

(19) 日本国特許庁(JP)

(12) 特許公報(B2)

(11) 特許番号

特許第4416493号
(P4416493)

(45) 発行日 平成22年2月17日(2010.2.17)

(24) 登録日 平成21年12月4日(2009.12.4)

(51) Int.Cl.

F 1

C 12 N 15/09 (2006.01)
C 12 Q 1/68 (2006.01)C 12 N 15/00 Z N A F
C 12 Q 1/68 A

請求項の数 5 (全 152 頁)

(21) 出願番号	特願2003-430554 (P2003-430554)
(22) 出願日	平成15年12月25日 (2003.12.25)
(65) 公開番号	特開2005-185172 (P2005-185172A)
(43) 公開日	平成17年7月14日 (2005.7.14)
審査請求日	平成18年12月25日 (2006.12.25)

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(54) 【発明の名称】 HLA-Bアレルを同定するためのプローブセット及び特定方法

(57) 【特許請求の範囲】

【請求項 1】

明細書中の配列番号1～270で表されるそれぞれの塩基配列またはその一部を有するプローブを全部含むプローブ群または配列番号271～517で表されるそれぞれの塩基配列またはその一部を有するプローブを全部含むプローブ群からなり、

前記2つのプローブ群の各プローブは、大文字で表記された塩基が欠落することがない範囲で明細書中の配列番号518～1011で表される塩基配列からなるHLA-B型のアリルリスト中から選択された15～30塩基の連続した塩基からなり、検体中に含まれるHLA-B型のアリルの同定に利用し得るプローブセット。

【請求項 2】

明細書中の配列番号1～270で表される塩基配列を有するプローブを全部含むプローブ群または配列番号271～517で表される塩基配列を有するプローブを全部含むプローブ群であって、前記プローブ群がHLA-B遺伝子に由来する30塩基以下の塩基からなる、検体中に含まれるHLA-B型のアリルの同定に利用し得るプローブセット。

【請求項 3】

検体からの試料中に含まれるHLA-B型のアリルをプローブセットを用いて同定する方法であって、

該プローブセットが請求項1または2に記載のプローブセットであって、明細書中の表3又は表4に記載されるアレル-プローブ対応リストに基づいて、検体中のアレルを同定することを特徴とする、HLA-B型のアリルを同定する方法。

【請求項 4】

前記検体中の HLA - B 領域をプライマー PCR 法により増幅する工程と、

前記増幅後の検体を、前記プローブセットが固定されたプローブアレイとハイブリダイゼーション反応させる工程と、

各アレルに対応するプローブの組み合わせを示す、明細書中の表 3 又は表 4 に記載されるアレル - プローブ対応リストに基づいて、検体中のアレルを同定する工程と、
を有する請求項 3 に記載の方法。

【請求項 5】

請求項 1 または 2 に記載のプローブセットが基板表面上に固定されている、検体中に含まれる HLA - B 型のアリルの同定に利用し得るプローブアレイ。

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【発明の詳細な説明】**【技術分野】****【0001】**

本発明は、人の HLA - B アレルを同定するためのプローブセット及び特定方法に関する。

【背景技術】**【0002】**

人白血球の HLA - B 型の各アレルについては、従来から血清学的レベルのタイピングが行われてきた。この場合、特別なサンプル処理を必要とせず、抗原抗体反応で容易にタイピングが可能である反面、同定できる内容はアミノ酸配列の違いを区別できるレベルを 4 桁以上の数字での命名法における 3 、 4 桁目とした場合、最初の 2 桁の数字が血清学的レベルのタイピングで同定可能なレベルである（日本組織適合性学会 HLA 標準化委員会「アリル表記法と結果報告の原則について 2000 」 <http://jshi.umin.ac.jp/standarization/hyoki.html> 参照）。

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【0003】

その他のゲノム抽出を伴うタイプの市販キットの多くは、各アレルを個別に同定可能な精度のものではなく、複数のアリルをセットとして区別しているのが現状である。また最も詳細な多型解析を可能とする SBT (Sequencing Based Typing) 法に基づくキットにしても、たいていのサンプルはヘテロ接合体であるため、ambiguity の問題を一度に解決できず、再検査を必要とすることが多い。こうした問題を伴うアレルは、IHWG 学会の <http://www.ihwg.org/protocols/sbt/ambiguities2.pdf> にまとめて紹介されている。

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【非特許文献 1】（日本組織適合性学会 HLA 標準化委員会「アリル表記法と結果報告の原則について 2000 」（ <http://jshi.umin.ac.jp/standarization/hyoki.html> のサイト））

【非特許文献 2】 <http://www.ihwg.org/protocols/sbt/ambiguities2.pdf>

【発明の開示】**【発明が解決しようとする課題】****【0004】**

一方、近年は高度医療の発達に伴い、臓器移植などの際に詳細なタイピングが要求されるほか、糖尿病や癌、その他多因子病においても、薬剤投与との関連が示唆され、医療行為に対するエビデンスが求められている。こうした背景から、各アリルを個別に同定可能な試験方法が望まれており、本発明はかかる要望に対して HLA - B の各アリルを個別に同定するために有用であるプローブセット及びそれを用いた HLA - B のアリルの同定方法を提供することを目的とする。

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【課題を解決するための手段】**【0005】**

本発明にかかる HLA - B 型のアリルを同定するためのプローブセットは、明細書中の配列番号 1 ~ 270 で表されるそれぞれの塩基配列またはその一部を有するプローブを全部含むプローブ群または配列番号 271 ~ 517 で表されるそれぞれの塩基配列またはその一部を有するプローブを全部含むプローブ群からなり、前記 2 つのプローブ群の各プロ

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ープは、大文字で表記された塩基が欠落するがない範囲で明細書中の配列番号 5 1 8 ~ 1 0 1 1 で表される塩基配列からなる H L A - B 型のアリルリスト中から選択された 1 5 ~ 3 0 塩基の連続した塩基からなり、検体中に含まれる H L A - B 型のアリルの同定に利用し得るプローブセットである。

【 0 0 0 6 】

また、本発明にかかる H L A - B アリルの同定方法は、検体からの試料中に含まれる H L A - B 型のアリルをプローブセットを用いて同定する方法であって、該プローブセットが請求項 1 または 2 に記載のプローブセットであって、明細書中の表 3 又は表 4 に記載されるアレル - プローブ対応リストに基づいて、検体中のアレルを同定することを特徴とする、H L A - D Q 型のアリルを同定する方法である。

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【 発明の効果 】

【 0 0 0 7 】

本発明にかかるプローブセット及びそれを用いた H L A - B アレルの同定によって、臓器移植、癌、糖尿病、その他多因子病において必要とされる体質判定、テーラーメイド医療に貢献することができる。

【 発明を実施するための最良の形態 】

【 0 0 0 8 】

本発明のプローブセットを構成する各プローブは後述するアレルリストの各アレルにおける大文字表記の塩基を含む部分配列をそれぞれが有するものである。大文字の塩基を含む 1 5 ~ 3 0 個の連続した塩基からなる部分を選択し得られた部分塩基配列からなるプローブを用いてプローブセットを構成する。具体例としては、後述の表 1 - 1 ~ 1 - 9 のプローブリスト 1 または表 2 - 1 ~ 2 - 8 のプローブリスト 2 に挙げられた各プローブ群からプローブセットを構成することができる。例えば、プローブリスト 1 における 0 番のプローブは、B*070201 の最初の大文字 (G) が含まれている部分「aggtaattctacacctccG」の 1 9 塩基配列からなるものであり、プローブリスト 2 におけるプローブ 0 番もまた同じアリルの最初の大文字の G を含む部分「cacctccGtgtcccg」の 1 6 塩基配列からなるものである。

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【 0 0 0 9 】

なお、後述のアリルリストにおける「 B * 」で示されている番号は、各アリルに付された固有の番号であり、日本組織適合性学会 H L A 標準化委員会による「アリル表記法」に従ったものである。

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【 0 0 1 0 】

本発明にかかるアリルの同定方法におけるプローブによるアリルの検出には、例えば、2つの方法が可能である。一つはハイブリダイゼーション法によって検出する場合と、もう一つは P C R 法によってハイブリダイゼーションをすることなしに直接検出する場合である。いずれの場合も、大文字の塩基を含む 1 5 ~ 3 0 個の連続した長さのオリゴヌクレオチドに、大文字で表した塩基を含むようにプローブが設計される。

【 0 0 1 1 】

また、本発明において提供されるプローブアレイは、各アリルを個別に同定するための変異塩基の組をプローブとして選択する位置で提示しているともいえる。この変異塩基を検出するための方法にもハイブリダイゼーション法による検出方法と、P C R 法によってハイブリダイゼーションをすることなしに直接検出する方法が好適に利用できる。これらの場合にも、大文字の塩基を含む 1 5 ~ 3 0 個の連続した長さのオリゴヌクレオチドに、大文字で表した塩基を含むようにプローブが設計される。

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【 0 0 1 2 】

ハイブリダイゼーションによって変異を検出する場合は、プローブの中心付近にミスマッチが（即ち大文字で表した変異塩基が）来るようプローブを設計したほうが、フルマッチとミスマッチの配列間で T m に差がつきやすく、ハイブリダイゼーションの反応温度を調節することによって、両者を分離しやすい。

【 0 0 1 3 】

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一方PCR法によって直接変異を検出する場合は、酵素がアニールした二本鎖を認識して伸長しないよう、むしろ3'末端側にミスマッチを配置することが行われる。またAllele Specific Primerのように、3'末端から2つ目にミスマッチを配置し、3個目に入人为的にミスマッチを追加したり(東洋紡(株))、3'末端側にミスマッチを配置するがライゲーションによって、プローブの環状化を行う方法(アマシャムバイオサイエンス(株))、TaqMan-MGB法(ABI社)LNAを使った3'末端ミスマッチ(プロリゴ・ジャパン(株))など、いくつかのバリエーションが可能である。

【実施例】

【0014】

以下実施例により本発明を更に説明する。

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【0015】

(実施例1)

アマシャムバイオサイエンスのGFX Genomic Blood DNA Purification Kitを使って、人の血液1mlからDNAの抽出を行った。以下にプロトコールを示す。

【0016】

血液1ml

+ RBC Lysis Solution(溶血)

+ 血液サンプル(穏やかに混和)

室温、5分間

12,000~16,000×g、20秒間遠心

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上清を20~50μl残して捨てる

沈殿物を再懸濁

+ Extraction Solution(激しくボルテックス)

室温、5分間(DNAの抽出)

Collection TubeにGFX Columnをセット

溶出バッファーを70℃に加温

+サンプル

5,000×g、1分間遠心(DNAの結合)

+ Extraction Solution(洗浄)

5,000×g、1分間遠心

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+ Wash Solution(洗浄)

12,000×g、3分間遠心

GFX Columnを遠心チューブにセット

+純水で溶出

室温、1分間

5,000~8,000×g、1分間遠心

230μlに濃縮調整.....溶液(1)

【0017】

次にキヤゲン社のQuantiTect SYBR Green PCR Kit、ABI社のGeneAmp5700を使って、定量PCRを行った。反応組成およびプロトコールを以下に示す。

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1) 反応組成/well(96wellマイクロプレート)

QuantiTect SYBR Green 2×プレミクス: 10μl

溶液(1): 1μl

プローブリスト1の各プローブ(10pmol/μl): 1μl

ミックスプライマ(10pmol/μl)注): 3μl

超純水: 5μl

(合計: 20μl)

注)以下の配列を持つ各10pmol/μlの水溶液各1μl

CTGAGCTCTCCCTCCTACACA

TCCTTCCCCTTCTCCAGGT

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AGGTCTCGTCAGGGCCA

2) PCR プログラム

94 : 180 sec の後に (94 : 10sec + 66 : 10sec + 72 : 20sec) の 30 cycles を行った。5700 ソフトウェア画面上の Amp Plot および Dissociation カーブおよびアレル - プローブ対応リスト 1 (後述) を参照して、B*520101 であると同定された。

【0018】

(実施例 2)

人の血液 1ml からの DNA 抽出は、実施例 1 と同様に行つた。次にタカラバイオ(株)の Ex Taq、ABI 社の PCR 装置 9700 を使って、人 HLA - B の PCR を行つた。反応組成およびプロトコールを以下に示す。

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1) 反応組成/tube

Ex Taq 2 × プレミクス : 20 μl

溶液 (1) : 3 μl

Cy-3 dUTP (1 mM) : 2 μl

ミックスプライマ (1.0 pmol/μl) 注) : 2 μl

超純水 : 13 μl

(合計 : 40 μl)

注) 以下の配列を持つ各 1.0 pmol/μl の水溶液各 1 μl

CTGAGCTCTCCTCCTACACA

GCTCCCCTCCATGAGGTATTTC

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2) PCR プログラム

94 : 180sec の後に、(94 : 10sec + 66 : 10sec + 72 : 20sec) の 30cycles を行った。反応終了後、精製用カラム (QIAGEN QIAquick PCR Purification Kit) を用いて未反応の dNTPs 等の Clean Up を行つた。

【0019】

一方上述の検体に対して、アレルを同定するための DNA マイクロアレイを作製した。作製の方法は、特開平 11-187900 号公報の実施例に従つた。固相化のための官能基は SH 基とし、ガラス基板上にシランカップリング処理を行い、2 倍性試薬の EMC S (N-(6-Maleimidocaproyloxy)succinimide) 介して SH 基と架橋した。各ドットのプローブは、プローブリスト 2 の各プローブを用いた。

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【0020】

次に先ほどの検体と作製した DNA マイクロアレイを用いて、ハイブリダイゼーションを行つた。DNA マイクロアレイは予め BSA (牛血清アルブミン) 1 wt% 加 PBS で 2 時間ブロッキングした。検体はその塩濃度が PBS と等しくなるように、また 0.1 wt% SDS (ドデシル硫酸ナトリウム)、2.5% Formamide となるように調整し、その 50 μl を、先ほどのブロッキング済み DNA マイクロアレイと 60 度 2 時間反応させ、未反応物を 2 × SSC 液 (NaCl 3.00 mM、Sodium Citrate (trisodium citrate dihydrate, C6H5Na3 · 2H2O) 3.0 mM、p.H. 7.0) で 3 回、続いて 0.1 × SSC 液で 2 回洗浄した後風乾させ、Axon 社製、GenePix 4000B を用いて蛍光測定を行つた。アレル - プローブ対応リスト 2 (後述) を参照して B*520101 であることが同定された。

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【0021】

アレルリスト

B*070201 atgctggcatggcgccccgaaccgtccctcgtgccttcggccgtggccctgaccgagacccgtggcc
cgctcccactccatgaggatttctacacctccGtgtccggccggccggagccccgttcatctcagtggct
acgtggacgacaccaggatcgatgggttcgacagcgacgcccgcgagttccgagagaggagccgcggccgtggatagag
caggaggggccggagtttgggaccggaaacacacagatctacaaggcccaggcacagactgaccgagagaggccgtggaa
cctgcgcggctactacaaccagagcgaggccgggtctcacaccctccagagCatgtacggctgcgacgtggggccggacg
ggcgccctccgcgggCatgaccagTacgcctacgacggcaaggatatactccctgaacgaggacccgtgcgcctccgg
accggccggacacggccggctcagatcacccagcgcaagtggaggccggccgtgaggccggacgcccgtggatagag
ggaggccggatggatGgctccgcagataccctggagaacgggaaggacaagctgGagcgcgcgtgaccccccggaa

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cacacgtgaccaccaccacccatctgaccatgaggccaccctgaggtgctggccctgggttttaccctgcggagatc
acactgacctggcagcggatggcaggacaaactcaggacactgagcttgtgagaccagaccagcaggagatagaac
cttcagaagtggcagctgtggtgccctctggagaagagcagagatacacatgccatgtacagcatgagggctgc
cgaagccctcaccctgagatgggacccgtctccagccaccgtccccatcgiggatgttgcgtggatggggctgc
ctaNNNgagttgtggcatcgagctgtggcgctgtgtatgttaggagaagagttcaggatgga (配列番号 : 518)

【0022】

B*070202 atgctggcatggccccgaaccgtccctctgctgctctggcgccctggccctgaccgagacctggc
cgctcccactccatgaggtatttcacacccgtgtccggccggccggggagcccccgttcatctcagtggt
acgtggacgacaccaggatcgaggttcgacagcgcacccgcgagttccgagagaggagccgcggccgtggatagag
caggagggccggatattggaccgaaacacacagatctacaaggcccaggcacagactgaccgagagagccgtgcgaa
cctgcgcggctactacaaccagagcggccgggtctcacacccctccagagcatgtacggctgcgcacgtggggccggacg
ggccctccctccgcggcatgaccatgcgcctacgcggcaaggattacatgcctgaacgaggaccgcgcctcc
accgcgcggacacggccgtcagatcacccagcgaatggggccctgaggtgctggccctgggttttaccctgcggagatc
ggagggcgatgtcgatggctccgcagGtaccctggagaacggaaaggacaagctggagcgcgtgaccggccaaaga
cacacgtgaccaccaccatctgaccatgaggccaccctgaggtgctggccctgggttttaccctgcggagatc
acactgacctggcagcggatggcaggacaaactcaggacactgagcttgtgagaccagaccagcaggagatagaac
cttcagaagtggcagctgtggtgccctctggagaagagcagagatacacatgccatgtacagcatgagggctgc
cgaagccctcaccctgagatgggacccgtctccagccaccgtccccatcgiggatgttgcgtggatggggctgc
cta...gcagttgtggcatcgagctgtggcgctgtgtatgttaggagaagagtt (配列番号 : 51
9)

