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(54) **STREPTOCOCCUS PNEUMONIAE PROTEINS AND NUCLEIC ACID MOLECULES**

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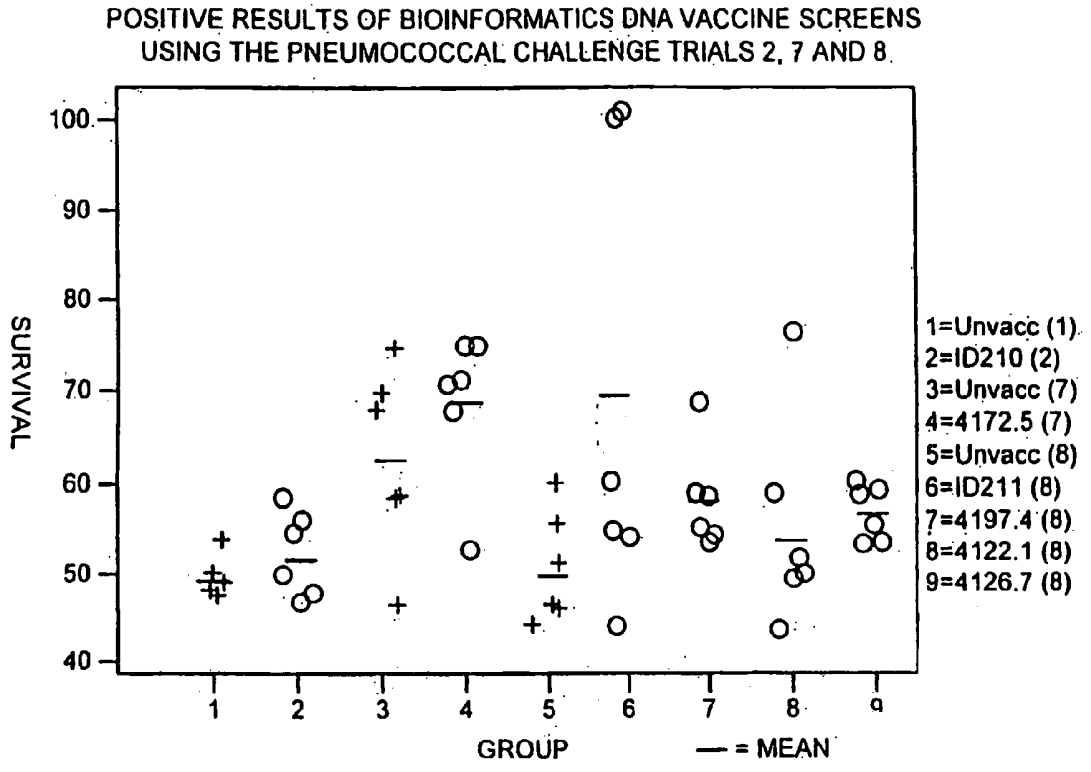
(57) **ABSTRACT**

Protein antigens from *Streptococcus pneumoniae* are disclosed, together with nucleic acid sequences encoding them. Their use in vaccines and in screening methods is also described.



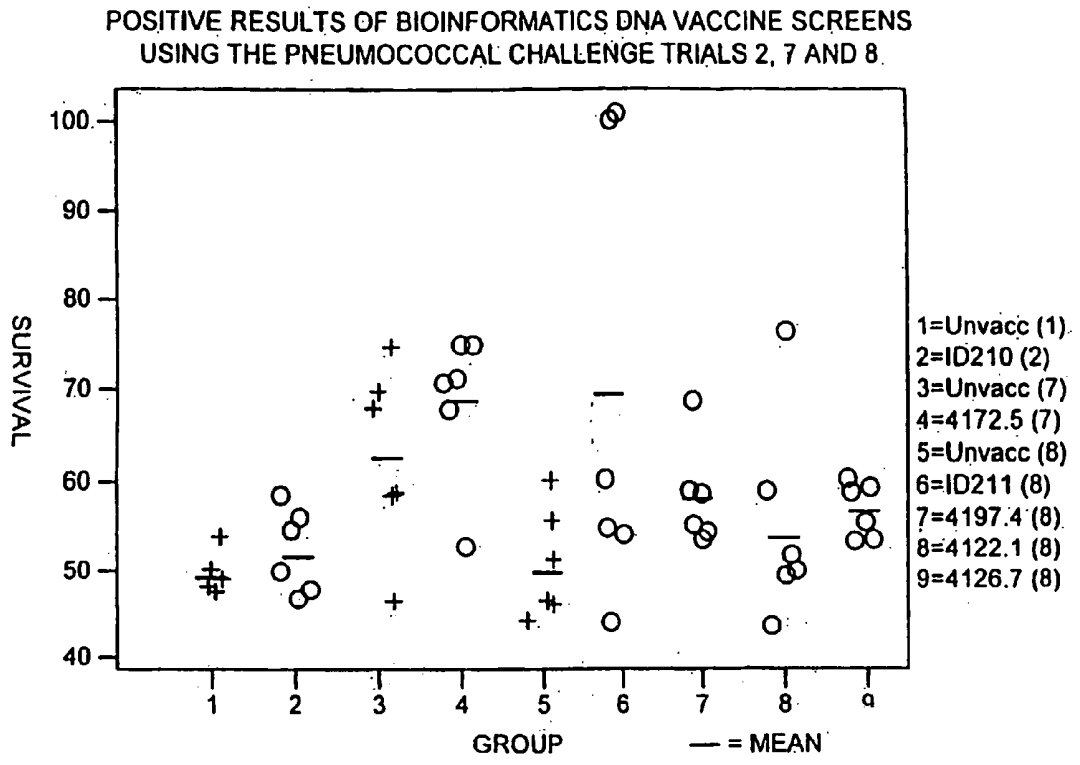

POSITIVE RESULTS OF BIOINFORMATICS DNA VACCINE SCREENS
USING THE PNEUMOCOCCAL CHALLENGE TRIALS 2, 7 AND 8
SURVIVAL
100
90
80
70
60
50
40
1
2
3
4
5
6
7
8
9
GROUP
— = MEAN
1=Unvacc (1)
2=ID210 (2)
3=Unvacc (7)
4=4172.5 (7)
5=Unvacc (8)
6=ID211 (8)
7=4197.4 (8)
8=4122.1 (8)
9=4126.7 (8)

Figure 1

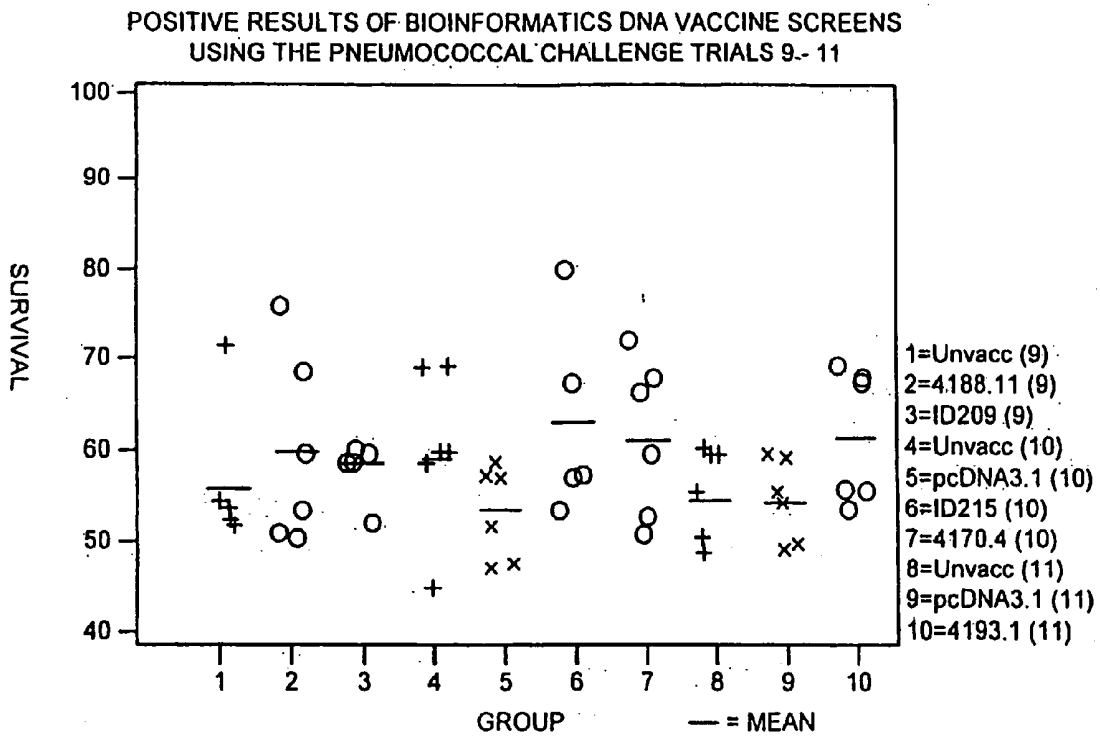

POSITIVE RESULTS OF BIOINFORMATICS DNA VACCINE SCREENS
USING THE PNEUMOCOCCAL CHALLENGE TRIALS 9- 11
SURVIVAL
100
90
80
70
60
50
40
1 2 3 4 5 6 7 8 9 10
GROUP
— = MEAN
1=Unvacc (9)
2=4188.11 (9)
3=ID209 (9)
4=Unvacc (10)
5=pcDNA3.1 (10)
6=ID215 (10)
7=4170.4 (10)
8=Unvacc (11)
9=pcDNA3.1 (11)
10=4193.1 (11)

Figure 2

STREPTOCOCCUS PNEUMONIAE PROTEINS AND NUCLEIC ACID MOLECULES

[0001] This application is a divisional of U.S. patent application Ser. No. 10/873,528, filed Jun. 23, 2004, which is a divisional of U.S. patent application Ser. No. 09/769,787, filed Jan. 26, 2001, now U.S. Pat. No. 6,936,252, which is a continuation of PCT/GB99/02451, filed Jul. 27, 1999, which claims benefit of U.S. Provisional Application No. 60/125,164, filed Mar. 19, 1999, and which also claims benefit of United Kingdom 9816337.1, filed Jul. 27, 1998, the disclosures of which are all hereby incorporated by reference.

[0002] The present invention relates to proteins derived from *Streptococcus pneumoniae*, nucleic acid molecules encoding such proteins, the use of the nucleic acid and/or proteins as antigens/immunogens and in detection/diagnosis, as well as methods for screening the proteins/nucleic acid sequences as potential anti-microbial targets.

[0003] *Streptococcus pneumoniae*, commonly referred to as the pneumococcus, is an important pathogenic organism. The continuing significance of *Streptococcus pneumoniae* infections in relation to human disease in developing and developed countries has been authoritatively reviewed (Fiber, G. R., *Science,* 265:1385-1387 (1994)). That indicates that on a global scale this organism is believed to be the most common bacterial cause of acute respiratory infections, and is estimated to result in 1 million childhood deaths each year, mostly in developing countries (Stansfield, S. K., *Pediatr. Infect. Dis.,* 6:622 (1987)). In the USA it has been suggested (Breiman et al., *Arch. Intern. Med.,* 150:1401 (1990)) that the pneumococcus is still the most common cause of bacterial *pneumoniae*, and that disease rates are particularly high in young children, in the elderly, and in patients with predisposing conditions such as asplenia, heart, lung, and kidney disease, diabetes, alcoholism, or with immunosuppressive disorders, especially AIDS. These groups are at higher risk of pneumococcal septicaemia and hence meningitis and therefore have a greater risk of dying from pneumococcul infection. The pneumococcus is also the leading cause of otitis media and sinusitis, which remain prevalent infections in children in developed countries, and which incur substantial costs.

[0004] The need for effective preventative strategies against pneumococcal infection is highlighted by the recent emergence of penicillin-resistant pneumococci. It has been reported that 6.6% of pneumoccal isolates in 13 US hospitals in 12 states were found to be resistant to penicillin and some isolates were also resistant to other antibiotics including third generation cyclosporins (Schappert, S. M., *Vital and Health Statistics of the Centres for Disease Control/National Centre for Health Statistics,* 214:1 (1992)). The rates of penicillin resistance can be higher (up to 20%) in some hospitals (Breiman et al, J. Am. Med. Assoc., 271: 1831 (1994)). Since the development of penicillin resistance among pneumococci is both recent and sudden, coming after decades during which penicillin remained an effective treatment, these findings are regarded as alarming.

[0005] For the reasons given above, there are therefore compelling grounds for considering improvements in the means of preventing, controlling, diagnosing or treating pneumococcal diseases.

[0006] Various approaches have been taken in order to provide vaccines for the prevention of pneumococcal infections. Difficulties arise for instance in view of the variety of serotypes (at least 90) based on the structure of the polysaccharide capsule surrounding the organism. Vaccines against individual serotypes are not effective against other serotypes and this means that vaccines must include polysaccharide antigens from a whole range of serotypes in order to be effective in a majority of cases. An additional problem arises because it has been found that the capsular polysaccharides (each of which determines the serotype and is the major protective antigen) when purified and used as a vaccine do not reliably induce protective antibody responses in children under two years of age, the age group which suffers the highest incidence of invasive pneumococcal infection and meningitis.

[0007] A modification of the approach using capsule antigens relies on conjugating the polysaccharide to a protein in order to derive an enhanced immune response, particularly by giving the response T-cell dependent character. This approach has been used in the development of a vaccine against *Haemophilus influenzae*. There are issues of cost concerning both the multi-polysaccharide vaccines and those based on conjugates.

[0008] A third approach is to look for other antigenic components which offer the potential to be vaccine candidates.

BACKGROUND OF THE INVENTION

[0009] In the present application we provide a group of proteins antigens which are secreted/exported proteins.

BRIEF SUMMARY OF THE INVENTION

[0010] Thus, in a first aspect the present invention provides a *Streptococcus pneumoniae* protein or polypeptide having a sequence selected from those shown in Table 2 herein.

[0011] A protein or polypeptide of the present invention may be provided in substantially pure form. For example, it may be provided in a form which is substantially free of other proteins.

[0012] In a preferred embodiment, a protein or polypeptide having an amino acid sequence as shown in Table 3 is provided.

[0013] The invention encompasses any protein coded for by a nucleic acid sequence as shown in Table 1 herein.

DETAILED DESCRIPTION OF THE INVENTION

[0014] As discussed herein, the proteins and polypeptides of the invention are useful as antigenic material. Such material can be "antigenic" and/or "immunogenic". Generally, "antigenic" is taken to mean that the protein or polypeptide is capable of being used to raise antibodies or indeed is capable of inducing an antibody response in a subject. "Immunogenic" is taken to mean that the protein or polypeptide is capable of eliciting a protective immune response in a subject.

[0015] Thus, in the latter case, the protein or polypeptide may be capable of not only generating an antibody response and in addition non-antibody based immune responses.

[0016] The skilled person will appreciate that homologues or derivatives of the proteins or polypeptides of the invention will also find use in the context of the present invention, ie as antigenic/immunogenic material. Thus, for instance proteins or polypeptides which include one or more additions, deletions, substitutions or the like are encompassed by the present invention.

[0017] In addition, it may be possible to replace one amino acid with another of similar "type". For instance replacing one hydrophobic amino acid with another. One can use a program such as the CLUSTAL program to compare amino acid sequences. This program compares amino acid sequences and finds the optimal alignment by inserting spaces in either sequence as appropriate.

[0018] It is possible to calculate amino acid identity or similarity (identity plus conservation of amino acid type) for an optimal alignment. A program like BLASTx will align the longest stretch of similar sequences and assign a value to the fit. It is thus possible to obtain a comparison where several regions of similarity are found, each having a different score. Both types of analysis are contemplated in the present invention.

[0019] In the case of homologues and derivatives, the degree of identity with a protein or polypeptide as described herein is less important than that the homologue or derivative should retain its antigenicity or immunogenicity to *Streptococcus pneumoniae*. However, suitably, homologues or derivatives having at least 60% similarity (as discussed above) with the proteins or polypeptides described herein are provided.

[0020] Preferably, homologues or derivatives having at least 70% similarity, more preferably at least 80% similarity are provided. Most preferably, homologues or derivatives having at least 90% or even 95% similarity are provided.

[0021] In an alternative approach, the homologues or derivatives could be fusion proteins, incorporating moieties which render purification easier, for example by effectively tagging the desired protein or polypeptide. It may be necessary to remove the "tag" or it may be the case that the fusion protein itself retains sufficient antigenicity to be useful.

[0022] In an additional aspect of the invention there are provided antigenic fragments of the proteins or polypeptides of the invention, or of homologues or derivatives thereof.

[0023] For fragments of the proteins or polypeptides described herein, or of homologues or derivatives thereof, the situation is slightly different. It is well known that is possible to screen an antigenic protein or polypeptide to identify epitopic regions, i.e., those regions which are responsible for the protein or polypeptide's antigenicity or immunogenicity. Methods for carrying out such screening are well known in the art. Thus, the fragments of the present invention should include one or more such epitopic regions or be sufficiently similar to such regions to retain their antigenic/immunogenic properties. Thus, for fragments according to the present invention the degree of identity is perhaps irrelevant, since they may be 100% identical to a particular part of a protein or polypeptide, homologue or derivative as described herein. The key issue, once again, is that the fragment retains the antigenic/immunogenic properties.

[0024] Thus, what is important for homologues, derivatives and fragments is that they possess at least a degree of the antigenicity/immunogenicity of the protein or polypeptide from which they are derived.

[0025] Gene cloning techniques may be used to provide a protein of the invention in substantially pure form, These techniques are disclosed, for example, in J. Sambrook et al *Molecular Cloning* 2nd Edition, Cold Spring Harbor Laboratory Press (1989). Thus, in a fourth aspect, the present invention provides a nucleic acid molecule comprising or consisting of a sequence which is:

[0026] (i) any of the DNA sequences set out in Table 1 or their RNA equivalents;

[0027] (ii) a sequence which is complementary to any of the sequences of (i);

[0028] (iii) a sequence which codes for the same protein or polypeptide, as those sequences of (i) or (ii);

[0029] (iv) a sequence which is has substantial identity with any of those of (i), (ii) and (iii);

[0030] (v) a sequence which codes for a homologue, derivative or fragment of a protein as defined in Table 1.

[0031] In a fifth aspect the present invention provides a nucleic acid molecule comprising or consisting of a sequence which is:

[0032] (i) any of the DNA sequences set out in Table 4 or their RNA equivalents;

[0033] (ii) a sequence which is complementary to any of the sequences of (i);

[0034] (iii) a sequence which codes for the same protein or polypeptide, as those sequences of (i) or (ii);

[0035] (iv) a sequence which is has substantial identity with any of those of (i), (ii) and (iii);

[0036] (v) a sequence which codes for a homologue, derivative or fragment of a protein as defined in Table 4.

[0037] The nucleic acid molecules of the invention may include a plurality of such sequences, and/or fragments. The skilled person will appreciate that the present invention can include, novel variants of those particular novel nucleic acid molecules which are exemplified herein. Such variants are encompassed by the present invention. These may occur in nature, for example because of strain variation. For example, additions, substitutions and/or deletions are included. In addition, and particularly when utilising microbial expression systems, one may wish to engineer the nucleic acid sequence by making use of known preferred codon usage in the particular organism being used for expression. Thus, synthetic or non-naturally occurring variants are also included within the scope of the invention.

[0038] The term "RNA equivalent" when used above indicates that a given RNA molecule has a sequence which is complementary to that of a given DNA molecule (allowing for the fact that in RNA "U" replaces "T" in the genetic code).

[0039] When comparing nucleic acid sequences for the purposes of determining the degree of homology or identity one can use programs such as BESTFIT and GAP (both from the Wisconsin Genetics Computer Group (GCG) software package) BESTFIT, for example, compares two sequences and produces an optimal alignment of the most similar segments. GAP enables sequences to be aligned along their whole length and finds the optimal alignment by inserting spaces in either sequence as appropriate. Suitably, in the context of the present invention compare when discussing identity of nucleic acid sequences, the comparison is made by alignment of the sequences along their whole length.

[0040] Preferably, sequences which have substantial identity have at least 50% sequence identity, desirably at least 75% sequence identity and more desirably at least 90 or at least 95% sequence identity with said sequences. In some cases the sequence identity may be 99% or above.

[0041] Desirably, the term "substantial identity" indicates that said sequence has a greater degree of identity with any of the sequences described herein than with prior art nucleic acid sequences.

[0042] It should however be noted that where a nucleic acid sequence of the present invention codes for at least part of a

novel gene product the present invention includes within its scope all possible sequence coding for the gene product or for a novel part thereof.

[0043] The nucleic acid molecule may be in isolated or recombinant form. It may be incorporated into a vector and the vector may be incorporated into a host. Such vectors and suitable hosts form yet further aspects of the present invention.

[0044] Therefore, for example, by using probes based upon the nucleic acid sequences provided herein, genes in *Streptococcus pneumoniae* can be identified. They can then be excised using restriction enzymes and cloned into a vector. The vector can be introduced into a suitable host for expression.

[0045] Nucleic acid molecules of the present invention may be obtained from *S. pneumoniae* by the use of appropriate probes complementary to part of the sequences of the nucleic acid molecules. Restriction enzymes or sonication techniques can be used to obtain appropriately sized fragments for probing.

[0046] Alternatively PCR techniques may be used to amplify a desired nucleic acid sequence. Thus the sequence data provided herein can be used to design two primers for use in PCR so that a desired sequence, including whole genes or fragments thereof, can be targeted and then amplified to a high degree. One primer will normally show a high degree of specificity for a first sequence located on one strand of a DNA molecule, and the other primer will normally show a high degree of specificity for a second sequence located on the complementary strand of the DNA sequence and being spaced from the complementary sequence to the first sequence.

[0047] Typically primers will be at least 15-25 nucleotides long.

[0048] As a further alternative chemical synthesis may be used. This may be automated. Relatively short sequences may be chemically synthesised and ligated together to provide a longer sequence.

[0049] In yet a further aspect the present invention provides an immunogenic/antigenic composition comprising one or more proteins or polypeptides selected from those whose sequences are shown in Tables 24, or homologues or derivatives thereof, and/or fragments of any of these. In preferred embodiments, the immunogenic/antigenic composition is a vaccine or is for use in a diagnostic assay.

[0050] In the case of vaccines suitable additional excipients, diluents, adjuvants or the like may be included. Numerous examples of these are well known in the art.

[0051] It is also possible to utilise the nucleic acid sequences shown in Table 1 in the preparation of so-called DNA vaccines. Thus, the invention also provides a vaccine composition comprising one or more nucleic acid sequences as defined herein. The use of such DNA vaccines is described in the art. See for instance, Donnelly et al, *Ann. Rev. Immunol.*, 15:617-648 (1997).

[0052] As already discussed herein the proteins or polypeptides described herein, their homologues or derivatives, and/or fragments of any of these, can be used in methods of detecting/diagnosing *S. pneumoniae*. Such methods can be based on the detection of antibodies against such proteins which may be present in a subject. Therefore the present invention provides a method for the detection/diagnosis of *S. pneumoniae* which comprises the step of bringing into contact a sample to be tested with at least one protein, or homologue, derivative or fragment thereof, as described herein. Suitably, the sample is a biological sample, such as a tissue sample or a sample of blood or saliva obtained from a subject to be tested.

[0053] In an alternative approach, the proteins described herein, or homologues, derivatives and/or fragments thereof, can be used to raise antibodies, which in turn can be used to detect the antigens, and hence *S. pneumoniae*. Such antibodies form another aspect of the invention. Antibodies within the scope of the present invention may be monoclonal or polyclonal.

[0054] Polyclonal antibodies can be raised by stimulating their production in a suitable animal host (e.g. a mouse, rat, guinea pig, rabbit, sheep, goat or monkey) when a protein as described herein, or a homologue, derivative or fragment thereof, is injected into the animal. If desired, an adjuvant may be administered together with the protein. Well-known adjuvants include Freund's adjuvant (complete and incomplete) and aluminium hydroxide. The antibodies can then be purified by virtue of their binding to a protein as described herein.

[0055] Monoclonal antibodies can be produced from hybridomas. These can be formed by fusing myeloma cells and spleen cells which produce the desired antibody in order to form an immortal cell line. Thus the well-known Kohler & Milstein technique (*Nature* 256 (1975)) or subsequent variations upon this technique can be used.

[0056] Techniques for producing monoclonal and polyclonal antibodies that bind to a particular polypeptide/protein are now well developed in the art. They are discussed in standard immunology textbooks, for example in Roitt et al, *Immunology* second edition (1989), Churchill Livingstone, London.

[0057] In addition to whole antibodies, the present invention includes derivatives thereof which are capable of binding to proteins etc as described herein. Thus the present invention includes antibody fragments and synthetic constructs. Examples of antibody fragments and synthetic constructs are given by Dougall et al in *Tibtech* 12 372-379 (September 1994).

[0058] Antibody fragments include, for example, Fab, $F(ab')_2$ and Fv fragments. Fab fragments (These are discussed in Roitt et al [supra]). Fv fragments can be modified to produce a synthetic construct known as a single chain Fv (scFv) molecule. This includes a peptide linker covalently joining V_h and V_l regions, which contributes to the stability of the molecule. Other synthetic constructs that can be used include CDR peptides. These are synthetic peptides comprising antigen-binding determinants. Peptide mimetics may also be used. These molecules are usually conformationally restricted organic rings that mimic the structure of a CDR loop and that include antigen-interactive side chains.

[0059] Synthetic constructs include chimaeric molecules. Thus, for example, humanised (or primatised) antibodies or derivatives thereof are within the scope of the present invention. An example of a humanised antibody is an antibody having human framework regions, but rodent hypervariable regions. Ways of producing chimaeric antibodies are discussed for example by Morrison et al in PNAS, 81, 6851-6855 (1984) and by Takeda et al in Nature. 314, 452454 (1985).

[0060] Synthetic constructs also include molecules comprising an additional moiety that provides the molecule with some desirable property in addition to antigen binding. For

example the moiety may be a label (e.g., a fluorescent or radioactive label). Alternatively, it may be a pharmaceutically active agent.

[0061] Antibodies, or derivatives thereof, find use in detection/diagnosis of *S. pneumoniae*. Thus, in another aspect the present invention provides a method for the detection/diagnosis of *S. pneumoniae* which comprises the step of bringing into contact a sample to be tested and antibodies capable of binding to one or more proteins described herein, or to homologues, derivatives and/or fragments thereof.

[0062] In addition, so-called AFFIBODIES may be utilised. These are binding proteins selected from combinatorial libraries of an alpha-helical bacterial receptor domain (Nord et al,) Thus, Small protein domains, capable of specific binding to different target proteins can be selected using combinatorial approaches.

[0063] It will also be clear that the nucleic acid sequences described herein may be used to detect/diagnose *S. pneumoniae*. Thus, in yet a further aspect, the present invention provides a method for the detection/diagnosis of *S. pneumoniae* which comprises the step of bringing into contact a sample to be tested with at least one nucleic acid sequence as described herein. Suitably, the sample is a biological sample, such as a tissue sample or a sample of blood or saliva obtained from a subject to be tested. Such samples may be pre-treated before being used in the methods of the invention. Thus, for example, a sample may be treated to extract DNA. Then, DNA probes based on the nucleic acid sequences described herein (i.e., usually fragments of such sequences) may be used to detect nucleic acid from *S. pneumoniae.*

[0064] In additional aspects, the present invention provides:

[0065] (a) a method of vaccinating a subject against *S. pneumoniae* which comprises the step of administering to a subject a protein or polypeptide of the invention, or a derivative, homologue or fragment thereof, or an immunogenic composition of the invention;

[0066] (b) a method of vaccinating a subject against *S. pneumoniae* which comprises the step of administering to a subject a nucleic acid molecule as defined herein;

[0067] (c) a method for the prophylaxis or treatment of *S. pneumoniae* infection which comprises the step of administering to a subject a protein or polypeptide of the invention, or a derivative, homologue or fragment thereof, or an immunogenic composition of the invention;

[0068] (d) a method for the prophylaxis or treatment of *S. pneumoniae* infection which comprises the step of administering to a subject a nucleic acid molecule as defined herein;

[0069] (e) a kit for use in detecting/diagnosing *S. pneumoniae* infection comprising one or more proteins or polypeptides of the invention, or homologues, derivatives or fragments thereof, or an antigenic composition of the invention; and

[0070] (f) a kit for use in detecting/diagnosing *S. pneumoniae* infection comprising one or more nucleic acid molecules as defined herein.

[0071] Given that we have identified a group of important proteins, such proteins are potential targets for anti-microbial therapy. It is necessary, however, to determine whether each individual protein is essential for the organism's viability. Thus, the present invention also provides a method of determining whether a protein or polypeptide as described herein represents a potential anti-microbial target which comprises inactivating said protein and determining whether *S. pneumoniae* is still viable, in vitro or in vivo.

[0072] A suitable method for inactivating the protein is to effect selected gene knockouts, ie prevent expression of the protein and determine whether this results in a lethal change. Suitable methods for carrying out such gene knockouts are described in Li et al, *P.N.A.S.,* 94:13251-13256 (1997).

[0073] In a final aspect the present invention provides the use of an agent capable of antagonising, inhibiting or otherwise interfering with the function or expression of a protein or polypeptide of the invention in the manufacture of a medicament for use in the treatment or prophylaxis of *S. pneumoniae* infection.

[0074] The invention will now be described with reference to the following examples, which should not be construed as in any way limiting the invention. The examples refer to the figures in which:

BRIEF DESCRIPTION OF THE FIGURES

[0075] FIG. **1**: shows the results of various DNA vaccine trials; and

[0076] FIG. **2**: shows the results of further DNA vaccine trials.

EXAMPLE 1

[0077] The Genome sequencing of *Streptococcus pneumoniae* type 4 is in progress at the Institute for Genomic Research (TIGR, Rockville, Md., USA). Up to now, the whole sequence has not been completed or published. On Nov. 21, 1997, the TIGR centre released some DNA sequences as contigs which are not accurate reflections of the finished sequence. These contigs can be downloaded from their website. We downloaded these contigs and created a local database using the application GCGToBLAST (Wisconsin Package Version 9.1, Genetics Computer Group (GCG), Madison, USA). This database can be searched with the FastA and TfastA procedures (using the method of Pearson and Lipman (*PNAS USA,* 85:2444-2448 (1988)).

[0078] Using FastA and TfastA procedures, the local pneumococcus database was searched for putative leader sequence or anchor sequence features. Relevant sequences were used to interrogate for comparative novel sequences. These were:

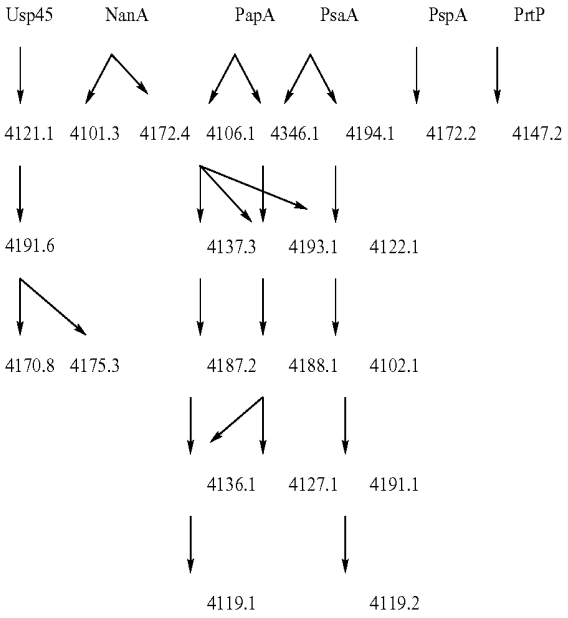
[0079] (i) already described leader sequences of *Streptococcus pneumoniae* (from proteins NanA, NanB, LytA, PapA, pcpA, PsaA and PspA);

[0080] (ii) the leader sequence of Usp45, a secreted protein from *Lactococcus lactis;*

[0081] (iii) new hypothetical leader sequences derived from the searches in (i) and (ii);

[0082] (iv) the anchor motif LPxTG (SEQ ID NO: 364), a feature common to many Gram-positive bacteria surface proteins which are anchored by a mechanism involving the Sortase complex proteins.

[0083] Provided below is an example of this approach, with reference to the sequences derived from the database (see table 1).



[0084] The protein leader sequences of different known exported proteins were used as a starting point for a search of the local pneumococcus database described above. The hypothetical proteins found with this search were then submitted to a Blast search in general databases such as NEMBL, Swissprot etc. Proteins remaining unknown in the pneumococcus are kept and annotated. Then the search is performed again using the new potential protein leader sequence as a probe, using the TfastA procedure.

EXAMPLE 2

DNA Vaccine Trials

[0085] pcDNA3.1+ as a DNA Vaccine Vector

pcDNA3.1+

[0086] The vector chosen for use as a DNA vaccine vector was pcDNA3.1 (Invitrogen) (actually pcDNA3.1+, the forward orientation was used in all cases but may be referred to as pcDNA3.1 here on). This vector has been widely and successfully employed as a host vector to test vaccine candidate genes to give protection against pathogens in the literature (Zhang, et al., Kurar and Splitter, Anderson et al.). The vector was designed for high-level stable and non-replicative transient expression in mammalian cells. pcDNA3.1 contains the ColE1 origin of replication which allows convenient high-copy number replication and growth in *E. coli*. This in turn allows rapid and efficient cloning and testing of many genes. The pcDNA3.1 vector has a large number of cloning sites and also contains the gene encoding ampicillin resistance to aid in cloning selection and the human cytomegalovirus (CMV) immediate-early promoter/enhancer which permits efficient, high-level expression of the recombinant protein. The CMV promoter is a strong viral promoter in a wide range of cell types including both muscle and immune (antigen presenting) cells. This is important for optimal immune response as it remains unknown as to which cells types are most important in generating a protective response in vivo. A T7 promoter upstream of the multiple cloning site affords efficient expression of the modified insert of interest and which allows in vitro transcription of a cloned gene in the sense orientation.

[0087] Zhang, D., Yang, X., Berry, J. Shen, C., McClarty, G. and Brunham, R. C. (1997) "DNA vaccination with the major outer-membrane protein genes induces acquired immunity to *Chlamydia trachomatis* (mouse pneumonitis) infection". *Infection and Immunity,* 176, 1035-40.

[0088] Kurar, E. and Splitter, G. A. (1997) "Nucleic acid vaccination of *Brucella abortus* ribosomal L7/L12 gene elicits immune response". *Vaccine,* 15, 1851-57.

[0089] Anderson, R., Gao, X.-M., Papakonstantinopoulou, A., Roberts, M. and Dougan, G. (1996) "Immune response in mice following immunisation with DNA encoding fragment C of tetanus toxin". *Infection and Immunity,* 64, 3168-3173.

Preparation of DNA Vaccines

[0090] Oligonucleotide primers were designed for each individual gene of interest derived using the LEEP system. Each gene was examined thoroughly, and where possible, primers were designed such that they targeted that portion of the gene thought to encode only the mature portion of the gene protein. It was hoped that expressing those sequences that encode only the mature portion of a target gene protein, would facilitate its correct folding when expressed in mammalian cells. For example, in the majority of cases primers were designed such that putative N-terminal signal peptide sequences would not be included in the final amplification product to be cloned into the pcDNA3.1 expression vector. The signal peptide directs the polypeptide precursor to the cell membrane via the protein export pathway where it is normally cleaved off by signal peptidase I (or signal peptidase II if a lipoprotein). Hence the signal peptide does not make up any part of the mature protein whether it be displayed on the surface of the bacteria surface or secreted. Where a N-terminal leader peptide sequence was not immediately obvious, primers were designed to target the whole of the gene sequence for cloning and ultimately, expression in pcDNA3.1.

[0091] Having said that, however, other additional features of proteins may also affect the expression and presentation of a soluble protein. DNA sequences encoding such features in the genes encoding the proteins of interest were excluded during the design of oligonucleotides. These features included:

1. LPXTG (SEQ ID NO: 364) cell wall anchoring motifs.
2. LXXC ipoprotein attachment sites.
3. Hydrophobic C-terminal domain.
4. Where no N-terminal signal peptide or LXXC was present the start codon was excluded.
5. Where no hydrophobic C-terminal domain or LPXTG (SEQ ID NO: 364) motif was present the stop codon was removed.

[0092] Appropriate PCR primers were designed for each gene of interest and any and all of the regions encoding the above features was removed from the gene when designing these primers. The primers were designed with the appropriate enzyme restriction site followed by a conserved Kozak nucleotide sequence (in all cases) GCCACC was used. The Kozak sequence facilitates the recognition of initiator sequences by eukaryotic ribosomes) and an ATG start codon upstream of the insert of the gene of interest. For example the forward primer using a BamHI site the primer would begin GCGGGATCCGCCACCATG (SEQ ID NO: 365) followed by a small section of the 5' end of the gene of interest. The

reverse primer was designed to be compatible with the forward primer and with a NotI restriction site at the 5' end in all cases (this site is TTGCGGCCGC) (SEQ ID NO:366).

PCR Primers

[0093] The following PCR primers were designed and used to amplify the truncated genes of interest.

```
ID210
Forward Primer
                                        (SEQ ID NO: 367)
5' CGGATCCGCCACCATGTCTTCTAATGAATCTGCCGATG 3'

Reverse Primer
                                        (SEQ ID NO: 368)
5' TTGCGGCCGCCTGTTTAGATTGGATATCTGTAAAGACTT 3'

4172.5
Forward Primer
                                        (SEQ ID NO: 369)
5' CGCGGATCCGCCACCATGGATTTTCCTTCAAATTTGGAGG 3'

Reverse Primer
                                        (SEQ ID NO: 370)
5' TTGCGGCCGCACCGTACTGGCTGCTGACT 3'

ID211
Forward Primer
                                        (SEQ ID NO: 371)
5' CGGATCCGCCACCATGAGTGAGATCAAAATTATTAACGC 3'

Reverse Primer
                                        (SEQ ID NO: 372)
5' TTGCGGCCGCCGTTCCATGGTTGACTCCT 3'

4197.4
Forward Primer
                                        (SEQ ID NO: 373)
5' CGCGGATCCGCCACCATGTGGGACATATTGGTGGAAAC 3'

Reverse Primer
                                        (SEQ ID NO: 374)
5' TTGCGGCCGCTTCACTTGAGCAAACTGAATCC 3'

4122.1
Forward Primer
                                        (SEQ ID NO: 375)
5' CGCGGATCCGCCACCATGTCACAAGAAAAAACAAAAAATGAA 3'

Reverse Primer
                                        (SEQ ID NO: 376)
5' TTGCGGCCGCATCGACGTAGTCTCCGCC 3'

4126.7
Forward Primer
                                        (SEQ ID NO: 377)
5' CGCGGATCCGCCACCATGCTGGTTGGAACTTTCTACTATCAAT 3'

Reverse Primer
                                        (SEQ ID NO: 378)
5' TTGCGGCCGCAACTTTCGTCCCTTTTTGG 3'

4188.11
Forward Primer
                                        (SEQ ID NO: 379)
5' CGCGGATCCGCCACCATGGGCAATTCTGGCGGAA 3'

Reverse Primer
                                        (SEQ ID NO: 380)
5' TTGCGGCCGCTTGTTTCATAGCTTTTTTGATTGTT 3'

ID209
Forward Primer
                                        (SEQ ID NO: 381)
5' CGCGGATCCGCCACCATGCTATTGATACGAAATGCAGGG 3'
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Reverse Primer
                                        (SEQ ID NO: 382)
5' TTGCGGCCGCAACATAATCTAGTAAATAAGCGTAGCC 3'

ID215
Forward Primer
                                        (SEQ ID NO: 383)
5' CGCGGATCCGCCACCATGACGGCGACGAATTTTC 3'

Reverse Primer
                                        (SEQ ID NO: 384)
5' TTGCGGCCGCTTAATTCGTTTTTGAACTAGTTGCT 3'

4170.4
Forward Primer
                                        (SEQ ID NO: 385)
5' CGCGGATCCGCCACCATGGCTGTTTTTCTTCGCTATCATG 3'

Reverse Primer
                                        (SEQ ID NO: 386)
5' TTGCGGCCGCTTTCTTCAACAAACCTTGTTCTTG 3'

4193.1
Forward Primer
                                        (SEQ ID NO: 387)
5' CGCGGATCCGCCACCATGGGTAACCGCTCTTCTCGTAAC 3'

Reverse Primer
                                        (SEQ ID NO: 388)
5' TTGCGGCCGCGCTTCCATCAAGGATTTTAGC 3'
```

Cloning

[0094] The insert along with the flanking features described above was amplified using PCR against a template of genomic DNA isolated from type 4 *S. pneumoniae* strain 11886 obtained from the National Collection of Type Cultures. The PCR product was cut with the appropriate restriction enzymes and cloned in to the multiple cloning site of pcDNA3.1 using conventional molecular biological techniques. Suitably mapped clones of the genes of interested were cultured and the plasmids isolated on a large scale (>1.5 mg) using Plasmid Mega Kits (Qiagen). Successful cloning and maintenance of genes was confirmed by restriction mapping and sequencing ~700 base pairs through the 5' cloning junction of each large scale preparation of each construct.

Strain Validation

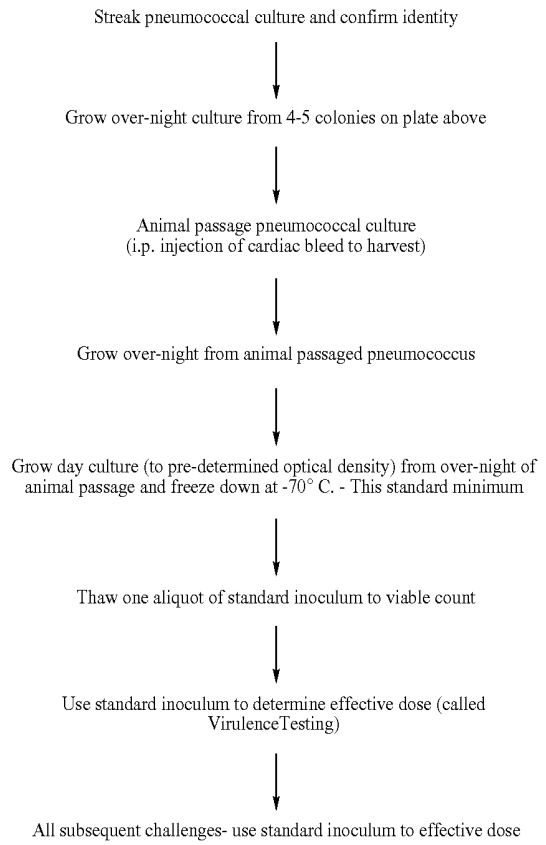
[0095] A strain of type 4 was used in cloning and challenge methods which is the strain from which the *S. pneumoniae* genome was sequenced. A freeze dried ampoule of a homogeneous laboratory strain of type 4 *S. pneumoniae* strain NCTC 11886 was obtained from the National Collection of Type Strains. The ampoule was opened and the cultured re suspended with 0.5 ml of tryptic soy broth (0.5% glucose, 5% blood). The suspension was subcultured into 10 ml tryptic soy broth (0.5% glucose, 5% blood) and incubated statically overnight at 37° C. This culture was streaked on to 5% blood agar plates to check for contaminants and confirm viability and on to blood agar slopes and the rest of the culture was used to make 20% glycerol stocks. The slopes were sent to the Public Health Laboratory Service where the type 4 serotype was confirmed.

[0096] A glycerol stock of NCTC 11886 was streaked on a 5% blood agar plate and incubated overnight in a CO2 gas jar at 37° C. Fresh streaks were made and optochin sensitivity was confirmed.

Pneumococcal Challenge

[0097] A standard inoculum of type 4 *S. pneumoniae* was prepared and frozen down by passaging a culture of pneumo-

coccus 1× through mice, harvesting from the blood of infected animals, and grown up to a predetermined viable count of around 10^9 cfu/ml in broth before freezing down. The preparation is set out below as per the flow chart.



[0098] An aliquot of standard inoculum was diluted 500× in PBS and used to inoculate the mice.

[0099] Mice were lightly anaesthetised using halothane and then a dose of 1.4×10^5 cfu of pneumococcus was applied to the nose of each mouse. The uptake was facilitated by the normal breathing of the mouse, which was left to recover on its back.

S. pneumoniae Vaccine Trials

[0100] Vaccine trials in mice were carried out by the administration of DNA to 6 week old CBA/ca mice (Harlan, UK). Mice to be vaccinated were divided into groups of six and each group was immunised with recombinant pcDNA3.1+ plasmid DNA containing a specific target-gene sequence of interest. A total of 100 μg of DNA in Dulbecco's PES (Sigma) was injected intramuscularly into the tibialis anterior muscle of both legs (50 μl in each leg). A boost was carried using the same procedure 4 weeks later. For comparison, control groups were included in all vaccine trials. These control groups were either unvaccinated animals or those administered with non-recombinant pcDNA3.1+ DNA (sham vaccinated) only, using the same time course described above. 3 weeks after the second immunisation, all mice groups were challenged intranasally with a lethal dose of *S. pneumoniae* serotype 4 (strain NCTC 11886). The number of bacteria administered was monitored by plating serial dilutions of the inoculum on 5% blood agar plates. A problem with intranasal immunisations is that in some mice the inoculum bubbles out of the nostrils, this has been noted in results table and taken account of in calculations. A less obvious problem is that a certain amount of the inoculum for each mouse may be swallowed. It is assumed that this amount will be the same for each mouse and will average out over the course of innoculations. However, the sample sizes that have been used are small and this problem may have significant effects in some experiments. All mice remaining after the challenge were killed 3 or 4 days after infection. During the infection process, challenged mice were monitored for the development of symptoms associated with the onset of *S. pneumoniae* induced-disease. Typical symptoms in an appropriate order included piloerection, an increasingly hunched posture, discharge from eyes, increased lethargy and reluctance to move. The latter symptoms usually coincided with the development of a moribund state at which stage the mice were culled to prevent further suffering. These mice were deemed to be very close to death, and the time of culling was used to determine a survival time for statistical analysis. Where mice were found dead, the survival time was taken as the last time point when the mouse was monitored alive.

Interpretation of Results

[0101] A positive result was taken as any DNA sequence that was cloned and used in challenge experiments as described above which gave protection against that challenge. Protection was taken as those DNA sequences that gave statistically significant protection (to a 95% confidence level ($p<0.05$)) and also those which were marginal or close to significant using Mann-Whitney or which show some protective features for example there were one or more outlying mice or because the time to the first death was prolonged. It is acceptable to allow marginal or non-significant results to be considered as potential positives when it is considered that the clarity of some of the results may be clouded by the problems associated with the administration of intranasal infections.

