857143	39874	29871	1.614035088
39817	29814	1.642857143	39875	29872	1.614035088
39818	29815	1.642857143	39876	29873	1.614035088
39819	29816	1.642857143	39877	29874	1.614035088
39820	29817	1.642857143	39878	29875	1.614035088
39821	29818	1.642857143	39879	29876	1.614035088
39822	29819	1.642857143	39880	29877	1.614035088
39823	29820	1.642857143	39881	29878	1.614035088
39824	29821	1.638676845	39882	29879	1.614035088

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39767	29764	1.680365297			
39768	29765	1.680365297			
39769	29766	1.677083333			
39770	29767	1.674329502			
39771	29768	1.672727273			
39772	29769	1.672727273			
39773	29770	1.672727273			
39774	29771	1.672727273			
39775	29772	1.672727273			
39776	29773	1.672727273			
39777	29774	1.672727273			
39778	29775	1.672727273			
39779	29776	1.672727273			
39780	29777	1.672727273			
39781	29778	1.672727273			
39782	29779	1.672727273			
39783	29780	1.669966997			
39784	29781	1.669966997			
39785	29782	1.666666667			
39786	29783	1.666666667			
39787	29784	1.666666667			
39788	29785	1.666666667			
39789	29786	1.666666667			
39790	29787	1.666666667			
39791	29788	1.666666667			
39792	29789	1.666666667			
39793	29790	1.666666667			
39794	29791	1.666666667			
39795	29792	1.666666667			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
39767	29764	1.680365297			
39768	29765	1.680365297			
39769	29766	1.677083333			
39770	29767	1.674329502			
39771	29768	1.672727273			
39772	29769	1.672727273			
39773	29770	1.672727273			
39774	29771	1.672727273			
39775	29772	1.672727273			
39776	29773	1.672727273			
39777	29774	1.672727273			
39778	29775	1.672727273			
39779	29776	1.672727273			
39780	29777	1.672727273			
39781	29778	1.672727273			
39782	29779	1.672727273			
39783	29780	1.669966997			
39784	29781	1.669966997			
39785	29782	1.666666667			
39786	29783	1.666666667			
39787	29784	1.666666667			
39788	29785	1.666666667			
39789	29786	1.666666667			
39790	29787	1.666666667			
39791	29788	1.666666667			
39792	29789	1.666666667			
39793	29790	1.666666667			
39794	29791	1.666666667			
39795	29792	1.666666667			









DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40347	30344	1.277777778	40463	30460	1.202614379
40348	30345	1.277777778	40464	30461	1.202614379
40349	30346	1.277777778	40465	30462	1.202614379
40350	30347	1.277777778	40466	30463	1.202614379
40351	30348	1.277777778	40467	30464	1.202614379
40352	30349	1.277777778	40468	30465	1.202614379
40353	30350	1.277777778	40469	30466	1.2
40354	30351	1.277777778	40470	30467	1.197916667
40355	30352	1.277777778	40471	30468	1.197916667
40356	30353	1.277777778	40472	30469	1.197916667
40357	30354	1.277777778	40473	30470	1.194805195
40358	30355	1.277777778	40474	30471	1.194805195
40359	30356	1.277777778	40475	30472	1.194805195
40360	30357	1.277777778	40476	30473	1.192592593
40361	30358	1.277777778	40477	30474	1.192592593
40362	30359	1.277777778	40478	30475	1.190938511
40363	30360	1.277777778	40479	30476	1.190938511
40364	30361	1.277777778	40480	30477	1.179487179
40365	30362	1.277777778	40481	30478	1.179487179
40366	30363	1.277777778	40482	30479	1.179487179
40367	30364	1.277777778	40483	30480	1.179487179
40368	30365	1.277777778	40484	30481	1.179487179
40369	30366	1.277777778	40485	30482	1.179487179
40370	30367	1.277777778	40486	30483	1.179487179
40371	30368	1.277777778	40487	30484	1.179487179
40372	30369	1.277777778	40488	30485	1.179487179
40373	30370	1.277777778	40489	30486	1.179487179
40374	30371	1.277777778	40490	30487	1.179487179
40375	30372	1.267217631	40491	30488	1.179487179

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40434	30431	1.226666667	40443	30440	1.216931217
40435	30432	1.226666667	40444	30441	1.216931217
40436	30433	1.226666667	40445	30442	1.210526316
40437	30434	1.221238938	40446	30443	1.210526316
40438	30435	1.21969697	40447	30444	1.210526316
40439	30436	1.21969697	40448	30445	1.210526316
40440	30437	1.21969697	40449	30446	1.210526316
40441	30438	1.216931217	40450	30447	1.210526316
40442	30439	1.216931217	40451	30448	1.210526316
40443	30440	1.216931217	40452	30449	1.210526316
40444	30441	1.216931217	40453	30450	1.210526316
40445	30442	1.210526316	40454	30451	1.210526316
40446	30443	1.210526316	40455	30452	1.210526316
40447	30444	1.210526316	40456	30453	1.210526316
40448	30445	1.210526316	40457	30454	1.210526316
40449	30446	1.210526316	40458	30455	1.210526316
40450	30447	1.210526316	40459	30456	1.210526316
40451	30448	1.210526316	40460	30457	1.210526316
40452	30449	1.210526316	40461	30458	1.205992509
40453	30450	1.210526316	40462	30459	1.202614379

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40405	30402	1.243243243	40414	30411	1.239057239
40406	30403	1.243243243	40415	30412	1.23655914
40407	30404	1.243243243	40416	30413	1.23655914
40408	30405	1.243243243	40417	30414	1.23655914
40409	30406	1.243243243	40418	30415	1.23655914
40410	30407	1.243243243	40419	30416	1.233716475
40411	30408	1.243243243	40420	30417	1.233716475
40412	30409	1.243243243	40421	30418	1.232142857
40413	30410	1.239057239	40422	30419	1.231143552
40414	30411	1.239057239	40423	30420	1.230452675
40415	30412	1.23655914	40424	30421	1.226666667
40416	30413	1.23655914	40425	30422	1.226666667
40417	30414	1.23655914	40426	30423	1.226666667
40418	30415	1.23655914	40427	30424	1.226666667
40419	30416	1.233716475	40428	30425	1.226666667
40420	30417	1.233716475	40429	30426	1.226666667
40421	30418	1.232142857	40430	30427	1.226666667
40422	30419	1.231143552	40431	30428	1.226666667
40423	30420	1.230452675	40432	30429	1.226666667
40424	30421	1.226666667	40433	30430	1.226666667
40425	30422	1.226666667			
40426	30423	1.226666667			
40427	30424	1.226666667			
40428	30425	1.226666667			
40429	30426	1.226666667			
40430	30427	1.226666667			
40431	30428	1.226666667			
40432	30429	1.226666667			
40433	30430	1.226666667			

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40376	30373	1.266055046	40385	30382	1.260273973
40377	30374	1.264604811	40386	30383	1.256830601
40378	30375	1.262745098	40387	30384	1.256830601
40379	30376	1.262745098	40388	30385	1.256830601
40380	30377	1.262745098	40389	30386	1.256830601
40381	30378	1.262745098	40390	30387	1.256830601
40382	30379	1.260273973	40391	30388	1.256830601
40383	30380	1.260273973	40392	30389	1.254545455
40384	30381	1.260273973	40393	30390	1.254545455
40385	30382	1.260273973	40394	30391	1.254545455
40386	30383	1.256830601	40395	30392	1.254545455
40387	30384	1.256830601	40396	30393	1.25170068
40388	30385	1.256830601	40397	30394	1.25170068
40389	30386	1.256830601	40398	30395	1.25170068
40390	30387	1.256830601	40399	30396	1.25170068
40391	30388	1.256830601	40400	30397	1.245833333
40392	30389	1.254545455	40401	30398	1.243243243
40393	30390	1.254545455	40402	30399	1.243243243
40394	30391	1.254545455	40403	30400	1.243243243
40395	30392	1.254545455	40404	30401	1.243243243

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40347	30344	1.277777778	40356	30353	1.277777778
40348	30345	1.277777778	40357	30354	1.277777778
40349	30346	1.277777778	40358	30355	1.277777778
40350	30347	1.277777778	40359	30356	1.277777778
40351	30348	1.277777778	40360	30357	1.277777778
40352	30349	1.277777778	40361	30358	1.277777778
40353	30350	1.277777778	40362	30359	1.277777778
40354	30351	1.277777778	40363	30360	1.277777778
40355	30352	1.277777778	40364	30361	1.277777778
40356	30353	1.277777778	40365	30362	1.277777778
40357	30354	1.277777778	40366	30363	1.277777778
40358	30355	1.277777778	40367	30364	1.277777778
40359	30356	1.277777778	40368	30365	1.277777778
40360	30357	1.277777778	40369	30366	1.277777778
40361	30358	1.277777778	40370	30367	1.277777778
40362	30359	1.277777778	40371	30368	1.277777778
40363	30360	1.277777778	40372	30369	1.277777778
40364	30361	1.277777778	40373	30370	1.277777778
40365	30362	1.277777778	40374	30371	1.277777778
40366	30363	1.277777778	40375	30372	1.267217631

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40492	30489	1.179487179	40608	30605	1.095238095
40493	30490	1.179487179	40609	30606	1.095238095
40494	30491	1.179487179	40610	30607	1.095238095
40495	30492	1.179487179	40611	30608	1.095238095
40496	30493	1.179487179	40612	30609	1.095238095
40497	30494	1.179487179	40613	30610	1.095238095
40498	30495	1.179487179	40614	30611	1.095238095
40499	30496	1.179487179	40615	30612	1.095238095
40500	30497	1.179487179	40616	30613	1.095238095
40501	30498	1.179487179	40617	30614	1.095238095
40502	30499	1.179487179	40618	30615	1.095238095
40503	30500	1.179487179	40619	30616	1.095238095
40504	30501	1.179487179	40620	30617	1.095238095
40505	30502	1.179487179	40621	30618	1.095238095
40506	30503	1.179487179	40622	30619	1.095238095
40507	30504	1.179487179	40623	30620	1.095238095
40508	30505	1.179487179	40624	30621	1.095238095
40509	30506	1.179487179	40625	30622	1.095238095
40510	30507	1.169491525	40626	30623	1.095238095
40511	30508	1.169491525	40627	30624	1.095238095
40512	30509	1.168253968	40628	30625	1.084175084
40513	30510	1.164556962	40629	30626	1.084175084
40514	30511	1.164556962	40630	30627	1.082352941
40515	30512	1.164556962	40631	30628	1.079812207
40516	30513	1.164556962	40632	30629	1.079812207
40517	30514	1.164556962	40633	30630	1.079812207
40518	30515	1.161616162	40634	30631	1.078125
40519	30516	1.161616162	40635	30632	1.076023392
40520	30517	1.157232704	40636	30633	1.076023392

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40521	30518	1.157232704	40579	30576	1.115151515
40522	30519	1.154121864	40580	30577	1.115151515
40523	30520	1.154121864	40581	30578	1.115151515
40524	30521	1.154121864	40582	30579	1.115151515
40525	30522	1.154121864	40583	30580	1.115151515
40526	30523	1.15	40584	30581	1.115151515
40527	30524	1.15	40585	30582	1.115151515
40528	30525	1.15	40586	30583	1.111111111
40529	30526	1.15	40587	30584	1.111111111
40530	30527	1.15	40588	30585	1.111111111
40531	30528	1.15	40589	30586	1.111111111
40532	30529	1.15	40590	30587	1.111111111
40533	30530	1.15	40591	30588	1.111111111
40534	30531	1.144278607	40592	30589	1.111111111
40535	30532	1.144278607	40593	30590	1.109649123
40536	30533	1.144278607	40594	30591	1.108433735
40537	30534	1.144278607	40595	30592	1.108433735
40538	30535	1.141843972	40596	30593	1.104
40539	30536	1.141843972	40597	30594	1.102396514
40540	30537	1.141843972	40598	30595	1.095238095
40541	30538	1.141843972	40599	30596	1.095238095
40542	30539	1.135802469	40600	30597	1.095238095
40543	30540	1.135802469	40601	30598	1.095238095
40544	30541	1.135802469	40602	30599	1.095238095
40545	30542	1.135802469	40603	30600	1.095238095
40546	30543	1.135802469	40604	30601	1.095238095
40547	30544	1.135802469	40605	30602	1.095238095
40548	30545	1.135802469	40606	30603	1.095238095
40549	30546	1.135802469	40607	30604	1.095238095

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40550	30547	1.135802469	40550	30547	1.135802469
40551	30548	1.135802469	40551	30548	1.135802469
40552	30549	1.135802469	40552	30549	1.135802469
40553	30550	1.135802469	40553	30550	1.135802469
40554	30551	1.135802469	40554	30551	1.135802469
40555	30552	1.135802469	40555	30552	1.135802469
40556	30553	1.135802469	40556	30553	1.135802469
40557	30554	1.135802469	40557	30554	1.135802469
40558	30555	1.129824561	40558	30555	1.129824561
40559	30556	1.129824561	40559	30556	1.129824561
40560	30557	1.128834356	40560	30557	1.128834356
40561	30558	1.12745098	40561	30558	1.12745098
40562	30559	1.12745098	40562	30559	1.12745098
40563	30560	1.12745098	40563	30560	1.12745098
40564	30561	1.125382263	40564	30561	1.125382263
40565	30562	1.12195122	40565	30562	1.12195122
40566	30563	1.12195122	40566	30563	1.12195122
40567	30564	1.12195122	40567	30564	1.12195122
40568	30565	1.12195122	40568	30565	1.12195122
40569	30566	1.12195122	40569	30566	1.12195122
40570	30567	1.12195122	40570	30567	1.12195122
40571	30568	1.12195122	40571	30568	1.12195122
40572	30569	1.12195122	40572	30569	1.12195122
40573	30570	1.12195122	40573	30570	1.12195122
40574	30571	1.12195122	40574	30571	1.12195122
40575	30572	1.12195122	40575	30572	1.12195122
40576	30573	1.119221411	40576	30573	1.119221411
40577	30574	1.118055556	40577	30574	1.118055556
40578	30575	1.115151515	40578	30575	1.115151515

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40579	30576	1.115151515	40579	30576	1.115151515
40580	30577	1.115151515	40580	30577	1.115151515
40581	30578	1.115151515	40581	30578	1.115151515
40582	30579	1.115151515	40582	30579	1.115151515
40583	30580	1.115151515	40583	30580	1.115151515
40584	30581	1.115151515	40584	30581	1.115151515
40585	30582	1.115151515	40585	30582	1.115151515
40586	30583	1.111111111	40586	30583	1.111111111
40587	30584	1.111111111	40587	30584	1.111111111
40588	30585	1.111111111	40588	30585	1.111111111
40589	30586	1.111111111	40589	30586	1.111111111
40590	30587	1.111111111	40590	30587	1.111111111
40591	30588	1.111111111	40591	30588	1.111111111
40592	30589	1.111111111	40592	30589	1.111111111
40593	30590	1.109649123	40593	30590	1.109649123
40594	30591	1.108433735	40594	30591	1.108433735
40595	30592	1.108433735	40595	30592	1.108433735
40596	30593	1.104	40596	30593	1.104
40597	30594	1.102396514	40597	30594	1.102396514
40598	30595	1.095238095	40598	30595	1.095238095
40599	30596	1.095238095	40599	30596	1.095238095
40600	30597	1.095238095	40600	30597	1.095238095
40601	30598	1.095238095	40601	30598	1.095238095
40602	30599	1.095238095	40602	30599	1.095238095
40603	30600	1.095238095	40603	30600	1.095238095
40604	30601	1.095238095	40604	30601	1.095238095
40605	30602	1.095238095	40605	30602	1.095238095
40606	30603	1.095238095	40606	30603	1.095238095
40607	30604	1.095238095	40607	30604	1.095238095

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40492	30489	1.179487179	40492	30489	1.179487179
40493	30490	1.179487179	40493	30490	1.179487179
40494	30491	1.179487179	40494	30491	1.179487179
40495	30492	1.179487179	40495	30492	1.179487179
40496	30493	1.179487179	40496	30493	1.179487179
40497	30494	1.179487179	40497	30494	1.179487179
40498	30495	1.179487179	40498	30495	1.179487179
40499	30496	1.179487179	40499	30496	1.179487179
40500	30497	1.179487179	40500	30497	1.179487179
40501	30498	1.179487179	40501	30498	1.179487179
40502	30499	1.179487179	40502	30499	1.179487179
40503	30500	1.179487179	40503	30500	1.179487179
40504	30501	1.179487179	40504	30501	1.179487179
40505	30502	1.179487179	40505	30502	1.179487179
40506	30503	1.179487179	40506	30503	1.179487179
40507	30504	1.179487179	40507	30504	1.179487179
40508	30505	1.179487179	40508	30505	1.179487179
40509	30506	1.179487179	40509	30506	1.179487179
40510	30507	1.169491525	40510	30507	1.169491525
40511	30508	1.169491525	40511	30508	1.169491525
40512	30509	1.168253968	40512	30509	1.168253968
40513	30510	1.164556962	40513	30510	1.164556962
40514	30511	1.164556962	40514	30511	1.164556962
40515	30512	1.164556962	40515	30512	1.164556962
40516	30513	1.164556962	40516	30513	1.164556962
40517	30514	1.164556962	40517	30514	1.164556962
40518	30515	1.161616162	40518	30515	1.161616162
40519	30516	1.161616162	40519	30516	1.161616162
40520	30517	1.157232704	40520	30517	1.157232704

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40709	30706	1.022222222
40710	30707	1.022222222
40711	30708	1.022222222
40712	30709	1.022222222
40713	30710	1.022222222
40714	30711	1.012578616
40715	30712	1.010989011
40716	30713	1.010989011
40717	30714	1.00877193
40718	30715	1.00877193
40719	30716	1.00877193
40720	30717	1.00877193
40721	30718	1.005464481
40722	30719	1.005464481

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40691	30688	1.022222222
40692	30689	1.022222222
40693	30690	1.022222222
40694	30691	1.022222222
40695	30692	1.022222222
40696	30693	1.022222222
40697	30694	1.022222222
40698	30695	1.022222222
40699	30696	1.022222222
40700	30697	1.022222222
40701	30698	1.022222222
40702	30699	1.022222222
40703	30700	1.022222222
40704	30701	1.022222222
40705	30702	1.022222222
40706	30703	1.022222222
40707	30704	1.022222222
40708	30705	1.022222222

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40673	30670	1.045454545
40674	30671	1.045454545
40675	30672	1.045454545
40676	30673	1.045454545
40677	30674	1.045454545
40678	30675	1.045454545
40679	30676	1.045454545
40680	30677	1.042071197
40681	30678	1.039548023
40682	30679	1.039548023
40683	30680	1.039548023
40684	30681	1.039548023
40685	30682	1.036036036
40686	30683	1.032051282
40687	30684	1.030812325
40688	30685	1.029850746
40689	30686	1.022222222
40690	30687	1.022222222

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40655	30652	1.057471264
40656	30653	1.057471264
40657	30654	1.057471264
40658	30655	1.057471264
40659	30656	1.057471264
40660	30657	1.057471264
40661	30658	1.057471264
40662	30659	1.057471264
40663	30660	1.057471264
40664	30661	1.050228311
40665	30662	1.050228311
40666	30663	1.050228311
40667	30664	1.050228311
40668	30665	1.050228311
40669	30666	1.050228311
40670	30667	1.048433048
40671	30668	1.045454545
40672	30669	1.045454545

DNA SEQ ID NO	AA SEQ ID NO	Kidney 1 Enrichment
40637	30634	1.076023392
40638	30635	1.069767442
40639	30636	1.069767442
40640	30637	1.069767442
40641	30638	1.069767442
40642	30639	1.069767442
40643	30640	1.069767442
40644	30641	1.069767442
40645	30642	1.069767442
40646	30643	1.069767442
40647	30644	1.064814815
40648	30645	1.062706271
40649	30646	1.057471264
40650	30647	1.057471264
40651	30648	1.057471264
40652	30649	1.057471264
40653	30650	1.057471264
40654	30651	1.057471264

FIG. 7

DNA SEQ ID NO	AA SEQ ID NO	Liver 1 Enrichment	Liver 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Liver 1 Enrichment	Liver 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Liver 1 Enrichment	Liver 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Liver 1 Enrichment	Liver 2 Enrichment
40723	30720	5.227272727	3.538461538	40749	30746	1.870813397	1.978744939	40775	30772	1.524621212	1.492788462	40801	30798	1.36489899	1.277777778
40724	30721	5.084710744	2.573426573	40750	30747	1.858585859	1.990384615	40776	30773	1.517595308	2.168734491	40802	30799	1.356265356	1.123700624
40725	30722	4.122077922	3.525824176	40751	30748	1.844919786	1.209841629	40777	30774	1.512572534	1.505728314	40803	30800	1.352941176	3.052790347
40726	30723	3.659090909	4.201923077	40752	30749	1.829545455	1.105769231	40778	30775	1.493506494	2.021978022	40804	30801	1.347474747	1.061538462
40727	30724	3.136363636	1.326923077	40753	30750	1.796875	1.520432692	40779	30776	1.493506494	1.453296703	40805	30802	1.347027972	1.122781065
40728	30725	3.090909091	2.807692308	40754	30751	1.792207792	1.39010989	40780	30777	1.493506494	2.021978022	40806	30803	1.34032634	1.088757396
40729	30726	3.055944056	2.517751479	40755	30752	1.787390029	1.598014888	40781	30778	1.478935698	7.141651032	40807	30804	1.339488636	1.592307692
40730	30727	3.013368984	4.475113122	40756	30753	1.777272727	1.857692308	40782	30779	1.475935829	1.509049774	40808	30805	1.327803583	1.478663672
40731	30728	2.955667789	2.178774929	40757	30754	1.772727272	1.238461538	40783	30780	1.473140496	1.145979021	40809	30806	1.326322931	1.161882893
40732	30729	2.923400673	1.015669516	40758	30755	1.756794752	1.942505948	40784	30781	1.473140496	1.005244755	40810	30807	1.324242424	1.518589744
40733	30730	2.882063882	1.47037422	40759	30756	1.742424242	1.503846154	40785	30782	1.470724191	1.859191656	40811	30808	1.322820037	1.335949765
40734	30731	2.852597403	1.074175824	40760	30757	1.669059011	1.458839406	40786	30783	1.463636364	1.194230769	40812	30809	1.318881119	1.047928994
40735	30732	2.851239669	2.573426573	40761	30758	1.66827853	1.373977087	40787	30784	1.444628099	1.238461538	40813	30810	1.314285714	1.023626374
40736	30733	2.800324675	1.216346154	40762	30759	1.638820639	1.004158004	40788	30785	1.443722944	1.221611722	40814	30811	1.306818182	1.232142857
40737	30734	2.566115702	3.833333333	40763	30760	1.636363636	1.211538462	40789	30786	1.442462601	1.466893866	40815	30812	1.302797203	1.279289941
40738	30735	2.538961039	1.769230769	40764	30761	1.631929047	1.100375235	40790	30787	1.439393939	1.192307692	40816	30813	1.3004443459	1.672138837
40739	30736	2.352272727	1.105769231	40765	30762	1.628964059	1.398926655	40791	30788	1.436179982	1.331390831	40817	30814	1.296363636	1.096923077
40740	30737	2.352272727	1.769230769	40766	30763	1.585043988	1.255583127	40792	30789	1.425619835	1.548076923	40818	30815	1.296363636	5.118974359
40741	30738	2.3	1.326923077	40767	30764	1.575544174	1.270855905	40793	30790	1.421348315	1.500864304	40819	30816	1.294372294	1.053113553
40742	30739	2.3	1.592307692	40768	30765	1.568181818	1.326923077	40794	30791	1.418831169	1.105769231	40820	30817	1.281524927	1.612282878
40743	30740	2.233471074	2.452797203	40769	30766	1.568181818	1.326923077	40795	30792	1.418831169	1.358516484	40821	30818	1.277777778	1.4375
40744	30741	2.153636364	4.14	40770	30767	1.568181818	1.326923077	40796	30793	1.414438503	1.14479638	40822	30819	1.277777778	1.277777778
40745	30742	2.090909091	3.538461538	40771	30768	1.568181818	2.653846154	40797	30794	1.40684624	1.234093067	40823	30820	1.273310023	1.49704142
40746	30743	1.974747475	1.965811966	40772	30769	1.568181818	2.211538462	40798	30795	1.393939394	2.948717949	40824	30821	1.272727273	1.596153846
40747	30744	1.916666667	1.621794872	40773	30770	1.559612519	1.044136192	40799	30796	1.384520885	1.434511435	40825	30822	1.272727273	1.538461538
40748	30745	1.916666667	1.179487179	40774	30771	1.551846591	1.423677885	40800	30797	1.370707071	1.690598291	40826	30823	1.272727273	1.346153846

DNA SEQ ID NO	AA SEQ ID NO	Liver 1 Enrichment	Liver 2 Enrichment
40905	30902	1.045454545	1.575721154
40906	30903	1.045454545	3.538461538
40907	30904	1.045454545	1.474358974
40908	30905	1.045454545	1.326923077
40909	30906	1.045454545	1.326923077
40910	30907	1.030934343	1.105769231
40911	30908	1.030729834	1.196099675
40912	30909	1.028030303	1.091025641
40913	30910	1.026446281	1.576223776
40914	30911	1.026094276	1.261396011
40915	30912	1.02534965	1.394970414
40916	30913	1.02534965	1.105769231
40917	30914	1.023674242	2.432692308
40918	30915	1.021694215	1.02534965
40919	30916	1.020562771	1.010989011
40920	30917	1.014705882	1.040723982
40921	30918	1.013450835	1.426216641
40922	30919	1.010606061	1.091025641
40923	30920	1.006372133	1.339324227
40924	30921	1.006003431	1.185050798
40925	30922	1.004456328	1.16214178
40926	30923	1.000967118	1.138707038

DNA SEQ ID NO	AA SEQ ID NO	Liver 1 Enrichment	Liver 2 Enrichment
40879	30876	1.085664336	1.156804734
40880	30877	1.082792208	1.57967033
40881	30878	1.080893683	1.304432855
40882	30879	1.080303030	1.110683761
40883	30880	1.077788191	1.285884219
40884	30881	1.077134986	1.045454545
40885	30882	1.077134986	1.501165501
40886	30883	1.075324675	1.061538462
40887	30884	1.075324675	1.112087912
40888	30885	1.074494949	1.056623932
40889	30886	1.074097136	1.514752371
40890	30887	1.071590909	1.371153846
40891	30888	1.070953437	1.197467167
40892	30889	1.069767442	1.080053667
40893	30890	1.069487983	1.230327144
40894	30891	1.061294766	1.005244755
40895	30892	1.045454545	1.114615385
40896	30893	1.045454545	1.061538462
40897	30894	1.045454545	1.184485007
40898	30895	1.045454545	1.608391608
40899	30896	1.045454545	1.032051282
40900	30897	1.045454545	2.653846154
40901	30898	1.045454545	1.061538462
40902	30899	1.045454545	3.685897436
40903	30900	1.045454545	1.274886878
40904	30901	1.045454545	1.326923077

DNA SEQ ID NO	AA SEQ ID NO	Liver 1 Enrichment	Liver 2 Enrichment
40853	30850	1.194805195	1.990384615
40854	30851	1.187211094	1.274445893
40855	30852	1.184848485	1.415384615
40856	30853	1.180351906	1.227047146
40857	30854	1.176136364	1.216346154
40858	30855	1.173232323	1.15982906
40859	30856	1.169491525	1.244458931
40860	30857	1.168449198	1.990384615
40861	30858	1.161616162	1.818376068
40862	30859	1.157467532	1.263736264
40863	30860	1.156336088	1.179487179
40864	30861	1.142706131	1.54293381
40865	30862	1.140495868	1.769230769
40866	30863	1.140495868	1.206293706
40867	30864	1.137700535	1.37899276
40868	30865	1.132575758	1.007478632
40869	30866	1.124144673	1.20802316
40870	30867	1.12012987	1.137362637
40871	30868	1.117554859	1.113395225
40872	30869	1.110795455	1.202524038
40873	30870	1.103535354	1.081196581
40874	30871	1.100478469	2.188259109
40875	30872	1.099343955	1.422680412
40876	30873	1.096452328	1.488742964
40877	30874	1.095238095	1.558608059
40878	30875	1.088418431	1.163329821

DNA SEQ ID NO	AA SEQ ID NO	Liver 1 Enrichment	Liver 2 Enrichment
40827	30824	1.272727273	1.192307692
40828	30825	1.258812616	1.173469388
40829	30826	1.254545455	1.454700855
40830	30827	1.254545455	1.216346154
40831	30828	1.25	1.115384615
40832	30829	1.249445676	1.03564728
40833	30830	1.248737374	1.326923077
40834	30831	1.247208931	1.25708502
40835	30832	1.243243243	1.123700624
40836	30833	1.239957717	1.913237925
40837	30834	1.2368758	1.171180932
40838	30835	1.233979136	1.392181589
40839	30836	1.233979136	1.116645649
40840	30837	1.233100233	1.633136095
40841	30838	1.233100233	1.088757396
40842	30839	1.233100233	1.247534517
40843	30840	1.228409091	1.205288462
40844	30841	1.224675325	1.516483516
40845	30842	1.21969697	1.474358974
40846	30843	1.21969697	1.032051282
40847	30844	1.21969697	2.211538462
40848	30845	1.217096336	1.399540758
40849	30846	1.210526316	1.489878543
40850	30847	1.206293706	1.147083686
40851	30848	1.203856749	1.594988345
40852	30849	1.194805195	1.137362637

FIG. 8

DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment
40927	30924	317.4	56.35	40953	30950	114.4102564	17.3974359	40979	30976	92	32.47058824	41005	31002	80.20512821	10.32051282
40928	30925	275.1481481	9.37037037	40954	30951	113.3170732	1.402439024	40980	30977	91.4025974	7.766233766	41006	31003	79.91919192	10.57070707
40929	30926	247.25	57.5	40955	30952	112.6206897	25.18103448	40981	30978	91.23333333	20.125	41007	31004	79.45454545	3.206060606
40930	30927	220.5909091	20.38636364	40956	30953	110.0392157	17.0245098	40982	30979	90.51612903	39.69354839	41008	31005	79.26153846	14.50769231
40931	30928	219.5454545	25.61363636	40957	30954	109.754386	8.877192982	40983	30980	90.06315789	5.205263158	41009	31006	79.14705882	16.91176471
40932	30929	200	54.5	40958	30955	109.6923077	7.961538462	40984	30981	89.25373134	11.84328358	41010	31007	78.64516129	36.72580645
40933	30930	163.915493	11.82394366	40959	30956	109.25	9.670454545	40985	30982	89.21212121	2.439393939	41011	31008	78.42622951	12.44262295
40934	30931	154.2352941	31.11764706	40960	30957	109.1641791	1.544776119	40986	30983	89.125	19.88541667	41012	31009	77.7027027	6.527027027
40935	30932	152.2058824	8.117647059	40961	30958	109.1162791	9.093023256	40987	30984	88.79069767	12.56976744	41013	31010	77.66233766	5.376623377
40936	30933	151.6296296	12.1388889	40962	30959	108.4285714	32.30952381	40988	30985	88.55	6.325	41014	31011	77	22.75
40937	30934	146.1176471	25.57058824	40963	30960	107.6818182	14.11363636	40989	30986	88.53763441	12.24193548	41015	31012	76.86075949	11.5
40938	30935	145.8113208	13.45283019	40964	30961	107.09375	15.09375	40990	30987	87.24137931	11.5	41016	31013	76.85365854	14.44512195
40939	30936	145.4022989	15.59770115	40965	30962	105.9393939	9.060606061	40991	30988	87.18095238	4.928571429	41017	31014	76.66666667	9.684210526
40940	30937	139.4375	15.2734375	40966	30963	103.7804878	7.152439024	40992	30989	86.88888889	23.76666667	41018	31015	75.44	40.71
40941	30938	135.8095238	59.14285714	40967	30964	101.7575758	17.42424242	40993	30990	86.65116279	14.70930233	41019	31016	75.3037037	1.874074074
40942	30939	135.7	73.025	40968	30965	101.7307692	16.0365385	40994	30991	85.03030303	24.39393939	41020	31017	75.27272727	3.833333333
40943	30940	134.7906977	22.73255814	40969	30966	101.627907	18.72093023	40995	30992	84.58064516	24.85483871	41021	31018	75.05263158	18.76315789
40944	30941	131.2352941	4.397058824	40970	30967	99.66666667	7.1875	40996	30993	84.5203252	5.329268293	41022	31019	74.47619048	6.936507937
40945	30942	130.9830508	9.161016949	40971	30968	97.52	15.41	40997	30994	84.23376623	6.87012987	41023	31020	73.47222222	12.9375
40946	30943	130.9230769	8.467032967	40972	30969	96.4	13	40998	30995	84.11428571	6.571428571	41024	31021	73.12820513	26.24358974
40947	30944	130	3.5	40973	30970	96.24615385	6.9	40999	30996	82.41666667	20.125	41025	31022	73.10714286	4.825892857
40948	30945	125.5254237	12.08474576	40974	30971	96.18181818	31.71212121	41000	30997	82.36190476	13.25238095	41026	31023	72.98666667	9.353333333
40949	30946	122.6666667	22.04166667	40975	30972	94.35897436	17.98717949	41001	30998	81.38461538	31.84615385	41027	31024	72.953125	13.56640625
40950	30947	119.4230769	24.99038462	40976	30973	94	23	41002	30999	81.17647059	12.40196078	41028	31025	72.92682927	14.30487805
40951	30948	116.0615385	11.67692308	40977	30974	92.68656716	12.52985075	41003	31000	81.10526316	30.86842105	41029	31026	72.66666667	8.5
40952	30949	115.3538462	1.061538462	40978	30975	92	19.32	41004	31001	80.39252336	14.61682243	41030	31027	72.48484848	7.492424242

DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment
41031	31028	71.90291262	6.475728155	41059	31056	61.75342466	11.34246575	41087	31084	55.3559322	8.771186441	41115	31112	48.70588235	12.62745098
41032	31029	71.72881356	9.745762712	41060	31057	61.33333333	4.259259259	41088	31085	55.2	35.9375	41116	31113	48.62857143	12.15714286
41033	31030	71.48648649	15.22972973	41061	31058	60.6031746	16.24603175	41089	31086	55.2	23	41117	31114	48.46428571	12.9375
41034	31031	70.27777778	11.5	41062	31059	60.52631579	16.79605263	41090	31087	54.68888889	18.52777778	41118	31115	48.3	7.475
41035	31032	70	9.5	41063	31060	60.52631579	8.070175439	41091	31088	54.36363636	11.5	41119	31116	47.97849462	16.56989247
41036	31033	69.97183099	21.38028169	41064	31061	60.34862385	5.591743119	41092	31089	54.19178082	5.51369863	41120	31117	47.84	10.12
41037	31034	69	48.875	41065	31062	60.2972973	10.41216216	41093	31090	53.85365854	28.32926829	41121	31118	47.76923077	36.04807692
41038	31035	69	9.2	41066	31063	60.27586207	11.5	41094	31091	53.51020408	1.173469388	41122	31119	47.73584906	5.316037736
41039	31036	69	9.234848485	41067	31064	60.05555556	4.046296296	41095	31092	53.34042553	5.260638298	41123	31120	47.73584906	22.3490566
41040	31037	69	22.09210526	41068	31065	59.90697674	14.1744186	41096	31093	53.15555556	13.03333333	41124	31121	47.5862069	7.336206897
41041	31038	68.53061224	11.57823129	41069	31066	59.84070796	13.94247788	41097	31094	52.73170732	14.02439024	41125	31122	47.31428571	8.542857143
41042	31039	67.02857143	17.41428571	41070	31067	59.225	7.7625	41098	31095	52.09638554	13.57831325	41126	31123	46.75409836	1.508196721
41043	31040	66.44444444	6.814814815	41071	31068	59.14285714	41.89285714	41099	31096	51.49253731	23.51492557	41127	31124	46.73015873	7.849206349
41044	31041	66.19512195	11.6402439	41072	31069	57.71974522	7.251592357	41100	31097	51.47619048	15.88095238	41128	31125	46.6969697	13.93939394
41045	31042	66.18705036	18.03597122	41073	31070	57.5	5.60625	41101	31098	51.16853933	7.494382022	41129	31126	46.60526316	7.868421053
41046	31043	65.91044776	9.268656716	41074	31071	57.23863636	4.508522727	41102	31099	51.11111111	13.92777778	41130	31127	46.52272727	6.272727273
41047	31044	65.52830189	5.099056604	41075	31072	57.21393035	8.467661692	41103	31100	51.04109589	11.34246575	41131	31128	46	3.653645833
41048	31045	65.40625	10.2421875	41076	31073	57.18918919	13.98648649	41104	31101	50.89361702	2.691489362	41132	31129	46	22.58928571
41049	31046	64.89285714	11.08928571	41077	31074	57.10344828	42.82758621	41105	31102	50.84210526	4.842105263	41133	31130	46	11.5
41050	31047	64.78873239	14.57746479	41078	31075	57.08433735	11.91566265	41106	31103	50.6	8.51	41134	31131	46	5.141176471
41051	31048	64.59574468	14.43617021	41079	31076	56.61538462	15.92307692	41107	31104	50.08888889	16.1	41135	31132	46	13.75
41052	31049	64.4	19.71428571	41080	31077	56.28235294	7.982352941	41108	31105	50.08888889	15.07777778	41136	31133	46	6.546153846
41053	31050	63.75438596	15.93859649	41081	31078	56.22222222	7.347222222	41109	31106	49.92682927	6.170731707	41137	31134	46	13.11
41054	31051	63.58823529	9.301470588	41082	31079	56.22222222	5.504273504	41110	31107	49.91489362	25.93617021	41138	31135	45.53535354	1.742424242
41055	31052	63.48	11.73	41083	31080	55.81333333	8.74	41111	31108	49.58865248	10.43971631	41139	31136	45.0212766	9.053191489
41056	31053	62.53932584	3.359550562	41084	31081	55.68421053	41.76315789	41112	31109	49.3253012	6.096385542	41140	31137	44.62686567	8.925373134
41057	31054	62.16216216	11.81081081	41085	31082	55.55844156	10.75324675	41113	31110	48.96774194	34.00537634	41141	31138	44.2962963	15.33333333
41058	31055	62	46.5	41086	31083	55.48453608	18.61340206	41114	31111	48.9009009	10.67117117	41142	31139	44.12244898	7.510204082





DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment
41255	31252	28.11111111	16.93055556	41283	31280	25.3	1.035	41311	31308	21.96129032	5.712903226
41256	31253	28.04878049	8.882113821	41284	31281	25.25490196	14.88235294	41312	31309	21.85	31.9125
41257	31254	28.02298851	30.53448276	41285	31282	24.98765432	7.666666667	41313	31310	21.26415094	6.726415094
41258	31255	27.97938144	16.83505155	41286	31283	24.5862069	8.922413793	41314	31311	21.12244898	15.60714286
41259	31256	27.6	12.65	41287	31284	24.53333333	2.453333333	41315	31312	21.10091743	26.79816514
41260	31257	27.6	16.24375	41288	31285	24.33057851	18.24793388	41316	31313	20.90909091	8.524475524
41261	31258	27.6	2.3	41289	31286	24.32183908	10.44252874	41317	31314	20.87037037	6.069444444
41262	31259	27.40425532	6.239361702	41290	31287	24.22900763	3.248091603	41318	31315	20.83018868	22.3490566
41263	31260	27.40425532	6.85106383	41291	31288	24.21052632	10.28947368	41319	31316	20.82432432	9.47972973
41264	31261	27.21666667	9.966666667	41292	31289	24.12195122	14.16463415	41320	31317	20.74509804	14.76960784
41265	31262	27.21126761	6.478873239	41293	31290	24.11290323	7.326612903	41321	31318	20.65306122	7.979591837
41266	31263	27.2	4.4	41294	31291	24.05504587	8.018348624	41322	31319	20	14.16666667
41267	31264	27.15662651	8.86746988	41295	31292	23.81176471	9.064705882	41323	31320	19.89189189	11.29279279
41268	31265	26.90566038	4.773584906	41296	31293	23.79310345	4.626436782	41324	31321	19.82113821	10.00406504
41269	31266	26.8	6.1	41297	31294	23.65714286	12.15714286	41325	31322	19.71428571	9.34375
41270	31267	26.7761194	9.611940299	41298	31295	23.58974359	8.256410256	41326	31323	19.66666667	5.75
41271	31268	26.70967742	4.266129032	41299	31296	23.42592593	3.833333333	41327	31324	19.55905512	2.625984252
41272	31269	26.59375	8.0859375	41300	31297	23.32857143	6.571428571	41328	31325	19.52830189	4.990566038
41273	31270	26.52252252	3.418918919	41301	31298	23.29113924	29.40506329	41329	31326	19.42222222	12.86296296
41274	31271	26.51764706	5.817647059	41302	31299	23.24210526	9.442105263	41330	31327	19.36842105	3.480263158
41275	31272	26.47169811	10.74056604	41303	31300	23	5	41331	31328	19.35172414	8.565517241
41276	31273	26.45	18.1125	41304	31301	22.8034188	10.41880342	41332	31329	19.16666667	6.882575758
41277	31274	26.28571429	23	41305	31302	22.8	4.6	41333	31330	19	4.5
41278	31275	25.6384615	8.735576923	41306	31303	22.77227723	8.198019802	41334	31331	18.99082569	6.119266055
41279	31276	25.55555556	6.708333333	41307	31304	22.38938053	5.902654867	41335	31332	18.95757576	7.527272727
41280	31277	25.55555556	18.74074074	41308	31305	22.34285714	7.721428571	41336	31333	18.31067961	10.71844466
41281	31278	25.42105263	11.80263158	41309	31306	22.16363636	12.44090909	41337	31334	18.21782178	9.336633663
41282	31279	25.3258427	7.235955056	41310	31307	22.1	1.75	41338	31335	18.21782178	2.448019802
41339	31336	18.16806723	9.953781513	41343	31340	17.90604027	20.53020134	41363	31360	14.22368421	7.036184211
41340	31337	18.13461538	10.61538462	41344	31341	17.69230769	1.84965035	41364	31361	13.88679245	10.8490566
41341	31338	17.95121951	8.040650407	41345	31342	17.50442478	6.411504425	41365	31362	13.66060606	5.715151515
41342	31339	17.94	6.9	41346	31343	17.42424242	3.484848485	41366	31363	12.71544715	4.674796748
41343	31340	17.90604027	20.53020134	41347	31344	17.35087719	8.877192982				
41344	31341	17.69230769	1.84965035	41348	31345	17.35087719	7.464912281				
41345	31342	17.50442478	6.411504425	41349	31346	16.74871795	2.830769231				
41346	31343	17.42424242	3.484848485	41350	31347	16.56	12.42				
41347	31344	17.35087719	8.877192982	41351	31348	16.53125	1.4375				
41348	31345	17.35087719	7.464912281	41352	31349	16.48333333	12.74583333				
41349	31346	16.74871795	2.830769231	41353	31350	16.34210526	3.404605263				
41350	31347	16.56	12.42	41354	31351	16.32258065	3.338709677				
41351	31348	16.53125	1.4375	41355	31352	16.171875	8.265625				
41352	31349	16.48333333	12.74583333	41356	31353	15.8125	6.109375				
41353	31350	16.34210526	3.404605263	41357	31354	15.80152672	4.213740458				
41354	31351	16.32258065	3.338709677	41358	31355	15.65277778	3.434027778				
41355	31352	16.171875	8.265625	41359	31356	15.33333333	5.594594595				
41356	31353	15.8125	6.109375	41360	31357	15.33333333	6.683760684				
41357	31354	15.80152672	4.213740458	41361	31358	15.11428571	21.68571429				
41358	31355	15.65277778	3.434027778	41362	31359	14.93506494	4.555194805				
41359	31356	15.33333333	5.594594595	41363	31360	14.22368421	7.036184211				
41360	31357	15.33333333	6.683760684	41364	31361	13.88679245	10.8490566				
41361	31358	15.11428571	21.68571429	41365	31362	13.66060606	5.715151515				
41362	31359	14.93506494	4.555194805	41366	31363	12.71544715	4.674796748				

DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment
41436	31433	2.3	24.15
41437	31434	2.3	12.3625
41438	31435	2.164705882	12.04117647
41439	31436	2.123076923	15.39230769
41440	31437	2.059701493	18.53731343
41441	31438	2.044444444	12.905555556
41442	31439	2	57.5
41443	31440	1.916666667	7.427083333
41444	31441	1.642857143	14.375
41445	31442	1.586206897	3.899425287
41446	31443	1.533333333	35.65
41447	31444	1.415384615	8.138461538
41448	31445	1.408163265	20.41836735
41449	31446	1.383458647	6.312030075
41450	31447	1.326923077	9.067307692
41451	31448	1.314285714	9.528571429
41452	31449	1.243243243	8.236486486
41453	31450	1.243243243	42.89189189
41454	31451	1.164556962	2.620253165

DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment
41413	31410	4.6	17.60384615
41414	31411	4.6	8.9125
41415	31412	4.451612903	1.483870968
41416	31413	4.404255319	6.239361702
41417	31414	4.351351351	6.527027027
41418	31415	4.211267606	8.665492958
41419	31416	3.942857143	14.45714286
41420	31417	3.72972973	5.905405405
41421	31418	3.659090909	25.74431818
41422	31419	3.538461538	1.769230769
41423	31420	3.538461538	22.41025641
41424	31421	3.478991597	1.836134454
41425	31422	3.256637168	13.94247788
41426	31423	3.2	5.3
41427	31424	3.172413793	6.344827586
41428	31425	3.136363636	12.80681818
41429	31426	3.016393443	7.980874317
41430	31427	2.967741935	8.717741935
41431	31428	2.591549296	16.52112676
41432	31429	2.555555556	4.983333333
41433	31430	2.509090909	13.59090909
41434	31431	2.453333333	5.52
41435	31432	2.358974359	6.487179487

DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment
41390	31387	8.658823529	9.470588235
41391	31388	8.653463347	2.277227723
41392	31389	8.625	5.190972222
41393	31390	8.363636364	3.397727273
41394	31391	8.214285714	10.0625
41395	31392	8.161290323	27.82258065
41396	31393	7.885714286	14.45714286
41397	31394	7.585106383	6.055851064
41398	31395	7.540983607	34.31147541
41399	31396	7.109090909	6.795454545
41400	31397	6.924731183	4.451612903
41401	31398	6.814814815	16.18518519
41402	31399	6.192307692	10.72596154
41403	31400	5.75	2.875
41404	31401	5.56043956	6.697802198
41405	31402	5.492537313	14.41791045
41406	31403	5.476190476	23.41071429
41407	31404	5.326315789	4.357894737
41408	31405	5.193548387	18.5483871
41409	31406	5.111111111	6.753968254
41410	31407	4.842105263	23.60526316
41411	31408	4.842105263	19.77192982
41412	31409	4.651685393	8.657303371

DNA SEQ ID NO	AA SEQ ID NO	Muscle 1 Enrichment	Muscle 2 Enrichment
41367	31364	11.90049751	14.58955224
41368	31365	11.79487179	1.081196581
41369	31366	11.70909091	5.959090909
41370	31367	11.68548387	4.3125
41371	31368	11.67164179	16.30597015
41372	31369	11.32835821	2.059701493
41373	31370	11.18232044	5.972375691
41374	31371	11.15151515	1.393939394
41375	31372	11.10344828	1.586206897
41376	31373	11.06329114	17.46835443
41377	31374	11.02083333	1.916666667
41378	31375	10.95238095	26.28571429
41379	31376	10.51038576	2.866468843
41380	31377	10.32653061	19.24489796
41381	31378	10.22222222	2.12962963
41382	31379	10.15584416	1.642857143
41383	31380	10.03636364	16.93636364
41384	31381	10.02564103	15.77564103
41385	31382	10	1.666666667
41386	31383	9.97044335	7.81773399
41387	31384	9.857142857	1.095238095
41388	31385	9.419795222	2.060580205
41389	31386	8.672131148	5.56147541

FIG. 9

DNA SEQ ID NO	AA SEQ ID NO	Pancreas 1 Enrichment	Pancreas 2 Enrichment
41455	31452	8198	14.18181818
41456	31453	3830.047619	27.48051948
41457	31454	3552.173077	33.91695804
41458	31455	371.0163934	6.478390462
41459	31456	356.8709677	3.271260997
41460	31457	301.2258065	8.431085044
41461	31458	221.3333333	3.696969697
41462	31459	51.27868852	2.947839046
41463	31460	11.5	23.83636364
41464	31461	3.833333333	52.27272727
41465	31462	2.520547945	3.207970112
41466	31463	1.703703704	6.698653199
41467	31464	1.533333333	29.27272727
41468	31465	1.277777778	11.79040404
41469	31466	1.12195122	3.39135255
41470	31467	1.045454545	9.219008264

FIG. 10

DNA SEQ ID NO	AA SEQ ID NO	Spleen 1 Enrichment	Spleen 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Spleen 1 Enrichment	Spleen 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Spleen 1 Enrichment	Spleen 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Spleen 1 Enrichment	Spleen 2 Enrichment
41471	31468	32.85714286	9.333333333	41497	31494	3.817687075	2.3	41523	31520	2.976800977	3.047008547	41549	31546	2.607709751	1.003968254
41472	31469	13.66941392	4.459935897	41498	31495	3.731922399	2.697530864	41524	31521	2.972789116	4.517857143	41550	31547	2.584761905	1.073333333
41473	31470	13.24553571	1.9765625	41499	31496	3.714285714	1.666666667	41525	31522	2.972789116	1.916666667	41551	31548	2.527472527	1.621794872
41474	31471	10.4047619	7.666666667	41500	31497	3.650793651	2.697530864	41526	31523	2.967741935	1.483870968	41552	31549	2.527472527	1.277777778
41475	31472	10.13095238	6.229166667	41501	31498	3.625615764	2.379310345	41527	31524	2.952380952	4.5	41553	31550	2.514991182	4.117283951
41476	31473	9.435897436	2.948717949	41502	31499	3.622710623	1.621794872	41528	31525	2.920634921	1.277777778	41554	31551	2.514991182	1.561728395
41477	31474	6.414965986	3.285714286	41503	31500	3.619047619	2	41529	31526	2.920634921	1.916666667	41555	31552	2.511033682	2.150406504
41478	31475	5.841269841	1.444444444	41504	31501	3.520408163	4.107142857	41530	31527	2.864468864	1.769230769	41556	31553	2.492610837	1.189655172
41479	31476	5.632653061	3.285714286	41505	31502	3.504761905	4.6	41531	31528	2.857142857	1.333333333	41557	31554	2.482539683	1.15
41480	31477	5.202380952	1.677083333	41506	31503	3.495440729	1.141843972	41532	31529	2.816326531	1.752380952	41558	31555	2.464285714	2.875
41481	31478	5.171957672	4.472222222	41507	31504	3.468253968	2.236111111	41533	31530	2.80952381	1.833333333	41559	31556	2.453333333	1.38
41482	31479	4.693877551	3.285714286	41508	31505	3.458646617	2.824561404	41534	31531	2.787878788	2.29004329	41560	31557	2.451247166	1.003968254
41483	31480	4.673015873	1.277777778	41509	31506	3.350140056	5.862745098	41535	31532	2.758377425	1.419753086	41561	31558	2.433862434	1.703703704
41484	31481	4.624338624	7.666666667	41510	31507	3.346560847	1.064814815	41536	31533	2.738095238	1.179487179	41562	31559	2.421052632	2.622807018
41485	31482	4.58008658	1.045454545	41511	31508	3.337868481	1.369047619	41537	31534	2.738095238	1.277777778	41563	31560	2.40952381	1.277777778
41486	31483	4.380952381	1.21969697	41512	31509	3.285714286	2.327380952	41538	31535	2.724738676	1.869918699	41564	31561	2.399092971	1.825396825
41487	31484	4.380952381	4.472222222	41513	31510	3.233560091	2.373015873	41539	31536	2.723294723	2.279279279	41565	31562	2.386638237	1.487562189
41488	31485	4.380952381	3.833333333	41514	31511	3.11417097	1.477911647	41540	31537	2.716190476	2.913333333	41566	31563	2.383753501	1.014705882
41489	31486	4.276643991	4.015873016	41515	31512	3.085177733	2.159624413	41541	31538	2.708225108	2.578787879	41567	31564	2.346938776	1.369047619
41490	31487	4.126245847	1.604651163	41516	31513	3.078507079	1.13963964	41542	31539	2.705882353	1.803921569	41568	31565	2.319327731	1.352941176
41491	31488	3.994397759	3.382352941	41517	31514	3.077097506	1.551587302	41543	31540	2.700587084	1.99543379	41569	31566	2.319327731	1.578431373
41492	31489	3.994397759	1.12745098	41518	31515	3.075987842	2.039007092	41544	31541	2.688311688	2.090909091	41570	31567	2.319327731	1.352941176
41493	31490	3.942857143	4.983333333	41519	31516	3.066666667	1.71025641	41545	31542	2.665079365	1.086111111	41571	31568	2.312169312	1.348765432
41494	31491	3.942857143	1.533333333	41520	31517	3.024943311	3.285714286	41546	31543	2.659863946	3.833333333	41572	31569	2.308243728	2.26702509
41495	31492	3.859410431	1.825396825	41521	31518	3.011904762	3.1625	41547	31544	2.635416667	2.455729167	41573	31570	2.302808303	1.081196581
41496	31493	3.844509232	1.56462585	41522	31519	3.011904762	1.4375	41548	31545	2.634116938	1.116033755	41574	31571	2.29004329	1.21969697

DNA SEQ ID NO	AA SEQ ID NO	Spleen 1 Enrichment	Spleen 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Spleen 1 Enrichment	Spleen 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Spleen 1 Enrichment	Spleen 2 Enrichment
41575	31572	2.268707483	1.916666667	41603	31600	2.021978022	1.769230769	41631	31628	1.84	1.226666667
41576	31573	2.238618524	2.358974359	41604	31601	2.01754386	1.614035088	41632	31629	1.825396825	1.742424242
41577	31574	2.238095238	1.916666667	41605	31602	2.016013485	1.017699115	41633	31630	1.80952381	1.166666667
41578	31575	2.228243021	1.057471264	41606	31603	2.01423098	1.409961686	41634	31631	1.806182122	1.00877193
41579	31576	2.19047619	1.032051282	41607	31604	2.005365526	3.023474178	41635	31632	1.803921569	1.014705882
41580	31577	2.19047619	6.098484848	41608	31605	2.001175779	1.609033498	41636	31633	1.797313797	2.555555556
41581	31578	2.19047619	1.533333333	41609	31606	1.991341991	2.265151515	41637	31634	1.784832451	2.768518519
41582	31579	2.19047619	1.15	41610	31607	1.991341991	2.003787879	41638	31635	1.777178796	2.386792453
41583	31580	2.19047619	3.120155039	41611	31608	1.991341991	1.568181818	41639	31636	1.77456299	1.16456962
41584	31581	2.19047619	2.896296296	41612	31609	1.991341991	1.045454545	41640	31637	1.752380952	1.672727273
41585	31582	2.19047619	2.175675676	41613	31610	1.985119048	1.557291667	41641	31638	1.73727422	1.80651341
41586	31583	2.19047619	1.317708333	41614	31611	1.971428571	2.683333333	41642	31639	1.73047619	1.878333333
41587	31584	2.139534884	1.515503876	41615	31612	1.955782313	2.875	41643	31640	1.721088435	1.779761905
41588	31585	2.138321995	1.003968254	41616	31613	1.943164363	1.731182796	41644	31641	1.716859717	1.087837838
41589	31586	2.131274131	1.761261261	41617	31614	1.937728938	2.358974359	41645	31642	1.714285714	1.111111111
41590	31587	2.124098124	1.626262626	41618	31615	1.935769657	3.298449612	41646	31643	1.712554113	1.184848485
41591	31588	2.112244898	2.053571429	41619	31616	1.932773109	1.578431373	41647	31644	1.703703704	1.064814815
41592	31589	2.102857143	1.226666667	41620	31617	1.927619048	1.38	41648	31645	1.693968254	1.635555556
41593	31590	2.09206349	1.118055556	41621	31618	1.898412698	1.022222222	41649	31646	1.690893901	1.68128655
41594	31591	2.097920858	1.187793427	41622	31619	1.898412698	1.277777778	41650	31647	1.688492063	2.315972222
41595	31592	2.089377289	1.120512821	41623	31620	1.898412698	1.788888889	41651	31648	1.67781155	1.875886525
41596	31593	2.082747853	2.136612022	41624	31621	1.895604396	1.032051282	41652	31649	1.656898657	1.326923077
41597	31594	2.068783069	2.768518519	41625	31622	1.890726817	1.533333333	41653	31650	1.650358774	1.155251142
41598	31595	2.06162465	1.12745098	41626	31623	1.87755102	1.095238095	41654	31651	1.649617872	1.325102881
41599	31596	2.06162465	2.198529412	41627	31624	1.87755102	2.3	41655	31652	1.642857143	1.384259259
41600	31597	2.050658561	1.060283688	41628	31625	1.865961199	2.413580247	41656	31653	1.642857143	1.105769231
41601	31598	2.044444444	1.277777778	41629	31626	1.853479853	1.769230769	41657	31654	1.642857143	1.109649123
41602	31599	2.034013605	1.505952381	41630	31627	1.846258503	1.423809524	41658	31655	1.642857143	1.677083333
41659	31656	1.642857143	1.022222222	41631	31628	1.84	1.226666667	41669	31666	1.611384784	1.498084291
41660	31657	1.642857143	1.829545455	41632	31629	1.825396825	1.742424242	41670	31667	1.604651163	2.228682171
41661	31658	1.637325637	1.084175084	41633	31630	1.80952381	1.166666667	41671	31668	1.600732601	1.621794872
41662	31659	1.633249791	1.176900585	41634	31631	1.806182122	1.00877193	41672	31669	1.598455598	1.346846847
41663	31660	1.632119514	3.006535948	41635	31632	1.803921569	1.014705882	41673	31670	1.593073593	1.161616162
41664	31661	1.628815629	1.769230769	41636	31633	1.797313797	2.555555556	41674	31671	1.593073593	2.787878788
41665	31662	1.627210884	1.478571429	41637	31634	1.784832451	2.768518519	41675	31672	1.593073593	1.443722944
41666	31663	1.614035088	1.210526316	41638	31635	1.777178796	2.386792453	41676	31673	1.589861751	2.287634409
41667	31664	1.614035088	1.361842105	41639	31636	1.77456299	1.16456962	41677	31674	1.589861751	2.040322381
41668	31665	1.614035088	1.614035088	41640	31637	1.752380952	1.672727273	41678	31675	1.589169001	1.954248366
41669	31666	1.611384784	1.498084291	41641	31638	1.73727422	1.80651341	41679	31676	1.584599797	1.141843972
41670	31667	1.604651163	2.228682171	41642	31639	1.73047619	1.878333333	41680	31677	1.584599797	1.712765957
41671	31668	1.600732601	1.621794872	41643	31640	1.721088435	1.779761905	41681	31678	1.579180509	1.515503876
41672	31669	1.598455598	1.346846847	41644	31641	1.716859717	1.087837838	41682	31679	1.577142857	1.993333333
41673	31670	1.593073593	1.161616162	41645	31642	1.714285714	1.111111111	41683	31680	1.574404762	1.677083333
41674	31671	1.593073593	2.787878788	41646	31643	1.712554113	1.184848485	41684	31681	1.56984127	1.15
41675	31672	1.593073593	1.443722944	41647	31644	1.703703704	1.064814815	41685	31682	1.569296375	1.258706468
41676	31673	1.589861751	2.287634409	41648	31645	1.693968254	1.635555556	41686	31683	1.551587302	4.152777778
41677	31674	1.589861751	2.040322381	41649	31646	1.690893901	1.68128655				
41678	31675	1.589169001	1.954248366	41650	31647	1.688492063	2.315972222				
41679	31676	1.584599797	1.141843972	41651	31648	1.67781155	1.875886525				
41680	31677	1.584599797	1.712765957	41652	31649	1.656898657	1.326923077				
41681	31678	1.579180509	1.515503876	41653	31650	1.650358774	1.155251142				
41682	31679	1.577142857	1.993333333	41654	31651	1.649617872	1.325102881				
41683	31680	1.574404762	1.677083333	41655	31652	1.642857143	1.384259259				
41684	31681	1.56984127	1.15	41656	31653	1.642857143	1.105769231				
41685	31682	1.569296375	1.258706468	41657	31654	1.642857143	1.109649123				
41686	31683	1.551587302	4.152777778	41658	31655	1.642857143	1.677083333				

DNA SEQ ID NO	AA SEQ ID NO	Spleen 1 Enrichment	Spleen 2 Enrichment
41687	31684	1.546218487	2.029411765
41688	31685	1.544106167	1.256830601
41689	31686	1.541446208	2.910493827
41690	31687	1.535851122	1.718390805
41691	31688	1.533333333	1.4375
41692	31689	1.526695527	1.103535354
41693	31690	1.523809524	1.5
41694	31691	1.523809524	1.75
41695	31692	1.523809524	1.111111111
41696	31693	1.500326158	1.52283105
41697	31694	1.498746867	2.219298246
41698	31695	1.493506494	5.75
41699	31696	1.492063492	1.555555556
41700	31697	1.492063492	1.611111111
41701	31698	1.491388045	1.468085106
41702	31699	1.483870968	1.483870968
41703	31700	1.481792717	1.12745098
41704	31701	1.477297896	1.426356589
41705	31702	1.47172619	1.497395833
41706	31703	1.465686275	1.775735294
41707	31704	1.46031746	1.597222222
41708	31705	1.46031746	1.357638889
41709	31706	1.46031746	2.3
41710	31707	1.46031746	2.738095238
41711	31708	1.45211343	1.205992509
41712	31709	1.447941889	3.508474576
41713	31710	1.447941889	1.234463277
41714	31711	1.446540881	1.952830189
41715	31712	1.432234432	1.032051282
41716	31713	1.430515063	1.603741497
41717	31714	1.427128427	1.103535354
41718	31715	1.423809524	1.15
41719	31716	1.419753086	2.271604938
41720	31717	1.414104882	2.329113924
41721	31718	1.408163265	1.095238095
41722	31719	1.404151404	1.769230769
41723	31720	1.40327381	2.575520833
41724	31721	1.399470899	1.171296296
41725	31722	1.393939394	2.090909091
41726	31723	1.391865079	1.317708333
41727	31724	1.385811467	1.173469388
41728	31725	1.380300065	1.102739726
41729	31726	1.376870748	1.861904762
41730	31727	1.375415282	1.515503876
41731	31728	1.374416433	1.12745098
41732	31729	1.373688458	1.559322034
41733	31730	1.369047619	1.245833333
41734	31731	1.365491651	1.244588745
41735	31732	1.363881402	1.08490566
41736	31733	1.360401003	1.492982456
41737	31734	1.352941176	1.240196078
41738	31735	1.351570415	2.691489362
41739	31736	1.347985348	2.064102564
41740	31737	1.34595525	1.431726908
41741	31738	1.338624339	1.064814815
41742	31739	1.338624339	1.419753086
41743	31740	1.335656214	1.495934959
41744	31741	1.335656214	2.056910569
41745	31742	1.333333333	1.666666667
41746	31743	1.331809524	1.165333333
41747	31744	1.33146592	1.202614379
41748	31745	1.33146592	1.16503268
41749	31746	1.329931973	1.779761905
41750	31747	1.328649493	1.508196721
41751	31748	1.322551662	1.735849057
41752	31749	1.314285714	1.245833333
41753	31750	1.314285714	1.533333333
41754	31751	1.314285714	7.283333333
41755	31752	1.314285714	4.6
41756	31753	1.308943089	1.636178862
41757	31754	1.305860806	2.064102564
41758	31755	1.302445302	1.243243243
41759	31756	1.299435028	1.36440678
41760	31757	1.299003322	1.114341085
41761	31758	1.296404276	1.486394558
41762	31759	1.285714286	1.416666667
41763	31760	1.280586081	1.71025641
41764	31761	1.272844273	2.797297297
41765	31762	1.272562358	1.241269841
41766	31763	1.271889401	1.731182796
41767	31764	1.263736264	1.474358974
41768	31765	1.258358663	2.528368794
41769	31766	1.256830601	1.256830601
41770	31767	1.25170068	1.241269841
41771	31768	1.25170068	3.833333333
41772	31769	1.24235963	1.315920398
41773	31770	1.241269841	1.277777778
41774	31771	1.235653236	1.376068376
41775	31772	1.234632035	1.184848485
41776	31773	1.234071093	1.889671362
41777	31774	1.232142857	1.197916667
41778	31775	1.232142857	2.555555556
41779	31776	1.230839002	2.153968254
41780	31777	1.229741019	1.479532164
41781	31778	1.226666667	2.453333333
41782	31779	1.221611722	2.211538462
41783	31780	1.219440353	1.027491409
41784	31781	1.216931217	1.022222222
41785	31782	1.216931217	1.135802469
41786	31783	1.214285714	1.5
41787	31784	1.207570208	1.277777778
41788	31785	1.203558346	1.179487179
41789	31786	1.201228879	2.596774194
41790	31787	1.197460317	2.146666667
41791	31788	1.19047619	1.416666667
41792	31789	1.18501171	1.885245902
41793	31790	1.18501171	1.948087432
41794	31791	1.182161754	2.007936508
41795	31792	1.179487179	1.432234432
41796	31793	1.179487179	1.326923077
41797	31794	1.176972281	1.087064677
41798	31795	1.176972281	2.288557214

DNA SEQ ID NO	AA SEQ ID NO	Spleen 1 Enrichment	Spleen 2 Enrichment
41859	31856	1.035497835	1.324242424
41860	31857	1.034870641	1.056430446
41861	31858	1.034391534	2.236111111
41862	31859	1.030812325	2.818627451
41863	31860	1.030812325	1.623529412
41864	31861	1.030812325	1.428104575
41865	31862	1.024577573	1.23655914
41866	31863	1.022222222	1.405555556
41867	31864	1.022222222	1.788888889
41868	31865	1.018108652	2.051643192
41869	31866	1.017006803	1.848214286
41870	31867	1.016380952	1.349333333
41871	31868	1.013095238	1.102083333
41872	31869	1.010989011	2.137820513
41873	31870	1.006435006	1.346846847
41874	31871	1.001360544	1.095238095
41875	31872	1.000587889	1.514403292

DNA SEQ ID NO	AA SEQ ID NO	Spleen 1 Enrichment	Spleen 2 Enrichment
41839	31836	1.095238095	1.13963964
41840	31837	1.095238095	1.427304965
41841	31838	1.082932049	1.292134831
41842	31839	1.081014224	1.095238095
41843	31840	1.075324675	1.184848485
41844	31841	1.069767442	3.387596899
41845	31842	1.068524971	1.495934959
41846	31843	1.067155067	1.376068376
41847	31844	1.065637066	1.657657658
41848	31845	1.063945578	4.380952381
41849	31846	1.062049062	1.742424242
41850	31847	1.058730159	1.597222222
41851	31848	1.057471264	1.32183908
41852	31849	1.056122449	1.505952381
41853	31850	1.051428571	4.063333333
41854	31851	1.051428571	1.226666667
41855	31852	1.047619048	4.666666667
41856	31853	1.041811847	1.12195122
41857	31854	1.04047619	1.29375
41858	31855	1.039072039	3.391025641

DNA SEQ ID NO	AA SEQ ID NO	Spleen 1 Enrichment	Spleen 2 Enrichment
41819	31816	1.131746032	1.118055556
41820	31817	1.129464286	1.4375
41821	31818	1.124839125	1.657657658
41822	31819	1.123321123	1.425213675
41823	31820	1.11957672	1.533333333
41824	31821	1.119047619	1.375
41825	31822	1.118541033	1.631205674
41826	31823	1.114795918	1.4375
41827	31824	1.112622827	1.582010582
41828	31825	1.112087912	1.887179487
41829	31826	1.112087912	1.651282051
41830	31827	1.111111111	2
41831	31828	1.110241357	1.52283105
41832	31829	1.109461967	1.244588745
41833	31830	1.095238095	1.823170732
41834	31831	1.095238095	1.742424242
41835	31832	1.095238095	2.555555556
41836	31833	1.095238095	2.058641975
41837	31834	1.095238095	1.277777778
41838	31835	1.095238095	1.4375

DNA SEQ ID NO	AA SEQ ID NO	Spleen 1 Enrichment	Spleen 2 Enrichment
41799	31796	1.17593985	1.492982456
41800	31797	1.174275896	1.067010309
41801	31798	1.173469388	2.327380952
41802	31799	1.171650055	1.872093023
41803	31800	1.170771757	1.123563218
41804	31801	1.168253968	1.448148148
41805	31802	1.159663866	2.179738562
41806	31803	1.159663866	1.240196078
41807	31804	1.159663866	1.202614379
41808	31805	1.152882206	1.210526316
41809	31806	1.152882206	2.824561404
41810	31807	1.152882206	1.815789474
41811	31808	1.152882206	1.311403509
41812	31809	1.151404151	1.228632479
41813	31810	1.14739229	2.099206349
41814	31811	1.14739229	1.216931217
41815	31812	1.142857143	1.333333333
41816	31813	1.134353741	1.095238095
41817	31814	1.133380715	1.029850746
41818	31815	1.133004926	1.057471264