【0023】

B*070203 gctcccactccatgaggtatttcacacccgtgtccggccggccggggagcccccgttcatctca
gtgggcacgtggacgacacGcagttcgaggttcgacagcgcacccgcgagttccgagagaggagccgcggccgt
gatagagcaggagggccggatattggaccgaaacacacagatctacaaggcccaggcacagactgaccgagagacc
tgcggAACCTGCGGGCTACTACAACCAGAGCAGGGCCGGTCTCACACCCCTCCAGAGCATGTACGGCTGCACGTGGGG
CCGGACGGGCCCTCCCGGGCATGACCAGTACGCCATACGCAGGCAAGGATTACATGCCTGAACGAGGACCCTGC
CTCTGGACCAGCCGGACACGGCGGTCTAGATCACCCAGCAGAATGGGGAGGGCCCGTGGAGCGAGCAGCGGAGAG
CCTACCTGGAGGGCGAGTGCATGGAGTGGCTCCGAGATACTGGAGAACGGAAAGGACAGTGGAGCAGCAGCTG
配列番号 : 520)

【0024】

B*0703 atgctggcatggccccgaaccgtccctctgctgctctggcgccctggccctgaccgagacctggcc
gctcccactccatgaggtatttcacacccgtgtccggccggccggggagcccccgttcatctcagtggt
gtggacgacaccaggatcgaggttcgacagcgcacccgcgagttccgagagaggagccgcggccgtggatagagca
ggagggccggatattggaccgaaacacacagatctacaagaccaACacagactgaccgagagaccgcgc
tgcggctactacaaccagagcggccgggtctcacacccctccagagcatgtacggctgcacgtggggccggaccc
ccctccctccggcatgaccatgcgcctacgcacggcaaggattacatgcctgaacgaggaccgcgc
cccgccggacacggccggctcagatcacccagcgaatggggaggcccggtgaggcggagcagcggagacc
aggcggatgtcgatggctccgagataccctggagaacggaaaggacaagctggagcgcgtgaccggccaaagaca
cacgtgaccaccaccatctgaccatgaggccaccctgaggtgctggccctgggttttaccctgcggagatcac
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: 521)

【0025】

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gaccgcgcacc (配列番号 : 522)

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 : 5 2 2)

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【 0 0 2 6 】

B*0705 atgctggtcatggcgcggccaccgtccctctgtgtctcgccggccctggccctgaccgagacatggcc
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【 0 0 2 7 】

B*0706 atgctggtcatggcgcggccaccgtccctctgtgtctcgccggccctggccctgaccgagacatggcc
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【 0 0 2 8 】

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【 0 0 2 9 】

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【0030】

B*0709 atgctggcatggccccgaaccgtccctctgtgtctcgccggccctggccctgaccgagac
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【0031】

B*0710 gctccactccatgaggtatttacacctccgtgtccggccggccggagccccgttc
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【0032】

B*0711 gctccactccatgaggtatttacacctccgtgtccggccggccggagccccgttc
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【0033】

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【0034】

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列番号：531)

【0035】

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【0036】

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【0037】

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【0038】

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: 5 3 6)

【 0 0 4 0 】

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列番号 : 5 3 7)

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【 0 0 4 1 】

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【 0 0 4 2 】

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【 0 0 4 3 】

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【 0 0 4 4 】

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【 0 0 4 5 】

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 (配列番号 : 5 4 2)

【 0 0 4 6 】

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B*0725 gctcccactccatgaggtaatttacacccctcggtccccggccgcggggagccccgcctcatctcagt
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【 0 0 4 7 】

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B*0726 gctcccactccatgaggtaatttacacccctcggtccccggccgcggggagccccgcctcatctcagt
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【 0 0 4 8 】

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 cctggaccgcggacacggcggtcagatcacccagcgcaagtggaggccggcgaggccggagcagcggagagcc
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 (配列番号 : 5 4 5)

【 0 0 4 9 】

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B*0728 gctcccactccatgaggtaatttacacccctcggtccccggccgcggggagccccgcctcatctcagt
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 (配列番号 : 5 4 6)

【 0 0 5 0 】

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【0053】

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【0054】

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：551)

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【 0 0 5 6 】

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【 0 0 5 7 】

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【 0 0 5 9 】

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【 0 0 6 0 】

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【 0 0 6 4 】

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【 0 0 6 5 】

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【 0 0 6 6 】

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【 0 0 6 7 】

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【 0 0 6 9 】

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【 0 0 7 0 】

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【 0 0 7 1 】

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【 0 0 7 2 】

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: 6 0 5)

【 0 1 0 9 】

B*1521 atgcgggtcacggcccccgaaccgtccctctgtgtctcgAgccctggccctgaccgagacctggccg
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: 6 0 6)

【 0 1 1 0 】

B*1523 atgcgggtcacggcccccgaaccgtccctctgtgtctcgAgccctggccctgaccgagacctggccg
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: 6 0 7)

【 0 1 1 1 】

B*1524 gctcccaactccatgaggattttctacaccgcatgtccggccggccggggagcccgcttcatcgcat
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列番号 : 6 0 8)

【 0 1 1 2 】

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aacc

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【 0 1 1 3 】

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【 0 1 1 4 】

B*1528 atgcgggtcacggcccccgaaccgtccctctgtctctcgggagccctggccctgaccgagacccgtggcc
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【 0 1 1 5 】

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【 0 1 1 6 】

B*1530 gaggtatctacaccgcccattccggccggccggggagccccgttcatcgcaatggctacgtggac
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【0117】

B*1531 gaggtatttctacaccgccatgtccggccggccgcggggagccccgttcatcgcaagtggctacgtggac
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【0118】

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【0119】

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gg (配列番号：616) 30

【0120】

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Gg (配列番号：617) 40

【0121】

B*1535 gctcccaactccatgaggatttctacaccgccatgtccggccggccgcggggagccccgttcatcgcaigt
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Gg (配列番号：618) 50

【0122】

B*1536 gctcccaactccatgaggatttctacaccgccatgtccggccggccgcggggagccccgttcatcgcaigt
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 列番号：619)

【0123】

B*1537 gctcccactccatgaggattttcacccgcattgtcccgccccggccgcggggagccccccttcatctcagt
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 列番号：620)

【0124】

B*1538 gctcccactccatgaggattttcacccgcattgtcccgccccggccgcggggagccccccttcatcgca
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 列番号：621)

【0125】

B*1539 gctcccactccatgaggattttcacccgcattgtcccgccccggccgcggggagccccccttcatcGcag
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 列番号：622)

【0126】

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【0127】

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 列番号：624)

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列番号 : 6 2 4)

【 0 1 2 8 】

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列番号 : 6 2 5)

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【 0 1 2 9 】

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列番号 : 6 2 6)

【 0 1 3 0 】

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B*1545 gctcccactccatgaggattttcacccgcgttccggccggccggggagccccgttcatcgca
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列番号 : 6 2 7)

【 0 1 3 1 】

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B*1546 atgcgggtcacggccccgaaccgtccctctgtctcggAgccctggccctgaccgagac
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6 2 8)

【 0 1 3 2 】

B*1547 gctcccactccatgaggattttcacccgcgttccggccggccggggagccccgttcatctca
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列番号 : 6 2 9)

【 0 1 3 3 】

B*1548 gctcccactccatgaggattttcacccgcgttccggccggccggggagccccgttcatcgca
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tacctggagggcCTgtgcgtggagttggctcccgagataccctggagaacgggaaggagacgcgtgcagcgcGg (配
列番号：630)

【0134】

B*1549 gctcccactccatgaggatat tctacaccgcattgtccggccggccggggagccccgc ttcatctcagt
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tacctggaggcgtgcgtggagttggctcccgagataccctggagaacgggaaggagacgcgtgcagcgcGg (配
列番号：631)

【0135】

B*1550 gctcccactccatgaggatat tctacaccgcattgtccggccggccggggagccccgc ttcatcgca
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tacctggaggcgcgtgcgtggagttggctcccgagataccctggagaacgggaaggagacgcgtgcagcgcGg (配
列番号：632)

【0136】

B*1551 gctcccactccatgaggatat tctacaccgcattgtccggccggccggggagccccgc ttcatctcagt
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列番号：633)

【0137】

B*1552 atgcgggtcacggcccccgaaccgtccctctgtctcggtgcgcggAgccctggccctgaccgagacctgggg
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aggcggatgcgtggagttggctcccgagataccctggagaacgggaaggagacgcgtgcagcgcGg (配列番号：
634)

【0138】

B*1553 atgcgggtcacggcccccgaaccgtccctctgtctcggtgcgcggAgccctggccctgaccgagacctgggg
gctcccactccatgaggatat tctacaccgcattgtccggccggccggggagccccgc ttcatcaccgtggctac
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cgccggcggacacggcggctcagatcacccagcgcaagtggaggcggcccgtagggcggagcagTggagagcctaccctgg
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635)

【0139】

B*1554 atgcgggtcacggccccgaaccgtccctctgtctcggtAgccctggccctgaccgagacctggggccg
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aagccctcaccctgagatgggagccatttccagttccaccatcccatcgtggcattgttgctggctggctgtcc
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: 636)

【0140】

B*1555 atgcgggtcacggccccgaaccgtccctctgtctcggtAgccctggccctgaccgagacctggggccg
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: 637)

【0141】

B*1556 gctcccactccatgaggattttctacaccgcatgtcccgccccggccggggagcccgcttcatcgcagt
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列番号: 638)

【0142】

B*1557 gggcacggccccgaaccgtccctctgtctcggtAgccctggccctgaccgagacctggccggcc
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ccTgtgcgtggagtggctccgcagataacctggagaacgggaaggagacgctgCagcgcgcGg (配列番号 : 6 3
9)

【 0 1 4 3 】

B*1558 atgcgggtcacggccccgaaccgtccctctgtgtctcgAgccctggccctgaccgagacctggcccg
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aggccTgtgcgtggagtggctccgcagataacctggagaacgggaaggagacgctgcagcgcgcGg (配列番号 :
6 4 0)

【 0 1 4 4 】

B*1560 gctcccaactccatgaggatttctacaccgcattgtccggccggccgcggggagcccccgttcatcgact
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列番号 : 6 4 1)

【 0 1 4 5 】

B*1561 gctcccaactccatgaggatttctacaccgcattgtccggccggccgcggggagcccccgttcatctcagt
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列番号 : 6 4 2)

【 0 1 4 6 】

B*1562 gctcccaactccatgaggatttctacaccgcattgtccggccggccgcggggagcccccgttcatctcagt
gggctacgtggacgacacGcagttcgtgaggttcgacagcgcacgcggcgagtcgaggagaggccgcggccgtgg
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列番号 : 6 4 3)

【 0 1 4 7 】

B*1563 gctcccaactccatgaggatttctacaccgcAtgtccggccggccgcggggagcccccgttcatcgact
gggctacgtggacgacacccagttcgtgaggttcgacagcgcacgcggcgagtcgaggatggccCcgccgcgcAtgga
tagagcaggagggccggagtttggaccggGacacagatctCcaagaccaacacacagactTaccgagagagcctg
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tacctggagggcTgtgcgtggagtggctccgcagataacctggagaacgggaaggagacgctgcagcgcgcGg (配
列番号 : 6 4 4)

【 0 1 4 8 】

B*1564 gctcccaactccatgaggatttctacaccgcattgtccggccggccgcggggagcccccgttcatctcagt
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ggcgtacgtggacgacacGcagt t cgtgagg t tcgacagcgacgcgcgag t ccgagagaggagccgcccccg t gga
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GGACGGCGCCCTCCCGCGGCACTGACCGAGTCCGCTACGACGGCAAGGATTACATGCCCTGAACCGAGGACCTGAGCT
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【0149】

B*1565 gctcccactccatgaggattttctacaccgcccAtgtcccgccccggccgccccggagccccgc t catcGcagt
ggcgtacgtggacgacacccagttcgtgagg t tcgacagcgacgcgcgag t ccgaggatggCgccccggccatgg
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GGACGGCGCCCTCCCGCGGCACTGACCGAGTCCGCTACGACGGCAAGGATTACATGCCCTGAACCGAGGACCTGAGCT
CCTGGACCGCGGACACGGCGGCTAGATCACCCAGCGCAAGTGGGAGGCCGGTGAAGCGGAGCAGCGAGAGCC
TACCTGGAGGGCTGTGCGTGGAGTGGCTCCGAGATAACCTGGAGAACCGGAAGGGAGACGCTGCAGCGCGG (配列番号：646)

【0150】

B*1566 atgcgggtcacggcccccaaccgtccctctgtctcggtccggAgccctggccctgaccgagacctggggcc
gctcccactccatgaggattttctacaccgcccAtgtcccgccccggccgccccggagccccgc t catcgcagtggctac
gtggacgacacccagttcgtgagg t tcgacagcgacgcgcgag t ccgaggatggcggcccgccatggatagagca
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【0151】

B*1567 gctcccacttcatgaggattttctacaccgcccAtgtcccgccccggccgccccggagccccgc t catcgcagt
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【0152】

B*1568 gctcccactccatgaggattttctacaccctccgtgtccggccccggccgccccggagccccgc t catctcagt
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agaaccttccagaagtggcagctgttgtggccttctggagaagagcagagatacacatgccatgtacagcatgaggg
gctgccgaagccccctaccctgagatggg (配列番号：649)

【0153】

B*1569 gctcccactccatgaggattttcacaccgcattgtcccgccccggccggggagccccgccttcatctcagt
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gagacgcgtgcgcG (配列番号：650) 10

【0154】

B*1570 gctcccactccatgaggattttcacaccgcAtgtcccgccccggccggggagccccgccttcatcg
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CgggcgcctAtgga tagagcaggagggccggagttttggaccggagacacagatctCcaagaccaac
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Tggagagacc tacctggaggggccTgtgcgtggagttggctcccgagataacctggagaacgggaagg
gagacgcgtgcgcG (配列番号：651) 20

【0155】

B*1571 gctcccactccatgaggatttCacacctccgtgtcccgccccggccggggagccccgc
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【0156】

B*1572 gctcccactccatgaggattttcacaccgcattgtcccgccccggccggggagccccgc
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【0157】

B*1573 gctcccactccatgaggattttcacaccgcattgtcccgccccggccggggagccccgc
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Tgagagacc tacctggaggcc (配列番号：654) 50

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列番号 : 6 5 4)

【 0 1 5 8 】

B*1574 gctcccaactccatggaggatttctacaccgcatgtccggccggccgcggggagcccccttcatactcagt
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列番号: 6 5 5)

【 0 1 5 9 】
B*1575 gctcccaactccatgaggatttctacaccgccatgtcccgccccggccgcggggagccccgttcatcgcagt
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列番号 : 6 5 6)

(0 1 6 0)

B*180101 atgcgggtcacggcccccaaccctccctgctgtctggggggcagtggccctgaccgagacctggctggctccactccatgaggtaattccacacccctccgtgtcccggccggccggagccccgcttcatctcagtggtacgtggacggcaccctcgtaggttcgacagcgacgcccgcgagttccgaggacggagccccggccggccgtggatagagaAaggggccggagtatgggaccggaacacacagatctccaagaccaacacagactTaccgagagagccctgcggaaacctgcggctactacaaccagagcgaggccgggtctcacaccctccagagGatgtacggctgcgacgtggggccggacggccctccctccggcatgaccagttccgcctacgcggcaaggattacatcgccctgaacgaggacctgagctccggaccgcggacaccgcggacaccgcggctcagatcacccagcgcaagtggaggcggccctgtggcggagcagctgagagccctacctggagggcacgtgcgtggagtggctccgcagacacccctggagaacggaaaggagacgcgtgcagcgcgcggaccccccggacacatgtgacccaccacccatctctgaccatgaggccaccctgagggtgtctggccctggcttctaccctgcggagatcacaactgaccctggcagcggatggcgaggaccaaactcaggacaccgcgttggagaccagaccagcaggagatagaaccttccagaagtggcagctgtggtggtgccttctggagaagagcagagatacacatgcctgtacacatgcggatggggctgcgcggaccgcggacaccctcaccctgagatggagccatctcccaactccatgtggcatgttgcgtggccctggctgtccat...gcagttgtggatcgagctgtggtcgctactgtgtatgttaggagaaagagCtcaggtgga (配列番号：6 5 7)

【 0 1 6 1 】

B*180102 gctcccaactccatgaggatttccacacctcggtccccggccggccggggagccccgttcatactca
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【 0 1 6 2 】

B*1802 atgcgggtcacggccccgaaccctccctgtgtctggggggcagtggccctgaccgagacctgggctg
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: 6 5 9)
5 6 4 6 9 1

【 0 1 6 3 】

B*1803 atgcgggtcacggcccccaacccctcgtgcgtggggggcagtggccctgaccgagacctggctg
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: 6 6 0)

【 0 1 6 4 】

B*1804 qctce

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列番号：6 6 1)