Results for vaccine trials 2, 7 and 8 (see FIG. 1)

	Mean survival times (hours)								
Mouse number	Unvacc control (2)	ID210 (2)	Unvacc control (7)	4172.5 (7)	Unvacc control (8)	ID211 (8)	4197.4 (8)	4122.1 (8)	4126.7 (8)
1	49.0	55.0	59.6	72.6	45.1	102.3T	60.1	50.6	60.0
2	51.0	46.5	47.2	67.9	50.8	55.5	54.9	77.2	60.0
3	49.0	49.0	59.6	54.4	60.4	60.6*	68.4	60.3	54.8
4	55.0	59.0	70.9	75.3	55.2	45.3	60.1	50.6	52.6

-continued

Results for vaccine trials 2, 7 and 8 (see FIG. 1)

	Mean survival times (hours)								
Mouse number	Unvacc control (2)	ID210 (2)	Unvacc control (7)	4172.5 (7)	Unvacc control (8)	ID211 (8)	4197.4 (8)	4122.1 (8)	4126.7 (8)
5	49.0	55.0	68.6*	70.9	45.1	55.5	54.9	50.6*	54.8
6	49.0	49.0	76.0	75.3	45.1	102.3T	52.7	44.9	60
Mean	50.3	52.3	63.6	69.4	50.2	70.2	58.5	55.7	57.0
sd	2.4	4.8	10.3	7.9	6.4	25.3	5.7	11.6	3.4
p value 1	—	0.3333	—	0.2104	—	0.0215	0.0621	0.4038	0.0833

*bubbled when dosed so may not have received full inoculum.
Tterminated at end of experiment having no symptoms of infection.
Numbers in brackets - survival times disregarded assuming incomplete dosing
p value 1 refers to significance tests compared to unvaccinated controls
Statistical Analyses.
Trial 2 - The group vaccinated with ID210 also had a longer mean survival time than the unvaccinated controls but the results are not statistically significant.
Trial 7 - The group vaccinated with 4172.5 showed much greater survival times than unvaccinated controls although the differences were not statistically significant.
Trial 8 - The group vaccinated with ID211 survived significantly longer than unvaccinated controls. 4197.4, 4122.1 and 4126.7 vaccinated groups showed longer mean survival times than the unvaccinated group but the results were not statistically significant. The 4197.4 and 4126.7 groups also showed a prolonged time to the first death and the 4122.1 group showed 1 outlying result.

Results of pneumococcal challenge DNA vaccination trials 9-11 (see FIG. 2).

	Mean survival times (hours)									
Mouse number	Unvacc control (9)	4188.11 (9)	ID209 (9)	Unvacc control (10)	pcDNA3.1+ (10)	ID215 (10)	4170.4 (10)	Unvacc control (11)	pcDNA3.1+ (11)	4193.1 (11)
1	(98.5)T	69.4	60.2	68.4	58.6	79.2	68.1	60.0	53.2	54.8
2	53.4	53.7	60.2	59.0	58.6	54.2	58.6	50.0	50.4	54.8
3	53.4	51.2	60.2	59.0	50.8	(103.2)*T	50.9	60.0	55.4	68.7*
4	53.4	75.0	(98.0)*T	45.1*	58.6	58.8	72.1	55.0	60.6	54.8
5	70.8	51.2	60.2	68.4	46.5	68.3	68.1	60.0	50.4	68.7
6	53.4	61.2	52.9	59.0	48.9	58.8	54.0	50.0	60.6	68.7*
Mean	56.9	60.3	58.8	59.8	53.6	63.9	62.0	55.8	55.1	61.7
Sd	7.8	10.0	3.3	8.5	5.6	10.0	8.7	5.0	4.6	7.6
p value 1	—	0.3894	0.2519	—	0.0307	<30.0	<39.0	—	—	0.1837
p value 2	—	—	—	—	—	0.0168	0.0316	—	—	0.0829

*bubbled when dosed so may not have received full inoculum.
Tterminated at end of experiment having no symptoms of infection.
Numbers in brackets - survival times disregarded assuming incomplete dosing
p value 1 refers to significance tests compared to unvaccinated controls
p value 2 refers to significance tests compared to pcDNA3.1+ vaccinated controls
Statistical Analyses.
Trial 9 - Although not statistically significant the groups vaccinated with 4188.11 and ID209 did have noticeably higher mean survival times than unvaccinated controls.
Trial 10 - The unvaccinated control group survived for a significantly longer period than the pcDNA3.1+ vaccinated group. The groups vaccinated with ID215 and 4170.4 showed statistically significant longer survival times compared to the sham vaccinated group (p = 0.0168 and 0.0316) but not compared to the unvaccinated group.
Trial 11 - The group vaccinated with 4193.1 was the most promising and survived an average of 6.5 hours longer than the pcDNA3.1+ vaccinated group and 6 hours longer than the unvaccinated group although the results were not statistically significant.

TABLE 1

4101.1

(SEQ. ID. NO. 208)

ATGGAAGAGTTAGTGACCTTAGATTGTTTGTTTGACAGAACTAAGATTGA
AGCCAATGCCAACAAGTATAGTTTTGTGTGGAAGAAAACGACAGAGAAAT
TCTCCGCCAAACTTTCAAGAACAGATACAGGTCTATTTTCAAGAAGAAAT

TABLE 1-continued

CACTCCCCTTCTGATTAAATATGCCATGTTTGATAAGAAACAAAAGAGAG
GGTATAAAGAGTCAGCTAAAAACTTAGCGAATTGGCACTATAATGACAAG
GAGGATAGCTACACACATCCTGATGGCTGGTATTTATCGTTTTCACCATA
CCAAATATCAGAAAACACAGACAGACTTTCAACAAGAAATCAAGGTTTAC
TACGCCGACGAACCTGAATCAGCCCCTCAAAAGGGACTGTATATGAACGA

TABLE 1-continued

ACGCTATCAAAACTTGAAAGCTAAAGAATGTCAGGCGCTTTTATCTCCCC
AAGGTAGACAGATTTTCGCTCAACGCAAGATTGATGTGGAACCTGTCTTT
GGGCAGATAAAGGCTTCTTTGGGTTACAAGAGATGTAATCTGAGAGGGAA
GCGTCAAGTGAGAATTGACATGGGATTGGTACTTATGGCCAATAACCTCC
TAAAATATAGTAAAATGAAATAA

4101.3

(SEQ. ID. NO. 209)

ATGGGGAAAGGCCATTGGAATCGGAAAAGAGTTTATAGCATTCGTAAGTT
TGCTGTGGGAGCTTGCTCAGTAATGATTGGGACTTGTGCAGTTTTATTAG
GAGGAAATATAGCTGGAGAATCTGTAGTTTATGCGGATGAAACACTTATT
ACTCATACTGCTGAGAAACCTAAAGAGGAAAAAATGATAGTAGAAGAAAA
GGCTGATAAAGCTTTGGAAACTAAAAATATAGTTGAAAGGACAGAACAAA
GTGAACCTAGTTCAACTGAGGCTATTGCATCTGAGAAGAAAGAAGATGAA
GCCGTAACTCCAAAAGAGGAAAAAGTGTCTGCTAAACCGGAAGAAAAAGC
TCCAAGGATAGAATCACAAGCTTCAAATCAAGAAAAACCGCTCAAGGAAG
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GGAAGCCATTAAACCTGATGCAGACGTATCTACGTGGAAAAAATTAGATT
TACCGTATGACTGGAGTATCTTTAACGATTTCGATCATGAATCTCCTGCA
CAAAATGAAGGTGGACAGCTCAACGGTGGGGAAGCTTGGTATCGCAAGAC
TTTCAAACTAGATGAAAAAGACCTCAAGAAAAATGTTCGCCTTACTTTTG
ATGGCGTCTACATGGATTCTCAAGTTTATGTCAATGGTCAGTTAGTGGGG
CATTATCCAAATGGTTATAACCAGTTCTCATATGATATCACCAAATACCT
TCAAAAAGATGGTCGTGAGAATGTGATTGCTGTCCATGCAGTCAACAAAC
AGCCAAGTAGCCGTTGGTATTCAGGAAGTGGTATCTATCGTGATGTGACT
TTACAAGTGACAGATAAGGTGCATGTTGAGAAAAATGGGACAACTATTTT
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CCAGCAAAATCGTCAATACGGACGACAAAGACCATGAACTTGTAGCCGAA
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AGCGAGTCGTACCTTAAAAGCACATGAATCAACAAGCCTAGATGCGATTT
TAGAAGTTGAAAGACCAAAACTCTGGACTGTTTTAAATGACAAACCTGCC
TTGTACGAATTGATTACGCGTGTTTACCGTGACGGTCAATTGGTTCATGC
TAAGAAGGATTTGTTTGGTTACCGTTACTATCACTGGACTCCAAATGAAG
GTTTCTCTTTGAATGGTGAACGTATTAAATTCCATGGAGTATCCTTGCAC
CACGACCATGGGGCGCTTGGAGCAGAAGAAAACTATAAAGCAGAATATCG
CCGTCTCAAACAAATGAAGGAGATGGGAGTTAACTCCATCCGTACAACCC
ACAACCCTGCTAGTGAGCAAACCTTGCAAATCGCAGCAGAACTAGGTTTA
CTCGTTCAGGAAGAGGCCTTTGATACGTGGTATGGTGGCAAGAAACCTTA
TGACTATGGACGTTTCTTTGAAAAAGATGCCACTCACCCAGAAGCTCGAA
AAGGTGAAAAATGGTCTGATTTTGACCTACGTACCATGGTCGAAAGAGGC
AAAAACAACCCTGCTATCTTCATGTGGTCAATTGGTAATGAAAATAGGTGA
AGCTAATGGTGATGCCCACTCTTTAGCAACTGTTAAACGTTTGGTTAAGG
TTATCAAGGATGTTGATAAGACTCGCTATGTTACCATGGGAGCAGATAAA
TTCCGTTTCGGTAATGGTAGCGGAGGGCATGAGAAAATTGCTGATGAACT
CGATGCTGTTGGATTTAACTATTCTGAAGATAATTACAAAGCCCTTAGAG
CTAAGCATCCAAAATGGTTGATTTATGGATCAGAAAACATCTTCAGCTACC
CGTACACGTGGAAGTTACTATCGCCCTGAACGTGAATTGAAACATAGCAA
TGGACCTGAGCGTAATTATGAACAGTCAGATTATGGAAATGATCGTGTGG
GTTGGGGGAAAACAGCAACCGCTTCATGGACTTTTGACCGTGACAACGCT
GGCTATGCTGGACAGTTTTATCTGGACAGGTACGGACTATATTGGTGAAC
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GGTATCGTAGATACAGCCGGCATTCCAAAACATGACTTCTATCTCTACCA
AAGCCAATGGGTTTCTGTTAAGAAGAAACCGATGGTACACCTTCTTCCTC
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GGTAAGATTCCAGTTCGTGCTTATTCGAATGCTTCTAGTGTAGAATTGTT
CTTGAATGGAAAATCTCTTGGTCTTAAGACTTTCAATAAAAACAAACCA
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TGAATCTGGCAAGGAAATTGCTCGAGATAAGATTACGACTGCTGGTAAGC
CAGCGGCAGTTCGTCTTATTAAGGAAGACCATGCGATTGCAGCAGATGGA
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AGCAAGCCTGGTATTGTAACGGTGAAAGGTATGGCTGACGGACGAGAAGT
AGAAGCTCGTGTAGAAGTGATTGCTCTTAAATCAGAGCTACCAGTTGTGA
AACGTATTGCTCCAAATACTGACTTGAATTCTGTAGACAAATCTGTTTCC
TATGTTTTGATTGATGGAAGTGTTGAAGAGTATGAAGTGGACAAGTGGGA
GATTGCCGAAGAAGATAAAGCTAAGTTAGCAATTCCAGGTTCTCGTATTC
AAGCGACCGGTTATTTAGAAGGTCAACCAATTCATGCAACCCTTGTGGTA

TABLE 1-continued

GAAGAAGGCAATCCTGCGGCACCTGCAGTACCAACTGTAACGGTTGGTGG
TGAGGCAGTAACAGGTCTTACTAGTCAAAAACCAATGCAATACCGCACTC
TTGCTTATGGAGCTAAGTTGCCAGAAGTCACAGCAAGTGCTAAAAATGCA
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CTTTATTCAGCCTAAAGATGGTGGCCCTCTTCAAACCTATGCAATTCAAT
TCCTTGAAGAAGCGCCAAAAATTGCTCACTTGAGCTTGCAAGTGGAAAAA
GCTGACAGTCTCAAAGAAGACCAAACTGTCAAATTGTCGGTTCGAGCTCA
CTATCAAGATGGAACGCAAGCTGTATTACCAGCTGATAAAGTAACCTTCT
CTACAAGTGGTGAAGGGGAAGTCGCAATTCGTAAAGGAATGCTTGAGTTG
CATAAGCCAGGAGCAGTCACTCTGAACGCTGAATATGAGGGAGCTAAAGA
CCAAGTTGAACTCACTATCCAAGCCAATACTGAGAAGAAGATTGCGCAAT
CCATCCGTCCTGTAAATGTAGTGACAGATTTGCATCAGGAACCAAGTCTT
CCAGCAACAGTAACAGTTGAGTATGACAAAGGTTTCCCTAAAACTCATAA
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GTCTCTGTAGAAGGTATCGTTTCAGTTGAAGAAGTCAGTGTGACAACTCC
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CAATACGCTAAGGAAGGTGTCTTTACAGTTAATGGTCGCTTAGAAGGTAC
GCAATTAACAACTAAACTTCATGTTCGCGTATCTGCTCAAACTGAGCAAG
GTGCAAACATTTCTGACCAATGGACCGGTTCAGAATTGCCACTTGCCTTT
GCTTCAGACTCAAATCCAAGCGACCCAGTTTCAAATGTTAATGACAAGCT
CATTTCCTACAATAACCAACCAGCCAATCGTTGGACAAACTGGAATCGTA
CTAATCCAGAAGCTTCAGTCGGTGTTCTGTTTGGAGATTCAGGTATCTTG
AGCAAACGCTCCGTTGATAATCTAAGTGTCGGATTCCATGAAGACCATGG
AGTTGGTGTACCGAAGTCTTATGTGATTGAGTATTATGTTGGTAAGACTG
TCCCAACAGCTCCTAAAAACCCTAGTTTTGTTGGTAATGAGGACCATGTC
TTTAATGATTCTGCCAACTGGAAACCAGTTACTAATCTAAAAGCCCCTGC
TCAACTCAAGGCTGGAGAAATGAACCACTTTAGCTTTGATAAAGTTGAAA
CCTATGCTGTTCGTATTCGCATGGTTAAAGCAGATAACAAGCGTGGAACG
TCTATCACAGAGGTACAAATCTTTGCGAAACAAGTTGCGGCAGCCAAGCA
AGGACAAACAAGAATCCAAGTTGACGGCAAAGACTTAGCAAACTTCAACC
CTGATTTGACAGACTACTACCTTGAGTCTGTAGATGGAAAAGTTCCGGCA
GTCACAGCAAGTGTTAGCAACAATGGTCTCGCTACCGTCGTTCCAAGCGT
TCGTGAAGGTGAGCCAGTTCGTGTCATCGCGAAAGCTGAAAATGGCGACA
TCTTAGGAGAATACCGTCTGCACTTCACTAAGGATAAGAGCTTACTTTCT
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GCTACGAAACAAAAGACCTGACAGTTGAATGGGAAGAAGTTCCAGCGGAA
AATCTGACAAAAGCAGGTCAATTTACTGTTCGAGGCCGTGTCCTTGGTAG
TAACCTTGTTGCTGAGATCACTGTACGAGTGACAGACAAACTTGGTGAGA
CTCTTTCAGATAACCCTAACTATGATGAAAACAGTAACCAGGCCTTTGCT
TCAGCAACCAATGATATTGACAAAAACTCTCATGACCGCGTTGACTATCT
CAATGACGGAGATCATTCAGAAAATCGTCGTTGGACAAACTGGTCACCAA
CACCATCTTCTAATCCAGAAGTATCAGCGGGTGTGATTTTCCGTGAAAAT
GGTAAGATTGTAGAACGGACTGTTACACAAGGAAAAGTTCAGTTCTTTGC
AGATAGTGGTACGGATGCACCATCTAAACTCGTTTTAGAACGCTATGTCG
GTCCAGAGTTTGAAGTGCCAACCTACTATTCAAACTACCAAGCCTACGAC
GCAGACCATCCATTCAACAATCCAGAAAATTGGGAAGCTGTTCCTTATCG
TGCGGATAAAGACATTGCAGCTGGTGATGAAATCAACGTAACATTTAAAG
CTATCAAAGCCAAAGCTATGAGATGGCGTATGGAGCGTAAAGCAGATAAG
AGCGGTGTTGCGATGATTGAGATGACCTTCCTTGCACCAAGTGAATTGCC
TCAAGAAAGCACTCAATCAAAGATTCTTGTAGATGGAAAAGAACTTGCTG
ATTTCGCTGAAAATCGTCAAGACTATCAAATTACCTATAAAGGTCAACGG
CCAAAAGTCTCAGTTGAAGAAAACAATCAAGTAGCTTCAACTGTGGTAGA
TAGTGGAGAAGATAGCTTTCCAGTACTTGTTCGCCTCGTTTCAGAAAGTG
GAAAACAAGTCAAGGAATACCGTATCCACTTGACTAAGGAAAAACCAGTT
TCTGAGAAGACAGTTGCTGCTGTACAAGAAGATCTTCCAAAAATCGAATT
TGTTGAAAAAGATTTGGCATACAAGACAGTTGAGAAAAAAGATTCAACAC
TGTATCTAGGTGAAACTCGTGTAGAACAAGAAGGAAAAGTTGGAAAAGAA
CGTATCTTTACAGCGATTAATCCTGATGGAAGTAAGGAAGAAAAACTCCG
TGAAGTGGTAGAAGTTCCGACAGACCGCATCGTCTTGGTTGGAACCAAAC
CAGTAGCTCAAGAAGCTAAAAAACCACAAGTGTCAGAAAAAGCAGATACA
AAACCAATTGATTCAAGTGAAGCTAGTCAAACTAATAAAGCCCAGTTACC
AAGTACAGGTAGTGCGGCAAGCCAAGCAGCAGTAGCAGCAGGTTTAACTC
TTCTAGGTTTGAGTGCAGGATTAGTAGTTACTAAAGGTAAAAAAGAAGAC
TAG

4101.5

(SEQ. ID. NO. 210)

ATGGATGCAATCTTTGACCTAATCGGAAAGGTTTTCAATCCCATCTTAGA
AATGGGTGGACCTGTCATCATGTAATCATTTTGACAGTATTGGCTTTACT
TTTTGGAGTGAAATTCTCCAAAGCGCTTGAAGGTGGTATCAAACTTGCCA
TCGCTCTTACAGGTATCGGTGCTATCATCGGTATGCTAAACACTGCTTTC
TCAGCATCACTAGCAAAATTCGTTGAAAACACTGGTATCCAATTGAGTAT
TACCGACGTTGGTTGGGCACCACTTGCTACAATCACTTGGGGTTCTGCTT

TABLE 1-continued

GGACACTATACTTCTTGCTCATCATGTTGATTGTCAACATAGTGATGCTA
GCTATGAAGAAAACAGATACACTTGATGTCGATATCTTTGATATCTGGCA
CTTGTCTATCACAGGTCTCTTGATTAAATGGTATGCTGATAACAATGGTG
TGAGTCAAGGGGTTTCACTCTTTATTGCTACAGCAGCTATCGTCCTTGTC
GGTGTGTTGAAAATTATCAACTCTGACTTGATGAAACCTACATTTGATGA
CCTTCTTAACGCCCCAAGTTTCATCACCAATGACATCAACTCACATGAAC
TACATGATGAACCCAGTTATCATGGTTTTGGATAAGATTTTTGAAAAATT
CTTCCCAGGCCTTGATAAATATGACTTTGATGCTGCTAAATTGAACAAGA
AAATCGGTTTCTGGGGATCTAAATTCTTCATCGGTTTCATCCTTGGTATC
GTTATCGGTATTATGGGAACTCCACATCCAATTGCAGGTGTTGCAGATGC
AGATAAATGGCGTCTTGTTATCAAAGGATGGTTGTCTCTTGGTTTGACTG
CCGGTGTATCTTTGGAACTCTTCTCACTTATCGGTTCATGGTTCATCGCA
GCCGTAGAACCACTATCACAAGGTATTACAAACGTTGCTACTAAACGTCT
TCAAGGACGTAAATTCAATATCGGTCTTGACTGGCCATTCATCGCTGGTC
GTGCTGAAATCTGGGCTTGTGCCAACGTACTTGCACCAATCATGTTGATT
GAAGCAGTGCTTCTTTCAAAAGTTGGAAATGGTATCTTGCCACTTGCAGG
TATCATCGCTATGGGTGTTACTCCAGCTCTCTTGGTTGTAACTCGTGGTA
AATTGCTCCGTATGATTATCTTCGGAACACTCTTGTTGCCACTCTTCCTT
CTTTCAGGTACACTTATTGCACCATTTGCAACAGAACTTGCTAAAGGTGT
AGGTGCCTTCCCAGAAGGTGTGAGCCAAACTCAATTGATTACTCACTCTA
CTCTTGAAGGACCAATCGAAAAACTTCTTGGTTGGACAATTGGTAACACT
ACAACTGGTGATATCAAAGCAATCCTTGGTGCAGTAGTCTTCCTTGTATT
CTATATCGGTATCTTTGCTTGGTACAGAAAACAAATGATCAAACGTAACG
AAGAGTACGCAGCAAAAGCAAAATAA

4102.1

(SEQ. ID. NO. 211)

ATGAAGATTATGAAAAAAAAATATTGGACTTTAGCGATATTATTCTTTTG
TTTGTTCAATAATTCTGTTACTGCTCAAGAAATACCTAAAAATCTTGATG
GCAATATAACTCACACTCAGACTAGCGAAAGTTTTTCTGAATCTGATGAA
AAACAGGTTGACTATTCTAATAAAAATCAAGAAGAAGTAGACCAAAATAA
ATTTCGTATTCAAATCGATAAGACAGAATTATTTGTAACAACAGATAAAC
ATTTAGAAAAAAACTGTTGTAAATTGGAACTTGAACCACAAATAAATAAC
GATATTGTTAACTCTGAAAGTAATAATTTACTAGGCGAAGATAATTTAGA
TAATAAAATTAAGGAAAATGTTTCTCATCTAGATAATAGAGGAGGAAATA
TAGAGCATGACAAAGATAACTTAGAATCGTCGATTGTAAGAAAATATGAA
TGGGATATAGATAAAGTTACTGGTGGAGGCGAAAGTTATAAATTATATTC
TAAAAGTAATTCTAAAGTTTCAATTGCTATTTTAGATTCAGGAGTCGATT
TACAAAATACTGGATTACTGAAAAATCTTTCAAATCACTCAAAAAACTAT
GTCCCCAATAAAGGATATTTAGGAAAAGAGGAGGGAGAGGAAGGAATAAT
ATCAGATATTCAAGATAGATTAGGTCATGGTACGGCTGTTGTAGCTCAAA
TTGTAGGGGATGACAATATTAATGGAGTAAATCCTCACGTTAATATTAAC
GTCTATAGAATATTTGGTAAGTCGTCAGCTAGTCCAGATTGGATTGTAAA
AGCAATTTTTGATGCTGTAGATGATGGCAATGATATTATCAATCTTAGTA
CTGGACAATATTTAATGATTGATGGAGAATATGAGGACGGAACAAATGAT
TTTGAAACATTTTTGAAGTATAAAAAGGCTATTGATTACGCGAATCAAAA
AGGAGTAATTATAGTAGCTGCATTAGGGAATGACTCCCTAAATGTATCAA
ATCAGTCAGATTTATTGAAACTTATTAGTTCACGCAAAAAAGTAAGAAAA
CCAGGATTAGTAGTTGATGTTCCAAGTTATTTCTCATCTACAATTTCGGT
CGGAGGCATAGATCGCTTAGGTAATTTATCAGATTTTAGCAATAAAGGGG
ATTCTGATGCAATATATGCGCCTGCAGGCTCAACATTATCTCTTTCAGAA
TTAGGACTTAATAACTTTATTAATGCAGAAAAATATAAAGAAGATTGGAT
TTTTTCGGCAACACTAGGAGGATATACGTATCTTTATGGAAACTCATTTG
CTGCTCCTAAAGTTTCTGGTGCGATTGCAATGATTATTGATAAATACAAA
TTAAAAGATCAGCCCTATAATTATATGTTTGTAAAAAAATTCTGGAAGAA
ACATTACCAGTAA

4106.1

(SEQ. ID. NO. 212)

ATGAAGAAAACATGGAAAGTGTTTTTAACGCTTGTAACAGCTCTTGTAGC
TGTTGTGCTTGTGGCCTGTGGTCAAGGAACTGCTTCTAAAGACAACAAAG
AGGCAGAACTTAAGAAGGTTGACTTTATCCTAGACTGGACACCAAATACC
AACCACACAGGGCTTTATGTTGCCAAGGAAAAAGGTTATTTCAAAGAAGC
TGGAGTGGATGTTGATTTGAAATTGCCACCAGAAGAAAGTTCTTCTGACT
TGGTTATCAACGGAAAGGCACCATTTGCAGTGTATTTCCAAGACTACATG
GCTAAGAAATTGGAAAAAGGAGCAGGAATCACTGCCGTTGCAGCTATTGT
TGAACACAATACATCAGGAATCATCTCTCGTAAATCTGATAATGTAAGCA
GTCCAAAAGACTTGGTTGGTAAGAAATATGGGACATGGAATGACCCAACT
GAACTTGCTATGTTGAAAACCTTGGTAGAATCTCAAGGTGGAGACTTTGA
GAAGGTTGAAAAAGTACCAAATAACGACTCAAACTCAATCACACCGATTG
CCAATGGCGTCTTTGATACTGCTTGGATTTACTACGGTTGGGATGGTATC
CTTGCTAAATCTCAAGGTGAGATGCTAACTTCATGTACTTGAAAGACTAT
GTCAAGGAGTTTGACTACTATTCACCAGTTATCATCGCAAACAACGACTA
TCTGAAAGATAACAAAGAAGAAGCTCGCAAAGTCATCCAAGCCATCAAAA
AAGGCTACCAATATGCCATGGAACATCCAGAAGAAGCTGCAGATATTCTC
ATCAAGAATGCACCTGAACTCAAGGAAAAACGTGACTTTGTCATCGAATC

TABLE 1-continued

TCAAAAATACTTGTCAAAAGAATACGCAAGCGACAAGGAAAAATGGGGTC
AATTTGACGCAGCTCGCTGGAATGCTTTCTACAAATGGGATAAAGAAAAT
GGTATCCTTAAAGAAGACTTGACAGACAAAGGCTTCACCAACGAATTTGT
GAAATAA

4106.4

(SEQ. ID. NO. 213)

ATGATAAAAAATCCTAAATTATTAACCAAGTCTTTTTTAAGAAGTTTTGC
AATTCTAGGTGGTGTTGGTCTAGTCATTCATATAGCTATTTATTTGACCT
TTCCTTTTTATTATATTCAACTGGAGGGGGAAAAGTTTAATGAGAGCGCA
AGAGTGTTTACGGAGTATTTAAAGACTAAGACATCTGATGAAATTCCAAG
CTTACTCCAGTCTTATTCAAAGTCCTTGACCATATCTGCTCACCTTAAAA
GAGATATTGTAGATAAGCGGCTCCCTCTTGTGCATGACTTGGATATTAAA
GATGGAAAGCTATCAAATTATATCGTGATGTTAGATATGTCTGTTAGTAC
AGCAGATGGTAAACAGGTAACCGTGCAATTTGTTCACGGGGTGGATGTCT
ACAAAGAAGCAAAGAATATTTTGCTTTTGTATCTCCCATATACATTTTTG
GTTACAATTGCTTTTTCCTTTGTTTTTTCTTATTTTTATACTAAACGCTT
GCTCAATCCTCTTTTTTACATTTCAGAAGTGACTAGTAAAATGCAAGATT
TGGATGACAATATTCGTTTTCATCAAACTAGGAAAGATGAAGTTGGTGAA
GTTGGAAAACAGATTAATGGTATGTATGAGCACTTGTTGAAGGTTATTTA
TGAGTTGGAAAGTCTGTAATGAGCAAATTGTAAAATTGCAAAATCAAAAG
GTTTCCTTTGTCCGCGGAGCATCACATGAGTTGAAAACCCCTTTAGCCAG
TCTTAGAATTATCCTAGAGAATATGCAGCATAATATTGGAGATTACAAAG
ATCATCCAAAATATATTGCAAAGAGTATAAATAAGATTGACCAGATGAGC
CACTTATTAGAAGAAGTACTGGAGTCTTCTAAATTCCAAGAGTGGACAGA
GTGTCGTGAGACCTTGACTGTTAAGCCAGTTTTAGTAGATATTTTATCAC
GTTATCAAGAATTAGCTCATTCAATAGGTGTTACAATTGAAAATCAATTG
ACAGATGCTACCAGGGTCGTCATGAGTCTTAGGGCATTGGATAAGGTTTT
GACAAACCTGATTAGTAATGCAATTAAATATTCAGATAAAAATGGGCGTG
TAATCATATCCGAGCAAGATGGCTATCTCTCTATCAAAAATACATGTGCG
CCTCTAAGTGACCAAGAACTAGAACATTTATTTGATATATTCTATCATTC
TCAAATCGTGACAGATAAGGATGAAAGTTCCGGTTTGGGTCTTTACATTG
TGAATAATATTTTAGAAAGCTATCAAATGGATTATAGTTTTCTCCCTTAT
GAACACGGTATGGAATTTAAGATTAGCTTGTAG

4106.6

(SEQ. ID. NO. 214)

ATGTATTTAGGAGATTTGATGGAGAAAGCCGAGTGTGGTCAATTTTCAAT
ACTTTCCTTTCTATTACAAGAGTCTCAGACGACCGTCAAGGCTGTAATGG
AAGAAACAGGATTTTCAAAAGCAACCCTAACCAAATATGTCACCCTGCTC
AATGACAAGGCTTTGGATAGTGGCTTAGAGCTGGCTATTCACTCAGAAGA
TGAAAATCTGCGTCTGTCTATCGGTGCAGCTACCAAGGGGAGAGATATTC
GGAGCTTGTTTTTGGAGAGTGCTGTTAAATACCAGATTTTGGTTTATCTT
CTCTACCACCAACAGTTTTAGCCCATCAGCTGGCTCAAGAATTGGTGAT
TAGCGAGGCTACGCTTGGTCGTCACTTGGCTGGTTTAAATCAGATTTTGT
CAGAATTTGATTTATCCATCCAAAATGGCCGTTGGCGAGGTCCAGAGCAT
CAGATTCACTATTTCTATTTCTGTCTTTTCCGAAAGGTCTGGTCGAGTCA
GGAATGGGAAGGTCACATGCAGAAACCAGAGAGAAAACAGGAGATTGCCA
ATTTAGAGGAAATCTGCGGTGCAAGTTTGTCTGCGGGGCAGAAATTGGAC
TTGGTTCTCTGGGCTCACATCAGTCAACAACGTCTTCGGGTCAATGCTTG
TCAGTTTCAAGTCATAGAAGAGAAAATGCGAGGGTATTTTGACAATATCT
TTTATCTTCGTTTGCTGAGAAAGGTTCCGTCCTTTTTTGCTGGGCAACAT
ATTCCACTAGGAGTTGAGGATGGTGAGATGATGATATTCTTCTCTTTTCT
CCTATCTCATCGCATTCTTCCTCTTCATACTATGGAGTATATTCTTGGTT
TTGGAGGGCAGTTGGCAGATTTACTGACGCAATTGATTCAAGAAATGAAG
AAGGAGGAACTATTGGGGGATTATACAGAGGACCATGTCACCTATGAACT
CAGTCAGCTTTGTGCTCAAGTCTATCTCTATAAGGGCTATATTTTACAGG
ATCGCTACAAGTACCAGTTAGAGAATCGTCATCCATATTTACTGATGGAA
CATGATTTTAAAGAGACAGCAGAGGAGATTTTTCATGCTCTACCTGCTTT
TCAACAGGGGACAGATTTAGATAAGAAGATTCTCTGGGAATGGCTCCAGT
TAATCGAATATATGGCTGAAAACGGTGGCCAGCATATGCGGATTGGTCTG
GATTTGACATCTGGTTTTCTTGTCTTTTCAAGGATGGCAGCCATTTTGAA
ACGGTATTTGGAATACAATCGTTTTATTACCATTGAAGCTTATGACCCTA
GTCGGCATTATGATTTGCTGGTTACCAATAACCCGATTCATAAGAAGGAA
CAGACACCAGTCTATTATTTAAAAAATGACTTGGATATGGAGGATTTGGT
AGCGATTCGCCAGTTATTATTCACTTAA

4106.7

(SEQ. ID. NO. 215)

ATGGAATTTTCAAAAGAAAACACGTGAATTGTCAATTAAAAAAATGCAGG
AACGTACCCTGGACCTCTTGATTATCGGTGGAGGAATCACAGGAGCTGGT
GTAGCCTTGCAGGCGGCAGCTAGCGGTCTTGAGACTGGTTTGATTGAAAT
GCAAGACTTTGCAGAAGGAACATCTAGTCGTTCAACAAAATTGGTTCACG
GAGGACTTCGTTACCTCAAACAATTTGACGTAGAAGTGGTCTCAGATACG
GTTTCTGAACGTGCAGTGGTTCAACAAATCGCTCCACACATTCCAAAATC
AGATCCAATGCTCTTACCAGTTTACGATGAAGATGGAGCAACCTTTAGCC

TABLE 1-continued

TCTTCCGTCTTAAAGTAGCCATGGACTTGTACGACCTCTTGGCAGGTGTT
AGCAACACACCAGCTGCGAACAAGGTTTTGAGCAAGGATCAAGTCTTGGA
ACGCCAGCCAAACTTGAAGAAGGAAGGCTTGGTAGGAGGTGGAGTGTATC
TTGACTTCCGTAACAACGATGCGCGTCTCGTGATTGAAAACATCAAACGT
GCCAACCAAGACGGTGCCCTCATTGCCAACCACGTGAAGGCAGAAGGCTT
CCTCTTTGACGAAAGTGGCAAGATTACAGGTGTTGTAGCTCGTGATCTCG
ACAGACCAAGTGTTTGAAATCAAGGCCCGTCTGGTTATTAATACAACAGG
TCCTTGGAGTGATAAAGTACGTAATTTGTCTAATAAGGGAACGCAATTCT
CACAAATGCGCCCAACTAAGGGAGTTCACTTGGTAGTAGATTCAAGCAAA
ATCAAGGTTTCACAGCCAGTTTACTTCGACACAGGTTTGGGTGACGGTCG
TATGGTCTTTGTTCTCCCACGTGAAAACAAGACTTACTTTGGTACAACTG
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GTAGATTATCTACTTTGGCATTGTCAACAACCGCTTCCCAGAATCCAACA
TCACCATTGATGATATCGAAAGCAGCTGGGCAGGTCTTCGTCCATTGATT
GCAGGGAACAGTGCCTCTGACTATAATGGTGGAAATAACGGTACCATCAG
TGATGAAAGCTTTGACAACTTGATTGCGACTGTTGAATCTTATCTCTCCA
AAGAAAAAACACGTGAAGATGTTGAGTCTGCTGTCAGCAAGCTTGAAAGT
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CTTGGACCGTGATGACAATGGTCTCTTGACTCTTGCTGGTGGTAAAATCA
CAGACTACCGTAAGATGGCTGAAGGAGCTATGGAGCGCGTGGTTGACATC
CTCAAAGCAGAATTTGACCGTAGCTTTAAATTGATCAATTCTAAAACTTA
CCCTGTTTCAGGTGGAGAATTGAACCCAGCAAATGTGGATTCAGAAATCG
AAGCCTTTGCGCAACTTGGAGTATCACGTGGTTTGGATAGCAAGGAAGCT
CACTATCTGGCAAATCTTTACGGTTCAAATGCACCGAAAGTCTTTGCACT
TGCTCACAGCTTGGAACAAGCGCCAGGACTCAGCTTGGCAGATACTTTGT
CCCTTTCACTATGCAATGCGCAATGAGTTGACTCTTAGCCCAGTTGACTT
CCTTCTTCGTCGTACCAATCACATGCTCTTTATGCGTGATAGCTTGGATA
GTATCGTTGAGCCAATTTTGGATGAAATGGGACGATTCTATGACTGGACA
GAAGAAGAAAAAGCAACTTACCGTGCTGATGTCGAAGCAGCTCTCGCTAA
CAACGATTTAGCAGAATTAAAAAATTAA

4106.8

(SEQ. ID. NO. 216)

ATGATGAATGAATTATTTGGAGAATTTCTAGGGACTTTAATCCTGATTCT
TCTAGGAAATGGTGTTGTTGCAGGTGTGGTTCTTCCTAAAACCAAGAGCA
ATAGCTCAGGTTGGATTGTGATTACTATGGGTTGGGGGATTGCAGTTGCG
GTTGCAGTCTTTGTATCTGGCAAGCTCAGTCCAGCTTATTTAAACCCAGC
TGTGACCATCGGTGTGGCCTTAAAAGGTGGTTTGCCTTGGGCTTCCGTTT
TGCCTTATATCTTAGCCCAGTTCGCAGGGGCCATGCTGGGTCAGATTTTG
GTTTGGTTGCAATTCAAACCTCACTATGAGGCAGAAGAAAATGCAGGCAA
TATCCTGGCAACCTTCAGTACTGGACCAGCCATCAAGGATACTGTATCAA
ACTTGATTAGCGAAATCCTTGGAACTTTTGTTTTGGTGTTGACAATCTTT
GCTTTGGGTCTTTACGACTTTCAGGCAGGTATCGGAACCTTTGCAGTGGG
AACTTTGATTGTCGGTATCGGTCTATCACTAGGTGGGACAACAGGTTATG
CCTTGAACCCAGCTCGTGACCTTGGACCTCGTATCATGCACAGCATCTTG
CCAATTCCAAACAAGGGAGACGGAGACTGGTCTTACGCTTGGATTCCTGT
TGTAGGCCCTGTTATCGGAGCAGCCTTGGCAGTGCTTGTATTCTCACTTT
TCTAG

4106.10

(SEQ. ID. NO. 217)

ATGAAAAGGACCTGGAGGAACTCATTCGTGACAAATCTTAATACACCTTT
TATGATTGGCAATATTGAGATTCCCAATCGTACCGTTTTAGCGCCTATGG
CTGGCGTGACCAACTCAGCCTTTCGTACTATCGCAAAGGAGCTCGGAGCT
GGACTCGTTGTAATGGAAATGGTCTCTGACAAGGGAATCCAATACAACAA
CGAAAAAACCCTGCACATGCTTCATATCGATGAGGGCGAAAACCCTGTCT
CTATCCAACTTTTTGGTAGCGATGAAGACAGCCTAGCACGCGCAGCAGAA
TTCATCCAAGAAAACACCAAGACCGATATCGTCGATATCAACATGGGCTG
CCCTGTCAACAAAATCGTGAAGAACGAAGCTGGTGCTATGTGGCTCAAGG
ATCCAGACAAGATTTACTCCATCATCAACAAGGTCCAGTCTGTCCTTGAT
ATCCCACTTACTGTCAAAATGCGTACCGGCTGGGCGGACCCATCTCTTGC
AGTAGAAAATGCTCTCGCTGCTGAAGCTGCAGGTGTTTCTGCCCTCGCCA
TGCATGGCCGTACCCGTGAACAAATGTATACTGGCCACGCAGACCTTGAG
ACCCTTTACAAGGTTGCCCAAGCTCTAACCAAGATTCCATTCATCGCCAA
CGGTGATATCCGTACTGTCCAAGAAGCCAAGCAACGCATCGAAGAAGTTG
GTGCTGACGCAGTCATGATTGGCCGAGCTGCCATGGGAAATCCTTACCTC
TTCAACCAAATCAACCATTACTTTGAAACAGGAGAAATCCTACCTGATTT
GACCTTTGAAGACAAGATGAAGATCGCCTAGGAACACTTGAAACGATTGA
TTAACCTCAAAGGAGAAAACGTCGCAGTTCGTGAATTCCGCGGTCTCGCT
CCTCACTATCTCCGTGGAACATCTGGCGCTGCCAAACTCCGTGGAGCCAT
TTCGCAAGCCAGCACCCTGGCAGAGATTGAAACCCTCTTGCAATTGGAGA
AGGCTTAA

TABLE 1-continued

4107.1

(SEQ. ID. NO. 218)

ATGACAAAGAAGAAAATTGAGCGTATTTCTGTAATACACCGAGAAAAGAT
TTTATGGCTCAAGTGGTATTTCATGCGAGATAAAGAACAACCTAAGTATA
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GCTTATCAAAAATACGCAACTATCAAGCAGATAACAGATATTAGGGTACA
AACAAGTGAGGCTGACATTTTAGAGGCTGTAAAAGAGGTTTATGTGTACA
ATCACATGAATGTTATCGGAGCTTGTCAGCGGATATTATTTATCAGTCAA
TCACCAGCTTATGATAAGTTAAATAAGTGGTTTAATATCTATTTCTGATT
TGTATTTTAGCGTTGTACCCTTGCCCAAAATGGGGGTATATCATGAGATG
GTAGGTATCTAG

4107.2

(SEQ. ID. NO. 219)

ATGAAAAATTCCAACGAGGCTGAGATGAAATTACTTTATACTGATATTCG
GACTTCTTTGACAGAAATTCTAACAAGAGAGGCAGAAGAGCTAGTTGCAG
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CGTCACGCGCTTTGCTCAAATGGCTCGCTATCTGGTCTTGAATGATTTAC
CAGCTAAAACTACTCTTGATGATATCGGTCTTGGGTTGGCCTTTTACAAA
TGCCTTGCCGAACTCGATCCCAAGGACTTGCGTGTTTATGGCGCTATTAA
GCAGGATCCTCAATTGATCCAGCAGTTAATTGAGCTTTACCATGAGATGA
CCAAATCTCAGATGAGTTTTTTGGACTTGGAGAATTTAACAGATGAGGAT
AAGAGGGCGGATTTACTCTTGATTTTTGAGAAAGTAACAGCCTATCTTAA
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GACGGCTTTACTCGTTTTTCTGCTGAGGAAGAGCGGGTTGTGGACTTACT
TCACGGCAAAGGTGTTGAGATTGTTATCGGGGCTTATGCTAGTAAGAAAG
CCTATACCAGTCCTTTTAGCGAGGGCAATCTCTACCAAGCCAGCGTAAAA
TTTCTCCATCATCTGGCTTCTAAATACCAAACGCCTGCTCAGGACTGTTC
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CGTGAAAATTTACAAATCTGGTCTTGTTTGACGCAAAAGGAGGAGTTGGA
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GCTACAAGCATTTTCGTATTCTCTTGGGGGATGTAGCTTCTTACCAGTTA
TCTCTCAAAACCATTTTTGACCAGTATCAGATTCCTTTTTATCTTGGTAG
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TAGCTTTAAAACGTTACCGTTTTCGTCAGGAGGATTTGATTAATCTTCTT
AGAACTGATTTGTATACTGACCTCAGTCAGTCTGATATTGATGCTTTTGA
GCAATATATCCGCTATCTTGGTATCAATGGCTTGCCAGCCTTTCAGCAAA
CCTTCACCAAATCCCACCATGGAAAATTTAATCTTGAGCGTTTGAATGTC
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GAGCTGTGACCAAGCAGTTACAAGATTTGACAACCACTTTGGAAGCTGTA
GAACAGGAAAGACAAGCCGAAGTTTGGAAGGCTTTCTGCCATGTTTTAGA
ACAATTTGCGACTGTTTTTGCTGGTTCACAGGTTAGTCTGGAAGACTTCC
TAGCCTGCTCCATTCTGGAATGAGTTTGTCCCAATACCGTACCATTCCAG
CAACAGTGGACACTGTTCTGGTGCAGCGTTACGATTTGATTGCACCATTG
ACTGCTGACTTTGTCTATGCTATTGGACTAACTCAGGACCATTTACCAAA
AATTTCTCAAAACACCAGTCTTCTGACAGATGAAGAAAGGCAAAACCTAA
ACCAAGCGACCGAAGAAGGCGTTCAATTACTGATTGCCAGCAGTGAAAAT
CTCAAGAAAAATCGCTACACTATGCTTTCCTTGGTCAATTCTGCTCGTAA
GCAGTTGTTCTTGTCGGCTCCAAGCCTTTTTAACGAAAGTGAAAGTAAGG
AATCTGCCTATCTTCAAGAGTTGATCCATTTTGGATTTAGGCGGAGAGAG
AAGAGGATGAATCACAAAGGACTGTCTAAGGAGGATATGGGGTCCTATCA
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AAAAAACTAGATCAGCAAGGTCTGGAAAATCCAGCTATCCCAACCAGTCC
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AACAGGAGTTTTACCTGTCTACGTCGGGTTTGACAGAGTTTTATCGCAAT
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CAAGCTATTCAAGAAACCAGTCAAGAACGCGAATTTGAAGCTATTTATCA
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GGACAACTGGACATATTCTCCGACACAATCCAGCCATCGAAACCATCAAA
GAAGAAGCAAATTTTGGTGGAAAAGACCAAGCCTTTATTCAATTAGACAA
TGGACGCAGTGTCTTTGTACGAGGCAAGGTGGACCGGATTGACCGTTTGA
AAGCTAATGGAGCGATAGGAGTAGTAGACTACAAATCCAGTCTGACTCAG
TTCCAGTTTCCTCATTTCTTTAATGGGCTCAATTCTCAGTTACCAACCTA
TCTTGCTGCCCTAAAAAGAGAAGGGGAGCAGAACTTTTTCGGCGCCATGT
ACTTGGAAATGGCTGAACCTGTCCAATCTCTGATGGCGGTAAAAAGTCTG
GCAGGAGCAGTGGTAGAAGCCAGCAAATCTATGAAATACCAAGGGCTCTT
CTTGGAAAAAGAAAGCAGTTATTTAGGCGAATTTTATAACAAAAACAAGG
CTAATCAACTGACAGATGAGGAATTTCAGCTCCTACTGGACTACAATGCC
TATCTTTACAAGAAAGCTGCTGAGAAGATTTTAGCAGGCCGGTTCGCCAT

TABLE 1-continued

CAATCCTTATACTGAAAATGGCAGAAGCATTGCCCCATACGTCCAGCAAC
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TTCCTAGAAAAGTTGGACCTAGCTGATGGCAAGCGTCTGGTCGGAGAAAA
ACTCAAGCAAGCTTGGCTTGAAAAAATAAGAGAGGAGTTGAATCGATGA

4107.3

(SEQ. ID. NO. 220)