FIG. 11

DNA SEQ ID NO	AA SEQ ID NO	Stomach 1 Enrichment	Stomach 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Stomach 1 Enrichment	Stomach 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Stomach 1 Enrichment	Stomach 2 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Stomach 1 Enrichment	Stomach 2 Enrichment
41876	31873	2139.442308	239.7307692	41902	31899	381.8730159	24.33862434	41928	31925	256.2857143	1.792207792	41954	31951	149.3982301	12.21238938
41877	31874	2110	335.3333333	41903	31900	381.5737705	12.31693989	41929	31926	241.2653061	7.197278912	41955	31952	144.7083333	7.506944444
41878	31875	1502	36	41904	31901	378.5416667	8.944444444	41930	31927	240.4545455	19.97979798	41956	31953	103.5966387	14.94677871
41879	31876	1421.157895	36.31578947	41905	31902	373.52	6.378666667	41931	31928	240.3870968	13.84946237	41957	31954	78.85714286	3.285714286
41880	31877	1177.6	19.42222222	41906	31903	370.2330097	28.13592233	41932	31929	236.6506024	4.064257028	41958	31955	55.97202797	4.181818182
41881	31878	1048.690476	63.34126984	41907	31904	365.8095238	15.33333333	41933	31930	231.9166667	21.50925926	41959	31956	37.59437751	10.37617135
41882	31879	1023.189189	16.57657658	41908	31905	365.4444444	8.802469136	41934	31931	220.9896907	15.01718213	41960	31957	27.28813559	1.559322034
41883	31880	1000.676923	21.93846154	41909	31906	363.4	5.914285714	41935	31932	215.28	3.475555556	41961	31958	27.01587302	13.87301587
41884	31881	1000.074074	21.58024691	41910	31907	359.4814815	24.04115226	41936	31933	214.0533333	2.044444444	41962	31959	24.64285714	21.35714286
41885	31882	991.0444444	40.03703704	41911	31908	358.9508197	38.20765027	41937	31934	213.8241758	16.51282051	41963	31960	24.53333333	1.533333333
41886	31883	889.1232877	11.13242009	41912	31909	351.7083333	14.21527778	41938	31935	202.2891566	14.77911647	41964	31961	24.35294118	7.215686275
41887	31884	775.4285714	7.119047619	41913	31910	350.7008547	14.28490028	41939	31936	202.0166667	13.92777778	41965	31962	24	10
41888	31885	685.2083333	13.73611111	41914	31911	337.3333333	5.366666667	41940	31937	200.990991	15.47147147	41966	31963	23	2.279279279
41889	31886	585.35	41.01666667	41915	31912	337.3333333	13.62962963	41941	31938	198.7010309	7.745704467	41967	31964	19.46153846	12.08974359
41890	31887	511.3488372	2.852713178	41916	31913	327.1111111	14.19753086	41942	31939	198.1869159	3.439252336	41968	31965	19.29032258	30.41935484
41891	31888	483.8846154	15.62820513	41917	31914	319.9402985	1.144278607	41943	31940	192	16.83333333	41969	31966	19.07317073	3.739837398
41892	31889	461.3939394	58.54545455	41918	31915	309.58	14.72	41944	31941	187.3658537	23.74796748	41970	31967	19.07317073	1.12195122
41893	31890	446.3703704	11.07407407	41919	31916	300.4375	30.90625	41945	31942	176.3909774	13.25814536	41971	31968	17.44827586	10.31034483
41894	31891	445.3191489	38.17021277	41920	31917	297.4059406	1.214521452	41946	31943	176.0595238	1.642857143	41972	31969	16.675	22.23333333
41895	31892	440.2150538	4.946236559	41921	31918	291.7714286	7.885714286	41947	31944	174.8760331	15.96694215	41973	31970	16.12987013	3.584415584
41896	31893	420.7153285	19.36253041	41922	31919	285.0103093	12.64604811	41948	31945	170.5833333	21.08333333	41974	31971	15.92307692	17.1025641
41897	31894	418.1071429	73.92857143	41923	31920	276	5.484184915	41949	31946	158.4444444	7.666666667	41975	31972	15.77142857	2.19047619
41898	31895	414.6478873	3.887323944	41924	31921	270.3777778	17.54814815	41950	31947	156.852459	1.508196721	41976	31973	13.14285714	2.19047619
41899	31896	404	4.444444444	41925	31922	269.6382979	14.5177305	41951	31948	154.1343284	1.60199005	41977	31974	12.54545455	3.717171717
41900	31897	402.9259259	15.90123457	41926	31923	265.8529412	14.09313725	41952	31949	152.8135593	3.378331073	41978	31975	12.54545455	6.96969697
41901	31898	400.8571429	3.066666667	41927	31924	264.2553191	16.96453901	41953	31950	150.047619	10.03968254	41979	31976	12.17647059	5.862745098



DNA SEQ ID NO	AA SEQ ID NO	Stomach 1 Enrichment	Stomach 2 Enrichment
42046	32043	1.15	25.68333333
42047	32044	1.15	12.84166667
42048	32045	1.15	6.133333333
42049	32046	1.12195122	15.14634146
42050	32047	1.12195122	46
42051	32048	1.12195122	7.853658537
42052	32049	1.108433735	10.71485944
42053	32050	1.095238095	50.38095238
42054	32051	1.095238095	13.14285714
42055	32052	1.069767442	4.635658915
42056	32053	1.069767442	51.70542636
42057	32054	1.069767442	3.209302326
42058	32055	1.069767442	11.41085271
42059	32056	1.069767442	7.666666667
42060	32057	1.022222222	23.17037037
42061	32058	1.022222222	13.11851852
42062	32059	1.022222222	36.11851852
42063	32060	1.010989011	2.695970696

DNA SEQ ID NO	AA SEQ ID NO	Stomach 1 Enrichment	Stomach 2 Enrichment
42024	32021	2.76	1.84
42025	32022	2.225806452	29.67741935
42026	32023	2.123076923	11.55897436
42027	32024	2	8.666666667
42028	32025	1.957446809	25.77304965
42029	32026	1.916666667	31.30555556
42030	32027	1.84	20.85333333
42031	32028	1.792207792	2.588744589
42032	32029	1.769230769	29.19230769
42033	32030	1.735849057	1.735849057
42034	32031	1.703703704	53.95061728
42035	32032	1.642857143	28.47619048
42036	32033	1.642857143	1.423809524
42037	32034	1.623529412	16.23529412
42038	32035	1.483870968	26.21505376
42039	32036	1.4375	16.77083333
42040	32037	1.393939394	56.22222222
42041	32038	1.277777778	48.55555556
42042	32039	1.254545455	38.05454545
42043	32040	1.243243243	28.59459459
42044	32041	1.179487179	21.23076923
42045	32042	1.179487179	18.47863248

DNA SEQ ID NO	AA SEQ ID NO	Stomach 1 Enrichment	Stomach 2 Enrichment
42002	31999	5.935483871	2.967741935
42003	32000	5.75	2.3
42004	32001	5.75	13.17708333
42005	32002	5.376623377	11.15151515
42006	32003	5.227272727	1.045454545
42007	32004	5.158878505	7.738317757
42008	32005	5.111111111	110.7407407
42009	32006	4.901639344	2.010928962
42010	32007	4.813953488	10.34108527
42011	32008	4.693877551	2.816326531
42012	32009	4.6	12.26666667
42013	32010	4.543209877	15.14403292
42014	32011	4.503496503	5.897435897
42015	32012	4.380952381	22.63492063
42016	32013	4.1	7.566666667
42017	32014	3.887323944	19.8685446
42018	32015	3.59375	3.59375
42019	32016	3.538461538	1.651282051
42020	32017	3.285714286	10.4829932
42021	32018	2.967741935	2.720430108
42022	32019	2.920634921	9.492063492
42023	32020	2.875	15.65277778

DNA SEQ ID NO	AA SEQ ID NO	Stomach 1 Enrichment	Stomach 2 Enrichment
41980	31977	12.10526316	1.614035088
41981	31978	12	14.22222222
41982	31979	11.87096774	6.677419355
41983	31980	11.5	65.16666667
41984	31981	11.24444444	11.58518519
41985	31982	11.01408451	34.33802817
41986	31983	10.22222222	3.975308642
41987	31984	10.01980198	3.491749175
41988	31985	9.857142857	10.03968254
41989	31986	9.517241379	2.643678161
41990	31987	9.2	10.73333333
41991	31988	8	6.666666667
41992	31989	7.666666667	4.472222222
41993	31990	7.666666667	2.555555556
41994	31991	7.666666667	1.277777778
41995	31992	7.561643836	1.470319635
41996	31993	7.527272727	8.642424242
41997	31994	7.276836158	8.316384181
41998	31995	7.1875	3.673611111
41999	31996	6.686046512	1.872093023
42000	31997	6.571428571	14.6031746
42001	31998	6.258503401	7.092970522

FIG. 12

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42064	32061	26.45
42065	32062	10.15833333
42066	32063	8.625
42067	32064	8.05
42068	32065	7.59
42069	32066	7.28333333
42070	32067	7.1875
42071	32068	6.70833333
42072	32069	5.635
42073	32070	5.175
42074	32071	5.092857143
42075	32072	4.74375
42076	32073	4.6
42077	32074	4.45625
42078	32075	4.255
42079	32076	4.14
42080	32077	3.641666667
42081	32078	3.408928571
42082	32079	3.370689655
42083	32080	3.345454545
42084	32081	3.258333333
42085	32082	3.258333333
42086	32083	3.066666667
42087	32084	3.066666667
42088	32085	2.998214286
42089	32086	2.902380952
42090	32087	2.9

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42091	32088	2.890540541
42092	32089	2.875
42093	32090	2.875
42094	32091	2.834883721
42095	32092	2.795138889
42096	32093	2.792857143
42097	32094	2.747222222
42098	32095	2.742307692
42099	32096	2.738095238
42100	32097	2.73125
42101	32098	2.653846154
42102	32099	2.60546875
42103	32100	2.5875
42104	32101	2.555555556
42105	32102	2.546428571
42106	32103	2.506410256
42107	32104	2.464285714
42108	32105	2.464285714
42109	32106	2.373404255
42110	32107	2.366666667
42111	32108	2.361333333
42112	32109	2.323469388
42113	32110	2.3
42114	32111	2.3
42115	32112	2.3
42116	32113	2.3
42117	32114	2.283088235

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42118	32115	2.264615385
42119	32116	2.25
42120	32117	2.2425
42121	32118	2.223333333
42122	32119	2.211538462
42123	32120	2.167307692
42124	32121	2.15625
42125	32122	2.15
42126	32123	2.124576271
42127	32124	2.121111111
42128	32125	2.118421053
42129	32126	2.108333333
42130	32127	2.090909091
42131	32128	2.075609756
42132	32129	2.064772727
42133	32130	2.057894737
42134	32131	2.05
42135	32132	2.05
42136	32133	2.044444444
42137	32134	2.044444444
42138	32135	2.038636364
42139	32136	1.990384615
42140	32137	1.988823529
42141	32138	1.976056338
42142	32139	1.971428571
42143	32140	1.95
42144	32141	1.934090909

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42145	32142	1.916666667
42146	32143	1.916666667
42147	32144	1.907317073
42148	32145	1.891111111
42149	32146	1.889285714
42150	32147	1.887735849
42151	32148	1.886
42152	32149	1.881818182
42153	32150	1.876315789
42154	32151	1.86875
42155	32152	1.865555556
42156	32153	1.861904762
42157	32154	1.861904762
42158	32155	1.84
42159	32156	1.826470588
42160	32157	1.807142857
42161	32158	1.807142857
42162	32159	1.786607143
42163	32160	1.785526316
42164	32161	1.777272727
42165	32162	1.775
42166	32163	1.758823529
42167	32164	1.756944444
42168	32165	1.753278689
42169	32166	1.752380952
42170	32167	1.750746269
42171	32168	1.744827586

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42172	32169	1.742424242
42173	32170	1.737777778
42174	32171	1.735087719
42175	32172	1.725
42176	32173	1.725
42177	32174	1.725
42178	32175	1.71097561
42179	32176	1.709459459
42180	32177	1.707575758
42181	32178	1.707216495
42182	32179	1.703703704
42183	32180	1.702884615
42184	32181	1.684883721
42185	32182	1.680769231
42186	32183	1.680769231
42187	32184	1.677868852
42188	32185	1.675714286
42189	32186	1.671649485
42190	32187	1.669354839
42191	32188	1.6675
42192	32189	1.657352941
42193	32190	1.646315789
42194	32191	1.642857143
42195	32192	1.642857143
42196	32193	1.642857143
42197	32194	1.636538462
42198	32195	1.635555556

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42315	32312	1.32037037	42316	32313	1.318292683
42317	32314	1.314285714	42318	32315	1.311
42319	32316	1.311	42320	32317	1.303333333
42321	32318	1.303333333	42322	32319	1.301315789
42323	32320	1.29375	42324	32321	1.29375
42325	32322	1.292380952	42326	32323	1.290243902
42327	32324	1.290243902	42328	32325	1.288
42329	32326	1.288	42330	32327	1.277777778
42331	32328	1.274698795	42332	32329	1.273214286
42333	32330	1.269480519	42334	32331	1.268556701
42335	32332	1.268382353	42336	32333	1.265
42337	32334	1.265	42338	32335	1.265
42339	32336	1.263114754	42340	32337	1.258235294
42341	32338	1.254545455	42342	32339	1.254545455
42343	32340	1.254545455			

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42286	32283	1.387931034	42287	32284	1.384259259
42288	32285	1.38	42289	32286	1.38
42290	32287	1.38	42291	32288	1.377325581
42292	32289	1.374390244	42293	32290	1.369852941
42294	32291	1.368103448	42295	32292	1.367567568
42296	32293	1.365625	42297	32294	1.362056738
42298	32295	1.36122449	42299	32296	1.359090909
42300	32297	1.359090909	42301	32298	1.355970149
42302	32299	1.355357143	42303	32300	1.354444444
42304	32301	1.354444444	42305	32302	1.351546392
42306	32303	1.348275862	42307	32304	1.348275862
42308	32305	1.345283019	42309	32306	1.341666667
42310	32307	1.341666667	42311	32308	1.341666667
42312	32309	1.341666667	42313	32310	1.34015748
42314	32311	1.3225			

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42257	32254	1.447647059	42258	32255	1.445714286
42259	32256	1.444512195	42260	32257	1.444186047
42261	32258	1.442727273	42262	32259	1.4375
42263	32260	1.4375	42264	32261	1.4375
42265	32262	1.4375	42266	32263	1.4375
42267	32264	1.433950617	42268	32265	1.433561644
42269	32266	1.433561644	42270	32267	1.43245614
42271	32268	1.430916031	42272	32269	1.430813953
42273	32270	1.427007299	42274	32271	1.421818182
42275	32272	1.420588235	42276	32273	1.41744186
42277	32274	1.415384615	42278	32275	1.415384615
42279	32276	1.405555556	42280	32277	1.405555556
42281	32278	1.399166667	42282	32279	1.398648649
42283	32280	1.39845679	42284	32281	1.396428571
42285	32282	1.393939394			

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42228	32225	1.541	42229	32226	1.539516129
42230	32227	1.533333333	42231	32228	1.533333333
42232	32229	1.519642857	42233	32230	1.519135802
42234	32231	1.518	42235	32232	1.517525773
42236	32233	1.515909091	42237	32234	1.511428571
42238	32235	1.506896552	42239	32236	1.503846154
42240	32237	1.500609756	42241	32238	1.5
42242	32239	1.5	42243	32240	1.495
42244	32241	1.495	42245	32242	1.487333333
42246	32243	1.482644628	42247	32244	1.478571429
42248	32245	1.478571429	42249	32246	1.474705882
42250	32247	1.465686275	42251	32248	1.458035714
42252	32249	1.458035714	42253	32250	1.456666667
42254	32251	1.456666667	42255	32252	1.450769231
42256	32253	1.448701299			

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42199	32196	1.634210526	42200	32197	1.627922078
42201	32198	1.622321429	42202	32199	1.620454545
42203	32200	1.61	42204	32201	1.603947368
42205	32202	1.602459016	42206	32203	1.6
42207	32204	1.598780488	42208	32205	1.59516129
42209	32206	1.593373494	42210	32207	1.592307692
42211	32208	1.592307692	42212	32209	1.590833333
42213	32210	1.588815789	42214	32211	1.588095238
42215	32212	1.588095238	42216	32213	1.583333333
42217	32214	1.58125	42218	32215	1.580272109
42219	32216	1.575925926	42220	32217	1.568181818
42221	32218	1.564	42222	32219	1.560714286
42223	32220	1.560714286	42224	32221	1.553508772
42225	32222	1.546551724	42226	32223	1.544285714
42227	32224	1.543835616			

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42344	32341	1.247457627	42460	32457	1.095238095
42345	32342	1.245833333	42461	32458	1.095238095
42346	32343	1.245833333	42462	32459	1.094354839
42347	32344	1.245833333	42463	32460	1.0925
42348	32345	1.241089109	42464	32461	1.0925
42349	32346	1.238461538	42465	32462	1.090610329
42350	32347	1.238461538	42466	32463	1.089473684
42351	32348	1.233333333	42467	32464	1.088392857
42352	32349	1.230232558	42468	32465	1.088392857
42353	32350	1.229310345	42469	32466	1.086111111
42354	32351	1.228767123	42470	32467	1.086111111
42355	32352	1.226666667	42471	32468	1.085211268
42356	32353	1.223404255	42472	32469	1.084285714
42357	32354	1.221875	42473	32470	1.080303030
42358	32355	1.220408163	42474	32471	1.078125
42359	32356	1.219	42475	32472	1.076595745
42360	32357	1.217647059	42476	32473	1.075
42361	32358	1.217647059	42477	32474	1.074590164
42362	32359	1.217083333	42478	32475	1.073333333
42363	32360	1.216346154	42479	32476	1.071590909
42364	32361	1.214788732	42480	32477	1.070689655
42365	32362	1.213888889	42481	32478	1.070689655
42366	32363	1.212403101	42482	32479	1.067857143
42367	32364	1.211333333	42483	32480	1.066363636
42368	32365	1.210526316	42484	32481	1.066145833
42369	32366	1.208474576	42485	32482	1.061538462
42370	32367	1.2075	42486	32483	1.061538462
42371	32368	1.197916667	42487	32484	1.059803922
42372	32369	1.197916667	42488	32485	1.058730159

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42431	32428	1.119736842	42431	32428	1.119736842
42432	32429	1.119736842	42432	32429	1.119736842
42433	32430	1.117142857	42433	32430	1.117142857
42434	32431	1.115671642	42434	32431	1.115671642
42435	32432	1.115671642	42435	32432	1.115671642
42436	32433	1.1140625	42436	32433	1.1140625
42437	32434	1.1140625	42437	32434	1.1140625
42438	32435	1.112903226	42438	32435	1.112903226
42439	32436	1.111666667	42439	32436	1.111666667
42440	32437	1.111666667	42440	32437	1.111666667
42441	32438	1.111666667	42441	32438	1.111666667
42442	32439	1.111666667	42442	32439	1.111666667
42443	32440	1.111666667	42443	32440	1.111666667
42444	32441	1.108928571	42444	32441	1.108928571
42445	32442	1.108928571	42445	32442	1.108928571
42446	32443	1.106329114	42446	32443	1.106329114
42447	32444	1.106329114	42447	32444	1.106329114
42448	32445	1.105769231	42448	32445	1.105769231
42449	32446	1.105769231	42449	32446	1.105769231
42450	32447	1.104901961	42450	32447	1.104901961
42451	32448	1.102083333	42451	32448	1.102083333
42452	32449	1.102083333	42452	32449	1.102083333
42453	32450	1.1	42453	32450	1.1
42454	32451	1.1	42454	32451	1.1
42455	32452	1.1	42455	32452	1.1
42456	32453	1.098888889	42456	32453	1.098888889
42457	32454	1.097727273	42457	32454	1.097727273
42458	32455	1.097727273	42458	32455	1.097727273
42459	32456	1.096511628	42459	32456	1.096511628

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42402	32399	1.15	42402	32399	1.15
42403	32400	1.15	42403	32400	1.15
42404	32401	1.15	42404	32401	1.15
42405	32402	1.15	42405	32402	1.15
42406	32403	1.15	42406	32403	1.15
42407	32404	1.15	42407	32404	1.15
42408	32405	1.15	42408	32405	1.15
42409	32406	1.15	42409	32406	1.15
42410	32407	1.15	42410	32407	1.15
42411	32408	1.15	42411	32408	1.15
42412	32409	1.15	42412	32409	1.15
42413	32410	1.15	42413	32410	1.15
42414	32411	1.15	42414	32411	1.15
42415	32412	1.14222973	42415	32412	1.14222973
42416	32413	1.140944882	42416	32413	1.140944882
42417	32414	1.137894737	42417	32414	1.137894737
42418	32415	1.136470588	42418	32415	1.136470588
42419	32416	1.135802469	42419	32416	1.135802469
42420	32417	1.135064935	42420	32417	1.135064935
42421	32418	1.134459459	42421	32418	1.134459459
42422	32419	1.131451613	42422	32419	1.131451613
42423	32420	1.130833333	42423	32420	1.130833333
42424	32421	1.129464286	42424	32421	1.129464286
42425	32422	1.128504673	42425	32422	1.128504673
42426	32423	1.125789474	42426	32423	1.125789474
42427	32424	1.125531915	42427	32424	1.125531915
42428	32425	1.124157303	42428	32425	1.124157303
42429	32426	1.122177419	42429	32426	1.122177419
42430	32427	1.12125	42430	32427	1.12125

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42373	32370	1.196938776	42373	32370	1.196938776
42374	32371	1.196	42374	32371	1.196
42375	32372	1.195098039	42375	32372	1.195098039
42376	32373	1.193396226	42376	32373	1.193396226
42377	32374	1.193396226	42377	32374	1.193396226
42378	32375	1.192073171	42378	32375	1.192073171
42379	32376	1.191071429	42379	32376	1.191071429
42380	32377	1.190350877	42380	32377	1.190350877
42381	32378	1.189655172	42381	32378	1.189655172
42382	32379	1.189655172	42382	32379	1.189655172
42383	32380	1.188333333	42383	32380	1.188333333
42384	32381	1.1845	42384	32381	1.1845
42385	32382	1.182394366	42385	32382	1.182394366
42386	32383	1.181944444	42386	32383	1.181944444
42387	32384	1.179113924	42387	32384	1.179113924
42388	32385	1.17875	42388	32385	1.17875
42389	32386	1.17804878	42389	32386	1.17804878
42390	32387	1.176744186	42390	32387	1.176744186
42391	32388	1.173	42391	32388	1.173
42392	32389	1.168253968	42392	32389	1.168253968
42393	32390	1.167424242	42393	32390	1.167424242
42394	32391	1.165131579	42394	32391	1.165131579
42395	32392	1.163855422	42395	32392	1.163855422
42396	32393	1.163690476	42396	32393	1.163690476
42397	32394	1.15	42397	32394	1.15
42398	32395	1.15	42398	32395	1.15
42399	32396	1.15	42399	32396	1.15
42400	32397	1.15	42400	32397	1.15
42401	32398	1.15	42401	32398	1.15

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42344	32341	1.247457627	42344	32341	1.247457627
42345	32342	1.245833333	42345	32342	1.245833333
42346	32343	1.245833333	42346	32343	1.245833333
42347	32344	1.245833333	42347	32344	1.245833333
42348	32345	1.241089109	42348	32345	1.241089109
42349	32346	1.238461538	42349	32346	1.238461538
42350	32347	1.238461538	42350	32347	1.238461538
42351	32348	1.233333333	42351	32348	1.233333333
42352	32349	1.230232558	42352	32349	1.230232558
42353	32350	1.229310345	42353	32350	1.229310345
42354	32351	1.228767123	42354	32351	1.228767123
42355	32352	1.226666667	42355	32352	1.226666667
42356	32353	1.223404255	42356	32353	1.223404255
42357	32354	1.221875	42357	32354	1.221875
42358	32355	1.220408163	42358	32355	1.220408163
42359	32356	1.219	42359	32356	1.219
42360	32357	1.217647059	42360	32357	1.217647059
42361	32358	1.217647059	42361	32358	1.217647059
42362	32359	1.217083333	42362	32359	1.217083333
42363	32360	1.216346154	42363	32360	1.216346154
42364	32361	1.214788732	42364	32361	1.214788732
42365	32362	1.213888889	42365	32362	1.213888889
42366	32363	1.212403101	42366	32363	1.212403101
42367	32364	1.211333333	42367	32364	1.211333333
42368	32365	1.210526316	42368	32365	1.210526316
42369	32366	1.208474576	42369	32366	1.208474576
42370	32367	1.2075	42370	32367	1.2075
42371	32368	1.197916667	42371	32368	1.197916667
42372	32369	1.197916667	42372	32369	1.197916667

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42533	32530	1.00625
42534	32531	1.00625
42535	32532	1.003636364
42536	32533	1.003636364
42537	32534	1.003191489
42538	32535	1.002564103
42539	32536	1.002564103

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42522	32519	1.014705882
42523	32520	1.012393162
42524	32521	1.012
42525	32522	1.011445783
42526	32523	1.010606061
42527	32524	1.010606061
42528	32525	1.009183673
42529	32526	1.008461538
42530	32527	1.00625
42531	32528	1.00625
42532	32529	1.00625

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42511	32508	1.035
42512	32509	1.030208333
42513	32510	1.029651163
42514	32511	1.028947368
42515	32512	1.026344086
42516	32513	1.025
42517	32514	1.022222222
42518	32515	1.018571429
42519	32516	1.018032787
42520	32517	1.014705882
42521	32518	1.014705882

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42500	32497	1.043846154
42501	32498	1.043518519
42502	32499	1.043023256
42503	32500	1.0421875
42504	32501	1.04047619
42505	32502	1.038709677
42506	32503	1.037804878
42507	32504	1.037254902
42508	32505	1.037254902
42509	32506	1.035
42510	32507	1.035

DNA SEQ ID NO	AA SEQ ID NO	Testicle 1 Enrichment
42489	32486	1.058730159
42490	32487	1.056122449
42491	32488	1.055294118
42492	32489	1.054166667
42493	32490	1.054166667
42494	32491	1.054166667
42495	32492	1.050393701
42496	32493	1.05
42497	32494	1.047321429
42498	32495	1.046794872
42499	32496	1.045454545

FIG. 13

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42540	32537	34.5
42541	32538	29.30482456
42542	32539	11.5
42543	32540	8.116346154
42544	32541	7.1875
42545	32542	7.1875
42546	32543	7.027777778
42547	32544	6.160714286
42548	32545	5.869791667
42549	32546	5.75
42550	32547	5.75
42551	32548	5.75
42552	32549	5.75
42553	32550	5.175
42554	32551	5.105457227
42555	32552	5.03125
42556	32553	4.644230769
42557	32554	4.6
42558	32555	4.6
42559	32556	4.6
42560	32557	4.3125
42561	32558	4.3125
42562	32559	4.3125
42563	32560	4.3125
42564	32561	4.3125
42565	32562	4.3125
42566	32563	4.3125

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42567	32564	4.3125
42568	32565	4.216666667
42569	32566	4.212209302
42570	32567	4.201923077
42571	32568	4.181818182
42572	32569	4.107142857
42573	32570	4.046296296
42574	32571	4.004464286
42575	32572	3.953125
42576	32573	3.920454545
42577	32574	3.901785714
42578	32575	3.833333333
42579	32576	3.833333333
42580	32577	3.833333333
42581	32578	3.833333333
42582	32579	3.833333333
42583	32580	3.833333333
42584	32581	3.833333333
42585	32582	3.7734375
42586	32583	3.75
42587	32584	3.696428571
42588	32585	3.659090909
42589	32586	3.59375
42590	32587	3.59375
42591	32588	3.463068182
42592	32589	3.45
42593	32590	3.45

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42594	32591	3.397727273
42595	32592	3.367857143
42596	32593	3.285714286
42597	32594	3.285714286
42598	32595	3.234375
42599	32596	3.234375
42600	32597	3.234375
42601	32598	3.213235294
42602	32599	3.148809524
42603	32600	3.128676471
42604	32601	3.121428571
42605	32602	3.114583333
42606	32603	3.114583333
42607	32604	3.114583333
42608	32605	3.096153846
42609	32606	3.080357143
42610	32607	3.034722222
42611	32608	3.01875
42612	32609	2.981481481
42613	32610	2.9325
42614	32611	2.924568966
42615	32612	2.875
42616	32613	2.875
42617	32614	2.875
42618	32615	2.875
42619	32616	2.875
42620	32617	2.875

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42621	32618	2.875
42622	32619	2.875
42623	32620	2.875
42624	32621	2.875
42625	32622	2.875
42626	32623	2.875
42627	32624	2.875
42628	32625	2.875
42629	32626	2.875
42630	32627	2.875
42631	32628	2.826271186
42632	32629	2.815721649
42633	32630	2.78515625
42634	32631	2.764423077
42635	32632	2.75
42636	32633	2.75
42637	32634	2.75
42638	32635	2.738095238
42639	32636	2.738095238
42640	32637	2.738095238
42641	32638	2.738095238
42642	32639	2.73125
42643	32640	2.719594595
42644	32641	2.715277778
42645	32642	2.6875
42646	32643	2.683333333
42647	32644	2.683333333

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42648	32645	2.678977273
42649	32646	2.674418605
42650	32647	2.669642857
42651	32648	2.669642857
42652	32649	2.653846154
42653	32650	2.653846154
42654	32651	2.645
42655	32652	2.625
42656	32653	2.625
42657	32654	2.613636364
42658	32655	2.613636364
42659	32656	2.613636364
42660	32657	2.60755814
42661	32658	2.5875
42662	32659	2.577586207
42663	32660	2.577586207
42664	32661	2.569148936
42665	32662	2.56964286
42666	32663	2.55875
42667	32664	2.555555556
42668	32665	2.555555556
42669	32666	2.555555556
42670	32667	2.536764706
42671	32668	2.53
42672	32669	2.515625
42673	32670	2.507978723
42674	32671	2.5

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42675	32672	2.491666667	42791	32788	2.029411765
42676	32673	2.491666667	42792	32789	2.026639344
42677	32674	2.464285714	42793	32790	2.019345238
42678	32675	2.456818182	42794	32791	2.018617021
42679	32676	2.452205882	42795	32792	2.016791045
42680	32677	2.432692308	42796	32793	2.0125
42681	32678	2.418650794	42797	32794	2.0125
42682	32679	2.413580247	42798	32795	2.0125
42683	32680	2.395833333	42799	32796	2.007936508
42684	32681	2.395833333	42800	32797	2.003787879
42685	32682	2.395833333	42801	32798	2.001
42686	32683	2.395833333	42802	32799	2
42687	32684	2.395833333	42803	32800	2
42688	32685	2.395833333	42804	32801	1.986363636
42689	32686	2.395833333	42805	32802	1.982758621
42690	32687	2.395833333	42806	32803	1.982758621
42691	32688	2.381313131	42807	32804	1.981418919
42692	32689	2.367647059	42808	32805	1.980555556
42693	32690	2.367647059	42809	32806	1.971428571
42694	32691	2.367647059	42810	32807	1.967105263
42695	32692	2.367647059	42811	32808	1.960227273
42696	32693	2.358974359	42812	32809	1.957446809
42697	32694	2.3359375	42813	32810	1.956932773
42698	32695	2.3359375	42814	32811	1.955
42699	32696	2.322115385	42815	32812	1.953525641
42700	32697	2.3	42816	32813	1.950892857
42701	32698	2.3	42817	32814	1.950892857
42702	32699	2.3	42818	32815	1.947580645
42703	32700	2.3	42819	32816	1.947580645

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42704	32701	2.3	42762	32759	2.125
42705	32702	2.3	42763	32760	2.125
42706	32703	2.3	42764	32761	2.118421053
42707	32704	2.3	42765	32762	2.118421053
42708	32705	2.3	42766	32763	2.118421053
42709	32706	2.290254237	42767	32764	2.113970588
42710	32707	2.28525641	42768	32765	2.112244898
42711	32708	2.280172414	42769	32766	2.108333333
42712	32709	2.280172414	42770	32767	2.100961538
42713	32710	2.280172414	42771	32768	2.097972973
42714	32711	2.269736842	42772	32769	2.090909091
42715	32712	2.265151515	42773	32770	2.090909091
42716	32713	2.261666667	42774	32771	2.090909091
42717	32714	2.258928571	42775	32772	2.090909091
42718	32715	2.258928571	42776	32773	2.079787234
42719	32716	2.258928571	42777	32774	2.061320755
42720	32717	2.24609375	42778	32775	2.060416667
42721	32718	2.239182692	42779	32776	2.053571429
42722	32719	2.236111111	42780	32777	2.053571429
42723	32720	2.236111111	42781	32778	2.053571429
42724	32721	2.231343284	42782	32779	2.053571429
42725	32722	2.229591837	42783	32780	2.053571429
42726	32723	2.228125	42784	32781	2.053571429
42727	32724	2.225806452	42785	32782	2.053571429
42728	32725	2.224056604	42786	32783	2.053571429
42729	32726	2.211538462	42787	32784	2.053571429
42730	32727	2.211538462	42788	32785	2.0484375
42731	32728	2.20212766	42789	32786	2.029411765
42732	32729	2.200617284	42790	32787	2.029411765

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42733	32730	2.198529412	42791	32788	2.029411765
42734	32731	2.198529412	42792	32789	2.026639344
42735	32732	2.19047619	42793	32790	2.019345238
42736	32733	2.185	42794	32791	2.018617021
42737	32734	2.185	42795	32792	2.016791045
42738	32735	2.181034483	42796	32793	2.0125
42739	32736	2.178030303	42797	32794	2.0125
42740	32737	2.170918367	42798	32795	2.0125
42741	32738	2.15625	42799	32796	2.007936508
42742	32739	2.15625	42800	32797	2.003787879
42743	32740	2.15625	42801	32798	2.001
42744	32741	2.15625	42802	32799	2
42745	32742	2.15625	42803	32800	2
42746	32743	2.15625	42804	32801	1.986363636
42747	32744	2.15625	42805	32802	1.982758621
42748	32745	2.15625	42806	32803	1.982758621
42749	32746	2.15625	42807	32804	1.981418919
42750	32747	2.15625	42808	32805	1.980555556
42751	32748	2.15625	42809	32806	1.971428571
42752	32749	2.15625	42810	32807	1.967105263
42753	32750	2.15625	42811	32808	1.960227273
42754	32751	2.15625	42812	32809	1.957446809
42755	32752	2.143181818	42813	32810	1.956932773
42756	32753	2.140957447	42814	32811	1.955
42757	32754	2.140957447	42815	32812	1.953525641
42758	32755	2.140510949	42816	32813	1.950892857
42759	32756	2.137820513	42817	32814	1.950892857
42760	32757	2.135714286	42818	32815	1.947580645
42761	32758	2.12962963	42819	32816	1.947580645