【 0 1 6 5 】

B*1805 gctcccaactccatggaggatttccacacccgtgtccggccgcgggagccccgttcatctcagt
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列番号: 6 6 2)

【0166】

B*1806 atgcgggtcacggccccgaaccctccctgctgtctggggggcagtggccctgaccgagacctgggctg
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: 6 6 3)

【 0 1 6 7 】

B*1807 gctccactccatgaggatttcacacccctccgtgtccggccggccggagcccccgttcatctcagt 10
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列番号 : 6 6 4)

【 0 1 6 8 】

B*1808 gctccactccatgaggatttcacacccctccgtgtccggccggccggagcccccgttcatctcagt 20
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列番号 : 6 6 5)

【 0 1 6 9 】

B*1809 gctccactccatgaggatttcacacccctccgtgtccggccggccggagcccccgttcatctcagt 30
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列番号 : 6 6 6)

【 0 1 7 0 】

B*1810 gctccactccatgaggatttcCacacccctccgtgtccggccggccggagcccccgttcatctcagt 40
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列番号 : 6 6 7)

【 0 1 7 1 】

B*1811 gctccactccatgaggatttcCacacccctccgtgtccggccggccggagcccccgttcatctcagt
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列番号：668)

【0172】

B*1812 gctcccactccatgaggatttcacacccctccgtgtcccgccccggccggggagccccgttcatctcagt
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列番号：669)

【0173】

B*1813 gctcccactccatgaggatttcCacacccctccgtgtcccgccccggccggggagccccgttcatctcagt
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列番号：670)

【0174】

B*1814 gctcccactccatgaggatttcCacacccctccgtgtcccgccccggccggggagccccgttcatctcagt
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列番号：671)

【0175】

B*1815 gctcccactccatgaggatttcCacacccctccgtgtcccgccccggccggggagccccgttcatctcagt
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列番号：672)

【0176】

B*1818 gctcccactccatgaggatttcacacccctccgtgtcccgccccggccggggagccccgttcatctcagt
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列番号：673)

【0177】

B*2701 gctcccactccatgaggatttcacacccctccgtgtcccgccccggccggggagccccgttcatcaccgt 50

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【0178】

B*2702 atgcgggtcacggcccccgaaccctccctgtcttggtggcagtggccctgaccgagacctgggctgctccactccatgaggattttccacacccctccgtgtcccgccggccgcggggagcccgcttcatcaccgtggctacgtggacgacacgctgttgcgtgagggtcgacagcgacgccgcgagtcggagagaggagccgcggccgcgtggatagagcaggagggccggagtttggaccgggagacacagatctgcaaggccaaggcacagactgaccgagagaacctgcggatcgcgcctcCgctactacaaccagagcgaggccgggtctcacaccctccagaaTatgtatggctgcgacgtggggccggacggccgcctccctccgggtaccaccagGacgcctacgacggcaaggattacatcgccctgaacgaggacacgtggctccctggacccgcggacacggcggtcagatcacccagcgaagtgggaggccggccgtgTggcggagcagctgagagcctaccctggaggcgagtgcgtggagttggctcccgagataccctggagaacgggaaggagacgctgcagcgcgcggaccccccaaagaca (配列番号：675)

【0179】

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【0198】

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【0199】

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 列番号：696)

【0200】

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【0201】

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【0202】

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列番号：738)

【0242】

B*3536 gctcccactccatgaggtatttctacaccgccatgtcccgccggccgcgggagccccgcctcatcgcagt
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列番号：739)

【0243】

B*3537 gctcccactccatgaggtatttctacaccgccatgtcccgccggccgcgggagccccgcctcatcgcagt
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列番号：740)

【0244】

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B*3538 gctcccaactccatgaggta t t c t a c a c c g c c a t g t c c c g c c c g c g g g a g c c c c g t t c a t c g c a g t
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 c g a c g g g c c t c c t c c g c g g c a t g a c c a g t T c g c c t a c g a c g g c a a g g a t t a c a t c g c c t g a a c g a g g a c c t g a g c t
 c c t g g a c c g c g g c g a c a c C g c g g t c a g a t c a c c c a c g c a a g t t g g a g g c g c c c g t g T g g c g g a g c a g g a C a g a g c c
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 番号 : 7 4 1)

【 0 2 4 5 】

B*3539 gctcccaactccatggaggtaatttctacaccgcatgtcccgccccggccgcggggagcccccgttcatacgcat
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列番号 : 7 4 2)

【 0 2 4 6 】

B*3541 ggggcagtggccctgaccgagacctggccggctcccactccatgaggatttctacaccgcatgtccccgg
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〔 0 2 4 7 〕

B*3542 atgcgggtcacggcccccaaccctccctgtgtctggggggcagtggccctgaccagacactggcTg
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【0 2 4 8】

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 : 7 4 5)

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【 0 2 4 9 】

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 列番号 : 7 4 6)

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【 0 2 5 0 】

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 列番号 : 7 4 7)

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【 0 2 5 1 】

B*3701 atgcgggtcacggccccgaaccctccctgtgtctggggggcagtggccctgaccgagacctgggt
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 : 7 4 8)

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【 0 2 5 2 】

B*3702 atgcgggtcacggccccgaaccctccctgtgtctggggggcagtggccctgaccgagacctgggt
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: 7 4 9)

【 0 2 5 3 】

B*3704 atgcgggtcacggcccccgaaccctccctgtgtctggggggcagtggccctgaccgagacctggcgtg
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: 7 5 0)

【 0 2 5 4 】

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7 5 1)

【 0 2 5 5 】

B*3801 atgcgtggtcatggcggcccccgaaccgtccctccgtgtctcggcggccctggccctgaccgagacctggccg
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: 7 5 2)

【 0 2 5 6 】

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【 0 2 5 7 】

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 列番号 : 7 5 4)

【 0 2 5 8 】

B*3803 gctcccactccatgaggatttctacaccctcggtcccgccccggccgcggggagccccgttcatctcagt
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 列番号 : 7 5 5)

【 0 2 5 9 】

B*3804 gctcccactccatgaggatttctacaccctcggtcccgccccggccgcggggagccccgttcatctcagt
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 列番号 : 7 5 6)

【 0 2 6 0 】

B*3805 gctcccactccatgaggatttctacaccGccgtgtcccgccccggccgcggggagccccgttcatctcagt
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【 0 2 6 1 】

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【 0 2 6 2 】

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【 0 2 6 3 】

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【 0 2 6 4 】

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【 0 2 6 5 】

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【 0 2 6 6 】

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【 0 2 6 7 】

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【 0 2 6 8 】

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【 0 2 6 9 】

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【 0 2 7 0 】

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【 0 2 7 1 】

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【 0 2 7 2 】

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【 0 2 7 3 】

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【 0 2 7 4 】

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【 0 2 7 5 】

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【 0 2 7 6 】

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【0277】

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【0278】

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【0279】

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【 0 2 9 7 】

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【 0 2 9 9 】

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【 0 3 0 1 】

B*400601 atgcgggtcacggcccccgaaccctccctccgtctggggggcagtggccctgaccgagac t tggc
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 号 : 7 9 8)

【 0 3 0 2 】

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【 0 3 0 3 】

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: 8 0 0)

【 0 3 0 4 】

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列番号 : 8 0 1)

【 0 3 0 5 】

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列番号 : 8 0 2)

【 0 3 0 6 】

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列番号 : 8 0 3)

【 0 3 0 7 】

B*4012 atgcgggtcacggccccgaaccgtccctctgctctcgAgccctggcccgtaccgagacctggccg
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 8 0 4)

10

【 0 3 0 8 】

B*4013 atgcgggtcacggccccgaaccctccctctgctctggggcagtgccctgaccgagacctggcTg
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【 0 3 0 9 】

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【 0 3 1 0 】

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【 0 3 1 1 】

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40

【 0 3 1 2 】

B*4016 atgcgggtcacggccccgaaccgtccctctgctctcgAgccctggcccgtaccgagacctggccg
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809)

【0313】

B*4018 gctcccactccatgaggatttcCacacccctccgtgtccggccggccggagccccgttcatcaccgt
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列番号 : 810)

【0314】

B*4019 gctcccactccatgaggatttcacacccctccgtgtccggccggccggagccccgttcatcaccgt
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列番号 : 811)

【0315】

B*4020 atgcgggtcacggcccccgaaccctccctccgtgtctggggggcagtggccctgaccgagacctggcTg
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812)

【0316】

B*4021 gctcccactccatgaggatttcacaccgcatagtccggccggccggagccccgttcatcgca
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列番号 : 813)

【0317】

B*4023 atgcgggtcacggccaccccgaaaccgtccctccgtgtctcgccggccctggccctgaccgagac
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814)

【0318】

B*4024 gctcccactccatgaggatttcCacacccctccgtgtccggccggccggggagccccgttcatcaccgt
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列番号：815)

【0319】

B*4025 gctcccactccatgaggatttcCacacccgcgttccggccggccggggagccccgttcatcaccgt
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列番号：816)

【0320】

B*4026 gctcccactccatgaggatttcCACACCCCTCCGTGTCCGGCCGGCCGGGGAGCCCCGTTCATCACC
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列番号：817)

【0321】

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列番号：818)

【0322】

B*4028 gctcccactccatgaggatttcCACACCCCTCCGTGTCCGGCCGGCCGGGGAGCCCCGTTCATCACC
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列番号：819)

【0323】

B*4029 gctcccactccatgaggatttccacacccgtccgttccggccggccggagccccgttcatcaccgt
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【0324】

B*4030 gctcccactccatgaggatttccacacccgcgtccggccggccggagccccgttcatcaccgt
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【0325】

B*4031 gctcccactccatgaggatttCacaccgcgtccggccggccggagccccgttcatcaccgt
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【0326】

B*4032 gctcccactccatgaggatttCacaccgcgtccggccggccggagccccgttcatcaccgt
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【0327】

B*4033 gctcccactccatgaggatttCacaccgcgtccggccggccggagccccgttcatcaccgt
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【0328】

B*4034 gctcccactccatgaggatttccacacccgcgtccggccggccggagccccgttcatcaccgt
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列番号：825)

【0329】

B*4035 gctcccactccatgaggatttcCacacccctcggtcccgccccggccggggagccccgttcatcaccgt
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列番号：826)

【0330】

B*4036 gctcccactccatgaggatttcCACACCCCTCGGTCCCGCCCCGGCCGGGGAGCCCCGTTCATCACC GT
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列番号：827)

【0331】

B*4037 gctcccactccatgaggatttcCacacccctcggtcccgccccggccggggagccccgttcatcaccgt
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列番号：828)

【0332】

B*4038 gctcccactccatgaggatttcCACACCCCTCGGTCCCGCCCCGGCCGGGGAGCCCCGTTCATCACC GT
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【0333】

B*4039 gggggcagtggccctgaccgagacccctgggcTggctcccactccatgaggatttcCACACCCCTCGGTCCCG
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【0334】

B*4040 gctcccaactccatgaggattttcacacctccgtgtccggccggccggagccccgttcatcaccgt
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列番号：831)

【0335】

B*4042 gctcccaactccatgaggattttcacaccgcgttccggccggccggagccccgttcatcaccgt
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列番号：832)

【0336】

B*4043 gctcccaactccatgaggatttccacaccgcgttccggccggccggagccccgttcatcaccgt
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列番号：833)

【0337】

B*4044 gctcccaactccatgaggattttcacaccctccgtgtccggccggccggagccccgttcatcaccgt
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列番号：834)

【0338】

B*4101 atgcgggtcacggcacccgaaccgtccctctgtctcgccgttccggccctggccctgaccgagacctggggcc
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列番号：835)

10

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: 8 3 5)

【 0 3 3 9 】

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【 0 3 4 0 】

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列番号 : 8 3 7)**

【 0 3 4 1 】

**B*4104 gctcccaactccatgaggatattccacaccgcatgtcccgccggccgcggggagcccgcttcatcaccgt 30
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列番号 : 8 3 8)**

【 0 3 4 2 】

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列番号 : 8 3 9)**

【 0 3 4 3 】

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列番号 : 8 4 0)

【 0 3 4 4 】

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: 8 4 1)

【 0 3 4 5 】

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列番号 : 8 4 2)

【 0 3 4 6 】

B*4204 gctccactccatgaggatttcacacctccgtgtcccgccggccggggagcccgcttcatactcag
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列番号 : 8 4 3)

【 0 3 4 7 】

B*440201 atgcgggtacggcgcggccaccctccctctgtctggggcagtgccctgaccgagacccgtggcc
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【0348】

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【0349】

B*440203 gctcccacccatgaggtatttacaccgcatgtccggccggccgcggggagccccgttcatcacc
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【0350】

B*440301 atgcgggtcacggcccccaaccctccctgcgtctgggggcagtggccctgaccgagacctgggc
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【0351】

B*440302 atgcgggtcacggcccccaaccctccctgcgtctgggggcagtggccctgaccgagacctgggc
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【 0 3 5 2 】

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【 0 3 5 3 】

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【 0 3 5 4 】

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8 5 1)

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【 0 3 5 5 】

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【 0 3 5 6 】

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 : 8 5 3)

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【 0 3 5 7 】

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 : 8 5 4)

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【 0 3 5 8 】

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 列番号 : 8 5 5)

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【 0 3 5 9 】

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 列番号 : 8 5 6)

【 0 3 6 0 】

B*4412 gctcccactccatgaggatttctacaccgccAtgtccggccggccggggagcccgcttcatcaccgt

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列番号：857)

【0361】

B*4413 atgcgggtcacggccccgaaccctccctgtcttggtggcagtggccctgaccgagacctgggg
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：858)

【0362】

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列番号：859)

【0363】

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列番号：860)

【0364】

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列番号：861)

【0365】

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【0 3 6 6】

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【0 3 6 7】

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【0 3 6 8】

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【0 3 6 9】

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【0 3 7 0】

B*4424 gctcccactccatgaggatttctacaccgccatgtccggccggccgcggggagccccgcttcatcaccgt
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列番号：867)

【0371】

B*4425 gctcccactccatgaggattttcacccgcatgtccggccggccggggagcccccttcatcaccgt
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列番号：868)

【0372】

B*4426 gctcccactccatgaggattttcacccgcatgtccggccggccggggagcccccttcatcaccgt
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(配列番号：869)

【0373】

B*4427 gctcccactccatgaggattttcacccgcatgtccggccggccggggagcccccttcatcaccgt
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【0374】

B*4428 gctcccactccatgaggattttcacccgcatgtccggccggccggggagcccccttcatcaccgt
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(配列番号：871)

【0375】

B*4429 gctcccactccatgaggattttcacccgcatgtccggccggccggggagcccccttcatcaccgt
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【0376】

B*4430 gctcccactccatgaggattttcacaccgcattgtcccgccccggccggggagccccgcattcatcaccgt
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【0377】

B*4431 atgcgggtcacggccccgaaccctccctgtgtcttgggggcagtggccctgaccgagacctggggcc
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【0378】

B*4432 gctcccactccatgaggattttcacaccgcattgtcccgccccggccggggagccccgcattcatcaccgt
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【0379】

B*4433 gctcccactccatgaggattttcacaccgcattgtcccgccccggccggggagccccgcattcatcaccgt
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【0380】

B*4501 atgcgggtcacggccccgaaccgtccctgtgtctcgccggccctggccctgaccgagacctggggcc
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: 8 7 7)

【 0 3 8 1 】

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【 0 3 8 2 】

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G (配列番号 : 8 7 9)

【 0 3 8 3 】

B*4504 atgcgggtcacggcacccgaaccgtccctctgtctcgccggccctggccctgaccgagacctggcc
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: 8 8 0)

【 0 3 8 4 】

B*4505 gctccactccatgaggatttcacaccgcattccggccgcggggagcccccttcatcaccgt
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G (配列番号 : 8 8 1)

【 0 3 8 5 】

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B*4506 gctcccactccatgaggattttcacaccgccatgtccggccggccggagccccgttcatcaccgt
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【0 3 8 6】

B*4601 atgcgggtcacggcccccgaaccgtccctctgtctcggtccggagccctggccctgaccgagac
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【0 3 8 7】

B*4602 gctcccactccatgaggattttcacaccgccatgtccggccggccggagccccgttcatcgca
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【0 3 8 8】

B*470101 atgcgggtcacggcccccgaaccctccctctgtctggggccagtgccctgaccgagac
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【0 3 8 9】

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【0390】

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【0391】

B*4704 gctcccactccatgaggattttcacccgcattgtcccgccccggccgcggggagccccgcctcatcaccgt
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【0392】

B*4801 atgctggcatggccccgaaccgtccctctgtgtctcggcgccctggccctgaccgagacctgggg
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 A...GAGTTGTGGTCACTGGAGCTGTGGTCGTGCTGTGATGTGAGGAGAGTTCAAGGTGGA (配列番号：889)

【0393】

B*4802 gtccctctgtgtctcggcgccctggccctgaccgagacctggggcgctccactccatgaggatttt
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【0394】

B*4803 gctcccaactccatgaggattttcacacccctccgtgtcccgccccggccggagccccgcctcatctcagt
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列番号：891)

【0395】

B*4804 gctcccaactccatgaggattttcacacccctccgtgtcccgccccggccggagccccgcctcatctcagt
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【0396】