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TCTGGAAAGACCTTTGTCATGGCAGAGCGCATTCTGGACCAATTGGCGCG
TGGTGTCGAAATTTCTCAACTCTTTATCTCAACCTTTACCGTCAAGGCTG
CAACTGAACTTAAAGAACGTTTAGAGAAAAAAATCAGCAAGAAAATCCAA
GAAACAGATGATGTCGACCTCAAACAACACTTGGGTCGCCAGTTGGCAGA
CCTACCCAACGCTGCCATTGGAACCATGGATTCTTTCACACAAAAATTCC
TTGGCAAACATGGTTATCTGCTTGATATTGCACCTAATTTCCGTATTTTA
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GCTGAGTGAATCTTTCCTCAAAGGATTTGAGAAAGCTGATTTTACCAGTG
AAAAAGAAAAACTGACCGAGCAAATCAAACAAGCCCTTTGGGATTTGGAA
AGCTTTTTCCGTTACCATCTGGATAACGATGCCAAGGAGTTTGCAAAGGC
TGCCTATTTAGAAAATGTTCAGTTAATTCTGGATGAAATTGGCTCCCTAA
ATCAGGAGTCCGATAGTCAGGCTTATCAGGCAGTGCTTGCGCGTGTTGTC
GCCATCTCTAAGGAGAAAAACGGTCGAGCTCTGACTAATGCCAGCCGTAA
GGCTGATTTGAAGCCCCTGGCTGATGCCTACAACGAAGAGAGAAAGACCC
AGTTTGCTAAACTAGGACAATTATCAGACCAGATAGCGATTCTCGACTAT
CAAGAACGTTATCATGGAGACACTTGGAAACTAGCTAAAACCTTCCAATC
TTTCATGAGCGATTTTGTAGAGGCTTATCGTCAGAGAAAACGACAGGAAA
ATGCCTTCGAATTCGCTGATATCAGCCATTACACCATTGAGATTTTAGAG
AATTTCCCACAAGTTCGTGAGTCTTATCAGGAGCGCTTCCATGAAGTCAT
GGTCGATGAGTATCAGGATACCAACCATATTCAAGAACGGATGCTGGAAT
TGTTGTCTAATGGCCACAATCGCTTTATGGTGGGAGATATCAAGCAATCC
ATCTATCGTTTCCGTCAGGCAGACCCGCAGATTTTCAATGAGAAATTCCA
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ATTTCCGTAGTAGTTCAGAAGTGCTGTCAGCAACCAATGATGTCTTTGAA
CGTCTCATGGACCAAGAGGTCGGCGAAATCAACTATGATAACAAGCACCA
GCTTGTTTTTGCCAATACCAAACTGACTCCCAATCCAGACAACAAGGCAG
CATTTCTCCTCTACGACAAGGACGATACAGGTGAGGAAGAAGAGAGTCAA
ACAGAAACGAAACTAACAGGCGAAATGCGCTTAGTTATCAAGGAGATTCT
GAAACTTCATCAAGAAAAAGGTGTTGCCTTTAAGGAAATTGCCCTTCTGA
CCTCCAGCCGCAGTCGTAATGACCAGATTCTCCTCGCCCTGTCTGAGTAC
GGAATTCCTGTCAAAACTGACGGAGAGCAAAACAATTATCTCCAATCCCT
AGAAGTGCAAGTCATGCTAGACACTCTTCGTGTCATTCACAATCCCCTGC
AAGACTACGCCTTGGTTGCCCTTATGAAGTCTCCAATGTTTGGTTTTGAT
GAGGATGAGCTAGCACGTTTGTCCCTTCAGAAAGCAGAGGATAAAGTCCA
CGAAAATCTCTATGAGAAACTGGTCAATGCACAAAAAATGGCAAGTAGTC
AAAAAGGCTTGATTCACACAGCTCTAGCTGAAAAACTAAAGCAATTCATG
GATATCCTAGCTTCTTGGCGCTTGTATGCCAAAACCCACTCTCTCTATGA
CTTGATTTGGAAGATTTACAACGACCGTTTTTATTATGACTATGTTGGGG
CTTTGCCGAATGGTCCTGCTAGGCAGGCCAATCTCTATGCCCTAGCACTG
CGTGCTGATCAATTTGAAAAGAGCAATTTCAAAGGTTTGTCGCGTTTTAT
TCGTATGATTGACCAAGTCTTAGAAGCCCAGCACGATTTGGCAAGCGTGG
CCGTCGCACCGCCAAAAGATGCAGTAGAGCTCATGACCATCCACAAGAGT
AAAGGGCTGGAGTTTCCTTACGTCTTTATCCTCAATATGGATCAAGATTT
CAACAAGCAAGACTCTATGTCAGAAGTCATTCTCAGTCGTCAGAATGGTC
TTGGTGTCAAATATATTGCCAAGATGGAGACAGGGGCAGTAGAAGACCAC
TATCCTAAAACCATCAAACTCTCCATTCCTAGTCTGACCTATAGGCAGAA
CGAAGAGGAATTACAGCTAGCAAGCTATTCTGAGCAGATGCGTTTGCTGT
ATGTTGCTATGACGCGGGCTGAGAAAAAGCTCTATCTTGTCGGCAAGGGT
TCTCGTGAAAAGCTGGAATCCAAGGAATACCCAGCAGCCAAAAATGGGAA
ACTAAATAGCAATACTAGACTGCAAGCACGGAATTTCCAAGATTGGCTTT
GGGCTATCAGTAAAGTGTTTACTAAGGACAAGCTCAACTTTAGTTATCGT
TTTATTGGCGAAGATCAGTTGACCAGAGAAGCTATCGGAGAGTTGGAAAC
CAAGAGTCCTCTCCAAGATAGCTCCCAAGCAGACAATCGTCAGTCAGATA
CCATCAAAGAAGCTCTGGAAATGCTGAAGGAGGTGGAAGTTTATAATACT
CTTCACCGCGCAGCTATTGAACTTCCTAGTGTTCAAACCCAAGTCAAAT
CAAGAAATTCTACGAACCAGTTATGGATATGGAAGGTGTCGAGATTGCTG
GTCAAGGTCAGTCAGTAGGCAAGAAAATCAGCTTCGATTTGCCAGATTTT
TCAACCAAAGAAAAGGTAACTGGAGCTGAGATTGGTAGTGCTACTCACGA
ACTCATGCAGAGAATTGACCTCAGCCAGCAACTAACCCTTGCTAGCCTAA
CAGAAACACTCAAACAAGTTCAAACTAGCCAAGCTGTCAGAGACAAGATC
AATCTTGATAAAATTCTTGCTTTCTTTGACACAGTACTCGGTCAGGAAAT
TCTTGCTAATACCGACCATCTTTATCGCGAGCAACCTTTCTCCATGCTCA
AACGAGACCAAAAGAGTCAGGAAGACTTTGTTGTCCGTGGTATCCTTGAT

TABLE 1-continued

GGCTATCTGCTTTACGAAAACAAAATTGTTCTGTTCGACTACAAGACAGA
CCGCTATGATGAACCAAGTCAACTCGTAGACCGCTATCGTGGTCAGTTAG
CTCTATACGAAGAGGCTTTATCACGAGCCTATTCGATTGAAAATATTGAA
AAATACTTGATTTTACTCGGTAAAGACGAGGTTCAAGTTGTAAAAGTATA
A

4109.1

(SEQ. ID. NO. 221)

ATGGAACTTGCTCGCCATGCTGAAACGTTGGGAGTAGATGCTATTGCAAC
GATTCCACCAATTTATTTCCGCTTGCCAGAATACTCAGTTGCCAAATACT
GGAACGATATCAGTTCTGCAGCTCCAAACACAGACTACGTGATTTACAAC
ATTCCTCAATTGGCAGGGGTTGCTTTGACTCCAAGCCTTTACACAGAAAT
GTTGAAAAATCCTCGTGTTATCGGTGTGAAGAACTCTTCTATGCCAGTTC
AAGATATCCAAACCTTTGTCAGCCTTGGTGGAGAAGACCATATCGTCTTT
AATGGTCCTGATGAGCAGTTCCTAGGAGGACGCCTCATGGGGGCTAGGGC
TGGTATCGGTGGTACTTATGGTGCTATGCCAGAACTCTTCTTGAAACTCA
ATCAGTTGATTGCGGATAAGGACCTAGAAACAGCGCGTGAATTGCAGTAT
GCTATCAACGCAATCATTGGTAAACTCACTTCTGCTCATGGAAATATGTA
CGGTGTCATCAAAGAAGTCTTGAAAATCAATGAAGGCTTGAATATTGGAT
CTGTTCGTTCACCATTGACACCAGTGACTGAAGAAGATCGTCCAGTTGTA
GAAGCGGCTGCTGCCTTGATTCGTGAAACCAAGGAGCGCTTCCTCTAA

4110.2

(SEQ. ID. NO. 222)

ATGTATAAGACAAAGTGTTTACGAGAGAAGTTAGTATTATTTTTAAAAAT
TTTCTTCCCAATCCTGATCTACCAATTTGCCAATTATTCTGCCTCTTTTG
TTGATACTGCAATGACAGGTCAATACAACACTATGGACTTGGCTGGTGTA
TCTATGGCAACCAGTATCTGGAATCCTTTCTTTACATTTCTAACAGGGAT
TGTGTCAGCCTTGGTGCCTATCATTGGTCACCATCTTGGTCGAGGCAAAA
AGGAAGAAGTTGCGTCTGATTTTTACCAATTTATTTATTTGGCCTTGGGC
CTATCTGTGGTCTTGCTGGGGATGGTACTTTTCTTGGCACCAATAATCTT
GAATCATATTGGGTTAGAAGCAGCAGTAGCGGCAGTAGCGGTTCGCTATC
TTTGGTTTTTATCTATCGGGATTATCCCCTTGTTGCTCTTTAGCGTCATT
CGTTCCTTGCTGGATTCGCTGGGCTTGACCAAACTGTCCATGTACCTCAT
GCTTTTCTTACTCCCTCTCAATAGCGGATTTAACTATCTCTTGATTTACG
GTGCCTTTGGTGTTCCACAACTGGGAGGGGCTGGTGCTGGTTTAGGAACA
TCCTTGGCCTACTGGGTCTTGCTTGGGATTTCTGTTCTGGTTTTATTTAA
AACAGGAGAAGCTCAAAGCCTTACACCTTGAGAAACGAATTCCACTTAAT
ATGGATAAAATTAAGGAAGGAGTTCGTTTAGGTCTGCCTATTGGGGGAAC
TGTCTTCGCGGAAGTGGCTATCTTTTCAGTGGTTGGCTTGATTATGGCTA
AGTTTTCGCCCTTGATTATAGCTAGTCACCAGTCAGCTATGAACTTTTCA
AGTCTTATGTACGCCTTTCCTATGAGTATCTCATCGGCTATGGCTATTGT
CGTTTCCTATGAAGTGGGAGCCAAGCGATTTGATGATGCGAAAACCTATA
TTGGTCTAGGAAGATGGACTGCCCTCATTTTTGCGGCCTTCACCTTAACC
TTCCTTTACATTTTTAGGGGAAATGTGGCCAGTCTTTATGGTAACGACCC
AAAATTTATCGATTTGACAGTGCGTTTTTTAACTTATAGTCTTTTCTTCC
AGTTAGCAGATACCTTTGCGGCGCCGCTTCAGGGAATTTTGCGGGGGTAT
AAGGATACAGTTATTCCTTTTTACCTTGGTTTGCTTGGTTATTGGGGCGT
AGCAATCCCTGTGTACGCTATTTGA

4112.2

(SEQ. ID. NO. 223)

ATGAGTACTTTAGCAAAAATAGAAGCGCTCTTGTTTGTAGCGGGTGAAGA
TGGGATTCGGGTCCGCCAGTTAGCTGAACTCCTCTCTCTGCCACCGACAG
GCATCCAGCAAAGTTTAGGAAAATTAGCCCAGAAGTATGAAAAGGACCCA
GATTCCAGTTTGGCTTTGATTGAGACAAGTGGTGCTTATAGATTGGTGAC
CAAGCCTCAATTTGCAGAGATTTTGAAGGAATACTCTAAGGCGCCTATCA
ACCAGAGCTTGTCTCGGGCTGCCCTTGAGACCTTGTCCATTATTGCCTAC
AAACAGCCGATTACGCGGATAGAAATTGATGCCATCCGTGGAGTTAACTC
GAGTGGAGCCTTGGCAAAGTTGCAGGCTTTTGACCTGATAAAGGAAGACG
GGAAAAAGGAAGTATTGGGGCGCCCCAACCTCTATGTGACTACGGATTAT
TTCCTAGATTACATGGGGATAAACCATTTAGAAGAATTACCAGTGATTGA
TGAGCTTGAGATTCAAGCCCAAGAAAGCCAATTATTTGGTGAAAGGATAG
AAGAAGATGAGAATCAATAA

4113.1

(SEQ. ID. NO. 224)

ATGGATACGATGATTAGTAGATTTTTTCGCCATTTATTTGAAGCCTTAAA
AAGTTTGAAACGAAATGGTTGGATGACAGTAGCTGCTGTCAGTTCAGTCA
TGATTACTTTGACCTTGGTGGCAATATTTGCATCTGTTATTTTCAATACA
GCGAAACTAGCTACAGATATTGAAAATAATGTCCGTGTAGTAGTTTATAT
CCGAAAGGATGTGGAAGATAATAGTCAGACAATTGAAAAAGAAGGTCAAA
CTGTTACAAATAATGACTACCACAAGGTATATGATTCTTTGAAGAACATG
TCTACGGTTAAAAGTGTTACCTTTTCAAGTAAAGAAGAACAATATGAAAA
ATTAACCGAGATAATGGGAGATAACTGGAAAATCTTTGAAGGAGATGCCA
ATCCTCTCTATGATGCCTATATTGTAGAGGCAAACACTCCAAATGATGTA

TABLE 1-continued

AAAACTATAGCCGAAGATGCTAAAAAAATTGAAGGTGTCTCTGAGGTTCA
AGATGGCGGTGCCAATACAGAAAGACTCTTCAAGTTAGCTTCATTTATCC
GTGTTTGGGGACTAGGGATTGCTGCTTTGTTAATTTTTATCGCAGTTTTC
TTGATTTCAAATACCATTCGTATTACCATTATTTCCCGCAGTCGCGAAAT
TCAAATCATGCGCTTGGTCGGAGCTAAAAACAGTTATATCCGTGGACCGT
TCTTGTTAGAAGGAGCCTTTATCGGTTTATTGGGAGCTATCGCACCATCT
GTTTTGGTCTTTATTGTTTATCAAATTGTTTACCAATCTGTCAACAAATC
GTTGGTAGGGCAAAATCTATCCATGATTAGTCCAGATTTATTTAGTCCGT
TGATGATTGCCCTACTATTTGTGATTGGGGTTTTCATTGGTTCATTGGGA
TCAGGAATATCCATGCGCCGATTCTTGAAGATTTAG

4117.1

(SEQ. ID. NO. 225)

ATGAAGAAAGTAAGATTTATTTTTTTAGCTCTGCTATTTTTCTTAGCTAG
TCCAGAGGGTGCAATGGCTAGTGATGGTACTTGGCAAGGAAAACAGTATC
TGAAAGAAGATGGCAGTCAAGCAGCAAATGAGTGGGTTTTTGATACTCAT
TATCAATCTTGGTTCTATATAAAAGCAGATGCTAACTATGCTGAAAATGA
ATGGCTAAAGCAAGGTGACGACTATTTTTACCTCAAATCTGGTGGCTATA
TGGCCAAATCAGAATGGGTAGAAGACAAGGGAGCCTTTTATTATCTTGAC
CAAGATGGAAAGATGAAAAGAAATGCTTGGGTAGGAACTTCCTATGTTGG
TGCAACAGGTGCCAAAGTAATAGAAGACTGGGTCTATGATTCTCAATACG
ATGCTTGGTTTTATATCAAAGCAGATGGACAGCACGCAGAGAAAGAATGG
CTCCAAATTAAAGGGAAGGACTATTATTTCAAATCCGGTGGTTATCTACT
GACAAGTCAGTGGATTAATCAAGCTTATGTGAATGCTAGTGGTGCCAAAG
TACAGCAAGGTTGGCTTTTTGACAAACAATACCAATCTTGGTTTTACATC
AAAGAAAATGGAAACTATGCTGATAAAGAATGGATTTTCGAGAATGGTCA
CTATTATTATCTAAAATCCGGTGGCTACATGGCAGCCAATGAATGGATTT
GGGATAAGGAATCTTGGTTTTATCTCAAATTTGATGGGAAAATGGCTGAA
AAAGAATGGGTCTACGATTCTCATAGTCAAGCTTGGTACTACTTCAAATC
CGGTGGTTACATGACAGCCAATGAATGGATTTGGGATAAGGAATCTTGGT
TTTATCTCAAATCTGATGGGAAAATAGCTGAAAAAGAATGGGTCTACGAT
TCTCATAGTCAAGCTTGGTACTACTTCAAATCCGGTGGTTACATGACAGC
CAATGAATGGATTTGGGATAAGGAATCTTGGTTTTACCTCAAATCTGATG
GGAAAATAGCTGAAAAAGAATGGGTCTACGATTCTCATAGTCAAGCTTGG
TACTACTTCAAATCTGGTGGCTACATGGCGAAAAATGAGACAGTAGATGG
TTATCAGCTTGGAAGCGATGGTAAATGGCTTGGAGGAAAAACTACAAATG
AAAATGCTGCTTACTATCAAGTAGTGCCTGTTACAGCCAATGTTTATGAT
TCAGATGGTGAAAAGCTTTCCTATATATCGCAAGGTAGTGTCGTATGGCT
AGATAAGGATAGAAAAAGTGATGACAAGCGCTTGGCTATTACTATTTCTG
GTTTGTCAGGCTATATGAAAACAGAAGATTTACAAGCGCTAGATGCTAGT
AAGGACTTTATCCCTTATTATGAGAGTGATGGCCACCGTTTTTATCACTA
TGTGGCTCAGAATGCTAGTATCCCAGTAGCTTCTCATCTTTCTGATATGG
AAGTAGGCAAGAAATATTATTCGGCAGATGGCCTGCATTTTGATGGTTTT
AAGCTTGAGAATCCCTTCCTTTTCAAAGATTTAACAGAGGCTACAAACTA
CAGTGCTGAAGAATTGGATAAGGTATTTAGTTTGCTAAACATTAACAATA
GCCTTTTGGAGAACAAGGGCGCTACTTTTAAGGAAGCCGAAGAACATTAC
CATATCAATGCTCTTTATCTCCTTGCCCATAGTGCCCTAGAAAGTAACTG
GGGAAGAAGTAAAATTGCCAAAGATAAGAATAATTTCTTTGGCATTACAG
CCTATGATACGACCCCTTACCTTTCTGCTAAGACATTTGATGATGTGGAT
AAGGGAATTTTAGGTGCAACCAAGTGGATTAAGGAAAATTATATCGATAG
GGGAAGAACTTTCCTTGGAAACAAGGCTTCTGGTATGAATGTGGAATATG
CTTCAGACCCTTATTGGGGCGAAAAAATTGCTAGTGTGATGATGAAAATC
AATGAGAAGCTAGGTGGCAAAGATTAG

4119.2

(SEQ. ID. NO. 226)

ATGAAAAAAGTATTACAAAAATATTGGGCATGGGCTTTTGTGGTCATCCC
CCTCTTGTTACAAGCAATTTTCTTCTATGTGCCGATGTTTCAAGGAGCCT
TTTACAGTTTTACCAACTGGACAGGATTGACTTATAACTACAAATTTGTT
GGCTTAAACAACTTTAAGCTCCTCTTCATGGATCCAAAATTCATGAATGC
GATTGGCTTTACCGCAATCATTGCGATTGCCATGGTGGTTGGTGAGATTG
CACTCGGGATCTTCATTGCGCGTGTCTTGAATTCTAAAATCAAAGGCCAA
ACCTTCTTCCGTGCTTGGTTCTTCTTCCCAGCTGTTTTATCTGGTTTGAC
AGTGGCTTTGATCTTCAAGCAAGTCTTCAACTACGGTCTTCCAGCGATTG
GAAATGCCCTTCATATTGAATTTTTCCAAACCAGTCTTTTAGGGACTAAG
TGGGGAGCAATCTTTGCGGCTGTCTTTGTCCTTCTTTGGCAAGGGGTGGC
TATGCCCATCATCATCTTCCTAGCTGGTTTGCAATCTATTCCAACTGAGA
TTACAGAGGCAGCAAGGATTGATGGTGCGACTAGCAAGCAAGTTTTCTGG
AACATTGAATTGCCTTACTTGCTACCAAGTGTCTCTATGGTCTTTATCCT
AGCCTAAAAGGTGGGCTGACTGCCTTTGACCAAGTCTTTGCCATGACCGG
TGGTGGTCCAAACAATGCCACAACCTCACTTGGGCTCTTGGTTTATAACT
ATGCCTTTAAAAACAACCAATTCGGTTATGCCAATGCCATTGCCGTAATC
TTGTTCTTCTTAATTGTAGTGATTTCGATCATCCAATTGAGAGTATCTAA
GAAATTTGAAATTTAA

TABLE 1-continued

4119.3

(SEQ. ID. NO. 227)

ATGATGAAACAAGATGAAAGAAAAGCCCTGATTGGCAAATACATTCTATT
GATTCTAGGATCGGTTCTGATTTTAGTGCCGCTCCTTGCTACCCTCTTTA
GTTCCTTCAAACCCACTAAGGATATTGTAGATAATTTCTTTGGCTTTCCA
ACCAACTTCACATGGGACAACTTTAGCCGTCTCTTAGCTGATGGGATTGG
AGGCTATTATTGGAACTCTGTCGTCATCACTGTCTTGTCTTTACTTGCAG
TAATGATCTTTATCCCTATGGCAGCGTACTCCATCGCTCGCAATATGAGT
AAAAGAAAAGCCTTTACCATCATGTATACCCTCTTAATCCTCGGAATCTT
CGTACCTTTCCAAGTCATCATGATTCCGATTACGGTTATGATGAGTAAAC
TCGGTTTGGCTAATACCTTTGGTTTGATCTTGCTCTACTTGACCTATGCG
ATTCCACAGACCCTCTTTCTCTATGTTGGCTATATCAAAATCTCGATTCC
AGAAAGTCTGGATGAAGCAGCAGAGATCGATGGGGCTAATCAATTTACAA
CCTATTTCCGCATCATCTTCCCAATGATGAAACCGATGCATGCGACAACC
ATGATCATCAATGCCCTTTGGTTCTGGAATGACTTCATGTTGCCACTCCT
TGTCTTGAACCGGGATTCCAAAATGTGGACTCTGCCTTTGTTCCAATACA
ACTACGCAGGCCAATATTTCAACGACTACGGACCAAGCTTTGCCTCTTAC
GTGGTCGGCATTATCAGTATCACCATTGTCTATCTCTTCTTCCAACGCCA
TATCATTTCAGGAATGAGCAACGGGGCAGTGAAGTAA

4119.4

(SEQ. ID. NO. 228)

ATGAAAAGTATTCTTCAGAAAATGGGGGAGCATCCGATGCTGCTTCTTTT
TCTTAGCTATAGTACTGTTTATATCCATTCTTGCACAAAATTGGATGGGT
CTTGTGGCTTCAGTAGGAATGTTTCTATTTACTATTTTCTTTTTGCACTA
TCAGTCGATTTTATCCCATAAATTCTTTCGATTGATTTTGCAGTTTGTCT
TGTTTGGTAGTGTCTTGTCAGCTGCTTTTGCCAGTTTAGAACATTTCCAA
ATTGTGAAGAAATTTAACTATGCTTTTCTTTCACCCAATATGCAGGTGTG
GCATCAGAACCGGGCAGAAGTGACCTTCTTTAATCCTAATTATTATGGAA
TTATTTGTTGTTTCTGTATTATGATTGCTTTCTATCTGTTTACAACGACG
AAGTTGAATTGGTTGAAAGTATTCTGTGTGATTGCAGGCTTTGTTAATCT
CTTTGGTTTGAACTTTACTCAAAATCGAACTGCCTTTCCTGCTATTATCG
CTGGAGCAATTATCTATCTCTTTACGACTATTAAAAACTGGAAGGCCTTT
TGGCTTAGTATTGGGGTCTTCGCGATTGGTTTGAGTTTCCTCTTTTCTAG
TGATTTGGGAGTTCGAATGGGTACTTTAGACTCTTCTATGGAAGAACGCA
TTTCTATCTGGGATGCTGGGATGGCCTTGTTTAAGCAAAATCCTTTTTGG
GGTGAAGGGCCATTGACCTATATGAACTCTTATCCTCGGATACATGCTCC
TTATCATGAACATGCCCACAGTCTTTATATTGATACGATTCTGAGTTACG
GAATTGTGGGGACTATTTTATTAGTTTTGTCTTCTGTTGCTCCTGTTCGC
TTGATGATGGATATGAGTCAGGAGTCGGGGAAACGTCCGATTATCGGCCT
TTATCTATCTTTCCTTACAGTGGTTGCTGTGCACGGAATTTTTGACTTGG
CTCTCTTCTGGATTCAGTCAGGCTTTATTTTCTTGCTAGTTATGTGCAGT
ATTCCATTGGAGCATCGAATGTTGGTATCGGACATGACGGATTAA

4120.1

(SEQ. ID. NO. 229)

ATGTCAAAGATGGATGTTCAGAAAATCATTGCACCGATGATGAAGTTTGT
GAATATGCGTGGCATTATAGCTCTAAAAGATGGGATGTTAGCAATTTTGC
CATTGACAGTAGTTGGTAGTTTGTTCTTGATTATGGGACAATTGCCGTTC
GAAGGATTAAATAAGAGCATTGCTAGTGTTTTTGGAGCTAATTGGACAGA
GCCGTTTATGCAAGTATATTCAGGAACTTTTGCTATTATGGGTCTAATTT
CTTGTTTTTCAATTGCCTATTCTTATGCTAAGAATAGCGGCGTAGAGGCT
TTACCAGCTGGACTTCTATCTGTATCTGCATTCTTTATTTTGCTAAGATC
ATCTTATATCCCTAAACAAGGTGAGGCGATTGGGGACGCTATTAGTAAAG
TTTGGTTTGGAGGCCAAGGAATTATCGGTGCTATCATTATAGGTTTGGTA
GTAGGAAGTATTTATACCTTCTTTATAAAGAGAAAAATTGTTATTAAGAT
GCCAGAACAAGTTCCACAAGCTATTGCCAAACAGTTTGAAGCAATGATTC
CAGCATTTGTAATTTTCTTATCTTCTATGATTGTATATATTTTAGCGAAG
TCATTGACTAATGGCGGAACATTCATAGAAATGATTTATTCTGCTATTCA
AGTTCCGTTGCAAGGTTTAACTGGATCTTTGTATGGTGCTATTGGAATTG
CATTCTTTATATCATTTTTGTGGTGGTTTGGTGTTCATGGGCAATCGGTA
GTAAATGGAGTAGTGACAGCTCTGCTTTTATCTAATCTTGATGCTAATAA
AGCTATGTTAGCCTCTGCTAATCTATCATTAGAAAATGGTGCACATATTG
TTACTCAACAATTTTTAGATTCATTTTTAATTCTATCAGGTTCAGGGATT
ACGTTTGGTCTTGTAGTTGCCATGCTTTTTGCAGCAAAATCAAAACAATA
CCAAGCCTTAGGAAAAGTTGCAGCTTTTCCAGCAATATTTAACGTAAATG
AGCCAGTTGTATTTGGATTTCCGATTGTCATGAATCCAGTTATGTTTGTA
CCTTTCATTCTTGTTCCTGTACTTGCAGCTGTGATAGTATATGGAGCTAT
TGCAACAGGTTTCATGCAGCCATTCTCAGGGGTAACATTGCCTTGGAGTA
CACCAGCTATTTTATCAGGATTTTTGGTGGGTGGATGGCAAGGAGTTATT
ACTCAGCTGGTGATATTAGCGATGTCTACATTGGTTTATTTTCCATTCTT
TAAAGTACAGGATCGTTTAGCTTACCAAAATGAAATCAAACAATCTTAG

TABLE 1-continued

4121.2

(SEQ. ID. NO. 230)

ATGAAGAAAAAGGACTTAGTAGACCAACTAGTCTCAGAGATCGAGACGGG
GAAAGTCAGGACACTGGGAATATACGGTCATGGAGCTTCAGGTAAATCAA
CCTTTGCACAGGAATTGTACCAAGCTTTAGATTCTACTACAGTAAATTTG
CTAGAGACAGATCCTTATATCACCTCAGGACGCCATCTGGTACTACCCAA
GGACGCGCCGAATCAAAAGGTGACAGCCAGTCTGCCAGTGGCGCATGAAC
TGGAGAGTTTGCAGAGAGATATCCTTgCTTGCAGGCGGGTATGGATGTCT
TGA

4122.1

(SEQ. ID. NO. 231)

ATGAAGAAAAGATACCTAGTCTTGACAGCTTTGCTAGCCTTGAGTCTAGC
AGCTTGTTCACAAGAAAAAACAAAAAATGAAGATGGAGAAACTAAGACAG
AACAGACAGCCAAAGCTGATGGAACAGTCGGTAGTAAGTCTCAAGGAGCT
GCCCAGAAGAAAGCAGAAGTGGTCAATAAAGGTGATTACTACAGCATTCA
AGGGAAATACGATGAAATCATCGTAGCCAACAAACACTATCCATTGTCTA
AAGACTATAATCCAGGGGAAAATCCAACAGCCAAGGCAGAGTTGGTCAAA
CTCATCAAAGCGATGCAAGAGGCAGGTTTCCCTATTAGTGATCATTTACA
GTGGTTTTAGAAGTTATGAAAACTCAGACCAAGCTCTATCAAGATTATGT
CAACCAAGATGGAAAGGCAGCAGCTGACCGTTACTCTGCCCGTCCTGGCT
ATAGCGAACACCAGACAGGCTGGCCTTTGATGTGATTGGGACTGATGGTG
ATTTGGTGACAGAAGAAAAAGCAGCCCAATGGCTCTTGGATCATGCAGCT
GATTATGGCTTTGTTGTCCGTTATCTCAAAGGCAAGGAAAAGGAAACAGG
CTATATGGCTGAAGAATGGCACCTGCGTTATGTAGGAAAAGAAGCTAAAG
AAATTGCTGCAAGTGGTCTCAGTTTGGAAGAATACTATGGCTTTGAAGGC
GGAGACTACGTCGATTAA

4125.6

(SEQ. ID. NO. 232)

ATGCGTAAATTCTTAATTATTTTGTTGCTACCAAGTTTTTTGACCATTTC
AAAAGTCGTTAGCACAGAAAAAGAAGTCGTCTATACTTCGAAAGAAATTT
ATTACCTTTCACAATCTGACTTTGGTATTTATTTTAGAGAAAAATTAAGT
TCTCCCATGGTTTATGGAGAGGTTCCTGTTTATGCGAATGAAGATTTAGT
AGTGGAATCTGGGAAATTGACTCCCAAAACAAGTTTTCAAATAACCGAGT
GGCGCTTAAATAAACAAGGAATTCCAGTATTTAAGCTATCAAATCATCAA
TTTATAGCTGCGGACAAACGATTTTTATATGATCAATCAGAGGTAACTCC
AACAATAAAAAAAGTATGGTTAGAATCTGACTTTAAACTGTACAATAGTC
CTTATGATTTAAAAGAAGTGAAATCATCCTTATCAGCTTATTCGCAAGTA
TCAATCGACAAGACCATGTTTGTAGAAGGAAGAGAATTTCTACATATTGA
TCAGGCTGGATGGGTAGCTAAAGAATCAACTTCTGAAGAAGATAATCGGA
TGAGTAAAGTTCAAGAAATGTTATCTGAAAAATATCAGAAAGATTCTTTC
TCTATTTATGTTAAGCAACTGACTACTGGAAAAGAAGCTGGTATCAATCA
AGATGAAAAGATGTATGCAGCCAGCGTTTTGAAACTCTCTTATCTCTATT
ATACGCAAGAAAAAATAAATGAGGGTCTTTATCAGTTAGATACGACTGTA
AAATACGTATCTGCAGTCAATGATTTTCCAGGTTCTTATAAACCAGAGGG
AAGTGGTAGTCTTCCTAAAAAAGAAGATAATAAAGAATATTCTTTAAAGG
ATTTAATTACGAAAGTATCAAAAGAATCTGATAATGTAGCTCATAATCTA
TTGGGATATTACATTTCAAACCAATCTGATGCCACATTCAAATCCAAGAT
GTCTGCCATTATGGGAGATGATTGGGATCCAAAAGAAAAATTGATTTCTT
CTAAGATGGCCGGGAAGTTTATGGAAGCTATTTATAATCAAAATGGATTT
GTGCTAGAGTCTTTGACTAAAACAGATTTTGATAGTCAGCGAATTGCCAA
AGGTGTTTCTGTTAAAGTAGCTCATAAAATTGGAGATGCGGATGAATTTA
AGCATGATACGGGTGTTGTCTATGCAGATTCTCCATTTATTCTTTCTATT
TTCACTAAGAATTCTGATTATGATACGATTTCTAAGATAGCCAAGGATGT
TTATGAGGTTCTAAAATGA

4125.7

(SEQ. ID. NO. 233)

ATGAAAAAACAAAATAATGGTTTAATTAAAAATCCTTTTATGGTTATTAT
TTATCTTTTTCCTTGTGACAGGATTCCAGTATTTCTATTCTGGGAATAAC
TCAGGAGGAAGTCAGCAAATCAACTATACTGAGTTGGTACAAGAAATTAC
CGATGGTAATGTAAAAGAATTAACTTACCAACCAAATGGTAGTGTTATCG
AAGTTTCTGGTGTCTATAAAAATCCTAAAACAAGTAAAGAAGAAACAGGT
ATTCAGTTTTTCACGCCATCTGTTACTAAGGTAGAGAAATTTACCAGCAC
TATTCTTCCTGCAGATACTACCGTATCAGAATTGCAAAAACTTGCTACTG
ACCATAAAGCAGAAGTAACTGTTAAGCATGAAAGTTCAAGTGGTATATGG
ATTAATCTACTCGTATCCATGTGCCATTTGGAATTCTATTCTTCTTCCTA
TTCTCTATGATGGGAAATATGGGAGGAGGCAATGGCCGTAATCCAATGAG
TTTTGGACGTAGTAAGGCTAAAGCAGCAAATAAAGAAGATATTAAAGTAA
GATTTTCAGATGTTGCTGGAGCTGAGGAAGAAAAACAAGAACTAGTTGAA
GTTGTTGAGTTCTTAAAAGATCCAAAACGATTCACAAAACTTGGAGCCCG
TATTCCAGCAGGTGTTCTTTTGGAGGGACCTCCGGGGACAGGTAAAACTT
TGCTTGCTAAGGCAGTCGCTGGAGAAGCAGGTGTTCCATTCTTTAGTATC
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TCGCTCTCTTTTTGAGGATGCCAAAAAAGCAGCACCAGCTATCATCTTTA
TCGATGAAATTGATGCTGTTGGACGTCAACGTGGAGTCGGTCTCGGCGGA
GGTAATGACGAACGTGAACAAACCTTGAACCACTTTTGATTGAGATGGAT
GGTTTTGAGGGAAATGAAGGGATTATCGTCATCGCTGCGACAAACCGTTC
AGATGTACTTGACCCTGCCCTTTTGCGTCCAGGACGTTTTGATAGAAAAG
TATTGGTTGGTCGTCCTGATGTTAAAGGTCGTGAAGCAATCTTGAAAGTT
CACGCTAAGAATAAGCCTTTAGCAGAAGATGTTGATTTGAAATTAGTGGC
TCAACAAACTCCAGGCTTTGTTGGTGCTGATTTAGAGAATGTCTTGAATG
AAGCAGCTTTAGTTGCTGCTCGTCGCAATAAATCGATAATTGATGCTTCA
GATATTGATGAAGCAGAAGATAGAGTTATTGCTGGACCTTCTAAGAAAGA
TAAGACAGTTTCACAAAAAGAACGAGAATTGGTTGCTTACCATGAGGCAG
GACATACCATTGTTGGTCTAGTCTTGTCGAATGCTCGCGTTGTCCATAAG
GTTACAATTGTACCACGCGGCCGTGCAGGCGGATACATGATTGCACTTCC
TAAAGAGGATCAAATGCTTCTATCTAAAGAAGATATGAAAGAGCAATTGG
CTGGCTTAATGGGTGGACGTGTAGCTGAAGAAATTATCTTTAATGTCCAA
ACCACAGGAGCTTCAAACGACTTTGAACAAGCGACACAAATGGCACGTGC
AATGGTTACAGAGTACGGTATGAGTGAAAAACTTGGCCCAGTACAATATG
AAGGAAACCATGCTATGCTTGGTGCACAGAGTCCTCAAAAATCAATTTCA
GAACAAACAGCTTATGAAATTGATGAAGAGGTTCGTTCATTATTAAATGA
GGCACGAAATAAAGCTGCTGAAATTATTCAGTCAAATCGTGAAACTCACA
AGTTAATTGCAGAAGCATTATTGAAATACGAAACATTGGATAGTACACAA
ATTAAAGCTCTTTACGAAACAGGAAAGATGCCTGAAGCAGTAGAAGAGGA
ATCTCATGCACTATCCTATGATGAAGTAAAGTCAAAAATGAATGACGAAA
AATAA

4125.10

(SEQ. ID. NO. 234)

ATGAGGGAACCAGATTTTTTAAATCATTTTCTCAAGAAGGGATATTTCAA
AAAGCATGCTAAGGCGGTTCTAGCTCTTTCTGGTGGATTAGATTCCATGT
TTCTATTTAAGGTATTGTCTACTTATCAAAAAGAGTTAGAGATTGAATTG
ATTCTAGCTCATGTGAATCATAAGCAGAGAATTGAATCAGATTGGGAAGA
AAAGGAATTAAGGAAGTTGGCTGCTGAAGCAGAGCTTCCTATTTATATCA
GCAATTTTTCAGGAGAATTTTCAGAAGCGCGTGCACGAAATTTTCGTTAT
GATTTTTTTCAAGAGGTCATGAAAAAGACAGGTGCGACAGCTTTAGTCAC
TGCCCACCATGCTGATGATCAGGTGGAAACGATTTTTATGCGCTTGATTC
GAGGAACTCGCTTGCGCTATCTATCAGGAATTAAGGAGAAGCAAGTAGTC
GGAGAGATAGAAATCATTCGTCCCTTCTTGCATTTTCAGAAAAAAGACTT
TCCATCAATTTTTCACTTTGAAGATACATCAAATTCAGGAGAATTCATTATT
TTCGAAATCGTATTCGAAATTCTTACTTACCAGAATTGGAAAAAGAAAAT
CCTCGATTTAGGGATGCAATCTTAGGCATTGGCAATGAAATTTTAGATTA
TGATTTGGCAATAGCTGAATTATCTAACAATATTAATGTGGAAGATTTAC
AGCAGTTATTTTCTTACTCTGAGTCTACACAAAGAGTTTTACTTCAAACT
TATCTGAATCGTTTTCCAGATTTGAATCTTACAAAAGCTCAGTTTGCTGA
AGTTCAGCAGATTTTAAAATCTAAAAGCCAGTATCGTCATCCGATTAAAA
ATGGCTATGAATTGATAAAAGAGTACCAACAGTTTCAGATTTGTAAAATC
AGTCCGCAGGCTGATGAAAAGGAAGATGAACTTGTGTTACACTATCAAAA
TCAGGTAGCTTATCAAGGATATTTATTTTCTTTTGGACTTCCATTAGAAG
GTGAATTAATTCAACAAATACCTGTTTCACGTGAAACATCCATACACATT
CGTCATCGAAAAACAGGAGATGTTTTGATTAAAAATGGGCATAGAAAAAA
ACTCAGACGTTTATTTATTGATTTGAAAATCCCTATGGAAAAGAGAAACT
CTGCTCTTATTATTGAGCAATTTGGTGAAATTGTCTCAATTTTGGGAATT
GCGACCAATAATTTGAGTAAAAAAACGAAAAATGATATAATGAACACTGT
ACTTTATATAGAAAAAATAGATAGGTAA

4126.1

(SEQ. ID. NO. 235)

ATGAAGCGTTCTTCTCTTTTAGTTAGAATGGTTATTTCCATCTTTCTGGT
CTTTCTCATTCTCCTAGCTCTGGTTGGAACTTTCTACTATCAATCAAGTT
CTTCAGCCATTGAGGCCACCATTGAGGGCAACAGCCAAACGACCATCAGC
CAGACTAGCCACTTTATTCAGTCTTATATCAAAAAACTAGAAACCACCTC
GACTGGTTTGACCCAGCAGACGGATGTTCTGGCCTATGCTGAGAATCCCA
GTCAAGACAAGGTCGAGGGAATCCGAGATTTGTTTTTGACCATCTTGAAG
TCAGATAAGGACTTGAAAACTGTTGTGCTGGTGACCAAATCTGGTCAGGT
CATTTCTACAGATGACAGTGTGCAGATGAAAACTTCCTCTGATATGATGG
CTGAGGATTGGTACCAAAAGGCCATTCATCAGGGAGCTATGCCTGTTTTG
ACTCCAGCTCGTAAATCAGATAGTCAGTGGGTCATTTCTGTCACTCAAGA
ACTTGTTGATGCAAAGGGAGCCAATCTTGGTGTGCTTCGTTTGGATATTT
CTTATGAAACTCTGGAAGCCTATCTCAATCAACTCCAGTTGGGGCAGCAG
GGCTTTGCCTTCATTATCAATGAAAACCATGAATTTGTCTACCATCCTCA
ACACACAGTTTATAGTTCGTCTAGCAAAATGGAGGCTATGAAACCCTACA
TCGATACAGGTCAGGGTTATACTCCTGGTCACAAATCCTACGTCAGTCAA
GAGAAGATTGCAGGAACTGATTGGACGGTGCTTGGCGTGTCATCATTGGA
AAAGTTAGACCAGGTTCGGAGTCAGCTCTTGTGGACCTTGCTTGGGGCCA
GTGTCACATCTCTTCTTGTCTGTCTCTGCTTAGTGTGGTTCAGTCTTAAA
CGCTGGATTGCTCCTTTGAAGGATTTGAGAGAAACCATGTTGGAAATTGC
TTCTGGTGCTCAAAATCTTCGTGCCAAGGAAGTTGGTGCCTATGAACTGA
GAGAAGTAACTCGCCAATTTAATGCTATGTTGGATCAGATTGATCAGTTG

TABLE 1-continued

ATGGTAGCTATTCGTAGCCAGGAAGAAACGACCCGTCAGTACCAACTTCA
AGCCCTTTCGAGCCAGATTAATCCACATTTCCTCTATAACACTTTGGACA
CCATCATCTGGATGGCTGAATTTCATGATAGTCAGCGAGTGGTGCAGGTG
ACCAAGTCCTTGGCAACCTATTTCCGCTTGGCGCTCAATCAAGGCAAGGA
CTTGATTTGTCTCTCTGACGAAATCAATCATGTCCGCCAGTATCTCTTTA
TCCAGAAACAACGCTATGGAGATAAGCTTGGAATACGAAATTAATGAAAA
TGTTGCCTTTGATAATTTAGTCTTACCCAAGCTGGTCCTACAACCCCTTG
TAGAAAATGCTCTTTACCATGGCATTAAGGAAAAGGAAGGTCAGGGCCAT
ATTAAACTTTCTGTCCAGAAACAGGATTCGGGATTGGTCATCCGTATTGA
GGATGATGGCGTTGGCTTCCAAGATGCTGGTGATAGTAGTCAAAGTCAAC
TCAAACGTGGGGGAGTTGGTCTTCAAAATGCGATCAACGGCTCAAACTTC
ATTTTGGAGCCAATTACCATATGAAGATTGATTCTAGACCCCAAAAAGGG
ACGAAAGTTGAAATATATATAAATAGAATAGAAACTAGCTAA

4126.7

(SEQ. ID. NO. 236)

ATGAAGCGTTCTTCTCTTTTAGTTAGAATGGTTATTTCCATCTTTCTGGT
CTTTCTCATTCTCCTAGCTCTGGTTGGAACTTTCTACTATCAATCAAGTT
CTTCAGCCATTGAGGCCACCATTGAGGGCAACAGCCAAACGACCATCAGC
CAGACTAGCCACTTTATTCAGTCTTATATCAAAAAACTAGAAACCACCTC
GACTGGTTTGACCCAGCAGACGGATGTTCTGGCCTATGCTGAGAATCCCA
GTCAAGACAAGGTCGAGGGAATCCGAGATTTGTTTTTGACCATCTTGAAG
TCAGATAAGGACTTGAAAACTGTTGTGCTGGTGACCAAATCTGGTCAGGT
CATTTCTACAGATGACAGTGTGCAGATGAAAACTTCCTCTGATATGATGG
CTGAGGATTGGTACCAAAAGGCCATTCATCAGGGAGCTATGCCTGTTTTG
ACTCCAGCTCGTAAATCAGATAGTCAGTGGGTCATTTCTGTCACTCAAGA
ACTTGTTGATGCAAAGGGAGCCAATCTTGGTGTGCTTCGTTTGGATATTT
CTTATGAAACTCTGGAAGCCTATCTCAATCAACTCCAGTTGGGGCAGCAG
GGCTTTGCCTTCATTTATCAATGAAAACCATGAATTTGTCTACCATCCTC
AACACACAGTTTATAGTTCGTCTAGCAAAATGGAGGCTATGAAACCCTAC
ATCGATACAGGTCAGGGTTATACTCCTGGTCACAAATCCTACGTCAGTCA
AGAGAAGATTGCAGGAACTGATTGGACGGTGCTTGGCGTGTCATCATTGG
AAAAGTTAGACCAGGTTCGGAGTCAGCTCTTGTGGACCTTTGCTTGGGGC
CAGTGTCACATCTCTTCTTGTCTGTCTCTGCTTAGTGTGGTTCAGTCTTA
AACGCTGGATTGCTCCTTTGAAGGATTTGAGAGAAACCATGTTGGAAATT
GCTTCTGGTGCTCAAAATCTTCGTGCCAAGGAAGTTGGTGCCTATGAACT
GAGAGAAGTAACTCGCCAATTTAATGCTATGTTGGATCAGAGATTCAGTT
GATGGTAGCTATTCGTAGCCAGGAAGAAACGACCCGTCAGTACCAACTTC
AAGCCCTTTCGAGCCAGATTAATCCACATTTCCTCTATAACACTTTGGAC
ACCATCATCTGGATGGCTGAATTTCATGATAGTCAGCGAGTGGTGCAGGT
GACCAAGTCCTTGGCAACCTATTTCCGCTTGGCGCTCAATCAAGGCAAGG
ACTTGATTTGTCTCTCTGACGAAATCAATCATGTCCGCCAGTATCTCTTT
ATCCAGAAAACAACGCTATGGAGATAAGCTGGAATACGAAATTAATGAAA
ATGTTGCCTTTGATAATTTAGTCTTACCCAAGCTGGTCCTACAACCCCTT
GTAGAAAATGCTCTTTACCATGGCATTAAGGAAAAGGAAGGTCAGGGCCA
TATTAAACTTTCTGTCCAGAAACAGGATTCGGGATTGGTCATCCGTATTG
AGGATGATGGCGTTGGCTTCCAAGATGCTGGTGATAGTAGTCAAAGTCAA
CTCAAACGTGGGGGAGTTGGTCTTCAAAATGTCGATCAACGGCTCAAACT
TCATTTTGGAGCCAATTACCATATGAAGATTGATTCTAGACCCCAAAAAG
GGACGAAAGTTGAAATATATATAAATAGAATAGAAACTAGCTAA