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42762	32759	2.125	42791	32788	2.029411765
42763	32760	2.125	42792	32789	2.026639344
42764	32761	2.118421053	42793	32790	2.019345238
42765	32762	2.118421053	42794	32791	2.018617021
42766	32763	2.118421053	42795	32792	2.016791045
42767	32764	2.113970588	42796	32793	2.0125
42768	32765	2.112244898	42797	32794	2.0125
42769	32766	2.108333333	42798	32795	2.0125
42770	32767	2.100961538	42799	32796	2.007936508
42771	32768	2.097972973	42800	32797	2.003787879
42772	32769	2.090909091	42801	32798	2.001
42773	32770	2.090909091	42802	32799	2
42774	32771	2.090909091	42803	32800	2
42775	32772	2.090909091	42804	32801	1.986363636
42776	32773	2.079787234	42805	32802	1.982758621
42777	32774	2.061320755	42806	32803	1.982758621
42778	32775	2.060416667	42807	32804	1.981418919
42779	32776	2.053571429	42808	32805	1.980555556
42780	32777	2.053571429	42809	32806	1.971428571
42781	32778	2.053571429	42810	32807	1.967105263
42782	32779	2.053571429	42811	32808	1.960227273
42783	32780	2.053571429	42812	32809	1.957446809
42784	32781	2.053571429	42813	32810	1.956932773
42785	32782	2.053571429	42814	32811	1.955
42786	32783	2.053571429	42815	32812	1.953525641
42787	32784	2.053571429	42816	32813	1.950892857
42788	32785	2.0484375	42817	32814	1.950892857
42789	32786	2.029411765	42818	32815	1.947580645
42790	32787	2.029411765	42819	32816	1.947580645

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42675	32672	2.491666667	42704	32701	2.3
42676	32673	2.491666667	42705	32702	2.3
42677	32674	2.464285714	42706	32703	2.3
42678	32675	2.456818182	42707	32704	2.3
42679	32676	2.452205882	42708	32705	2.3
42680	32677	2.432692308	42709	32706	2.290254237
42681	32678	2.418650794	42710	32707	2.28525641
42682	32679	2.413580247	42711	32708	2.280172414
42683	32680	2.395833333	42712	32709	2.280172414
42684	32681	2.395833333	42713	32710	2.280172414
42685	32682	2.395833333	42714	32711	2.269736842
42686	32683	2.395833333	42715	32712	2.265151515
42687	32684	2.395833333	42716	32713	2.261666667
42688	32685	2.395833333	42717	32714	2.258928571
42689	32686	2.395833333	42718	32715	2.258928571
42690	32687	2.395833333	42719	32716	2.258928571
42691	32688	2.381313131	42720	32717	2.24609375
42692	32689	2.367647059	42721	32718	2.239182692
42693	32690	2.367647059	42722	32719	2.236111111
42694	32691	2.367647059	42723	32720	2.236111111
42695	32692	2.367647059	42724	32721	2.231343284
42696	32693	2.358974359	42725	32722	2.229591837
42697	32694	2.3359375	42726	32723	2.228125
42698	32695	2.3359375	42727	32724	2.225806452
42699	32696	2.322115385	42728	32725	2.224056604
42700	32697	2.3	42729	32726	2.211538462
42701	32698	2.3	42730	32727	2.211538462
42702	32699	2.3	42731	32728	2.20212766
42703	32700	2.3	42732	32729	2.200617284

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42936	32933	1.742424242	42943	32940	1.725
42937	32934	1.742424242	42944	32941	1.725
42938	32935	1.740131579	42945	32942	1.725
42939	32936	1.740131579	42946	32943	1.725
42940	32937	1.740131579	42947	32944	1.725
42941	32938	1.735849057	42948	32945	1.725
42942	32939	1.732876712	42949	32946	1.725
42943	32940		42950	32947	1.725
42944	32941		42951	32948	1.725
42945	32942		42952	32949	1.725
42946	32943		42953	32950	1.725
42947	32944		42954	32951	1.713942308
42948	32945		42955	32952	1.712765957
42949	32946		42956	32953	1.711309524
42950	32947		42957	32954	1.711309524
42951	32948		42958	32955	1.709459459
42952	32949		42959	32956	1.709459459
42953	32950		42960	32957	1.703703704
42954	32951		42961	32958	1.703703704
42955	32952		42962	32959	1.703703704
42956	32953		42963	32960	1.701530612
42957	32954		42964	32961	1.700704225

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42907	32904	1.779761905	42914	32911	1.769230769
42908	32905	1.779761905	42915	32912	1.769230769
42909	32906	1.779761905	42916	32913	1.769230769
42910	32907	1.777960526	42917	32914	1.769230769
42911	32908	1.77393617	42918	32915	1.769230769
42912	32909	1.77393617	42919	32916	1.766071429
42913	32910	1.772260274	42920	32917	1.766071429
42914	32911	1.769230769	42921	32918	1.762096774
42915	32912	1.769230769	42922	32919	1.760204082
42916	32913	1.769230769	42923	32920	1.756944444
42917	32914	1.769230769	42924	32921	1.756944444
42918	32915	1.769230769	42925	32922	1.75304878
42919	32916	1.766071429	42926	32923	1.75304878
42920	32917	1.766071429	42927	32924	1.75304878
42921	32918	1.762096774	42928	32925	1.751953125
42922	32919	1.760204082	42929	32926	1.751953125
42923	32920	1.756944444	42930	32927	1.75
42924	32921	1.756944444	42931	32928	1.75
42925	32922	1.75304878	42932	32929	1.748958333
42926	32923	1.75304878	42933	32930	1.745535714
42927	32924	1.75304878	42934	32931	1.743852459
42928	32925	1.751953125	42935	32932	1.743852459

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42878	32875	1.826822917	42885	32882	1.81125
42879	32876	1.819620253	42886	32883	1.810185185
42880	32877	1.819335938	42887	32884	1.810185185
42881	32878	1.817528736	42888	32885	1.810185185
42882	32879	1.815789474	42889	32886	1.810185185
42883	32880	1.815789474	42890	32887	1.810185185
42884	32881	1.813461538	42891	32888	1.807142857
42885	32882	1.81125	42892	32889	1.805232558
42886	32883	1.810185185	42893	32890	1.805232558
42887	32884	1.810185185	42894	32891	1.796875
42888	32885	1.810185185	42895	32892	1.796875
42889	32886	1.810185185	42896	32893	1.796875
42890	32887	1.810185185	42897	32894	1.796875
42891	32888	1.807142857	42898	32895	1.796875
42892	32889	1.805232558	42899	32896	1.792207792
42893	32890	1.805232558	42900	32897	1.791666667
42894	32891	1.796875	42901	32898	1.790983607
42895	32892	1.796875	42902	32899	1.79009434
42896	32893	1.796875	42903	32900	1.788888889
42897	32894	1.796875	42904	32901	1.788888889
42898	32895	1.796875	42905	32902	1.7825
42899	32896	1.792207792	42906	32903	1.7825

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42849	32846	1.88671875	42856	32853	1.871031746
42850	32847	1.879807692	42857	32854	1.86875
42851	32848	1.879807692	42858	32855	1.86875
42852	32849	1.879807692	42859	32856	1.86622807
42853	32850	1.879807692	42860	32857	1.863425926
42854	32851	1.875	42861	32858	1.860294118
42855	32852	1.872093023	42862	32859	1.860294118
42856	32853	1.871031746	42863	32860	1.860294118
42857	32854	1.86875	42864	32861	1.85483871
42858	32855	1.86875	42865	32862	1.852777778
42859	32856	1.86622807	42866	32863	1.848214286
42860	32857	1.863425926	42867	32864	1.848214286
42861	32858	1.860294118	42868	32865	1.844339623
42862	32859	1.860294118	42869	32866	1.844339623
42863	32860	1.860294118	42870	32867	1.842429577
42864	32861	1.85483871	42871	32868	1.84
42865	32862	1.852777778	42872	32869	1.832107843
42866	32863	1.848214286	42873	32870	1.829545455
42867	32864	1.848214286	42874	32871	1.829545455
42868	32865	1.844339623	42875	32872	1.829545455
42869	32866	1.844339623	42876	32873	1.829545455
42870	32867	1.842429577	42877	32874	1.829545455

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42820	32817	1.947580645	42827	32824	1.916666667
42821	32818	1.944852941	42828	32825	1.916666667
42822	32819	1.940625	42829	32826	1.916666667
42823	32820	1.940625	42830	32827	1.916666667
42824	32821	1.929276316	42831	32828	1.916666667
42825	32822	1.916666667	42832	32829	1.916666667
42826	32823	1.916666667	42833	32830	1.916666667
42827	32824	1.916666667	42834	32831	1.916666667
42828	32825	1.916666667	42835	32832	1.916666667
42829	32826	1.916666667	42836	32833	1.916666667
42830	32827	1.916666667	42837	32834	1.916666667
42831	32828	1.916666667	42838	32835	1.916666667
42832	32829	1.916666667	42839	32836	1.916666667
42833	32830	1.916666667	42840	32837	1.916666667
42834	32831	1.916666667	42841	32838	1.916666667
42835	32832	1.916666667	42842	32839	1.916666667
42836	32833	1.916666667	42843	32840	1.916666667
42837	32834	1.916666667	42844	32841	1.903716216
42838	32835	1.916666667	42845	32842	1.899553571
42839	32836	1.916666667	42846	32843	1.893292683
42840	32837	1.916666667	42847	32844	1.893292683
42841	32838	1.916666667	42848	32845	1.891447368



DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42965	32962	1.698863636	43081	33078	1.568181818
42966	32963	1.698863636	43082	33079	1.568181818
42967	32964	1.695512821	43083	33080	1.568181818
42968	32965	1.695512821	43084	33081	1.568181818
42969	32966	1.695512821	43085	33082	1.568181818
42970	32967	1.694736842	43086	33083	1.568181818
42971	32968	1.694736842	43087	33084	1.568181818
42972	32969	1.694196429	43088	33085	1.568181818
42973	32970	1.691176471	43089	33086	1.568181818
42974	32971	1.6875	43090	33087	1.564338235
42975	32972	1.68595679	43091	33088	1.564338235
42976	32973	1.685344828	43092	33089	1.563596491
42977	32974	1.682926829	43093	33090	1.560714286
42978	32975	1.681603774	43094	33091	1.55873494
42979	32976	1.681603774	43095	33092	1.557291667
42980	32977	1.680769231	43096	33093	1.557291667
42981	32978	1.680769231	43097	33094	1.555327869
42982	32979	1.677083333	43098	33095	1.554054054
42983	32980	1.677083333	43099	33096	1.5525
42984	32981	1.677083333	43100	33097	1.5525
42985	32982	1.672727273	43101	33098	1.550986842
42986	32983	1.671511628	43102	33099	1.548076923
42987	32984	1.671511628	43103	33100	1.548076923
42988	32985	1.671511628	43104	33101	1.548076923
42989	32986	1.669354839	43105	33102	1.548076923
42990	32987	1.669354839	43106	33103	1.548076923
42991	32988	1.669354839	43107	33104	1.548076923
42992	32989	1.664473684	43108	33105	1.548076923
42993	32990	1.664473684	43109	33106	1.548076923

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43023	33020	1.622983871	43052	33049	1.597222222
43024	33021	1.622983871	43053	33050	1.597222222
43025	33022	1.621794872	43054	33051	1.597222222
43026	33023	1.620454545	43055	33052	1.597222222
43027	33024	1.6171875	43056	33053	1.597222222
43028	33025	1.6171875	43057	33054	1.597222222
43029	33026	1.6171875	43058	33055	1.597222222
43030	33027	1.6171875	43059	33056	1.591517857
43031	33028	1.6171875	43060	33057	1.590425532
43032	33029	1.6171875	43061	33058	1.588815789
43033	33030	1.612804878	43062	33059	1.587686567
43034	33031	1.612804878	43063	33060	1.586206897
43035	33032	1.612804878	43064	33061	1.586206897
43036	33033	1.61	43065	33062	1.586206897
43037	33034	1.608944954	43066	33063	1.584183673
43038	33035	1.608050847	43067	33064	1.584183673
43039	33036	1.608050847	43068	33065	1.582865169
43040	33037	1.606617647	43069	33066	1.58125
43041	33038	1.606617647	43070	33067	1.58125
43042	33039	1.606617647	43071	33068	1.58125
43043	33040	1.606617647	43072	33069	1.58125
43044	33041	1.606617647	43073	33070	1.58125
43045	33042	1.604651163	43074	33071	1.58125
43046	33043	1.604651163	43075	33072	1.578431373
43047	33044	1.604651163	43076	33073	1.576612903
43048	33045	1.600235849	43077	33074	1.574404762
43049	33046	1.597222222	43078	33075	1.574404762
43050	33047	1.597222222	43079	33076	1.573113208
43051	33048	1.597222222	43080	33077	1.568181818

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42994	32991	1.660211268	43023	33020	1.622983871
42995	32992	1.658653846	43024	33021	1.622983871
42996	32993	1.658653846	43025	33022	1.621794872
42997	32994	1.657657658	43026	33023	1.620454545
42998	32995	1.65530303	43027	33024	1.6171875
42999	32996	1.650462963	43028	33025	1.6171875
43000	32997	1.650462963	43029	33026	1.6171875
43001	32998	1.648333333	43030	33027	1.6171875
43002	32999	1.642857143	43031	33028	1.6171875
43003	33000	1.642857143	43032	33029	1.6171875
43004	33001	1.642857143	43033	33030	1.612804878
43005	33002	1.642857143	43034	33031	1.612804878
43006	33003	1.642857143	43035	33032	1.612804878
43007	33004	1.642857143	43036	33033	1.61
43008	33005	1.642857143	43037	33034	1.608944954
43009	33006	1.642857143	43038	33035	1.608050847
43010	33007	1.642857143	43039	33036	1.608050847
43011	33008	1.642857143	43040	33037	1.606617647
43012	33009	1.642857143	43041	33038	1.606617647
43013	33010	1.642857143	43042	33039	1.606617647
43014	33011	1.642857143	43043	33040	1.606617647
43015	33012	1.635775862	43044	33041	1.606617647
43016	33013	1.634803922	43045	33042	1.604651163
43017	33014	1.633522727	43046	33043	1.604651163
43018	33015	1.626644737	43047	33044	1.604651163
43019	33016	1.625	43048	33045	1.600235849
43020	33017	1.625	43049	33046	1.597222222
43021	33018	1.625	43050	33047	1.597222222
43022	33019	1.625	43051	33048	1.597222222

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42965	32962	1.698863636	42994	32991	1.660211268
42966	32963	1.698863636	42995	32992	1.658653846
42967	32964	1.695512821	42996	32993	1.658653846
42968	32965	1.695512821	42997	32994	1.657657658
42969	32966	1.695512821	42998	32995	1.65530303
42970	32967	1.694736842	42999	32996	1.650462963
42971	32968	1.694736842	43000	32997	1.650462963
42972	32969	1.694196429	43001	32998	1.648333333
42973	32970	1.691176471	43002	32999	1.642857143
42974	32971	1.6875	43003	33000	1.642857143
42975	32972	1.68595679	43004	33001	1.642857143
42976	32973	1.685344828	43005	33002	1.642857143
42977	32974	1.682926829	43006	33003	1.642857143
42978	32975	1.681603774	43007	33004	1.642857143
42979	32976	1.681603774	43008	33005	1.642857143
42980	32977	1.680769231	43009	33006	1.642857143
42981	32978	1.680769231	43010	33007	1.642857143
42982	32979	1.677083333	43011	33008	1.642857143
42983	32980	1.677083333	43012	33009	1.642857143
42984	32981	1.677083333	43013	33010	1.642857143
42985	32982	1.672727273	43014	33011	1.642857143
42986	32983	1.671511628	43015	33012	1.635775862
42987	32984	1.671511628	43016	33013	1.634803922
42988	32985	1.671511628	43017	33014	1.633522727
42989	32986	1.669354839	43018	33015	1.626644737
42990	32987	1.669354839	43019	33016	1.625
42991	32988	1.669354839	43020	33017	1.625
42992	32989	1.664473684	43021	33018	1.625
42993	32990	1.664473684	43022	33019	1.625

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
42965	32962	1.698863636	42965	32962	1.698863636
42966	32963	1.698863636	42966	32963	1.698863636
42967	32964	1.695512821	42967	32964	1.695512821
42968	32965	1.695512821	42968	32965	1.695512821
42969	32966	1.695512821	42969	32966	1.695512821
42970	32967	1.694736842	42970	32967	1.694736842
42971	32968	1.694736842	42971	32968	1.694736842
42972	32969	1.694196429	42972	32969	1.694196429
42973	32970	1.691176471	42973	32970	1.691176471
42974	32971	1.6875	42974	32971	1.6875
42975	32972	1.68595679	42975	32972	1.68595679
42976	32973	1.685344828	42976	32973	1.685344828
42977	32974	1.682926829	42977	32974	1.682926829
42978	32975	1.681603774	42978	32975	1.681603774
42979	32976	1.681603774	42979	32976	1.681603774
42980	32977	1.680769231	42980	32977	1.680769231
42981	32978	1.680769231	42981	32978	1.680769231
42982	32979	1.677083333	42982	32979	1.677083333
42983	32980	1.677083333	42983	32980	1.677083333
42984	32981	1.677083333	42984	32981	1.677083333
42985	32982	1.672727273	42985	32982	1.672727273
42986	32983	1.671511628	42986	32983	1.671511628
42987	32984	1.671511628	42987	32984	1.671511628
42988	32985	1.671511628	42988	32985	1.671511628
42989	32986	1.669354839	42989	32986	1.669354839
42990	32987	1.669354839	42990	32987	1.669354839
42991	32988	1.669354839	42991	32988	1.669354839
42992	32989	1.664473684	42992	32989	1.664473684
42993	32990	1.664473684	42993	32990	1.664473684

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43226	33223	1.4375	43226	33223	1.4375
43227	33224	1.4375	43227	33224	1.4375
43228	33225	1.4375	43228	33225	1.4375
43229	33226	1.4375	43229	33226	1.4375
43230	33227	1.4375	43230	33227	1.4375
43231	33228	1.4375	43231	33228	1.4375
43232	33229	1.4375	43232	33229	1.4375
43233	33230	1.4375	43233	33230	1.4375
43234	33231	1.4375	43234	33231	1.4375
43235	33232	1.4375	43235	33232	1.4375
43236	33233	1.4375	43236	33233	1.4375
43237	33234	1.4375	43237	33234	1.4375
43238	33235	1.4375	43238	33235	1.4375
43239	33236	1.4375	43239	33236	1.4375
43240	33237	1.4375	43240	33237	1.4375
43241	33238	1.4375	43241	33238	1.4375
43242	33239	1.4375	43242	33239	1.4375
43243	33240	1.4375	43243	33240	1.4375
43244	33241	1.4375	43244	33241	1.4375
43245	33242	1.4375	43245	33242	1.4375
43246	33243	1.4375	43246	33243	1.4375
43247	33244	1.4375	43247	33244	1.4375
43248	33245	1.4375	43248	33245	1.4375
43249	33246	1.4375	43249	33246	1.4375
43250	33247	1.4375	43250	33247	1.4375
43251	33248	1.4375	43251	33248	1.4375
43252	33249	1.4375	43252	33249	1.4375
43253	33250	1.4375	43253	33250	1.4375
43254	33251	1.4375	43254	33251	1.4375

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43197	33194	1.472560976	43197	33194	1.472560976
43198	33195	1.472560976	43198	33195	1.472560976
43199	33196	1.470930233	43199	33196	1.470930233
43200	33197	1.470930233	43200	33197	1.470930233
43201	33198	1.466836735	43201	33198	1.466836735
43202	33199	1.466836735	43202	33199	1.466836735
43203	33200	1.464622642	43203	33200	1.464622642
43204	33201	1.464622642	43204	33201	1.464622642
43205	33202	1.464622642	43205	33202	1.464622642
43206	33203	1.462719298	43206	33203	1.462719298
43207	33204	1.461864407	43207	33204	1.461864407
43208	33205	1.459615385	43208	33205	1.459615385
43209	33206	1.459615385	43209	33206	1.459615385
43210	33207	1.458955224	43210	33207	1.458955224
43211	33208	1.458333333	43211	33208	1.458333333
43212	33209	1.458333333	43212	33209	1.458333333
43213	33210	1.458333333	43213	33210	1.458333333
43214	33211	1.458333333	43214	33211	1.458333333
43215	33212	1.457746479	43215	33212	1.457746479
43216	33213	1.457746479	43216	33213	1.457746479
43217	33214	1.457191781	43217	33214	1.457191781
43218	33215	1.456168831	43218	33215	1.456168831
43219	33216	1.44527027	43219	33216	1.44527027
43220	33217	1.4375	43220	33217	1.4375
43221	33218	1.4375	43221	33218	1.4375
43222	33219	1.4375	43222	33219	1.4375
43223	33220	1.4375	43223	33220	1.4375
43224	33221	1.4375	43224	33221	1.4375
43225	33222	1.4375	43225	33222	1.4375

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43168	33165	1.5	43168	33165	1.5
43169	33166	1.5	43169	33166	1.5
43170	33167	1.496173469	43170	33167	1.496173469
43171	33168	1.495	43171	33168	1.495
43172	33169	1.495	43172	33169	1.495
43173	33170	1.493506494	43173	33170	1.493506494
43174	33171	1.490740741	43174	33171	1.490740741
43175	33172	1.490740741	43175	33172	1.490740741
43176	33173	1.490740741	43176	33173	1.490740741
43177	33174	1.490740741	43177	33174	1.490740741
43178	33175	1.490740741	43178	33175	1.490740741
43179	33176	1.487068966	43179	33176	1.487068966
43180	33177	1.487068966	43180	33177	1.487068966
43181	33178	1.485416667	43181	33178	1.485416667
43182	33179	1.485416667	43182	33179	1.485416667
43183	33180	1.483870968	43183	33180	1.483870968
43184	33181	1.483870968	43184	33181	1.483870968
43185	33182	1.483870968	43185	33182	1.483870968
43186	33183	1.483870968	43186	33183	1.483870968
43187	33184	1.483870968	43187	33184	1.483870968
43188	33185	1.482421875	43188	33185	1.482421875
43189	33186	1.481060606	43189	33186	1.481060606
43190	33187	1.481060606	43190	33187	1.481060606
43191	33188	1.478571429	43191	33188	1.478571429
43192	33189	1.478571429	43192	33189	1.478571429
43193	33190	1.478571429	43193	33190	1.478571429
43194	33191	1.476351351	43194	33191	1.476351351
43195	33192	1.476351351	43195	33192	1.476351351
43196	33193	1.474358974	43196	33193	1.474358974

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43139	33136	1.522058824	43139	33136	1.522058824
43140	33137	1.522058824	43140	33137	1.522058824
43141	33138	1.522058824	43141	33138	1.522058824
43142	33139	1.519642857	43142	33139	1.519642857
43143	33140	1.518867925	43143	33140	1.518867925
43144	33141	1.518867925	43144	33141	1.518867925
43145	33142	1.518867925	43145	33142	1.518867925
43146	33143	1.517361111	43146	33143	1.517361111
43147	33144	1.517361111	43147	33144	1.517361111
43148	33145	1.515909091	43148	33145	1.515909091
43149	33146	1.513157895	43149	33146	1.513157895
43150	33147	1.513157895	43150	33147	1.513157895
43151	33148	1.513157895	43151	33148	1.513157895
43152	33149	1.513157895	43152	33149	1.513157895
43153	33150	1.513157895	43153	33150	1.513157895
43154	33151	1.513157895	43154	33151	1.513157895
43155	33152	1.51059322	43155	33152	1.51059322
43156	33153	1.509375	43156	33153	1.509375
43157	33154	1.509375	43157	33154	1.509375
43158	33155	1.508196721	43158	33155	1.508196721
43159	33156	1.505952381	43159	33156	1.505952381
43160	33157	1.505952381	43160	33157	1.505952381
43161	33158	1.505952381	43161	33158	1.505952381
43162	33159	1.502840909	43162	33159	1.502840909
43163	33160	1.501865672	43163	33160	1.501865672
43164	33161	1.501865672	43164	33161	1.501865672
43165	33162	1.5	43165	33162	1.5
43166	33163	1.5	43166	33163	1.5
43167	33164	1.5	43167	33164	1.5

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43110	33107	1.548076923	43110	33107	1.548076923
43111	33108	1.548076923	43111	33108	1.548076923
43112	33109	1.5453125	43112	33109	1.5453125
43113	33110	1.543981481	43113	33110	1.543981481
43114	33111	1.542682927	43114	33111	1.542682927
43115	33112	1.542682927	43115	33112	1.542682927
43116	33113	1.542682927	43116	33113	1.542682927
43117	33114	1.542682927	43117	33114	1.542682927
43118	33115	1.541666667	43118	33115	1.541666667
43119	33116	1.541666667	43119	33116	1.541666667
43120	33117	1.540178571	43120	33117	1.540178571
43121	33118	1.540178571	43121	33118	1.540178571
43122	33119	1.540178571	43122	33119	1.540178571
43123	33120	1.540178571	43123	33120	1.540178571
43124	33121	1.538732394	43124	33121	1.538732394
43125	33122	1.537790698	43125	33122	1.537790698
43126	33123	1.537790698	43126	33123	1.537790698
43127	33124	1.536637931	43127	33124	1.536637931
43128	33125	1.536637931	43128	33125	1.536637931
43129	33126	1.533333333	43129	33126	1.533333333
43130	33127	1.533333333	43130	33127	1.533333333
43131	33128	1.533333333	43131	33128	1.533333333
43132	33129	1.533333333	43132	33129	1.533333333
43133	33130	1.529255319	43133	33130	1.529255319
43134	33131	1.52734375	43134	33131	1.52734375
43135	33132	1.526548673	43135	33132	1.526548673
43136	33133	1.526548673	43136	33133	1.526548673
43137	33134	1.523065476	43137	33134	1.523065476
43138	33135	1.522058824	43138	33135	1.522058824

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43255	33252	1.4375	43371	33368	1.358516484
43256	33253	1.4375	43372	33369	1.357638889
43257	33254	1.4375	43373	33370	1.357638889
43258	33255	1.4375	43374	33371	1.357638889
43259	33256	1.4375	43375	33372	1.357638889
43260	33257	1.4375	43376	33373	1.357638889
43261	33258	1.4375	43377	33374	1.356741573
43262	33259	1.4375	43378	33375	1.356132075
43263	33260	1.4375	43379	33376	1.356132075
43264	33261	1.4375	43380	33377	1.352941176
43265	33262	1.4375	43381	33378	1.352941176
43266	33263	1.4375	43382	33379	1.352941176
43267	33264	1.4375	43383	33380	1.352941176
43268	33265	1.4375	43384	33381	1.352941176
43269	33266	1.4375	43385	33382	1.352941176
43270	33267	1.4375	43386	33383	1.352941176
43271	33268	1.4375	43387	33384	1.352941176
43272	33269	1.4375	43388	33385	1.352941176
43273	33270	1.4375	43389	33386	1.352941176
43274	33271	1.4375	43390	33387	1.352941176
43275	33272	1.4375	43391	33388	1.352941176
43276	33273	1.4375	43392	33389	1.352941176
43277	33274	1.4375	43393	33390	1.352941176
43278	33275	1.425	43394	33391	1.351092896
43279	33276	1.423809524	43395	33392	1.349489796
43280	33277	1.422043011	43396	33393	1.348765432
43281	33278	1.422043011	43397	33394	1.34765625
43282	33279	1.421348315	43398	33395	1.34765625
43283	33280	1.420977011	43399	33396	1.34765625

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43284	33281	1.420180723	43402	33403	1.366803279
43285	33282	1.418831169	43403	33404	1.36489899
43286	33283	1.416044776	43404	33405	1.36440678
43287	33284	1.415384615	43405	33406	1.363782051
43288	33285	1.413934426	43406	33407	1.363782051
43289	33286	1.413541667	43407	33408	1.362962963
43290	33287	1.413135593	43408	33409	1.361842105
43291	33288	1.411363636	43409	33410	1.361842105
43292	33289	1.410377358	43410	33411	1.361842105
43293	33290	1.410377358	43411	33412	1.361842105
43294	33291	1.408163265	43412	33413	1.361842105
43295	33292	1.408163265	43413	33414	1.361842105
43296	33293	1.408163265	43414	33415	1.361842105
43297	33294	1.406914894	43415	33416	1.361842105
43298	33295	1.404829545	43416	33417	1.361842105
43299	33296	1.404069767	43417	33418	1.361842105
43300	33297	1.404069767	43418	33419	1.361842105
43301	33298	1.404069767	43419	33420	1.361842105
43302	33299	1.404069767	43420	33421	1.361842105
43303	33300	1.402439024	43421	33422	1.361842105
43304	33301	1.4015625	43422	33423	1.361842105
43305	33302	1.401260504	43423	33424	1.361842105
43306	33303	1.400641026	43424	33425	1.361842105
43307	33304	1.400641026	43425	33426	1.361842105
43308	33305	1.399671053	43426	33427	1.361842105
43309	33306	1.398648649	43427	33428	1.361842105
43310	33307	1.398648649	43428	33429	1.361842105
43311	33308	1.398648649	43429	33430	1.361842105
43312	33309	1.396428571	43430	33431	1.361842105

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43313	33310	1.396428571	43431	33432	1.361842105
43314	33311	1.396428571	43432	33433	1.361842105
43315	33312	1.396428571	43433	33434	1.361842105
43316	33313	1.396428571	43434	33435	1.361842105
43317	33314	1.39480198	43435	33436	1.361842105
43318	33315	1.394589552	43436	33437	1.361842105
43319	33316	1.393041237	43437	33438	1.361842105
43320	33317	1.391129032	43438	33439	1.361842105
43321	33318	1.389583333	43439	33440	1.361842105
43322	33319	1.389583333	43440	33441	1.361842105
43323	33320	1.387931034	43441	33442	1.361842105
43324	33321	1.387931034	43442	33443	1.361842105
43325	33322	1.387931034	43443	33444	1.361842105
43326	33323	1.387931034	43444	33445	1.361842105
43327	33324	1.387931034	43445	33446	1.361842105
43328	33325	1.386764706	43446	33447	1.361842105
43329	33326	1.386764706	43447	33448	1.361842105
43330	33327	1.384259259	43448	33449	1.361842105
43331	33328	1.382211538	43449	33450	1.361842105
43332	33329	1.381127451	43450	33451	1.361842105
43333	33330	1.38	43451	33452	1.361842105
43334	33331	1.38	43452	33453	1.361842105
43335	33332	1.38	43453	33454	1.361842105
43336	33333	1.377604167	43454	33455	1.361842105
43337	33334	1.377604167	43455	33456	1.361842105
43338	33335	1.377604167	43456	33457	1.361842105
43339	33336	1.376760563	43457	33458	1.361842105
43340	33337	1.375	43458	33459	1.361842105
43341	33338	1.375	43459	33460	1.361842105

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43342	33339	1.375	43460	33461	1.361842105
43343	33340	1.373134328	43461	33462	1.361842105
43344	33341	1.372747748	43462	33463	1.361842105
43345	33342	1.372159091	43463	33464	1.361842105
43346	33343	1.372159091	43464	33465	1.361842105
43347	33344	1.372159091	43465	33466	1.361842105
43348	33345	1.371153846	43466	33467	1.361842105
43349	33346	1.371153846	43467	33468	1.361842105
43350	33347	1.369047619	43468	33469	1.361842105
43351	33348	1.369047619	43469	33470	1.361842105
43352	33349	1.369047619	43470	33471	1.361842105
43353	33350	1.369047619	43471	33472	1.361842105
43354	33351	1.369047619	43472	33473	1.361842105
43355	33352	1.369047619	43473	33474	1.361842105
43356	33353	1.369047619	43474	33475	1.361842105
43357	33354	1.369047619	43475	33476	1.361842105
43358	33355	1.369047619	43476	33477	1.361842105
43359	33356	1.366803279	43477	33478	1.361842105
43360	33357	1.36489899	43478	33479	1.361842105
43361	33358	1.36440678	43479	33480	1.361842105
43362	33359	1.363782051	43480	33481	1.361842105
43363	33360	1.363782051	43481	33482	1.361842105
43364	33361	1.362962963	43482	33483	1.361842105
43365	33362	1.361842105	43483	33484	1.361842105
43366	33363	1.361842105	43484	33485	1.361842105
43367	33364	1.361842105	43485	33486	1.361842105
43368	33365	1.361842105	43486	33487	1.361842105
43369	33366	1.359496124	43487	33488	1.361842105
43370	33367	1.359090909	43488	33489	1.361842105

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43371	33368	1.358516484	43489	33490	1.361842105
43372	33369	1.357638889	43490	33491	1.361842105
43373	33370	1.357638889	43491	33492	1.361842105
43374	33371	1.357638889	43492	33493	1.361842105
43375	33372	1.357638889	43493	33494	1.361842105
43376	33373	1.357638889	43494	33495	1.361842105
43377	33374	1.356741573	43495	33496	1.361842105
43378	33375	1.356132075	43496	33497	1.361842105
43379	33376	1.356132075	43497	33498	1.361842105
43380	33377	1.352941176	43498	33499	1.361842105
43381	33378	1.352941176	43499	33500	1.361842105
43382	33379	1.352941176	43500	33501	1.361842105
43383	33380	1.352941176	43501	33502	1.361842105
43384	33381	1.352941176	43502	33503	1.361842105
43385	33382	1.352941176	43503	33504	1.361842105
43386	33383	1.352941176	43504	33505	1.361842105
43387	33384	1.352941176	43505	33506	1.361842105
43388	33385	1.352941176	43506	33507	1.361842105
43389	33386	1.352941176	43507	33508	1.361842105
43390	33387	1.352941176	43508	33509	1.361842105
43391	33388	1.352941176	43509	33510	1.361842105
43392	33389	1.352941176	43510	33511	1.361842105
43393	33390	1.352941176	43511	33512	1.361842105
43394	33391	1.351092896	43512	33513	1.361842105
43395	33392	1.349489796	43513	33514	1.361842105
43396	33393	1.348765432	43514	33515	1.361842105
43397	33394	1.34765625	43515	33516	1.361842105
43398	33395	1.34765625	43516	33517	1.361842105
43399	33396	1.34765625	43517	33518	1.361842105

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43516	33513	1.2777777778	43517	33514	1.2777777778
43518	33515	1.2777777778	43519	33516	1.2777777778
43520	33517	1.274764151	43521	33518	1.273734177
43522	33519	1.273734177	43523	33520	1.273214286
43524	33521	1.272540984	43525	33522	1.272540984
43526	33523	1.271634615	43527	33524	1.271634615
43528	33525	1.271634615	43529	33526	1.270833333
43530	33527	1.270348837	43531	33528	1.270348837
43532	33529	1.269480519	43533	33530	1.269480519
43534	33531	1.269480519	43535	33532	1.265
43536	33533	1.265	43537	33534	1.265
43538	33535	1.265	43539	33536	1.265
43540	33537	1.263257576	43541	33538	1.262195122
43542	33539	1.262195122	43543	33540	1.262195122
43544	33541	1.260964912	43545	33542	1.260964912