B*4805 atgctggcatggccccgaaccgtccctctgtgtctcgccggccctggccctgaccgagacctggcc
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893)

【0397】

B*4806 gctcccaactccatgaggattttcacacccctccgtgtcccgccccggccggagccccgcctcatctcagt
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列番号：894)

【0398】

B*4807 gctcccaactccatgaggattttcacacccctccgtgtcccgccccggccggagccccgcctcatctcagt
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（配列番号：895）

【0399】

B*4901 atgcgggtcacggcacccgaaccgtccctctgtgtctcggccgcggccctggccctgaccgagacctggggcc
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：896)

【0400】

B*4902 tcccactccatgaggattttccacaccgcctgtcccgccggccggggagccccgttcatcaccgtgg
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【0401】

B*4903 gctcccactccatgaggattttccacaccgcctgtcccgccggccggggagccccgttcattgtcgt
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列番号：898）

【0402】

B*5001 atgcgggtcacggcacccgaaccgtccctctgtgtctcggccgcggccctggccctgaccgagacctggggcc
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tgg (配列番号：899)

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: 8 9 9)

【 0 4 0 3 】

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: 9 0 0)

【 0 4 0 4 】

B*5004 gctcccaactccatgaggatattccacaccggccatgtccggccggccggggagcccgcttcatcacc
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列番号 : 9 0 1)

【 0 4 0 5 】

B*510101 atgcgggtcacggcccccgaaccgtccctctgtgtctggggggcagtggccctgaccgagacccctgg
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号 : 9 0 2)

【 0 4 0 6 】

B*510102 atgcgggtcacggcccccgaaccgtccctctgtgtctggggggcagtggccctgaccgagacccctgg
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【0407】

B*510103 gctccactccatgaggtatctacaccgcattccgcggccggggagcccgcttcatTgca
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 cctacctggagggccTgtgcgtggatggctccgcagaCaccctggagaacgggaaggagacgctgcagcgcggg (配列番号 : 904) 20

【0408】

B*510104 gctccactccatgaggtatctacaccgcattccgcggccggggagcccgcttcatTgca
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【0409】

B*510105 atgcgggtacggccccgaaccgtccctctgtctggggggcagtggccctgaccgagacctgggc
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【0410】

B*510201 atgcgggtacggccccgaaccgtccctctgtctggggggcagtggccctgaccgagacctgggc
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号：907)

【0411】

10

B*510202 atgcgggtcacggccccgaaccgtccctccgtctggggggcagtggccctgaccgagacctgggc
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号：908)

【0412】

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B*5103 atgcgggtcacggccccgaaccgtccctccgtctggggggcagtggccctgaccgagacctggccg
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号：909)

【0413】

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B*5104 atgcgggtcacggccccgaaccgtccctccgtctggggggcagtggccctgaccgagacctggccg
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: 9 1 0)

【 0 4 1 4 】

B*5105 gctcccactccatgaggatttctacaccgccatgtccggccggccggagcccccttcatcgca
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【 0 4 1 5 】

B*5106 gctcccactccatgaggatttctacaccgccatgtccggccggccggagcccccttcatTgc
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agacgtgcagcgcgg (配列番号 : 9 1 2)

【 0 4 1 6 】

B*5107 gctcccactccatgaggatttctacaccgccatgtccggccggccggagcccccttcatTgc
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agacgtgcagcgcgg (配列番号 : 9 1 3)

【 0 4 1 7 】

B*5108 atgcgggtcacggcccccaaccgtccctctgtcttggtggggcagtggccctgacc
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gagaagagCtcagggtgga (配列番号 : 9 1 4)

【 0 4 1 8 】

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B*5109 gctcccactccatgaggatttctacaccgccatgtcccgccccggccgcggggagccccgcttcattTgcagt
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【0419】

B*5110 tacaccgccatgtcccgccccggccgcggggagccccgcttcattgcagtggctacgtggacgacacccagttcgtagggttcgacagcgacgcgcgcgagtcggaggacggagccccggccatggatagagcaggagggccggagtttggaccgaaacacacagatctcaagaccaacacacagacttaccgagagaacctgcggatcgccgtccgcgtactacaaaccagagcgaggccgggtctcacacttggcagaCgtgtatggctgcacgtggggccggacggccctcccgccggataAaccagtaaccgcgtacgcggcaaggattacatcgcccgtgaacgaggacctgcgcgtccctggaccgcggacacggcggtcagatcacccagcgaagtggaggccggcgtgTggcggagcagcTgagagccttacccggcggacccctggagtttcaccctgcggagatcacactgacctggcagcggatggcgaggaccaaactcaggacactgagcttgtggagaccag (配列番号：916)

【0420】

B*5112 gctcccactccatgaggatttctacaccgccatgtcccgccccggccgcggggagccccgcttcattgcagt
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【0421】

B*511301 gctcccactccatgaggatttctacaccgccatgtcccgccccggccgcggggagccccgcttcattTgca
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【0422】

B*511302 gctcccactccatgaggatttctacaccgccatgtcccgccccggccgcggggagccccgcttcattTgca
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【0423】

B*5114 gctcccactccatgaggatttctacaccgccatgtcccgccccggccgcggggagccccgcttcattgcagt
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ggacgggcgcctcccgccccataaAcagtacgcctacgacggcaaagat tacatgcgcctgaacgaggacctgagct
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列番号：920)

【0424】

B*5115 gctcccactccatgaggtatttctacaccgcctgtccggccggccggggagccccgcattcatcgca
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tacctggagggcctgtgcgtggagtggctcccgagataccctggagaacggaaaggagacgctgcagcgcgcGg (配
列番号：921)

【0425】

B*5116 gctcccactccatgaggtatttctacaccgcctgtccggccggccggggagccccgcattcatTgc
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tacctggagggcgagtgctggagtggctcccgagaCaccctggagaacggaaaggagacgctgcagcgcgcgg (配
列番号：922)

【0426】

B*5117 gctcccactccatgaggtatttctacaccgcctgtccggccggccggggagccccgcattcatTgc
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列番号：923)

【0427】

B*5118 gctcccactccatgaggtatttctacaccgcctgtccggccggccggggagccccgcattcatTgc
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列番号：924) 40

【0428】

B*5119 gctcccactccatgaggtatttctacaccgcctgtccggccggccggggagccccgcattcatTgc
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tacctggagggcctgtgcgtggagtggctcccgagaCaccctggagaacggaaaggagacgctgcagcgcgcgg (配
列番号：925)

【0429】

B*5120 gctcccactccatgaggta tttcacaccgccatgtccggccggccggagccccgttcatTgcagt
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 列番号：926)

【0430】

B*5121 gctcccactccatgaggta tttcacaccgccatgtccggccggccggagccccgttcatTgcagt 10
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 列番号：927)

【0431】

B*5122 gctcccactccatgaggta tttcacaccgccatgtccggccggccggagccccgttcatTgcagt
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 列番号：928)

【0432】

B*5123 gctcccactccatgaggta tttcacaccgccatgtccggccggccggagccccgttcatTgcagt
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 tagagcaggagggccggagtttggaccggaacacacagatctcaagaccaacacacagacttaccgagagaacctg 30
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 tacctggagggccTgtgcgtggagttggctcccgagaCaccggagaacgggaaggagacgctgcagcgcgg (配
 列番号：929)

【0433】

B*5124 gctcccactccatgaggta tttcacaccgccatgtccggccggccggagccccgttcatTgcagt
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 列番号：930)

【0434】

B*5126 gctcccactccatgaggta tttcacaccgccatgtccggccggccggagccccgttcatTgcagt
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cctggaccgcggcggacaccgcggcagatcacccagcgcaagtggaggcggccgtgaggcggagcagctgagagcc
tacctggaggccctgtgcgtggagtggtcccgagacaccctggagaacgggaaggagacgctgcagcgcgg (配
列番号：931)

【0435】

B*5128 gctcccactccatgaggatttctacaccgcattgtcccgccccggccgcggggagccccccttcatTgcagt
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10 (配列番号：932)

【0436】

B*5129 gctcccactccatgaggatttctacaccgcattgtcccgccccggccgcggggagccccccttcatTgcagt
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20 (配列番号：933)

【0437】

B*5130 gctcccactccatgaggatttctacaccgcattgtcccgccccggccgcggggagccccccttcatTgcagt
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【0438】

B*5131 gctcccactccatgaggatttctacaccgcattgtcccgccccggccgcggggagccccccttcatTgcagt
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列番号：935)

【0439】

B*5132 gctcccactccatgaggatttctacaccgcattgtcccgccccggccgcggggagccccccttcatTgcagt
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gctgcTgaagccctcaccctgagatggg (配列番号：936)

【0440】

B*5133 gctcccaactcatgaggattttcacaccgcattgtcccgccccggccggagccccccttcatTgcagt
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列番号：937)

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【0441】

B*5134 gctcccaactccatgaggattttcacaccgcattgtcccgccccggccggagccccccttcatTgcagt
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列番号：938)

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【0442】

B*520101 atgcgggtcacggcgcggccgaaccgtccctctgtctggggggcagtggccctgaccgagacctgggc
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号：939)

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【0443】

B*520102 gtcctccctgtgtctggggggcagtggccctgaccgagacctggccggctcccaactccatgaggattt
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gctgtggtcgctactgtatgttaggagaaagatcgaggtgga (配列番号：940)

【0444】

B*520103 gctcccactccatgaggtatttctacaccgccatgtccggccggccggggagccccccttcatcgca
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cctacctggagggccTgtgcgtggatggctcccgagaCaccctggagaacgggaaggagacgctgcagcgcgg (配列番号：941)

【0445】

B*520104 gctcccactccatgaggtatttctacaccgccatgtccggccggccggggagccccccttcatcgca
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【0446】

B*5202 gctcccactccatgaggtatttctacaccgccatgtccggccggccggggagccccccttcatTgcagt
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【0447】

B*5203 gctcccactccatgaggtatttctacaccgccatgtccggccggccggggagccccccttcatTgcagt
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【0448】

B*5204 atcggggtcacggcccccgaaccgtccctctgtcttggggggcagtggccctgaccgagacctggccg
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5)

【 0 4 4 9 】

B*5205 gctcccactccatgaggattttcacaccgcattccggccggccggggagcccccccttcatcgca
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列番号 : 9 4 6)

【 0 4 5 0 】

B*5301 atgcgggtcacggcccccgaaccgtccctctgtcttggggggcagtggccctgaccgagacccgg
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【 0 4 5 1 】

B*5302 gctcccactccatgaggattttcacaccgcattccggccggccggggagcccccccttcatcgca
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列番号 : 9 4 8)

【 0 4 5 2 】

B*5303 gctcccactccatgaggattttcacaccgcattccggccggccggggagcccccccttcatcgca
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列番号 : 9 4 9)

【 0 4 5 3 】

B*5304 gctcccactccatgaggattttcacaccgcattccggccggccggggagcccccccttcatcgca
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5)

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 列番号：950)

【0454】

B*5305 gctcccactccatgaggattttcacccgcattgtccggccggccggggagccccgttcatcgca
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 列番号：951)

【0455】

B*5306 gctcccactccatgaggattttcacccgcattgtccggccggccggggagccccgttcatTgcagt
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 列番号：952)

【0456】

B*5307 gctcccactccatgaggattttcacccgcattgtccggccggccggggagccccgttcatcgca
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 列番号：953)

【0457】

B*5308 gctcccactccatgaggattttcacccgcattgtccggccggccggggagccccgttcatcgca
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【0458】

B*5309 gctcccactccatgaggattttcacccgcattgtccggccggccggggagccccgttcatcgca
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 列番号：955)

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列番号：955)

【0459】

B*5401 atgcgggtcacggcacccgaaccctccctgctgcttgggggcccctggccctgaccgagacctggccg
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cgccgcggacaccgcggctcagatcacccagcgaatgggaggccggcgtggcggagcagctgagag
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（配列番号：956）

【0460】

B*5402 gctcccaactccatgaggattttCacacccctccgttccggccggccgcggggagcccccgttcatcg
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（配列番号：957）

【0461】

B*5501 atgcgggtcacggcacccgaaccctccctgctgcttgggggcccctggccctgaccgagacctggccg
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（配列番号：958）

【0462】

B*5502 atgcgggtcacggcacccgaaccctccctgctgcttgggggcccctggccctgaccgagacctggccg
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（配列番号：959）

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: 9 5 9)

【 0 4 6 3 】

B*5503 gctcccaactccatgaggattttcacccgcattccggccggccggggagccccccttcatcgca
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tacctggagggcaCgtgcgtggagttggctcccgagatacctggagaacgggaaggagacgctgCagcgcgcGg (配
列番号 : 9 6 0)

【 0 4 6 4 】

B*5504 gctcccaactccatgaggattttcacccgcAtgtccggccggccggggagccccccttcatcGcagt
ggctacgtggacgacacGcagttcgtaggatcgacagcgacgcccggagttccgagagaggagccgcggcgccgtgg
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列番号 : 9 6 1)

【 0 4 6 5 】

B*5505 atgcgggtcacggcaccccgAACCTCCCTGCTGCTTGGGGGCCCTGGCCCTGACCGAGACCTGGGCC
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tccagaagtggcagctgtgtggccttctggagaagagcagagatacacatgccatgtacacgatgagggctgccc
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: 9 6 2)

【 0 4 6 6 】

B*5507 gctcccaactccatgaggattttcacccgcAtgtccggccggccggggagccccccttcatcgca
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列番号 : 9 6 3)

【 0 4 6 7 】

B*5508 gctcccaactccatgaggattttcacccgcattccggccggccggggagccccccttcatcGcagt
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 CCTGGACCGCCCGGGACACCGCGGCTCAGATCACCCAGCGCAAGTGGGAGGCGGGCCGTGAGGAGGACCTGAGAGCC
 TACCTGGAGGGCTGTGCGTGGAGTGGCTCCAGATACTGGAGAACCGGAAGGAGACGCTGCAGCGCGC
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【0468】

B*5509 gctcccaactccatgaggattttcacaccgcAtgtcccgccccggccgcggggagccccgcTTcatcGcagt
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 GGACGGGCGCCTCCTCCCGGGCATAACCGTAGCCTACGACGGCAAGGATTACATGCCCTGAACGAGGACCTGAGCT
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 TACCTGGAGGGCGAGTGCCTGGAGTGGCTCCAGATACTGGAGAACCGGAAGGAGACGCTGCAGCGCGC
 G (配列番号：965)

【0469】

B*5510 gctcccaactccatgaggattttcacacccctccgtgtcccgccccggccgcggggagccccgcTTcatctcagt
 ggctacgtggacacacgcagttcgtaggttcgacagcgacgcgcgcgagttccagagaggagccgcgggcgcgttgg
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 GGACGGGCGCCTCCTCCCGGGCATAACCGTAGCCTACGACGGCAAGGATTACATGCCCTGAACGAGGACCTGAGCT
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 G (配列番号：966)

【0470】

B*5511 gctcccaactccatgaggattttcacaccgcAtgtcccgccccggccgcggggagccccgcTTcatcgca
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 GGACGGGCGCCTCCTCCCGGGCATAACCGTAGCCTACGACGGCAAGGATTACATGCCCTGAACGAGGACCTGAGCT
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 TACCTGGAGGGCACTGCCTGGAGTGGCTCCAGATACTGGAGAACCGGAAGGAGACGCTGCAGCGCGC
 G (配列番号：967)

【0471】

B*5512 atgcgggtcacggcacccgaaccctccctgtgtcttggtggccctggccctgaccgagacctggcc
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 ggtggacacacgcagttcgtaggttcgacagcgacgcgcgcgagttccagagaggagccgcgggcgcgttggatagaga
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 AGGGCACTGCCTGGAGTGGCTCCAGATACTGGAGAACCGGAAGGAGACGCTGCAGCGCGGACCCCCCAAAGACA
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 TCCAGAAGTGGCAGCTGTGGTGGTGCCTCTGGAGAACAGAGCAGAGATAACATGCCATGTACAGCATGAGGGCTGCC
 AAGCCCCCTACCCCTGAGATGGGAGCCATCTCCAGTCCACCATCCCCATCGTGGGATTGTGCTGGCCCTGGCTGCC
 A...GCAGTTGTGGTCACTGGAGCTGTGGTCGCTACTGTGATGTAGGAGGAAGAGCAGCTCAGGTGGA (配列番号
 : 968)

【0472】

B*5601 atgcgggtcacggcacccgaaccctccctgtgtcttggtggccctggccctgaccgagacctggcc
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 gtggacgacacgcagttcgtagggttcgacagcgacgcgcgagttccgagagagaggccgcggccgtggatagagca
 ggagggccggagtttgggaccgaaacacacaga t cacaaggcccaggcacagactgaccgagagagacctgcggaacc
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 : 9 6 9)

【 0 4 7 3 】
 B*5602 atgcgggtcacggcacccgaaccctccctgtgtcttggggccctggccctgaccgagacccggcc
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 : 9 7 0)