4127.4

(SEQ. ID. NO. 237)

ATGTTTTTTAAATTATTAAGAGAAGCTCTTAAAGTCAAGCAGGTTCGATC
AAAAATTTTATTTACAATTTTTATCGTTTTGGTCTTTCGTATCGGAACTA
GCATTACAGTTCCTGGTGTGAATGCCAATAGCTTGAATGCTTTAAGTGGA
TTATCCTTCTTAAACATGTTGAGCTTGGTGTCGGGGAATGCCCTAAAAAA
CTTTTCGATTTTTGCCCTAGGAGTTAGTCCCTATATCACCGCTTCTATTG
TTGTCCAACTCTTGCAAATGGATATTTTACCCAAGTTTGTAGAGTGGGGT
AAACAAGGGGAAGTAGGTCGAAGAAAATTGAATCAAGCTACTCGTTATAT
TGCTCTAGTTCTCGCTTTTGTGCAATCTATCGGGATTACAGCTGGTTTTA
ATACCTTGGCTGGAGCTCAATTGATTAAAACTGCTTTAACTCCACAAGTT
TTTCTGACGATTGGTATCATCTTAACAGCTGGTAGTATGATTGTCACTTG
GTTGGGTGAGCAAATTACAGATAAGGGATACGGAAACGGTGTTTCCATGA
TTATCTTTGCCGGGATTGTTTCCTCAATTCCAGAGATGATTCAGGGCATC
TATGTGGACTACTTTGTGAACGTCCCAAGTAGCCGTATCACTTCATCTAT
CATTTTCGTAATCATTTTGATTATTACTGTATTGTTGATTATTTACTTTA
CAACTTATGTTCAACAAGCAGAATACAAAATTCCAATCCAATATACTAAG
GTTGCACAAGGTGCTCCATCTAGCTCTTACCTTCCGTTAAAAGTAAACCC
TGCTGGAGTTATCCCTGTTATCTTTGCCAGTTCGATTACTGCAGCGCCTG
CGGCTATTCTTCAGTTTTTGAGTGCCACAGGTCATGATTGGGCTTGGGTA
AGGGTAGCACAAGAGATGTTGGCAACTACTTCTCCAACTGGTATTGCCAT
GTATGCTTTGTTGATTATTCTCTTTACATTCTTCTATACGTTTGTACAGA
TTAATCCTGAAAAAGCAGCAGAGACCTACAAAAGAGTGGTGCCTATATCC
ATGGAGTTCGTCCTGGTAAAGGTACAGAAGAATATATGTCTAAACTTCTT
CGTCGTCTTGCAACTGTTGGTTCCCTCTTCCTTGGTGTGA

TABLE 1-continued

4127.5

(SEQ. ID. NO. 238)

ATGGATATTAGACAAGTTACTGAAACCATCGCCATGATTGAGGAGCAAAA
CTTCGATATTAGAACCATTACCATGGGGATTTCTCTTTTGGACTGTATCG
ATCCAGATATCAATCGTGCTGCGGAGAAAATCTATCAAAAAATTACGACA
AAGGCGGCTAATTTAGTAGCTGTTGGTGATGAAATTGCGGCTGAGTTGGG
AATTCCTATCGTTAATAAGCGTGTATCGGTGACACCTATTTCTCTGATTG
GGGCAGCGACAGATGCGACGGACTACGTGGTTTCTGGCAAAAGCGCTTGA
TAAGGCTGCGAAAGAGATTGGTGTGGACTTTATTGGTGGTTTTTCTGCCT
TAGTACAAAAAGGTTATCAAAAGGGAGATGAGATTCTCATCAATTCCATT
CCTCGCGCTTTGGCTGAGACGGATAAGGTCTGCTCGTCAGTCAATATCGG
CTCAACCAAGTCTGGTATTAATATGACGGCTGTGGCAGATATGGGACGAA
TTATCAAGGAAACAGCAAATCTTTCAGATATGGGAGTGGCCAAGTTGGTT
GTATTCGCTAATGCTGTTGAGGACAATCCATTTATGGCGGGTGCCTTTCA
TGGTGTTGGGGAAGCAGATGTTATCATCAATGTCGGAGTTTCTGGTCCTG
GTGTTGTGAAACGTGCTTTGGAAAAAGTTCGTGGACAGAGCTTTGATCTA
GTAGCCGAAACAGTTAAGAAAACTGCCTTTAAAATCACTCGTATCGGTCA
ATTGGTTGGTCAAATGGCCAGTGAGAGACTGGGTGTGGAGTTTGGTATTG
TGGACTTGAGTTTGGCACCAACCCCTGCGGTTGGAGACTCTGTGGCACGT
GTCCTTGAGGAAATGGGGCTAGAAACAGTTGGCACGCATGGAACGACGGC
TGCCTTGGCCCTCTTGAACGACCAAGTTAAAAAGGGTGGAGTGATGGCCT
GCAACCAAGTCGGTGGTTTATCTGGTGCCTTTATCCCTGTTTCTGAGGAT
GAAGGAATGATTGCTGCAGTGCAAAATGGCTCTCTTAATTTAGAAAAACT
AGAAGCTATGACGGCTATCTGTTCTGTTGGATTGGATATGATTGCCATCC
CAGAAGATACGCCTGCTGAAACTATTGCGGCTATGATTGCGGATGAAGCA
GCAATCGGTGTTATCAACATGAAAACAACAGCTGTTCGTATCATTCCCAA
AGGAAAAGAAGGCGATATGATTGAGTTTGGTGGTCTATTAGGAACTGCAC
CCGTTATGAAGGTTAATGGGGCTTCGTCTGTCGACTTCATCTCTCGCGGT
GGACAAATCCCAGCACCAATTCATAGTTTTAAAAATTAA

4128.1

(SEQ. ID. NO. 239)

ATGACACAGATTATTGATGGGAAAGCTTTAGCGGCCAAATTGCAGGGGCA
GTTGGCTGAAAAGACTGCAAAATTAAAGGAAGAAACAGGTCTAGTGCCTG
GTTTGGTAGTGATTTTGGTTGGGGACAATCCAGCCAGCCAAGTCTACGTT
CGCAACAAGGAGAGGTCAGCCCTTGCGGCTGGTTTCCGTAGCGAAGTAGT
ACGGGTTCCAGAGACCATTACTCAAGAGGAATTCTTAGACCTGATTGCTA
AATACAATCAGGATCCAGCTTGGCATGGGATTTTGGTTCAGTTGCCATTA
CCAAAACACATTGATGAAGAGGCGGTTCTATTGGCTATTGACCCAGCAAA
AGGATGTGGATGGTTTCCATCCTCTAAACATGGGGCGTCTTTGGTCTGGT
CATCCAGTCATGATTCCTTCGACACCGGCAGGAATTATGGAAATGTTCCA
TGAATATGGGATTGACT6TGGAAGGTAAAAATGCAGTCGTCATCGGTCGA
TCCAATATTGTCGGAAAACCTATGGCCCAGCTTCTTTTGGCAAAGAATGC
AACAGTAACCTTGACTCACTCACGTACTCATAATCTTTCCAAGGTGGCTG
CAAAAGCAGATATTCTGGTTGTTGCAATCGGTCGTGCCAAGTTTGTGACT
GCTGACTTTGTCAAACCAGGTGCGGTAGTCATTGACGTTGGGATGAACCG
CGATGAAAATGGTAAGCTCTGTGGGGATGTTGATTATGAGGCGGTTGCCC
CACTTGCTAGCCACATTACGCCAGTCCCTGGAGGTGTCGGTCCTATGACC
ATTACTATGCTGATGGAGCAAACCTATCAGGCAGCACTTAGGACATTGGA
TAGAAAATAA

4128.2

(SEQ. ID. NO. 240)

ATGTCTAAATTTAATCGTATTCATTTGGTGGTACTGGATTCTGTAGGAAT
CGGTGCAGCACCAGATGCTAATAACTTTGTCAATGCAGGGGTTCCAGATG
GAGCTTCTGACACACTGGGACACATTTCAAAAACAGTTGGTTTGAATGTC
CCAAACATGGCTAAAATAGGTCTTGGAAATATTCCTCGTGAAACTCCTCT
TAAGACTGTAGCAGCTGAAAGCAATCCAACTGGATATGCAACAAAATTAG
AGGAAGTATCTCTTGGTAAGGATACTATGACTGGACACTGGGAAATCATG
GGACTCAACATTACTGAGCCTTTCGATACTTTCTGGAACGGATTCCCAGA
AGAAATCCTGACAAAAATCGAAGAATTCTCAGGACGCAAGGTTATTCGTG
AAGCCAACAAACCTTATTCAGGAACGGCTGTTATCTATGATTTTGGACCA
CGTCAGATGGAAACTGGAGAGTTGATTATCTATACTTCAGCTGACCCTGT
TTTGCAGATTGCTGCCCACGAAGACATTATTCCTTTGGATGAATTGTACC
GTATCTGTGAATACGCTCGTTCGATTACCCTTGAGCGTCCTGCCCTTCTT
GGTCGCATCATTGCTCGCCCTTATGTAGGTGAACCAGGTAACTTCACTCG
TACGGCAAACCGTCGTGACTTGGCTGTATCTCCATTTTTCCCAACTGTTT
TGGATAAATTGAATGAGGCTGGTATCGATACTTATGCTGTGGGTAAAATC
AACGATATCTTTAACGGTGCTGGTATCAACCATGACATGGGTCACAACAA
GTCAAATAGTCATGGAATTGATACACTATTGAAGACTATGGGACTTGCTG
AGTTTGAAAAAGGATTCTCATTCACAAACCTAGTTGACTTTGATGCCCTT
TACGGCCATCGTCGTAATGCTCACGGTTACCGTGATTGCTTGCATGAGTT
TGATGAACGCTTACCTGAAATTATCGCAGCTATGAGAGAGAATGACCTTC
TCTTGATTACTGCGGACCATGGAAATGACCCAACGTATGCAGGAACGGAT
CACACTCGGGAATATATTCCATTGTTGGCCTATAGCCCTGCCTTTAAAGG

TABLE 1-continued

AAATGGTCTCATTCCAGTAGGACATTTTGCAGATATTTCAGCGACTGTTG
CCGATAACTTTGGTGTGGAAACTGCTATGATTGGGGAAAGTTTCTTAGAT
AAATTGGTATAA

4129.2

(SEQ. ID. NO. 241)

ATGTTTATTTCCATCAGTGCTGGAATTGTGACATTTTTACTAACTTTAGT
AGAAATTCCGGCCTTTATCCAATTTTATAGAAAGGCGCAAATTACAGGCC
AGCAGATGCATGAGGATGTCAAACAGCATCAGGCAAAAGCTGGGACTCCT
ACAATGGGAGGTTTGGTTTTCTTGATTACTTCTGTTTTGGTTGCTTTCTT
TTTCGCCCTATTTAGTAGCCAATTCAGCAATAATGTGGGAATGATTTTGT
TCATCTTGGTCTTGTATGGCTTGGTCGGATTTTTAGATGACTTTCTCAAG
GTCTTTCGTAAAATCAATGAGGGGCTTAATCCTAAGCAAAAATTAGCTCT
TCAGCTTCTAGGTGGAGTTATCTTCTATCTTTTCTATGAGCGCGGTGGCG
ATATCCTGTCTGTCTTTGGTTATCCAGTTCATTTGGGATTTTTCTATATT
TTCTTCGCTCTTTTCTGGCTAGTCGGTTTTTCAAACGCAGTAAACTTGAC
AGACGGTGTTGACGGTTTAGCTAGTATTTCCGTTGTGATTAGTTTGTCTG
CCTATGGAGTTATTGCCTATGTGCCAGGTCAGATGGATATTCTTCTAGTA
ATTCTTGCCATGATTGGTGGTTTGCTCGGTTTCTTCATCTTTAACCATAA
GCCTGCCAAGGTCTTTATGGGTGATGTGGGAAGTTTGGCCCTAGGTGGGA
TGCTGGCAGCTATCTCTATGGCTCTCCACCAAGAATGGACTCTCTTGATT
ATCGGAATTGTGTATGTTTTTGAAACAACTTCTGTTATGATGCAAGTCAG
TTATTTCAAACTGACAGGTGGTAAACGTATTTTCCGTATGACGCCTGTAC
ATCACCATTTTGAGCTTGGGGGGATTGTCTGGTAAAGGAAATCCTTGGAG
CGAGTGGAAGGTTGACTTCTTCTTTTGGGGAGTGGGACTTCTAGCAAGTC
TCCTGACCCTAGCAATTTTATATTTGATGTAA

4133.1

(SEQ. ID. NO. 242)

TTGTTTAAGAAAAATAAAGACATTCTTAATATTGCATTGCCAGCTATGGG
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CTCATTTAGGATTGATAGCTATTTCAGGGGTTTCAGTAGCTGGTAATATT
ATCACCATTTATCAGGCGATTTTCATCGCTCTGGGAGCTGCTATTTCCAG
TGTTATTTCAAAAAGCATAGGGCAGAAAGACCAGTCGAAGTTGGCCTATC
ATGTGACTGAGGCGTTGAAGATTACCTTACTATTAAGTTTCCTTTTAGGA
TTTTTGTCCATCTTCGCTGGGAAAGAGATGATAGGACTTTTGGGGACGGA
GAGGGATGTAGCTGAGAGTGGTGGACTGTATCTATCTTTGGTAGGCGGAT
CGATTGTTCTCTTAGGTTTAATGACTAGTCTAGGAGCCTTGATTCGTGCA
ACGCATAATCCACGTCTGCCTCTCTATGTTAGTTTTTTATCCAATGCCTT
GAATATTCTTTTTTCAAGTCTAGCTATTTTTGTTCTGGATATGGGGATAG
CTGGTGTTGCTTGGGGGACAATTGTGTCTCGTTTGGTTGGTCTTGTGATT
TTGTGGTCACAATTAAAACTGCCTTATGGGAAGCCAACTTTTGGTTTAGA
TAAGGAACTGTTGACCTTGGCTTTACCAGCAGCTGGAGAGCGACTTATGA
TGAGGGCTGGAGATGTAGTGATCATTGCCTTGGTCGTTTCTTTTGGGACG
GAGGCAGTTGCTGGGAATGCAATCGGAGAAGTCTTGACCCAGTTTAACTA
TATGCCTGCCTTTGGCGTCGCTACGGCAACGGTCATGCTGTTGGCCCGAG
CAGTTGGAGAGGATGATTGGAAAAGAGTTGCTAGTTTGAGTAAACAAACC
TTTTGGCTTTCTCTGTTCCTCATGTTGCCCCTGTCCTTTAGTATATATGT
CTTGGGTGTACCATTAACTCATCTCTATACGACTGATTCTCTAGCGGTGG
AGGCTAGTGTTCTAGTGACACTGTTTTCACTACTTGGGACCCCTATGACG
ACAGGAACAGTCATCTATACGGCAGTCTGGCAGGGATTAGGAAATGCACG
CCTCCCTTTTTATGCGACAAGTATAGGAATGTGGTGTATCCGCATTGGGA
CAGGATATCTGATGGGGATTGTGCTTGGTTGGGGCTTGCCTGGTATTTGG
GCAGGGTCTCTCTTGGATAATGGTTTTCGCTGGTTATTTCTACGCTATCG
TTACCAGCGCTATATGAGCTTGAAAGGATAG

4135.2

(SEQ. ID. NO. 243)

ATGCAAACCAAGAAAAACACTCGCAAGCAGCCGTTCTTGGCTTGCAGCAC
TTACTAGCCATGTACTCAGGATCTATCCTGGTTCCCATCATGATTGCGAC
AGCCCTTGGCTATTCAGCTGAGCAGTTGACCTACCTGATTTCTACAGATA
TCTTCATGTGTGGGGTGGCAACCTTCCTCCAACTCCAACTCAACAAATAC
TTTGGGATGGACTCCCAGTCGTTCTTGGAGTTTGCATTCCAGTCGGTCGCT
CCCTTGATTATGATTGGGCAAAGCCATGGTAGTGGCGCTATGTTTGGTGC
CCTTATCGCATCTGGGATTTACGTGGTTCTTGTTTCAGGCATCTTCTCAA
AAGTAGCCAATCTCTTCCCATCTATCGTAACAGGATCTGTTATTACCACG
ATTGGTTTAACCTTGATCCCTGTCGCTATTGGAAATATGGGAAATAACGT
TCCAGAGCCAACTGGTCAAAGTCTCTTGCTTGCAGCTATTACTGTTCTGA
TTATCCTCTTGATCAACATCTTTACCAAAGGATTTATCAAGTCTATCTCT
ATTTTGATTGGTCTGGTTGTTGGAACTGCCATTGCTGCTACTATGGGCTT
GGTGGACTTCTCTCCTGTTGCGGTAGCTCCACTTGTCCATGTCCCAACTC
CACTCTACTTTGGGATGCCAACCTTTGAAATCTCATCTATTGTCATGATG
TGTATCATCGCAACGGTGTCTATGGTTGAGTCAACTGGTGTTTATCTGGC
CTTGTCTGATATCACAAAGGAATCCAATCGACAGCACGCGCCTTCGCAAC
GGATACCGCGCAGAAGGTTTGGCCGTACTTCTCGGAGGAATCTTTAACAC
CTTCCCTTACACCGGATTTTCACAAAACGTTGGTTTGGTTAAATTGTCAG

TABLE 1-continued

GCATCAAAAAACGCCTGCCAATCTACTACGCAGCTGGTTTCCTGGTTCTC
CTTGGACTGCTTCCTAAGTTTGGCGCCCTTGCCCAAATCATTCCAAGCTC
CGTCCTCGGTGGTGCCATGCTGGTAATGTTTGGTTTTGTATCAATTCAAG
GGATGCAAATCCTCGCCCGTGTTGACTTTGCTAACAATGAACACAACTTC
CTTATCGCAGCTGTTTCAATCGCTGCAGGTGTCGGTCTCAACAACAGTAA
TCTCTTTGTCAGCATGCCGACAGCCTTCCAAATGTTCTTCTCAAACGGAA
TCGTCGTAGCCAGCCTACTCGCTATTGTCCTCAATGCCGTATTAAATCAT
AAAAAGAAATAA

4136.2

(SEQ. ID. NO. 244)

ATGAAAGATAGAATAAAAGAATATTTACAAGACAAGGGAAAGGTGACTGT
TGAATGATTTGGCTCAGGCTTGGGAAAAGACAGTTCCAAGGATTTTCGTG
AGTTGATTAAAACCTTGTCCTTAATGGAAAGAAAGCACCAAATTCGTTTG
AAGAAGATGGTAGTCTGACATTAGAAATTAAGAAAAAACATGAGATTACC
CTCAAGGGGATTTTTCATGCCCATAAAAATGGCTTTGGCTTTGTTAGTCT
GGAAGGCGAGGAGGACGACCTTTTTGTAGGGAAAAATGATGTCAACTATG
CTATTGATGGTGATACCGTCGAGGTAGTGATTAAGAAAGTCGCTGACCGC
AATAAGGGAACAGCAGCAGAAGCCAAAATTATTGATATCCTAGAACACAG
TTTGACAACAGTTGTCGGGCAAATCGTTCTGGATCAGGAAAAACCTAAGT
ATGCTGGCTATATTCGTTCAAAAAATCAGAAAATCAGTCAACCGATTTAT
GTTAAGAAACCAGCCCTAAAATTAGAAGGAACAGAAGTTCTCAAAGTCTT
TATCGATAAATACCCAAGCAAGAAACATGATTTCTTTGTCGCGAGTGTTC
TCGATGTAGTGGGACACTCAACGGATGTCGGAATTGATGTTCTTGAGGTC
TTGGAATCAATGGACATTGTATCCGAGTTTCCAGAAGCTGTTGTTAAGGA
AGCAGAAAGTGTGCCTGATGCTCCGTCTCAAAAGGATATGGAAGGTCGTC
TGGATCTAAGAGATGAAATTACCTTTACCATTGACGGTGCGGATGCCAAG
GACTTGGACGATGCAGTGCATATCAAGGCTCTGAAAAATGGCAATCTGGA
GTTTGGGGTTCACATCGCAGATGTTTCTTATTATGTGACCGAGGGGTCTG
CCCTTGACAAGGAAGCCCTTAACCGTGCGACTTCTGTTTACGTGACAGAC
CGAGTGGTGCCAATGCTTCCAGAACGACTATCAAATGGCATCTGCTCTCT
CAATCCCCAAGTTGACCGCCTGACCCAGTCTGCTATTATGGAGATTGATA
AACATGGTCGTGTGGTCAACTATACCATTACACAAACAGTTATCAAGACC
AGTTTTCGTATGACCTATAGCGATGTCAATGATATCCTAGCTGGCGATGA
AGAAAAGAGAAAAGAATATCATAAAATTGTATCAAGTATCGAACTCATGG
CCAAGCTTCATGAAACTTTAGAAAACATGCGTGTGAAACGTGGAGCTCTC
AATTTTGATACCAATGAAGCGAAGATTTTAGTGGATAAACAAGGTAAGCC
TGTTGATATCGTTCTTCGGCAGCGTGGTATTGCCGAGCGGATGATTGAGT
CTTTTATGTTGATGGCTAATGAAACAGTTGCCGAACATTTCAGCAAGTTG
GATTTGCCTTTTATCTATCGAATTCACGAGGAGCCTAAGGCTGAAAAGGT
TCAGAAGTTTATTGATTATGCTTCGAGTTTTGGCTTGCGCATTTATGGAA
CTGCCAGTGAGATTAGTCAGGAGGCACTTCAAGACATCATGCGTGCTGTT
GAGGGAGAACCTTATGCAGATGTATTGTCCATGATGCTTCTTCGCTCTAT
GCAGCAGGCTCGTTATTCGGAGCACAATCACGGCCACTATGGACTAGCTG
CTGACTATTATACTCACTTTACCAGTCCAATTCGTCGTTATCCAGACCTT
CTTGTTCACCGTATGATTCGGGATTACGGCCGTTCTAAGGAAATAGCAGA
GCATTTTGAACAAGTGATTCCAGAGATTGCGACCCAGTCTTCCAACCGTG
AACGTCGTGCCATAGAAGCTGAGCGTGAAGTCGAAGCCATGAAAAAGGCT
GAGTATATGGAAGAATACGTGGGTGAAGAGTATGATGCAGTTGTATCAAG
TATTGTCAAATTCGGTCTCTTTGTCGAATTGCCAAACACAGTTGAAGGCT
TGATTCACATCACTAATCTGCCTGAATTTTATCATTTCAATGAGCGTGAT
TTGACTCTTCGTGGAGAAAAATCAGGTATCACTTTCCGAGTGGGTCAGCA
GATCCGTATCCGTGTTGAAAGAGCGGATAAAATGACTGGAGAGATTGATT
TTTCATTCGTACCTAGTGAGTTTGATGTGATTGAAAAAGGCTTGAAACAG
TCTAGTCGTAGTGGCAGAGGGCGTGATTCAAATCGTCGTTCGGATAAGAA
GGAAGACAAGAGAAAATCAGGACGCTCAAATGATAAGCGTAAGCATTCAC
AAAAAGACAAGAAGAAAAAAGGAAAGAAACCTTTTTCACCGGAAGTAGCT
AAGAAAGGAGCCAAGCATGGCAAAGGGCGAGGGAAAGGTCGTCGCACAAA
ATAA

4137.2

(SEQ. ID. NO. 245)

ATGGGCACAACAGGATTTACAATAATTGACTTAATTATCTTGATTGTTTA
TTTACTTGCGGTGTTGGTTGCAGGTATCTATTTCTCTAAAAAAGAGATGA
AAGGAAAAGAGTTCTTTAAAGGAGATGGTTCGGTTCCTTGGTATGTTACT
TCGGTATCCATTTTTGCCACAATGCTCAGTCCGATTTCCTTCTTGGGACT
CGCTGGTAGCTCTTATGCAGGTAGCTGGATTTTATGGTTTGCTCAATTAG
GGATGGTAGTAGCTATTCCACTGACAATTCGTTTTATCTTACCTATCTTT
GCACGGATAGACATCGATACGGCATATGATTACTTGGATAAACGTTTTAA
TTCTAAAAGCACTTCGTATTATTTCAGCACTCTTGTTTATTATTTATCAA
TTGGGACGTATGTCTATCATTATGTACCTCCCATCAGCTGGTTTATCAGT
ATTGACAGGAATTGACATCAATATTTTGATTATTTTGATGGGTGTAGTTG
CAATTGTTTATTCTTATACTGGTGGTCTAAAATCCGTATTATGGACAGAC
TTTATTCAAGGTGTGATTCTGATTAGTGGTGTCGTTTTAGCTTTATTTGT
ACTGATTGCTAATATTAAAGGTGGCTTTGGTGCAGTAGCAGAAACATTAG
CAAACGGGAAATTCCTTGCTGCAAATGAAAAACTTTTCGATCCTAACTTG

TABLE 1-continued

CTTTCAAACTCCATCTTTTTAATTGTGATGGGTTCAGGCTTTACAATCTT
GTCTTCCTATGCTTCATCTCAAGATTTGGTTCAACGTTTTACTACAACAC
AAAATATTAAGAAACTTAATAAGATGTTGTTCACAAACGGTGTTTTGTCA
CTTGCAACTGCAACAGTCTTTTACTTGATTGGTACAGGCTTGTACGTATT
CTATCAAGTACAAAATGCAGATAGTGCAGCTAGCAATATCCCTCAAGACC
AAATCTTTATGTACTTTATTGCATACCAGTTACCAGTAGGTATCACAGGT
TTGATCTTGGCAGCGATTTATGCAGCATCTCAATCAACTATTTCAACAGG
TTTGAACTCTGTTGCAACTTCATGGACATTGGATATTCAAGATGTCATTT
CTAAAAATATGTCAGACAATCGTCGTACGAAAATTGCACAATTCGTATCT
CTAGCAGTAGGTTTATTCTCAATTGGTGTTTCCATTGTCATGGCTCACTC
AGATATTAAATCTGCATACGAATGGTTCAATAGTTTCATGGGACTTGTAC
TTGGTCTACTTGGTGGTGTATTTATTCTTGGATTTGTTTCTAAAAAAGCA
AATAAACAAGGTGCTTATGCAGCGCTGATTGTATCAACCATCGTCATGGT
ATTTATTAAATACTTCCTTCCTCCAACAGCTGTTAGCTACTGGGCATATT
CATTGATTTCAATCTCTGTATCAGTAGTTTCAGGTTATATTGTATCTGTT
CTTACTGGAAATAAAGTATCTGCACCTAAATATACAACGATTCATGATAT
TACAGAAATTAAAGCGGATTCAAGTTGGGAAGTTCGTCACTAA

4138.1

(SEQ. ID. NO. 246)

ATGAAATTTAGTAAAAAATATATAGCAGCTGGATCAGCTGTTATCGTATC
CTTGAGTCTATGTGCCTATGCACTAAACCAGCATCGTTCGCAGGAAAATA
AGGACAATAATCGTGTCTCTTATGTGGATGGCAGCCAGTCAAGTCAGAAA
AGTGAAAACTTGACACCAGACCAGGTTAGCCAGAAAGAAGGAATTCAGGC
TGAGCAAATTGTAATCAAAATTACAGATCAGGGCTATGTAACGTCACACG
GTGACCACTATCATTACTATAATGGGAAAGTTCCTTATGATGCCCTCTTT
AGTGAAGAACTCTTGATGAAGGATCCAAACTATCAACTTAAAGACGCTGA
TATTGTCAATGAAGTCAAGGGTGGTTATATCATCAAGGTCGATGGAAAAT
ATTATGTCTACCTGAAAGATGCAGCTCATGCTGATAATGTTCGAACTAAA
GATGAAATCAATCGTCAAAAACAAGAACATGTCAAAGATAATGAGAAGGT
TAACTCTAATGTTGCTGTAGCAAGGTCTCAGGGACGATATACGACAAATG
ATGGTTATGTCTTTAATCCAGCTGATATTATCGAAGATACGGGTAATGCT
TATATCGTTCCTCATGGAGGTCACTATCACTACATTCCCAAAAGCGATTT
ATCTGCTAGTGAATTAGCAGCAGCTAAAGCACATCTGGCTGGAAAAAATA
TGCAACCGAGTCAGTTAAGCTATTCTTCAACAGCTAGTGACAATAACACG
CAATCTGTAGCAAAAGGATCAACTAGCAAGCCAGCAAATAAATCTGAAAA
TCTCCAGAGTCTTTTGAAGGAACTCTATGATTCACCTAGCGCCCAACGTT
ACAGTGAATCAGATGGCCTGGTCTTTGACCCTGCTAAGATTATCAGTCGT
ACACCAAATGGAGTTGCGATTCCGCATGGCGACCATTACCACTTTATTCC
TTACAGCAAGCTTTCTGCCTTAGAAGAAAAGATTGCCAGAATGGTGCCTA
TCAGTGGAACTGGTTCTACAGTTTCTACAAATGCAAAACCTAATGAAGTA
GTGTCTAGTCTAGGCAGTCTTTCAAGCAATCCTTCTTCTTTAACGACAAG
TAAGGAGCTCTCTTCAGCATCTGATGGTTATATTTTTAATCCAAAAGATA
TCGTTGAAGAAACGGCTACAGCTTATATTGTAAGACATGGTGATCATTTC
CATTACATTCCAAAATCAAATCAAATTGGGCAACCGACTCTTCCAAACAA
TAGTCTAGCAACACCTTCTCCATCTCTTCCAATCAATCCAGGAACTTCAC
ATGAGAAACATGAAGAAGATGGATACGGATTTGATGCTAATCGTATTATC
GCTGAAGATGAATCAGGTTTTGTCATGAGTCACGGAGACCACAATCATTA
TTTCTTCAAGAAGGACTTGACAGAAGAGCAAATTAAGGTGCGCAAAAACA
TTTAG

4139.1

(SEQ. ID. NO. 247)

ATGAAAAAAAGAGCAATAGTGGCAGTCATTGTACTGCTTTTGATTGGGCT
GGATCAGTTGGTCAAATCCTATATCGTCCAGCAGATTCCACTGGGTGAAG
TGCGCTCCTGGATCCCCAATTTCGTTAGCTTGACCTACCTGCAAAATCGA
GGTGCAGCCTTTTCTATCTTACAAGATCAGCAGCTGTTATTCGCTGTCAT
TACTCTGGTTGTCGTGATAGGTGCCATTTGGTATTTACATAAAACACATG
GAGGACTCATTCTGGATGGTCTTGGGTTTGACTCTAATAATCGCGGGTGG
TCTTGGAAACTTTATTGACAGGGTCAGTCAGGGCTTTGTTGTGGATATGT
TCCACCTTGACTTTATCAACTTTGCAATTTTCAATGTGGCAGATAGCTAT
CTGACGGTTGGAGTGATTATTTTATTGATTGCAATGCTAAAAGAGGAAAT
AAATGGAAATTAA

4139.5

(SEQ. ID. NO. 248)

ATGAATACAAATCTTGCAAGTTTTATCGTTGGACTGATCATCGATGAAAA
CGACCGTTTTTACTTTGTGCAAAAGGATGGTCAAACCTATGCTCTTGCTA
AGGAAGAAGGCCAACATACAGTAGGGGATACGGTCAAAGGTTTTGCATAC
ACGGATATGAAGCAAAAACTCCGCCTGACAACCTTAGAAGTGACTGCCAC
TCAGGACCAATTTGGTTGGGGACGTGTCACAGAGGTTCGTAAGGACTTGG
GTGTCTTTGTGGATACAGGCCTTCCTGACAAGGAAATCGTTGTGTCACTC
GATATTCTCCCTGAGCTCAAGGAACTCTGGCCTAAGAAGGGCGACCAACT
CTACATCCGTCTTGAAGTGGATAAGAAAGACCGTATCTGGGGCCTCTTGG
CTTATCAAGAAGACTTCCAACGTCTTGCTCGTCCTGCCTACAACAACATG
CAGAACCAAAACTGGCCAGCCATTGTTTACCGTCTCAAGCTGTCAGGAAC

TABLE 1-continued

TTTTGTTTACCTACCAGAAAATAATATGCTTGGTTTTATTCATCCTAGCG
AGCGTTACGCAGAGCCACGTTGGGGCAAGTATTAGATGCGCGCGTTATTG
GTTTCCGTAAGTGGACCGCACTCTGAACCTCTCCCTCAAACCACGCTCCT
TTGAAATGTTGGAAAACGATGCTCAGATGATTTTGACTTATTTGGAAAGC
AATGGCGGTTTCATGACCTTAAATGACAAGTCATCTCCAGACGACATCAA
GGCAACCTTTGGCATTTCTAAAGGTCAGTTCAAGAAAGCTTTAGGTGGTC
TTATGAAGGCTGGTAAAATCAAGCAGGACCAGTTTGGGACAGAGTTGATT
TAG

4139.8

(SEQ. ID. NO. 249)

ATGAAAGATGTTAGTCTATTTTTATTGAAAAAAGTTTTCAAAAGCCGCTT
AAACTGGATTGTCTTAGCTTTATTTGTATCTGTACTCGGTGTTACCTTTT
ATTTAAATAGTCAGACTGCAAACTCACACAGCTTGGAGAGCAGGTTGGAA
AGTCGCATTGCAGCCAACGAGAGGGCTATCAATGAAAATGAAGAGAAACT
CTCCCAAATGTCTGATACCAGCTCGGAGGAATACCAGTTTGCTAAAAATA
ATTTAGACGTGCAAAAAAATCTTTTGACGCGAAAGACAGAAATTCTGACT
TTATTAAAAGAAGGGCGCTGGAAAGAAGCCTACTATTTGCAGTGGCAAGA
TGAAGAGAAGAATTATGAATTTGTATCAAATGACCCGACTGCTAGCCCTG
GCTTAAAAATGGGGGTTGACCGCGAACGGAAGATTTACCAAGCCCTGTAT
CCCTTGAACATAAAAGCACATACTTTGGAGTTTCCGACCCACGGGATTGA
TCAGATTGTCTGGATTTTAGAGGTTATCATCCCAAGTTTGTTTGTGGTTG
CTATTATTTTTATGCTAACACAACTATTTGCAGAAAGATATCAAAATCAT
CTGGACACAGCTCACTTATATCCTGTTTCAAAAGTGACATTTGCAATATC
CTCTCTTGGAGTTGGAGTGGGATATGTAACTGTGCTGTTTATCGGAATCT
GTGGCTTTTCTTTTCTAGTGGGAAGTCTGATAAGTGGTTTTGGACAGTTA
GATTATCCCTACCCAATTTATAGCTTAGTGAATCAAGAAGTAACTATTGG
GAAAATACAAGATGTATTATTTCCTGGCTTGCTCTTAGCTTTCTTAGCCT
TTATCGTCATTGTGGAAGTTGTGTACTTGATTGCTTACTTTTTCAAGCAA
AAAATGCCTGTCCTCTTTCTTTCACTCATTGGGATTGTTGGCTTATTGTT
TGGTATCCAAACCATTCAGCCTCTTCAAAGGATTGCACATCTGATTCCCT
TTACTTACTTGCGTTCAGTGGAGATTTTATCTGGAAGATTACCTAAGCAG
ATTGATAATGTCGATCTAAATTGGAGCATGGGAATGGTCTTACTTCCTTG
CCTGATTATCTTTTTGCTATTGGGAATTCTATTTATTGAAAGATGGGGAA
GTTCACAGAAAAAAGAATTTTTTAATAGATTCTAG

4141.1

(SEQ. ID. NO. 250)

ATGATGAAGTTCATATTGGATATTGTTAGTACACCAGCTATTTTAGTAGC
TTTAATTGCAATCTTAGGATTAGTTCTTCAGAAGAAGAAATTACCTGATA
TTATTAAAGGTGGAATTAAGACCTTTGTTGGTTTCTTAGTTGTATCTGGT
GGTGCAGGAATTGTACAAAATTCTTTAAATCCATTTGGTACCATGTTTGA
GCATGCTTTTCATTTATCTGGCGTTGTGCCGAATAATGAAGCAATTGTAG
CTGTAGCTTTAACAACATATGGCTCAGCTACTGCAATGATTATGTTTGCA
GGCATGGTGTTCAATATCTTAATCGCTCGTTTTACTCGATTTAAATATAT
TTTTTTAACAGGGCACCACACTCTATATATGGCATGTATGATTGCGGTCA
TTTTATCAGTTGCTGGCTTTACTAGCTTGCCTCTCATCTTACTAGGAGGA
TTAGCACTCGGTATTATTATGAGTATTTCCCCAGCATTTGTGCAAAAATA
TATGGTTCAATTAACTGGAAATGACAAGGTAGCTTTAGGTCATTTCAGTT
CTTTGGGATATTGGTTGAGTGGTTTTACTGGTAGCCTTATCGGTGACAAA
TCAAAATCAACAGAGGACATTAAATTTCCAAAGAGTTTAGCTTTTTTACG
TGATAGTACTGTTAGTATTACTTTATCCATGGCAGTTATTTACATTATTG
TAGCTATCTTTGCAGGGTCAGAATATATAGAAAAAGAAATCAGTAGTGGT
ACAAGTGGTCTAGTTTATGCTTTACAATTAGCAGGTCAATTTGCAGCAGG
GGTATTTGTTATTTTAGCAGGTGTTCGCCTTATTTTGGGCGAAATTGTTC
CAGCCTTTAAAGGTATTTCAGAGCGTCTTGTACCTAATTCAAAACCTGCT
TTGGATTGTCCGATTGTTTATACTTATGCACCCAATGCAGTTCTAATTGG
ATTTATCTCTAGTTTTGTTGGTGGTTTAGTAAGTATGGTAATTATGATTG
CTTCAGGAACGGTTGTTATCTTACCAGGTGTTGTGCCTCATTTCTTCTGT
GGAGCGACTGCAGGTGTCATTGGGAATGCATCTGGTGGTGTTCGTGGAGC
CACTATTGGAGCATTTTTACAAGGTATTTTAATCAGTTTTCTTCCAGTCT
TTTTAATGCCAGTTTTGGGAGGACTTGGTTTCCAAGGATCAACTTTCTCA
GATGCAGATTTTGGTCTATCAGGAATTATTTTAGGAATGTTAAATCAATT
TGGCTCACAAGCAGGCATTGTGATTGGTCTTGTTCTTATTCTAGCAGTTA
TGTTTGGAGTATCCTTTATTAAAAAGCCATCTGCAACGGAGGAATAA

4142.3

(SEQ. ID. NO. 251)

ATGATTAAAACATTTCTCTCTGCCCTTTCGGTCATTCTCTTTTCTATCCC
TATCATAACTTATTCTTTTTTCCCATCTTCTAATCTTAACATTTGGCTAT
CTACCCAACCTATCTTGGCACAGATTTATGCCTTCCCCTTAGCTACTGCA
ACTATGGCTGCTATTTTAAGTTTCTTATTTTTTTTCCTATCTTTTTACAA
GAAAAATAAACAAATACGGTTTTACTCTGGCATTTTGCTCTTACTATCGC
TCATATTACTATTATTCGGAACAGATAAAACCCTTTCTTCTGCATCAAAT
AAGACTAAAAACTTAAAATTAGTAACTTGGAACGTCGCTAATCAAATAGA
AGCACAACATATTGAGCGAATTTTTAGCCATTTTGACGCCGATATGGCTA

TABLE 1-continued

TATTCCCTGAACTAGCTACCAATATCAGAGGTGAGCAAGAAAACCAGAGA
ATCAAACTATTGTTTCATCAAGTTGGACTTTCTATGGCCAACTATGATAT
TTTCACTTCTCCACCTACCAATAGTGGAATAGCTCCTGTGACTGTGATTG
TCAAGAAAAGTTATGGTTTCTATACAGAAGCTAAAACTTTTCATACAACA
CGGTTCGGGACAATTGTATTACATTCGAGAAAACAAAATATACCAGATAT
CATTGCCTTGCATACTGCGCCTCCTCTGCCAGGTTTAATGGAAATCTGGA
AGCAAGACTTAAACATCATTCATAATCAATTGGCTTCAAAATATCCAAAG
GCTATTATTGCAGGTGATTTTAATGCAACTATGCGTCATGGAGCACTTGC
AAAAATAAGCTCTCATAGGGACGCATTAAATGCACTGCCACCTTTTGAAA
GAGGAACTTGGAATAGCCAAAGTCCAAAACTTTTTAATGCAACAATAGAT
CATATTTTATTGCCTAAAAACCACTACTATGTTAAAGATTTAGACATTGT
AAGTTTTCAAAACTCTGATCATAGATGTATTTTTACAGAAATCACATTTT
AA

4142.4

(SEQ. ID. NO. 252)

ATGAATCCAATCCAAAGATCTTGGGCTTATGTCAGCAGAAAGCGACTGAG
AAGTTTTATTTTATTTCTGATTTTATTGGTCTTATTGGCCGGAATTTCAG
CCTGTTTGACTCTGATGAAGTCCAACAAAACAGTAGAAAGCAATCTTTAT
AAATCACTCAATACATCTTTTTCTATTAAGAAGATAGAGAATGGTCAGAC
ATTCAAGTTGTCAGACCTAGCATCTGTAAGCAAGATTAAGGGGCTGGAAA
ATGTCTCTCCTGAACTTGAGACGGTCGCAAAACTAAAAGACAAGGAAGCA
GTGACTGGCGAGCAGAGCGTGGAGCGTGATGATTTATCAGCTGCAGACAA
TAACTTGGTTAGCTTAACGGCTCTTGAGGATTCATCCAAGGATGTAACCT
TTACCAGTTCGGCTTTCAATCTAAAAGAAGGGCGACACCTTCAAAAAGGG
GATTCCAAGAAAATCCTTATCCACGAAGAATTGGCTAAGAAGAACGGTCT
TTCGCTTCATGACAAGATTGGCTTGGATGCTGGTCAGTCTGAATCTGGAA
AAGGACAAACAGTAGAGTTTGAGATTATCGGCATCTTTTCTGGTAAAAAA
CAAGAGAAATTCACAGGCTTGTCTTCTGACTTCAGTGAAAATCAAGTCTT
TACAGACTATGAAAGTAGCCAAACCCTTTTGGGCAATAGTGAAGCTCAAG
TCAGTGCAGCACGCTTCTATGTAGAAAATCCTAAGGAAATGGACGGACTC
ATGAAGCAGGTAGAAAACTTGGCCTTGGAAAATCAAGGCTACCAAGTCGA
AAAGGAAAACAAGGCTTTTGAACAAATCAAAGACTCAGTTGCAACTTTCC
AAACCTTCCTGACCATCTTCCTTTATGGGATGTTGATAGCAGGAGCTGGA
GCCTTAATTCTGGTTTTGTCTCTCTGGTTGAGAGAACGGGTCTATGAAGT
GGGGATTTTACTTGCACTTGGAAAAGGCAAGAGCTCGATCTTCCTACAAT
TCTGTTTAGAGGTAGTTTTGGTATCTCTTGGAGCTTTGCTTCCAGCATTT
GTTGCAGGAAACGCAATCACAACTTACCTACTCCAAACTCTACTAGCAAG
TGGAGATCAGGCAAGCTTACAAGATACACTAGCCAAAGCAAGCAGTTTAT
CAACTAGCATCTTATCTTTTGCAGAATCCTATGTTTTTCTAGTTCTGCTT
AGTTGCTTATCTGTAGCCCTTTGTTTCCTATTCTTATTTAGAAAATCACC
GAAAGAAATTTTATCATCTATTAGTTAA

4142.5

(SEQ. ID. NO. 253)

ATGTTACACAACGCATTTGCCTATGTTACAAGGAAGTTTTTCAAATCGAT
TGTCATCTTCCTGATTATTCTCCTCATGGCGAGCTTGAGTTTGGTCGGCT
TGTCAATCAAGGGAGCTACTGCCAAGGCTTCTCAGGAGACCTTTAAAAAT
ATCACCAATAGCTTCTCCATGCAAATCAATCGTCGCGTCAACCAAGGAAC
GCCTCGTGGTGCTGGGAATATCAAGGGTGAAGACATCAAAAAAATCACCG
AAAACAAGGCCATTGAGTCTTATGTCAAACGTATCAACGCTATCGGAGAT
TTGACTGGATATGACCTGATTGAAACGCCAGAAACCAAGAAGAATCTCAC
TGCTGATCGTGCCAAGCGTTTTGGAAGTAGCTTGATGATTACAGGTGTCA
ATGACTCCTCTAAAGAAGACAAGTTTGTCTCTGGTTCTTATAAACTAGTC
GAAGGAGAGCACTTAACCAACGACGACAAGGATAAAATCCTCTTGCACAA
GGACTTGGCAGCCAAACACGGCTGGAAAGTAGGGGACAAGGTTAAACTGG
ACTCTAATATCTACGATGCAGATAATGAAAAAGGAGCCAAGGAAACAGTT
GAAGTGACAATCAAGGGACTCTTTGATGGTCATAATAAGTCAGCAGTAAC
CTACTCACAAGAACTTTACGAAAACACAGCTATTACAGACATTCACACTG
CTGCAAAACTTTATGGATACACAGAAGACACAGCCATTTATGGGGACGCA
ACCTTCTTTGTAACAGCAGACAAGAACTTGGATGATGTTATGAAAGAGTT
GAATGGCATCAGTGGTATCAACTGGAAGAGCTACACACTCGTCAAGAGCT
CCTCTAACTACCCAGCTCTTGAGCAATCTATCTCTGGTATGTACAAGATG
GCCAACCTCCTCTTCTGGGGTAGCTTGAGCTTCTCAGTTCTCCTCCTTGC
CCTCTTGCTCAGCCTTTGGATCAACGCCCGTCGCAAGGAAGTGGGAATTC
TCCTCTCTATCGGCCTCAAGCAGGCAAGTATCTTGGGTCAATTCATCACC
GAATCTATCTTGATTGCTATCCCTGCTCTAGTTTCTGCTTACTTCCTAGC
TAATTACACTGCCCGTGCAATTGGAAACACTGTCCTTGCCAATGTGACTT
CAGGTGTTGCCAAACAGGCTAGTAAGGCGGCTCAAGCCTCTAACCTTGGT
GGTGGTGCAGAAGTAGATGGCTTTAGCAAGACCTTGTCGAGCCTAGACAT
TTCCATTCAGACATCAGACTTTATCATCATTTTTGTCCTTGCCTTGGTTC
TAGTGGTTCTCGTTATGGCGCTTGCTTCAAGCAATCTCCTTAGAAAACAA
CCAAAAGAGCTCTTGCTGGATGGTGAATAA