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43487	33484	1.29375	43488	33485	1.29375
43489	33486	1.29375	43490	33487	1.29375
43491	33488	1.29375	43492	33489	1.29375
43493	33490	1.29375	43494	33491	1.29375
43495	33492	1.292635659	43496	33493	1.292134831
43497	33494	1.290816327	43498	33495	1.290816327
43499	33496	1.290816327	43500	33497	1.288793103
43501	33498	1.288793103	43502	33499	1.286184211
43503	33500	1.286184211	43504	33501	1.284574468
43505	33502	1.284574468	43506	33503	1.283482143
43507	33504	1.277777778	43508	33505	1.277777778
43509	33506	1.277777778	43510	33507	1.277777778
43511	33508	1.277777778	43512	33509	1.277777778
43513	33510	1.277777778	43514	33511	1.277777778
43515	33512	1.277777778	43516	33513	1.277777778

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43458	33455	1.317708333	43459	33456	1.317708333
43460	33457	1.317708333	43461	33458	1.317708333
43462	33459	1.316021127	43463	33460	1.315677966
43464	33461	1.313271605	43465	33462	1.313271605
43466	33463	1.3125	43467	33464	1.310661765
43468	33465	1.306818182	43469	33466	1.306818182
43470	33467	1.306818182	43471	33468	1.306818182
43472	33469	1.306818182	43473	33470	1.306818182
43474	33471	1.306818182	43475	33472	1.306818182
43476	33473	1.30377907	43477	33474	1.301886792
43478	33475	1.300595238	43479	33476	1.300595238
43480	33477	1.299657534	43481	33478	1.298387097
43482	33479	1.296568627	43483	33480	1.296568627
43484	33481	1.296568627	43485	33482	1.296568627
43486	33483	1.294701987	43487	33484	1.294701987

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43429	33426	1.328781513	43430	33427	1.326923077
43431	33428	1.326923077	43432	33429	1.326923077
43433	33430	1.326923077	43434	33431	1.326923077
43435	33432	1.326923077	43436	33433	1.326923077
43437	33434	1.326923077	43438	33435	1.326923077
43439	33436	1.326923077	43440	33437	1.326923077
43441	33438	1.326923077	43442	33439	1.326923077
43443	33440	1.326923077	43444	33441	1.326923077
43445	33442	1.326923077	43446	33443	1.326923077
43447	33444	1.326923077	43448	33445	1.326923077
43449	33446	1.326923077	43450	33447	1.326923077
43451	33448	1.323412698	43452	33449	1.3225
43453	33450	1.320153061	43454	33451	1.319672131
43455	33452	1.319672131	43456	33453	1.319672131
43457	33454	1.317708333	43458	33455	1.317708333

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43400	33397	1.345744681	43401	33398	1.344758065
43402	33399	1.344758065	43403	33400	1.344758065
43404	33401	1.344758065	43405	33402	1.344758065
43406	33403	1.344155844	43407	33404	1.344155844
43408	33405	1.344155844	43409	33406	1.344155844
43410	33407	1.341666667	43411	33408	1.341666667
43412	33409	1.341666667	43413	33410	1.338362069
43414	33411	1.337209302	43415	33412	1.337209302
43416	33413	1.337209302	43417	33414	1.336267606
43418	33415	1.335629921	43419	33416	1.334821429
43420	33417	1.334821429	43421	33418	1.333762887
43422	33419	1.333333333	43423	33420	1.333333333
43424	33421	1.332317073	43425	33422	1.331578947
43426	33423	1.331018519	43427	33424	1.331018519
43428	33425	1.331018519	43429	33426	1.331018519

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43545	33542	1.259831461	43661	33658	1.203488372
43546	33543	1.25952381	43662	33659	1.202806122
43547	33544	1.2578125	43663	33660	1.202272727
43548	33545	1.2578125	43664	33661	1.202272727
43549	33546	1.2578125	43665	33662	1.200549451
43550	33547	1.2578125	43666	33663	1.197916667
43551	33548	1.2578125	43667	33664	1.197916667
43552	33549	1.2578125	43668	33665	1.197916667
43553	33550	1.2578125	43669	33666	1.197916667
43554	33551	1.2578125	43670	33667	1.197916667
43555	33552	1.2578125	43671	33668	1.197916667
43556	33553	1.2578125	43672	33669	1.197916667
43557	33554	1.2578125	43673	33670	1.197916667
43558	33555	1.254545455	43674	33671	1.197916667
43559	33556	1.253989362	43675	33672	1.197916667
43560	33557	1.253759398	43676	33673	1.194805195
43561	33558	1.253205128	43677	33674	1.194230769
43562	33559	1.253205128	43678	33675	1.193396226
43563	33560	1.253205128	43679	33676	1.192819149
43564	33561	1.252016129	43680	33677	1.192073171
43565	33562	1.252016129	43681	33678	1.192073171
43566	33563	1.250954198	43682	33679	1.192073171
43567	33564	1.25	43683	33680	1.192073171
43568	33565	1.25	43684	33681	1.191071429
43569	33566	1.25	43685	33682	1.191071429
43570	33567	1.24897541	43686	33683	1.189655172
43571	33568	1.248737374	43687	33684	1.189655172
43572	33569	1.248737374	43688	33685	1.189655172
43573	33570	1.248737374	43689	33686	1.189655172

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43574	33571	1.247641509	43693	33629	1.218220339
43575	33572	1.246987952	43693	33630	1.216346154
43576	33573	1.245833333	43694	33631	1.216346154
43577	33574	1.245833333	43695	33632	1.216346154
43578	33575	1.245833333	43696	33633	1.213888889
43579	33576	1.245833333	43697	33634	1.213888889
43580	33577	1.245833333	43698	33635	1.213888889
43581	33578	1.245833333	43699	33636	1.212009804
43582	33579	1.245833333	43700	33637	1.21177686
43583	33580	1.245833333	43701	33638	1.210526316
43584	33581	1.244845361	43702	33639	1.210526316
43585	33582	1.244402985	43703	33640	1.210526316
43586	33583	1.243243243	43704	33641	1.210526316
43587	33584	1.243243243	43705	33642	1.210526316
43588	33585	1.243243243	43706	33643	1.210526316
43589	33586	1.243243243	43707	33644	1.210526316
43590	33587	1.243243243	43708	33645	1.210526316
43591	33588	1.240196078	43709	33646	1.210526316
43592	33589	1.240196078	43710	33647	1.210526316
43593	33590	1.240196078	43711	33648	1.208333333
43594	33591	1.239224138	43712	33649	1.208333333
43595	33592	1.238461538	43713	33650	1.207983193
43596	33593	1.237847222	43714	33651	1.205645161
43597	33594	1.237341772	43715	33652	1.205645161
43598	33595	1.237341772	43716	33653	1.205645161
43599	33596	1.237341772	43717	33654	1.204391892
43600	33597	1.235981308	43718	33655	1.204391892
43601	33598	1.23553719	43719	33656	1.203488372
43602	33599	1.235351563	43720	33657	1.203488372

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43603	33600	1.235351563	43721	33658	1.203488372
43604	33601	1.232142857	43722	33659	1.203488372
43605	33602	1.232142857	43723	33660	1.202272727
43606	33603	1.232142857	43724	33661	1.202272727
43607	33604	1.232142857	43725	33662	1.200549451
43608	33605	1.232142857	43726	33663	1.197916667
43609	33606	1.232142857	43727	33664	1.197916667
43610	33607	1.232142857	43728	33665	1.197916667
43611	33608	1.232142857	43729	33666	1.197916667
43612	33609	1.232142857	43730	33667	1.197916667
43613	33610	1.232142857	43731	33668	1.197916667
43614	33611	1.232142857	43732	33669	1.197916667
43615	33612	1.232142857	43733	33670	1.197916667
43616	33613	1.232142857	43734	33671	1.197916667
43617	33614	1.232142857	43735	33672	1.197916667
43618	33615	1.232142857	43736	33673	1.194805195
43619	33616	1.232142857	43737	33674	1.194230769
43620	33617	1.232142857	43738	33675	1.193396226
43621	33618	1.22752809	43739	33676	1.192819149
43622	33619	1.226666667	43740	33677	1.192073171
43623	33620	1.226102941	43741	33678	1.192073171
43624	33621	1.225409836	43742	33679	1.192073171
43625	33622	1.223404255	43743	33680	1.192073171
43626	33623	1.223404255	43744	33681	1.191071429
43627	33624	1.21969697	43745	33682	1.191071429
43628	33625	1.21969697	43746	33683	1.189655172
43629	33626	1.21969697	43747	33684	1.189655172
43630	33627	1.21969697	43748	33685	1.189655172
43631	33628	1.21969697	43749	33686	1.189655172

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43632	33629	1.218220339	43750	33687	1.189655172
43633	33630	1.216346154	43751	33688	1.189655172
43634	33631	1.216346154	43752	33689	1.189655172
43635	33632	1.216346154	43753	33690	1.189655172
43636	33633	1.213888889	43754	33691	1.189655172
43637	33634	1.213888889	43755	33692	1.189655172
43638	33635	1.213888889	43756	33693	1.189655172
43639	33636	1.212009804	43757	33694	1.189655172
43640	33637	1.21177686	43758	33695	1.189655172
43641	33638	1.210526316	43759	33696	1.189655172
43642	33639	1.210526316	43760	33697	1.189655172
43643	33640	1.210526316	43761	33698	1.189655172
43644	33641	1.210526316	43762	33699	1.189655172
43645	33642	1.210526316	43763	33700	1.189655172
43646	33643	1.210526316	43764	33701	1.189655172
43647	33644	1.210526316	43765	33702	1.189655172
43648	33645	1.210526316	43766	33703	1.189655172
43649	33646	1.210526316	43767	33704	1.189655172
43650	33647	1.210526316	43768	33705	1.189655172
43651	33648	1.208333333	43769	33706	1.189655172
43652	33649	1.208333333	43770	33707	1.189655172
43653	33650	1.207983193	43771	33708	1.189655172
43654	33651	1.205645161	43772	33709	1.189655172
43655	33652	1.205645161	43773	33710	1.189655172
43656	33653	1.205645161	43774	33711	1.189655172
43657	33654	1.204391892	43775	33712	1.189655172
43658	33655	1.204391892	43776	33713	1.189655172
43659	33656	1.203488372	43777	33714	1.189655172
43660	33657	1.203488372	43778	33715	1.189655172

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43661	33658	1.203488372	43779	33716	1.189655172
43662	33659	1.202806122	43780	33717	1.189655172
43663	33660	1.202272727	43781	33718	1.189655172
43664	33661	1.202272727	43782	33719	1.189655172
43665	33662	1.200549451	43783	33720	1.189655172
43666	33663	1.197916667	43784	33721	1.189655172
43667	33664	1.197916667	43785	33722	1.189655172
43668	33665	1.197916667	43786	33723	1.189655172
43669	33666	1.197916667	43787	33724	1.189655172
43670	33667	1.197916667	43788	33725	1.189655172
43671	33668	1.197916667	43789	33726	1.189655172
43672	33669	1.197916667	43790	33727	1.189655172
43673	33670	1.197916667	43791	33728	1.189655172
43674	33671	1.197916667	43792	33729	1.189655172
43675	33672	1.197916667	43793	33730	1.189655172
43676	33673	1.194805195	43794	33731	1.189655172
43677	33674	1.194230769	43795	33732	1.189655172
43678	33675	1.193396226	43796	33733	1.189655172
43679	33676	1.192819149	43797	33734	1.189655172
43680	33677	1.192073171	43798	33735	1.189655172
43681	33678	1.192073171	43799	33736	1.189655172
43682	33679	1.192073171	43800	33737	1.189655172
43683	33680	1.192073171	43801	33738	1.189655172
43684	33681	1.191071429	43802	33739	1.189655172
43685	33682	1.191071429	43803	33740	1.189655172
43686	33683	1.189655172	43804	33741	1.189655172
43687	33684	1.189655172	43805	33742	1.189655172
43688	33685	1.189655172	43806	33743	1.189655172
43689	33686	1.189655172	43807	33744	1.189655172

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43806	33803	1.134868421	43806	33803	1.134868421
43807	33804	1.134868421	43807	33804	1.134868421
43808	33805	1.134868421	43808	33805	1.134868421
43809	33806	1.134868421	43809	33806	1.134868421
43810	33807	1.134174312	43810	33807	1.134174312
43811	33808	1.133413462	43811	33808	1.133413462
43812	33809	1.132575758	43812	33809	1.132575758
43813	33810	1.132575758	43813	33810	1.132575758
43814	33811	1.132575758	43814	33811	1.132575758
43815	33812	1.132575758	43815	33812	1.132575758
43816	33813	1.131648936	43816	33813	1.131648936
43817	33814	1.131147541	43817	33814	1.131147541
43818	33815	1.131147541	43818	33815	1.131147541
43819	33816	1.131147541	43819	33816	1.131147541
43820	33817	1.131147541	43820	33817	1.131147541
43821	33818	1.13034188	43821	33818	1.13034188
43822	33819	1.129464286	43822	33819	1.129464286
43823	33820	1.129464286	43823	33820	1.129464286
43824	33821	1.129464286	43824	33821	1.129464286
43825	33822	1.129464286	43825	33822	1.129464286
43826	33823	1.128164557	43826	33823	1.128164557
43827	33824	1.12745098	43827	33824	1.12745098
43828	33825	1.12745098	43828	33825	1.12745098
43829	33826	1.127	43829	33826	1.127
43830	33827	1.126689189	43830	33827	1.126689189
43831	33828	1.12628866	43831	33828	1.12628866
43832	33829	1.12628866	43832	33829	1.12628866
43833	33830	1.125	43833	33830	1.125
43834	33831	1.125	43834	33831	1.125

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43777	33774	1.15	43777	33774	1.15
43778	33775	1.15	43778	33775	1.15
43779	33776	1.15	43779	33776	1.15
43780	33777	1.15	43780	33777	1.15
43781	33778	1.15	43781	33778	1.15
43782	33779	1.15	43782	33779	1.15
43783	33780	1.15	43783	33780	1.15
43784	33781	1.15	43784	33781	1.15
43785	33782	1.15	43785	33782	1.15
43786	33783	1.15	43786	33783	1.15
43787	33784	1.15	43787	33784	1.15
43788	33785	1.15	43788	33785	1.15
43789	33786	1.144675926	43789	33786	1.144675926
43790	33787	1.142628205	43790	33787	1.142628205
43791	33788	1.142123288	43791	33788	1.142123288
43792	33789	1.141221374	43792	33789	1.141221374
43793	33790	1.140873016	43793	33790	1.140873016
43794	33791	1.140086207	43794	33791	1.140086207
43795	33792	1.139150943	43795	33792	1.139150943
43796	33793	1.139150943	43796	33793	1.139150943
43797	33794	1.139150943	43797	33794	1.139150943
43798	33795	1.139150943	43798	33795	1.139150943
43799	33796	1.138020833	43799	33796	1.138020833
43800	33797	1.138020833	43800	33797	1.138020833
43801	33798	1.138020833	43801	33798	1.138020833
43802	33799	1.137362637	43802	33799	1.137362637
43803	33800	1.136627907	43803	33800	1.136627907
43804	33801	1.136627907	43804	33801	1.136627907
43805	33802	1.135802469	43805	33802	1.135802469

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43748	33745	1.15858209	43748	33745	1.15858209
43749	33746	1.157986111	43749	33746	1.157986111
43750	33747	1.157986111	43750	33747	1.157986111
43751	33748	1.157012195	43751	33748	1.157012195
43752	33749	1.156609195	43752	33749	1.156609195
43753	33750	1.15625	43753	33750	1.15625
43754	33751	1.15	43754	33751	1.15
43755	33752	1.15	43755	33752	1.15
43756	33753	1.15	43756	33753	1.15
43757	33754	1.15	43757	33754	1.15
43758	33755	1.15	43758	33755	1.15
43759	33756	1.15	43759	33756	1.15
43760	33757	1.15	43760	33757	1.15
43761	33758	1.15	43761	33758	1.15
43762	33759	1.15	43762	33759	1.15
43763	33760	1.15	43763	33760	1.15
43764	33761	1.15	43764	33761	1.15
43765	33762	1.15	43765	33762	1.15
43766	33763	1.15	43766	33763	1.15
43767	33764	1.15	43767	33764	1.15
43768	33765	1.15	43768	33765	1.15
43769	33766	1.15	43769	33766	1.15
43770	33767	1.15	43770	33767	1.15
43771	33768	1.15	43771	33768	1.15
43772	33769	1.15	43772	33769	1.15
43773	33770	1.15	43773	33770	1.15
43774	33771	1.15	43774	33771	1.15
43775	33772	1.15	43775	33772	1.15
43776	33773	1.15	43776	33773	1.15

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43719	33716	1.175492611	43719	33716	1.175492611
43720	33717	1.174295775	43720	33717	1.174295775
43721	33718	1.173469388	43721	33718	1.173469388
43722	33719	1.173469388	43722	33719	1.173469388
43723	33720	1.173469388	43723	33720	1.173469388
43724	33721	1.172697368	43724	33721	1.172697368
43725	33722	1.172330097	43725	33722	1.172330097
43726	33723	1.171296296	43726	33723	1.171296296
43727	33724	1.170353982	43727	33724	1.170353982
43728	33725	1.17005814	43728	33725	1.17005814
43729	33726	1.169491525	43729	33726	1.169491525
43730	33727	1.169491525	43730	33727	1.169491525
43731	33728	1.168956044	43731	33728	1.168956044
43732	33729	1.167293233	43732	33729	1.167293233
43733	33730	1.165540541	43733	33730	1.165540541
43734	33731	1.165540541	43734	33731	1.165540541
43735	33732	1.165540541	43735	33732	1.165540541
43736	33733	1.165540541	43736	33733	1.165540541
43737	33734	1.165540541	43737	33734	1.165540541
43738	33735	1.164556962	43738	33735	1.164556962
43739	33736	1.163690476	43739	33736	1.163690476
43740	33737	1.163690476	43740	33737	1.163690476
43741	33738	1.163690476	43741	33738	1.163690476
43742	33739	1.162234043	43742	33739	1.162234043
43743	33740	1.162234043	43743	33740	1.162234043
43744	33741	1.162234043	43744	33741	1.162234043
43745	33742	1.160087719	43745	33742	1.160087719
43746	33743	1.159274194	43746	33743	1.159274194
43747	33744	1.159274194	43747	33744	1.159274194

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43690	33687	1.1875	43690	33687	1.1875
43691	33688	1.1875	43691	33688	1.1875
43692	33689	1.186926606	43692	33689	1.186926606
43693	33690	1.1859375	43693	33690	1.1859375
43694	33691	1.183823529	43694	33691	1.183823529
43695	33692	1.183823529	43695	33692	1.183823529
43696	33693	1.183823529	43696	33693	1.183823529
43697	33694	1.183823529	43697	33694	1.183823529
43698	33695	1.183823529	43698	33695	1.183823529
43699	33696	1.183823529	43699	33696	1.183823529
43700	33697	1.183823529	43700	33697	1.183823529
43701	33698	1.182242991	43701	33698	1.182242991
43702	33699	1.180263158	43702	33699	1.180263158
43703	33700	1.180263158	43703	33700	1.180263158
43704	33701	1.180263158	43704	33701	1.180263158
43705	33702	1.179487179	43705	33702	1.179487179
43706	33703	1.179487179	43706	33703	1.179487179
43707	33704	1.179487179	43707	33704	1.179487179
43708	33705	1.179487179	43708	33705	1.179487179
43709	33706	1.179487179	43709	33706	1.179487179
43710	33707	1.179487179	43710	33707	1.179487179
43711	33708	1.179487179	43711	33708	1.179487179
43712	33709	1.179487179	43712	33709	1.179487179
43713	33710	1.177951389	43713	33710	1.177951389
43714	33711	1.177710843	43714	33711	1.177710843
43715	33712	1.176136364	43715	33712	1.176136364
43716	33713	1.176136364	43716	33713	1.176136364
43717	33714	1.176136364	43717	33714	1.176136364
43718	33715	1.176136364	43718	33715	1.176136364

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43835	33832	1.125	43951	33948	1.086111111
43836	33833	1.125	43952	33949	1.086111111
43837	33834	1.125	43953	33950	1.086111111
43838	33835	1.123046875	43954	33951	1.086111111
43839	33836	1.12195122	43955	33952	1.086111111
43840	33837	1.12195122	43956	33953	1.08490566
43841	33838	1.12195122	43957	33954	1.08490566
43842	33839	1.120762712	43958	33955	1.084016393
43843	33840	1.120762712	43959	33956	1.084016393
43844	33841	1.120762712	43960	33957	1.083653846
43845	33842	1.120762712	43961	33958	1.083333333
43846	33843	1.12012987	43962	33959	1.083333333
43847	33844	1.119736842	43963	33960	1.083333333
43848	33845	1.118055556	43964	33961	1.082792208
43849	33846	1.118055556	43965	33962	1.082352941
43850	33847	1.118055556	43966	33963	1.081422018
43851	33848	1.118055556	43967	33964	1.081422018
43852	33849	1.118055556	43968	33965	1.081422018
43853	33850	1.118055556	43969	33966	1.078125
43854	33851	1.118055556	43970	33967	1.078125
43855	33852	1.118055556	43971	33968	1.078125
43856	33853	1.118055556	43972	33969	1.078125
43857	33854	1.118055556	43973	33970	1.078125
43858	33855	1.118055556	43974	33971	1.078125
43859	33856	1.118055556	43975	33972	1.078125
43860	33857	1.118055556	43976	33973	1.078125
43861	33858	1.116735537	43977	33974	1.078125
43862	33859	1.114795918	43978	33975	1.078125
43863	33860	1.114795918	43979	33976	1.078125

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43864	33861	1.114795918	43922	33919	1.095238095
43865	33862	1.114795918	43923	33920	1.095238095
43866	33863	1.1140625	43924	33921	1.09375
43867	33864	1.1140625	43925	33922	1.093309859
43868	33865	1.113738739	43926	33923	1.093309859
43869	33866	1.112903226	43927	33924	1.0925
43870	33867	1.112903226	43928	33925	1.092054264
43871	33868	1.112903226	43929	33926	1.091772152
43872	33869	1.110344828	43930	33927	1.090517241
43873	33870	1.109649123	43931	33928	1.090517241
43874	33871	1.108928571	43932	33929	1.090517241
43875	33872	1.105769231	43933	33930	1.090517241
43876	33873	1.105769231	43934	33931	1.090517241
43877	33874	1.105769231	43935	33932	1.089473684
43878	33875	1.105769231	43936	33933	1.089015152
43879	33876	1.105769231	43937	33934	1.089015152
43880	33877	1.105769231	43938	33935	1.089015152
43881	33878	1.105769231	43939	33936	1.089015152
43882	33879	1.105769231	43940	33937	1.089015152
43883	33880	1.105769231	43941	33938	1.088592233
43884	33881	1.105769231	43942	33939	1.087837838
43885	33882	1.105769231	43943	33940	1.087837838
43886	33883	1.105769231	43944	33941	1.087837838
43887	33884	1.105769231	43945	33942	1.087837838
43888	33885	1.105769231	43946	33943	1.087837838
43889	33886	1.105769231	43947	33944	1.087837838
43890	33887	1.105769231	43948	33945	1.087837838
43891	33888	1.105769231	43949	33946	1.086890244
43892	33889	1.105769231	43950	33947	1.086614173

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43893	33890	1.104304636	43902	33899	1.10106383
43894	33891	1.103535354	43903	33900	1.10106383
43895	33892	1.103197674	43904	33901	1.10106383
43896	33893	1.102739726	43905	33902	1.10106383
43897	33894	1.102083333	43906	33903	1.10106383
43898	33895	1.102083333	43907	33904	1.100308642
43899	33896	1.102083333	43908	33905	1.099264706
43900	33897	1.102083333	43909	33906	1.099264706
43901	33898	1.102083333	43910	33907	1.099264706
43902	33899	1.10106383	43911	33908	1.099264706
43903	33900	1.10106383	43912	33909	1.098314607
43904	33901	1.10106383	43913	33910	1.098090278
43905	33902	1.10106383	43914	33911	1.097727273
43906	33903	1.10106383	43915	33912	1.097727273
43907	33904	1.100308642	43916	33913	1.097039474
43908	33905	1.099264706	43917	33914	1.096649485
43909	33906	1.099264706	43918	33915	1.095238095
43910	33907	1.099264706	43919	33916	1.095238095
43911	33908	1.099264706	43920	33917	1.095238095
43912	33909	1.098314607	43921	33918	1.095238095

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43893	33890	1.104304636	43902	33899	1.10106383
43894	33891	1.103535354	43903	33900	1.10106383
43895	33892	1.103197674	43904	33901	1.10106383
43896	33893	1.102739726	43905	33902	1.10106383
43897	33894	1.102083333	43906	33903	1.10106383
43898	33895	1.102083333	43907	33904	1.100308642
43899	33896	1.102083333	43908	33905	1.099264706
43900	33897	1.102083333	43909	33906	1.099264706
43901	33898	1.102083333	43910	33907	1.099264706
43902	33899	1.10106383	43911	33908	1.099264706
43903	33900	1.10106383	43912	33909	1.098314607
43904	33901	1.10106383	43913	33910	1.098090278
43905	33902	1.10106383	43914	33911	1.097727273
43906	33903	1.10106383	43915	33912	1.097727273
43907	33904	1.100308642	43916	33913	1.097039474
43908	33905	1.099264706	43917	33914	1.096649485
43909	33906	1.099264706	43918	33915	1.095238095
43910	33907	1.099264706	43919	33916	1.095238095
43911	33908	1.099264706	43920	33917	1.095238095
43912	33909	1.098314607	43921	33918	1.095238095

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43893	33890	1.104304636	43902	33899	1.10106383
43894	33891	1.103535354	43903	33900	1.10106383
43895	33892	1.103197674	43904	33901	1.10106383
43896	33893	1.102739726	43905	33902	1.10106383
43897	33894	1.102083333	43906	33903	1.10106383
43898	33895	1.102083333	43907	33904	1.100308642
43899	33896	1.102083333	43908	33905	1.099264706
43900	33897	1.102083333	43909	33906	1.099264706
43901	33898	1.102083333	43910	33907	1.099264706
43902	33899	1.10106383	43911	33908	1.099264706
43903	33900	1.10106383	43912	33909	1.098314607
43904	33901	1.10106383	43913	33910	1.098090278
43905	33902	1.10106383	43914	33911	1.097727273
43906	33903	1.10106383	43915	33912	1.097727273
43907	33904	1.100308642	43916	33913	1.097039474
43908	33905	1.099264706	43917	33914	1.096649485
43909	33906	1.099264706	43918	33915	1.095238095
43910	33907	1.099264706	43919	33916	1.095238095
43911	33908	1.099264706	43920	33917	1.095238095
43912	33909	1.098314607	43921	33918	1.095238095

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
43980	33977	1.078125	44096	34093	1.035
43981	33978	1.078125	44097	34094	1.035
43982	33979	1.078125	44098	34095	1.035
43983	33980	1.078125	44099	34096	1.035
43984	33981	1.078125	44100	34097	1.035
43985	33982	1.078125	44101	34098	1.035
43986	33983	1.078125	44102	34099	1.033707865
43987	33984	1.078125	44103	34100	1.032458564
43988	33985	1.073795181	44104	34101	1.032051282
43989	33986	1.073795181	44105	34102	1.032051282
43990	33987	1.072033898	44106	34103	1.032051282
43991	33988	1.072033898	44107	34104	1.032051282
43992	33989	1.072033898	44108	34105	1.03125
43993	33990	1.071078431	44109	34106	1.030660377
43994	33991	1.071078431	44110	34107	1.030660377
43995	33992	1.070478723	44111	34108	1.029850746
43996	33993	1.069767442	44112	34109	1.029850746
43997	33994	1.069767442	44113	34110	1.029320988
43998	33995	1.069767442	44114	34111	1.029320988
43999	33996	1.069767442	44115	34112	1.028947368
44000	33997	1.068910256	44116	34113	1.028669725
44001	33998	1.068584071	44117	34114	1.026785714
44002	33999	1.067857143	44118	34115	1.026785714
44003	34000	1.067857143	44119	34116	1.026785714
44004	34001	1.067857143	44120	34117	1.026785714
44005	34002	1.067857143	44121	34118	1.026785714
44006	34003	1.067857143	44122	34119	1.026785714
44007	34004	1.067857143	44123	34120	1.026785714
44008	34005	1.067857143	44124	34121	1.026785714

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
44009	34006	1.045454545	44067	34064	1.045454545
44010	34007	1.045454545	44068	34065	1.045454545
44011	34008	1.045454545	44069	34066	1.045454545
44012	34009	1.045454545	44070	34067	1.045454545
44013	34010	1.045454545	44071	34068	1.045454545
44014	34011	1.045454545	44072	34069	1.045454545
44015	34012	1.045454545	44073	34070	1.045454545
44016	34013	1.045454545	44074	34071	1.045454545
44017	34014	1.045454545	44075	34072	1.045454545
44018	34015	1.045454545	44076	34073	1.045454545
44019	34016	1.045454545	44077	34074	1.045454545
44020	34017	1.045454545	44078	34075	1.045454545
44021	34018	1.045454545	44079	34076	1.045454545
44022	34019	1.0421875	44080	34077	1.0421875
44023	34020	1.0421875	44081	34078	1.0421875
44024	34021	1.0421875	44082	34079	1.0421875
44025	34022	1.041338583	44083	34080	1.041338583
44026	34023	1.040948276	44084	34081	1.040948276
44027	34024	1.040948276	44085	34082	1.040948276
44028	34025	1.040948276	44086	34083	1.040948276
44029	34026	1.039893617	44087	34084	1.039893617
44030	34027	1.039893617	44088	34085	1.039893617
44031	34028	1.038194444	44089	34086	1.038194444
44032	34029	1.037371134	44090	34087	1.037371134
44033	34030	1.036337209	44091	34088	1.036337209
44034	34031	1.036337209	44092	34089	1.036337209
44035	34032	1.036337209	44093	34090	1.036337209
44036	34033	1.036337209	44094	34091	1.036337209
44037	34034	1.036036036	44095	34092	1.036036036

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
44038	34035	1.059210526	44038	34035	1.059210526
44039	34036	1.059210526	44039	34036	1.059210526
44040	34037	1.056985294	44040	34037	1.056985294
44041	34038	1.056122449	44041	34038	1.056122449
44042	34039	1.056122449	44042	34039	1.056122449
44043	34040	1.056122449	44043	34040	1.056122449
44044	34041	1.055045872	44044	34041	1.055045872
44045	34042	1.054166667	44045	34042	1.054166667
44046	34043	1.054166667	44046	34043	1.054166667
44047	34044	1.054166667	44047	34044	1.054166667
44048	34045	1.054166667	44048	34045	1.054166667
44049	34046	1.054166667	44049	34046	1.054166667
44050	34047	1.054166667	44050	34047	1.054166667
44051	34048	1.054166667	44051	34048	1.054166667
44052	34049	1.054166667	44052	34049	1.054166667
44053	34050	1.052455357	44053	34050	1.052455357
44054	34051	1.051829268	44054	34051	1.051829268
44055	34052	1.051829268	44055	34052	1.051829268
44056	34053	1.051829268	44056	34053	1.051829268
44057	34054	1.051829268	44057	34054	1.051829268
44058	34055	1.051829268	44058	34055	1.051829268
44059	34056	1.051829268	44059	34056	1.051829268
44060	34057	1.050480769	44060	34057	1.050480769
44061	34058	1.050480769	44061	34058	1.050480769
44062	34059	1.050480769	44062	34059	1.050480769
44063	34060	1.050480769	44063	34060	1.050480769
44064	34061	1.050480769	44064	34061	1.050480769
44065	34062	1.049603175	44065	34062	1.049603175
44066	34063	1.048529412	44066	34063	1.048529412

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
44067	34064	1.067857143	44067	34064	1.067857143
44068	34065	1.066532258	44068	34065	1.066532258
44069	34066	1.066532258	44069	34066	1.066532258
44070	34067	1.066532258	44070	34067	1.066532258
44071	34068	1.066532258	44071	34068	1.066532258
44072	34069	1.066011236	44072	34069	1.066011236
44073	34070	1.065732759	44073	34070	1.065732759
44074	34071	1.064814815	44074	34071	1.064814815
44075	34072	1.064814815	44075	34072	1.064814815
44076	34073	1.064814815	44076	34073	1.064814815
44077	34074	1.064814815	44077	34074	1.064814815
44078	34075	1.064814815	44078	34075	1.064814815
44079	34076	1.064814815	44079	34076	1.064814815
44080	34077	1.063356164	44080	34077	1.063356164
44081	34078	1.0625	44081	34078	1.0625
44082	34079	1.0625	44082	34079	1.0625
44083	34080	1.0625	44083	34080	1.0625
44084	34081	1.061538462	44084	34081	1.061538462
44085	34082	1.06045082	44085	34082	1.06045082
44086	34083	1.059210526	44086	34083	1.059210526
44087	34084	1.059210526	44087	34084	1.059210526
44088	34085	1.059210526	44088	34085	1.059210526
44089	34086	1.059210526	44089	34086	1.059210526
44090	34087	1.059210526	44090	34087	1.059210526
44091	34088	1.059210526	44091	34088	1.059210526
44092	34089	1.059210526	44092	34089	1.059210526
44093	34090	1.059210526	44093	34090	1.059210526
44094	34091	1.059210526	44094	34091	1.059210526
44095	34092	1.059210526	44095	34092	1.059210526

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
44096	34093	1.078125	44096	34093	1.078125
44097	34094	1.078125	44097	34094	1.078125
44098	34095	1.078125	44098	34095	1.078125
44099	34096	1.078125	44099	34096	1.078125
44100	34097	1.078125	44100	34097	1.078125
44101	34098	1.078125	44101	34098	1.078125
44102	34099	1.078125	44102	34099	1.078125
44103	34100	1.078125	44103	34100	1.078125
44104	34101	1.073795181	44104	34101	1.073795181
44105	34102	1.073795181	44105	34102	1.073795181
44106	34103	1.072033898	44106	34103	1.072033898
44107	34104	1.072033898	44107	34104	1.072033898
44108	34105	1.072033898	44108	34105	1.072033898
44109	34106	1.071078431	44109	34106	1.071078431
44110	34107	1.071078431	44110	34107	1.071078431
44111	34108	1.070478723	44111	34108	1.070478723
44112	34109	1.069767442	44112	34109	1.069767442
44113	34110	1.069767442	44113	34110	1.069767442
44114	34111	1.069767442	44114	34111	1.069767442
44115	34112	1.069767442	44115	34112	1.069767442
44116	34113	1.068910256	44116	34113	1.068910256
44117	34114	1.068584071	44117	34114	1.068584071
44118	34115	1.067857143	44118	34115	1.067857143
44119	34116	1.067857143	44119	34116	1.067857143
44120	34117	1.067857143	44120	34117	1.067857143
44121	34118	1.067857143	44121	34118	1.067857143
44122	34119	1.067857143	44122	34119	1.067857143
44123	34120	1.067857143	44123	34120	1.067857143
44124	34121	1.067857143	44124	34121	1.067857143



DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
44189	34186	1.004518072
44190	34187	1.004518072
44191	34188	1.003968254
44192	34189	1.002906977
44193	34190	1.002906977
44194	34191	1.002906977
44195	34192	1.002906977
44196	34193	1.002906977
44197	34194	1.002293578
44198	34195	1.001893939
44199	34196	1.001893939
44200	34197	1.001893939
44201	34198	1.001893939

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
44173	34170	1.010135135
44174	34171	1.010135135
44175	34172	1.009308511
44176	34173	1.00877193
44177	34174	1.00877193
44178	34175	1.008116883
44179	34176	1.00729927
44180	34177	1.00625
44181	34178	1.00625
44182	34179	1.00625
44183	34180	1.00625
44184	34181	1.00625
44185	34182	1.00625
44186	34183	1.00625
44187	34184	1.00625
44188	34185	1.00625

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
44157	34154	1.014705882
44158	34155	1.014705882
44159	34156	1.014705882
44160	34157	1.014705882
44161	34158	1.014705882
44162	34159	1.014705882
44163	34160	1.014705882
44164	34161	1.014705882
44165	34162	1.014705882
44166	34163	1.014705882
44167	34164	1.014705882
44168	34165	1.014705882
44169	34166	1.012323944
44170	34167	1.012323944
44171	34168	1.010989011
44172	34169	1.010135135

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
44141	34138	1.022222222
44142	34139	1.022222222
44143	34140	1.02016129
44144	34141	1.02016129
44145	34142	1.02016129
44146	34143	1.02016129
44147	34144	1.02016129
44148	34145	1.02016129
44149	34146	1.02016129
44150	34147	1.02016129
44151	34148	1.018987342
44152	34149	1.017307692
44153	34150	1.016768293
44154	34151	1.016768293
44155	34152	1.016768293
44156	34153	1.016414141

DNA SEQ ID NO	AA SEQ ID NO	Lung 1 Enrichment
44125	34122	1.026785714
44126	34123	1.026785714
44127	34124	1.026785714
44128	34125	1.026785714
44129	34126	1.026785714
44130	34127	1.026785714
44131	34128	1.026785714
44132	34129	1.026785714
44133	34130	1.02534965
44134	34131	1.023972603
44135	34132	1.023972603
44136	34133	1.023972603
44137	34134	1.023305085
44138	34135	1.023305085
44139	34136	1.023305085
44140	34137	1.022222222

FIG. 14

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44202	34199	1909	44256	34253	162	44289	34286	126.5	44316	34313	118
44203	34200	616.4	44257	34254	160.28125	44290	34287	126.2051282	44317	34314	117.875
44204	34201	608.2222222	44258	34255	159.9047619	44291	34288	126	44318	34315	117.875
44205	34202	477.25	44259	34256	159.6470588	44292	34289	125.7333333	44319	34316	116.9166667
44206	34203	425.5	44260	34257	159.5625	44293	34290	124.7111111	44320	34317	116.8852459
44207	34204	375.2631579	44261	34258	159.2307692	44294	34291	124.5365854	44321	34318	116.4081633
44208	34205	346.3529412	44262	34259	157.4615385	44295	34292	124.5365854	44322	34319	116.15
44209	34206	331.2	44263	34260	156.6875	44296	34293	123.6721311	44323	34320	115
44210	34207	326	44264	34261	146.9444444	44297	34294	123.625	44324	34321	115
44211	34208	324.0909091	44265	34262	146.9032258	44298	34295	123.4736842	44325	34322	114.5490196
44212	34209	322	44266	34263	146	44299	34296	122.6666667	44326	34323	114.3428571
44213	34210	316.8888889	44267	34264	145.8113208	44300	34297	122.4594595	44327	34324	113.6470588
44214	34211	295.7142857	44268	34265	142.6	44301	34298	122.137931	44328	34325	112.8301887
44215	34212	289.2888889	44269	34266	141.4074074	44302	34299	122	44329	34326	112.7
44216	34213	282.969697	44270	34267	138.7301587	44303	34300	121.9	44330	34327	112.4444444
44217	34214	279.9428571	44271	34268	138	44304	34301	121.7083333	44331	34328	112.24
44218	34215	276	44272	34269	135.9090909	44305	34302	121.3888889	44332	34329	111.8918919
44219	34216	271.6190476	44273	34270	135.6410256	44306	34303	121.2727273	44333	34330	111.5342466
44220	34217	266.8	44274	34271	135.5135135	44307	34304	121.1020408	44334	34331	111.2363636
44221	34218	261.4736842	44275	34272	135.1692308	44308	34305	121.0526316	44335	34332	110.9411765
44222	34219	250.7	44276	34273	134	44309	34306	119.9016393	44336	34333	110.7209302
44223	34220	250.125	44277	34274	132.5882353						
44224	34221	248.7407407	44278	34275	132.48						
44225	34222	243.3157895	44279	34276	131.8666667						
44226	34223	239.7575758	44280	34277	131.4285714						
44227	34224	239.2	44281	34278	130.8125						
44228	34225	236.5714286	44282	34279	130.6818182						

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44433	34450	78.47058824	44453	34450	78.47058824
44434	34451	78.47058824	44454	34451	78.47058824
44435	34452	78.32432432	44455	34452	78.32432432
44436	34453	78.06060606	44456	34453	78.06060606
44437	34454	77.79411765	44457	34454	77.79411765
44438	34455	77.68888889	44458	34455	77.68888889
44439	34456	77.42574257	44459	34456	77.42574257
44440	34457	77.33333333	44460	34457	77.33333333
44441	34458	77.28	44461	34458	77.28
44442	34459	77.05	44462	34459	77.05
44443	34460	76.66666667	44463	34460	76.66666667
44444	34461	76.43076923	44464	34461	76.43076923
44445	34462	76.37735849	44465	34462	76.37735849
44446	34463	76.31818182	44466	34463	76.31818182
44447	34464	76.16393443	44467	34464	76.16393443
44448	34465	75.30973451	44468	34465	75.30973451
44449	34466	75.27272727	44469	34466	75.27272727
44450	34467	75.17073171	44470	34467	75.17073171
44451	34468	75.13333333	44471	34468	75.13333333
44452	34469	75.10204082	44472	34469	75.10204082
44453	34470	75.08045977	44473	34470	75.08045977
44454	34471	74.91428571	44474	34471	74.91428571
44455	34472	74.67532468	44475	34472	74.67532468
44456	34473	74.6557377	44476	34473	74.6557377
44457	34474	74.5	44477	34474	74.5
44458	34475	74.30769231	44478	34475	74.30769231
44459	34476	74.30769231	44479	34476	74.30769231
44460	34477	74.19354839	44480	34477	74.19354839
44461	34478	74.16326531	44481	34478	74.16326531

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44424	34421	86.03703704	44424	34421	86.03703704
44425	34422	85.42857143	44425	34422	85.42857143
44426	34423	85.06849315	44426	34423	85.06849315
44427	34424	85	44427	34424	85
44428	34425	84.92307692	44428	34425	84.92307692
44429	34426	84.73684211	44429	34426	84.73684211
44430	34427	84.51162791	44430	34427	84.51162791
44431	34428	84.33333333	44431	34428	84.33333333
44432	34429	83.88235294	44432	34429	83.88235294
44433	34430	83.54022989	44433	34430	83.54022989
44434	34431	83.375	44434	34431	83.375
44435	34432	83.20588235	44435	34432	83.20588235
44436	34433	83.17808219	44436	34433	83.17808219
44437	34434	82.6122449	44437	34434	82.6122449
44438	34435	82.26923077	44438	34435	82.26923077
44439	34436	82.14285714	44439	34436	82.14285714
44440	34437	82.05405405	44440	34437	82.05405405
44441	34438	82.03333333	44441	34438	82.03333333
44442	34439	81.46987952	44442	34439	81.46987952
44443	34440	81.30232558	44443	34440	81.30232558
44444	34441	81.17647059	44444	34441	81.17647059
44445	34442	81.08474576	44445	34442	81.08474576
44446	34443	80.92592593	44446	34443	80.92592593
44447	34444	80.84848485	44447	34444	80.84848485
44448	34445	80.07407407	44448	34445	80.07407407
44449	34446	79.73333333	44449	34446	79.73333333
44450	34447	79.54166667	44450	34447	79.54166667
44451	34448	78.76712329	44451	34448	78.76712329
44452	34449	78.58333333	44452	34449	78.58333333

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44395	34392	92	44395	34392	92
44396	34393	92	44396	34393	92
44397	34394	92	44397	34394	92
44398	34395	92	44398	34395	92
44399	34396	91.11538462	44399	34396	91.11538462
44400	34397	91.08	44400	34397	91.08
44401	34398	90.93023256	44401	34398	90.93023256
44402	34399	90.75675676	44402	34399	90.75675676
44403	34400	90.4137931	44403	34400	90.4137931
44404	34401	90.35714286	44404	34401	90.35714286
44405	34402	90.2962963	44405	34402	90.2962963
44406	34403	90.10958904	44406	34403	90.10958904
44407	34404	89.78313253	44407	34404	89.78313253
44408	34405	89.73770492	44408	34405	89.73770492
44409	34406	89.49090909	44409	34406	89.49090909
44410	34407	89.25373134	44410	34407	89.25373134
44411	34408	89.19512195	44411	34408	89.19512195
44412	34409	89	44412	34409	89
44413	34410	88.76056338	44413	34410	88.76056338
44414	34411	88.75294118	44414	34411	88.75294118
44415	34412	88.46153846	44415	34412	88.46153846
44416	34413	88.32	44416	34413	88.32
44417	34414	88.16666667	44417	34414	88.16666667
44418	34415	88.11267606	44418	34415	88.11267606
44419	34416	87.89285714	44419	34416	87.89285714
44420	34417	87.88059701	44420	34417	87.88059701
44421	34418	87.66037736	44421	34418	87.66037736
44422	34419	87.28205128	44422	34419	87.28205128
44423	34420	86.88888889	44423	34420	86.88888889

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44366	34363	101.2	44366	34363	101.2
44367	34364	100.7027027	44367	34364	100.7027027
44368	34365	100.3636364	44368	34365	100.3636364
44369	34366	100.031746	44369	34366	100.031746
44370	34367	99.93103448	44370	34367	99.93103448
44371	34368	99.93103448	44371	34368	99.93103448
44372	34369	99.81132075	44372	34369	99.81132075
44373	34370	99.81132075	44373	34370	99.81132075
44374	34371	99.55223881	44374	34371	99.55223881
44375	34372	99.36	44375	34372	99.36
44376	34373	99.21568627	44376	34373	99.21568627
44377	34374	98.9	44377	34374	98.9
44378	34375	97.96296296	44378	34375	97.96296296
44379	34376	97.84126984	44379	34376	97.84126984
44380	34377	97.63265306	44380	34377	97.63265306
44381	34378	96.38095238	44381	34378	96.38095238
44382	34379	96.24615385	44382	34379	96.24615385
44383	34380	96.18181818	44383	34380	96.18181818
44384	34381	95.89830508	44384	34381	95.89830508
44385	34382	95.83333333	44385	34382	95.83333333
44386	34383	95.28571429	44386	34383	95.28571429
44387	34384	95.11864407	44387	34384	95.11864407
44388	34385	95.06666667	44388	34385	95.06666667
44389	34386	95	44389	34386	95
44390	34387	94.875	44390	34387	94.875
44391	34388	93.80392157	44391	34388	93.80392157
44392	34389	93.7037037	44392	34389	93.7037037
44393	34390	93.12195122	44393	34390	93.12195122
44394	34391	92.8440367	44394	34391	92.8440367

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44337	34334	110.5483871	44337	34334	110.5483871
44338	34335	110.4	44338	34335	110.4
44339	34336	109.8888889	44339	34336	109.8888889
44340	34337	108.8076923	44340	34337	108.8076923
44341	34338	108.56	44341	34338	108.56
44342	34339	108.3555556	44342	34339	108.3555556
44343	34340	108.1	44343	34340	108.1
44344	34341	107.9591837	44344	34341	107.9591837
44345	34342	107.8360656	44345	34342	107.8360656
44346	34343	106.8135593	44346	34343	106.8135593
44347	34344	106.7857143	44347	34344	106.7857143
44348	34345	106.72	44348	34345	106.72
44349	34346	106.6808511	44349	34346	106.6808511
44350	34347	106.5263158	44350	34347	106.5263158
44351	34348	105.4827586	44351	34348	105.4827586
44352	34349	105.0617284	44352	34349	105.0617284
44353	34350	104.7777778	44353	34350	104.7777778
44354	34351	104.7234043	44354	34351	104.7234043
44355	34352	104.6896552	44355	34352	104.6896552
44356	34353	104.65	44356	34353	104.65
44357	34354	104.3214286	44357	34354	104.3214286
44358	34355	103.2745098	44358	34355	103.2745098
44359	34356	102.8235294	44359	34356	102.8235294
44360	34357	102.8235294	44360	34357	102.8235294
44361	34358	101.9215686	44361	34358	101.9215686
44362	34359	101.787234	44362	34359	101.787234
44363	34360	101.7575758	44363	34360	101.7575758
44364	34361	101.34375	44364	34361	101.34375
44365	34362	101.2	44365	34362	101.2

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44482	34479	74.14925373	44598	34595	59.70212766
44483	34480	74.04878049	44599	34596	59.65625
44484	34481	74.02298851	44600	34597	59.64835165
44485	34482	74	44601	34598	59.52941176
44486	34483	74	44602	34599	59.52941176
44487	34484	73.94936709	44603	34600	59.5
44488	34485	73.28813559	44604	34601	59.5
44489	34486	73.23684211	44605	34602	59.34
44490	34487	73.18181818	44606	34603	59.31578947
44491	34488	73.12820513	44607	34604	59
44492	34489	73.05882353	44608	34605	58.9375
44493	34490	72.20930233	44609	34606	58.88
44494	34491	72.10810811	44610	34607	58.64122137
44495	34492	72	44611	34608	58.54545455
44496	34493	71.93617021	44612	34609	58.17647059
44497	34494	71.91549296	44613	34610	58.04761905
44498	34495	71.50909091	44614	34611	57.96
44499	34496	71.37931034	44615	34612	57.96
44500	34497	71.34693878	44616	34613	57.94805195
44501	34498	71.3	44617	34614	57.84848485
44502	34499	71.26760563	44618	34615	57.84158416
44503	34500	71.22580645	44619	34616	57.82857143
44504	34501	71.03797468	44620	34617	57.80530973
44505	34502	70.64285714	44621	34618	57.74468085
44506	34503	70.57534247	44622	34619	57.5
44507	34504	70.48387097	44623	34620	57.5
44508	34505	69.95833333	44624	34621	57.5
44509	34506	69.8961039	44625	34622	57.36470588
44510	34507	69.85185185	44626	34623	57.07407407

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44569	34566	62.8	44570	34567	62.72727273
44570	34567	62.72727273	44571	34568	62.675
44571	34568	62.675	44572	34569	62.51282051
44572	34569	62.51282051	44573	34570	62.47761194
44573	34570	62.47761194	44574	34571	62.45528455
44574	34571	62.45528455	44575	34572	62.3364486
44575	34572	62.3364486	44576	34573	62.32258065
44576	34573	62.32258065	44577	34574	62.07228916
44577	34574	62.07228916	44578	34575	61.94059406
44578	34575	61.94059406	44579	34576	61.72151899
44579	34576	61.72151899	44580	34577	61.65957447
44580	34577	61.65957447	44581	34578	61.63106796
44581	34578	61.63106796	44582	34579	61.525
44582	34579	61.525	44583	34580	61.51807229
44583	34580	61.51807229	44584	34581	61.453125
44584	34581	61.453125	44585	34582	61.33333333
44585	34582	61.33333333	44586	34583	61.20967742
44586	34583	61.20967742	44587	34584	60.97674419
44587	34584	60.97674419	44588	34585	60.97674419
44588	34585	60.97674419	44589	34586	60.74358974
44589	34586	60.74358974	44590	34587	60.56666667
44590	34587	60.56666667	44591	34588	60.52631579
44591	34588	60.52631579	44592	34589	60.52631579
44592	34589	60.52631579	44593	34590	60.52631579
44593	34590	60.52631579	44594	34591	60.52631579
44594	34591	60.52631579	44595	34592	60.5
44595	34592	60.5	44596	34593	60
44596	34593	60	44597	34594	59.84466019
44597	34594	59.84466019			

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44540	34537	65.29032258	44541	34538	65.29032258
44541	34538	65.29032258	44542	34539	65.23636364
44542	34539	65.23636364	44543	34540	65.10769231
44543	34540	65.10769231	44544	34541	65.07317073
44544	34541	65.07317073	44545	34542	64.975
44545	34542	64.975	44546	34543	64.91111111
44546	34543	64.91111111	44547	34544	64.87179487
44547	34544	64.87179487	44548	34545	64.71186441
44548	34545	64.71186441	44549	34546	64.59574468
44549	34546	64.59574468	44550	34547	64.50574713
44550	34547	64.50574713	44551	34548	64.50574713
44551	34548	64.50574713	44552	34549	64.4
44552	34549	64.4	44553	34550	64.29545455
44553	34550	64.29545455	44554	34551	64.20833333
44554	34551	64.20833333	44555	34552	64.03921569
44555	34552	64.03921569	44556	34553	63.95121951
44556	34553	63.95121951	44557	34554	63.88888889
44557	34554	63.88888889	44558	34555	63.825
44558	34555	63.825	44559	34556	63.63333333
44559	34556	63.63333333	44560	34557	63.56363636
44560	34557	63.56363636	44561	34558	63.46296296
44561	34558	63.46296296	44562	34559	63.42424242
44562	34559	63.42424242	44563	34560	63.1372549
44563	34560	63.1372549	44564	34561	63.12765957
44564	34561	63.12765957	44565	34562	63.11627907
44565	34562	63.11627907	44566	34563	63.08571429
44566	34563	63.08571429	44567	34564	63
44567	34564	63	44568	34565	62.82926829
44568	34565	62.82926829			

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44511	34508	69.56097561	44512	34509	69
44512	34509	69	44513	34510	69
44513	34510	69	44514	34511	69
44514	34511	69	44515	34512	68.69333333
44515	34512	68.69333333	44516	34513	68.66666667
44516	34513	68.66666667	44517	34514	68.46511628
44517	34514	68.46511628	44518	34515	68.46511628
44518	34515	68.46511628	44519	34516	68.425
44519	34516	68.425	44520	34517	68.38938053
44520	34517	68.38938053	44521	34518	68.32352941
44521	34518	68.32352941	44522	34519	68.32352941
44522	34519	68.32352941	44523	34520	68.26984127
44523	34520	68.26984127	44524	34521	68.04166667
44524	34521	68.04166667	44525	34522	68
44525	34522	68	44526	34523	67.74545455
44526	34523	67.74545455	44527	34524	67.50649351
44527	34524	67.50649351	44528	34525	67.39534884
44528	34525	67.39534884	44529	34526	67.35714286
44529	34526	67.35714286	44530	34527	67.23076923
44530	34527	67.23076923	44531	34528	67.19101124
44531	34528	67.19101124	44532	34529	67.01234568
44532	34529	67.01234568	44533	34530	66.73239437
44533	34530	66.73239437	44534	34531	66.62068966
44534	34531	66.62068966	44535	34532	66.60416667
44535	34532	66.60416667	44536	34533	66.125
44536	34533	66.125	44537	34534	65.93333333
44537	34534	65.93333333	44538	34535	65.42222222
44538	34535	65.42222222	44539	34536	65.33333333
44539	34536	65.33333333			

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44482	34479	74.14925373	44483	34480	74.04878049
44483	34480	74.04878049	44484	34481	74.02298851
44484	34481	74.02298851	44485	34482	74
44485	34482	74	44486	34483	74
44486	34483	74	44487	34484	73.94936709
44487	34484	73.94936709	44488	34485	73.28813559
44488	34485	73.28813559	44489	34486	73.23684211
44489	34486	73.23684211	44490	34487	73.18181818
44490	34487	73.18181818	44491	34488	73.12820513
44491	34488	73.12820513	44492	34489	73.05882353
44492	34489	73.05882353	44493	34490	72.20930233
44493	34490	72.20930233	44494	34491	72.10810811
44494	34491	72.10810811	44495	34492	72
44495	34492	72	44496	34493	71.93617021
44496	34493	71.93617021	44497	34494	71.91549296
44497	34494	71.91549296	44498	34495	71.50909091
44498	34495	71.50909091	44499	34496	71.37931034
44499	34496	71.37931034	44500	34497	71.34693878
44500	34497	71.34693878	44501	34498	71.3
44501	34498	71.3	44502	34499	71.26760563
44502	34499	71.26760563	44503	34500	71.22580645
44503	34500	71.22580645	44504	34501	71.03797468
44504	34501	71.03797468	44505	34502	70.64285714
44505	34502	70.64285714	44506	34503	70.57534247
44506	34503	70.57534247	44507	34504	70.48387097
44507	34504	70.48387097	44508	34505	69.95833333
44508	34505	69.95833333	44509	34506	69.8961039
44509	34506	69.8961039	44510	34507	69.85185185

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44743	34740	46.68148148	44743	34740	46.68148148
44744	34741	46.42990654	44744	34741	46.42990654
44745	34742	46.42201835	44745	34742	46.42201835
44746	34743	46.34074074	44746	34743	46.34074074
44747	34744	46	44747	34744	46
44748	34745	46	44748	34745	46
44749	34746	46	44749	34746	46
44750	34747	46	44750	34747	46
44751	34748	46	44751	34748	46
44752	34749	46	44752	34749	46
44753	34750	46	44753	34750	46
44754	34751	46	44754	34751	46
44755	34752	46	44755	34752	46
44756	34753	46	44756	34753	46
44757	34754	45.64885496	44757	34754	45.64885496
44758	34755	45.43902439	44758	34755	45.43902439
44759	34756	45.41025641	44759	34756	45.41025641
44760	34757	45.38666667	44760	34757	45.38666667
44761	34758	45.09803922	44761	34758	45.09803922
44762	34759	45.09803922	44762	34759	45.09803922
44763	34760	44.93023256	44763	34760	44.93023256
44764	34761	44.82051282	44764	34761	44.82051282
44765	34762	44.82051282	44765	34762	44.82051282
44766	34763	44.58461538	44766	34763	44.58461538
44767	34764	44.49180328	44767	34764	44.49180328
44768	34765	44.2962963	44768	34765	44.2962963
44769	34766	44.26415094	44769	34766	44.26415094
44770	34767	44.23076923	44770	34767	44.23076923
44771	34768	44.19607843	44771	34768	44.19607843

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44714	34711	48.83076923	44714	34711	48.83076923
44715	34712	48.73513514	44715	34712	48.73513514
44716	34713	48.72592593	44716	34713	48.72592593
44717	34714	48.62857143	44717	34714	48.62857143
44718	34715	48.57943925	44718	34715	48.57943925
44719	34716	48.50909091	44719	34716	48.50909091
44720	34717	48.48648649	44720	34717	48.48648649
44721	34718	48.46428571	44721	34718	48.46428571
44722	34719	48.42105263	44722	34719	48.42105263
44723	34720	48.42105263	44723	34720	48.42105263
44724	34721	48.38961039	44724	34721	48.38961039
44725	34722	48.38961039	44725	34722	48.38961039
44726	34723	48.33898305	44726	34723	48.33898305
44727	34724	48.3	44727	34724	48.3
44728	34725	48.27722772	44728	34725	48.27722772
44729	34726	48.19047619	44729	34726	48.19047619
44730	34727	48.04444444	44730	34727	48.04444444
44731	34728	48	44731	34728	48
44732	34729	47.89041096	44732	34729	47.89041096
44733	34730	47.76923077	44733	34730	47.76923077
44734	34731	47.7037037	44734	34731	47.7037037
44735	34732	47.64285714	44735	34732	47.64285714
44736	34733	47.55932203	44736	34733	47.55932203
44737	34734	47.37313433	44737	34734	47.37313433
44738	34735	47.29577465	44738	34735	47.29577465
44739	34736	47.04545455	44739	34736	47.04545455
44740	34737	46.83636364	44740	34737	46.83636364
44741	34738	46.82142857	44741	34738	46.82142857
44742	34739	46.68148148	44742	34739	46.68148148

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44685	34682	51.64912281	44685	34682	51.64912281
44686	34683	51.6097561	44686	34683	51.6097561
44687	34684	51.52	44687	34684	51.52
44688	34685	51.41176471	44688	34685	51.41176471
44689	34686	51.41176471	44689	34686	51.41176471
44690	34687	51.32631579	44690	34687	51.32631579
44691	34688	51.25714286	44691	34688	51.25714286
44692	34689	51.00990099	44692	34689	51.00990099
44693	34690	50.97297297	44693	34690	50.97297297
44694	34691	50.87058824	44694	34691	50.87058824
44695	34692	50.84210526	44695	34692	50.84210526
44696	34693	50.80597015	44696	34693	50.80597015
44697	34694	50.80597015	44697	34694	50.80597015
44698	34695	50.75862069	44698	34695	50.75862069
44699	34696	50.6	44699	34696	50.6
44700	34697	50.6	44700	34697	50.6
44701	34698	50.50980392	44701	34698	50.50980392
44702	34699	50.47222222	44702	34699	50.47222222
44703	34700	50.38095238	44703	34700	50.38095238
44704	34701	50.08064516	44704	34701	50.08064516
44705	34702	49.96551724	44705	34702	49.96551724
44706	34703	49.94285714	44706	34703	49.94285714
44707	34704	49.61797753	44707	34704	49.61797753
44708	34705	49.61797753	44708	34705	49.61797753
44709	34706	49.48484848	44709	34706	49.48484848
44710	34707	49.17241379	44710	34707	49.17241379
44711	34708	48.92727273	44711	34708	48.92727273
44712	34709	48.875	44712	34709	48.875
44713	34710	48.83076923	44713	34710	48.83076923

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44656	34653	54.21428571	44656	34653	54.21428571
44657	34654	54.11764706	44657	34654	54.11764706
44658	34655	54.11764706	44658	34655	54.11764706
44659	34656	54.08108108	44659	34656	54.08108108
44660	34657	54	44660	34657	54
44661	34658	53.82	44661	34658	53.82
44662	34659	53.81132075	44662	34659	53.81132075
44663	34660	53.66666667	44663	34660	53.66666667
44664	34661	53.56164384	44664	34661	53.56164384
44665	34662	53.56164384	44665	34662	53.56164384
44666	34663	53.31818182	44666	34663	53.31818182
44667	34664	53.07692308	44667	34664	53.07692308
44668	34665	53.07692308	44668	34665	53.07692308
44669	34666	52.73170732	44669	34666	52.73170732
44670	34667	52.70833333	44670	34667	52.70833333
44671	34668	52.65060241	44671	34668	52.65060241
44672	34669	52.63461538	44672	34669	52.63461538
44673	34670	52.48717949	44673	34670	52.48717949
44674	34671	52.34482759	44674	34671	52.34482759
44675	34672	52.27272727	44675	34672	52.27272727
44676	34673	52.22916667	44676	34673	52.22916667
44677	34674	52.19230769	44677	34674	52.19230769
44678	34675	52.13333333	44678	34675	52.13333333
44679	34676	51.91428571	44679	34676	51.91428571
44680	34677	51.87234043	44680	34677	51.87234043
44681	34678	51.75	44681	34678	51.75
44682	34679	51.75	44682	34679	51.75
44683	34680	51.75	44683	34680	51.75
44684	34681	51.68539326	44684	34681	51.68539326

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44627	34624	56.96923077	44627	34624	56.96923077
44628	34625	56.95238095	44628	34625	56.95238095
44629	34626	56.73333333	44629	34626	56.73333333
44630	34627	56.66666667	44630	34627	56.66666667
44631	34628	56.61538462	44631	34628	56.61538462
44632	34629	56.54166667	44632	34629	56.54166667
44633	34630	56.09756098	44633	34630	56.09756098
44634	34631	56.03636364	44634	34631	56.03636364
44635	34632	55.92156863	44635	34632	55.92156863
44636	34633	55.7962963	44636	34633	55.7962963
44637	34634	55.68421053	44637	34634	55.68421053
44638	34635	55.58333333	44638	34635	55.58333333
44639	34636	55.56435644	44639	34636	55.56435644
44640	34637	55.51724138	44640	34637	55.51724138
44641	34638	55.2	44641	34638	55.2
44642	34639	55.2	44642	34639	55.2
44643	34640	55.04918033	44643	34640	55.04918033
44644	34641	55.03571429	44644	34641	55.03571429
44645	34642	54.90322581	44645	34642	54.90322581
44646	34643	54.87719298	44646	34643	54.87719298
44647	34644	54.77456647	44647	34644	54.77456647
44648	34645	54.44897959	44648	34645	54.44897959
44649	34646	54.30555556	44649	34646	54.30555556
44650	34647	54.30555556	44650	34647	54.30555556
44651	34648	54.29508197	44651	34648	54.29508197
44652	34649	54.28828829	44652	34649	54.28828829
44653	34650	54.25641026	44653	34650	54.25641026
44654	34651	54.23880597	44654	34651	54.23880597
44655	34652	54.21428571	44655	34652	54.21428571

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44772	34769	43.80952381	44888	34885	36.26923077
44773	34770	43.73770492	44889	34886	36.17094017
44774	34771	43.7	44890	34887	35.9375
44775	34772	43.61038961	44891	34888	35.77777778
44776	34773	43.57894737	44892	34889	35.77777778
44777	34774	43.51351351	44893	34890	35.77777778
44778	34775	43.47945205	44894	34891	35.71052632
44779	34776	43.37142857	44895	34892	35.66292135
44780	34777	43.34615385	44896	34893	35.65
44781	34778	43.33884298	44897	34894	35.58490566
44782	34779	43.18367347	44898	34895	35.58490566
44783	34780	43.16923077	44899	34896	35.54545455
44784	34781	43.08860759	44900	34897	35.48571429
44785	34782	43.06382979	44901	34898	35.30232558
44786	34783	42.98360656	44902	34899	35.21875
44787	34784	42.93333333	44903	34900	35.21875
44788	34785	42.93333333	44904	34901	35.02752294
44789	34786	42.71428571	44905	34902	35.01492537
44790	34787	42.61764706	44906	34903	34.96
44791	34788	42.51515152	44907	34904	34.96
44792	34789	42.5	44908	34905	34.92592593
44793	34790	42.46153846	44909	34906	34.7804878
44794	34791	42.38202247	44910	34907	34.7804878
44795	34792	42.32	44911	34908	34.7804878
44796	34793	42.32	44912	34909	34.7804878
44797	34794	42.29032258	44913	34910	34.66666667
44798	34795	42.24489796	44914	34911	34.66666667
44799	34796	42.20618557	44915	34912	34.6185567
44800	34797	42.05714286	44916	34913	34.61386139

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44830	34827	39.97619048	44859	34856	38.58064516
44831	34828	39.86666667	44860	34857	38.33333333
44832	34829	39.72727273	44861	34858	38.33333333
44833	34830	39.66666667	44862	34859	38.24719101
44834	34831	39.63076923	44863	34860	38.21538462
44835	34832	39.58787879	44864	34861	38.17021277
44836	34833	39.53125	44865	34862	38.01652893
44837	34834	39.51282051	44866	34863	37.96825397
44838	34835	39.4751773	44867	34864	37.78571429
44839	34836	39.42857143	44868	34865	37.76842105
44840	34837	39.42857143	44869	34866	37.75722543
44841	34838	39.42857143	44870	34867	37.74358974
44842	34839	39.32258065	44871	34868	37.63636364
44843	34840	39.31623932	44872	34869	37.55102041
44844	34841	39.30909091	44873	34870	37.45714286
44845	34842	39.29166667	44874	34871	37.44871795
44846	34843	39.28648649	44875	34872	37.375
44847	34844	39.2	44876	34873	37.20588235
44848	34845	39.16831683	44877	34874	37.13541667
44849	34846	39.06849315	44878	34875	37.09677419
44850	34847	38.86206897	44879	34876	37.03896104
44851	34848	38.83116883	44880	34877	37.02439024
44852	34849	38.83116883	44881	34878	36.90697674
44853	34850	38.78431373	44882	34879	36.56410256
44854	34851	38.77142857	44883	34880	36.55357143
44855	34852	38.6984127	44884	34881	36.52941176
44856	34853	38.66666667	44885	34882	36.44153844
44857	34854	38.60714286	44886	34883	36.3880597
44858	34855	38.58064516	44887	34884	36.37209302

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44801	34798	42	44801	34798	42
44802	34799	41.952	44802	34799	41.952
44803	34800	41.88617886	44803	34800	41.88617886
44804	34801	41.88059701	44804	34801	41.88059701
44805	34802	41.81818182	44805	34802	41.81818182
44806	34803	41.74074074	44806	34803	41.74074074
44807	34804	41.57692308	44807	34804	41.57692308
44808	34805	41.57692308	44808	34805	41.57692308
44809	34806	41.47540984	44809	34806	41.47540984
44810	34807	41.4	44810	34807	41.4
44811	34808	41.4	44811	34808	41.4
44812	34809	41.34831461	44812	34809	41.34831461
44813	34810	41.33333333	44813	34810	41.33333333
44814	34811	41.19402985	44814	34811	41.19402985
44815	34812	41.05376344	44815	34812	41.05376344
44816	34813	41.04615385	44816	34813	41.04615385
44817	34814	40.98181818	44817	34814	40.98181818
44818	34815	40.79245283	44818	34815	40.79245283
44819	34816	40.66666667	44819	34816	40.66666667
44820	34817	40.65116279	44820	34817	40.65116279
44821	34818	40.58823529	44821	34818	40.58823529
44822	34819	40.50746269	44822	34819	40.50746269
44823	34820	40.46616541	44823	34820	40.46616541
44824	34821	40.37777778	44824	34821	40.37777778
44825	34822	40.36734694	44825	34822	40.36734694
44826	34823	40.33497537	44826	34823	40.33497537
44827	34824	40.25	44827	34824	40.25
44828	34825	40.1025641	44828	34825	40.1025641
44829	34826	40.08571429	44829	34826	40.08571429