【 0 4 7 4 】
 B*5603 atgcgggtcacggcacccgaaccCtccctctgtgtcttGggggccctggccctgaccgagacccggcc
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 catgtgacccaccacccatcttgaccatgaggccaccctgaggtgttggccctggcttctaccctgcccggagatcac
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 tccagaagtggcagctgtggcgtgccttctggagaagagcagagatacacatgcccattacatgcccattacatgccc
 aagccctcaccctgagatgggaggccatctccatccaccatcccattcgtggcatttgttgctggcgtgcct
 a...gcagttgtggcatcgagctgtggcgtactgtatgttaggagaaagagCtcagggtgga (配列番号
 : 9 7 1)

【 0 4 7 5 】
 B*5604 gctcccactccatgaggta t t tacaccgccatgtccggccggccgcggggagccccgcttcatcgca
 gggctacgtggacacGcagttcgtagggttcgacagcgacgcgcgagttccgagagagaggccgcggccgtgg
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 cgaaccctgcgcggctactacaaccagagcggccgggtctcacaccctccagaggatgtacggctgcgacccggcc
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列番号：972)

【0476】

B*5605 gctcccactccatgaggatttctacaccgccatgtcccgccccggccggggagccccgttcatTgcagt
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列番号：973)

【0477】

B*5606 gctcccactccatgaggatttctacaccgccatgtcccgccccggccggggagccccgttcatTgcagt
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列番号：974)

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【0478】

B*5607 gctcccactccatgaggatttctacaccgccatgtcccgccccggccggggagccccgttcatcgca
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cctggaccgcggcggacaccgcggctcagatcacccagcgaactgggaggccggcgtgaggcggagc
tacactggaggcccTgtgcgtggagtggtcccgagaacctggagaacgggaaggagacgctgcagcgcGg (配
列番号：975)

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【0479】

B*5608 gctcccactccatgaggatttctacaccgccatgtcccgccccggccggggagccccgttcatcgca
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列番号：976)

【0480】

B*5609 gctcccactccatgaggatttctacaccgccatgtcccgccccggccggggagccccgttcatcGcag
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列番号：977)

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【0481】

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列番号：978)

【0482】

B*5611 atgcgggtcacggcacccgaaccCtcctccgtgtcttgggggccctggccctgaccgagacctggggcc
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【0483】

B*570101 atgcgggtcacggcacccgaaccgtccctccgtgtcttgggggcagtggccctgaccgagacctgggc
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【0484】

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列番号：981)

【0485】

B*5702 atgcgggtcacggcacccgaaccgtccctccgtgtcttgggggcagtggccctgaccgagacctggggcc
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: 9 8 2)

【 0 4 8 6 】

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【 0 4 8 8 】

B*5704 gctcccacccatgaggtaattctacaccggcatgtccggccggccgcggggagccccccttcatcgcaigt
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列番号 : 9 8 5)

【 0 4 8 9 】

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【 0 4 9 0 】

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【 0 4 9 1 】

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【 0 4 9 2 】

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【 0 4 9 3 】

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【 0 4 9 4 】

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【 0 4 9 5 】

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【 0 4 9 6 】

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【 0 4 9 7 】

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【 0 4 9 8 】

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【 0 4 9 9 】

B*5807 gctcccaactccatggaggta t t cttacaccgcca t g tcccggccggccggggagcccccttcatcgcat
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(0 5 0 0)

B*5901 atgcgggtcacggcaccggaaacctccctgctgcttggggggccctggccctgaccgagacactggccg
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: 9 9 7)

【 0 5 0 1 】

B*670101 atgctggatcatggcgccccgaaccgtccctcgtgtctcgccggccctggccctgaccgagacctgggc
cggtcccactccatgaggtaatttacacccctccgtgtcccgccggccggggagccccgttcatactcagtggt
acgtggacgacacgcagttcgtgaggttcgacagcgacgccgcgagttccgagagagaggagccgcggccgtggatagag
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ggcgcctccctccgccccataaccagttccctacgcggcaaggatcacatcgccctgaacgaggaccgtgagctccgg
accgcggccggacaccgcggctcagatcacccagcgcaagtggaggccggccgtgtggccggacgcTgagaAcctaccc
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cacatgtgacccaccacccatctgtaccatgaggccaccctgagggtctggccctgggttctaccctgcggagatc
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cttccagaagtggcagctgtgtgtgccttctggagaagagcagagatacacatgcctgtacagcatgagggctgc
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cta...gcagtgtggatcatggagctgtggcgctgtgtatgttaggagaaagatcaggtgga (配列番
号：9 9 8)

【 0 5 0 2 】

B*670102 gctcccaactccatgagggtatttctacacctccgtgtcccggccggccgcggggagccccgttcatctcagtgggctacgtggacgacacgcagttcgtaggttcgacagcgacccgcgagttccgagagaggagccgcggcgccgtgatagagcaggaggggccggagtttgccggacacacagatctacaaggcccaggcacagactgaccgagagagcctgtcggAACCTGCGGGCTACTACAACCAGAGCGAGGCCGGTCTCACACCCCTCCAGAGGATGTACGGCTGCGACGTGGGGCCGGACGGGCGCCCTCCGCGGGCATACCAGTTGCGCTACGACGGCAAGGATTACATCGCCCTGAACGAGGACCTGAGCTCCCTGGACCGCGGGCGGACACCCGGCTCAGATCACCCAGCGCAAGTGGGAGGC GGCCCGTG TGGCGAGCAGCTGAGA CCTACCTGGAGQQCA CQTGCGTGGAGTGGCTCCQCAAGATACCTGGAGA CCGQGAAGGAGACGCTQCAQCG (配列番

号 : 9 9 9)

【 0 5 0 3 】

B*6702 atgctggtcatggcgccccgaaccgtccctctgtctcggcgccctggcccgtaccgagacctggccg
gctcccaactccatgaggattttcacacccctccgttcccgccccggccgcggggagcccccgttcatctcagtggtac
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ccctccctcccgccccataaccagttgcctacgacggcaaggattacatgcctgaacgaggacctgagctccctggac
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agggcacgtgcgtggatggctcccgagataccctggagaacgggaggacgcgtgcagcgcggacccccc aaagaca
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aagccctcaccctgagatgggaggacatctccagttccaccatcccatcgatggcatttgtgcctggctgtcc
a...gcagtttgtcatcgagctgtggatgcgtgtatgttaggagaaagatcaggatgga (配列番号
: 1 0 0 0)

【 0 5 0 4 】

B*7301 atgctggtcatggcgccccgaaccgtccctctgtctcggcgccctggcccgtaccgagacctggccg
gctcccaactccatgaggattttccacacccctccgttcccgccccggccgcggggagcccccgttcatcaccgtgg
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ggagggccggatattgggaccggaaacacacagaatcgcaaggccaaggcacagactgaccgatggccctgcgg
tgcgcggctactacaaccagagcgaggacgggtctcacacttggcagacgcgtatggctgcacatggggccggacccg
ccctccctcccgccccataaccagttgcctacgacggcaaggattacatgcctgaacgaggacctgcgccttgg
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tccagaagtggcagctgtggatggccttctggacaagaacagagatacacatgcctacatgtgcagcac
gagccctgcaccctgagatgggaggacatctccagttccaccatcccatcgatggcatttgtgcctggctgtcc
tgtggatcaccgttagctgtggatCgctgtggatgcgtgtatgttaggagaaagatcaggatgga (配列番号
: 1 0 0 1)

【 0 5 0 5 】

B*7801 atgcgggtcacggcgccccgaaccgtccctctgtctcggggggcgtggccctgaccgagacctggccg
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ggagggccggatattgggaccggaaacacacagaatctTcaagaccaacacacagactgaccgagagac
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cacgtgacccaccacccGtctctgaccatgaggccaccctggatggccctggcttctaccctgcggagatcac
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tccagaagtggcagctgtggatggccttctggagaagagcagagatacacatgcctacagcatgagggctgc
aagccctcaccctgagatgggaggacatctccagttccaccatcccatcgatggcatttgtgcctggctgtcc
a...gcagtttgtcatcgagctgtggatgcgtgtatgttaggagaaagatCt caggatgga (配列番号
: 1 0 0 2)

【 0 5 0 6 】

B*780201 atgcgggtcacggcgccccgaaccgtccctctgtctcggggggcgtggccctgaccgagacctggcc
cgctcccaactccatgaggattttcacacccgcgttcccgccccggccgcggggagcccccgttcatcgagtggt
acgtggacgacacccagttcggtgaggttcgacagcgacgcccgcagttccgaggacggagcccccggccatggatagag
50

caggagggccggagtatggaccggaacacacagatctTcaagaccaacacacagactTaccgagagagcctgcggaa
 cctgcgcggctactacaaccagagcgaggccgggtctcacacttggcagaCgatgtatggctgcacgtggggccggacg
 ggcgcctccctccgcggcataaccagtacgcctacgacggcaaagattacatgcgcctgaacgaggaccgtgagctccctgg
 accgcggccggacaccgcggctcagatcaccagcgaagttggaggccggccgtgaggcggagcagcTgagacccctacct
 ggagggcctgtgcgtggatggctccgcagaCaccctggagaacgggaaggagacgcgtgcagcgcggaccccccggaa
 cacacgtgacccaccaccccGtctctgaccatgaggccaccctgagggtgctggggccctggcttctaccctgcggagatc
 acactgacctggcagcggatggcaggacaaactcaggacactgagcttggagaccagaccgcggagatagaac
 ctccagaagtggcagctgtggcttcgtggagaagagcagagatcacatgccatgtacagcatgagggctgc
 cgaagccctcaccctgagatgggagccatctccctaccatccccatcgtggcattgttgcggctggctgtc
 cta...gcagttgtggcatcgagctgtggctactgtatgttaggagaaagacgcgtgcagcgcgg (配列番号 : 1003) 10

【0507】

B*780202 gctccactccatgaggatttctacaccgcattgtccggccggccggggagcccgcttcatTgca
 gtggctacgtggacacccagttcgtaggttcgcacagcgacgcgcgagttcgaggacggagcccccggcgccAtg
 gatagagcaggagggccggagtatggaccgaaacacacagatctTcaagaccaacacacagactTaccgagagaccc
 tgcggacccctgcgcggctactacaaccagagcgaggccgggtctcacacttggcagaCgatgtatggctgcacgtgggg
 ccggacggccgcctccgcggcataaccagtacgcctacgacggcaaAgattacatgcgcctgaacgaggaccgtAg
 ctccctggaccgcggcggacaccgcggctcagatcaccagcgaagttggaggccggccgtgaggcggagcagcTgagag
 cctacctggagggccTgtgcgtggatggctccgcagaCaccctggagaacgggaaggagacgcgtgcagcgcgg (配列番号 : 1004) 20

【0508】

B*7803 gctccactccatgaggatttctacaccgcattgtccggccggccggggagcccgcttcatTgcagt
 gggctacgtggacacccagttcgtaggttcgcacagcgacgcgcgagttcgaggacggagcccccggcgccatgg
 tagagcaggagggccggagtatggaccgaaacacacagatctGcaagaccaacAcacagactgaccgagagaccc
 cggAACCTGCACGGCTACTACAACCAGAGCGAGGCCGGGTCTCACACTTGGCAGAAGATGAACTGCACGTGGGG
 GGACGGCGCCCTCCCGCGGCATAACCAGTACGCCTACGACGGCAAAGATTACATGCACCTGAACGAGGACCTGAGCT
 CCTGGACCGCGCGGGACACCAGCGGCTCAGATCACCAGCAGAAGTTGGAGGCCGGCCGTGAGGCGGAGCAGCTGAGAG
 TACCTGGAGGGCCTGTGCCTGGAGTTGGCTCCGCAGAACCCTGGAGAAGGGAGACGCAGCGCG (配列番号 : 1005) 30

【0509】

B*7804 gctccactccatgaggatttctacaccgcattgtccggccggccggggagcccgcttcatcgca
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 tagagcaggagggccggagtatggaccgaaacacacagatctcaagaccaacacacagacttaccgagagaccc
 cggAACCTGCACGGCTACTACAACCAGAGCGAGGCCGGGTCTCACACTTGGCAGACGATGTGGCTGCACGTGGGG
 GGACGGCGCCCTCCCGCGGCATAACCAGTACGCCTACGACGGCAAAGATTACATGCACCTGAACGAGGACCTGAGCT
 CCTGGACCGCGCGGGACACCAGCGGCTCAGATCACCAGCAGAAGTTGGAGGCCGGCCGTGAGGCGGAGCAGCTGAGAG
 TACCTGGAGGGCCTGTGCCTGGAGTTGGCTCCGCAGAACCCTGGAGAAGGGAGACGCAGCGCG (配列番号 : 1006) 40

【0510】

B*7805 gctccactccatgaggatttctacaccgcattgtccggccggccggggagcccgcttcatcgca
 ggtggctacgtggacacccagttcgtaggttcgcacagcgacgcgcgagttcgaggacggccCggagccCggggcgccatgg
 tagagcaggagggccggagtatggaccgaaGacacagatctCcaagaccaacacacagactTaccgagagaccc
 cggAACCTGCACGGCTACTACAACCAGAGCGAGGCCGGGTCTCACACTTGGCAGAAGATGAACTGCACGTGGGG
 GGACGGCGCCCTCCCGCGGCATAACCAGTACGCCTACGACGGCAAAGATTACATGCACCTGAACGAGGACCTGAGCT
 CCTGGACCGCGCGGGACACCAGCGGCTCAGATCACCAGCAGAAGTTGGAGGCCGGCCGTGAGGCGGAGCAGCTGAGAG
 TACCTGGAGGGCCTGTGCCTGGAGTTGGCTCCGCAGAACCCTGGAGAAGGGAGACGCAGCGCG (配列番号 : 1007) 50

[0 5 1 1]

B*8101 atgcgtggcatggcccccaaccgtccctgctgcctggggcagtgcccgtaccgagacctggccg
gccccactccatgaggtaattcacaccctcggtcccgccccggccggagcccgcttcatctcagtggtac
gtggacgacacccagtcgtgagggttcgacagcgacgccgcgagtcgagagaggagccgcggcgccgtggatagagca
ggagggccggagttggaccgaaacacacagatctacaaggccaggcacagactgaccgagagagccgtcggaacc
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tccagaagtggacagactgtgtgtgccttctggagaagagcagagatacacatgcctgtacagcatgagggctgccc
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a...gcagttgtgtcatcgagctgtggcgctgtgtatgttaggagaaagat tCTTGTGGA (配列番号
: 1 0 0 8)
[2 5 1 3]

【 0 5 1 2 】

B*8201 gctcccaactccatgagggtatttacaccgctatgtcccgccccggccgcggggagccccgttcatctcagt
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tagagcaggagggccggagtttgggaccggaacacacagatctacaaggcccaggcacagactgaccgagagagccgt
cgaaacctgcgcggtactacaaccagagcgaggccgggtctcacaccctccagaggatgtttggctgcacactggggcc
cgacgggcgcctccccgcggcataaccaatttgcctacgacggcaaggatatactgcccctgaacgaggacactgagct
cctggaccgcggcggacaccggccggctcagatcacccagcgcagaatggaggccggccgtgtggcggagcaggacagagcc
tacctggaggAcctgtgcgtggagtgcctccgcagataccctggagaacgggaaggagacgcgtgcagcgcgcgg (配
列番号 : 1 0 0 9)

【 0 5 1 3 】

B*8202 atgcgggtcacggcccccaaccctccctgcgtctggggggccctggccctgaccgagacctgggctg
gctcccactccatgaggatttctacaccgctatgtcccgccggccgcggagccccgttcatctcagtggctac
gtggacgacacgcagttcgtgagggttcgacagcgcacccgcgagttccgagagaggagccgcggcgcgtggatagagca
ggagggccggagatttggaccgaaacacacagatctacaaggcccaggcacagactgaccgagagagccctgcggaaacc
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cgccctcccgccgataaccagttagctacgcgcgcaaggattacatgcctgaacgaggacctgagctccgtggac
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a...gcagttgtggtcatcgagctgtggTgctactgtgttaggagaaagactcaggtgga (配列番号
: 1 0 1 0)

【 0 5 1 4 】

B*8301 atgcgggtcacggcccccaaccctccctgcttgcttggggggcaGtggccctgaccgagacccctggggcc
gctcccactccatgaggtaattctacaccgccAtgtcccgccccggccggagccccgcttcatctcagtggtac
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ggagggggccggagtatgggaccggaacacacagatctacaaggcccaggcacagactgaccgagagagccctgcggaaacc
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ccctccctccgcccggTatgaccagGacgcctacgacggcaaggattacatccctgaacgaggacccctggac
cgccggccggacaccggcgtcagatcacccagcgaagtggaggccggccgtgtggcggagcaggaCagaggccctaccctgg
agggccTgtgcgtggagtCgctccgcagataccctggagaacgggaaggagacgcgtgcagcgcgcGg (配列番号：
1 0 1 1)。