TABLE 1-continued

4144.1

(SEQ. ID. NO. 254)

ATGTCACAGGATAAACAAATGAAAGCTGTTTCTCCCCTTCTGCAGCGAGT
TATCAATATCTCATCGATTGTCGGTGGGGTTGGGAGTTTGATTTTCTGTA
TTTGGGCTTATCAGGCTGGGATTTTACAATCCAAGGAAACCCTCTCTGCC
TTTATCCAGCAGGCAGGCATCTGGGGTCCACCTCTCTTTATCTTTTTACA
GATTTTACAGACTGTCGTCCCTATCATTCCAGGGGCCTTGACCTCGGTGG
CTGGGGTCTTTATCTACGGGCACATCATCGGGACTATCTACAACTATATC
GGCATCGTGATTGGCTGTGCCATTATCTTTTATCTAGTGCGCCTATACGG
AGCTGCCTTTGTCCAGTCTGTCGTCAGCAAGCGCACCTACGACAAGTACA
TCGACTGGCTAGATAAGGGCAATCGTTTTGACCGCTTCTTTATTTTTATG
ATGATTTGGCCCATTAGCCCAGCTGACTTTCTCTGTATGCTGGCTGCCCT
GACCAAGATGAGCTTCAAGCGCTACATGACCATCATCATTCTGACCAAAC
CCTTTACCCTCGTGGTTTATACCTACGGTCTGACCTATATTATTGACTTT
TTCTGGCAAATGCTTTGA

4144.2

(SEQ. ID. NO. 255)

ATGAGAAATATGTGGGTTGTAATCAAGGAAACCTATCTTCGACATGTCGA
GTCATGGAGTTTCTTCTTTATGGTGATTTCGCCGTTCCTCTTTTTAGGAA
TCTCTGTAGGAATTGGGCATCTCCAAGGTTCTTCTATGGCTAAAAATAAT
AAAGTGGCAGTAGTGACAACAGTGCCATCTGTAGCAGAAGGACTGAAGAA
TGTAAATGGTGTTAACTTCGACTATAAAGACGAAGCAAGTGCCAAAGAAG
CAATTAAAGAAGAAAAATTAAAAGGTTATTTGACCATTGATCAAGAAGAT
AGTGTTCTAAAGGCAGTTTATCATGGCGAAACATCGCTTGAAAATGGAAT
TAAATTTGAGGTTACAGGTACACTCAATGAACTGCAAAATCAGCTTAATC
GTTCAACTGCTTCCTTGTCTCAAGAGCAGGAAAAACGCTTAGCGCAGACA
ATTCAATTCACAGAAAAGATTGATGAAGCCAAGGAAAATAAAAAGTTTAT
TCAAACAATTGCAGCAGGTGCCTTAGGATTCTTTCTTTATATGATTCTGA
TTACCTATGCGGGTGTAACAGCTCAGGAAGTTGCCAGTGAAAAAGGCACC
AAAATTATGGAAGTCGTTTTTTCTAGCATAAGGGCAAGTCACTATTTCTA
TGCGCGGATGATGGCTCTGTTTCTAGTGATTTTAACGCATATTGGGATCT
ATGTTGTAGGTGGTCTGGCTGCCGTTTTGCTCTTTAAAGATTTGCCATTC
TTGGCTCAGTCTGGTATTTTGGATCACTTGGGAGATGCTATCTCACTGAA
TACCTTGCTCTTTATTTTGATCAGTCTTTTCATGTACGTAGTCTTGGCAG
CCTTCCTAGGATCTATGGTTTCTCGTCCTGAGGACTCAGGGAAAGCCTTG
TCGCCTTTGATGATTTTGATTATGGGTGGTTTTTTTGGAGTGACAGCTCT
AGGTGCAGCTGGTGACAATCTCCTCTTGAAGATTGGTTCTTATATTCCCT
TTATTTCGACCTTCTTTATGCCGTTTCGAACGATTAATGACTATGCGGGG
GGAGCAGAAGCATGGATTTCACTTGCTATTACAGTGATTTTTGCGGTGGT
AGCAACAGGATTTATCGGACGCATGTATGCTAGTCTCGTTCTTCAAACGG
ATGATTTAGGGATTTGGAAAACCTTTAAACGTGCCTTATCTTATAAATAG

4144.3

(SEQ. ID. NO. 256)

ATGACAGAAACCATTAAATTGATGAAGGCTCATACTTCAGTGCGCAGGTT
TAAAGAGCAAGAAATTCCCCAAGTAGACTTAAATGAGATTTTGACAGCAG
CCCAGATGGCATCATCTTGGAAGAATTTCCAATCCTACTCTGTGATTGTG
GTACGAAGTCAAGAGAAGAAAGATGCCTTGTATGAATTGGTACCTCAAGA
AGCCATTCGCCAGTCTGCTGTTTTCCTTCTCTTTGTCGGAGATTTGAACC
GAGCAGAAAAGGGAGCCCGACTTCATACCGACACCTTCCAACCCCAAGGT
GTGGAAGGTCTCTTGATTAGTTCGGTCGATGCAGCTCTTGCTGGACAAAA
CGCCTTGTTGGCAGCTGAAAGCTTGGGCTATGGTGGTGTGATTATCGGTT
TGGTTCGATACAAGTCTGAAGAAGTGGCAGAGCTCTTTAACCTACCTGAC
TACACCTATTCTGTCTTTGGGATGGCACTGGGTGTGCCAAATCAACATCA
TGATATGAAACCGAGACTGCCACTAGAGAATGTTGTCTTTGAGGAAGAAT
ACCAAGAACAGTCAACTGAGGCAATCCAAGCTTATGACCGTGTTCAGGCT
GACTATGCTGGGGCGCGTGCGACCACAAGCTGGAGTCAGCGCCTAGCAGA
ACAGTTTGGTCAAGCTGAACCAAGCTCAACTAGAAAAAATCTTGAACAGA
AGAAATTATTGTAG

4146.1

(SEQ. ID. NO. 257)

ATGTTAAAACTTATTGCTATTGTTGGAACAAATTCAAAACGTTCTACAAA
CCGTCAATTGCTTCAATACATGCAAAAACACTTTACTGACAAAGCTGAAA
TTGAACTTGTTGAAATCAAGGCCATTCCTGTCTTCAACAAACCAGCTGAC
AAGCAAGTACCTGCTGAAATATTGGAAATTGCTGCTAAAATCGAAGAGGC
AGATGGCGTTATTATCGGTACTCCTGAGTATGATCACTCTATTCCAGCTG
TTTTGATGAGCGCTCTTGCTTGGTTGTCTTATGGTATTTACCCACTTTTG
AACAAACCAATCATGATTACAGGTGCTTCTTACGGTACGCTTGGTTCATC
TCGTGCCCAATTGCAACTTCGTCAAATCTTGAATGCTCCTGAAATCAAGG
CAAATGTTCTTCCAGATGAATTCTTGCTCTCACACTCTCTTCAAGCATTT
AACCCAAGTGGCGACTTGGTTGACCTTGATGTTATCAAGAAATTGGATGC
CATCTTTGATGACTTCCGTATCTTTGTAAAAATCACAGAAAAATTACGTA
ATGCACAAGAATTACTTCGCAAAGATGCTGAAGACTTTGACTGGGAAAAT
TTGTAA

TABLE 1-continued

4146.2

(SEQ. ID. NO. 258)

ATGAATACCTATCAATTAAATAATGGAGTAGAAATTCCAGTATTGGGATT
TGGAACTTTTAAGGCTAAGGATGGAGAAGAAGCCTATCGTGCAGTGTTAG
AAGCCTTGAAGGCTGGTTATCGTCATATTGATACGGCGGCGATTTATCAG
AATGAAGAAAGTGTTGGTCAAGCAATCAAAGATAGCGGAGTTCCACGTGA
AGAAATGTTCGTAACTACCAAGCTTTGGAATAGTCAGCAAACCTATGAGC
AAACTCGTCAAGCTTTGGAAAAATCTATAGAAAAACTGGGCTTGGATTAT
TTGGATTTGTATTTGATTCATTGGCCGAACCCAAAACCGCTCAGAGAAAA
TGACGCATGGAAAACTCGCAATGCGGAAGTTTGGAGAGCGATGGAAGACC
TCTATCAAGAAGGGAAAATCCGTGCTATCGGCGTTAGCAATTTTCTTCCC
CATCATTTGGATGCCTTGCTTGAAACTGCAACTATCGTTCCTGCGGTCAA
TCAAGTTCGCTTGGCGCCAGGTGTGTATCAAGATCAAGTCGTAGCTTACT
GTCGTGAAAAGGGAATTTTATTGGAAGCTTGGGGGCCTTTTGGACAAGGA
GAACTGTTTGATAGCAAGCAAGTCCAAGAAATAGCAGCAAATCACGGAAA
ATCGGTTGCTCAGATAGCCTTGGCCTGGAGCTTGGCAGAAGGATTTTTAC
CACTTCCAAAATCTGTCACAACCTCTCGTATTCAAGCTAATCTTGATTGC
TTTGGAATTGAACTGAGTCATGAGGAGAGAGAAACCTTAAAAACGATTGC
TGTTCAATCGGGTGCTCCACGAGTTGATGATGTGGATTTCTAG

4147.1

(SEQ. ID. NO. 259)

ATGAGGTGCAAAATGCTTGATCCAATTGCTATTCAACTAGGACCCCTAGC
CATTCGTTGGTATGCCTTATGTATTGTGACAGGCTTGATTCTTGCGGTTT
ATTTGACCATGAAAGAAGCACCTAGAAAGAAGATCATACCAGACGATATT
TTAGATTTTATCTTAGTAGCCTTTCCCTTGGCTATTTTAGGAGCTCGTCT
CTACTATGTTATTTTCCGATTTGATTACTATAGTCAGAATTTAGGAGAGA
TTTTTGCCATTTGGAATGGTGGTTTGGCCATTTACGGTGGTTTGATAACT
GGGGCTCTTGTGCTCTATATCTTTGCTGACCGTAAACTCATCAATACTTG
GGATTTTCTAGATATTGCGGCGCCTAGCGTTATGATTGCTCAAAGTTTGG
GGCGTTGGGGTAATTTCTTTAACCAAGAAGCTTATGGTGCAACAGTGGAT
AATCTGGATTATCTACCTGGCTTTATCCGTGACCAGATGTATATTGAGGG
GAGCTACCGTCAACCGACTTTCCTTTATGAGTCTCTATGGAATCTGCTTG
GCTTTGCCTTGATTCTGATTTTTAGACGGAAATGGAAGAGTCTCAGACGA
GGTCATATCACGGCCTTTTACTTGATTTGCTATGGTTTCGGTCGTATGGT
TATCGAAGGTATGCGAACAGATAGTCTCATGTTCTTCGGCTTTCGAGTGT
CCCAATGGCTGTCAGTTGTCCTTATCGGTCTCGGTATAATGATCGTTATT
TATCAAAATCGAAAGAAGGCCCCTTACTATATTACAGAGGAGGAAAACTA
A

4147.2

(SEQ. ID. NO. 260)

ATGGGTAAATTATCCTCAATCCTTTTAGGAACCGTTTCAGGTGCAGCTCT
TGCCTTGTTTTTAACAAGTGATAAGGGCAAACAAGTTTGCAGTCAGGCTC
AAGATTTTCTAGATGATTTGAGAGAAGATCCGGAGTATGCCAAGGAGCAA
GTCTGTGAAAAACTGACAGAAGTTAAGGAGCAGGCTACAGATTTTGTTCT
GAAAACAAAAGAACAGGTTGAGTCAGGTGAAATCACTGTGGACAGTATAC
TTGCTCAAACTAAATCCTATGCTTTTCAAGCGACAGAAGCATCAAAAAAT
CAATTAAATAATCTCAAGGAGCAATGGCAAGAAAAAGCCGAAGCTCTTGA
TGACTCAGAAGAGATTGTGATTGATATAACAGAAGAATAA

4147.3

(SEQ. ID. NO. 261)

ATGAAAACTAAATTGATCTTTTGGGGCTCTATGCTCTTTCTCCTCTCCCT
CTCCATCCTTCTGACCATTTATCTGGCTTGATTTTCTATCCTATGGAGAT
TCAGTGGCTAAACTTAACGAATCGAGTCTATCTAAAACCAGAAACCATTC
AATACAATTTTCATATCTTGATGAATTATCTGACCAATCCTTTTAGTCAG
GTCTTACAGATGCCTGATTTTCGTTCGTCAGCAGCTGGTCTGCACCATTT
CGCAGTGGTCAAGAATCTCTTTCATTTGGTTCAGCTAGTAGCTCTAGTGA
CACTGCCAAGTTTCTATGTCTTTGTCAATAGGATTGTGAAAAAGGACTTT
TTGTCTCTTTATCGAAAAAGTCTCCTGGCTCTAGTAGTCTTACCTGTGAT
GATTGGACTTGGGGGAGTTTTCATTGGTTTTGACCAATTCTTTACTCTTT
TCCATCAAATTCTCTTTGTGGGAGATGATACCTGGCTTTTTGATCCAGCC
AAGGATCCTGTTATTATGATTTTGCCAGAGACCTTCTTTCTTCATGCCTT
CCTCCTCTTTTTTGCCCTCTATGAAAACTTCTTTGGCTATCTGTATCTGA
AAAGTCGTAGGAAGTGA

4149.1

(SEQ. ID. NO. 262)

ATGACTTATCATTTTACTGAAGAATACGATATTATTGTAATTGGTGCGGG
ACACGCTGGGGTTGAGGCTTCCTTGGCCGCTAGCCGTATGGGCTGTAAGG
TCCTGCTTGCGACCATCAATATTGAAATGCTGGCTTTCATGCCTTGTAAT
CCCTCTATCGGTGGTTCTGCCAAGGGGATTGTCGTGCGTGAAGTCGATGC
CCTCGGTGGCGAGATGGCCAAAACCATTGACAAGACTTACATCCAGATGA
AGATGCTAAACACAGGGAAGGGGCCAGCTGTCCGTGCCCTTCGTGCGCAG

TABLE 1-continued

GCTGACAAGGAACTTTACTCTAAGGAGATGCGCAAGACGGTTGAAAACCA
AGAAAATCTGACCCTTCGTCAAACCATGATTGATGAGATTTTGGTGGAAG
ATGGCAAGGTTGTCGGTGTGCGTACAGCCACCCATCAAGAATATGCTGCT
AAGGCTGTTATTGTGACGACAGGGACTGCTCTCCGTGGGGAAATTATCAT
CGGAGACCTCAAGTACTCATCAGGTCCTAACCACAGCTTGGCTTCTATTA
ACCTAGCTGACAATCTCAAGGAACTGGGTCTCGAAATCGGTCGTTTCAAG
ACAGGACCCCTCCACGTGTCAAGGCTTCTTCTATCAATTACGATGTGACA
GAAATTCAGCCAGGAGACGAAGTGCCTAATCATTTCTCATACACTTCACG
TGATGAGGATTATGTCAAGGACCAAGTACCATGCTGGTTGACCTATACCA
ATGGTACCAGTCATGAGATTATCCAAAACAACCTCCACCGTGCGCCTATG
TTTACAGGTGTGGTCAAGGGAGTGGGGCCTCGTTACTGTCCGTCGATTGA
AGACAAGATTGTGCGCTTTGCGGACAAGGAACGTCACCAACTCTTCCTTG
AGCCAGAAGGGCGCATTACTGAGGAAGTCTATGTGCAAGGACTTTCAACC
AGTCTGCCTGAGGATGTCCAGCGTGACTTGGTGCATTCCATCAAAGGTTT
GGAAAATGCAGAGATGATGCGGACAGGTTATGCTATTGAGTATGATATGG
TCTTGCCTCATCAGTTGCGTGCGACTTTGGAAACCAAGAAAATCTCAGGT
CTCTTCACTGCTGGTCAGACAAATGGAACATCAGGTTACGAAGAGGCAGC
AGGCCAAGGGATTATCGCGGGTATCAATGCGGCTCTGAAAATCCAAGGCA
AGCCTGAATTGATTTTGAAGCGCAGTGATGGTTATATCGGGGTGATGATC
GACGACTTGGTGACCAAGGGAACCATTGAACCCTACCGTCTCTTGACCAG
TCGTGCTGAATACCGTCTCATTCTTCGTCATGACAATGCTGATATGCGCT
TGACTGAGATGGGACGCGAGATTGGCCTTGTGGACGATGAACGCTGGGCT
CGTTTTGAAATCAAGAAAAATCAATTTGATAATGAGATGAAGCGCCTAGA
CAGTATCAAACTCAAGCCAGTCAAGGAAACCAATGCCAAGGTTGAGGAGA
TGGGCTTCAAACCCTTGACCGATGCAGTGACAGCCAAGGAATTCCTTCGC
CGTCCAGAAGTTTCTTACCAAGATGTGGTGGCCTTCATCGGACCAGCTGC
AGAAGACTTGGATGACAAGATTATCGAATTGATTGAAACAGAAATCAAGT
ATGAAGGCTATATTTCCAAAGCCATGGACCAGGTTGCCAAGATGAAACGC
ATGGAAGAAAAACGCATTCCGGCCAATATCGACTGGGATGACATTGATTC
TATCGCAACCGAAGCCCGTCAGAAGTTCAAACTCATCAATCCAGAAACCA
TCGGCCAAGCCAGCCGTATTTCGGGAGTAAACCCAGCAGATATTTCTATT
TTGATGGTGTATCTGGAAGGTAAAAATCGTAGTATTTCTAAAACTCTTCA
AAAATCAAAATGA

4149.2

(SEQ. ID. NO. 263)

ATGAAAGTATTAGCTTTTGATACGTCCAGCAAGGCTCTTTCTCTGGCTAT
TTTAGAGGATAAGCAGGTTCTTGCCGAGACGACGATTAATATTAAGAAAA
ATCACAGTATTACTCTTATGCCTGCCATCGATTTTTTGATGGCAAGTTTG
GATTGGACACCCAAGGATTTGGACCGAATCGTGGTAGCTGAAGGGCCGGG
TAGCTATACAGGCTTGCGAATTGCGGTAGCAACTGCTAAGACCTTAGCTC
ACACCCTGAACATCGAGTTGGTTGGTATGTCGAGTCTCTTGGCTCTGGTG
CCCCATCAACAAGAAGGTTTGTTTGTCCCCTTGATGGATGCGCGTCGCAA
TAATGTTTATGCAGGATTTTATGAAAATGCCAAACCTGTCATGGCAGAAG
CGCACCTATCTTTTGAAGAGGTGCTAGAAAAAGTCAAGGGTACTAGTCAG
GTAACCTTTGTCGGAGAAGTTGGCCCCTTTTGTTGAGCAGATTCAAAAAC
ACTTGCCAAGGACTGATTACAAAGAAACATTGCCCAATGCAGCTAATCTA
GCTCTTTTGGCCTGGGACAAGGAAGCAGACTCCTTGCATGATTTTGTGCC
GAATTACCTCAAACGAGTCGAGGCTGAGGAAAACTGGCTCAAGAACCATA
CCGAGTCTGGCGAGTCTTACATTAAACGCCTATGA

4149.3

(SEQ. ID. NO. 264)

ATGATAGAAATCAAGCGAATTCAACAACAGCCTGACCTAGCTCAAGCCAT
CTACGCTGTTATGGCAGCTGTTTACCTAGTCAGTCCTTGGACTCTGGAGC
AAATCCAAGCAGATCTGTCCCAAGACCAGACTTGGTATGCATTGGCTTAT
GATGGGGCAGAAGTGATTGGATTTCTAGCTGTGCAGGAGAATCTTTTTGA
AGCAGAAGTCCTGCAAATCGCTGTCAAAGGAGCTTATCAGGGTCAGGGGA
TTGCGTCagCCTTGTTTGCTCAATTGCCGACAGACAAGGAAATTTTCCTC
GAAGTCAGACAGTCAAATCAACGAGCGCAAGCATTTTACAAGAAAGAAAA
GATGACAGTTATCGCTGAGCGAAAGGCCTACTACCATGACCCAGTCGAGG
ACGCCATTATCATGAAGAGAGAAATAGATGAAGGATAG

4152.2

(SEQ. ID. NO. 265)

ATGACAAAACAAGTCTTATTAGTGGATGATGAAGAACACATTCTGAAATT
GCTTGACTACCATTTAAGTAAGGAAGGCTTTTCTACTCAATTGGTGACAA
ATGGACGGAAGGCCTTAGCTTTGGCAGAAACAGAACCCTTTGATTTTATC
TTGCTTGATATCATGTTACCACAATTAGATGGCATGGAAGTTTGTAAGCG
GCTGAGAGCCAAAGGCGTCAAAACTCCAATTATGATGGTTTCTGCGAAAA
GTGATGAATTTGATAAGGTTTTGGCCTTGGAATTAGGGGCTGATGACTAC
CTGACCAAGCCTTTTAGCCCTAGAGAATTGCTGGCGGCGTGCAAGGCTGT
CCTCAGGCGAACTAAAGGAGAACAAGAAGGAGATGATTCAGATAATATCG
CTGACGATTCTTGGCTATTTGGGACCTTGAAAGTATACCCTGAGCGTCAT
GAAGTCTACAAGGCGAATAAGTTACTGAGTTTGACCCCAAAAGAATTTGA

TABLE 1-continued

AAGCGATAAAAATCCGTTTTTTGAAGTTTTCAAAGTTTCGAAAGTAACCG
CCCAATAA

4154.1

(SEQ. ID. NO. 266)

ATGACTACTTTTAAAGATGGATTTTTATGGGGTGGTGCTGTTGCTGCTCA
TCAACTTGAAGGTGGATGGCAAGAAGGTGGCAAGGGAATTAGTGTTGCTG
ATGTTATGACTGCTGGTCGTCATGGAGTAGCTCGTGAAATACTTTGGGAG
TTTTAGAGGGTAAATATTATCCAAATCATGAGGCGATAGATTTTTATCAC
CGTTATAAAGAAGATATAGCACTTTTTGCTGAAATGGGATTCAAGTGCTT
CCGTACCTCTATTGCATGGACACGTATCTTTCCAAAAGGTGATGAGTTAG
AGCCGAATGAAGAAGGATTACAGTTTTATGATAATCTTTTTGATGAATGC
TTAAAGAATGGTATTGAACCTGTCATCACTCTATCTCATTTTGAAATGCC
TTATCACTTAGTGACCGAATATGGTGGTTGGAAAAATAGGAAATTGATTG
ATTTCTTTGCTCGTTTTGCAGAAGTCGTATTTAAACGTTACAAAGATAAG
GTTAAATATTGGATGACTTTCAATGAAATCAATAATCAAGCGAATTATCA
GGAAGATTTTGCACCATTTACTAACTCAGGTATTGTATATGAGGAAGGTG
ATAATAGAGAAGCAATTATGTATCAAGCAGCACATTACGAATTAGTTGCT
TCTGCACGAGCTGTAAAAATTGGTCATGAGATTAATCCAGATTTTCAAAT
AGGTTGTATGATTGCGATGTGTCCAATTTATCCAGTTACTTGCAATCCTA
AGGATATCTTAATGGCAATGAAAGCTATGCAGAAGCGTTATTATTTTGCT
GATGTGCATGTTTTAGGTAAATATCCTGAGCATATTTTCAAGTATTGGGA
ACGAAAAGGTATTTCAGTTGATTTTACTGCCCAGGATAAAGAAGATTTAC
TTGGTGGGACTGTAGATTACATTGGTTTCAGTTACTATATGTCCTTTGCT
ATCGACTCTCATCGTGAAAATAATCCTTATTTTGATTATCTTGAAACAGA
AGATTTAGTGAAAAATAATTATGTTAAGGCTTCTGAATGGGAGTGGCAAA
TTGATCCAGAAGGTTTGCGTTATGCGTTAAATTGGTTTACAGACCACTAT
CACTTACCACTCTTTATTGTTGAAAATGGTTTTGGAGCTATAGATCAAGT
TGCAGCAGATGGTATGGTACATGATGATTATAGAATTGAATATCTAGGTG
CCCATATTCGTGAAATGAAAAAGGCTGTAGTTGAAGATGGTGTTGATTTA
ATGGGTTATACTCCATGGGGATGTATTGATTTGGTTTCAGCTGGTACCGG
TGAAATGCGGAAACGTTATGGCTTTATTTATGTAGATAAAGATGATAATG
GGAAGGGAAGTTATAATCGTTCCCCGAAAAAATCTTTTGGCTGGTATAAG
GAAGTTATTTCATCTAACGGTGAATCAGTAGAATAG

4154.2

(SEQ. ID. NO. 267)

ATGGATCAACAAAACGGGTTGTTTGGTTTTCTTGAAAACCATGTTATGGG
ACCAATGGGCAAACTTGCTCAGTTTAAAGTAGTACGTGCTATCACGGCTG
CAGGTATGGCTGCTGTACCATTTACTATTGTAGGATCAATGTTTTTGGTA
TTCAGTATTTTGCCACAAGCTTTCTCATTTTGGCCAATTGTGGCAGATAT
TTTCTCTGCTTCATTTGATAAATTCACATCACTTTACATGGTTGCAAACT
ATGCGACTATGGGTTCTCTATCTCTTTATTTCGTTCTATCACTTGCATAT
GAATTGACAAAAATTTATGCAGAGGAAGAAGAACTCAATATGAATCCTCT
TAATGGTGCCTTGCTTGCCTTGATGGCTTTTGTCATGACAGTACCGCAAA
TCATTTTTGATGGTGGAATGATGAAGACTGTGACAAGTCTAAAAGAAGGT
GCAGTAATTGCAGATGGATGGGCAATGGGAAATGTCGTCGCACGTTTTGG
GACAACAGGGATTTTTACCGCAATCATTATGGCAATTGTGACTGTTCTTA
TTTATCGTATGTGTGTTAAACATAATTGGGTTATTAAAATGCCTGAAGCT
GTTCCAGAAGGAGTTTCTCGTGGATTTACCGCTTTGGTTCCGGGATTTGT
TGTTGCATTTGTTGTTATCTTTATCAACGGTCTTCTTGTAGCAATGGGAA
CAGATATTTTTAAAGTCATTGCAATTCCATTTGGTTTTGTATCCAATCTG
ACTAATTCGTGGATTGGTTTAATGATTATTTATCTATTGACTCAACTACT
TTGGATTGTAGGTATCCACGGTGCGAACATTGTTTTTGCATTTGTTAGTC
CAATTGCTCTTGCTAACATGGCTGAAAATGCTGCTGGCGGGCACTTCGCT
GTTGCAGGTGAATTTTCTAATATGTTTGTAATTGCAGGTGGTTCTGGTGC
AACTTTAGGACTATGTTTATATATTGCTTTTGCCTCTAAATCTGAACAGC
TTAAAGCAATAGGACGAGCATCTGTAGTTCCAGCCTTATTTAATATTAAT
GAACCATTAATTTTTGGATTACCTATTATCTATAATCCAGCCTTGGCTAT
ACCATTTATTTTAGCACCAATGGTTACTGCTACTATTTATTACGTAGCGA
ATTCTCTAAACTTTATTAAGCCAATTATCGCACAGGTTCCATGGCCAACT
CCAGTAGGGATTGGAGCTTTCTTAGGGACAGCAGATCTTCGAGCTGTATT
AGTTGCTCTAGTATGTGCATTTGCAGCATTCCTAGTCTATCTTCCATTCA
TCCGTGTATATGATCAAAAATTGGTGAAAGAAGAGCAAGGTATCTAA

4155.1

(SEQ. ID. NO. 268)

ATGAAAAAATTTTATGTAAGTCCAATTTTTCCTATTCTAGTAGGATTGAT
TGCGTTTGGAGTCTTATCCACTTTCATTATTTTTGTTAATAATAATCTGT
TGACGGTTTTAATTTTGTTTCTTTTTGTAGGAGGCTATGTTTTTTTTATTT
AAGAAACTGAGAGTGCATTATACAAGGAGTGATGTAGAACAGATACAGTA
TGTAAACCACCAAGCGGAAGAAAGTTTGACAGCTCTATTGGAACAGATGC
CTGTAGGTGTTATGAAATTGAATTTATCTTCTGGAGAGGTTGAGTGGTTT
AATCCCTATGCTGAATTGATTTTGACCAAGGAAGATGGTGATTTTGATTT
AGAAGCTGTTCAAACGATTATCAAGGCTTCAGTAGGAAATCCGTCTACTT
ATGCCAAGCTTGGTGAGAAGCGTTATGCTGTTCATATGGATGCTTCTTCC

TABLE 1-continued

GGTGTTTTGTATTTTGTAGATGTATCCAGGGAACAAGCCATAACAGATGA
ATTGGTAACAAGTAGACCAGTGATTGGGATTGTCTCTGTGGATAATTATG
ATGATTTGGAGGATGAAACTTCTGAGTCAGATATTAGTCAAATCAATAGT
TTTGTAGCTAATTTTATATCAGAGTTTTCAGAAAAACACATGATGTTTTC
TCGTCGGGTAAGTATGGATCGATTTTATCTATTTACTGACTACACGGTGC
TTGAGGGCTTGATGAATGATAAATTTTCTGTTATTGATGCTTTCAGAGAA
GAGTCGAAACAGAGACAGTTGCCCTTGACCTTAAGTATGGGATTTTCTTA
TGGCGATGGAAATCATGATGAGATAGGGAAAGTTGCTTTGCTCAATTTGA
ACTTGGCTGAAGTACGTGGTGGCGACCAGGTGGTTGTTAAGGAAAACGAC
GAAACGAAAAATCCAGTTTATTTTGGTGGTGGGTCTGCTGCTTCAATCAA
GCGTACACGGACTCGTACGCGCGCTATGATGACAGCTATTTCAGATAAGA
TTCGGAGTGTAGATCAGGTTTTTGTAGTCGGTCACAAAAATTTAGACATG
GATGCTTTGGGCTCTGCTGTAGGTATGCAGTTGTTCGCCAGCAATGTGAT
TGAAAATAGCTATGCTCTTTATGATGAAGAACAAATGTCTCCAGATATTG
AACGAGCTGTTTCATTCATAGAAAAAGAAGGAGTTACGAAGTTGTTGTCT
GTTAAGGATGCAATGGGGATGGTGACCAATCGTTCTTTGTTGATTCTTGT
AGACCATTCAAAGACAGCCTTAACATTATCAAAAGAATTTTATGATTTAT
TTACCCAAACCATTGTTATTGACCACCATAGAAGGGATCAGGATTTTCCA
GATAATGCGGTTATTACTTATATCGAAAGTGGTGCAAGTAGTGCCAGTGA
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CAGAACGCGCGGAAGTGATAGTATTGCTATCCAGGAAATCGCTGCGACAG
ATTTTGAAGAATATCGTGAGGTCAATGAACTTATTTTACAGGGGCGTAAA
TTAGGTTCAGATGTACTAATAGCAGAGGCTAAGGACATGAAATGCTATGA
TACAGTTGTTATTAGTAAGGCAGCAGATGCCATGTTAGCCATGTCAGGTA
TTGAAGCGAGTTTTGTTCTTGCGAAGAATACACAAGGATTTATCTCTATC
TCAGCTCGAAGTCGTAGTAAACTGAATGTACAACGGATTATGGAAGAGTT
AGGCGGTGGAGGCCACTTTAATTTGGCAGCAGCTCAAATTAAAGATGTAA
CCTTGTCAGAAGCAGGTGAAAAACTGACAGAAATTGTATTAAATGAAATG
AAGGAAAAGGAGAAAGAAGAATGA

4156.1

(SEQ. ID. NO. 269)

ATGAAAGAGAAAAATATGTGGAAAGAATTGTTGAATCGTGCAGGCTGGAT
TTTGGTCTTTTTACTTGCCGTCCTTTTATATCAGGTTCCCCTAGTGGTTA
CCTCTATTTTGACTTTAAAAGAAGTAGCCCTGCTACAGTCAGGGCTGATA
GTTGCTGGCCTTTCAATTGTGGTTCTGGCTCTATTTATTATGGGAGCTCG
TAAAACCAAGTTAGCTAGTTTTAATTTTTCTTTTTTTAGAGCTAAAGATT
TGGCACGTTTGGGCTTGAGTTATCTAGTTATTGTCGGGTCAAATATACTT
GGTTCCATTTTATTGCAACTGTCAAATGAGACGACAACAGCTAACCAGTC
TCAGATTAATGATATGGTTCAAAATAGTTCGTTGATTTCCAGTTTCTTCT
TGCTAGCCTTGCTTGCTCCGATTTGTGAGGAAATCTTGTGTCGTGGGATT
GTTCCTAAAAAGATTTTCCGAGGCAAGGAGAACTTGGGATTTGTAGTCGG
TACGATTGTGTTTGCTTTATTGCATCAACCAAGTAATTTACCTTCTTTAT
TGATTTATGGAGGTATGTCGACAGTTCTATCTTGGACAGCCTACAAGACC
CAACGTTTGGAAATGTCGATCTTGCTTCACATGATTGTTAATGGGATTGC
TTTCTGTTTGTTGGCTCTTGTGGTGATTATGAGTCGGACATTAGGAATTT
CTGTTTAAATGAAAGAGAAAAATATGTGGAAAGAATTGTTGAATCGTGCA
GGCTGGATTTTGGTCTTTTTACTTGCCGTCCTTTTATATCAGGTTCCCCT
AGTGGTTACCTCTATTTTGACTTTAAAAGAAGTAGCCCTGCTACAGTCAG
GGCTGATAGTTGCTGGCCTTTCAATTGTGGTTCTGGCTCTATTTATTATG
GGAGCTCGTAAAACCAAGTTAGCTAGTTTTAATTTTTCTTTTTTTAGAGC
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AACCAGTCTCAGATTAATGATATGGTTCAAAATAGTTCGTTGATTTCCAG
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GTGGGATTGTTCCTAAAAAGATTTTCCGAGGCAAGGAGAACTTTGGGATT
GTAGTCGGTACGATTGTGTTTGCTTTATTGCATCAACCAAGTAATTTACC
TTCTTTATTGATTTATGGAGGTATGTCGACAGTTCTATCTTGGACAGCCT
ACAAGACCCAACGTTTGGAAATGTCGATCTTGCTTCACATGATTGTTAAT
GGGATTGCTTTCTGTTTGTTGGCTCTTTGTGGTGATTATGAGTCGGACAT
TAGGAATTTCTGTTTAA

4156.4

(SEQ. ID. NO. 270)

ATGGATACACAAAAGATTGAAGCGGCTGTAAAAATGATTATCGAGGCTGT
AGGAGAGGACGCTAATCGCGAGGGCTTGCAGGAAACACCTGCTCGTGTAG
CCCGTATGTATCAAGAGATTTTTTCAGGTCTTGGTCAAACAGCAGAGGAA
CATTTGTCAAAATCCTTTGAAATTATTGACGATAATATGGTGGTAGAAAA
GGATATCTTTTTCCATACCATGTGTGAACACCACTTCTTGCCATTTTATG
GTAGAGCGCACATTGCCTACATTCCAGATGGTCGTGTGGCAGGCTTGTCT
AAGCTAGCCCGTACGGTTGAAGTTTATTCGAAAAAACCACAAATTCAAGA
ACGTTTGAATATCGAAGTGGCCGATGCCTTGATGGACTATCTAGGTGCTA
AAGGAGCCTTTGTTGTCATTGAGGCGGAACATATGTGTATGAGTATGCGT
GGTGTTAGAAAACCAGGCACTGCAACCTTGACGACAGTAGCTCGTGGTCT

TABLE 1-continued

ATTTGAAACAGATAAGGATCTCCGTGACCAAGCTTATCGTTTAATGGGGC
TATAA

4157.2

(SEQ. ID. NO. 271)

ATGAAAGACTTGTTTTTAAAGAGAAAGCAGGCCTTTCGTAAGGAGTGTCT
TGGTTATCTGCGCTATGTGCTCAATGACCACTTTGTCTTGTTCCTGCTTG
TCCTGTTGGGCTTTCTAGCCTACCAGTACAGTCAACTCTTACAACATTTT
CCTGAAAATCATTGGCCTATCCTTTTGTTTGTAGGAATTACGTCTGTTTT
ACTTTTACTTTGGGGAGGAACTGCCACCTATATGGAGGCTCCAGACAAGC
TCTTTCTCTTAGTTGGAGAAGAGGAAATTAAGCTCCATCTCAAGCGTCAA
ACTGGCATTTCCCTAGTCTTTTGGCTCTTTGTACAGACCCTTTTCTTGCT
GTTATTTGCGCCTTTATTTTTAGCAATGGGTTATGGCTTGCCAGTTTTTC
TGCTCTATGTGCTTTTATTGGGGGTAGGAAAATATTTCCACTTTTGTCAA
AAGGCCAGCAAATTTTTCACTGAAACTGGACTGGACTGGGACTATGTTAT
TTCTCAAGAAAGCAAGCGTAAGCAAGTCTTGCTTCGTTTCTTTGCCCTCT
TTACGCAGGTCAAGGGAATTTCAAACAGCGTTAAGCGTCGTGCCTATCTG
GACTTTATTTTAAAGGCTGTTCAGAAGGTGCCTGGGAAGATTTGGCAAAA
TCTCTATCTGCGTTCTTATCTGCGAAATGGCGACCTCTTTGCTCTCAGTC
TTCGTCTTCTCTTGCTTTGCCTTGCTGGCGCAGGTTTTTATCGAGCAAGC
TTGGATTGCGACAGCAGTGGTAGTTCTCTTTAACTACCTCTTGCTCTTCC
AGTTGCTGGCCCTCTATCATGCCTTTGACTACCAGTATTTGACCCAACTC
TTTCCGCTGGACAAGGGGCAAAAGGAAAAAGGCTTACAGGAGGTAGTTCG
AGGATTGACCAGTTTTGTTTTACTTGTGGAATTAGTTGTTGGGTTGATTA
CCTTCCAAGAAAAACTAGCCCTTCTAGCCTTACTAGGAGCTGGTTTGGTT
TTACTAGTCTTGTATTTGCCTTATCAGGTAAAACGTCAGATGCAGGACTA
A

4258.2

(SEQ. ID. NO. 272)

ATGAGAAAATCAATAGTATTAGCGGCAGATAATGCCTATCTTATTCCTTT
AGAGACGACTATAAAGTCTGTATTGTATCACAATAGAGATGTTGATTTTT
ATATTCTCAACAGTGATATAGCTCCTGAATGGTTTAAATTATTGGGGAGA
AAAATGGAAGTTGTGAATTCTACAATTCGCAGTGTACACATTGATAAAGA
ACTTTTTGAAAGCTATAAAACAGGACCTCATATAAATTATGCTTCTTACT
TTAGATTTTTTGCGACAGAAGTGGTTGAATCTGATAGGGTATTGTATCTG
GATTCCGATATCATTGTAACTGGGGAACTAGCTACTTTGTTTGAGATAGA
TCTCAAAGGATATTCAATTGGTGCTGTTGATGATGTCTATGCCTATGAAG
GACGAAAATCTGGATTTAATACTGGTATGTTACTAATGGATGTTGCAAAG
TGGAAAGAACATTCTATTGTCAATAGTTTATTGGAATTAGCGGCCGAGCA
GAATCAAGTTGTTCATCTTGGGGATCAGAGTATTTTAAATATTTATTTTG
AGGATAATTGGCTAGCCTTAGATAAAACATATAATTATATGGTGGGTATT
GATATTTATCACCTTGCTCAAGAATGTGAACGTCTAGATGACAATCCACC
TACAATTGTTCACTATGCTAGTCATGATAAACCTTGGAATACATATAGTA
TATCTAGACTACGTGAATTATGGTGGGTTTATAGAGATTTGGATTGGTCA
GAGATTGCTTTTCAACGTTCCGATTTAAATTATTTTGAAAGAAGCAATCA
GTCTAAAAAACAAGTGATGCTTGTGACATGGAGTGCAGATATAAAACATT
TAGAGTATTTAGTACAACGGTTACCTGATTGGCATTTTCATTTGGCTGCA
CCGTGTGATTGTTCTGAGGAGCTGACCTCTCTATCACAGTATACGAATGT
AACAGTATATCAAAATGTATTACATAGTAGAATTGATTGGCTATTGGACG
ATTCTATAGTTTATTTAGATATTAATACAGGTGGAGAGGTTTTTAATGTA
GTTACAAGGGCACAAGAAAGTGGCAAGAAAATCTTCGCTTTTGATATCAC
ACGTAAAAGTATGGATGATGGACTCTATGACGGTATTTTTTCTGTGGAGA
GACCAGATGATTTAGTGGATAGAATGAAGAATATAGAGATAGAGTAA

4158.2

(SEQ. ID. NO. 273)

ATGACTAAGATTTATTCGTCAATAGCAGTAAAAAAAGGACTATTTACCTC
ATTTCTACTGTTTATCTATGTATTGGGAAGTCGTATTATTCTCCCTTTTG
TTGACCTAAATACTAAAGATTTTTTAGGAGGTTCAACAGCCTATCTAGCC
TTCTCAGCCGCCCTAACAGGTGGGAATCTAAGAAGTTTATCAATTTTTTC
TGTTGGATTATCCCCTTGGATGTCCGCCATGATTTTATGGCAGATGTTTT
CTTTTTCTAAACGGTTGGGTTTAACATCTACGTCTATAGAAATACAAGAT
CGCCGTAAAATGTACCTGACCTTGCTAATTGCTGTGATTCAATCCTTGGC
AGTTAGCTTGAGACTGCCAGTACAATCCTCCTATTCTGCAATATTGGTTG
TTCTAATGAATACAATATTGCTGATAGCAGGAACATTTTTTCTTGTTTGG
TTGTCAGATTTAAATGCGAGTATGGGGATTGGAGGTTCTATTGTAATCCT
CCTATCCAGTATGGTTTTAAATATTCCTCAGGATGTTTTGGAAACATTTC
AGACAGTACACATTCCAACAGGGATTATTGTGTTACTTGCTTTATTAACC
CTTGTCTTTTCTTATTTACTTGCCCTTATGTATCGAGCTCGCTATTTGGT
TCCTGTTAATAAAATTGGCTTACACAATCGATTTAAACGCTATTCTTATC
TCGAAATCATGTTGAATCCTGCAGGTGGGATGCCTTATATGTATGTGATG
AGTTTTCTTAGTGTACCAGCTTATTTGTTCATCTTGTTGGGATTTATTTT
CCCTAATCATTCAGGGTTAGCGGCTTTATCAAAGGAATTTATGGTTGGAA
AGCCTTTGTGGGTCTATGTTTATATTTCGGTCTTATTTTTATTTAGTATC
ATTTTTGCTTTTGTTACGATGAATGGAGAAGAGATTGCAGACCGTATGAA

TABLE 1-continued

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GTTATTACGATTGGCAATGATTCCAGGCTTATTTATGATGTTCGGGGGCA
TGATTTTTACGATTAGAGACGAGGTCAAGGCTTTAAGGCTAAATGAGACC
TATAGACCTTTGATTTAG

4158.3

(SEQ. ID. NO. 274)

ATGTCCTCTCTTTCGGATCAAGAATTAGTAGCTAAAACAGTAGAGTTTCG
TCAGCGTCTTTCCGAGGGAGAAAGTCTAGACGATATTTTGGTTGAAGCTT
TTGCTGTGGTGCGTGAAGCAGATAAGCGGATTTTAGGGATGTTTCCTTAT
GATGTTCAAGTCATGGGAGCTATTGTCATGCACTATGGAAATGTTGCTGA
GATGAATACGGGGGAAGGTAAGACCTTGACAGCTACCATGCCTGTCTATT
TGAACGCTTTTTCAGGAGAAGGAGTGATGGTTGTGACTCCTAATGAGTAT
TTATCAAAGCGTGATGCCGAGGAAATGGGTCAAGTTTATCGTTTTCTAGG
ATTGACCATTGGTGTACCATTTACGGAAGATCCAAAGAAGGAGATGAAAG
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AGTAATTTAGGTTTTGATTATCTAAATGATAACCTAGCCTCGAATGAAGA
AGGTAAGTTTTTACGACCGTTTAACTATGTGATTATTGATGAAATTGATG
ATATCTTGCTTGATAGTGCACAAACTCCTCTGATTATTGCGGGTTCTCCT
CGTGTTCAGTCTAATTACTATGCGATCATTGATACACTTGTAACAACCTT
GGTCGAAGGAGAGGATTATATCTTTAAAGAGGAGAAAGAGGAGGTTTGGC
TCACTACTAAGGGGGCCAAGTCTGCTGAGAATTTCCTAGGGATTGATAAT
TTATACAAGGAAGAGCATGCGTCTTTTGCTCGTCATTTGGTTTATGCGAT
TCGAGCTCATAAGCTCTTTACTAAAGATAAGGACTATATCATTCGTGGAA
ATGAGATGGTACTGGTTGATAAGGGAACAGGGCGTCTAATGGAAATGACT
AAACTTCAAGGAGGTCTCCATCAGGCTATTGAAGCCAAGGAACATGTCAA
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GAAAAAGAGTTTATTGAAACTTACAATATGTCTGTAGTACGCATTCCAAC
CAATCGTCCGAGACAACGGATTGACTATCCAGATAATCTATATATCACTT
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CTATTCGTCTCTCTTGTTTCGTGAAGGGATTGCCCATAATGTCCTAAATG
CTAATAATGCGGCGCGTGAGGCTCAGATTATCTCCGAGTCAGGTCAGATG
GGGGCTGTGACAGTGGCTACCTCTATGGCAGGACGTGGTACGGATATCAA
GCTTGGTAAAGGAGTCGCAGAGCTTGGGGGCTTGATTGTTATTGGGACTG
AGCGGATGGAAAGTCAGCGGATCGACCTACAAATTCGTGGCCGTTCTGGT
CGTCAGGGAGATCCTGGTATGAGTAAATTTTTTGTATCCTTAGAGGATGA
TGTTATCAAGAAATTTGGTCCATCTTGGGTGCATAAAAAGTACAAAGACT
ATCAGGTTCAAGATATGACTCAACCGGAAGTATTGAAAGGTCGTAAATAC
CGGAAACTAGTCGAAAAGGCTCAGCATGCCAGTGATAGTGCTGGACGTTC
AGCACGTCGTCAGACTCTGGAGTATGCTGAAAGTATGAATATACAACGGG
ATATAGTCTATAAAGAGAGAAATCGTCTAATAGATGGTTCTCGTGACTTA
GAGGATGTTGTTGTGGATATCATTGAGAGATATACAGAAGAGGTAGCGGC
TGATCACTATGCTAGTCGTGAATTATTGTTTCACTTTATTGTGACCAATA
TTAGTTTTCATGTTAAAGAGGTTCCAGATTATATAGATGTAACTGACAAA
ACTGCAGTTCGTAGCTTTATGAAGCAGGTGATTGATAAAGAACTTTCTGA
AAAGAAAGAATTACGTTAATCAACATGACTTATATGAACAGTTTTTACGA
CTTTCACTGCTTAAAGCCATTGATGACAACTGGGTAGAGCAGGTAGACTA
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ATCCAATCGTAGAGTACTATCAAGAAGCCTACGCGGGCTTTGAAGCTATG
AAAGAACAGATTCATGCGGATATGGTGCGTAATCTCCTGATGGGGCTGGT
TGAGGTCACTCCAAAAGGTGAAATCGTGACTCATTTTCCATAA