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44772	34769	43.80952381	44801	34798	42
44773	34770	43.73770492	44802	34799	41.952
44774	34771	43.7	44803	34800	41.88617886
44775	34772	43.61038961	44804	34801	41.88059701
44776	34773	43.57894737	44805	34802	41.81818182
44777	34774	43.51351351	44806	34803	41.74074074
44778	34775	43.47945205	44807	34804	41.57692308
44779	34776	43.37142857	44808	34805	41.57692308
44780	34777	43.34615385	44809	34806	41.47540984
44781	34778	43.33884298	44810	34807	41.4
44782	34779	43.18367347	44811	34808	41.4
44783	34780	43.16923077	44812	34809	41.34831461
44784	34781	43.08860759	44813	34810	41.33333333
44785	34782	43.06382979	44814	34811	41.19402985
44786	34783	42.98360656	44815	34812	41.05376344
44787	34784	42.93333333	44816	34813	41.04615385
44788	34785	42.93333333	44817	34814	40.98181818
44789	34786	42.71428571	44818	34815	40.79245283
44790	34787	42.61764706	44819	34816	40.66666667
44791	34788	42.51515152	44820	34817	40.65116279
44792	34789	42.5	44821	34818	40.58823529
44793	34790	42.46153846	44822	34819	40.50746269
44794	34791	42.38202247	44823	34820	40.46616541
44795	34792	42.32	44824	34821	40.37777778
44796	34793	42.32	44825	34822	40.36734694
44797	34794	42.29032258	44826	34823	40.33497537
44798	34795	42.24489796	44827	34824	40.25
44799	34796	42.20618557	44828	34825	40.1025641
44800	34797	42.05714286	44829	34826	40.08571429

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45033	35030	26.63157895	45033	35030	26.63157895
45034	35031	26.63157895	45034	35031	26.63157895
45035	35032	26.60240964	45035	35032	26.60240964
45036	35033	26.53846154	45036	35033	26.53846154
45037	35034	26.48484848	45037	35034	26.48484848
45038	35035	26.41584158	45038	35035	26.41584158
45039	35036	26.28571429	45039	35036	26.28571429
45040	35037	26.28571429	45040	35037	26.28571429
45041	35038	26.28571429	45041	35038	26.28571429
45042	35039	26.13636364	45042	35039	26.13636364
45043	35040	25.82456164	45043	35040	25.82456164
45044	35041	25.80487805	45044	35041	25.80487805
45045	35042	25.78021978	45045	35042	25.78021978
45046	35043	25.74626866	45046	35043	25.74626866
45047	35044	25.55555556	45047	35044	25.55555556
45048	35045	25.55555556	45048	35045	25.55555556
45049	35046	25.37931034	45049	35046	25.37931034
45050	35047	25.33333333	45050	35047	25.33333333
45051	35048	25.3258427	45051	35048	25.3258427
45052	35049	25.24390244	45052	35049	25.24390244
45053	35050	25.22580645	45053	35050	25.22580645
45054	35051	25.20547945	45054	35051	25.20547945
45055	35052	25.2	45055	35052	25.2
45056	35053	24.97142857	45056	35053	24.97142857
45057	35054	24.86486486	45057	35054	24.86486486
45058	35055	24.76923077	45058	35055	24.76923077
45059	35056	24.61971831	45059	35056	24.61971831
45060	35057	24.55932203	45060	35057	24.55932203
45061	35058	24.35294118	45061	35058	24.35294118

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45004	35001	28.75	45004	35001	28.75
45005	35002	28.64150943	45005	35002	28.64150943
45006	35003	28.62222222	45006	35003	28.62222222
45007	35004	28.57575758	45007	35004	28.57575758
45008	35005	28.54216867	45008	35005	28.54216867
45009	35006	28.5	45009	35006	28.5
45010	35007	28.5	45010	35007	28.5
45011	35008	28.42696629	45011	35008	28.42696629
45012	35009	28.24561404	45012	35009	28.24561404
45013	35010	28.21333333	45013	35010	28.21333333
45014	35011	28.19354839	45014	35011	28.19354839
45015	35012	28.06779661	45015	35012	28.06779661
45016	35013	28.04878049	45016	35013	28.04878049
45017	35014	28.04878049	45017	35014	28.04878049
45018	35015	27.94936709	45018	35015	27.94936709
45019	35016	27.6	45019	35016	27.6
45020	35017	27.51401869	45020	35017	27.51401869
45021	35018	27.48780488	45021	35018	27.48780488
45022	35019	27.40425532	45022	35019	27.40425532
45023	35020	27.39325843	45023	35020	27.39325843
45024	35021	27.33333333	45024	35021	27.33333333
45025	35022	27.3125	45025	35022	27.3125
45026	35023	27.23684211	45026	35023	27.23684211
45027	35024	27.2244898	45027	35024	27.2244898
45028	35025	27.20430108	45028	35025	27.20430108
45029	35026	27.14754098	45029	35026	27.14754098
45030	35027	27.08888889	45030	35027	27.08888889
45031	35028	27.03092784	45031	35028	27.03092784
45032	35029	26.78481013	45032	35029	26.78481013

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44975	34972	30.66666667	44975	34972	30.66666667
44976	34973	30.66666667	44976	34973	30.66666667
44977	34974	30.66666667	44977	34974	30.66666667
44978	34975	30.66666667	44978	34975	30.66666667
44979	34976	30.53448276	44979	34976	30.53448276
44980	34977	30.43076923	44980	34977	30.43076923
44981	34978	30.24657534	44981	34978	30.24657534
44982	34979	30.1875	44982	34979	30.1875
44983	34980	30.13793103	44983	34980	30.13793103
44984	34981	30.13793103	44984	34981	30.13793103
44985	34982	30.11904762	44985	34982	30.11904762
44986	34983	30.10909091	44986	34983	30.10909091
44987	34984	30.0483871	44987	34984	30.0483871
44988	34985	29.8028169	44988	34985	29.8028169
44989	34986	29.79545455	44989	34986	29.79545455
44990	34987	29.67741935	44990	34987	29.67741935
44991	34988	29.65789474	44991	34988	29.65789474
44992	34989	29.65789474	44992	34989	29.65789474
44993	34990	29.62121212	44993	34990	29.62121212
44994	34991	29.54966887	44994	34991	29.54966887
44995	34992	29.5308642	44995	34992	29.5308642
44996	34993	29.50943396	44996	34993	29.50943396
44997	34994	29.39849624	44997	34994	29.39849624
44998	34995	29.23364486	44998	34995	29.23364486
44999	34996	29.22352941	44999	34996	29.22352941
45000	34997	29.03278689	45000	34997	29.03278689
45001	34998	29.00900901	45001	34998	29.00900901
45002	34999	28.88372093	45002	34999	28.88372093
45003	35000	28.8627451	45003	35000	28.8627451

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44946	34943	32.63513514	44946	34943	32.63513514
44947	34944	32.60194175	44947	34944	32.60194175
44948	34945	32.5	44948	34945	32.5
44949	34946	32.47058824	44949	34946	32.47058824
44950	34947	32.37037037	44950	34947	32.37037037
44951	34948	32.33142857	44951	34948	32.33142857
44952	34949	32.32432432	44952	34949	32.32432432
44953	34950	32.28070175	44953	34950	32.28070175
44954	34951	32.26865672	44954	34951	32.26865672
44955	34952	32.2	44955	34952	32.2
44956	34953	31.88636364	44956	34953	31.88636364
44957	34954	31.88118812	44957	34954	31.88118812
44958	34955	31.68888889	44958	34955	31.68888889
44959	34956	31.58208955	44959	34956	31.58208955
44960	34957	31.43333333	44960	34957	31.43333333
44961	34958	31.3968254	44961	34958	31.3968254
44962	34959	31.13846154	44962	34959	31.13846154
44963	34960	31.06493506	44963	34960	31.06493506
44964	34961	30.98947368	44964	34961	30.98947368
44965	34962	30.96732026	44965	34962	30.96732026
44966	34963	30.96153846	44966	34963	30.96153846
44967	34964	30.94545455	44967	34964	30.94545455
44968	34965	30.88571429	44968	34965	30.88571429
44969	34966	30.87671233	44969	34966	30.87671233
44970	34967	30.86842105	44970	34967	30.86842105
44971	34968	30.86075949	44971	34968	30.86075949
44972	34969	30.81553398	44972	34969	30.81553398
44973	34970	30.80357143	44973	34970	30.80357143
44974	34971	30.66666667	44974	34971	30.66666667

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
44917	34914	34.5	44917	34914	34.5
44918	34915	34.32307692	44918	34915	34.32307692
44919	34916	34.25531915	44919	34916	34.25531915
44920	34917	34.23255814	44920	34917	34.23255814
44921	34918	34.2195122	44921	34918	34.2195122
44922	34919	34.04	44922	34919	34.04
44923	34920	33.925	44923	34920	33.925
44924	34921	33.925	44924	34921	33.925
44925	34922	33.78761062	44925	34922	33.78761062
44926	34923	33.73333333	44926	34923	33.73333333
44927	34924	33.67010309	44927	34924	33.67010309
44928	34925	33.65853659	44928	34925	33.65853659
44929	34926	33.65853659	44929	34926	33.65853659
44930	34927	33.56756757	44930	34927	33.56756757
44931	34928	33.56756757	44931	34928	33.56756757
44932	34929	33.55294118	44932	34929	33.55294118
44933	34930	33.488	44933	34930	33.488
44934	34931	33.45454545	44934	34931	33.45454545
44935	34932	33.45454545	44935	34932	33.45454545
44936	34933	33.39726027	44936	34933	33.39726027
44937	34934	33.38709677	44937	34934	33.38709677
44938	34935	33.36263736	44938	34935	33.36263736
44939	34936	33.22222222	44939	34936	33.22222222
44940	34937	33.22222222	44940	34937	33.22222222
44941	34938	33.1627907	44941	34938	33.1627907
44942	34939	33.09756098	44942	34939	33.09756098
44943	34940	32.85714286	44943	34940	32.85714286
44944	34941	32.85714286	44944	34941	32.85714286
44945	34942	32.85714286	44945	34942	32.85714286

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45178	35175	16.01785714	45179	35176	16
45180	35177	15.65957447	45181	35178	15.64948454
45182	35179	15.53246753	45183	35180	15.53246753
45184	35181	15.525	45185	35182	15.51162791
45186	35183	15.453125	45187	35184	15.33333333
45188	35185	15.33333333	45189	35186	15.33333333
45190	35187	15.33333333	45191	35188	15.16483516
45192	35189	15.088	45193	35190	15.05454545
45194	35191	15.01388889	45195	35192	14.91034483
45196	35193	14.86153846	45197	35194	14.8045977
45198	35195	14.58536585	45199	35196	14.58536585
45200	35197	14.52631579	45201	35198	14.52631579
45202	35199	14.5045045	45203	35200	14.45714286
45204	35201	14.375	45205	35202	14.352
45206	35203	14.34117647			

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45149	35146	18.28915663	45150	35147	18.26950355
45151	35148	18.20833333	45152	35149	18.18604651
45153	35150	18.07142857	45154	35151	18.03921569
45155	35152	17.64383562	45156	35153	17.63333333
45157	35154	17.46296296	45158	35155	17.44827586
45159	35156	17.44827586	45160	35157	17.42424242
45161	35158	17.37234043	45162	35159	17.33333333
45163	35160	17.25	45164	35161	17.01369863
45165	35162	16.94736842	45166	35163	16.9245283
45167	35164	16.86666667	45168	35165	16.78378378
45169	35166	16.69354839	45170	35167	16.56
45171	35168	16.42857143	45172	35169	16.29166667
45173	35170	16.26262626	45174	35171	16.18518519
45175	35172	16.1	45176	35173	16.06349206
45177	35174	16.04651163			

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45120	35117	20.39175258	45121	35118	20.39175258
45122	35119	20.31168831	45123	35120	20.19512195
45124	35121	20.18367347	45125	35122	20.16438356
45126	35123	20.125	45127	35124	20.10084034
45128	35125	19.89189189	45129	35126	19.71428571
45130	35127	19.71428571	45131	35128	19.66896552
45132	35129	19.51515152	45133	35130	19.51515152
45134	35131	19.49668874	45135	35132	19.44329897
45136	35133	19.33333333	45137	35134	19.32
45138	35135	19.13868613	45139	35136	19.05714286
45140	35137	19.01333333	45141	35138	19
45142	35139	18.975	45143	35140	18.84337349
45144	35141	18.81818182	45145	35142	18.59574468
45146	35143	18.5483871	45147	35144	18.4
45148	35145	18.4			

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45091	35088	22.83916084	45092	35089	22.81889764
45093	35090	22.73563218	45094	35091	22.67605634
45095	35092	22.61016949	45096	35093	22.42016807
45097	35094	22.4	45098	35095	22.37837838
45099	35096	22.3030303	45100	35097	22.25806452
45101	35098	22.16363636	45102	35099	22.02816901
45103	35100	22.0212766	45104	35101	21.78947368
45105	35102	21.74545455	45106	35103	21.64705882
45107	35104	21.32727273	45108	35105	21.26415094
45109	35106	20.90909091	45110	35107	20.90909091
45111	35108	20.84375	45112	35109	20.77419355
45113	35110	20.73239437	45114	35111	20.71755725
45115	35112	20.71755725	45116	35113	20.65306122
45117	35114	20.56060606	45118	35115	20.55319149
45119	35116	20.4			

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45062	35059	24.35294118	45063	35060	24.35294118
45064	35061	24.35294118	45065	35062	24.32692308
45066	35063	24.31428571	45067	35064	24.31428571
45068	35065	24.23655914	45069	35066	24.21052632
45070	35067	24.21052632	45071	35068	24.16161616
45072	35069	24.15	45073	35070	24.12195122
45074	35071	24.0952381	45075	35072	24
45076	35073	23.95833333	45077	35074	23.88461538
45078	35075	23.85185185	45079	35076	23.82142857
45080	35077	23.74193548	45081	35078	23.74193548
45082	35079	23.39655172	45083	35080	23.26436782
45084	35081	23.26436782	45085	35082	23.26436782
45086	35083	23.20720721	45087	35084	23.20353982
45088	35085	23.1965812	45089	35086	23
45090	35087	23			



DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45207	35204	14.31111111	45323	35320	5.11111111
45208	35205	14.23809524	45324	35321	5.04109589
45209	35206	14.13253012	45325	35322	5
45210	35207	14.11881188	45326	35323	4.928571429
45211	35208	14	45327	35324	4.912621359
45212	35209	13.85897436	45328	35325	4.791666667
45213	35210	13.66336634	45329	35326	4.75862069
45214	35211	13.5	45330	35327	4.75862069
45215	35212	13.4015748	45331	35328	4.75
45216	35213	13.34	45332	35329	4.73294118
45217	35214	13.25423729	45333	35330	4.717948718
45218	35215	13.14285714	45334	35331	4.677966102
45219	35216	13.04477612	45335	35332	4.666666667
45220	35217	13.01010101	45336	35333	4.658227848
45221	35218	12.85294118	45337	35334	4.624338624
45222	35219	12.77777778	45338	35335	4.487804878
45223	35220	12.65	45339	35336	4.380952381
45224	35221	12.26666667	45340	35337	4.380952381
45225	35222	12.21875	45341	35338	4.339622642
45226	35223	12.03076923	45342	35339	4.181818182
45227	35224	12.01801802	45343	35340	4.181818182
45228	35225	11.94230769	45344	35341	3.956989247
45229	35226	11.9389313	45345	35342	3.942857143
45230	35227	11.92592593	45346	35343	3.898305085
45231	35228	11.9020979	45347	35344	3.833333333
45232	35229	11.87096774	45348	35345	3.833333333
45233	35230	11.69491525	45349	35346	3.833333333
45234	35231	11.61616162	45350	35347	3.833333333
45235	35232	11.5	45351	35348	3.793814433

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45294	35291	7.419354839	45300	35297	6.71707317
45295	35292	7.263157895	45301	35298	6.571428571
45296	35293	7.263157895	45302	35299	6.478873239
45297	35294	7.040816327	45303	35300	6.405063291
45298	35295	6.85106383	45304	35301	6.388888889
45299	35296	6.731707317	45305	35302	6.325
45300	35297	6.571428571	45306	35303	6.301369863
45301	35298	6.571428571	45307	35304	6.272727273
45302	35299	6.478873239	45308	35305	6.272727273
45303	35300	6.405063291	45309	35306	6.2
45304	35301	6.388888889	45310	35307	6.075471698
45305	35302	6.325	45311	35308	6.069444444
45306	35303	6.301369863	45312	35309	6.023809524
45307	35304	6.272727273	45313	35310	5.75
45308	35305	6.272727273	45314	35311	5.75
45309	35306	6.2	45315	35312	5.75
45310	35307	6.075471698	45316	35313	5.609756098
45311	35308	6.069444444	45317	35314	5.411764706
45312	35309	6.023809524	45318	35315	5.411764706
45313	35310	5.75	45319	35316	5.348837209
45314	35311	5.75	45320	35317	5.111111111
45315	35312	5.75	45321	35318	5.111111111
45316	35313	5.609756098	45322	35319	5.111111111
45317	35314	5.411764706			
45318	35315	5.411764706			
45319	35316	5.348837209			
45320	35317	5.111111111			
45321	35318	5.111111111			
45322	35319	5.111111111			

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45265	35262	9.397849462	45270	35267	9.117117117
45266	35263	9.2	45271	35268	8.877192982
45267	35264	9.2	45272	35269	8.761904762
45268	35265	9.2	45273	35270	8.715789474
45269	35266	9.139072848	45274	35271	8.576271186
45270	35267	9.117117117	45275	35272	8.363636364
45271	35268	8.877192982	45276	35273	8.363636364
45272	35269	8.761904762	45277	35274	8.363636364
45273	35270	8.715789474	45278	35275	8.30075188
45274	35271	8.576271186	45279	35276	8.1117647059
45275	35272	8.363636364	45280	35277	8.05
45276	35273	8.363636364	45281	35278	8
45277	35274	8.363636364	45282	35279	8
45278	35275	8.30075188	45283	35280	8
45279	35276	8.1117647059	45284	35281	7.931034483
45280	35277	8.05	45285	35282	7.90625
45281	35278	8	45286	35283	7.853658537
45282	35279	8	45287	35284	7.790322581
45283	35280	8	45288	35285	7.666666667
45284	35281	7.931034483	45289	35286	7.666666667
45285	35282	7.90625	45290	35287	7.666666667
45286	35283	7.853658537	45291	35288	7.666666667
45287	35284	7.790322581	45292	35289	7.666666667
45288	35285	7.666666667	45293	35290	7.419354839
45289	35286	7.666666667			
45290	35287	7.666666667			
45291	35288	7.666666667			
45292	35289	7.666666667			
45293	35290	7.419354839			

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45236	35233	11.3034188	45240	35237	10.98507463
45237	35234	11.23255814	45241	35238	10.97727273
45238	35235	11.02083333	45242	35239	10.79591837
45239	35236	11	45243	35240	10.51428571
45240	35237	10.98507463	45244	35241	10.47524752
45241	35238	10.97727273	45245	35242	10.45454545
45242	35239	10.79591837	45246	35243	10.38709677
45243	35240	10.51428571	45247	35244	10.35
45244	35241	10.47524752	45248	35245	10.22222222
45245	35242	10.45454545	45249	35246	10.15172414
45246	35243	10.38709677	45250	35247	10.12
45247	35244	10.35	45251	35248	10.03636364
45248	35245	10.22222222	45252	35249	10.01612903
45249	35246	10.15172414	45253	35250	9.966666667
45250	35247	10.12	45254	35251	9.966666667
45251	35248	10.03636364	45255	35252	9.931818182
45252	35249	10.01612903	45256	35253	9.796296296
45253	35250	9.966666667	45257	35254	9.77952759
45254	35251	9.966666667	45258	35255	9.757575758
45255	35252	9.931818182	45259	35256	9.706422018
45256	35253	9.796296296	45260	35257	9.654320988
45257	35254	9.77952759	45261	35258	9.583333333
45258	35255	9.757575758	45262	35259	9.558441558
45259	35256	9.706422018	45263	35260	9.492063492
45260	35257	9.654320988	45264	35261	9.470588235
45261	35258	9.583333333			
45262	35259	9.558441558			
45263	35260	9.492063492			
45264	35261	9.470588235			

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment	DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45207	35204	14.31111111	45217	35214	13.25423729
45208	35205	14.23809524	45218	35215	13.14285714
45209	35206	14.13253012	45219	35216	13.04477612
45210	35207	14.11881188	45220	35217	13.01010101
45211	35208	14	45221	35218	12.85294118
45212	35209	13.85897436	45222	35219	12.77777778
45213	35210	13.66336634	45223	35220	12.65
45214	35211	13.5	45224	35221	12.26666667
45215	35212	13.4015748	45225	35222	12.21875
45216	35213	13.34	45226	35223	12.03076923
45217	35214	13.25423729	45227	35224	12.01801802
45218	35215	13.14285714	45228	35225	11.94230769
45219	35216	13.04477612	45229	35226	11.9389313
45220	35217	13.01010101	45230	35227	11.92592593
45221	35218	12.85294118	45231	35228	11.9020979
45222	35219	12.77777778	45232	35229	11.87096774
45223	35220	12.65	45233	35230	11.69491525
45224	35221	12.26666667	45234	35231	11.61616162
45225	35222	12.21875	45235	35232	11.5
45226	35223	12.03076923			
45227	35224	12.01801802			
45228	35225	11.94230769			
45229	35226	11.9389313			
45230	35227	11.92592593			
45231	35228	11.9020979			
45232	35229	11.87096774			
45233	35230	11.69491525			
45234	35231	11.61616162			
45235	35232	11.5			

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45452	35449	1.210526316
45453	35450	1.210526316
45454	35451	1.194805195
45455	35452	1.179487179
45456	35453	1.179487179
45457	35454	1.164556962
45458	35455	1.15
45459	35456	1.15
45460	35457	1.15
45461	35458	1.135802469
45462	35459	1.12195122
45463	35460	1.108433735
45464	35461	1.095238095
45465	35462	1.095238095
45466	35463	1.095238095
45467	35464	1.078125
45468	35465	1.069767442
45469	35466	1.069767442
45470	35467	1.069767442
45471	35468	1.069767442
45472	35469	1.057471264
45473	35470	1.045454545
45474	35471	1.022222222

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45427	35424	1.550561798
45428	35425	1.550561798
45429	35426	1.533333333
45430	35427	1.533333333
45431	35428	1.533333333
45432	35429	1.46031746
45433	35430	1.452631579
45434	35431	1.4375
45435	35432	1.4375
45436	35433	1.4375
45437	35434	1.4375
45438	35435	1.415384615
45439	35436	1.38
45440	35437	1.352941176
45441	35438	1.333333333
45442	35439	1.314285714
45443	35440	1.314285714
45444	35441	1.295774648
45445	35442	1.277777778
45446	35443	1.277777778
45447	35444	1.243243243
45448	35445	1.210526316
45449	35446	1.210526316
45450	35447	1.210526316
45451	35448	1.210526316

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45402	35399	2.059701493
45403	35400	2.059701493
45404	35401	2
45405	35402	2
45406	35403	2
45407	35404	1.971428571
45408	35405	1.890410959
45409	35406	1.87755102
45410	35407	1.87755102
45411	35408	1.858585859
45412	35409	1.84
45413	35410	1.803921569
45414	35411	1.769230769
45415	35412	1.769230769
45416	35413	1.769230769
45417	35414	1.703703704
45418	35415	1.703703704
45419	35416	1.703703704
45420	35417	1.703703704
45421	35418	1.703703704
45422	35419	1.642857143
45423	35420	1.642857143
45424	35421	1.586206897
45425	35422	1.559322034
45426	35423	1.550561798

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45377	35374	2.76
45378	35375	2.705882353
45379	35376	2.639344262
45380	35377	2.628571429
45381	35378	2.555555556
45382	35379	2.555555556
45383	35380	2.555555556
45384	35381	2.555555556
45385	35382	2.509090909
45386	35383	2.509090909
45387	35384	2.486486486
45388	35385	2.464285714
45389	35386	2.442477876
45390	35387	2.421052632
45391	35388	2.38961039
45392	35389	2.262295082
45393	35390	2.243902439
45394	35391	2.225806452
45395	35392	2.19047619
45396	35393	2.15625
45397	35394	2.123076923
45398	35395	2.090909091
45399	35396	2.090909091
45400	35397	2.090909091
45401	35398	2.07518797

DNA SEQ ID NO	AA SEQ ID NO	Adipose 1 Enrichment
45352	35349	3.744186047
45353	35350	3.72972973
45354	35351	3.72972973
45355	35352	3.68
45356	35353	3.631578947
45357	35354	3.607843137
45358	35355	3.59375
45359	35356	3.577777778
45360	35357	3.538461538
45361	35358	3.538461538
45362	35359	3.484848485
45363	35360	3.45
45364	35361	3.421487603
45365	35362	3.345454545
45366	35363	3.285714286
45367	35364	3.228070175
45368	35365	3.136363636
45369	35366	3.066666667
45370	35367	3.066666667
45371	35368	3.066666667
45372	35369	3.016393443
45373	35370	2.967741935
45374	35371	2.875
45375	35372	2.816326531
45376	35373	2.787878788

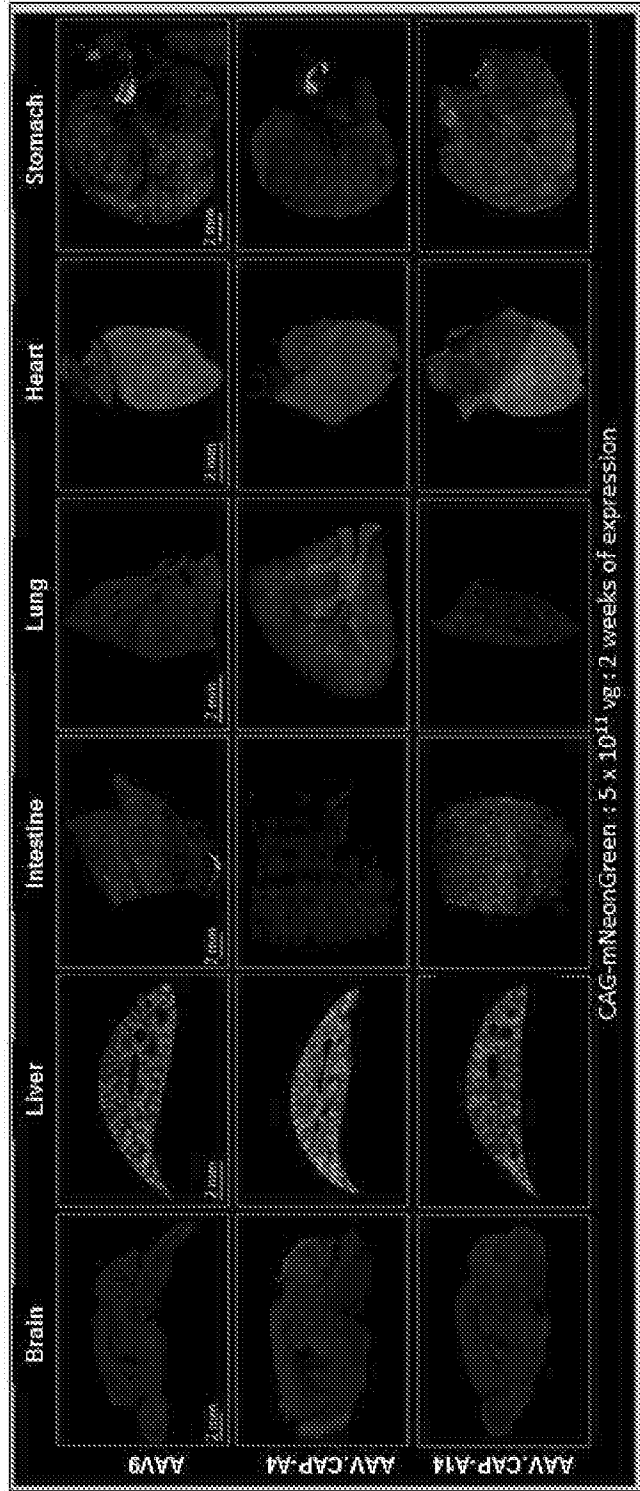
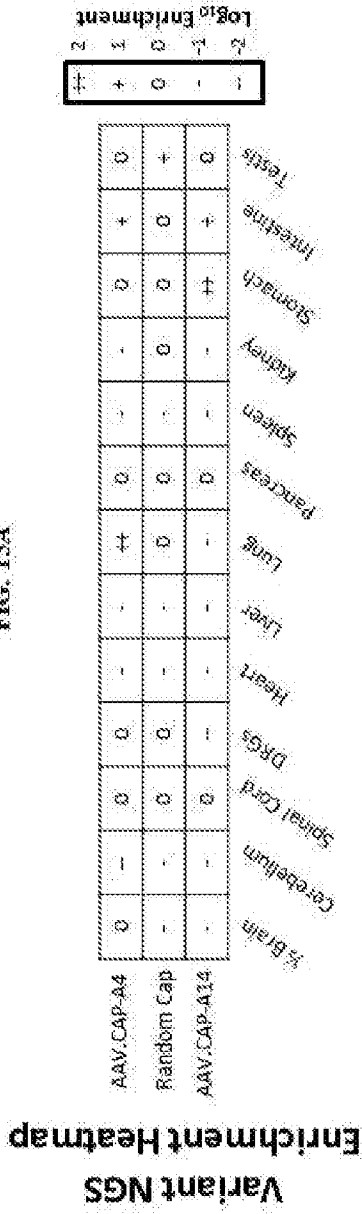


FIG. 16A

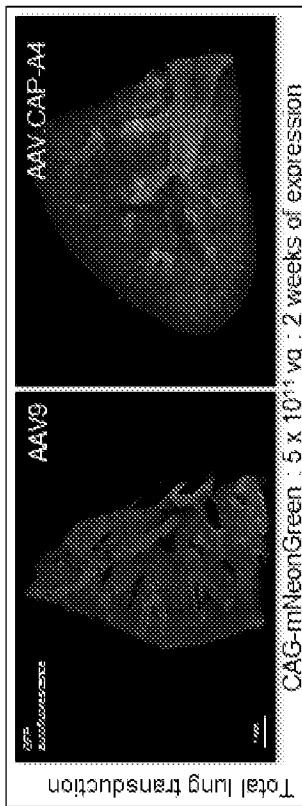


FIG. 16B

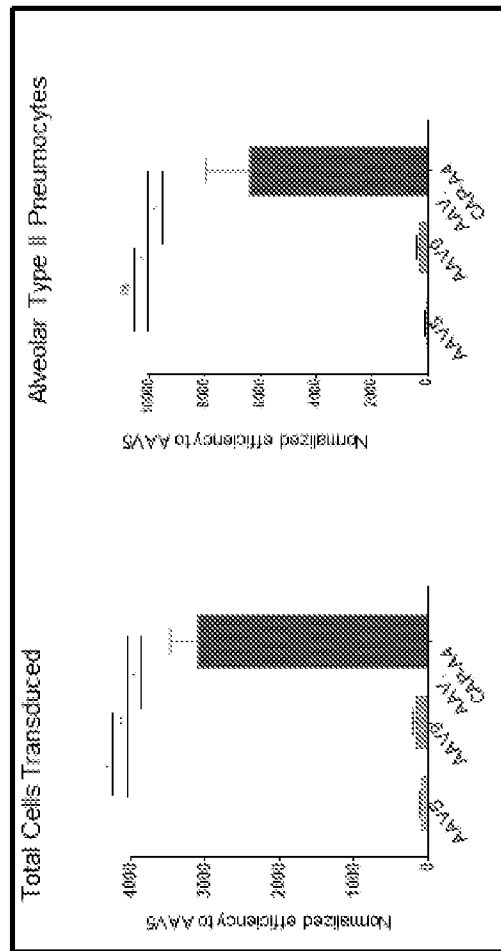


FIG. 16C

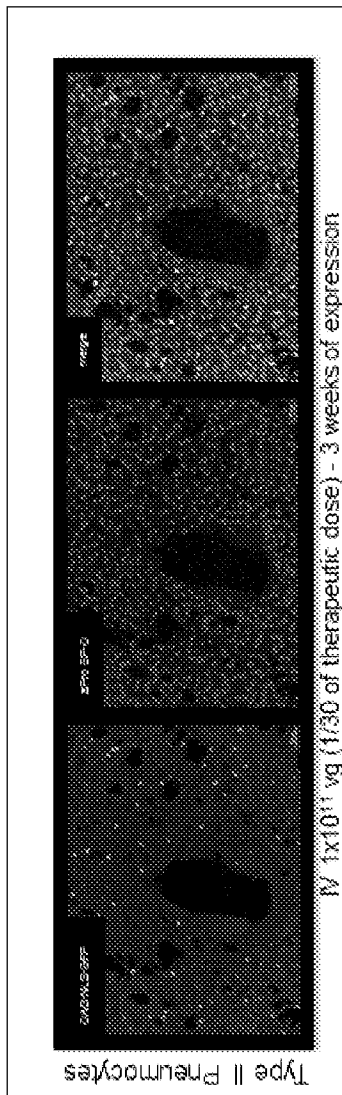


FIG. 16D

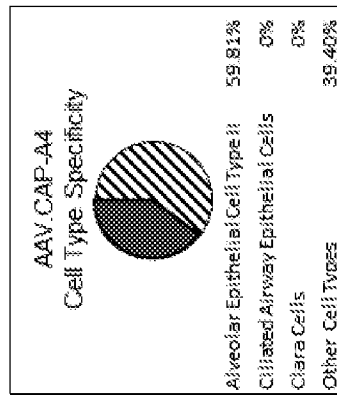


FIG. 17A

**Presence in viral library**

AA	#	A	C	D	E	F	G	H	I	K	L	M	N	P	Q	R	S	T	V	W	Y
452	--	+	0	+	+	-	+	+	-	0	0	0	0	+	-	0	+	+	0	-	-
453	--	+	-	0	0	-	++	+	0	+	0	0	+	+	+	0	+	+	0	--	-
454	--	+	-	+	+	-	+	+	0	+	-	0	+	+	+	0	+	+	0	--	-
455	--	+	-	+	+	-	++	+	-	++	-	-	+	+	+	0	+	+	0	-	-
456	--	+	-	+	0	-	+	+	-	++	-	-	0	+	+	0	+	+	0	--	-
457	--	+	-	+	0	-	+	+	0	+	0	+	+	+	0	0	+	+	0	--	-
458	--	+	0	0	+	--	++	0	-	+	0	+	0	0	+	+	+	+	+	-	-

**Prevalence**

++	+	0	-	--
----	---	---	---	----

high

low

FIG. 17B

SEQ ID NO	Variant	450-451	452-458.7AA.Sub	459-560
1	AAV9	TI	NGSGQNQ	QI
5	PHP.eB	TI	NGSGQNQ	QI
2933	AAV.CAP-B1	TI	LQISSPG	QI
79	AAV.CAP-B2	TI	QQGKQSV	QI
45475	AAV.CAP-B4	TI	SINTKTN	QI
442	AAV.CAP-B7	TI	SNGTKQI	QI
88	AAV.CAP-B8	TI	GSGKTAA	QI
2466	AAV.CAP-B9	TI	MGDKPTR	QI
3943	AAV.CAP-B10	TI	DGAATKN	QI
2672	AAV.CAP-B11	TI	QPSGGMT	QI
5192	AAV.CAP-B14	TI	ERGANTK	QI
2743	AAV.CAP-B16	TI	TTGGHSS	QI
3064	AAV.CAP-B17	TI	GFTKTSE	QI
11958	AAV.CAP-B18	TI	GIGTSVL	QI
780	AAV.CAP-B19	TI	NQSGTKG	QI
2764	AAV.CAP-B22	TI	DGQSSKS	QI
45476	AAV.CAP-B23	TI	KGPGQMIG	QI
2741	AAV.CAP-B25	TI	GIPSKAG	QI