以下、表1-1~1-9にプローブリスト1を、表2-1~2-8にプローブリスト2を

示す。

【0515】

【表1】

表1-1

プローブ番号	塩基配列	
0	agg tat ttc tac acc tcc G (配列番号:1)	
1	ct cac acc ctc cag agC (配列番号:2)	
2	gc ctc ctc cgc ggg C (配列番号:3)	
3	c cgc ggg cat gac cag T (配列番号:4)	10
4	gt gag gcg gag cag cG (配列番号:5)	
5	t gag gcg gag cag cgG (配列番号:6)	
6	gcc tac ctg gag ggc gA (配列番号:7)	
7	ggc gag tgc gtg gag tG (配列番号:8)	
8	c ggg aag gac aag ctg G (配列番号:9)	
9	g gag tgg ctc cgc agG (配列番号:10)	
10	gc tac gtg gac gac acG (配列番号:11)	
11	a cag atc tac aag acc aac A (配列番号:12)	
12	gt gag gcg gag cag gaC (配列番号:13)	
13	c ctc ctc cgc ggg cat A (配列番号:14)	
14	cg tct tcc cag tcc acc A (配列番号:15)	20
15	ct cac acc ctc cag agG (配列番号:16)	
16	ac cgg aac aca cag atc tT (配列番号:17)	
17	a cag atc ttc aag acc aac A (配列番号:18)	
18	cgc ggg cat gac cag tC (配列番号:19)	
19	c cgg aac aca cag atc tG (配列番号:20)	
20	ca cag act gac cga gag aA (配列番号:21)	
21	g gcc ggg tct cac atc A (配列番号:22)	
22	ac atc atc cag agg atg taT (配列番号:23)	
23	gg atg tat ggc tgc gac C (配列番号:24)	
24	c tgc gac ctg ggg ccC (配列番号:25)	
25	ag aca cag aag tac aag cG (配列番号:26)	30
26	c aag cgc cag gca cag G (配列番号:27)	
27	gca cag gct gac cga gT (配列番号:28)	
28	gag gcc ggg tct cac aT (配列番号:29)	
29	g tct cac atc atc cag agG (配列番号:30)	
30	cgc ctc ctc cgc ggg T (配列番号:31)	

【0516】

【表2】

表1-2

プローブ番号	塩基配列	
31	c aag gcc cag gca cag G	(配列番号:32)
32	c aag acc aac aca cag act T	(配列番号:33)
33	cgc ggg tat gac cag tC	(配列番号:34)
34	gcc tac ctg gag ggc aC	(配列番号:35)
35	ctg gag aac ggg aag gaG	(配列番号:36)
36	g acg ctg gag cgc gcG	(配列番号:37)
37	gcc tac ctg gag ggc cT	(配列番号:38)
38	ggc ctg tgc gtg gag tC	(配列番号:39)
39	c ggc cgc ggg gag cT	(配列番号:40)
40	tcc tgg acc gcc gcg A	(配列番号:41)
41	cgg aac ctg cgc ggc C	(配列番号:42)
42	gcc tac ctg gag ggc C	(配列番号:43)
43	gg gag gcg gcc cgt gT	(配列番号:44)
44	gt gtg gcg gag cag gaC	(配列番号:45)
45	cgt gag gcg gag cag cT	(配列番号:46)
46	c cgg aac aca cag atc tC	(配列番号:47)
47	ca cag act tac cga gag G	(配列番号:48)
48	ctg cgg acc ctg ctc C	(配列番号:49)
49	c cgc ggg tat gac cag G	(配列番号:50)
50	cac tcc atg agg tat ttc G	(配列番号:51)
51	gg tat ttc gac acc gcc A	(配列番号:52)
52	cg aga gag gag ccg cC	(配列番号:53)
53	a gcc tac ctg gag ggc A	(配列番号:54)
54	g atg tgt agg agg aag agC	(配列番号:55)
55	ctg cgc acc gcg ctc C	(配列番号:56)
56	c cga gag aac ctg cgg aT	(配列番号:57)
57	gag aac ctg cgg atc gC	(配列番号:58)
58	ctg cgg atc gcg ctc C	(配列番号:59)
59	c acg ctg gag cgc gcG	(配列番号:60)
60	g gac cgg aac aca cag aC	(配列番号:61)

【0517】

【表3】

表1-3

プローブ番号	塩基配列	
61	c act tgg cag acg atg taT	(配列番号:62)
62	g gag tat tgg gac cgg G	(配列番号:63)
63	c cgg gac aca cag atc tT	(配列番号:64)
64	cgt gtg gcg gag cag ctT	(配列番号:65)
65	cgc ggg tac cac cag G	(配列番号:66)
66	c aca cag act gac cga gT	(配列番号:67)
67	ttc aag acc aac aca cag G	(配列番号:68)
68	c cgg gag aca cag atc tC	(配列番号:69)
69	g tgc tgg gcc ctg ggC	(配列番号:70)
70	g gct cag atc acc cag ctT	(配列番号:71)
71	g tct cac act tgg cag aC	(配列番号:72)
72	cgc ggg cat aac cag ttA	(配列番号:73)
73	cg atg tat ggc tgc gac C	(配列番号:74)
74	tgg gag cca tct tcc caA	(配列番号:75)
75	gag cag ctg aga gcc tG	(配列番号:76)
76	gg tct cac acc ctc cag T	(配列番号:77)
77	cc aga cca gca gga gaC	(配列番号:78)
78	cc ctg aga tgg gag ccA	(配列番号:79)
79	c atg agg tat ttc tac acc G	(配列番号:80)
80	c tcc cac tcc atg agg C	(配列番号:81)
81	g cag gag ggg ccg gaA	(配列番号:82)
82	g gag tgg ctc cgc aga C	(配列番号:83)
83	g acg ctg cag cgc gcG	(配列番号:84)
84	c acc ctc cag agg atg taT	(配列番号:85)
85	tc ctg ctg ctc tcg ggA	(配列番号:86)
86	gcg ccc cgg gcg ccA	(配列番号:87)
87	gag tat tgg gac cgg gaG	(配列番号:88)
88	c cgt gag gcg gag cag T	(配列番号:89)
89	gac caa act cag gac acC	(配列番号:90)
90	cc gcc tac gac ggc aaA	(配列番号:91)

【0518】

【表4】

表1-4

プローブ番号	塩基配列	
91	g agc tcc tgg acc gcG	(配列番号:92)
92	g gat tac atc gcc ctg aaT	(配列番号:93)
93	c gac acg cag ttc gtg C	(配列番号:94)
94	cag atc tcc aag acc aac A	(配列番号:95)
95	c gga gct gtg gtc gct A	(配列番号:96)
96	c acc ctc cag agg atg tT	(配列番号:97)
97	tac gcc tac gac ggc aaA	(配列番号:98)
98	cag atc tgc aag acc aac A	(配列番号:99)
99	cg agt ccg agg atg gcT	(配列番号:100)
100	g ggc ctg tgc gtg gaC	(配列番号:101)
101	gg gcc ggc tcc cac tT	(配列番号:102)
102	ac atg aag gcc tcc gcG	(配列番号:103)
103	gca gct gtg gtg gtg cT	(配列番号:104)
104	gtg acc cac cac ccc G	(配列番号:105)
105	g tat tgg gac cgg gag aT	(配列番号:106)
106	gcg agt ccg agg atg gC	(配列番号:107)
107	c acc ctc cag agg atg tC	(配列番号:108)
108	gg acc gcc gcg gac aA	(配列番号:109)
109	g atg tac ggc tgc gac C	(配列番号:110)
110	g tct cac acc ctc cag aC	(配列番号:111)
111	ct cac acc ctc cag acG	(配列番号:112)
112	ac cga gag aac ctg cgC	(配列番号:113)
113	c ggg aag gag acg ctg C	(配列番号:114)
114	cc ctg aac gag gac ctg A	(配列番号:115)
115	g gag ccc cgc ttc atc G	(配列番号:116)
116	agg tat ttc tac acc gcc A	(配列番号:117)
117	t ccg agg atg gcg ccC	(配列番号:118)
118	g ttc gac agc gac gcc A	(配列番号:119)
119	gag ccg cgg gcg ccA	(配列番号:120)
120	g gcg gag cag ctg aga A	(配列番号:121)

【0519】

【表5】

表1-5

プローブ番号	塩基配列	
121	a acc tac ctg gag ggc C	(配列番号:122)
122	acc tac ctg gag ggc cT	(配列番号:123)
123	c tcc aag acc aac aca cG	(配列番号:124)
124	c tac gtg gac gac acg cT	(配列番号:125)
125	c cgg gag aca cag atc tT	(配列番号:126)
126	ac aca cag act tac cga gT	(配列番号:127)
127	ca cag act tac cga gtg aA	(配列番号:128)
128	c cgc ggg cat aac cag tT	(配列番号:129)
129	cc cag ttc gtg agg ttc A	(配列番号:130)
130	c cgg gag aca cag atc tG	(配列番号:131)
131	g gct cag atc acc cag cA	(配列番号:132)
132	acc tac ctg gag ggc aC	(配列番号:133)
133	cac tcc atg agg tat ttc C	(配列番号:134)
134	gac ccc cca aag aca caT	(配列番号:135)
135	gag aca cag atc tcc aag aT	(配列番号:136)
136	gg gag gcg gcc cgt C	(配列番号:137)
137	gcg ccg tgg ata gag caA	(配列番号:138)
138	g acc aac aca cag act tac A	(配列番号:139)
139	ac acc ctc cag aat atg taT	(配列番号:140)
140	g gag ccc cgc ttc att G	(配列番号:141)
141	g gat tac atc gcc ctg aaG	(配列番号:142)
142	c acc ctc cag agg atg tG	(配列番号:143)
143	gcg ccg tgg ata gag caA	(配列番号:144)
144	cga gag aac ctg cgc aC	(配列番号:145)
145	gag aac ctg cgc acc gC	(配列番号:146)
146	g tct cac acc ctc cag aaT	(配列番号:147)
147	cag gag ggg ccg gag C	(配列番号:148)
148	ctg ggc ttc tac cct gG	(配列番号:149)
149	ca cag act gac cga gag G	(配列番号:150)
150	c gcc gcg gac acg gcA	(配列番号:151)

【0520】

【表6】

表1-6

プローブ番号	塩基配列	
151	ctg ctc tgg ggg gca G	(配列番号:152)
152	c cag agc gag gcc ggT	(配列番号:153)
153	c tcc gtg tcc cgg ccT	(配列番号:154)
154	cgc ggg tac cac cag C	(配列番号:155)
155	tg acc gag acc tgg gCT	(配列番号:156)
156	cag gag ggg ccg gag tT	(配列番号:157)
157	cga gag agc ctg cgg aC	(配列番号:158)
158	c acg gcg gct cag atc T	(配列番号:159)
159	cg gag cag ctg aga gCT	(配列番号:160)
160	gg ccc gac ggg cgc T	(配列番号:161)
161	cgc ggg cat gac cag tT	(配列番号:162)
162	cc atg tcc cgg ccc gT	(配列番号:163)
163	g acc gcg gcg gac acC	(配列番号:164)
164	c tgc gac gtg ggg ccC	(配列番号:165)
165	t ccg agg acg gag ccC	(配列番号:166)
166	gag ccc cgg gcg ccA	(配列番号:167)
167	cc gcg agt ccg agg aC	(配列番号:168)
168	cac atc atc cag agg atg tT	(配列番号:169)
169	ca cag act tac cga gag aA	(配列番号:170)
170	c atg tac ggc tgc gac C	(配列番号:171)
171	ctg cgg aac ctg cgc gA	(配列番号:172)
172	cat gac cag tcc gcc tG	(配列番号:173)
173	c acc atc cag agg atg tC	(配列番号:174)
174	gac ctg agc tcc tgg acA	(配列番号:175)
175	cga gag agc ctg cgc aC	(配列番号:176)
176	g cag gag ggg ccg gG	(配列番号:177)
177	ga acc tac ctg gag ggc A	(配列番号:178)
178	a acc tac ctg gag ggc aT	(配列番号:179)
179	c tgg acc gcg gcg gaG	(配列番号:180)
180	ta gag cag gag ggg ccA	(配列番号:181)

【0521】

【表7】

表1-7

プローブ番号	塩基配列	
181	tct cac act tgg cag acG (配列番号:182)	
182	g gcg gag cag cgG aga A (配列番号:183)	
183	cgG ccc ggc cgc ggA (配列番号:184)	
184	gg tct cac acc ctc caC (配列番号:185)	
185	c cgc ggg tat aac cag ttA (配列番号:186)	
186	g gcg gag cag tgg aga A (配列番号:187)	10
187	gaa tat tgg gac cgG gaG (配列番号:188)	
188	gcg gct cag atc acc cG (配列番号:189)	
189	cac acc ctc cag agc aC (配列番号:190)	
190	ag tgg gag gcg gcc ct (配列番号:191)	
191	g acc gag acc tgg gcG (配列番号:192)	
192	c gcc acg agt ccG agg A (配列番号:193)	
193	g atc tcc cag cgc aag tt (配列番号:194)	
194	tg gag gcg gcc cgt gt (配列番号:195)	
195	tg acc gag acc tgg gct (配列番号:196)	
196	g cgc tcc tgg acc gcG (配列番号:197)	
197	ag ggc gag tgc gtg gaT (配列番号:198)	20
198	gg tat ttc cac acc gcc A (配列番号:199)	
199	c cgc ggg cat aac cag A (配列番号:200)	
200	ccg gag tat tgg gac cc (配列番号:201)	
201	gg tct cac atc atc cag G (配列番号:202)	
202	c gcc tac gac ggc aag A (配列番号:203)	
203	cgc ggg cat aac cag tc (配列番号:204)	
204	cc ggg tct cac act tgg (配列番号:205)	
205	c act tgg cag agg atg tat (配列番号:206)	
206	ga gag agc ctg cgG aAG (配列番号:207)	
207	c ggg aag gac acg ctg C (配列番号:208)	
208	c acg ctg cag cgc gcG (配列番号:209)	
209	cc atc tct gac cat gag gt (配列番号:210)	30
210	cgg gag aca cag atc tcG (配列番号:211)	

【0522】

【表8】

表1-8

プローブ番号	塩基配列	
211	g gag gcg gcc cgt gtC	(配列番号:212)
212	a gag aac ctg cgc acc G	(配列番号:213)
213	gg gag ccc cgc ttc att	(配列番号:214)
214	ctg cgc acc ccg ctc C	(配列番号:215)
215	gg ccg gag tat tgg gaG	(配列番号:216)
216	c cgc ggg cat aac cag G	(配列番号:217)
217	ggc gag tgc gtg gag tc	(配列番号:218)
218	cgg gcg ccg tgg gtG	(配列番号:219)
219	ga gag aac ctg cgg atc G	(配列番号:220)
220	gtg gac acg ctg ttG	(配列番号:221)
221	tg gag ggc ctg tgc gc	(配列番号:222)
222	gac ggc aag gat tac atc A	(配列番号:223)
223	c cgc ggg tat aac cag tt	(配列番号:224)
224	ctc cgc ggg tat aac CG	(配列番号:225)
225	gcg gag cag gac aga GT	(配列番号:226)
226	gag aca cag aag tac aag C	(配列番号:227)
227	cgc cag gca cag act GG	(配列番号:228)
228	t gtg gtc gct gct gtg G	(配列番号:229)
229	c ctg cgg aac ctg ctc C	(配列番号:230)
230	aga acc ttc cag aag tgg A	(配列番号:231)
231	ag ccc cgc ttc atc tcC	(配列番号:232)
232	c cgc ggg tat aac cag ttA	(配列番号:233)
233	ggc ctg tgc gtg gag G	(配列番号:234)
234	cgg atc gcg ctc cgc G	(配列番号:235)
235	ttc gcc tac gac ggc aaa	(配列番号:236)
236	ctc ctc cgc ggg cat aaa	(配列番号:237)
237	g cgt ctc ctc cgc ggt	(配列番号:238)
238	c ggg cgc ctc ctc cC	(配列番号:239)
239	g agt ccg agg acg gag A	(配列番号:240)
240	ata gag cag gag ggg cG	(配列番号:241)

【0523】

【表9】

表1-9

プローブ番号	塩基配列	
241	cc aga cca gca gga gat G	(配列番号:242)
242	cag cat gag ggg ctg cT	(配列番号:243)
243	cag act tac cga gag aac T	(配列番号:244)
244	gc gac gcc gcg agt cA	(配列番号:245)
245	c cgc ggg gag ccc cC	(配列番号:246)
246	cga gag agc ctg cgg aT	(配列番号:247)
247	gag agc ctg cgg atc gC	(配列番号:248)
248	g gca cag act gac cga gT	(配列番号:249)
249	g acc gcc gcg gac acc C	(配列番号:250)
250	g cag gag ggg ccg gC	(配列番号:251)
251	cc gcg agt ccg aga gG	(配列番号:252)
252	gg tct cac act tgg cag aT	(配列番号:253)
253	acg gca ccc cga acc C	(配列番号:254)
254	ctc ctc ctg ctg ctc TG	(配列番号:255)
255	ag aca cag aag tac aag gG	(配列番号:256)
256	gg tct cac atc atc cag gT	(配列番号:257)
257	gc ggg cat gac cag tCT	(配列番号:258)
258	g acc gcg gcg gac acA	(配列番号:259)
259	g ccg gag tat tgg gac G	(配列番号:260)
260	c ctc ctc cgc ggg tat A	(配列番号:261)
261	c acg gcg gct cag atc aT	(配列番号:262)
262	tg cgg atc gcg ctc cc	(配列番号:263)
263	g ccg gag tat tgg gac gA	(配列番号:264)
264	g gag gcg gcc cgt gC	(配列番号:265)
265	c gac gcc gcg agt cCA	(配列番号:266)
266	gtc acc gta gct gtg gTC	(配列番号:267)
267	g tgt agg agg aag agt tcT	(配列番号:268)
268	c aga gcc tac ctg gag gA	(配列番号:269)
269	gtc atc gga gct gtg gTT	(配列番号:270)