4158.4

(SEQ. ID. NO. 275)

ATGATAGGGACTTTCGCCGCTGCTCTTGTAGCTGTACTAGCAAATTTCAT
CGTCCCTATTGAAATTACCCCAAATAGTGCCAATACTGAAATTGCACCAC
CAGATGGGATTGGGCAGGTTCTCAGCAACCTCTTGCTCAAACTGGTTGAC
AACCCAGTCAACGCCCTGTTACTGCTAACTATATTAGAATCTTATCTTGG
GCAGTCATTTTTGGAATCGCTATGAGAGAAGCCAGTAAAAATAGTCAAGA
ATTGCTAAAAACTATCGCTGACGTGACTTCTAAAATTGTCGAATGGATCA
TCAATCTGGCTCCATTTGGAATCCTTGGTCTTGTTTTTAAAACCATTTCT
GACAAGGGAGTCGGAAGCCTTGCCAACTACGGTATTTTATTGGTTCTATT
AGTAACGACTATGCTTTTTGTTGCCCCTGTGGTCAACCCTTTGATTGCCT
TCTTCTTTATGAGACGCAATCCTTACCCTCTAGTTTGGAACTGCCTCCGT
GTCAGCGGTGTGACAGCCTTTTTCACTCGTAGTTCTGCGACTAACATTCC
TGTCAACATGAAACTCTGCCATGACCTTGGACTCAACCCAGATACCTATT
CTGTTTCTATCCCACTCGGTTCTACTATCAATATGGCTGGAGTAGCGATT
ACCATTAACCTTTTGACCCTTGCTGCAGTTAACACTCTTGGAATTCCTGT
TGACTTTGCCACAGCCTTTGTCCTCAGTGTGGTAGCAGCTATCTCATCCT
GTGATGCTTCAGGTATTGCCGGAGGTTCCCTCCTTCTTATCCCAGTTGCT
TGTAGCCTTTTCGGTATTTCTAACGATATTGCCATACAAATTGTTGGGGT
TGGTTTTGTGATTGGTGTCATCCAAGACTCATGTGAAACAGCCCTTAACT

TABLE 1-continued

CTTCTACAGATGTCCTCTTTACCGCCGTTGCCGAATACGCAGCAACCCGT
AAAAAATAA

4158.5

(SEQ. ID. NO. 276)

ATGTCTATTAGCCAACGTACGACCAAGCTCATCTTAGCTACCTGTCTTGC
CTGCCTGCTTGCTTATTTTCTCAATCTTTCGTCAGCAGTTTCGGCTGGAA
TTATCGCTCTCTTGAGCCTATCTGATACGCGTAGAAGTACTTTAAAACTG
GCTCGCAATCGTCTTTTTTCTATGCTTCTAGCTCTGGCTATCGGTGTTCT
AGCTTTTCACTTGAGCGGATTTCATATCTGGAGTCTCGGCCTCTATCTGG
CCTTCTACGTTCCTTTAGCCTACAAGATGGGCTGGGAAATTGGCATCACA
CCAAGCACTGTTTTGGTTAGCCATCTCTTGGTTCAAGAGTCAACCTCTCC
AGACCTTCTAGTCAATGAATTCCTTCTCTTTGCTATTGGTACAGGATTTG
CCTTGCTTGTTAATCTCTATATGCCTTCACGAGAAGAGGAAATCCAGCAC
TACCACACGCTGGTGGAAGAAAAGTTAAAAGATATCCTCCAGCGCTTCAA
ATACTATTTATCCAGAGGAGACGGACGCAACCGAGCACAGCTGGTAGCAG
AATTAGACACGCTTTTGAAAGAAGCCCTCAGACTGGTCTATTTGGATCAC
TCTGACCACCTCTTTCACCAGACAGACTACCATATCCACTACTTTGAGAT
GAGACAGCGACAAAGTCGTATCCTGAGAAACATGGCCCAACAGATTAACA
CTTGTCACCTTGCCGCCAGTGAAAGCCTGATCTTAGCGCAACTCTTTTCA
AAAATTGCAGGTCAACTGAGCCAGACCAATCCTGCTTCTGATTTGCTAGA
TGAAATTGAACGTTATCTGGAAGTCTTCCGGAACCGCAGTCTGCCCAAGA
CAAGAGAAGAATTTGAAACCCGCGCCACCCTTCTTCAACTCCTACGTGAA
GCCAAAACCTTCATCCAAGTAAAAGTTGATTTTTACCAAAAATATAGACA
GTAA

4158.6

(SEQ. ID. NO. 277)

ATGGAAATCATGTCGCTTGCGATTGCTGTTTTTGCCGTCATCATTGGTTT
AGTCATTGGATATGTCAGCATCTCAGCTAAGATGAAATCATCTCAGGAAG
CTGCAGAGTTGATGCTTTTAAATGCTGAACAAGAAGCAACTAATTTACGT
GGACAAGCTGAGCGTGAAGCGGATTTACTTGTTAATGAAGCCAAACGTGA
AAGCAAGTCTCTTAAAAAAGAAGCACTATTGGAGGCCAAAGAAGAAGCCA
GAAAATACCGTGAAGAAGTGGACGCTGAATTCAAATCAGAACGTCAAGAA
CTCAAACAAATCGAAAGTCGTTTGACAGAGAGAGCTACTAGCCTTGACCG
TAAGGACGACAATTTGACGAGTAAAGAACAAACACTTGAACAAAAAGAAC
AAAGTATTTCTGATAGAGCGAAAAACCTTGATGCGCGTGAAGAGCAATTA
GAGGAAGTCGAAAGACAAAAAGAAGCAGAACTAGAGCGTATTGGTGCGCT
GTCTCAGGCAGAAGCACGAGATATTATCTTGGCTCAGACAGAGGAAAACT
TGACCAGGGAGATTGCCAGTCGCATTCGCGAAGCTGAGCAAGAGGTCAAG
GAACGTTCTGACAAAATGGCCAAGGACATCTTGGTTCAAGCTATGCAACG
TATCGCTGGTGAATATGTAGCGGAGTCAACAAACTCAACAGTTCATCTGC
CAGACGATACTATGAAGGGACGCATTATTGGTCGTGAAGGTCGTAACATT
CGTACCTTTGAAAGTTTGACAGGGGTCGATGTGATTATCGACGATACACC
AGAAGTGGTGACCTTGTCAGGATTTGATCCGATTCGTCGTGAGATTGCCC
GTATGACTATGGAAATGTTGCTCAAAGATGGTCGTATACATCCAGCTCGT
ATCGAAGAGTTGGTTGAGAAAAACCGTCAAGAGATTGACAATAAGATTCG
TGAATACGGTGAGGCTGCTGCCTATGAAATTGGTGCGCCAAACCTTCATC
CAGACTTGATGAAGATTATGGGACGTTTGCAGTTCCGTACTTCATATGGA
CAAAATGTTTTGCGCCATTCGATTGAGGTTGCTAAGTTGGCTGGTATCAT
GGCGAGCGAACTTGGTGAAAATGCGGCTCTTGCCCGTCGTGCTGGATTCC
TTCACGATATCGGGAAAGCCATTGACCATGAGGTTGAAGGTAGCCACGTT
GAAATCGGTATGGAATTGGCCCGTAAGTACAAGGAACCCCCAGTTGTGGT
GAATACGATTGCTAGTCACCACGGAGATGTTGAAGCTGAGAGCGTGATAG
CAGTTATCGTCGCTGCAGCAGATGCCTTGAGCGCAGCCCGTCCAGGTGCT
CGTAGTGAGTCTCTTGAAAGCTACATCAAGCGTCTCCATGATTTGGAAGA
AATTGCTAACGGCTTGAAGGAGTGCAAACTAGCTTTGCCCTTCAAGCAGG
ACGTGAAATTCGTATCATGGTCAATCCAGGAAAAATCAAGGACGACAAAG
TCACAATCTTGGCTCACAAAGTTCGTAAGAAAATTGAAAACAATCTCGAT
TATCCAGGAAATATCAAGGTAACCGTGATTCGCGAGCTTCGTGCAGTAGA
TTATGCTAAATAA

4158.7

(SEQ. ID. NO. 278)

ATGATGTTAAAACCCTCTATTGATACCTTGCTCGACAAGGTTCCTTCAAA
ATATTCACTCGTAATCTTGGAAGCAAAACGTGCCCACGAATTGGAAGCAG
GTGCCCCAGCAACTCAAGGTTTCAAGTCTGAAAAATCAACTCTTCGCGCT
TTAGAAGAAATCGAATCAGGAAACGTTACAATTCACCCAGATCCAGAAGG
AAAACGTGAAGCAGTGCGTCGCCGTATCGAAGAAGAAAACGCCGCAAAGA
AGAAGAAGAAAAGAAAATCAAAGAGCAAATTGCTAAAGAAAAAGAAGATG
GTGAAAAAATTTAA

4161.1

(SEQ. ID. NO. 279)

ATGTCAGCATATCAATTACCGACCGTATGGCAGGATGAAGCTAGTAATCA
AGGAGCTTTTACGGGGCTAAACAGACCAACAGCAGGTGCCCGTTTCGAAC

TABLE 1-continued

AAAACTTGCCAAAAGGAGAACAAGCTTTTCAGCTTTATTCACTGGGAACA
CCAAATGGTGTGAAGGTTACTATCTTATTGGAAGAATTACTAGAAGCTGG
TTTTAAGGAAGCGGCTTACGACTTGTATAAGATTGCTATCATGGATGGGG
ATCAATTCGGATCAGACTTTGTGAAGCTCAATCCAAATTCCAAGATTCCA
GCCTTATTGGACCAGTCAGGTACTGAAAACGTAAGAGTCTTTGAGTCTGC
TCATATTCTTCTTTACCTTGCTGAGAAATTTGGAGCCTTTTTACCAAGTA
ATCCTGTGGAAAAGGTAGAAGTTTTGAATTGGCTATTCTGGCAAGCAGGT
GCAGCACCTTTTCTAGGTGGGGGATTTGGACATTTCTTCAATTATGCTCC
TGAAAAATTGGAATATCCTATTAACCGTTTTACGATGGAAGTGAAACGCC
AGTTGGATTTATTGGATAAGGAATTGGCTCAGAAACCTTATATTGCAGGC
AATGACTATACGATTGCAGATATTGCTATCTGGTCTTGGTATGGACAGTT
AGTTCAAGGAAATCTTTACCAAGGTTCTGCAAAATTCTTGGATGCCTCAA
GTTATCAAAATCTAGTAAAATGGGCAGAAAAAATTGCCAATCGTCCAGCT
GTTAAGCGTGGCTTGGAAGTAACTTATACAGAAATTAAATAG

4161.2

(SEQ. ID. NO. 280)

TTGGCAAGCTTGATCACTTCTATCATCATGTTCTATGTCGGTTTCGATGT
TCTAAGAGATACCATTCAAAAGATTCTCAGTCGGGAAGAAACGGTCATTG
ATCCTCTTGGTGCAACTCTAGGAATCATTTCTGCAGCGATTATGTTTGTG
GTCTATCTCTACAATACTCGCCTCAGTAAGAAATCCAACTCCAATGCGCT
GAAGGCAGCTGCTAAGGACAATCTTTCTGACGCTGTTACCTCACTTGGAA
CCGCCATTGCCATCCTAGCTAGTAGTTTCAATTATCCGATTGTGGATAAA
CTGGTTGCTATCATCATCACTTTCTTTATCTTGAAGACTGCCTATGATAT
CTTCATCGAGTCTTCCTTTAGTCTTTCAGATGGCTTTGACGACCGCCTGC
TCGAGGACTACCAAAAGGCTATCATGGAAATTCCCAAAATCAGCAAGGTC
AAATCGCAAAGAGGTCGCACCTACGGTAGCAACATCTACCTGGATATTAC
ACTAGAGATGAATCCTGACTTGTCTGTTTTTGAAAGCCATGAAATCGCGG
ATCAGGTCGAGTCTATGCTGGAGGAGCGTTTTGGCGTCTTTGATACCGAT
GTCCATATCGAACCAGCACCTATCCCTGAGGATGAAATTTTAGACAATGT
CTATAAAAAATTGCTTATGCGTGAACAATTGATTGACCAAGGAAACCAAC
TAGAAGAACTCTTGACTGATGATTTTGTCTATATTCGCCAAGATGGAGAG
CAGATGGATAAAGAGGCTTATAAGACCAAAAAAGAGTTAAATTCTGCTAT
CAAGGACATTCAAATTACTTCCATCAGTCAAAAAACCAAACTCATCTGCT
ATGAGTTAGATGGTATCATCCATACCAGTATCTGGCGTCGCCACGAAACC
TGGCAAAATATCTTTCATCAAGAAACCAAAAAAGAATAG

4162.1

(SEQ. ID. NO. 281)

ATGACAATTAAACTAGTAGCAACGGATATGGACGGAACCTTCCTAGATGG
GAATGGACGCTTTGATATGGATCGTCTCAAGTCTCTCTTGGTTTCCTACA
AGGAAAAAGGGATTTACTTTGCGGTAGCTTCGGGTCGGGGATTTCTGTCT
CTAGAAAAATTATTTGCTGGTGTTCGTGATGACATTATTTTCATCGCGGA
AAATGGCAGTTTGGTAGAGTATCAAGGTCAGGACTTGTATGAAGCGACTA
TGTCTCGTGACTTTTATCTGGCAACTTTTGAAAAGCTGAAAACTTCACCT
TATGTAGATATCAATAAACTGCTCTTGACGGGTAAGAAGGGTTCATATGT
TCTAGATACGGTTGATGAGACCTATTTGAAAGTGAGTCAGCACTATAATG
AAAATATCCAAAAAGTAGCGAGTTTGGAAGATATCACAGATGACATTTTC
AAATTTACAACCAACTTCACAGAAGAAACGCTGGAAGATGGGGAGGCTTG
GGTAAACGAAAACGTTCCTGGTGTTAAGGCCATGACAACTGGCTTTGAAT
CCATTGATATTGTTCTGGACTATGTCGATAAGGGAGTGGCCATTGTTGAA
TTAGTTAAAAAACTTGGTATCACAATGGATCAGGTCATGGCTTTTGGAGA
CAATCTTAATGACTTACATATGATGCAGGTTGTGGGACATCCTGTAGCTC
CTGAAAATGCACGACCTGAAATTTAGAATTAGCAAAGACTGTGATTGGTC
ACCATAAGGAACGGTCGGTTATAGCTTATATGGAGGGCTTATAA

4162.2

(SEQ. ID. NO. 282)

ATGGCAGATATAAAATTGATTGCATTGGACTTGGACGGGACCTTGCTGAC
TACTGATAAAAGGCTGACGGATCGTACCAAGGAAACCTTGCAAGCTGCGC
GTGATCGTGGTATCAAGGTCGTATTGACAACTGGTCGTCCCTTAAAAGCC
ATGGATTTCTTTCTCCATGAGTTAGGGACTGACGGTCAGGAAGATGAGTA
TACCATTACTTTTAATGGTGGATTAGTTCAGAAAAATACAGGAGAAATCC
TTGATAAAACAGTCTTTTCATATGATGATGTGGCACGTTTGTATGAAGAA
ACAGAGAAATTATCACTGCCTCTTGATGCCATCTCAGAAGGAACAGTTTA
TCAAATCCAATCGGACCAAGAAAGTCTTTATGCCAAATTCAATCCAGCTT
TGACCTTTGTTCCAGTGGACTTTGAAGACTTATCTAGTCAAATGACCTAC
AACAAATGCGTGACTGCCTTTGCTCAAGAACCCTTGGATGCAGCCATTCA
GAAGATTTCTCCAGAATTGTTGACCAATATGAAATCTTTAAATCACGTGA
AATGTTGCTAGAATGGTCACCAAAGAATGTTCATAAAGCAACAGGTTTGG
CAAAACTAATCAGCCATCTTGGAATCGACCAAAGTCAAGTGATGGCTTGT
GGTGACGAGGCCAATGACCTCTCTATGATTGAATGGGCAGGTCTTGGTGT
TGCTATGCAAAACGCTGTTCCTGAAGTAAAGGCAGCCGCAAATGTAGTGA
CGCCGATGACCAACGATGAGGAAGCTGTCGCCTGGGCTATCGAAGAATAT
GTGCTAAAGGAGAACTAA

TABLE 1-continued

4164.2

(SEQ. ID. NO. 283)

ATGGAAAGTTTACTTATTCTATTATTAATTGCCAATCTAGCTGGTCTCTT
TCTGATTTGGCAAAGGCAGGATAGGCAGGAGAAACACTTAAGTAAGAGCT
TGGAGGATCAGGCAGATCATTTGTCAGACCAGTTGGATTACCGCTTTGAC
CAAGCCAGACAAGCCAGCCAGTTAGACCAAAAAGATTTGGAAGTGGTTGT
CAGCGACCGTTTGCAAGAAGTGCGGATTGAATTGCACCAAGGTCTGACCC
AAGTCCGTCAAGAAATGACAGATAATCTCCTCCAAACTAGAGACAAGACA
GACCAACGTCTCCAAGCCTTGCAGGAATCAAATGAGCAACGTTTGGAACA
AATGCGCCAGACGGTCGAGGAAAAACTAGAAAAGACCTTGCAGACACGCT
TACAGGCTTCCTTTGAGACAGTTTCTAAACAACTGGAGTCTGTCAATCGT
GGCCTTGGAGAAATGCAGACAGTTGCCCGTGATGTCGGAGCTCTTAACAA
GGTTCTCTCTGGAACCAAGACGCGAGGGATTCTGGGAGAATTGCAACTGG
GGCAAATTATTGAAGACATCATGACACCTGCCCAGTACGAACGAGAATAC
GCAACGGTTGAAAACTCTAGTGAACGAGTGGAGTATGCCATCAAGTTACC
CGGACAAGGCGACCAAGAATACGTCTATCTGCCAATTGACTCTAAGTTTC
CACTGGCAGATTATTACCGCTTGGAAGAAGCCTATGAGACAGGTGACAAG
GATGAGATTGAACGCTGTCGTAAGTCACTCCTAGCAAGCGTCAAGCGCTT
TGCTAGGGATATTAGGAACAAGTACATAGCACCACCTCGGACGACCAATT
TTGGAGTTTTGTTTGTTCCGACAGAAGGTCTCTACTCAGAAATCGTCCGC
AATCCGGTCTTCTTTGATGATTTGAGACGGGAAGAACAGATTATTGTTGC
AGGACCAAGTACCCTATCAGCCCTTCTTAACTCCCTATCAGTTGGTTTCA
AGACCCTTAATATCCAAAAGAGTGCCGACCATATCAGCAAGACTCTTGCC
AGTGTCAAGACCGAGTTTGGCAAGTTTGGTGGTATTCTGGTCAAGGCACA
AAAACATCTCCAACATGCCTCTGGCAATATTGATGAATTATTAAACCGTC
GTACCATAGCTATCGAGCGGACGATCCGTCACATTGAGTTGTCAGAAGGT
GAGCCTGCGCTTGATCTACTCCATTTTCAAGAAAATGAGGAAGAATATGA
AGATTAG

4164.3

(SEQ. ID. NO. 284)

ATGAAGATTAGTCACATGAAAAAAGATGAGTTATTTGAAGGCTTTTACCT
AATCAAATCAGCTGACCTGAGGCAAACTCGAGCTGGGAAAAACTACCTAG
CCTTTACCTTCCAAGATGATAGTGGCGAGATTGATGGGAAGCTCTGGGAT
GCCCAACCTCATAACATTGAGGCCTTTACCGCAGGTAAGGTTGTCCACAT
GAAAGGACGCCGAGAAGTTTATAACAATACCCCTCAAGTCAATCAAATTA
CTCTCCGCCTGCCTCAAGCTGGTGAACCCAATGACCCAGCTGATTTCAAG
GTCAAGTCACCAGTTGATGTCAAGGAAATTCGTGACTACATGTCGCAAAT
GATTTTCAAAATTGAAAATCCTGTCTGGCAACGGATTGTCCGAAATCTCT
ACACCAAGTATGATAAGGAATTCTACTCCTATCCAGCTGCCAAGACCAAC
CACCATGCCTTTGAAACGGGCTTGGCCTATCATACGGCGACCATGGTGCG
TTTGGCAGACGCTATTAGCGAAGTTTATCCTCAGCTCAATAAGAGCCTGC
TCTATGCGGGGATTATGTTGCATGACTTAGCTAAGGTCATCGAGTTGACG
GGGCCAGACCAGACAGAGTACACAGTGCGAGGTAATCTTCTTGGACATAT
CGCTCTCATTGATAGCGAAATTACCAAGACAGTTATGGAACTCGGCATCG
ATGATACCAAGGAAGAAGTCGTTTTGCTTCGTCATGTCATCCTCAGTCAC
CACGGCTTGCTTGAGTATGGAAGCCCAGTCCGTCCACGCATTATGGAAGC
AGAGATTATCCATATGATTGACAATCTGGATGCAAGCATGATGATGATGT
CAACAGCTCTTGCTTTGGTGGATAAAGGAGAGATGACCAATAAAATCTTC
GCTATGGATAATCGTTCCTTCTATAAACCAGATTTAGATTAA

4166.2

(SEQ. ID. NO. 285)

ATGAGTGAAAAAGCTAAAAAAGGGTTTAAGATGCCTTCATCTTACACCGT
ATTATTGATAATCATTGCTATTATGGCAGTGCTAACTTGGTTTATCCCTG
CGGGGGCCTTTATAGAAGGTATTTACGAGACTCAGCCTCAAAATCCACAA
GGGATTTGGGATGTCCTGATGGCACCGATTCGGGCTATGCTAGGTACTCA
TCCAGAGGAAGGTTCGCTCATTAAAGAAACGAGCGCAGCGATTGATGTAG
CCTTCTTCATCCTTATGGTTGGTGGTTTCCTTGGCATTGTCAACAAAACT
GGTGCTCTTGACGTAGGGATTGCCTCTATCGTGAAGAAGTATAAGGGCCG
CGAAAAAATGTTAATTTTGGTACTGATGCCTTTGTTTGCCCTCGGTGGTA
CAACTTATGGTATGGGTGAAGAAACAATGGCCTTCTATCCACTCCTTGTG
CCAGTTATGATGGCCGTTGGTTTTGATAGCCTGACTGGTGTTGCAATTAT
TTTGCTCGGTTCTCAAATCGGCTGTTTGGCATCTACTCTGAATCCATTTG
CGACAGGTATTGCTTCAGCGACTGCGGGAGTTGGTACAGGGGACGGTATC
GTACTTCGTCTGATCTTCTGGGTTACCTTGACTGCTCTTAGTACTTGGTT
TGTTTACCGTTATGCGGATAAGATTCAAAAAGATCCGACTAAGTCACTGG
TTTATAGTACTCGCAAAGAAGATTTGAAACACTTTAACGTAGAAGAATCT
TCATCTGTAGAATCTACACTTAGCAGCAAACAAAAATCAGTTCTCTTCTT
ATTTGTGTTGACATTCATCTTGATGGTATTGAGCTTCATTCCATGGACAG
ACCTTGGCGTTACCATTTTTGATGACTTTAATACTTGGTTGACTGGTCTT
CCAGTTATTGGTAATATTGTCGGTTCATCTACTTCTGCACTAGGTACTTG
GTACTTCCCAGAAGGCGCAATGCTCTTTGCCTTTATGGGTATCCTGATTG
GTGTTATTTATGGTCTTAAAGAAGATAAGATTATCTCTTCCTTCATGAAT
GGTGCTGCTGACTTGCTCAGTGTTGCCTTGATCGTAGCGATTGCTCGTGG
TATTCAAGTTATCATGAACGACGGTATGATTACCGATACAATCCTCAACT

TABLE 1-continued

GGGGTAAAGAAGGCTTGAGCGGTCTATCTTCACAAGTCTTTATCGTTGTA
ACTTATATCTTCTATCTACCTATGTCATTCTTGATCCCATCTTCATCTGG
TCTTGCCAGCGCAACTATGGGTATCATGGCTCCACTTGGAGAATTTGTAA
ATGTCCGTCCTAGCTTGATTATCACTGCTTACCAATCTGCTTCAGGTGTC
TTGAACTTGATTGCACCAACATCTGGTATTGTGATGGGAGCTCTTGCACT
TGGACGTATCAACATTGGTACTTGGTGGAAATTCATGGGCAAACTCGTAG
TCGCTATTATTGTAGTGACCATCGCCCTTCTTCTCCTTGGAACCTTCCTT
CCATTCCTATAA

4166.3

(SEQ. ID. NO. 286)

ATGAAAATAGATATAACAAATCAAGTTAAAGATGAATTTCTTATATCATT
AAAAACCTTGATTTCCTATCCTTCAGTACTCAATGAAGGAGAAAATGGAA
CACCTTTTGGACAAGCAATCCAAGATGTCCTAGAAAAAACTTTAGAGATT
TGTCGAGACATAGGTTTCACTACCTATCTTGACCCTAAAGGTTATTACGG
ATATGCAGAAATCGGTCAGGGAGCAGAGCTTCTGGCCATTCTCTGTCATT
TGGATGTTGTTCCATCAGGTGATGAAGCAGATTGGCAGACACCGCCATTT
GAAGCAACTATCAAAGACGGCTGGGTATTCGGACGTGGTGTCCAAGATGA
TAAAGGCCCTTCGCTCGCAGCTCTCTATGCAGTAAAAAGCTTGCTGGACC
AAGGTATTCAGTTCAAAAAGCGCGTACGCTTTATCTTTGGTACCGATGAG
GAAACCCTCTGGCGCTGCATGGCACGCTACAATACCATCGAAGAACAGGC
CAGTATGGGCTTTGCACCTGACTCATCTTTTCCTCTGACCTATGCTGAAA
AAGGGCTTCTACAGGTCAAACTTCATGGCCCTGGATCGGATCAACTAGAG
CTTGAAGTAGGAGGCGCCTTTAACGTTGTACCAGACAAGGCCAACTACCA
AGGTCTCCTCTATGAACAGGTTTGTAACGGTCTCAAAGAAGCTGGTTATG
ATTACCAAACCACTGAACAAACCGTAACGGTTCTCGGAGTGCCAAAGCAT
GCTAAGGATGCTAGTCAAGGTATCAATGCTGTCATCCGACTAGCTACCAT
TCTTGCTCCTCTCCAAGAACACCCTGCTCTCAGTTTTCTTGCAACACAAG
CAGGTCAAGACGGCACAGGAAGACAAATCTTTGGTGATATAGCAGATGAA
CCTTTCTGGTCACCTATCCTTTAATGTCGCAGGTCTCATGATCAATCATG
AACGTTCTGAAATCCGTATTGACATTCGGACTCCTGTCTTAGCTGACAAG
GAAGAACTAGTAGAGTTGCTTACAAGATGTGCACAAAACTACCAACTCCG
CTACGAAGAGTTTGACTATCTAGCGCCTCTATACGTCGCAGAAGACAGTA
AACTCGTTAGCACACTGATGCAAATCTACCAAGAAAAGACTGGCGATAAC
AGTCCTGCTATTTCATCCGGTGGTGCCACTTTTGCTCGCACCATGCCAAA
TTGTGTAGCCTTCGGCGCCTTATTCCCAGGAGCGAAGCAGACAGAACATC
AGGCAAATGAATGTGCCGTTCTAGAAGATTTGTACCGTGCTATGGATATT
TATGCCGAAGCCGTCTATCGACTTGCAACTTAA

4169.1

(SEQ. ID. NO. 287)

ATGTCTAATTCATTTGTCAAGTTGTTAGTCTCTCAATTATTTGCAAATTT
AGCAGATATTTTCTTTAGAGTAACAATCATTGCTAACATATACATTATTT
CAAAATCAGTAATTGCCACATCACTAGTTCCTATCTTAATAGGAATATCC
TCTTTTGTTGCGAGTCTTTTAGTTCCGTTGGTTACTAAAAGGTTAGCGCT
AAATAGGGTTTTATCTTTATCTCAATTTGGAAAGACTATATTATTGGCGA
TACTGGTAGGAATGTTTACCGTAATGCAATCCGTAGCGCCTTTGGTGACC
TATCTATTTGTTGTTGCAATTTCCATACTAGATGGTTTTGCAGCACCCGT
TTCCTATGCTATTGTGCCACGCTATGCGACCGATTTGGGTAAGGCTAATT
CAGCCTTATCAATGACTGGTGAAGCTGTTCAATTGATAGGTTGGGGATTA
GGTGGACTCTTGTTTGCAACAATTGGTCTGTTACCTACCACGTGTATCAA
TTTAGTCTTGTATATCATTTCTAGCTTTCTGATGTTATTTCTTCCTAACG
CTGAAGTGGAGGTGTTAGAGTCAGAAACTAATCTTGAAATTTTGCTCAAA
GGTTGGAAGTTAGTTGCTAGAAATCCTAGATTAAGACTTTTTGTATCAGC
AAATTTATTGGAAATTTTTTCAAATACGATTTGGGTTTCTTCCATTATAC
TTGTTTTTGTAACGGAGTTATTAAATAAAACGGAAAGTTACTGGGGATAT
TCTAATACAGCATACTCTATTGGTATTATAATTAGTGGCTTAATTGCTTT
TAGGCTATCTGAAAAGTTCCTTGCTGCTAAATGGGAAGGGGAATTATTCA
CCCCAAATCTAAAAACCATCCAGAATCCTGCCTTAGCTTAGATCCTGGAT
GGTTTCTTTTTTCACCCAATGGGTGTTTTTTACTAGACAAAAAAGAGTTT
CCCCTTTATGGTATAAGTGTAGAAAAAAACACAAAAAGAAAGGAAACTCA
CATGAACAGTTTACCAAATCATCACTTCCAAAACAAGTCTTTTTACCAAC
TATCTTTCGATGGAGGTCATTTAACCCAGTATGGTGGTCTTATCTTTTTT
CAGGAACTTTTTTCCCAGTTGAAACTAAAAGAGCGGATTTCTAAGTATTT
AGTAACGAATGACCAACGCCGCTACTGTCGTTATTCGGATTCAGATATCC
TTGTCCAGTTCCTCTTTCAACTGTTAACAGGTTATGGAACGGACTATGCT
TGTAAAGAATTGTCAGCTGATGCCTACTTTCCAAAATTGTTGGAAGGAGG
GCAGCTTGCTTCACAGCCAACCTTATCCCGTTTTCTTTCCAGAACTGACG
AGGAAACAGTCCATAGTTTGCGATGCCTCAACCTTGAATTGGTCGAATTC
TTTTTACAGTTTCACCAGCTAAACCAACTCATTGTAGATATCGATTCTAC
CCATTTCACAACTTATGGCAAGCAAGAAGGTGTTGCTTATAACGCCCACT
ATCGTGCTCATGGCTATCATCCTCTTTATGCTTTCGAGGGGAAGACAGGT
TATTGTTTCAATGCCCAGCTTCGTCCTGGTAATCGTTATTGTTCTGAAGA
GGCAGACAGCTTTTATCACACCTGTTTTAGAACGGTTTAATCAACTTCTC
TTTCGAATGGATAGTGGCTTTGCGACCCCAAAATTATACGATTTAATTGA
AAAAACAGGGCAATACTACCTCATAAAACTCAAGAAAAATACTGTTCTGA

TABLE 1-continued

GCCGTCTTGGAGACCTTTCCCTCCCTTGCCCACAGGATGAGGACTTAACC
ATCTTGCCCCACTCCGCCTACTCAGAAACTCTCTATCAAGCAGGATCTTG
GTCGCACAAGCGTCGTGTCTGCCAGTTCTCTGAACGAAAAGAAGGAAACT
TGTTCTACGATGTTATTTCTCTCGTTACAAATATGACGAGTGGAACAAGC
CAAGACCAGTTTCAGCTTTATCGTGGACGTGGTCAAGCCGAGAATTTCAT
CAAGGAGATGAAGGAGGGATTTTTTGGCGATAAAACGGATAGTTCAACCT
TAATCAAAAACGAAGTTCGTATGATGATGAGCTGTATCGCCTACAATCTC
TATCTTTTTCTCAAACATCTAGCTGGAGGTGACTTCCAAACTTTAACAAT
CAAACGCTTCCGCCATCTTTTTCTTCACGTGGTGGGAAAATGTGTTCGAA
CAGGACGCAAGCAGCTCCTCAAATTGTCTAGTCTCTATGCCTATTCCGAA
TTGTTTTCAGCACTTTATTCTAGGATTAGAAAAGTCAACCTGAATCTTCC
TGTTCCTTATGAACCACCTAGAAGAAAAGCGTCGTTAATGATGCATTAA

4169.3

(SEQ. ID. NO. 288)

ATGATGGAGTTTTTTCAACAGCTTCCTCATTTAGAGCCATATGGCAATCC
TCAGTATTTTGTTTATGTGATTGCTGCAACCTTGCCCATCTTTATAGGTC
TCTTTTTCAAGAAACGCTTTGCCTGGTATGAAGTGTTGGTAAGTCTCTTC
TTTATTGTCACCATGTTGGTGGGTGGAAAGACCAATCAACTAGCTGCCTT
GGGTATTTACCTTTGCTGGGAAATATTGCTCCTGCTTTTCTACAAGCATT
ATCGAAAAAGCAAGGATGGCAAGTGGGTCTTCTACTTAGTTAGTTTTCTG
TCCCTACTTCCGATTATCTTTGTCAAGGTGCAACCAGCTATCAATGGAAC
GCAGTCTTTGCTTGGGTTCTTGGGAATTTCTTACCTGACCTTTCGTTCGG
TTGGAATTGTCATCGAGCTGAGAGATGGAGTGATTAAGGATTTTACCCTC
TGGGAATTCCTCCGTTTCCTTCTCTTCATGCCAACTTTCTCGAGTGGTCC
AATCGATCGCTTTAAGCGATTTAATGAAAATTATCAGGCTATTCCTGAGC
GAGATGAGTTGATGGATATGCTGGATGAATCTGTCCGCTATATCATGTGG
GGCTTTTTGTATAAGTTTATCCTAGCTCATGTTTTAGGAGAGACCTTACT
ACCTCCTCTGAAGAATTTAGCCTTGCAGTCAGGTGGCTTCTTTAATCTCT
ATGCCTTGGCAGTTATGTATACTTTTGGTCTGGAACTCTTCTTTGACTTT
GCAGGTTATTCTATGTTTGCTTTGGCCATCTCAAACTTGATGGGAATCCG
TAGCCCTATCAACTTTAACAAGCCCTTTTTATCAAGGGATTTAAAGGAGT
TTTGGAATCGCTGGCATATGAGTCTGTCCTTCTGGTTCCGTGACTTTGTC
TTTATGCGAATGGTGATGGTGTTAACCAGAAAGAAAGTCTTTAAAAATCG
TAATGTAACCTCAAGCATGGCCTACATTGTAAATATGCTGATTATGGGAT
TTTGGCATGGTGTGACCTGGTACTATATCGCCTATGGACTCTTTCATGGA
CTAGGCTTGGTCATCAATGATGCCTGGGTTCGCAAGAAAAAAACGCTCAA
TAAGGAACGGAAAAAAGCAGGGAAGGCTGCCCTACCTGAGAATCGCTGGA
TTCAGTTGCTTGGCATGGTTGTCACTTTCCATGTTGTCATGTTGTCATTC
TTAATCTTTTCTGGATTCTTGAATAATCTATGGTTTAAAAAATAA

4169.4

(SEQ. ID. NO. 289)

ATGCTTAAACGCTTATGGATGATCTTCGGACCGGTCTTGATCGCTGGTTT
GTTGGTTTTTCTGCTCATTTTCTTTTATCCTACTGAGATGCATCATAATC
TAGGAGCTGAAAAGCGTTCAGCAGTGGCTACTACTATCGATAGTTTTAAG
GAGCGAAGTCAAAAAGTCAGAGCACTATCTGATCCAAATGTGCGTTTTGT
TCCCTTCTTTGGCTCTAGTGAATGGCTTCGTTTTGACGGTGCTCATCCTG
CGGTATTAGCTGAGAAATACAATCGTTCCTACCGTCCTTATCTTTTAGGA
CAGGGGGGAGCTGCATCGCTTAACCAATATTTTGGAATGCAACAGATGTT
ACCACAGCTGGAGAATAAACAAGTTGTGTATGTTATCTCACCTCAGTGGT
TCAGTAAAAATGGCTATGATCCAGCAGCCTTCCAGCAGTATTTTAATGGA
GACCAGTTGACTAGTTTTCTGAAACATCAATCTGGGGATCAGGCTAGTCA
ATATGCAGCGACTCGCTTACTGCAACAGTTCCCAAACGTAGCTATGAAGG
ACCTGGTTCAGAAGTTGGCAAGTAAAGAAGAATTGTCGACAGCAGACAAT
GAAATGATTGAATTATTGGCTCGTTTTAATGAACGCCAAGCTTCCTTTTT
TGGTCAGTTTTCGGTTAGAGGCTATGTTAACTACGATAAGCATGTAGCTA
AGTATTTAAAAATCTTGCCAGACCAGTTTTCTTATCAGGCAATAGAAGAT
GTTGTCAAAGCAGATGCTGAAAAAAATACTTCCAATAATGAGATGGGAAT
GGAAAATTATTTCTATAATGAGCAGATCAAGAAGGATTTGAAGAAATTAA
AGGATTCTCAGAAAAGCTTTACCTATCTCAAGTCGCCAGAGTATAATGAC
TTGCAGTTGGTTTTAACACAGTTTTCTAAATCTAAGGTAAACCCGATTTT
TATCATTCCACCTGTTAATAAAAAATGGATGAACTATGCTGGTCTACGAG
AGGATATGTACCAACAAACGGTGCAGAAGATTCGCTACCAGTTAGAAAGT
CAAGGTTTTACCAATATAGCAGATTTTTCTAAGGACGGCGGGGAGCCTTT
CTTTATGAAGGACACCATTCACCTTGGTTGGTTGGGTTGGTTGGCTTTTG
ACAAGGCAGTTGATCCTTTCCTATCCAATCCCACACCAGCTCCGACTTAC
CATCTGAATGAGCGCTTTTTCAGCAAAGATTGGGCGACTTATGATGGAGA
TGTCAAAGAATTTCAATAG

4169.6

(SEQ. ID. NO. 290)

ATGGAGAAAAACCTCAAGGCTTTGAAACAAACAACAGACCAAGAAGGCCC
AGCAATTGAACCTGAAAAGGCAGAGGATACCAAGACAGTCCAAAATGGTT
ACTTCGAGGATGCAGCTGTCAAGGACCGCACCTTGAGTGACTATGCAGGT
AACTGGCAATCAGTTTATCCTTTCCTTGAAGACGGCACGTTTGACCAAGT

TABLE 1-continued

CTTTGACTACAAGGCTAAGTTGACTGGTAAGATGACCCAGGCTGAGTACA
AGGCTTACTATACAAAAGGCTATCATACAGATGTGACTAAGATTAACATT
ACTGATAATACTATGGAATTTGTTCAAGGTGGACAAAGCAAGAAATACAC
TTACAAGTATGTCGGTAAGAAAATTTTGACTTACAAGAAAGGCAATCGTG
GCGTGCGTTTCCTCTTTGAAGCCACAGATGCTGACGCTGGACAATTCAAG
TATGTTCAGTTTAGTGACCACAATGTTGCCCCAGTTAAGGCAGAACATTT
CCATATCTTCTTTGGAGGCACAAGCCAAGAAGCCCTCTTTGAAGAAATGG
ACAACTGGCCAACCTACTACCCAGATAACCTATCTGGCCAAGAAATCGCC
CAAGAAATGTTGGCGCATTGA

4170.3

(SEQ. ID. NO. 291)

ATGAAAGATGGTCATTTGCTAGCCCATCATATTCGTTTGTTGAATGGGCG
GATTTTTCAAAAGTTACTGAGTCAAGATCCTGAGGCTCTTTATAGGGGTG
AACAGGGCAAGATTTTAGCGGTTTTATGGAATAGTGAAACTGGCTGCGCA
ACTGCGACAGATATCGCGCTTGCGACTTGGACTTGCGAATAATACGCTGAC
GACTATGATAAAAAAGCTAGAGGAACAAAAGCTTGTAATTGTTAGTCCGT
GTGGAAAAGACAAGCGTAAGAAGTATTTAGTTTTAACGGAGTTAGGCAAG
TCCCAGAAAGAAGTGGGGCATCGTGTCAGTCAGAAATTGGATACTATCTT
TTACAAAGGATTTTCAGAGGAAGAAATTCACCAATTTGAAGGTTTTCAAG
AAAGAATTTTGGCGAATCTGAAAGAGAAGGGAAATGAGGTTTAG

4170.4

(SEQ. ID. NO. 292)

ATGACTAATTTAATTGCAACTTTTCAGGATCGTTTTAGTGATTGGTTGAC
AGCTCTATCTCAACATTTGCAGTTGTCGCTTTTGGACCTTGTTACTAGCTA
TTTTGCTTGCGATTCCCTTGGCTGTTTTTCTTCGCTATCATGAGAAGCTG
GCCGACTGGGTCTTGCAGATTGCAGGTATTTTCCAGACCATCCCGTCTCT
GGCCTTGTTGGGGCTCTTTATCCCTTTGATGGGAATTGGGACCTTGCCGG
CTTTGACAGCTCTAGTGATTTATGCGATTTTCCCTATTTTGCAAAATACT
ATCACTGGGCTGAAGGGAATTGATCCGAACCTGCAAGAGGCTGGGATTGC
CTTTGGGATGACCAGATGGGAACGTCTCAAGAAATTTGAAATTCCACTCG
CCATGCCTGTTATCATGTCTGGGATTCGGACGGCAGCTGTTTTGATTATC
GGTACGGCAACCTTGGCGGCCTTGATTGGTGCAGGGGGACTAGGTTCCTT
TATTCTTTTGGGAATTGACCGTAATAATGCCAGTTTGATTTTGATTGGGG
CACTTTCTTCTGCAGTGCTAGCCATTGCCTTTAACTTCCTACTAAAAGTG
ATGGAAAAAGCAAAATTACGGACGATTTTCTCAGGTTTTGCCTTGGTGGC
TTTATTACTGGGTCTGTCTTATAGTCCAGCTCTTTTGGTTCAAAAAGAGA
AGGAAAACTTGGTTATTGCTGGGAAAATAGGTCCAGAACCAGAAATTTTG
GCCAATATGTATAAGTTGCTGATTGAAGAAAATACCAGCATGACTGCGAC
TGTTAAACCGAATTTTGGGAAGACAAGCTTCCTTTATGAAGCTCTGAAAA
AAGGCGATATTGACATCTATCCTGAATTTACTGGTACGGTGACTGAAAGT
TTGCTTCAACCATCACCCAAGGTGAGTCATGAACCAGAACAGGTTTATCA
GGTGGCGCGTGATGGCATTGCTAAGCAGGATCATCTAGCCTATCTCAAAC
CCATGTCTTATCAAAACACCTATGCTGTAGCTGTTCCGAAAAAGATTGCT
CAAGAATATGGCTTGAAGACCATTTCAGACTTGAAAAAAGTGGAAGGGCA
GTTGAAGGCAGGTTTTACACTCGAGTTTAACGACCGTGAAGATGGAAATA
AGGGCTTGCAATCAATGTATGGTCTCAATCTCAATGTAGCGACCATTGAG
CCAGCCCTTCGCTATCAGGCTATTCAGTCAGGGGATATTCAAATCACGGA
TGCCTATTCGACTGATGCGGAATTGGAGCGTTATGATTTACAGGTCTTGG
AAGATGACAAGCAACTCTTCCCACCTTATCAAGGGGCTCCACTCATGAAA
GAAGCTCTTCTCAAGAAACACCCAGAGTTGGAAAGAGTTCTTAATACATT
GGCTGGTAAGATTACAGAAAGCCAGATGAGCCAGCTCAACTACCAAGTCG
GTGTTGAAGGCAAGTCAGCAAAGCAAGTAGCCAAGGAGTTTCTCCAAGAA
CAAGGTTTGTTGAAGAAATGA

4170.5

(SEQ. ID. NO. 293)

ATGATGCATACTTATTTGCAAAAGAAAATTGAAAATATCAAAACAACCCT
AGGTGAAATGTCAGGTGGTTACCGTCGTATGGTTGCGGCTATGGCTGATT
TAGGATTTTCAGGAACTATGAAGGCTATCTGGGATGACCTCTTTGCCCAT
CGTAGTTTTGCCCAGTGGATTTATTTGCTGGTTTTAGGAAGTTTTCCTCT
CTGGCTGGAGTTGGTTTACGAACATCGTATTGTTGACTGGATTGGGATGA
TTTGTAGCTTGACAGGGATTATCTGTGTAATCTTTGTATCGGAAGGTCGA
GCAAGTAATTATCTTTTTGGCTTGATTAACTCTGTTATTTACCTTATTTT
GGCCCTACAGAAAGGCTTTTATGGTGAGGTGCTGACGACACTTTACTTCA
CAGTCATGCAGCCAATTGGACTTCTAGTTTGGATTTATCAGGCACAGTTT
AAGAAGGAAAAGCAGGAGTTTGTCGCGCGTAAACTGGACGGCAAGGGCTG
GACAAAGTATCTTTCCATTAGTGTGCTTTGGTGGTTGGCCTTTGGCTTCA
TTTATCAGTCTATTGGTGCCAATCGTCCCTATCGTGATTCAATCACAGAT
GCAACCAATGGGGTAGGGCAAATCCTCATGACAGCTGTTTACCGTGAACA
GTGGATATTCTGGGCGGCTACCAATGTCTTTTCAATCTATCTCTGGTGGG
GAGAAAGCCTGCAAATTCAAGGGAAATATCTAATTTATCTCATTAACAGT
CTAGTTGGTTGGTATCAATGGAGCAAGGCAGCTAAGCAGAATACTGATTT
ACTTAACTAG