FIG. 17C

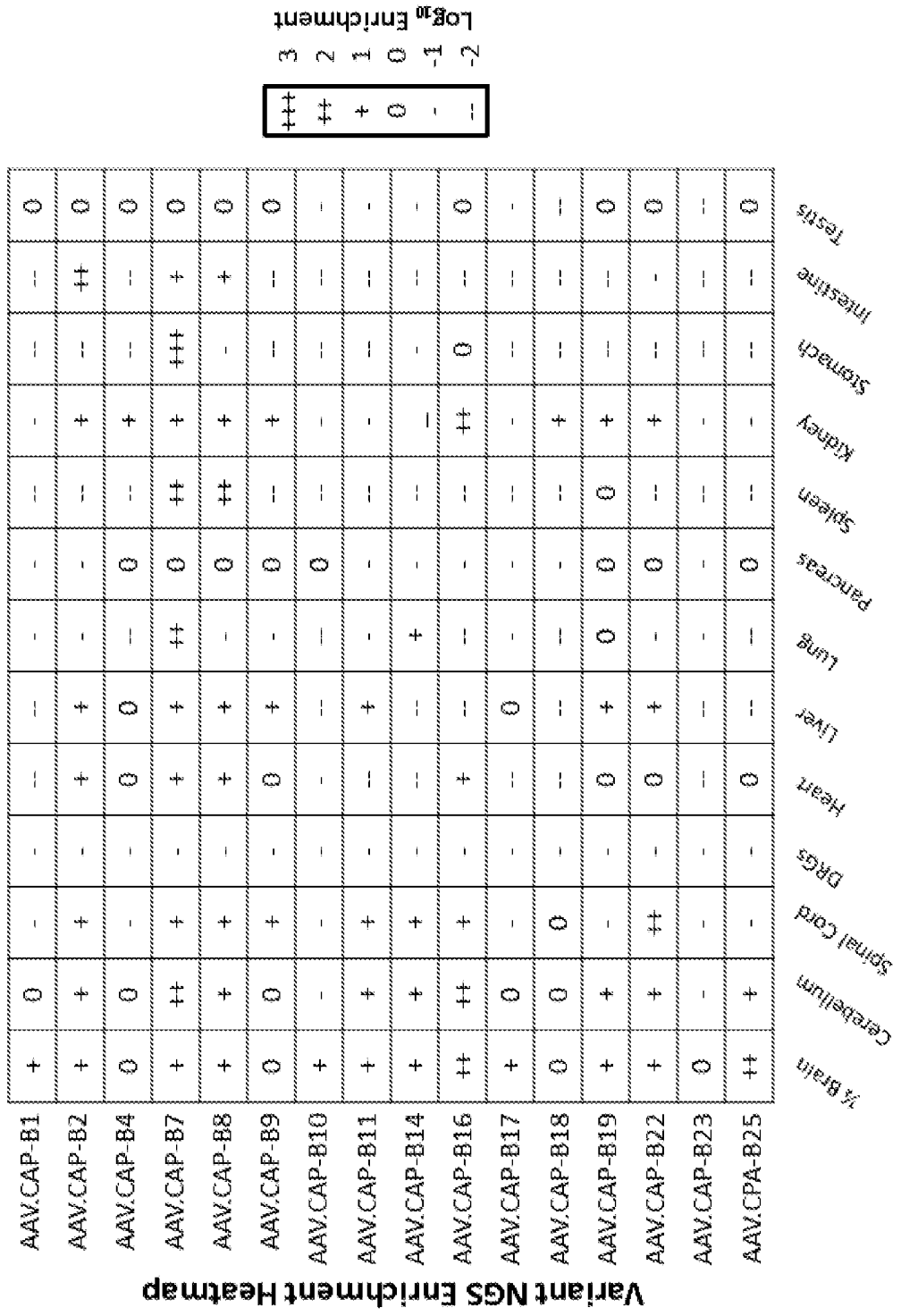




FIG. 17D

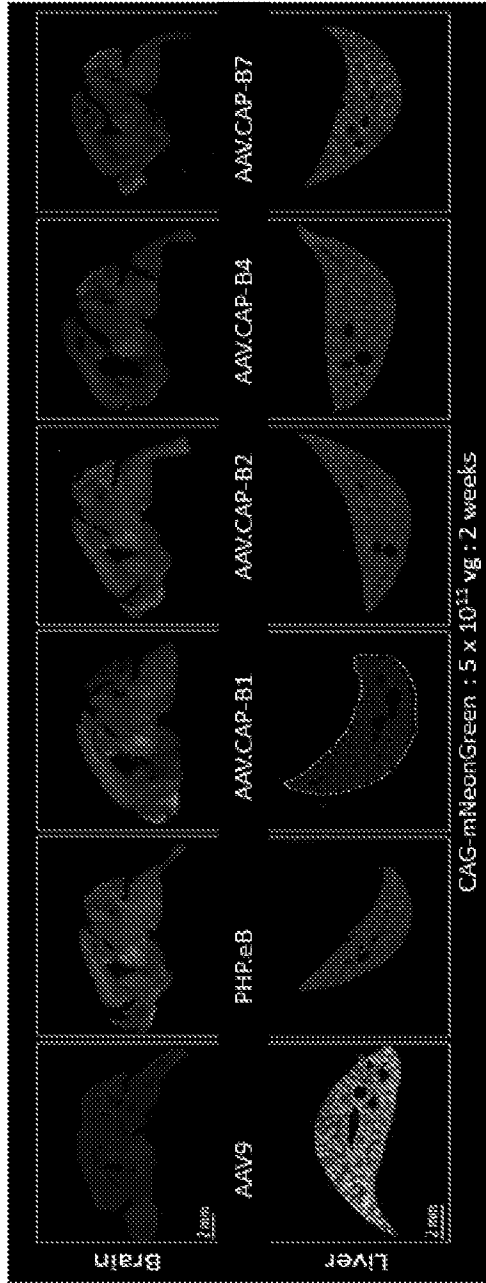


FIG. 17E



FIG. 18A

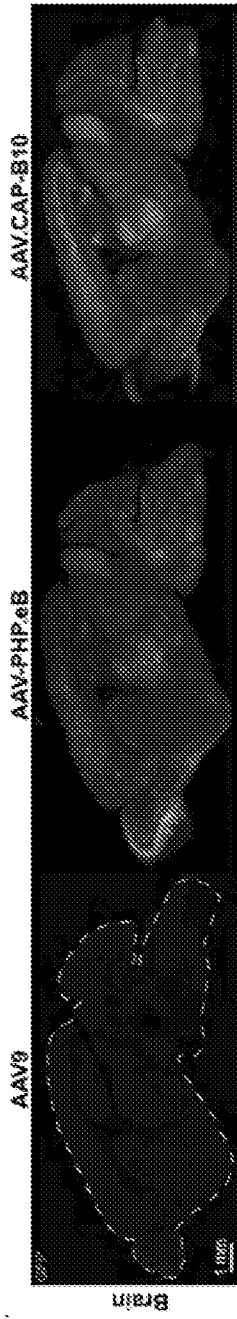


FIG. 18B



FIG. 18C

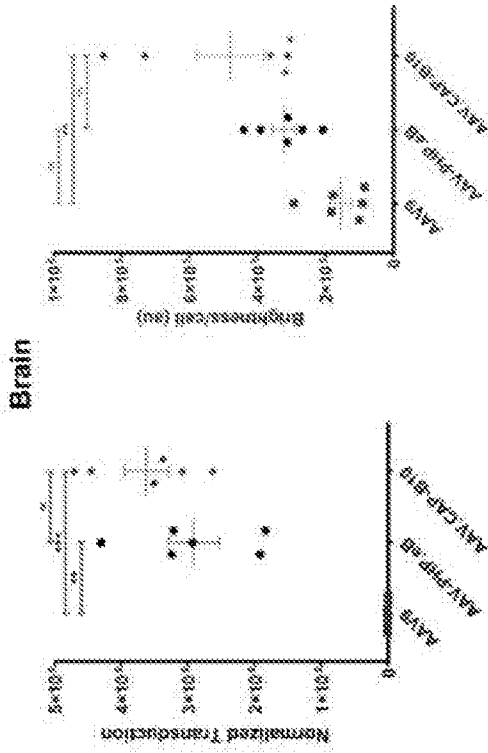
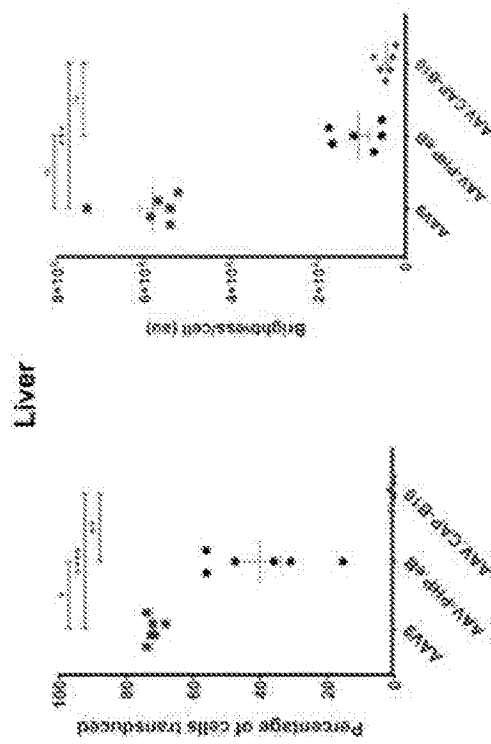


FIG. 18D



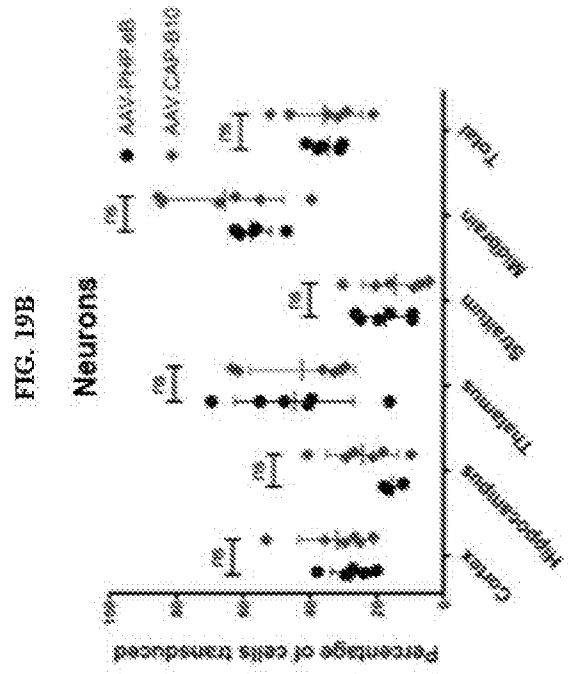
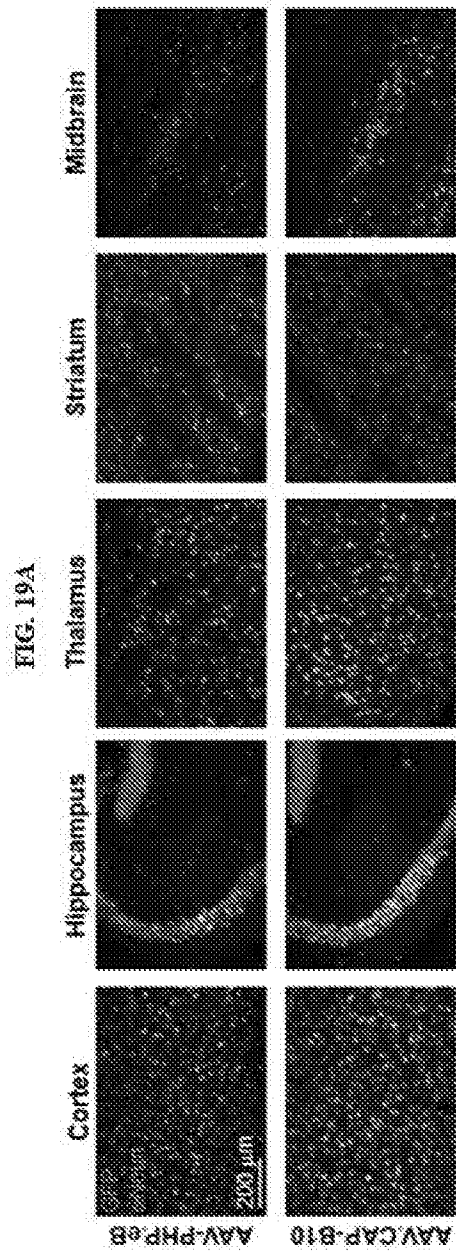


FIG. 19C

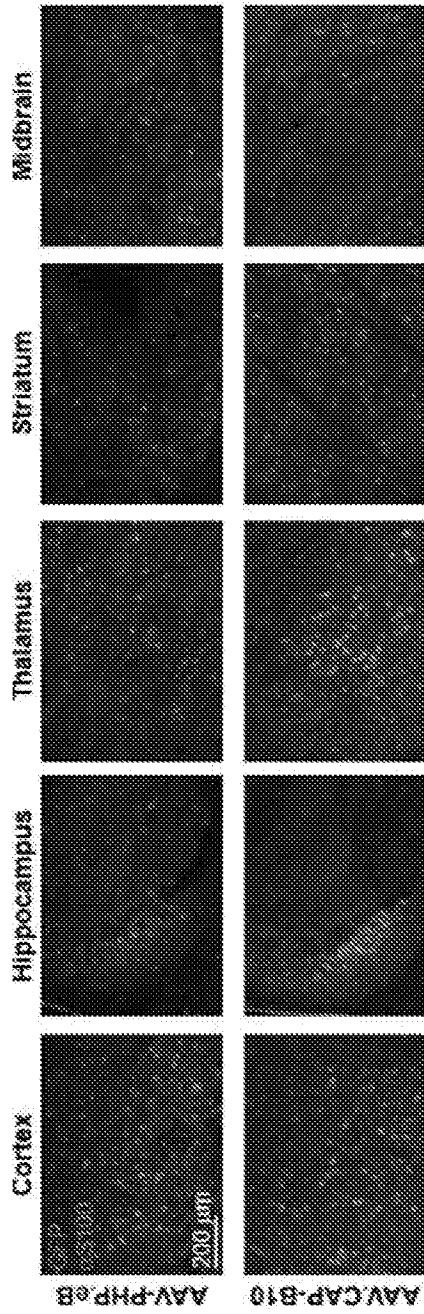
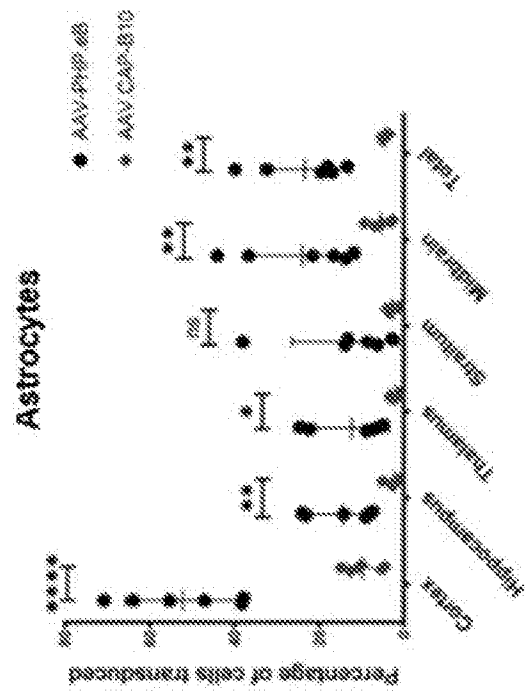


FIG. 19D



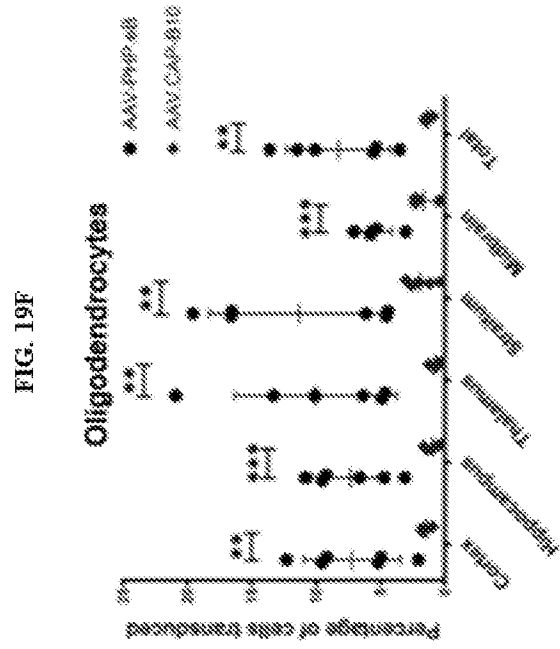
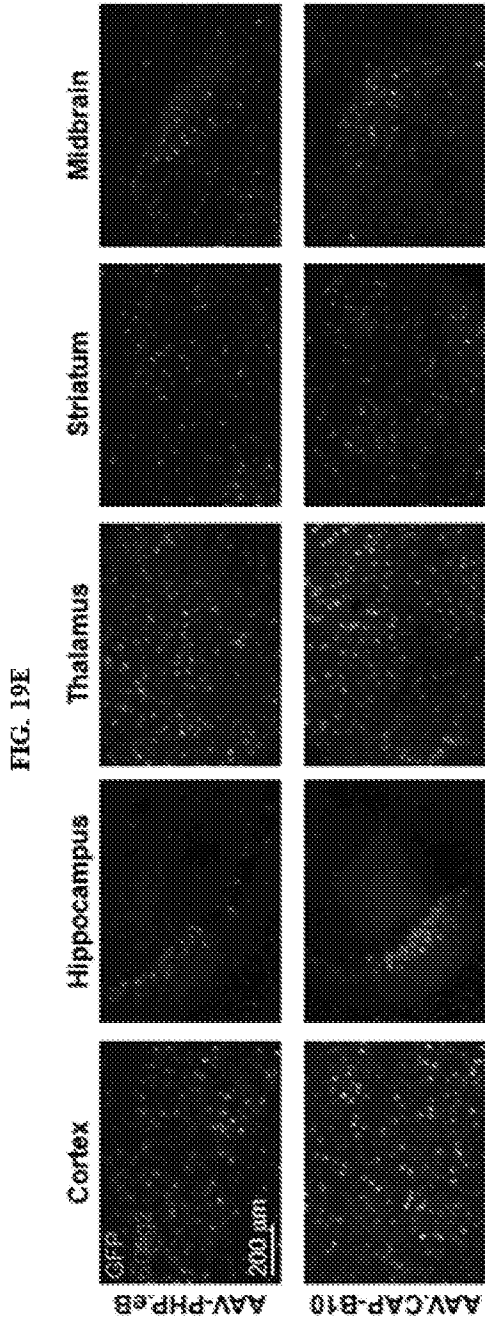


FIG. 20A

		Enriched in brain																			
AA		A	C	D	E	F	G	H	I	K	L	M	N	P	Q	R	S	T	V	W	Y
452	0	-	+++	+++	-	+	0	0	-	-	-	0	++	-	++	-	0	0	0	0	-
453	0	0	0	0	-	+	0	0	0	0	-	0	++	-	++	-	0	0	0	0	-
454	0	-	+	+	-	+	0	0	0	0	-	-	+	-	+	-	0	0	0	0	-
455	0	-	+	+	-	0	0	0	-	+++	-	-	+	-	++	-	0	0	0	0	-
456	0	-	+	+	-	0	0	0	-	+++	-	-	+	-	+	-	0	0	0	0	-
457	+	-	+	0	-	0	0	0	0	0	-	0	+++	+	+	-	0	0	0	0	-
458	0	-	+	++	-	+	+	+	++	++	-	0	+	-	+	-	-	+	0	0	-

+++	3
++	2
+	1
0	0
-	-1
--	-2

**z-score**



FIG. 20B

**De-targeted from liver**

AA	A	C	D	E	F	G	H	I	K	L	M	N	P	Q	R	S	T	V	W	Y
452	0	0	+++	+	-	0	++	-	0	-	+	+	-	+	-	-	+	0	--	-
453	0	--	+	0	-	-	+	+	0	-	+++	0	0	+++	-	-	+	0	--	-
454	0	--	+	0	--	-	+	+	+	-	0	+	-	+	-	-	+	-	--	-
455	0	--	+	+	--	-	+	+	+	-	0	+	0	+	-	-	+	-	--	--
456	0	--	+	0	--	-	+	-	+	-	--	+	+	+	-	-	0	-	--	--
457	0	--	0	-	-	-	++	+	0	-	0	+	+	+	-	-	+	+	--	-
458	0	0	+	-	-	-	++	+	+	-	+	+	-	++	-	-	+	+	--	-

**Z-score**

+++	3
++	2
+	1
0	0
-	-1
--	-2

FIG. 20C

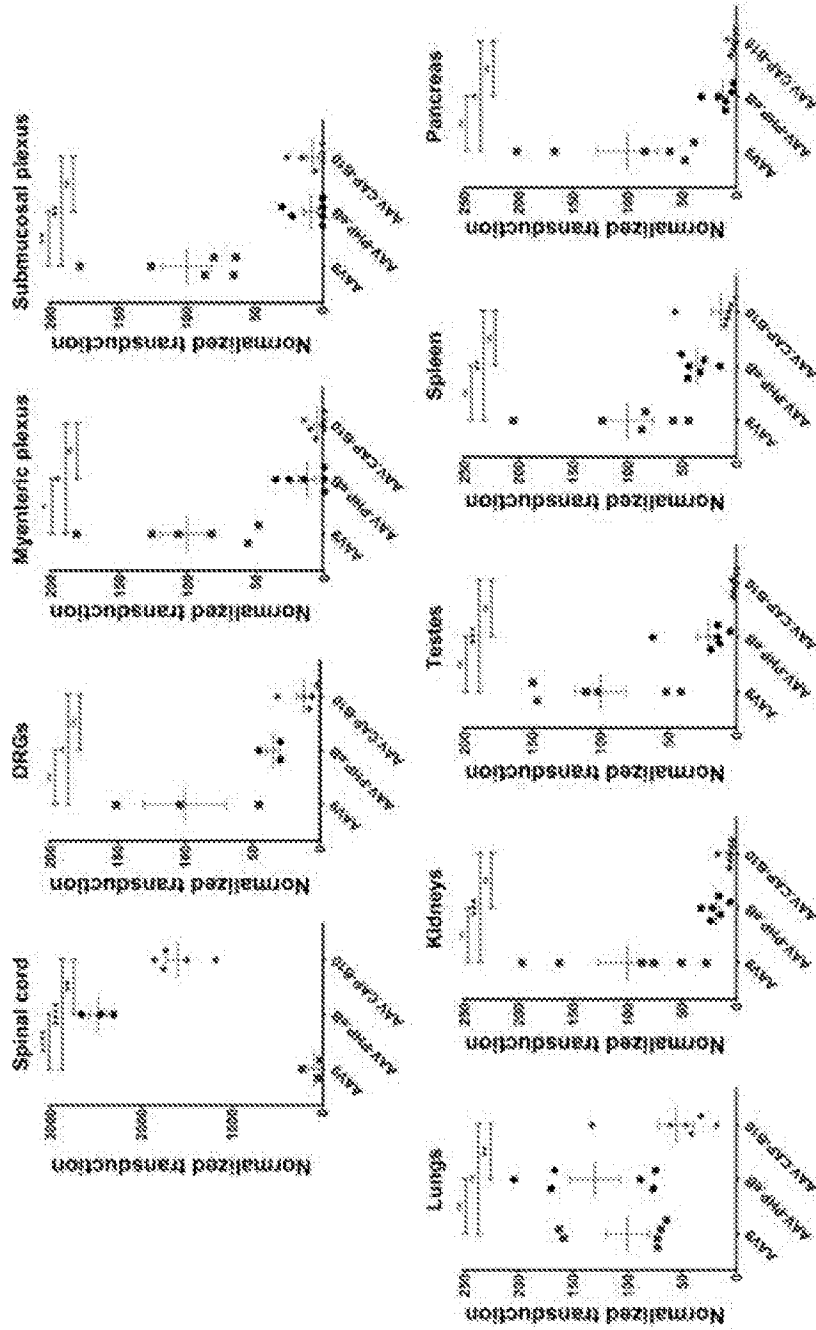
**Enriched in brain and de-targeted from liver**

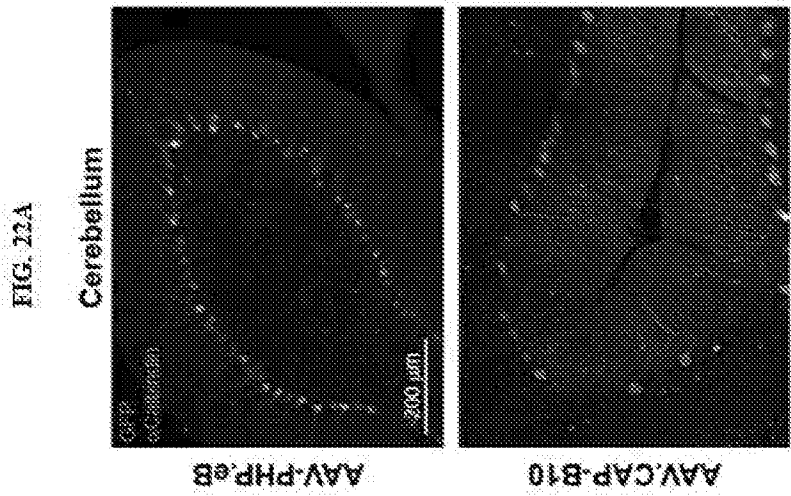
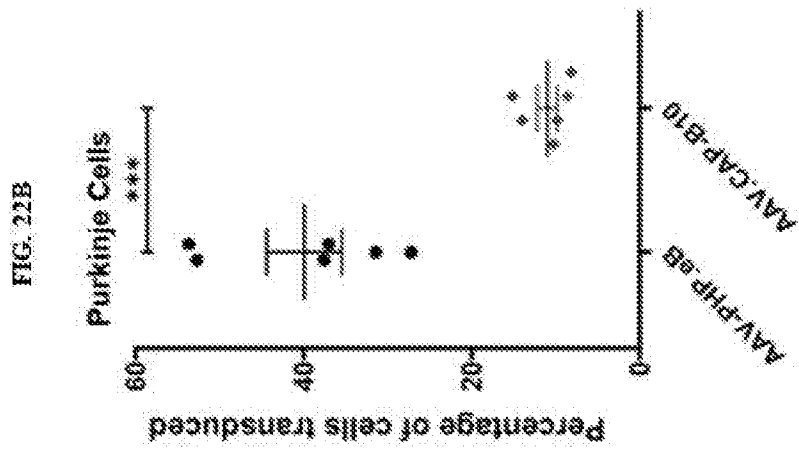
AA	A	C	D	E	F	G	H	I	K	L	M	N	P	Q	R	S	T	V	W	Y
452	0	-	++	++	0	0	+	+	+	-	+	+	-	+	-	-	0	-	-	-
453	0	-	++	+	-	0	+	+	+	-	+	+	-	+	-	-	0	-	--	-
454	0	-	++	++	-	0	+	+	+	-	0	+	-	+	-	-	0	-	--	-
455	0	-	++	++	-	0	0	-	+	-	-	+	-	+	-	-	0	-	--	--
456	0	-	+	+	-	0	+	-	+	-	-	+	-	+	-	-	0	-	--	-
457	0	-	+	+	-	0	+	+	+	-	+	++	0	0	-	-	0	-	-	-
458	0	-	+	+	0	0	+	+	++	-	+	+	--	+	-	-	0	0	-	-

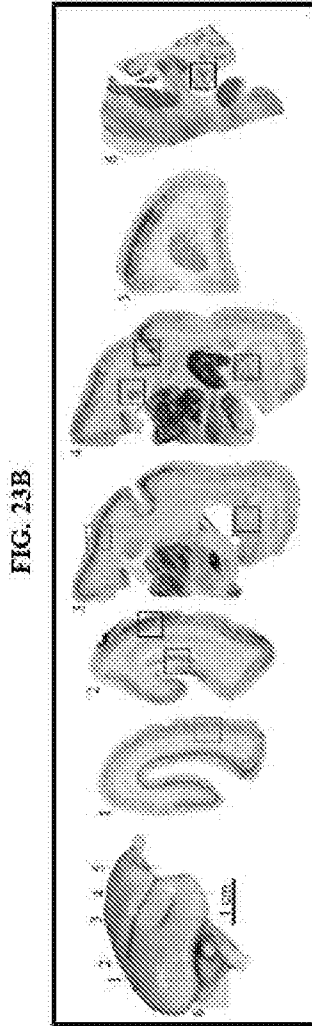
**Z-score**

+++	3
++	2
+	1
0	0
-	-1
--	-2

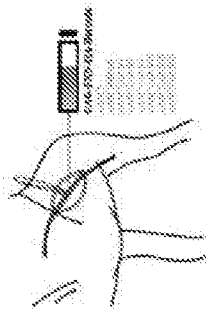
FIG. 21



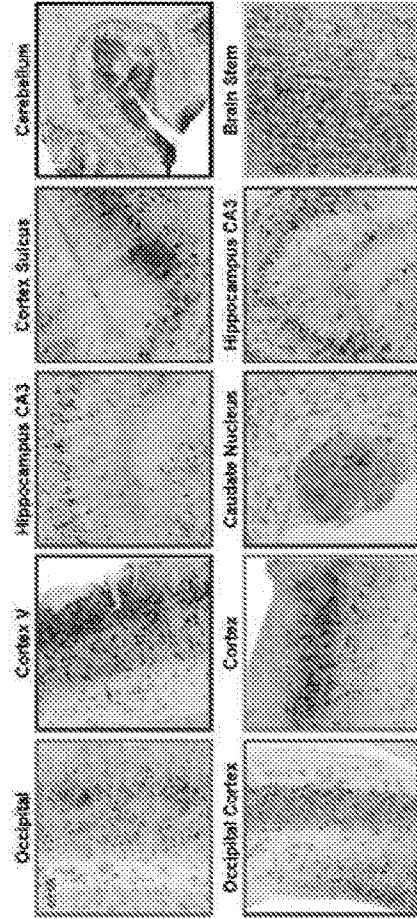




**FIG. 23A**



**FIG. 23D**



**FIG. 23C**

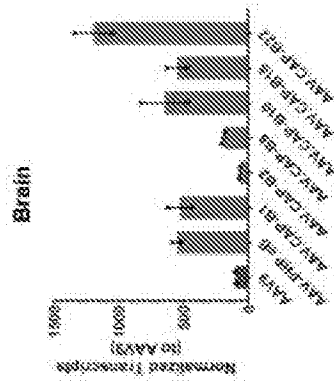


FIG. 23E

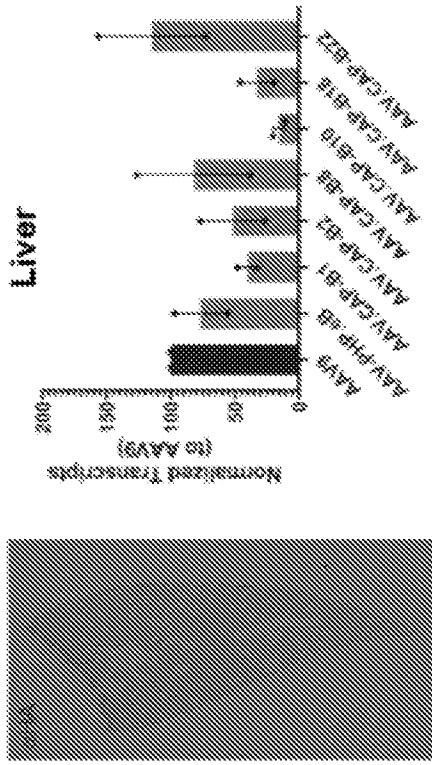
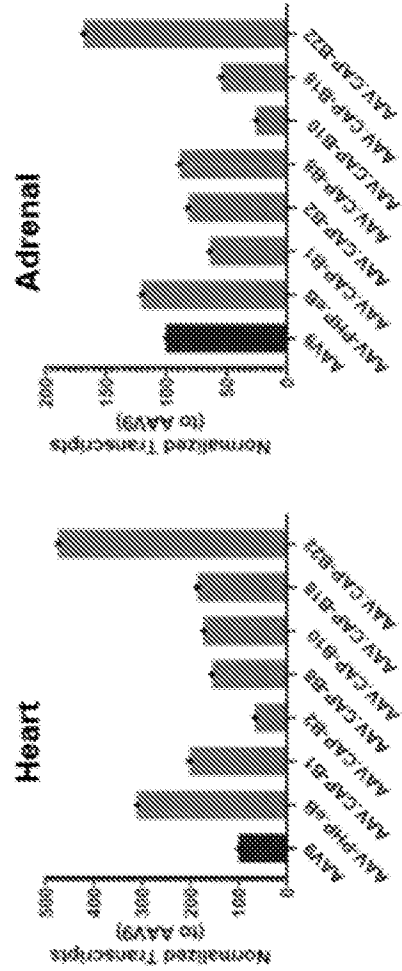


FIG. 23F



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 19/52969

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC - C12N 15/86; C07K 7/06; C07K 14/015 (2019.01)  
 CPC - C12N 15/8645; C12N 2750/14145; C12N 2750/14143; C12N 2750/14122; C12N 2750/14171;  
 C07K 14/015; C07K 7/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
 See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 See Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ---- Y	US 2018/0230186 A1 (CALIFORNIA INSTITUTE OF TECHNOLOGY) 16 July 2018 (16.07.2018). Especially para [0047], [0067], [0094], [0095], [0109], [0141], sheet 26 fig 24H, I SEQ ID NO: 2	33 ----- 1-3, 34
Y	US 2009/0215879 A1 (DIPRIMIO et al.) 27 August 2009 (27.08.2009). Especially para [0004].	1-3
Y	US 2017/0166926 A1 (CALIFORNIA INSTITUTE OF TECHNOLOGY) 15 June 2017 (15.06.2017). Especially para [0047], [0050]	34

Further documents are listed in the continuation of Box C.  See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"D" document cited by the applicant in the international application	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"E" earlier application or patent but published on or after the international filing date	"&" document member of the same patent family
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
 21 November 2019

Date of mailing of the international search report  
**23 DEC 2019**

Name and mailing address of the ISA/US  
 Mail Stop PCT, Attn: ISA/US, Commissioner for Patents  
 P.O. Box 1450, Alexandria, Virginia 22313-1450  
 Facsimile No. 571-273-8300

Authorized officer  
 Lee Young  
 Telephone No. PCT Helpdesk: 571-272-4300

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 19/52969

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.: 4-32  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.