【0524】

【表10】

表2-1

プローブ番号	塩基配列	
0	c acc tcc Gtg tcc cgg	(配列番号:271)
1	c ctc cag agC atg tac gg	(配列番号:272)
2	c cgc ggg Cat gac cag	(配列番号:273)
3	cat gac cag Tac gcc tac	(配列番号:274)
4	g gag cag cGg aga gcc	(配列番号:275)
5	gag cag cgG aga gcc ta	(配列番号:276)
6	g gag ggc gAg tgc gtg	(配列番号:277)
7	c gtg gag tGg ctc cgc	(配列番号:278)
8	ac aag ctg Gag cgc gct	(配列番号:279)
9	ctc cgc agG tac ctg ga	(配列番号:280)
10	g gac gac acG cag ttc gt	(配列番号:281)
11	aag acc aac Aca cag act g	(配列番号:282)
12	g gag cag gaC aga gcc ta	(配列番号:283)
13	cgc ggg cat Aac cag tac	(配列番号:284)
14	cag tcc acc Atc ccc atc	(配列番号:285)
15	c ctc cag agG atg tac gg	(配列番号:286)
16	aca cag atc tTc aag acc aa	(配列番号:287)
17	t gac cag tCc gcc tac g	(配列番号:288)
18	ca cag atc tGc aag gcc c	(配列番号:289)
19	c cga gag aAc ctg cgg a	(配列番号:290)
20	tct cac atc Atc cag agg a	(配列番号:291)
21	g agg atg taT ggc tgc ga	(配列番号:292)
22	c tgc gac Ctg ggg ccc	(配列番号:293)
23	ctg ggg ccC gac ggg	(配列番号:294)
24	g tac aag cGc cag gca c	(配列番号:295)
25	ag gca cag Gct gac cga	(配列番号:296)
26	t gac cga gTg agc ctg c	(配列番号:297)
27	gg tct cac aTc atc cag ag	(配列番号:298)
28	c atc cag agG atg tac gg	(配列番号:299)
29	tc cgc ggg Tat gac cag	(配列番号:300)
30	aag acc aac Aca cag act ta	(配列番号:301)

【0525】

【表 1 1】

表 2-2

プローブ番号	塩基配列	
31	aca cag act Tac cga gag a	(配列番号:302)
32	g gag ggc aCg tgc gtg	(配列番号:303)
33	ggg aag gaG acg ctg ga	(配列番号:304)
34	g aag gag aCg ctg gag c	(配列番号:305)
35	g gag ggc cTg tgc gtg	(配列番号:306)
36	c gtg gag tCg ctc cgc	(配列番号:307)
37	c ggg gag cTc cgc ttc	(配列番号:308)
38	c gcc gcg Aac acg gcg	(配列番号:309)
39	tg cgc ggc Cac tac aac	(配列番号:310)
40	g gag ggc Ctg tgc gtg	(配列番号:311)
41	g gcc cgt gTg gcg gag	(配列番号:312)
42	g gag cag cTg aga gcc t	(配列番号:313)
43	ca cag atc tCc aag acc aa	(配列番号:314)
44	aca cag act Tac cga gag g	(配列番号:315)
45	c cga gag Gac ctg cgg	(配列番号:316)
46	cc ctg ctc Cgc tac tac	(配列番号:317)
47	tat gac cag Gac gcc tac	(配列番号:318)
48	agg tat ttc Gac acc gcc	(配列番号:319)
49	c acc gcc Atg tcc cgg	(配列番号:320)
50	gag ccg cCg gcg ccg	(配列番号:321)
51	g gag ggc Acg tgc gtg	(配列番号:322)
52	g agg aag agC tca ggt gg	(配列番号:323)
53	cc gcg ctc Cgc tac tac	(配列番号:324)
54	c ctg cgg aTc gcg ctc	(配列番号:325)
55	g cgg atc gCg ctc cgc	(配列番号:326)
56	tc gcg ctc Cgc tac tac	(配列番号:327)
57	g aag gac aCg ctg gag c	(配列番号:328)
58	ac aca cag aCc ttc aag ac	(配列番号:329)
59	g acg atg taT ggc tgc ga	(配列番号:330)
60	gg gac cgg Gac aca gag	(配列番号:331)
61	ac cac cag Gac gcc tac	(配列番号:332)

【0526】

【表 1 2】

表 2-3

プローブ番号	塩基配列	
62	aac aca cag Gct gac cga	(配列番号:333)
63	gcc ctg ggC ttc tac cc	(配列番号:334)
64	c acc cag cTc aag tgg g	(配列番号:335)
65	ct tgg cag aCg atg tat gg	(配列番号:336)
66	t aac cag ttA gcc tac gac	(配列番号:337)
67	c tgc gac Ctg ggg ccg	(配列番号:338)
68	a tct tcc caA tcc acc gtc	(配列番号:339)
69	g aga gcc tGc ctg gag g	(配列番号:340)
70	acc ctc cag Tgg atg tat g	(配列番号:341)
71	a gca gga gaC aga acc ttc	(配列番号:342)
72	a tgg gag ccA tct tcc ca	(配列番号:343)
73	tc tac acc Gcc gtg tcc	(配列番号:344)
74	tcc atg agg Cat ttc tac ac	(配列番号:345)
75	g ggg ccg gaA tat tgg ga	(配列番号:346)
76	tc cgc aga Cac ctg gag	(配列番号:347)
77	g acg ctg Cag cgc gcg	(配列番号:348)
78	ctc tcg ggA gcc ctg g	(配列番号:349)
79	cgg gcg ccA tgg ata ga	(配列番号:350)
80	g gac cgg gaG aca cag at	(配列番号:351)
81	cg gag cag Tgg aga gcc	(配列番号:352)
82	t cag gac acC gag ctt gt	(配列番号:353)
83	c gac ggc aaA gat tac atc	(配列番号:354)
84	tgg acc gcG gcg gac a	(配列番号:355)
85	c gcc ctg aaT gag gac ct	(配列番号:356)
86	cag ttc gtg Cgg ttc gac	(配列番号:357)
87	gtg gtc gct Act gtg atg	(配列番号:358)
88	ag agg atg tTt ggc tgc g	(配列番号:359)
89	ca cag atc tGc aag acc aa	(配列番号:360)
90	agg atg gcT ccc cgg g	(配列番号:361)
91	tgc gtg gaC ggg ctc c	(配列番号:362)
92	gc tcc cac tTc atg agg t	(配列番号:363)

【0527】

【表13】

表2-4

プローブ番号	塩基配列	
93	gcc tcc gcG cag act ta	(配列番号:364)
94	tg gtg gtg cTt tct gga g	(配列番号:365)
95	ac cac ccc Gtc tct gac	(配列番号:366)
96	ac cgg gag aTa cag atc tc	(配列番号:367)
97	g agg atg gCg ccc cgG	(配列番号:368)
98	g agg atg tCt ggc tgc g	(配列番号:369)
99	c gcg gac aAg gcg gct	(配列番号:370)
100	cc ctc cag aCg atg tac g	(配列番号:371)
101	c ctc cag acG atg tac gg	(配列番号:372)
102	aac ctg cgC acc gcg c	(配列番号:373)
103	ag gac ctg Agc tcc tgg	(配列番号:374)
104	gc ttc atc Gca gtg ggc	(配列番号:375)
105	atg gcg ccC cgG gcg	(配列番号:376)
106	c gac gcc AcG agt ccG	(配列番号:377)
107	cag ctg aga Acc tac ctg	(配列番号:378)
108	cc aac aca cGg act tac c	(配列番号:379)
109	ggg aag gaG acg ctg ca	(配列番号:380)
110	ac gac acg cTg ttc gtg a	(配列番号:381)
111	ct tac cga gTg aac ctg c	(配列番号:382)
112	c cga gtg aAc ctg cgG a	(配列番号:383)
113	at aac cag tTc gcc tac ga	(配列番号:384)
114	gtg agg ttc Aac agc gac	(配列番号:385)
115	c acc cag cAc aag tgg g	(配列番号:386)
116	cg gag cag cTg aga acc t	(配列番号:387)
117	agg tat ttc Cac acc tcc g	(配列番号:388)
118	a aag aca caT gtg acc cac	(配列番号:389)
119	atc tcc aag aTc aac aca ca	(配列番号:390)
120	g gcc cgt Cag gcg gag	(配列番号:391)
121	g ata gag caA gag ggg cc	(配列番号:392)
122	cag act tac Aga gag agc c	(配列番号:393)
123	g aat atg taT ggc tgc gac	(配列番号:394)

【0528】

【表 1 4】

表 2-5

プローブ番号	塩基配列	
124	cgc ttc att Gca gtg ggc	(配列番号:395)
125	gcc ctg aaG gag gac ct	(配列番号:396)
126	ct tac cga gTg agc ctg c	(配列番号:397)
127	g agg atg tGc ggc tgc g	(配列番号:398)
128	g ata gag caA gag ggg cc	(配列番号:399)
129	ca cag atc tGc aag gcc a	(配列番号:400)
130	c ctg cgc aCc gcg ctc	(配列番号:401)
131	cgc acc gCg ctc cgc	(配列番号:402)
132	c ctc cag aaT atg tat ggc	(配列番号:403)
133	gg ccg gag Cat tgg gac	(配列番号:404)
134	tc tac cct gGg gag atc a	(配列番号:405)
135	g gac acg gcA gct cag at	(配列番号:406)
136	g ggg gca Gtg gcc ctg	(配列番号:407)
137	gag gcc ggT tct cac ac	(配列番号:408)
138	tcc cgg ccT ggc cgc	(配列番号:409)
139	ac cac cag Cac gcc tac	(配列番号:410)
140	acc tgg gcT ggc tcc c	(配列番号:411)
141	g gtc acg gAg ccc cga	(配列番号:412)
142	g ccg gag tTt tgg gac c	(配列番号:413)
143	c ctc cag aaT atg tac ggc	(配列番号:414)
144	c ctg cgg aCc ctg ctc	(配列番号:415)
145	ct cag atc Tcc cag cgc	(配列番号:416)
146	g ctg aga gcT tac ctg ga	(配列番号:417)
147	c ggg cgc Ttc ctc cgc	(配列番号:418)
148	at gac cag tTc gcc tac g	(配列番号:419)
149	cgc ggg cat Aac cag ttc	(配列番号:420)
150	cgg ccc gTc cgc ggg	(配列番号:421)
151	gcg gac acC gcg gct c	(配列番号:422)
152	tct cac atc Atc cag agc a	(配列番号:423)
153	gtg ggg ccC gac ggg	(配列番号:424)
154	acg gag ccC cgG gcg	(配列番号:425)

【0529】

【表 15】

表 2-6

プローブ番号	塩基配列	
155	t ccg agg aCg gag ccc	(配列番号:426)
156	ac ctg cgc gAc tac tac a	(配列番号:427)
157	g tcc gcc tGc gac ggc	(配列番号:428)
158	tcc tgg acA gcg gcg g	(配列番号:429)
159	c cga gag aAc ctg cgc a	(配列番号:430)
160	g ggg ccg gGa tat tgg g	(配列番号:431)
161	tg gag ggc Atg tgc gtg	(配列番号:432)
162	g gag ggc aTg tgc gtg g	(配列番号:433)
163	gcg gcg gaG acc gcg	(配列番号:434)
164	g gag ggg ccA gaa tat tg	(配列番号:435)
165	ct tgg cag aCg atg tac g	(配列番号:436)
166	t tgg cag acG atg tac gg	(配列番号:437)
167	cag cgg aga Acc tac ctg	(配列番号:438)
168	ggc cgc ggA gag ccc	(配列番号:439)
169	c acc ctc caC agg atg ta	(配列番号:440)
170	cg gag cag Tgg aga acc	(配列番号:441)
171	cag tgg aga Acc tac ctg	(配列番号:442)
172	g atc acc cGg cgc aag t	(配列番号:443)
173	c cag agc aCg tac ggc t	(配列番号:444)
174	g gcg gcc cTt gtg gcg	(配列番号:445)
175	acc tgg gcG ggc tcc c	(配列番号:446)
176	gtc acg gcA ccc cga ac	(配列番号:447)
177	agg tat ttc Cac acc gcc	(配列番号:448)
178	gt ccg agg Aag gag ccg	(配列番号:449)
179	g cgc aag tTg gag gcg g	(配列番号:450)
180	acc tgg gcT ggc tcc c	(配列番号:451)
181	tgc gtg gaT tgg ctc cg	(配列番号:452)
182	cat aac cag Aac gcc tac g	(配列番号:453)
183	t tgg gac cCg gag aca c	(配列番号:454)
184	atc atc cag Gtg atg tat gg	(配列番号:455)
185	gac ggc aag Aat tac atc g	(配列番号:456)

【0530】

【表 1 6】

表 2-7

プローブ番号	塩基配列	
186	at aac cag tCc gcc tac g (配列番号:457)	
187	ctg cgg aaG ctg cgc g (配列番号:458)	
188	t cac act tgG cag agg atg (配列番号:459)	
189	c acg ctg Cag cgc gcg (配列番号:460)	
190	ac cat gag gTc acc ctg a (配列番号:461)	
191	a cag atc tcG aag acc aac (配列番号:462)	
192	gcc cgt gtC gcg gag c (配列番号:463)	10
193	g cgc acc Gcg ctc cg (配列番号:464)	
194	c cgc ttc atT gca gtg gg (配列番号:465)	
195	c ctg cgc aCc ccg ctc (配列番号:466)	
196	cc ccg ctc Cgc tac tac (配列番号:467)	
197	g tat tgg gaG cgg gag ac (配列番号:468)	
198	gc ggg cat Aac cag gac (配列番号:469)	
199	cat aac cag Gac gcc tac (配列番号:470)	
200	ctc cgc ggg Tat aac cag (配列番号:471)	
201	ccg tgg gtG gag cag g (配列番号:472)	
202	g cgg atc Gcg ctc cgc (配列番号:473)	20
203	c acg ctg ttG gtg agg tt (配列番号:474)	
204	c ctg tgc gCg gag tcg (配列番号:475)	
205	gat tac atc Acc ctg aac g (配列番号:476)	
206	gg tat aac cGg tta gcc ta (配列番号:477)	
207	ag gac aga gTc tac ctg g (配列番号:478)	
208	aag tac aag Cgc cag gca (配列番号:479)	
209	ca cag act gGc cga gtg a (配列番号:480)	
210	gct gct gtg Gtg tgt agg (配列番号:481)	
211	aac ctg ctc Cgc tac tac (配列番号:482)	
212	cag aag tgg Aca gct gtg (配列番号:483)	
213	cag cgc gcG gac ccc (配列番号:484)	30
214	c ttc atc tcC gtg ggc ta (配列番号:485)	
215	c gtg gag Ggg ctc cgc (配列番号:486)	
216	cg ctc cgc Gac tac aac (配列番号:487)	

【0531】

【表 1 7】

表 2-8

プローブ番号	塩基配列	
217	c ggg cat aaA cag tac gc	(配列番号:488)
218	c ctc cgc ggT tat aac ca	(配列番号:489)
219	c ctc ctc cCc ggg cat	(配列番号:490)
220	g acg gag Acc cgg gcg	(配列番号:491)
221	g gag ggg cGg gag tat t	(配列番号:492)
222	gca gga gat Gga acc ttc	(配列番号:493)
223	g ggg ctg cTg aag ccc	(配列番号:494)
224	cgG gtc aCg gcg ccc	(配列番号:495)
225	t ccg agg aCg gag ccg	(配列番号:496)
226	cga gag aac Ttg cgg atc	(配列番号:497)
227	c gcg agt cAg agg acg g	(配列番号:498)
228	g gag ccc cCc ttc atc g	(配列番号:499)
229	g ggg ccg gCg tat tgg	(配列番号:500)
230	t ccg aga gGg gag ccg	(配列番号:501)
231	ct tgg cag aTg atg tat gg	(配列番号:502)
232	g tac aag gGc cag gca c	(配列番号:503)
233	tc atc cag gTg atg tat gg	(配列番号:504)
234	t gac cag tcT gcc tac ga	(配列番号:505)
235	gCG gac acA gcg gct c	(配列番号:506)
236	tat tgg gac Ggg gag aca	(配列番号:507)
237	cgc ggg tat Aac cag tac	(配列番号:508)
238	ct cag atc aTc cag cgc a	(配列番号:509)
239	c gcg ctc cCc tac tac a	(配列番号:510)
240	at tgg gac gAg gag aca c	(配列番号:511)
241	gcc cgt gCg gcg gag	(配列番号:512)
242	g aag gag aCg ctg cag c	(配列番号:513)
243	gCG agt ccA aga ggg ga	(配列番号:514)
244	gct gtg gtC gct gtg gt	(配列番号:515)
245	c ctg gag gAc ctg tgc g	(配列番号:516)
246	a gct gtg gtT gct act gtg	(配列番号:517)