TABLE 1-continued

4170.6

(SEQ. ID. NO. 294)

ATGAGAAATATGAAGGCAAAATATGCTGTTTGGGTGGCTTTTTTCTTAAA
TTTGACTTATGCCATTGTTGAGTTTATGCAGGTGGAGTATTTGGTTCTAG
CGCTGTTCTTGCTGACTCTGTGCATGACTTGGGAGATGCGATTGCAATTG
GAATATCAGCTTTTCTAGAAACAATCTCCAATCGTGAAGAAGACAATCAG
TACACCTTGGGCTATAAGCGGTTTAGCCTGCTAGGAGCCTTGGTAACAGC
TGTGATTCTCGTAACGGGCTCTGTTCTAGTCATTTTGGAAAATGTCACGA
AGATTTGCATCCGCAACCAGTCAATGATGAGGGGATTCTCTGGTTAGGAA
TTATTGCGATTACTATCAATCTGTTAGCGAGTCTGGTGGTTGGTAAGGGA
AAGACAAAGAATGAGTCTATTCTGAGTCTGCATTTTCTGGAAGATACGCT
AGGGTGGGTAGCTGTTATCCTGATGGCGATTGTTCTTCGATTTACGGACT
GGTATATCCTAGATCCTCTTTTGTCCCTTGTCATTTCTTTCTTTATTCTT
TCAAAAGCCCTTCCACGTTTTTGGTCTACACTCAAGATTTTCTTGGATGC
TGTGCCAGAAGGTCTTGATATCAAGCAAGTAAAGAGTGGCCTGGAGCGAT
TGGACAATGTGGCCAGCCTTAATCAGCTTAATCTCTGGACTATGGATGCT
TTGGAAAAAAAATGCCATTGTCCATGTTTGTCTAAAAGAAATGGAACATAT
GGAAACTTGTAAAGAGTCTATTCGAATTTTCCTAAAAGATTGTGGTTTTC
AAAATATTACCATTGAAATTGATGCTGACCTAGAAACTCACCAAACCCAT
AAGCGAAAGGTGTGTGACTTGGAACGGAGTTATGAGCATCAACATTAG

4170.8

(SEQ. ID. NO. 295)

ATGATTGAATACAAAAATGTAGCACTGCGCTACACAGAAAAGGATGTCTT
GAGAGATGTCAACTTACAGATTGAGGATGGGGAATTTATGGTTTTAGTAG
GGCCTTCTGGGTCAGGTAAGACGACCATGCTCAAGATGATTAACCGTCTT
TTGGAACCAACTGATGGAAATATTTATATGGATGGGAAGCGCATCAAAGA
CTATGATGAGCGTGAACTTCGTCTTTCTACTGGTTATGTTTTACAGGCTA
TTGCTCTTTTTCCAAATCTAACAGTTGCGGAAAATATTTGCTCTCATTCC
TGAAATGAAGGGGTGGAGCAAGGAAGAAATTACGAAGAAAACAGAAGAGC
TTTTGGCTAAGGTTGGTTTACCAGTAGCCGAGTATGGGCATCGCTTACCT
AGTGAATTATCTGGTGGAGAACAGCAACGGGTCGGTATTGTCCGAGCTAT
GATTGGTCAGCCCAAGATTTTCCTCATGGATGAACCCTTTTCGGCCTTGG
ATGCTATTTCGAGAAAACAGTTGCAGGTTCTGACAAAAGAATTGCATAAA
GAGTTTGGGATGACAACGATTTTTGTAACCCATGATACGGATGAAGCCTT
GAAGTTGGCGGACCGTATTGCTGTCTTGCAGGATGGAGAAATTCGCCAGG
TAGCGAATCCCGAGACAATTTTAAAAGCGCCTGCAACAGACTTTGTAGCA
GACTTGTTTGGAGGTAGTGTTCATGACTAA

4171.1

(SEQ. ID. NO. 296)

ATGTCAGCAGTTGCTATTTCAGCTATGACCAAGGTTATGCAAGAAACCCA
CGGAAATCCTTCTAGTATTCATGGTCATGGTCGTCAAGCTGGCAAACTCT
TGCGAGAAGCCCGTCAGGAACTAGCCCAGTTACTAAGGACAAAACCTCAA
CATATCTTTTTCACTTCTGGTGGGACTGAAGGCAATAATACTACCATCAT
TGGCTACTGTCTTCGTCACCAAGAACAAGGAAAACATATCATCACAACTG
CCATCGAGCACCATGCTGTCCTTGAAACAATTGATTACTTGGTTCAACAC
TTTGGGTTTGAAGCAACCATTATCCAGCCAGAAAATCAAGAAATCACAGC
CCAGCAAATTCAAAAGGCTTTACGTGACGATACGATTTTGGTTTCTACCA
TGTTTGTCAATAATGAGACAGGAAACCTACTGCCCATCGCTGAAATTGGC
CAAATACTCAAGCAACACCCTGCTGCCTATCATGTTGATGCAGTTCAGGC
TATTGGTAAAATCCCAATTCATTCAGAAGAATTGGGCATTGATTTTCTCA
CTGCTTCTGCCCACAAATTCCATGGTCCTAAGGGAATCGGTTTTCTCTAC
GCATCTAGCATGGACTTTGATTCCTATCTACATGGCGGAGACCAGGAACA
GAAAAAACGTGCAGGAACTGAAAATCTGCCTGCCATTGTAGGCATGGTTG
CAGCCCTAAAAGAAGACCTAGAAAAACAAGAAGAACATTTTCAACATGTA
CAAAATCTAGAAACTGCCTTTCTGGCAGAGCTGGAGGGCATTCAGTATTA
CCTGAATAGAGGAAAACATCATCTCCCTTATGTTCTCAATATTGGATTTC
CTGGTCAGAAAAATGACCTCTTACTCCTTCGGCTAGATTTAGCTGGAATT
TCAATCTCTACTGGCTCAGCCTGTACTGCAGGCGTTGTCCAATCCAGCCA
TGTTCTTGAAGCCATGTATGGCGCAAATTCAGAACGCTTGAAGGAATCCC
TTCGCATCAGTTTGTCGCCACAAAATACCGTTGAAGACCTACAAACCCTC
GCAAAAACCTTAAAAGAAATTATCGGAGGTTAG

4172.1

(SEQ. ID. NO. 297)

ATGTTATTCAAATTATCTAAGGAAAAAATAGAGCTAGGCTTATCTCGTTT
ATCGCCAGCCCGTCGTATTTTTTTGAGTTTTGCCTTGGTCATTTTACTAG
GCTCTCTTCTTTTGAGCTTGCCCTTTGTCCAAGTTGAAAGCTCACGAGCG
ACTTATTTTGATCATCTTTTCACTGCTGTCTCTGCAGTCTGTGTGACGGG
TCTCTCAACCCTTCCAGTAGCTCACACCTATAATATCTGGGGTCAAATAA
TCTGTTTGCTCTTGATTCAGATCGGTGGTCTAGGGCTCATGACCTTTATT
GGGGTTTTCTATATCCAGAGCAAGCAAAAGCTTAGTCTTCGTAGCCGTGC
AACTATTCAGGATAGTTTTAGTTATGGAGAAACTCGATCTTTGAGAAAGT
TTGTCTATTCTATTTTTCTCACGACCTTTTTGGTTGAGAGCTTGGGAGCT
ATTTTGCTTAGTTTTCGCCTTATTCCTCAACTTGGCTGGGGACGTGGTCT

TABLE 1-continued

TTTTAGTTCCATTTTTCTAGCGATCTCAGCCTTCTGTAATGCCGGTTTTG
ATAATTTAGGGAGCACCAGTTTATTTGCTTTTCAGACCGATTTACTGGTC
AATCTGGTGATTGCAGGCTTGATTATTACAGGCGGCCTTGGTTTTATGGT
CTGGTTTGATTTGGCTGGTCATGTAGGAAGAAAGAAAAAAGGACGTCTGC
ACTTTCATACGAAGCTTGTACTATTATTGACTATAGGTTTGTTGTTATTT
GGAACAGCAACTACTCTCTTTCTTGAGTGGAACAATGCTGGAACGATTGG
CAATCTCCCTGTTGCCGATAAGGTTTTAGTTAGCTTTTTTCAAACAGTGA
CGATGCGAACAGCTGGCTTTTCTACGATAGATTATACTCAGGCTCATCCT
GTGACTCTTTTGATTTATATCTTACAGATGTTTCTAGGTGGGGCACCTGG
AGGAACAGCTGGGGGACTCAAGATTACGACATTTTTTGTCCTCTTGGTCT
TTGCACGAAGTGAGCTTCTAGGCTTGCCTCATGCCAATGTTGCGAGACGA
ACGATCGCGCCGCGAACGGTTCAAAAATCCTTTAGTGTCTTTATTATCTT
TTTGATGAGCTTCTTGATAGGATTGATTCTGCTAGGGATAACAGCCAAAG
GCAATCCTCCCTTTATCCACCTCGTATTTGAAACCATTTCAGCTCTTAGT
ACAGTTGGTGTAACGGCAAATCTGACTCCTGACCTTGGGAAATTGGCTCT
CAGTGTTATCATGCCACTTATGTTTATGGGACGAATTGGTCCCTTGACCT
TGTTTGTTAGCTTGGCAGATTACCATCCAGAAAAGAAAGATATGATTCAC
TATATGAAAGCAGATATTAGTATTGGTTAA

4172.2

(SEQ. ID. NO. 298)

ATGTCAGATCGTACGATTGGAATTTTGGGCTTGGGAATTTTTGGGAGCAG
TGTCCTAGCTGCCCTAGCCAAGCAGGATATGAATATTATCGCTATTGATG
ACCACGCAGAGCGCATCAATCAGTTTGAGCCAGTTTTGGCGCGTGGAGTG
ATTGGTGACATCACAGATGAAGAATTATTGAGATCAGCAGGGATTGATAC
CTGCGATACCGTTGTAGTCGCGACAGGTGAAAATCTGGAGTCGAGTGTGC
TTGCGGTTATGCACTGTAAGAGTTTGGGGGTACCGACTGTTATTGCTAAG
GTCAAAAGTCAGACCGCTAAGAAAAGTGCTAGAAAAGATTGGAGCTGACT
CGGTTATCTCGCCAGAGTATGAAATGGGGCAGTCTCTAGCACAGACCATT
CTTTTCCATAATAGTGTTGATGTCTTTCAGTTGGATAAAAATGTGTCTAT
CGTGGAGATGAAAATTCCTCAGTCTTGGGCAGGTCAAAGTCTGAGTAAAT
TAGACCTCCGTGGCAAATACAATCTGAATATTTTGGGTTTCCGAGAGCAG
GAAAATTCCCCATTGGATGTTGAATTTGGACCAGATGACCTCTTGAAAGC
AGATACCTATATTTTGGCAGTCATCAACAACCAGTATTTGGATACCCTAG
TAGCATTGAATTCGTAA

4172.3

(SEQ. ID. NO. 299)

ATGAAGTTATTGTCTATCGCAATTTCTAGCTATAATGCAGCAGCCTATCT
TCATTACTGTGTGGAGTCGCTAGTGATTGGTGGTGAGCAAGTTGGGATTT
TGATTATCAATGACGGGTCTCAGGATCAGACTCAGGAAATCGCTGAGTGT
TTAGCTAGCAAGTATCCTAATATCGTTAGAGCCATCTATCAGGAAAATAA
ATGCCATGGCGGTGCGGTCAATCGTGGCTTGGTAGAGGCTTCTGGGCGCT
ATTTTAAAGTAGTTGACAGTGATGACTGGGTGGATCCTCGTGCCTACTTG
AAAATTCTTGAAACCTTGCAGGAACTTGAGAGCAAAGGTCAAGAGGTGGA
TGTCTTTGTGACCAATTTTGTCTATGAAAAGGAAGGGCAGTCTCGTAAGA
AGAGTATGAGTTACGATTCAGTCTTGCCTGTTCGGCAGATTTTTGGCTGG
GACCAGGTCGGAAATTTCTCCAAAGGCCAGTATACCATGATGCACTCGCT
GATTTATCGGACAGATTTGTTGCGTGCTAGCCAGTTCTAA

4172.4

(SEQ. ID. NO. 300)

ATGAAATTCAATCCAAATCAAAGATATACTCGTTGGTCTATTCGCCGTCT
CAGTGTCGGTGTTGCCTCAGTTGTTGTGGCTAGTGGCTTCTTTGTCCTAG
TTGGTCAGCCAAGTTCTGTACGTGCCGATGGGCTCAATCCAACCCCAGGT
CAAGTCTTACCTGAAGAGACATCGGGAACGAAAGAGGGTGACTTATCAGA
AAAACCAGGAGACACCGTTCTCACTCAAGCGAAACCTGAGGGCGTTACTG
GAAATACGAATTCACTTCCGACACCTACAGAAAGAACTGAAGTGAGCGAG
GAAACAAGCCCTTCTAGTCTGGATACACTTTTTGAAAAAGATGAAGAAGC
TCAAAAAAATCCAGAGCTAACAGATGTCTTAAAAGAAACTGTAGATACAG
CTGATGTGGATGGGACACAAGCAAGTCCAGCAGAAACTACTCCTGAACAA
GTAAAAGGTGGAGTGAAAGAAAATACAAAAGACAGCATCGATGTTCCTGC
TGCTTATCTTGAAAAAGCTGAAGGGAAAGGTCCTTTCACTGCCGGTGTAA
ACCAAGTAATTCCTTATGAACTATTCGCTGGTGATGGTATGTTAACTCGT
CTATTACTAAAAGCTTCGGATAATGCTCCTTGGTCTGACAATGGTACTGC
TAAAAATCCTGCTTTACCTCCTCTTGAAGGATAACAAAAGGGAAATACTT
CTATGAAGTAGACTTAAATGGCAATACTGTTGGTAAACAAGGTCAAGCTT
TAATTGATCAACTTCGCGCTAATGGTACTCAAACTTATAAAGCTACTGTT
AAAGTTTACGGAAATAAAGACGGTAAAGCTGACTTGACTAATCTAGTTGC
TACTAAAAATGTAGACATCAACATCAATGGATTAGTTGCTAAAGAAACAG
TTCAAAAAGCCGTTGCAGACAACGTTAAAGACAGTATCGATGTTCCAGCA
GCCTACCTAGAAAAAGCCAAGGGTGAAGGTCCATTCACAGCAGGTGTCAA
CCATGTGATTCCATACGAACTCTTCGCAGGTGATGGCATGTTGACTCGTC
TCTTGCTCAAGGCATCTGACAAGGCACCATGGTCAGATAACGGCGACGCT
AAAAACCCAGCCCTATCTCCACTAGGCGAAAACGTGAAGACCAAAGGTCA
ATACTTCTATCAAGTAGCCTTGGACGGAAATGTAGCTGGCAAAGAAAAAC

TABLE 1-continued

AAGCGCTCATTGACCAGTTCCGAGCAAATGGTACTCAAACTTACAGCGCT
ACAGTCAATGTCTATGGTAACAAAGACGGTAAACCAGACTTGGACAACAT
CGTAGCAACTAAAAAAGTCACTATTAACATAAACGGTTTAATTTCTAAAG
AAACAGTTCAAAAAGCCGTTGCAGACAACGTTAAAGACAGTATCGATGTT
CCAGCAGCCTACCTAGAAAAAGCCAAGGGTGAAGGTCCATTCACAGCAGG
TGTCAACCATGTGATTCCATACGAACTCTTCGCAGGTGATGGTATGTTGA
CTCGTCTCTTGCTCAAGGCATCTGACAAGGCACCATGGTCAGATAACGGT
GACGCTAAAAACCCAGCCCTATCTCCACTAGGTGAAAACGTGAAGACCAA
AGGTCAATACTTCTATCAATTAGCCTTGGACGGAAATGTAGCTGGCAAAG
AAAAACAAGCGCTCATTGACCAGTTCCGAGCAAACGGTACTCAAACTTAC
AGCGCTACAGTCAATGTCTATGGTAACAAAGACGGTAAACCAGACTTGGA
CAACATCGTAGCAACTAAAAAAGTCACTATTAACATAAACGGTTTAATTT
CTAAAGAAACAGTTCAAAAAGCCGTTGCAGACAACGTTAAGACAGTATCG
ATGTTCCAGCAGCCTACCTAG

4172.5

(SEQ. ID. NO. 301)

ATGAAACTAAAAAGTTATATTTTGGTTGGATATATTATTTCAACCCTCTT
AACCATTTTGGTTGTTTTTTGGGCTGTTCAAAAAATGCTGATTGCGAAAG
GCGAGATTTACTTTTTGCTTGGGATGACCATCGTTGCCAGCCTTGTCGGT
GCTGGGATTAGTCTCTTTCTCCTATTGCCAGTCTTTACGTCGTTGGGCAA
ACTCAAGGAGCATGCCAAGCGGGTAGCGGCCAAGGATTTTCCTTCAAATT
TGGAGGTTCAAGGTCCTGTAGAATTTCAGCAATTAGGGCAAACTTTTAAT
GAGATGTCCCATGATTTGCAGGTAAGCTTTGATTCCTTGGAAGAAAGCGA
ACGAGAAAAGGGCTTGATGATTGCCCAGTTGTCGCATGATATTAAGACTC
CTATCACTTCGATCCAAGCGACGGTAGAAGGGATTTTGGATGGGATTATC
AAGGAGTCGGAGCAAGCTCATTATCTAGCAACCATTGGACGCCAGACGGA
GAGGCTCAATAAACTGGTTGAGGAGTTGAATTTTTTGACCCTAAACACAG
CTAGAAATCAGGTGGAAACTACCAGTAAAGACAGTATTTTTCTGGACAAG
CTCTTAATTGAGTGCATGAGTGAATTTCAGTTTTTGATTGAGCAGGAGAG
AAGAGATGTCCACTTGCAGGTAATCCCAGAGTCTGCCCGGATTGAGGGAG
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AAATATTCTGCTCCAGGAACCAAGCTGGAAGTGGTGGCTAAGCTGGAGAA
GGACCAGCTTTCAATCAGTGTGACCGATGAAGGGCAGGGTATTGCCCCAG
AGGATTTGGAAAATATTTTCAAACGCCTTTATCGTGTCGAAACTTCGCGT
AACATGAAGACAGGTGGTCATGGATTAGGACTTGCGATTGCGCGTGAATT
GGCCCATCAATTGGGTGGGGAAATCACAGTCAGCAGCCAGTACGGTCTAG
GAAGTACCTTTACCCTCGTTCTCAACCTCTCTGGTAGTGAAAATAAAGCC
TAA

4172.6

(SEQ. ID. NO. 302)

ATGTTTGGTCAAACGGCTCAACATGGTCTTACGAATAGCCTGAAAGACTT
CTGGATTTTTCTGCTGAATATAGGTCCACAATTGGCGTTTTTTTGCCAGA
TGCTCCGCTGTTCCAGATCGGTTGAGCAGGGTACTGGAAATCACCGTCGT
GAGTTCAATATGATTCAGCAGATATTCTCGCATTTTGGGATGACTCACTT
GGGACAAATCAAGTTGGTCTATCAAGAGTCGATTGACCTTGAGTTGCTGG
TCAATGCACTTAATCATCACTTGCTCATTGACAGACTGGTCCTCACGCCC
AATCAAATAACGATAGAAATCGACAGGCAGATAGTACATGGTCTTGACCT
GCTGAAGGGGCGTAAAGACAAAGAGATTATCGACATAAAAAGTATGTTCA
GGCAGTTAGAACTGGCTAGCACGCAACAAATCTGTCCGATAAATCAGCGA
GTGCATCATGGTATACTGGCCTTGGAGAAATTTCCGACCTGGTCCCAGCC
AAAAATCTGCCGAACAGGCAAGACTGA

4174.1

(SEQ. ID. NO. 303)

ATGGAACATTTAGCAACTTATTTTTCAACCTATGGAGGAGCTTTCTTCGC
TGCATTGGGAATTGTATTGGCGGTTGGATTAAGCGGTATGGGGTCTGCTT
ATGGAGTTGGTAAGGCTGGGCAATCTGCCGCAGCTTTACTGAAAGAACAG
CCTGAAAAGTTTGCCTCAGCTTTGATATTGCAATTATTGCCCGGAACACA
AGGATTATATGGTTTTGTTATTGGAATTTTAATTTGGTTGCAATTAACTC
CAGAACTTCCTTTAGAAAAAGGCGTTGCTTATTTCTTTGTAGCTCTTCCA
ATTGCTATTGTAGGATACTTTTCAGCTAAGCATCAAGGAAATGTAGCAGT
AGCGGGAATGCAAATCTTGGCTAAAAGACCAAAAGAATTCATGAAGGGAG
CAATTTTAGCTGCCATGGTAGAAACCTATGCAATTCTTGCTTTTGTCGTA
TCATTCATTTTGACCCTTCGTGTATTA

4175.2

(SEQ. ID. NO. 304)

ATGTTAAAATCAGAAAAACAATCACGTTATCAAATGTTAAATGAAGAATT
GTCCTTCCTATTGGAAGGCGAAACCAATGTTTTGGCTAATCTTTCCAACG
CCAGTGCTCTCATAAAATCACGTTTTCCTAATACCGTATTTGCAGGCTTT
TATTTGTTCGATGGAAAGGAATTGGTTTTAGGCCCCTTCCAAGGAGGTGT
TTCCTGCATCCGTATTGCACTAGGCAAGGGTGTTTGTGGTGAGGCAGCTC
ACTTTCAGGAAACTGTTATTGTTGGAGATGTGACGACCTATCTCAACTAT
ATTTCTTGTGATAGTCTAGCTAAAAGTGAAATTGTGGTGCCGATGATGAA

TABLE 1-continued

GAATGGTCAGTTACTTGGAGTTCTGGATCTGGATTCTTCAGAGATTGAGG
ATTACGATGCTATGGATCGAGATTATTTGGAACAATTTGTCGCTATTTTG
CTTGAAAAGACAGCATGGGACTTTACGATGTTTGAGGAAAAATCTTAA

4175.3

(SEQ. ID. NO. 305)

ATGTCAGTATTAGAGATCAAAGATCTTCACGTTGAGATTGAAGGAAAAGA
AATTTTAAAAGGGGTTAACCTGACCCTGAAAACAGGAGAAATTGCCGCTA
TCATGGGACCAAATGGTACAGGTAAATCGACTCTTTCTGCCGCTATCATG
GGAAATCCAAACTATGAAGTAACTAAAGGTGAAGTTTTGTTTGATGGCGT
AAACATCCTTGAGTTGGAAGTGGATGAGCGTGCGCGTATGGGACTTTTCC
TTGCTATGCAATACCCATCAGAAATCCCTGGAATTACCAATGCTGAGTTT
CTTCGTGCCGCTATGAATGCGGGTAAAGAAGATGATGAGAAGATTTCAGT
TCGTGAGTTTATTACTAAGCTAGATGAAAAAATGGAATTGCTCAACATGA
AAGAAGAAATGGCAGAGCGTTACCTCAACGAAGGCTTCTCTGGTGGTGAG
AAAAAACGCAATGAAATTCTTCAACTTTTGATGTTGGAGCCAACATTTGC
TCTTTTGGACGAGATTGACTCAGGTCTTGATATTGACGCTCTTAAAGTTG
TGTCTAAAGGTGTCAATGCCATGCGTGGTGAAGGTTTTGGTGCTATGATC
ATCACTCACTACCAACGTCTTTTGAACTATATCACACCTGATGTGGTACA
CGTGATGATGGAAGGTCGTGTTGTCCTTTCTGGTGGTCCAGAATTGGCTG
CGCGTTTGGAACGTGAAGGATACGCAAAATTAGCTGAAGAACTTGGCTAC
GACTACAAGGAAGAATTGTAA

4174.4

(SEQ. ID. NO. 306)

ATGCCCTACAAAAGACAAAGGAGTTTTTCAATGGCACTTTCTAAACTAGA
TAGCCTTTATATGGCAGTGGTAGCAGACCATTCGAAAAATCCACATCACC
AAGGGAAGTTAGAAGATGCTGAGCAAATCAGTCTCAACAATCCGACTTGT
GGGGATGTCATCAACCTCTCTGTCAAGTTTGATGCAGAGGACCGTTTGGA
AGATATTGCTTTTCTAAATTCAGGATGCACGATTTCAACTGCTTCTGCTA
GTATGATGACAGATGCCGTTTTAGGAAAAACCAAACAAGAAATTTTAGAA
CTGGCGACTATTTTTTCTGAAATGGTTCAAGGGCAAAAAGATGAGCGTCA
AGACCAACTTGGAGACGCGGCATTCTTGTCAGGTGTTGCCAAATTCCCTC
AAAGAATCAAGTGTGCAACCCTAGCTTGGAATGCCCTTAAGAAAACAATT
GAAAATCAAGAAAAACAGTAA

4175.5

(SEQ. ID. NO. 307)

ATGAAAATTCAAGACCTATTGAGAAAAGATGTCATGTTGCTAGATTTGCA
GGCAACTGAAAAAACAGCTGTCATCGACGAGATGATTAAAAATTTGACAG
ACCACGGTTATGTAACAGATTTTGAAACATTTAAAGAAGGAATTTTGGCG
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GGCAGAATTGTCTCAATACTTGATGAAAGACGGTTTTGCAGACAAACTTC
GTCAAGCAACATCTGCAGACCAAGTTATCGAACTTTTTGACCAAGCTTCA
GAAAAAACTGAGGAACTTGTTCAAGCACCTGCTAATGACTCTGGTGACTT
TATCGTAGCTGTTACAGCTTGTACAACAGGTATTGCCCACACTTACATGG
CCCAAGAAGCCCTTCAAAAAGTAGCTGCTGAAATGGGGGTTGGTATCAAG
GTCGAAACCAACGGTGCTAGCGGTGTTGGAAATCAACTAACTGCAGAAGA
TATCCGTAAGGCTAAAGCTATTATCATTGCAGCAGACAAGGCCGTTGAAA
TGGATCGATTTGATGGAAAACCATTGATCCATCGTCCAGTTGCTGACGGT
ATCCGTAAGACAGAAGAGCTAATTAACTTGGCTCTTTCAGGAGATACTGA
AGTCTACCGTGCCGCTAATGGTGCCAAAGCTGCAACAGCCTCTAACGAAA
AACAAAGCCTTGGTGGTGCCTTGTACAAACACTTGATGAGTGGTGTATCT
CAAATGTTACCATTCGTTATCGGTGGTGGTATCATGATTGCCCTTGCCTT
CTTGATTGACGGTGCTTTGGGTGTTCCAAATGAAAACCTTGGCAATCTTG
GTTCTTACCATGAGTTAGCTTCTATGTTCATGAAAATTGGTGGAGCTGCC
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GACCAGTTAATAAAGCAGCTTATGTCTTTGGTACAGGTACGCTTGCAGCA
ACTGTTTCTTCAGGTGGTTCTGTAGCCATGGCAGCAGTTATGGCTGGAGG
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AATTTACTAAGGAAGAACGTAACTCTGGTTTGACAAACATCATCATGGGC
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ATCGCCCTTACTTCAAATGCTCTCCTTTACCTCGTTTCTGTCTTGGTAGG

TABLE 1-continued

AGCAATCGTAAGTGGTGTGGTTTATGGTTACCTACGCAAACCACAAGCAT
AA

4175.6

(SEQ. ID. NO. 308)

ATGGCAAACAAGAATACAAGTACAACAAGACGGAGACCGTCTAAAGCAGA
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CTTTATAATTTAATTCGCTTGCTAGTGGGTAGCCTAGCTTATCTGGCGAT
ATTCGGCCTATTAATCTATCTCTTCTTTTTCAAGTGGATACGAAAACAGG
AAGGACTCTTATCTGGCTTTTTCACCATATTTGCTGGCTTACTCTTGATT
TTTGAGGCCTACTTGGTTTGGAAATATGGTTTGGACAAGTCCGTTCTAAA
AGGGACCATGGCTCAGGTTGTGACAGATCTGACTGGTTTTCGAACGACTA
GCTTTGCTGGAGGGGGCTTGATCGGGGTCGCTCTTTATATTCCACAGCCT
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TGGGTTCTCTCCTAGTCAGCCCTTGGTCTGTTTACGATATTGCTGAATTT
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GGAACGCTTTGTCAAACAAGAAGAAAAAGCTCGCCAAAAGGCTGAGAAAG
AGGCTAGATTAGAACAAGAAGAGACTGAAAAAGCCTTACTCGATTTGCCT
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TCTTCCACCTATTCCAGAAGAAAAGTGGGTGGAACCAGAAATCATCCTGC
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CAAGTATGAAGTCAAGCCGGCTGTTGGTGTAAGGGTCAACCGCATTTCCA
ATCTATCAGATGACCTCGCTCTAGCCTTGGCTGCCAAAGATGTCCGGATT
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GCAAATTCCGCTACCATTCATTGTCGTGATTGTGGATGAGTTGGCTGACC
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ATCTGTTGATGTCATCTCTGGTTTGATTAAGGCCAATGTTCCATCTCGTG
TAGCATTTGCGGTTTCATCAGGAACAGACTCCCGTACGATTTTGGATGAA
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TTATCGAAACACAGAAAGCCAGTGCGTCTATGATTCAGCGTCGTTTATCA
GTTGGATTTAACCGTGCGACCCGTCTCATGGAAGAACTGGAGATAGCAGG
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AA

4176.1

(SEQ. ID. NO. 309)

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TAAATACCTTTTTCCACGAAGCCTTTTGGGTGACCTTGGTAGTTGTTCCA
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AGGGGTTATTGGTGGTGTAGCAGCTATGTTAATCATTACCCTATCAATTC
CAAGTGGTGAGACAATTTTGTACGTGTTTGTGCGTGTATTAGAAACGTTT
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GTCTCTTTTTAGAGAAAAAAGAAAAATAA

4178.2

(SEQ. ID. NO. 310)

ATGAATAAATCAGAACACCGCCACCAACTTATACGCGCTCTTATCACAAA
AAACAAGATTCATACACAGGCTGAGTTGCAAGCCCTTCTTGCTGAGAACG
ACATTCAAGTAACCCAGGCAACCCTCTCACGCGACATCAAAAATATGAAC
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TTCCATCTCAAAATGGGAAAAACGTCTCGAACTCTACATGGAAGACGCCC
TTGTCTGGATGCGCCCAGTTCAACACCAAGTCCTACTAAAAACCCTTCCT
GGACTGGCTCAATCCTTTGGTTCTATCATTGATACTTTGAGCTTCCCTGA
CGCTATCGCTACCCTTTGTGGTAATGATGTCTGTCTTATCATCTGTGAAG
ATGCAGATACTGCTCAAAAGTGCTTTGAAGAACTGAAAAAATTCGCCCCA
CCATTTTTCTTTGAAGAATAA

4179.1

(SEQ. ID. NO. 311)

ATGAAAAGTATAAAATTAAATGCTCTATCTTACATGGGAATTCGTGTCTT
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TTCTTGCCCTTTGCAACTTATGGTGTCTATAACTACGGTTTAAGGGCTAT
CAGTAATGTCAAGGATAACAAAAAAGATCTTAACAGAACCTTTTCTAGTC
TTTTTTATTTGTGCATCGCTTGTACGATTTTGACCACTGCTGTCTATATC
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CCGTATCCTGATGCTGGTCTCTATTTTCTTATTTGTTAAAAATGAACACG
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TTCCTGATTAATTTCGTGTATCCTGTAGATATGGTCATTAATTTGCCATT
TTTGATTAATACTGGTTTGATTGTCTTGCTATCAGCTATCTCTTATATTA
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GTCCTAGCCTTAAAAAATAAATTTAAAAAATCATAG

4179.2

(SEQ. ID. NO. 312)

ATGAAACAACTAACCGTTGAAGATGCCAAACAAATTGAATTAGAAATTTT
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GACGACGATATTGATCTGTCCATGCCTAGAGAAGACTACCAACGATTTAT
TAACATTTTTCAAAAGGAAAAAAGCAAGTATAAGCTCCTATCCTTAGAAA
CTGATAAGAACTACTTTAACAACTTTATCAAGATAACCGACAGTACGACT
AAAATTATTGATACTCGAAATACAAAAACCTATGAGTCTGGTATCTTTAT
CGATATTTCCCTATAGATCGCTTTGATGATCCTAAGGTCATTGATACTT
GTTATAAACTGGAAAGCTTCAAACTGCTGTCTTTCAGTAAACATAAAAAT
ATTGTCTATAAGGATAGCCTTTTAAAAGATTGGATACGAACAGCCTTCTG
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CCTTCAAAATTTAAGGAAAAGGAAGTCTTCCCAAGTGGTACCTTTGATAA
AACAATCGATTTACCCTTTGAGAATTTAAGCCTTCCTGCACCTGAAAAAT
TTGATACTATTTTGACACAATTTTATGGAGATTATATGACCCTACCACCA
GAAGAAAAACGCTTCTACAGTCATGAATTTCACGCTTATAAATTGGAGGA
TTAG

4179.3

(SEQ. ID. NO. 313)

ATGATAAAAATCAATCATCTAACCATCACACAAAACAAAGATTTACGAGA
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TTATTGGTGAAGAAGGAAATGGCAAATCAACCTTACTTAAAATTTTAATG
GGGGAAGCTTTGTCTGATTTCACTATCAAGGGAAACATCCAATCTGACTA
TCAGTCACTGGCCTACATTCCTCAAAAAGTCCCTGAGGACCTAAAAAAGA
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CCTTCAAATGACCTAGACCTTGAGACAGTTGATTGGCTAAAAGGCCAGAT
TCAAAAGACCAGGCAAACCGTTATTTTCATTTCCCATGATGAAGACTTTC
TTTCTGAAACGGCAGACACTATTGTTCACTTGCGACTGGTCAAACACCGT
AAAGAAGCGGAAACGCTAGTAGAGCATTTAGACTATGATAGCTATAGTGA
GCAGAGAAAGGCTAATTTTGGCAAACAAAGTCAGCAAGCTGCTAACAACC
AAAGAGCCTACGATAAAACCATGGAAAAACATCGGAGAGTTAAGCAAAAT
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GGCTAAAAAGATGAAAACTGTCCTCTCACAAGAAAAACGCTACGAAAAGG

TABLE 1-continued

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4179.4

(SEQ. ID. NO. 314)

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AGctACGCCCTACCGAATAGAGATCCGCGCTATATCACAGTGGTAGAAAA
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AACGCCCACTTTAA

4179.6

(SEQ. ID. NO. 315)

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AAGCTGGTGTCAAAGTCGTGATTGCAACTGGCCGCCCTATCGCAGGCGTT
GCCAAACTTCTAGACGACTTGCAGTTGAGAGACGAGGGGGACTATGTGGT
AACCTTCAACGGTGCCCTTGTCCAAGAAACTGCTACAGGACATGAGATTA
TCAGCGAATCCTTGACTTATGAGGATTATCTAGATATGGAATTCCTCAGT
CGCAAGCTCGGTGTCCACATGCATGCCATTACCAAGGACGGTATCTATAC
TGCAAATCGCAATATCGGAAAATACACTGTACACGAATCAACCCTCGTCA
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AAAAATTCCAGCAGAATTTTACGAGCGCTACTCCATCAACAAATCTGCTC
CTTTCTACCTCGAACTCCTTAAAAAGAATGTAGACAAGGGTTCAGCCATT
ACTCACTTGGCTGAAAAACTCGGATTGACCAAAGATGAAACCATGGCAAT
CGGTGATGAAGAAAATGACCGTGCCATGCTGGAAGTCGTTGGAAACCCCG
TTGTCATGGAAAATGGAAATCCAGAAATCAAAAAAATCGCCAAATACATC
ACCAAAACAAATGACGAATCCGGCGTTGCCCATGCCATCCGAACATGGGT
ACTGTAA

4179.7

(SEQ. ID. NO. 316)

ATGACTTGGATTATTCTTGGAGTTATCGCTCTTATTGTTATTTTTGTGAT
TGTTAGCTATAACGGTTTGGTTAAAAATCGTATGCAAACCAAGGAGGCTT
GGAGTCAGATTGATGTTCAGTTGAAACGTCGCAATGACCTCTTGCCAAAC
TTGATTGAGACTGTAAAAGGTTATGCCAAATATGAAGGTTCTACCCTTGA
AAAGGTGGCAGAACTACGTAACCAAGTGGCGGCAGCGACTTCACCAGCAG
AAGCTATGAAAGCCAGTGATGCCCTCACTCGTCAGGTTTCAGGTATTTTT
GCAGTTGCAGAAAGCTATCCAGATTTGAAAGCTAGTGCTAACTTTGTTAA
ATTGCAAGAGGAGTTGACAAACACAGAAAATAAAATTTCTTACTCTCGTC
AACTCTATAACAGTGTTTGTCAGCAACTACAATGTAAAATTAGAAACTTT
CCCGAGCAATATTATCGCTGGAATGTTTGGATTTAAAGCGGCAGATTTCC
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TTAGGTGACTAA

4179.8

(SEQ. ID. NO. 317)

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TTTATCTACGCTTTGTCTATGATTTTTCAATCGACAGAGATTGTCATGTC
CATGAATGGAGCGCGTGAGGTGGATGAGCAAACGGCACCAGACCTCTACC
ATGTAGTGGAAGATATGGCTCTGGTCGCTCAGATTCCTATGCCCCGTGTT

TABLE 1-continued

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4179.9

(SEQ. ID. NO. 318)

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TGTATCAGACAATATCCTGCTAAACATTCCTATCAAGGTCTTGACGGCTG
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4179.12

(SEQ. ID. NO. 319)

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GTAATCCAGCCGTTTTTATGGAACGTTATTTTCAGATAGACGATGCGCAT
TTGTCGAAAGAGTTTCAAAAATTTCCATCTTTCTCTATTTTAGATGACTG
TTATCCTTGGGATTTGAGTGAAATATATGATGCGCCTGTACTTTTATTTT
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TTCCTGGTAGCATTTTAGATGGACTATCAGACGGTTGCCATCATTTGATT
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TGAATTTTAA

4181.1

(SEQ. ID. NO. 320)

ATGAAACGTCAATTAGCCTTGGTCGTCTTTAGTGGTGGTCAAGATTCAAC
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AATTCACTCCGCGCGGTGGCATTTCAATCGACCCCTACTACAACTACGGT
AAGCAAGGAACTAAGTATGAGGGCTTGGCAGAACAACGCCTCTTCCAACA
CGACCTTTATCCAGAGAAAATTGACAACCGCTAA

4181.2

(SEQ. ID. NO. 321)

ATGACCGAAACGGTAGAAGATAAAGTAAGTCATTCAATTACTGGGCTTGA
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CGGCAAGTACATCTGCATCTGAGTCAGCCTCAACCAGCGCTTCGACCTCA
GCAAGTACAAGTGCATCAGAATCAGCAAGTACATCGGCTTCGACAAGTAT
TTCTGCATCATCTACTGTGGTAGGTTCACAAACAGCTGCCGCTACAGAAG
CAACTGCTAAGAAGGTCGAAGAAGATCGTAAGAAACCAGCTAGTGATTAT
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TABLE 1-continued

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CAACAAGTGCTTCAGCCTCAGCATCGACAAGTGCCTCGGCTTCAGCAAGC
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GCAAGTACCAGTGCTTCAGCCTCAGCGTCGACAAGTGCGTCGGCCTCAAC
CAGTGCATCTGAATCGGCATCAACCAGTGCGTCAGCCTCAGCAAGTACTA
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GCGTCAGCTTCAGCAAGTACCAGTGCTTCAGTCTCAGCATCAACAAGTGC
TTCAGCCTCAGCATCGACAAGTGCCTCGGCTTCAGCAAGCACATCAGCAT
CTGAATCAGCGTCGACAAGCGCCTCAGCTTCAGCAAGTCCCAGTGCGTCA
GCTTCAGCATCAACCAGCGCCTCGGCCTCAGCAAGCACCTCAGCTTCTGA
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CGGCCTCAACCAGCGCCTCAGCCTCAGCATCAACGAGTGCTTCGGCTTCA
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GTATCTCAGCGTCTGAATCGGCATCAACGAGTGCGTCTGAGTCAGCATCA
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GTGCTTCAGCCTCAGCTCGACAAGTGCGTCGGCCTCAACCAGTGCATCTG
AATCGGCATCAACCAGTGCGTCAGCCTCAGCAAGTACTAGTGCATCAGCT
TCAGCATCAACGAGTGCATCGGCTTCAGCATCAACCAGTGCCTCGGCTTC
AGCGTCAACCAGTGCGTCAGCTTCAGCAAGTACCAGTGCTTCAGTCTCAG
CATCAACAAGTGCTTCAGCCTCAGCATCGACAAGTGCcTCGGCTTCAGCA
AGCACATCAGCATCTGAATCAGCGTCGACAAGCGCcTCAGCTTCAGCAAG
TACCAGTGCGTCAGCCTCAGCGTCGACAAGTGCGTCAGCCTCAGCAAGTA
CTAGTGCATCAGCTTCAGCATCAACGAGTGCATCGGCTTCGGCGTCAACC
AGTGCATCAGAGTCAGCAAGTACCAGTGCGTCAGCTTCCGCATCAACAAG
TGCCTCGGCTTCAGCAAGCACCAGTGCGTCGGCTTCAGCAAGTACTAGCG
CCTCAGCCTCAGCCTCAACCAGTGCGTCAGCCTCAGCAAGTATCTCAGCG
TCTGAATCGGCATCAACGAGTGCGTCCGCTTCAGCAAGTACTAGCGCCTC
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AATCGGCATCAACGAGTGCGTCCGCTTCAGCAAGTACTAGCGCCTCAGCC
TCAGCGTCAACAAGTGCATCGGCTTCAGCATCAACGAGTGCGTCCGCTTC
AGCAAGTACTAGCGCCTCAGCCTCAGCGTCAACAAGTGCATCGGCTTCAG
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AGCACATCAGCTTCTGAATCTGCATCAACCAGTGCGTCAGCCTCAGCATC
GACAAGCGCCTCAGCTTCAGCAAGTACCAGTGCGTCAGCCTCAGCGTCGA
CAAGTGCGTCGGCTTCAGCAAGTACCAGTGCGTCAGCCTCAGCAAGTACC
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TGAATCGGCATCAACCAGTGCGTCAGCCTCAGCAAGTACTAGTGCATCAG
CTTCAGCATCAACGAGTGCATCGGCTTCAGCATCAACCAGTGCATCAGAG
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GCAAGTACTAG

4183.1

(SEQ. ID. NO. 322)

ATGGGGGTCGAAACTTGGTTTTATTCTAGCATCTGCTGGCTGGCCATCGG
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GAGGCTTTTTACTAATCTTTCTCATTTCCACTATTTTAATCGGTTTCCCT
CTCCTGCTGGCTGAGTTTGCCCTTGGCCGTAGTGCTGGCGTTTCCGCTAT
CAAAACCTTTGGAAAACTGGGCAAGAATAACAAGTACAACTTTATCGGTT
GGATTGGCGCCTTTGCCCTCTTTATCCTCTTATCTTTTTACAGTGTTATC
GGAGGATGGATTCTAGTCTATCTAGGTATTGAGTTTGGGAAATTGTTCCA
ACTTGGTGGAACGGGTGATTATGCTCAGTTATTTACTTCAATCATTTCAA
ATCCAGCCATTGCCCTAGGAGCTCAAGCGGCCTTTATCCTATTGAATATC
TTCATTGTATCACGTGGGGTTCAAAAAGGGATTGAAAGAGCTTCGAAAGT

TABLE 1-continued

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TCAGTTTGCCAAATGCCATGGAAGGGGTTCTTTACTTCCTCAAACCAGAC
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CTTTGCCCTCTCACTAGGGGTTACAGTCATGTTGACCTATGCTTCTTACT
TAGACAAGAAAACCAATCTAGTCCAGTCAGGAATCTCCATCGTAGCCATG
AATATCTCGATATCCATCATGGCAGGTCTAGCCATTTTCCAAGCTCGATC
CCCCTTCAATATCCAGTCTGAAGGGGGACCCAGCCTGCTCTTTATCGTCT
TGCCTCAACTCTTTGACAAGATGCCTTTTGGAACCATTTTCTACGTCCTC
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GCCCTATCTTACGGTGTCATGGCGGATGTTCACATTTTTGGTAAGACCTT
CTTTGACGCTATGGACTTCTTGGTTTCCAATCTCCTCATGCCATTTGGAG
CTCTCTACCTTCACTTTTTACAGGCTATATCTTTAAAAAGGCTCTTGCAA
TGGAGGAACTCCATCTCGATGAAAGAGCATGGAAACAAGGACTGTTCCAA
GTCTGGCTCTTCCTTCTTCGTTTCTTCGTTTCGTCATTCCAATCATCATC
ATTGTGGTCTTCATTGCCCAATTTATGTAATCAAAAAGGACTTGAGTAG

4183.5

(SEQ. ID. NO. 323)

ATGTTGAAAAAATGGCAGTTAAAAGATGTTATCTTGCTTGCTTTCTTGTC
TATCTTTTTTGGTGGGGTTTTCGTTGGTTCAGGATATGTGTATAATATTC
TCAGTCTACTCTTAACACCTCTTGGTTTGCAGGCCTTTGCCAATGAAATC
CTCTTCGGTCTCTGGTGTATGGCTGCGCCCATTGCTGCCATCTTTGTTCC
GAGAGTCGGAAGTGCAACGATTGGAGAAGTGCTAGCTGCGCTTGCTGAAG
TCCTTTATGGTAGCCAATTTGGTCTAGGAGCTCTTTTGTCTGGCTTTGTT
CAAGGTTTGGGAAGTGAATTTGGTTTTATCGTAACTAAGAATCGCTATGA
AAGTTGGCTCTCTCTAACTGCTAATAGTATTGGGATTACGCTTGTTAGCT
TTGTCTATGAATACATTAAGTTAGGTTACTACGCCTTTTCCCTTCCGTTT
GTCCTTTCCTTGCTTGTGGTACGTTTTATTTCTGTTTATTTCTTCTGTAC
CATCTTGGTTCGTGCCATTGTCAAACTCTATCATCAGTTTGCAACTGGAG
GAAAAGCATAG

4183.6

(SEQ. ID. NO. 324)