【0532】

以下に、アレル - プローブ対応リストを示す。なお、(アレル - プローブ対応リスト 1)を表3、(アレル - プローブ対応リスト 2)を表4とする：

【0533】

(アレル - プローブ対応リスト 1)

B*070201 0 1 2 3 4 5 6 7 8

B*070202 9

B*070203 10

B*0703 11

B*0704 12

B*0705 13 14

B*0706 13

B*0707 15

B*0708 16 17

B*0709 18

B*0710 19

B*0711 20 18

B*0712 21 22 23 24

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B*0713	25	26	27	
B*0714	28	21	29	30
B*0715	31	27		
B*0716	11	32		
B*0717	30	33		
B*0718	28	22		
B*0719	12	34	35	36
B*0720	37	38		
B*0721	39			
B*0722	40			10
B*0723	41			
B*0724	42			
B*0725	43	44		
B*0726	45			
B*0727	46	32	47	48
B*0728	30	49		
B*0729	50	51		
B*0730	52			
B*0731	53	34		
B*0801	50	54		20
B*0802	50	55	54	
B*0803	56	57	58	13 43 44 53 34 59
B*0804	50	46	13	44 53 59
B*0805	60			
B*0806	50	16	20	13 53 59
B*0807	50	16	44	53 59
B*0809	50	61	13	44 53 59
B*0810	50	62	63	13 44 53 59
B*0811	50	16	13	44 59
B*0812	50	15	13	44 53 59
B*0813	50	16	64	53 59
B*0814	50	65	44	53 59
B*0815	66	44	34	59
B*0816	67	44	59	
B*0817	50	68	20	69
B*1301	21	70	54	
B*1302	71	70	54	
B*1303	55	61	72	43 64 37 54
B*1304	73	18	64	74
B*1306	70	34		40
B*1308	75			
B*1309	71	61	72	70
B*1310	33	70		
B*1311	70	69		
B*1401	76	77	78	
B*1402	79	76	77	78
B*1403	79	76	77	
B*1404	80			
B*1405	79	81	45	82 83
B*140601	79	81	15	45 82 83

B*140602	79 81 84 45 82 83	
B*15010101	85 86 87 68 32 88 89 54	
B*150102	90 91 88 37 83	
B*150103	92	
B*150104	93 37	
B*1502	85 46 22 30 33 45 89 54	
B*1503	85 10 87 68 94 15 18 45 89 54	
B*1504	85 61 88 89 54	
B*1505	15 43 64 37 89 95	
B*1506	96 45 95 54	10
B*1507	86 87 68 32 88 54	
B*1508	85 16 32 88 89 54	
B*1509	85 97 45 89 54	
B*1510	85 10 19 98 15 45 89 54	
B*151101	85 86 32 88 89 54	
B*151102	99	
B*1512	100	
B*1513	85 58 22 30 33 45 89 54	
B*1514	85 38 89 54	
B*1515	85 86 46 32 88 89 54	20
B*1516	101 54	
B*151701	102 65 89 95 54	
B*1518	85 10 19 98 15 18 45 89 54	
B*1519	103	
B*1520	85 104 54	
B*1521	85 19 22 30 33 45 89 54	
B*1523	85 19 98 58 15 18 45 89 54	
B*1524	57 58 15 18 91 88 37 83	
B*1525	85 87 68 22 30 33 45 89 54	
B*1527	96 88 37	30
B*1528	105	
B*1529	85 16 17 15 18 45 89	
B*1530	68 13 91 88 37	
B*1531	106 15 30 33 43 64 37 83	
B*1532	107 88 37	
B*1533	108	
B*1534	68 109 18 91 88 37 83	
B*1535	110 111 18 91 88 37 83	
B*1536	112 30 33 45 42 37 113 83	
B*1537	10 19 32 114 45 37 82	40
B*1538	88 82 83	
B*1539	115 106 87 68 94 15 18 45 37 83	
B*1540	115 106 87 68 94 15 18 45 83	
B*1542	68 32 71 61 73 72 34 83	
B*1543	47 88 37 83	
B*1544	19 33 91 45 34 83	
B*1545	116 117 86 87 68 32 91 88 37 83	
B*1546	85 115 118 119 87 68 32 18 88 37 83	
B*1547	10 87 68 94 32 15 18 114 91 83	
B*1548	68 13 120 121 122 83	50

B*1549	123	
B*1550	18 88 34 83	
B*1551	19 18 43 44 37 35 113 83	
B*1552	85 19 15 43 64 83	
B*1553	85 124 118 119 87 68 32 18 88 37 83	
B*1554	85 10 87 68 32 88 89 54	
B*1555	85 43 64 89 54	
B*1556	87 125 32 15 18 91 88 37 83	
B*1557	126 127 37 113 83	
B*1558	85 128 88 37 83	10
B*1560	129	
B*1561	10 87 68 94 15 18 114 45 37 83	
B*1562	10 87 68 94 32 21 22 23 24 18 114 91 45 37 113 83	
B*1563	116 117 86 87 68 32 15 91 88 37 83	
B*1564	10 46 94 32 15 18 114 45 37 83	
B*1565	116 115 106 87 68 94 32 15 18 91 37 83	
B*1566	85 130 32 88 89 54	
B*1567	131	
B*1568	87 68 32 88 89	
B*1569	68 18 45 120 132 83	20
B*1570	116 117 86 87 68 94 15 18 91 88 37 83	
B*1571	133 86 87 68 32 15 88 89	
B*1572	10 19 18 45 37 134 89	
B*1573	72 88 37 83	
B*1574	135	
B*1575	136	
B*180101	137 32 15 54	
B*180102	138	
B*1802	137 139 54	
B*1803	137 15 54	30
B*1804	140 137 46 32 15 43 64 82	
B*1805	141	
B*1806	126 82 95 54	
B*1807	137 16 32 15 43 64 82	
B*1808	142	
B*1809	137 55 15 43 64 82	
B*1810	133 137 46 32 15 43 64	
B*1811	133 137 46 32 15 43 64 34	
B*1812	137 87 68 32 15 43 64 82	
B*1813	133 137 46 32 15 43 82	40
B*1814	133 137 46 32 43 64 82	
B*1815	133 137 46 32 15 45 82	
B*1818	107 64 82	
B*2701	130 144 145 55 146 65 43 64 83	
B*2702	57 58 146 65 43 54	
B*2703	147	
B*2704	65 148	
B*270502	130 149 146 65 114 64 54	
B*270503	150	
B*270504	151 130 149 146 139 65 114 43 64 83	50

B*270505	152	
B*270506	153	114
B*2706	148	
B*2707	149	48 13 64 54
B*2708	130	146 65 43 54
B*2709	154	
B*2710	130	149 146 139 65 114 45 83
B*2711	155	48 13 43 64 54
B*2712	130	98 146 65 43 54
B*2713	130	149 146 65 114 64 54
B*2714	149	73 65 114 43 64 83
B*2715	146	65 34 83
B*2716	130	98 149 146 139 65 114 43 64 83
B*2717	156	
B*2718	133	124 68 94 32 146 65 114 45 83
B*2719	149	21 29 65 114 43 64 83
B*2720	146	13 45 83
B*2721	130	48 15 30 114 45 83
B*2723	16	17 32 157 48 146 65 43 64 83
B*2724	48	158 83
B*2725	146	37 83
B*350101	16	17 21 22 18 114 43 64 37 104 54
B*350102	159	
B*3502	160	
B*3503	161	114 43 64 37 104 54
B*3504	24	13 114 43 64 37 104 54
B*3505	16	17 18 114 43 64 37 104 54
B*3506	13	128 114 43 64 37 104 54
B*3507	162	
B*3508	16	17 21 22 18 114 43 37 104 54
B*350901	24	13 43 64 37 104 54
B*350902	16	24 13 43 64 37 113 83
B*3510	87	125 17 32 21 22 23 24 18 114 163 43 64 37
B*3511	16	17 21 22 18 114 45 37 104 54
B*3512	13	114 43 64 37 104 54
B*3513	87	125 32 24 161 114 163 43 64 37 113 83
B*3514	163	88 37 83
B*3515	16	17 21 22 18 114 43 64 104 54
B*3516	87	125 17 32 21 164 18 114 163 43 64 37 113 83
B*3517	165	166 16 17 32 21 164 18 114 163 43 64 37 113 83
B*3518	16	17 21 24 13 43 37 113 83
B*3519	119	16 17 32 21 22 23 24 18 114 163 43 64 37 113 83
B*3520	167	166 46 94 32 21 22 23 24 18 114 163 43 64 37 113 83
B*3521	18	114 163 45 37 82
B*3522	167	16 13 114 163 43 64 37 83
B*3523	168	18 43 64 37 83
B*3524	18	43 64 37 82
B*3525	10	16 17 32 21 22 23 24 18 114 163 43 64 37 113 83
B*3526	81	42 37 83
B*3527	16	17 169 21 22 23 24 18 114 163 43 64 37 113 83

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B*3916	184	
B*3917	185 120 132 83	
B*3918	81 88 186 132 83	
B*3919	166 19 98 15 13 128 43 64 120 132 83	
B*3920	169 15 13 128 43 64 120 132 83	
B*3922	81 187 130 98 15 13 128 64 120 132 83	
B*3923	188	
B*3924	189	
B*3926	190	
B*3927	98 66 120 132 113 83	10
B*400101	191	
B*400102	133 124 118 192 119 87 68 32 15 13 193 194	
B*400103	133 124 118 192 87 68 32 15 13 193 194	
B*4002	155 68 32 13 43 64 54	
B*4003	155 87 68 32 18 43 64 54	
B*4004	155 23 13 43 64 54	
B*4005	155 13 45 37 54	
B*400601	155 71 61 13 43 64 54	
B*4007	125 32 15 13 193 194	
B*4008	155 16 32 13 43 64 54	20
B*4009	133 124 118 30 43 64 35 113 83	
B*4010	115 118 192 119 87 68 32 15 13 193 194	
B*4011	133 124 118 15 13 43 64 35 113 83	
B*4012	85 10 119 87 68 32 15 13 193 194	
B*4013	155 57 58 13 43 64	
B*401401	133 124 118 13 163 43 64	
B*401402	133 124 118 13 196 43 64	
B*4015	197	
B*4016	133 198 124 118 119 87 68 32 13	
B*4018	133 124 118 68 43 64 35 113 83	30
B*4019	118 68 94 56 13 43 64 113	
B*4020	155 87 68 32 15 18 43 64	
B*4021	117 86 87 68 32 15 13 193 194	
B*4023	133 124 118 192 119 87 68 32 15 13 158	
B*4024	133 118 119 87 68 94 32 170 24 43 64 113 83	
B*4025	133 124 118 192 119 46 32 15 13 193 194	
B*4026	118 87 68 32 97 45 37	
B*4027	199	
B*4028	23 97 45 37 82	
B*4029	200 13	40
B*4030	201 193 64	
B*4031	133 124 118 192 119 87 68 32 193 194	
B*4032	133 198 124 118 119 87 68 32	
B*4033	133 124 118 192 119 87 68 32 15 193 194	
B*4034	202	
B*4035	133 124 118 13 114 43 64 35 113 83	
B*4036	15 128 193 194	
B*4037	133 124 118 68 169 13 43 64 35 113 83	
B*4038	203 193 194	
B*4039	155 13 64 34 69	50

B*4040	124 118 68 13 43 64 35 113 83	
B*4042	30 193 194	
B*4043	133 124 118 192 119 87 68 15 13 193 194	
B*4044	124 118 68 32 71 61 43 64 113	
B*4101	204 205 44 34 54	
B*4102	119 32 44 34 54	
B*4103	183 44	
B*4104	24 43 44 53 34 59	
B*4105	206	
B*4106	204 44 34 207 208	10
B*4201	44 34 54	
B*4202	133 13 43 44 53 34 59	
B*4204	71 61 13 43 44 53 34 59	
B*440201	118 55 44 37 209 54	
B*440202	210 55 44 37 209	
B*440203	211	
B*440301	118 64 37 209 54	
B*440302	118 22 64 37 209 54	
B*4404	34 209 54	
B*4405	87 144 212 55 21 30 44 37 38 83	20
B*4406	213 44 38	
B*4407	22 64 37 209 54	
B*4408	117 55 44 37 209 54	
B*4409	118 44 37 209 54	
B*4410	168 64 38 83	
B*4411	116 118 119 87 144 214 21 30 49 44 37 38 83	
B*4412	116 118 119 144 212 55 21 30 49 44 37 38 83	
B*4413	215	
B*4414	13 216 44 37 38 83	
B*4415	175 55 30 185 44 38 83	30
B*4416	116 118 119 87 112 212 21 30 49 44 113 83	
B*4417	18 44 37 38 83	
B*4418	56 58 30 185 44 38 83	
B*4420	61 30 49 44 37 38 83	
B*4421	116 118 119 87 144 212 55 21 30 49 44 217 83	
B*4422	118 119 87 144 212 55 21 30 49 44 37 38 83	
B*4424	218 38 83	
B*4425	68 56 219 58 21 30 44 37 38 83	
B*4426	220	
B*4427	118 55 49 44 37 38 89	40
B*4428	118 21 22 30 49 163 43 37 38 83	
B*4429	120 38 83	
B*4430	221	
B*4431	193 217	
B*4432	200 38	
B*4433	222	
B*4501	30 185 44 38 89 95 54	
B*4502	32 30 223 44 37 38 83	
B*4503	224	
B*4504	30 185 44 89 95 54	50

B*4505	225	
B*4506	30 185 44 38 83	
B*4601	226 54	
B*4602	227	
B*470101	228	
B*4702	96 43 64 69	
B*4703	229 96 65 43 64 83	
B*4704	94 144 145 55 146 65 43 64 83	
B*4801	32 230	
B*4802	68 94 21 22 18 114 43 64 37 104 54	10
B*4803	87 68 32 15 13 193 194	
B*4804	83 230	
B*4805	231 87 68 32 13	
B*4806	16 32 13 193 194	
B*4807	128 193 194	
B*4901	58 185 45 89 95 54	
B*4902	144 55 185 45 89	
B*4903	165 56 58 23 30 185 45 37 83	
B*5001	185 45 89 95 54	
B*5002	185 45 38 89 95 54	20
B*5004	118 30 185 45 37 83	
B*510101	213 16 58 71 45 82 104 54	
B*510102	16 58 71 45 82 104 54	
B*510103	213 16 58 71 61 97 114 45 37 82	
B*510104	213 166 16 58 71 61 13 114 45 37 82	
B*510105	134 104 54	
B*510201	213 16 58 71 97 114 45 37 104 54	
B*510202	16 58 71 97 114 45 37 104 54	
B*5103	233 104	
B*5104	21 45 82 104 54	30
B*5105	58 97 114 43 37 104	
B*5106	213 166 16 58 97 114 45 37 82	
B*5107	213 167 46 58 71 61 97 114 45 37 82	
B*5108	44 82 104 54	
B*5109	213 43 64 37 82	
B*5110	58 71 61 13 43 64 104	
B*5112	234	
B*511301	213 128 114 45 37 82	
B*511302	213 128 235 114 45 37 82	
B*5114	236	40
B*5115	56 58 71 61 73 72 43 64 37 83	
B*5116	213 166 16 58 71 61 97 114 45 82	
B*5117	237	
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	42	35	77			
B*5509	49	104	10	65	59	67
	66	151				
B*5510	65	59	67	66	41	32
B*5511	231	32	77			
B*5512	176	19	41	32	87	52
B*5601	176	59	41	42	35	87
	52					
B*5602	176	41	42	35	87	52
B*5603	176	81	82	87	52	
B*5604	104	10	66	41	42	35
B*5605	194	10	65	59	83	103
	42	35	76			
B*5606	194	155	79	65	59	83
	103	42	35	76		
B*5607	10	130	53	65	59	67
	66	41	42	35		
B*5608	232	42	35	77		
B*5609	104	10	20	21	22	23
	17	103	151	41	42	35
	77					
B*5610	49	104	10	67	66	41
	32					
B*5611	176	23	151	41	42	35
	77	63				
B*570101	233	17	42	68		
B*570102	234					
B*5702	13	68				
B*570301	13	42	68			
B*570302	235					

B*5704 184 47 41 77
B*5705 236 200 237 41 35
B*5706 238
B*5707 184 36 77
B*5708 239
B*5709 184 12 77
B*5801 236 20 87 52
B*5802 70 52
B*5804 240
B*5805 241 10
B*5806 70 35
B*5807 70 36
B*5901 176 56 41 32 87 52
B*670101 75 15 116 107 71 72
B*670102 15 149 113 41 116 107 32 242
B*6702 243
B*7301 244
B*7801 194 16 65 42 76 95 52
B*780201 16 31 65 42 76 95 52
B*780202 194 79 16 31 65 59 83 103 42 35 76 20
B*7803 194 89 11 65 59 83 103 42 35 76
B*7804 83 103 41 42 35 95
B*7805 155 154 80 43 31 65 59 83 42 35 76
B*8101 136 212
B*8201 245
B*8202 246
B*8301 136 49 20 29 47 12 35 36 77

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(58)調査した分野(Int.Cl., DB名)

C12N15/

C12Q

CA/REGISTRY/BIOSIS/MEDLINE/WPIIDS(STN)

JSTPlus/JMEDPlus/JST7580(JDreamII)