ATGGTCAAAGTAGCAACCCAGACACCGATTATCAGTCTCTTCTTGCTGAT
TTTATCCTTGGAAACATCTTTCATTCCTTCGATTGCTCTGACTCTTTCGG
TAGTCGCATTTTGTATTCTCTTTATGCTCTATTACCGTCGATTTAAAATG
TTAGCTTGGATGATCATACTTGCCATTTTACCATCTTTTGCCAACTACTG
GGCAGTTCAGTTACACGGAGATGCTTCACAGGCAGTCATGCTTGGAACGA
GGGCCTTTGTGACAGTTTGTATCGGCCTTGTCTTTGTTTCCTCTGTTTCA
CTAAAAGAGCTTCTCTTGTACTTGGCTCAAAAGGGCTATCACGCTCTTG
GTCCTATGCCTTGATTGTGGTATTCAATTCTTTTCCTCTCATTCAGCAAG
AAATCAAGTCCCTCAAAGAAGCTTGCCTATTACGTGGTCAAGAACTACAT
TTTTGGTCGCCCTTGATTTACAGTAAGGTTCTGATGACAGTCTTTAGGTG
GCGCCATCTTTACCTGAGAGCTCTATCTGCTCACGGATATGACGAACATG
CACAGTTGAAGAATAGCTATCGGACTTTTTATATTCCTAAAAAACAAAA
TTAATCTACCTGCTTTTCTTTTTATTGCTTCAAACCAGTCTATTTTTATA
A

4183.7

(SEQ. ID. NO. 325)

ATGAGAAAGCACCAATTACAAGTTCACAAATTAACCATTTTATCTATGAT
GATTGCCCTTGATGTAGTCCTTACACCTATCTTTCGAATTGAGGGAATGG
CACCGATGTCCAGTGTAGTCAATATTCTAGCAGGAATCATGATGGGACCT
GTTTATGCCTTGGCTATGGCTACAGTCACAGCCTTTATCCGTATGACGAC
TCAAGGGATTCCGCCTTTAGCTCTCACAGGAGCGACTTTTGGAGCCCTTC
TAGCAGGTCTCTTTTATAAGTACGGTCGAAAATTTCACTATTCTGCTCTA
GGAGAGATTTTGGGAACAGGTATTATTGGTTCCATTGTTTCCTATCCTGT
TATGGTACTCTTTACAGGATCAGCTGCTAAGCTTAGCTGGTTTATCTACA
CGCCTCGATTTTTCGGAGCAACCTTGATTGGTACAGCGATTTCCTTTATT
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TTTCTTTAGTGAAAGGATAGACTGA

4183.8

(SEQ. ID. NO. 326)

ATGCAGGAATTTACAAATCCCTTTCCTATAGGCTCTAGTTCCCTCATTCA
CTGCATTACCAATGAGATTTCTTGTGAGATGCTGGCAAATGGGATTTTGG
CTCTGGGATGCAAACCTGTCATGGCAGATGATTCCCGTGAAGTTCTTGAT
TTTACTAAGCAAAGTCAGGCTCTCTTCATCAATTTGGGGCATTTGTCAGC
TGAGAAGGAAAAAGCAATCCGCATGGCAGCTTCGTATGCAAACCAATCTT
CTCTCCCGATGGTAGTAGATGCGGTTGGCGTAACGACTTCATCCATTCGT
AAGAGCTTAGTTAAAGACCTTTTAGACTATAGACCTACGGTCCTTAAAGG
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TTGAAAGACTGGTGTCAGACCTATCCTGGTATGTCTTTCTTAGTCACAGG

TABLE 1-continued

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GCTGTACTGAATTAGACTGGATAACAGGGACAGGAGACTTGGTTGGAGCC
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CTTAGCAGTCTCTTATCTCAATATCGCTGCTGAGAAAATAGTTGTTCAAG
GAATGGGATTGGAAGAATTTCGTTACCAAGTACTCAATCAGCTTTCGCTC
CTAAGAAGAGATGAAAATTGGCTAGATACCATCAAAGGAGAGGTTTATGA
ATAG

4185.3

(SEQ. ID. NO. 327)

ATGAACCATAAAATCGCAATTTTATCAGATGTTCATGGCAATGCGACGGC
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GGCTTCTGGGAGATATTTTTCTTCCTGGTCCAGGCGCAAATGACTTAGTC
GCCCTGCTAAAGGACCTTCCTATCACAGCAAGTGTTCGAGGCAATTGGGA
TGATCGTGTCCTTGAGGCTTTAGATGGGCAATATGGCTTAGAAGACCCAC
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CCTGCAACGATTGTCTGGCTACGAAGCTTGCCTTTGCTGGAAAAGAAAGA
AATTGACGGATTGCGCTTTTCTATCTCTCATAATTTACCTGACAAAAACT
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GCATGCCCTATTTTAATTGGGAGGCGTTAAAAAATCACCGTTCCCAGTAT
GCCGTGATAGAAGTTGAAGATGGGGAATTACTCAATATCCAATTTCGTAA
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TTCCCTTTATCGAAATGTATGAAGAACTGCGTCGTGACGATAACTATCAG
GGGCACAATCTGGAATTATTAGCCAGCTTAATAGAAAAGCATGGGTATGT
AGAGGATGTGAAGAATTTTTTTGATTTTTTGTAA

4186.1

(SEQ. ID. NO. 328)

ATGAATGTAAATCAGATTGTACGGATTATTCCTACTTTAAAAGCTAATAA
TAGAAAATTAAATGAAACATTTTATATTGAAACCCTTGGAATGAAGGCCT
TGTTAGAAGAATCGGCCTTTCTGTCACTAGGTGACCAAACGGGTCTTGAA
AAGCTGGTTTTAGAAGAAGCTCCCAGTATGCGTACTCGTAAGGTAGAGGG
AAGAAAAAAACTAGCTAGATTGATTGTCAAGGTGGAAAATCCCTTAGAAA
TTGAAGGAATCTTATCTAAAACAGATTCGATTCATCGATTATATAAAGGT
CAAAATGGCTACGCTTTTGAAATTTTCTCACCAGAAGATGATTTGATTTT
GATTCATGCGGAAGATGACATAGCAAGTCTAGTAGAAGTAGGAGAAAAGC
CTGAATTTCAAACAGATTTGGCATCAATTTCTTTAAGTAAATTTGAGATT
TCTATGGAATTACATCTCCCAACTGATATCGAAAGTTTCTTGGAATCATC
TGAAATTGGGGCATCCCTTGATTTTATTCCAGCTCAGGGGCAGGATTTGA
CTGTGGACAATACGGTTACCTGGGACTTATCTATGCTCAAGTTCTTGGTC
AATGAATTAGACATAGCAAGTCTTCGCCAGAAGTTTGAGTCTACTGAATA
TTTTATTCCTAAGTCTGAAAAATTCTTCCTGGTAAAGATAGAAATAATGT
TGAATTGTGGTTTGAAGAAGTATGA

4186.2

(SEQ. ID. NO. 329)

ATGAAGTGGACCAAGATTATTAAAAAAATAGAAGAACAAATCGAGGCAGG
GATTTATCCCGGAGCCTCTTTTGCGTATTTTAAGGACAATCAATGGACAG
AGTTCTATTTAGGCCAGAGTGACCCAGAGCATGGCTTGCAGACTGAGGCA
GGACTAGTTTATGACCTAGCTAGTGTCAGCAAGGTTGTTGGGGTTGGCAC
AGTTTGTACCTTCTTGTGGGAAATAGGTCAATTAGATATTGATAGACTGG
TAATAGATTTTTTACCTGAGAGTGATTATCCAGACATCACTATTCGCCAG
CTCTTGACTCATGCAACAGACCTTGATCCTTTTATTCCTAATCGTGATCT
TTTAACAGCCCCTGAATTAAAGGAAGCGATGTTTCATCTCAACAGACGAA
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ATTTTGGAAAGAATTTTTAATCAAGATTTGGATGTGATTTTAAAGGATCA
AGTCTGGAAACCTTGGGGAATGACGGAAACTAAGTTTGGGCCAGTTGAGC
TTGCTGTTCCAACAGTTAGAGGTGTAGAGGCAGGCATAGTGCATGATCCC
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TATAAAGGATTTACAAATCTTTTTAGAACACTATTTAGCAGATGATTTTG
CAAGAGACTTAAATCAAAATTTTTCTCCTTTGGATGACAAGGAACGTTCT
TTAGCATGGAATTTGGAAGGAGATTGGCTAGACCATACGGGCTATACAGG
TACCTTTATCATGTGGAATCGTCAGAAGCAAGAAGCCACTATTTTCCTAT
CGAATCGTACCTATGAAAAGGACGAGAGAGCTCAATGGATATTAGACCGC
AATCAAGTGATGAACTTGATTCGCAAAGAAGAGTAA

4187.2

(SEQ. ID. NO. 330)

ATGATGAAGAAGACTTATAATCATATTTTGGTCTGGGGAGTCATTTTCTA
TAGCATTTGCATTGTCTGTTTTTGCTTTACTCCTCAAGAACAATCTACCG
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TTGACTCCTTTCAATTCTCTCTGGAAACTGGGCGAAGTGAGTGACATTGG
ACAATTATGTTGGATTTTTTTACAAAATATCCTCAATGTCTTCTTGTTTT
TTCCTCTGATTTTCCAACTCCTTTATCTATTTCCAAATTTGCGGAAAACA

TABLE 1-continued

AAAAAGGTCCTTCTTTTTAGTTTTCTTGTGAGTCTTGGAATCGAGTGTAC
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4188.1

(SEQ. ID. NO. 331)

ATGAAGATTCCTCTCTTAACTTTTGCAAGGCATAAATTTGTTTATGTCTT
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4188.2

(SEQ. ID. NO. 332)

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TGATTTCAATTTTTTCCTATAATGACTATTCTGAAGCGAATTTAGAAATC
CCCAAACTATTGTTAAACCTTTCGCTTTTCATGGTAGGATGGCTCTCTGT
CATTTTACTTGAAAGTGATTTGGCAGACCATTACCATCACTTGATTCGCT
ATCAATCAAGCTCCTTTTTCGATTATACAAGGAAACGATTGGTTGTCATT
TCTAAATTTTTTACTCAAGATTTGTTTGTCTGGTTTCTTGGTTTACTTCC
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TAATGATGTTGTACTTACTACTGTCTTATCTGATAGCACTGATTAGTGCG
GGCGCTGGTTTTTCCTTTTTTCTCTATTTTTTAGCATTTGTGGGACAAGA
ATGGATGATGGATCATATTGTAACAGTGTATTTAGTACTCTTAAGTTTAT
TAGTTATGTTGATTGTTAGTCGCTTGGAAGAGAAATTTAAGAAAGGATAA

4188.5

(SEQ. ID. NO. 333)

ATGGGCAAAGGAGAGATGGGCAAAGGAGTTATTGGCTTGGAGTTCGACTC
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GATAAGGAAGATATCGGACAGGAAATTATTGGTATAGCTAAAGGAAGCAT
CGAAAGTATGCATAATCTTCCTGTAAATCTAGCAGGTGCCAGAGTTCCTG
GCGGAGTAAATGGTAGCAAAGCAGCGGTGCATGAAGTTCCAGAATTTACA
GGGGGAGTTAATGGTACAGAGCCAGCTGTTCATGAAATCGCAGAGTATAA
GGGATCTGATCGCTTGTAACTCTTACTACAAAAAAAGATTATACTTACAA
AGCTCCTCTTGCTCAGCAGGCACTTCCTGAAACAGGAAACAAGGAGAGTG
ACCTCCTAGCTTCACTAGGACTAACAGCTTTCTTCCTTGGTCTGTTTACG
CTAGGGAAAAAGAGAGAACAATAA

4188.10

(SEQ. ID. NO. 334)

ATGTTTAAAGTTTTACAAAAAGTTGGAAAAGCTTTTATGTTACCTATAGC
TATACTTCCTGCAGCAGGTCTACTTTTGGGGATTGGTGGTGCACTTTCAA
ACCCAACCACGATAGCAACTTATCCAATACTAGACAATAGTATTTTTCAA
TCAATATTCCAAGTAATGAGCTCTGCAGGAGAGGTTGTATTCAGTAATTT
GTCACTACTTCTCTGTGTGGGATTATGTATTGGCTTAGCGAAACGAGATA
AAGGAACCGCTGCGTTAGCAGGAGTAACTGGTTACTTAGTTATGACTGCA
ACGATCAAAGCTTTGGTAAAACTTTTTATGGCAGAAGGATCTGCAATTGA
TACTGGAGTTATTGGAGCATTAGTTGTCGGAATAGTTGCCGTATATTTGC
ACAACCGATATAACAATATTCAATTACCTTCCGCTTTAGGATTCTTTGGA
GGTTCACGCTTCGTTCCTATTGTTACATCGTTCTCTTCTATCTTGATTGG
CTTTGTCTTCTTTGTTATTTGGCCACCTTTCCAACAACTTCTTGTTTCTA
CAGGTGGATATATTTCTCAGGCGGGTCCAATTGGAACTTTTCTATATGGA
TTTTTAATGAGACTTTCTGGAGCAGTAGGCTTACATCATATAATTTACCC
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CAGTGGTTGGAGCTCAAAAAATATTTTTTGCTCAATTAGCCGATTTGGCC
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TABLE 1-continued

GCTTCTTTATTGCAGACGTCTTAAATATTTCAATAGGAAACACATTTTCA
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GAGCCTTGGGTGGATCAAATAATATAGAAGATGTAGATGCTTGTGTGACA
CGTTTACGTGTAGCTGTAAAAGAAGTTAATCAAGTTGATAAAGCACTTTT
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TTAGGTGTAGATGATTAA

4188.11

(SEQ. ID. NO. 335)

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CCATCGACTTCAAGTCAGGTCCTGAAAAAATCACAACAGCCATCGAAGCA
GGAACAGCTCCAGACGTACTCTTTGATGCACCAGGACGTATCATCCAATA
CGGTAAAAACGGTAAATTGGCTGAGTTGAATGACCTCTTCACAGATGAAT
TTGTTAAAGATGTCAACAATGAAAACATCGTACAAGCAAGTAAAGCTGGA
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CAATCCTTTGGGCACCAGCTCAAAATGGTATCCAAGCTAAACTTTTAGAA
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GCTGAAATGAGAACACTTTGGTTCCCAATGTTGCAATCTGTATCAAATGG
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4188.12

(SEQ. ID. NO. 336)

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CAGTGGTTCCCTAAAATGCCAACCATGGAAAACTTCCAACAACTCATGGT
GCAGAACCCTGCCTTGCAATGGATGTGGAACTCAGTATTTATCTCATTGG
TAACCATGTTCTTAGTTTGTGCAACCTCATCTCTAGCAGGTTATGTATTG
GCTAAAAAACGTTTCTATGGTCAACGCATTCTATTTGCTATCTTTATCGC
TGCTATGGCGCTTCCAAAACAAGTTGTCCTTGTACCATTGGTACGTATCG
TCAACTTCATGGGAATCCATGATACTCTCTGGGCAGTTATCTTGCCTTTG
ATTGGATGGCCATTCGGTGTCTTCCTCATGAAACAGTTCAGTGAAAATAT
CCCTACAGAGTTGCTTGAATCAGCTAAAATCGACGGTTGTGGTGAGATTC
GTACCTTCTGGAGTGTAGCCTTCCCGATTGTGAAACCAGGGTTTGCAGCC
CTTGCAATCTTTACCTTCATCAATACTTGGAATGACTACTTCATGCAATT
GGTAATGTTGACTTCACGTAACAATTTGACCATCTCACTTGGGGTTGCGA
CCATGCAGGCTGAAATGGCAACCAACTATGGTTTGATTATGGCAGGAGCT
GCCCTTGCTGCTGTTCCAATCGTCACAGTCTTCCTAGTCTTCCAAAAATC
CTTCACACAGGGTATTACTATGGGAGCGGTCAAAGGATAA

4191.1

(SEQ. ID. NO. 337)

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ACTCTCTGTTTTTGCCATTGATTTCAAGATAAACTCTTATCAAGGGGATT
TGTATATTCATGCAGACAATACGGCAGAGTTTAGACAGAAGATAGTTTAC
CAGTTTGAGGAGGACTTTAAGGGCCAAATCGTGGGACTTGGACGTGCTGG
TAAGATGCCTAGCGGGTTTGACATTGACCCTCATCCAAAGATTCAGGCCG
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GCGGATGGTTATACTGTGAGAGTCTATAATCCAGGTCAGGAGGGCGACAT
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ATGATATCGCTGAATTAAATTGGCAACCTCTGACAGATAGTTCAGAGTCT
ATTGAAAAGTTTGAATTTCATGTAAGGGGAGACAAGGGGGCTGAAAAACT
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ACCTTGATTATACTATCCGTTTAGACAATCTTCCGGCTAAGCGTGGAGTT

TABLE 1-continued

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GGGATTGAAAGGGAATCGTTTAGAAGAGTTTAATAAGATAGAAGACTCGA
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AGAAGAAAGACCACTCCTTCAGTCAAATATGCCAAAAATCATCGTCTCTA
TGAACCACCAATGGAATTAGAGCCTATGGTTTTATCAGAAGCAGTCTACT
CGACCTCCTTGGAGGAAGTGAGTCCCTTGGTCAAGGGAGCTGGAAAATTC
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TCTGATAGTCTTTATCGTAGAGCCAAAGTTTCTGATGAAAAACGGATTCA
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ATGCAAGAAGGAGTGAGAAAACGAGTTTCCTTCTGGGGGCTCCCAGATTA
TTATCGTCCTTTAACTGGTGGGGAAAAGGCCTTGCAAGTGGGTATGGGTG
CCTTGACTATCCTGCCCCTATTTATCGGATTTGGTTTGTTCTTGTACAGT
TTAGACGTTCATGGCTATCTTTACCTCCCTTTGCCAATACTTGGTTTTCT
AGGGTTAGTTTTGTCTGTTTTCTATTATTGGAAGCTTCGACTAGATAATC
GTGATGGTGTTCTAAATGAAGCGGGAGCTGAGGTCTACTATCTCTGGACC
AGTTTTGAAAATATGTTGCGTGAGATTGCACGATTGGATCAGGCTGAACT
GGAAAGTATTGTGGTCTGGAATCGCCTCTTGGTCTATGCGACCTTATTTG
GCTATGCGGACAAGGTTAGTCATTTGATGAAGGTTCATCAGATTCAAGTG
GAAAATCCAGATATCAATCTCTATGTAGCTTATGGCTGGCACAGTACGTT
TTATCATTCAACAGCACAAATGAGCCATTATGCTAGTGTCGCAAATACAG
CAAGCACCTACTCTGTATCTTCTGGAAGTGGAAGTTCTGGTGGTGGCTTC
TCTGGAGGCGGAGGTGGCGGCAGTATCGGTGCCTTTTAA

4191.2

(SEQ. ID. NO. 338)

ATGAAAAAAGTAAGAAAGATATTTCAGAAGGCAGTTGCAGGACTGTGCTG
TATATCTCAGTTGACAGCTTTTTCTTCGATAGTTGCTTTAGCAGAAACGC
CTGAAACCAGTCCAGCGATAGGAAAAGTAGTGATTAAGGAGACAGGCGAA
GGAGGAGCGCTTCTAGGAGATGCCGTCTTTGAGTTGAAAAACAATACGGA
TGGCACAACTGTTTCGCAAAGGACAGAGGCGCAAACAGGAGAAGCGATAT
TTTCAAACATAAAACCTGGGACATACACCTTGACAGAAGCCCAACCTCCA
GTTGGTTATAAACCCTCTACTAAACAATGGACTGTTGAAGTTGAGAAGAA
TGGTCGGACGACTGTCCAAGGTGAACAGGTAGAAAATCGAGAAGAGGCTC
TATCTGACCAGTATCCACAAACAGGGACTTATCCAGATGTTCAAACACCT
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AGAGAATTTATCAAGTGAATAATTTGGATGATAACCAATATGGAATCGAA
TTGACGGTTAGTGGGAAAACAGTGTATGAACAAAAAGATAAGTCTGTGCC
GCTGGATGTCGTTATCTTGCTCGATAACTCAAATAGTATGAGTAACATTC
GAAACAAGAATGCTCGACGTGCGGAAAGAGCTGGTGAGGCGACACGTTCT
CTTATTGATAAAATTACATCTGATTCAGAAAATAGGGTAGCGCTTGTGAC
TTATGCTTCCACTATCTTTGATGGGACCGAGTTTACAGTAGAAAAAGGGG
TAGCAGATAAAAACGGAAAGCGATTGAATGATTCTCTTTTTTGGAATTAT
GATCAGACGAGTTTTACAACCAATACCAAAGATTATAGTTATTTAAAGCT
GACTAATGATAAGAATGACATTGTAGAATTAAAAAATAAGGTACCTACCG
AGGCAGAAGACCATGATGGAAATAGATTGATGTACCAATTCGGTGCCACT
TTTACTCAGAAAGCTTTGATGAAGGCAGATGAGATTTTGACACAACAAGC
GAGACAAAATAGTCAAAAAGTCATTTTCCATATTACGGATGGTGTCCCAA
CTATGTCGTATCCGATTAATTTTAATCATGCTACGTTTGCTCCATCATAT
CAAAATCAACTAAATGCATTTTTTAGTAAATCTCCTAATAAAGATGGAAT
ACTATTAAGTGATTTTATTACGCAAGCAACTAGTGGAGAACATACAATTG
TACGCGGAGATGGGCAAAGTTACCAGATGTTTACAGATAAGACAGTTTAT
GAAAAAGGTGCTCCTGCAGCTTTCCCAGTTAAACCTGAAAAATATTCTGA
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AATACTGCTAAAATTACCAATCATGGTGACCCTACAAGATGGTACTATAA
CGGGAATATTGCTCCTGATGGGTATGATGTCTTTACGGTAGGTATTGGTA
TTAACGGAGATCCTGGTACGGATGAAGCAACGGCTACTAGTTTTATGCAA
AGTATTTCTAGTAAACCTGAAAACTATACCAATGTTACTGACACGACAAA
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AATCAATTGAGAATGGTACGATTACAGATCCGATGGGTGAGTTAATTGAT
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TGCAAACGATGGTAGTCGCTTGGAGAATGGACAAGCTGTAGGTGGTCCAC
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TTTATGATACCAATGGTCGAACAACCTTACATCCTAAGGAAGTAGAACAG
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TCCAGAAATCACAATTTCAAAAGAGAAAAAACTTGGTGACATTGAGTTTA
TTAAGGTCAATAAAAATGATAAAAAACCACTGAGAGGTGCGGTCTTTAGT
CTTCAAAAACAACATCCGGATTATCCAGATATTTATGGAGCTATTGATCA
AAATGGCACTTATCAAAATGTGAGAACAGGTGAAGATGGTAAGTTGACCT

TABLE 1-continued

TTAAAAATCTGTCAGATGGGAAATATCGATTATTTGAAAATTCTGAACCA
GCTGGTTATAAACCCGTTCAAAATAAGCCTATCGTTGCCTTCCAAATAGT
AAATGGAGAAGTCAGAGATGTGACTTCAATCGTTCCACAAGATATACCAG
CGGGTTACGAGTTTACGAATGATAAGCACTATATTACCAATGAACCTATT
CCTCCAAAGAGAGAATATCCTCGAACTGGTGGTATCGGAATGTTGCCATT
CTATCTGATAGGTTGCATGATGATGGGAGGAGTTCTATTATACACACGGA
AACATCCGTAA

4191.3

(SEQ. ID. NO. 339)

ATGAAATCAATCAACAAATTTTTAACAATGCTTGCTGCCTTATTACTGAC
AGCGAGTAGCCTGTTTTCAGCTGCAACAGTTTTTGCGGCTGGGACGACAA
CAACATCTGTTACCGTTCATAAACTATTGGCAACAGATGGGGATATGGAT
AAAATTGCAAATGAGTTAGAAACAGGTAACTATGCTGGTAATAAAGTGGG
TGTTCTACCTGCAAATGCAAAAGAAATTGCCGGTGTTATGTTCGTTTGGA
CAAATACTAATAATGAAATTATTGATGAAAATGGCCAAACTCTAGGAGTG
AATATTGATCCACAAACATTTAAACTCTCAGGGGCAATGCCGGCAACTGC
AATGAAAAAATTAACAGAAGCTGAAGGAGCTAAATTTAACACGGCAAATT
TACCAGCTGCTAAGTATAAAATTTATGAAATTCACAGTTTATCAACTTAT
GTCGGTGAAGATGGAGCAACCTTAACAGGTTCTAAAGCAGTTCCAATTGA
AATTGAATTACCATTGAACGATGTTGTGGATGCGCATGTGTATCCAAAAA
ATACAGAAGCAAAGCCAAAAATTGATAAAGATTTCAAAGGTAAAGCAAAT
CCAGATACACCACGTGTAGATAAAGATACACCTGTGAACCACCAAGTTGG
AGATGTTGTAGAGTACGAAATTGTTACAAAAATTCCAGCACTTGCTAATT
ATGCAACAGCAAACTGGAGCGATAGAATGACTGAAGGTTTGGCATTCAAC
AAAGGTACAGTGAAAGTAACTGTTGATGATGTTGCACTTGAAGCAGGTGA
TTATGCTCTAACAGAAGTAGCAACTGGTTTTGATTTGAAATTAACAGATG
CTGGTTTAGCTAAAGTGAATGACCAAAACGCTGAAAAAACTGTGAAAATC
ACTTATTCGGCAACATTCAATGACAAAGCAATTGTAGAAGTACCAGAATC
TAATGATGTAACATTTAACTATGGTAATAATCCAGATCACGGGAATACTC
CAAAGCCGAATAAGCCAAATGAAAACGGCGATTTGACATTGACCAAGACA
TGGGTTGATGCTACAGGTGCACCAATTCCGGCTGGAGCTGAAGCAACGTT
CGATTTGGTTAATGCTCAGACTGGTAAAGTTGTACAAACTGTAACTTTGA
CAACAGACAAAAATACAGTTACTGTTAACGGATTGGATAAAAATACAGAA
TATAAATTCGTTGAACGTAGTATAAAAGGGTATTCAGCAGATTATCAAGA
AATCACTACAGCTGGAGAAATTGCTGTCAAGAACTGGAAAGACGAAAATC
CAAAACCACTTGATCCAACAGAGCCAAAAGTTGTTACATATGGTAAAAAG
TTTGTCAAAGTTAATGATAAAGATAATCGTTTAGCTGGGGCAGAATTTGT
AATTGCAAATGCTGATAATGCTGGTCAATATTTAGCACGTAAAGCAGATA
AAGTGAGTCAAGAAGAGAAGCAGTTGGTTGTTACAACAAAGGATGCTTTA
GATAGAGCAGTTGCTGCTTATAACGCTCTTACTGCACAACAACAAACTCA
GCAAGAAAAAAGAGAAAGTTGACAAAGCTCAAGCTGCTTATAATGCTGCTG
TGATTGCTGCCAACAATGCATTTGAATGGGTGGCAGATAAGGACAATGAA
AATGTTGTGAAATTAGTTTCTGATGCACAAGGTCGCTTTGAAATTACAGG
CCTTCTTGCAGGTACATATTACTTAGAAGAAACAAAACAGCCTGCTGGTT
ATGCATTACTAACTAGCCGTCAGAAATTTGAAGTCACTGCAACTTCTTAT
TCAGCGACTGGACAAGGCATTGAGTATACTGCTGGTTCAGGTAAAGATGA
CGCTACAAAAGTAGTCAACAAAAAAATCACTATCCCACAAACGGGTGGTA
TTGGTACAATTATCTTTGCTGTAGCGGGGGCTGCGATTATGGGTATTGCA
GTGTACGCATATGTTAAAAACAACAAAGATGAGGATCAACTTGCTTAA

4191.4

(SEQ. ID. NO. 340)

ATGACAATGCAGAAAATGCAGAAAATGATTAGTCGTATCTTCTTTGTTAT
GGCTCTGTGTTTTTCTCTTGTATGGGGTGCACATGCAGTCCAAGCGCAAG
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CAATTGCCATCTCGTGATGGTCATCGGTTGCAAGTATGGAAGTTGGATGA
TTCGTATTCCTATGATGATCGGGTGCAAATTGTAAGAGACTTGCATTCGT
GGGATGAGAATAAACTTTCTTCTTTCAAAAAGACTTCGTTTGAGATGACC
TTCCTTGAGAATCAGATTGAAGTATCTCATATTCCAAATGGTCTTTACTA
TGTTCGCTCTATTATCCAGACGGATGCGGTTTCTTATCCAGCTGAATTTC
TTTTTGAAATGACAGATCAAACGGTAGAGCCTTTGGTCATTGTAGCGAAA
AAAACAGATACAATGACAACAAAGGTGAAGCTGATAAAGGTGGATCAAGA
CCACAATCGCTTGGAGGGTGTCGGCTTTAAATTGGTATCAGTAGCAAGAG
ATGTTTCTGAAAAAGAGGTTCCCTTGATTGGAGAATACCGTTACAGTTCT
TCTGGTCAAGTAGGGAGAACTCTCTATACTGATAAAAATGGAGAGATTTT
TGTGACAAATCTTCCTCTTGGGAACTATCGTTTCAAGGAGGTGGAGCCAC
TGGCAGGCTATGCTGTTACGACGCTGGATACGGATGTCCAGCTGGTAGAT
CATCAGCTGGTGACGATTACGGTTGTCAATCAGAAATTACCACGTGGCAA
TGTTGACTTTATGAAGGTGGATGGTCGGACCAATACCTCTCTTCAAGGGG
CAATGTTCAAAGTCATGAAAGAAGAAAGCGGACACTATACTCCTGTTCTT
CAAAATGGTAAGGAAGTAGTTGTAACATCAGGGAAAGATGGTCGTTTCCG
AGTGGAAGGTCTAGAGTATGGGACATACTATTTATGGGAGCTCCAAGCTC
CAACTGGTTATGTTCAATTAACATCGCCTGTTTCCTTTACAATCGGGAAA
GATACTCGTAAGGAACTGGTAACAGTGGTTAAAAATAACAAGCGACCACG

TABLE 1-continued

GATTGATGTGCCAGATACAGGGGAAGAAACCCTTGTATATCTTGATGCTT
GTTGCCATTTTGTTGTTTGGTAG

4191.5

(SEQ. ID. NO. 341)

ATGAGCCACATATACTTATCTATTTTCACAAGTCTCTTGCTGATGCTAGG
ACTTGTCAATGTTGCTCAAGCCGATGAATATTTACGCATCGGTATGGAAG
CAGCATATGCTCCCTTTAACTGGACCCAGGATGATGATAGCAACGGAGCT
GTCAAAATCGATGGGACCAATCAGTATGCCAACGGATACGATGTTCAAAT
CGCCAAGAAAATCGCTAAGGACTTAGGTAAAGAACCTTTGGTTGTTAAAA
CCAAGTGGGAAGGTCTAGTCCCTGCCCTTACTTCTGGTAAGATTGACATG
ATTATCGCAGGTATGAGTCCAACTGCAGAACGCAAACAAGAAATTGCCTT
TTCGAGCAGTTACTATACTAGCGAACCAGTTTTGCTTGTCAAAAAAGATT
CTGCCTACGCAAGTGCTAAATCTTTGGATGACTTTAACGGTGCAAAAATC
ACTTCTCAACAAGGGGTCTACCTTTATAACTTGATTGCACAAATCCCAGG
TGCTAAAAAAGAAACAGCCATGGGAGACTTCACTCAAATGCGACAAGCTC
TTGAGGCTGGTGTCATTGATGCTTATGTTTCTGAACGTCCAGAAGCACTG
ACTGCTGAAGCTGCGAACTCTAAGTTCAAGATGATTCAAGTAGAACCTGG
TTTCAAAACTGGGGAAGAAGATACAGCTATCGCTATCGGGCTTCGTAAAA
ATGACAATCGTATTAGCCAAATCAATGCCAGCATTGAAACCATTTCAAAA
GATGACCAAGTTGCCTTGATGGATCGTATGATCAAGGAACAACCTGCCGA
AGCTACAACAACTGAAGAGACTAGCAGTAGTTTCTTTAGCCAAGTTGCTA
AAATTCTTTCTGAAAACTGGCAACAACTCTTGCGTGGTGCTGGTATCACT
CTTTTAATCTCTATCGTCGGAACCATCATAGGTCTCATTATTGGACTTGC
CATTGGTGTCTTCCGTACTGCTCCTCTCTCTGAAAACAAAGTCATTTACG
GCCTACAAAAACTAGTCGGCTGGGTTCTCAATGTCTACATTGAAATTTTC
CGTGGTACGCCAATGATTGTTCAATCGATGGTTATCTACTATGGAACTGC
CCAAGCTTTCGGGATCAACCTTGACCGTACACTGGCTGCTATCTTCATCG
TTTCAATCAATACCGGTGCCTACATGACTGAAATCGTCCGTGGTGGTATC
CTAGCAGTTGACAAGGGACAATTTGAAGCTGCGACTGCTCTTGGTATGAC
CCATAACCAGACCATGCGTAAGATTGTCCTACCTCAGGTAGTCCGTAACA
TCCTACCTGCAACTGGTAATGAATTTGTCATCAATATCAAAGATACATCT
GTATTGAACGTTATCTCTGTGTCGAACTTTATTTCTCAGGAAATACCGTG
GCAACACAAACCTATCAATACTTCCAGACATTTACAATCATCGCCGTGAT
TTACTTTGTCCTCACCTTCACCGTAACACGTATCCTACGCTTTATCGAGC
GCAGAATGGACATGGATACCTACACTACAGGTGCTAACCAAATGCAAACG
GAGGATTTGAAATAA

4191.6

(SEQ. ID. NO. 342)

ATGACACAAGCAATCCTTGAAATTAAACACCTCAAAAAATCCTATGGACA
AAACGAAGTGCTAAAAGACATTTCACTCACTGTCCACAAGGGAGAGGTCA
TCTCTATCATCGGAAGCTCTGGAAGCGGAAAATCGACCTTCCTACGCTCC
ATTAACCTACTTGAAACACCAACTGATGGACAAATCCTTTATCATGGACA
AAACGTCCTCGAAAAAGGCTATGACCTCACGCAATACCGTGAAAAGTTGG
GGATGGTTTTCCAATCCTTTAACCTCTTTGAAAATCTCAATGTTCTTGAA
AACACAATCGTCGCTCAGACAACTGTCCTAAAACGCGAACGCACAGAAGC
TGAAAAGATTGCCAAAGAAAACCTGGAAAAGGTCGGCATGGGAGAACGCT
ACTGGCAAGCCAAACCAAAACAACTCTCAGGTGGTCAAAAACAACGTGTG
GCCATCGCTCGTGCCCTCTCCATGAATCCGGACGCTATTCTCTTTGATGA
ACCAACATCAGCTCTCGATCCAGAAATGGTTGGAGAAGTCCTCAAAATCA
TGCAGGACCTGGCTCAGGAAGGCTTGACCATGATTGTCGTAACCCATGAA
ATGGAATTTGCCCGTGATGTCTCTCACCGTGTTATCTTTATGGATAAGGG
CGTGATCGCTGAAGAAGGTAAACCAGAAGACCTCTTCACCAATCCTAAAG
AAGACCGAACAAAAGAGTTCCTTCAACGCTATCTCAAATAA

4192.3

(SEQ. ID. NO. 343)

ATGAAAAAGTATCAACTTCTATTCAAAATAAGTGCAGTCTTCTCTTACTT
ATTTTTCGTATTTAGTCTTTCTCAGCTGACGCTTATCGTCCAAAACTATT
GGCAATTTTCTTCTCAGATAGGCAATTTATTCTGGATTCAAAATATCTTG
AGTTTACTTTTTTATTGGAGTCATGATTGTGGTTCTTGTTAAGACAGGCA
TGGTTATCTCTTCCGCATTCCAAGAAAAAAATGGCTTTGGTATTCGATTT
TGACAGTATTAGTGCTAGTGTTCCAGATCTCTTTTAACGTTCAGACAGCT
AAACATGTTCAGTCAACTGCGGAAGGTTGGGCTGTATTGATTGGTTATAG
TGGGACTAACTTTGCAGAGCTAGGTATTTATATAGCCCTGTTCTTTCTGG
TTCCACTGATGGAAGAATTGATTTATAGAGGATTACTGCAACATGCTTTC
TTTAAGCATTCGCGATTTGGTCTTGATTTGCTTCTTCCTTCTATTTTATT
TGCTCTCCCTCATTTTTCAAGCCTGCCTAGTCTGTTAGATATCTTCGTCT
TTGCAACAGTTGGAATCATCTTTTGCTGGTTTGACCCGCTATACCAAGAG
CATTTATCCATCCTATGCGGTGCATGTGATCAATAATATTGTAGCGACCT
TCCCGTTTTTGCTCACTTTTCTACATAGGGTCTTGGGGTAA

TABLE 1-continued

4193.1

(SEQ. ID. NO. 344)

ATGAACAAGAAACAATGGCTAGGTCTTGGCCTAGTTGCAGTGGCAGCAGT
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GACAAATCATTCAACCAATCAGCTTGGGAAGGTTTGCAGGCTTGGGGTAA
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CTAATCTTCGGTGTTGGTTTTGCCCTTAATAATGCAGTTAAAGATGCAGC
AAAAGAACACACTGACTTGAACTATGTCTTGATTGATGATGTGATTAAAG
ACCAAAAGAATGTTGCGAGCGTAACTTTCGCTGATAATGAGTCAGGTTAC
cTTGCAGGTGTGGCTGCAGCAAAAACAACTAAGACAAAACAAGTTGGTTT
TGTAGGTGGTATCGAATCTGAAGTTATCTCTCGTTTTGAAGCAGGATTCA
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GCTGGTTCATTTGGTGATGCGGCTAAAGGTAAAACAATTGCAGCCGCACA
ATACGCAGCCGGTGCAGATATTGTTTACCAAGTAGCTGGTGGTACAGGTG
CAGGTGTCTTTGCAGAGGCAAAATCTCTCAACGAAAGCCGTCCTGAAAAT
GAAAAAGTTTGGGTTATCGGTGTTGATCGTGACCAAGAAGCAGAAGGTAA
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TGAAACAAGTTGGTACAACTGTAAAAGATATTTCTAACAAGGCAGAAAGA
GGAGAATTCCCTGGCGGTCAAGTGATCGTTTACTCATTGAAGGATAAAGG
GGTTGACTTGGCAGTAACAAACCTTTCAGAAGAAGGTAAAAAAGCTGTCG
AAGATGCAAAAGCTAAAATCCTTGATGGAAGCGTAAAAGTTCCTGAAAAA
TAA

4193.3

(SEQ. ID. NO. 345)

ATGTCTAAAAAATTACAACAAATTTCGGTTCCCTTGATTTCTGTATTCCT
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ATTTGGGGCTACGAAGAATTGTTCTATACAGCCTTTGGCAGTCTGCGTGG
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CAGGCTTTGGCAGGTTGGATTCTCAGTGGTTGGTTTGCCCTGTCGCATCC
AGATATGCCCCGTCCCTTGATGATTCTAGCAACCATCGTGATTGCCTTGA
TTGCTGGTGGGATTGTCGGAGCGATTCCAGGTATTCTTAGGGCCTATCTA
GGGACGTCAGAGGTTATTGTAACCATCATGATGAACTACATTGTCTTGTA
TGTAGGGAATGCCTTTATCCATGCTTTCCCTAAAGACTTCATGCAAAGTA
CAGATTCGACCATTCGTGTTGGGGCTAATGCAACCTATCAGACACCTTGG
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CATCATTGCCGTTGCAGTTATTTGGTTCATGCTCAAGAAAACAACTCTTG
GTTTTGAAATCCGTGCAGTTGGTCTTAATCCACATGCTTCAGAATATGCT
GGTATTTCTGCCAAGCGGACTATTATCCTATCTATGATTATTTCAGGTGC
CTTGGCAGGTCTTGGTGGAGCTGTTGAAGGTTTGGGAACCTTCCAGAACG
TCTATGTTCAAGGTTCGTCATTAGCTATCGGATTTAACGGAATGGCGGTT
AGTTTGCTTGCGGCCAACTCACCAATTGGTATACTCTTTGCAGCCTTCCT
ATTTGGCGTTCTCCAAGTTGGGGCTCCTGGTATGAATGCGGCGCAGGTAC
CATCTGAGCTTGTCAGCATTGTAACAGCGTCTATTATCTTCTTTGTCAGT
GTTCATTACCTTATCGAACGCTTTGTCAAACCGAAAAAACAAGTTAAAGG
AGGTAAGTAA

4194.1

(SEQ. ID. NO. 346)

ATGGGAGTGAAAAAGAAACTAAAGTTGACTAGTTTGCTAGGACTGTCTCT
GTTAATCATGACAGCCTGTGCGACTAATGGGGTAACTAGCGATATTACAG
CCGAATCGGCTGATTTTTGGAGTAAATTGGTTTACTTCTTTGCGGAAATC
ATTCGCTTTTTATCGTTTGATATTAGTATCGGAGTGGGGATTATTCTCTT
TACGGTCTTGATTCGTACAGTCCTCTTGCCAGTCTTTCAGGTGCAAATGG
TGGCTTCTAGGAAAATGCAGGAAGCTCAGCCACGCATTAAGGCGCTTCGA
GAACAATATCCAGGTCGAGATATGGAAAGCAGAACCAAACTAGAGCAGGA
AATGCGTAAAGTATTTAAAGAAATGGGTGTCAGACAGTCAGACTCTCTTT
GGCCGATTTTGATTCAGATGCCGGTTATTTTGGCCCTGTTCCAAGCCCTA
TCAAGAGTTGACTTTTTAAAGACAGGTCATTTCTTATGGATTAACCTTGG
TAGTGTGGATACAACCCTTGTTCTTCCGATTTTAGCAGCAGTATTCACCT
TTTTAAGTACTTGGTTGTCCAACAAAGCTTTGTCTGAGCGAAATGGCGCT
ACGACTGCGATGATGTATGGGATTCCAGTCTTGATTTTTATCTTTGCAGT
TTATGCGCCAGGTGGAGTCGCCCTATACTGGACAGTGTCTAATGCTTATC
AAGTCTTGCAAACCTATTTCTTGAATAATCCATTCAAGATTATCGCAGAG
CGCGAGGCCGTAGTACAGGCACAAAAAGATTTGGAAAATAGAAAAAGAAA
AGCCAAGAAAAAGGCTCAGAAAACGAAATAA

4194.4

(SEQ. ID. NO. 347)

ATGGTTATCGATCCATTTGCTATCAACGAACTAGACTATTACTTAGTTTC
ACACTTCCACAGTGATCATATCGACCCATACACAGCTGCAGCAATTCTCA
ATAATCCTAAGTTAGAGCATGTTAAGTTTATCGGTCCTTACCACTGTGGA
CGAATCTGGGAAGGATGGGGTGTTCCAAAAGAACGTATCATCGTTGTTAA
ACCAGGTGACACTATCGAATTAAAAGATATGAAGATTCATGCAGTAGAAT
CATTTGACCGTACTTGCTTGGTAACTCTCCCAGTGAACGGTGCTGATGAG
ACAGGCGGTGAACTTGCTGGCTTGGCTGTTACAGATGAAGAAATGGCTCA
AAAGGCTGTTAACTATATCTTTGAAACACCAGGTGGAACCATCTATCATG
GTGCAGATTCTCACTTCTCAAACTATTTTGCAAAACATGGTAAAGACTTT
AAAATTGATGTTGCTTTGAATAACTATGGTGAAAATCCGGTAGGTATCCA
AGACAAAATGACATCTATCGACCTTCTTCGTATGGCAGAAAATCTGCGTA
CCAAAGTCATTATCCCAGTTCACTATGATATCTGGTCTAACTTCATGGCT
TCTACTAATGAGATTCTAGAACTTTGGAAAATGCGAAAAGATCGCTTGCA
ATACGATTTCCATCCATTTATCTGGGAAGTTGGCGGTAAGTACACTTATC
CTCAAGATCAACACTTAGTAGAATACCATCATCCACGTGGTTTTGATGAT
TGTTTTGAACAAGACTCTAACATTCAATTTAAAGCTTTGCTATAA

4196.2

(SEQ. ID. NO. 348)

ATGTTCCTTTCAGGCTGGTTGTCTAGTTTTGCTAATACTTATATCCATGA
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GTGCTATTGCGGCTCCTTTGGTAGAAGAACCCTTGAAATTATTGTCACTT
GTTTTTGTTTTGGCTTTGATTCCTGTGCGAAAATTAAAATCTTTGTTTTT
ACTTGGAATTGCTTCCGGTTTGGGATTCCAAATGATTAAGGATATTGGTT
ATATTCGTACGGATTTGCCAGAGGGCTTTGACTTTACTATTTCGCGAATT
TTAGAGCGTATCATCTCAGGAATTGCCTCTCACTGGACTTTTTCAGGTCT
AGCTGTAGTAGGTGTTTACTTGCTTTACAGAGCCTATAAAGGACAGAAGG
TTGGCAAGAAACAGGGCCTTATTTTTCTAGGTTTAGCCTTGGGAACTCAC
TTCTTGTTTAACTCTCCTTTTGTGGAGTTGGAAACAGAGTTGCCTTTAGC
GATTCCAGTGGTTACGGCTATTGCTCTCTATGGTTTTTATCATGCTTATT
GCTTTGTTGAGAAACACAATGAGTTGATGACCTAG

4197.1

(SEQ. ID. NO. 349)

ATGAAGGTGGAACCACGTTGCGACGTCCTTTCGAGGATGTCGCATTTTTT
TATTAGGATACTAATTATGGAGTTGCAAGAATTAGTGGAGCGCAGTTGGG
CAATCCGACAAGCTTATCACGAACTGGAAGTTAAGCATCATGATTCCAAG
TGGACGGTAGAAGAAGACCTCTTGGCTTTATCTAATGATATTGGAAATTT
CCAACGACTGGTGATGACAAAGCAAGGACGCTACTATGATGAAACACCCT
ACACACTGGAACAAAAACTTTCAGAAAATATCTGGTGGCTATTAGAACTT
TCTCAACGTTTGGATATAGACATTCTGACGGAAAATGGAAAACTTCCTCTC
TGATAAAGAAAAGCAATTGAACGTTAGGACTTGGAAGTAG

4197.4

(SEQ. ID. NO. 350)

ATGCTTGATTGGAAACAATTTTTTCTAGCCTATCTGCGCTCCCGTAGTCG
TCTTTTTATCTATCTGCTTTCTTTGGCATTTCTTGTCTTACTCTTTCAGT
TTTTTATTTGCCAGTCTAGGAATTTACTTCCTCTACTTTTTCTTCTTGTG
TTGCTTTGTAACCATATTATTTTTCACTTGGGACATATTGGTGGAAACGC
AGGTCTATCGCCAGGAACTTCTCTATGGAGAGAGGGAAGCCAAGTCTCCT
TTGGAAATAGCTTTAGCAGAAAAATTAGAAGCGCGTGAGATGGAACTCTA
TCAGCAGAGGTCAAAAGCAGAAAGAAAACTGACGGATTTGCTGGATTACT
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TTAGTTGCAGAAGTGGTCGACCGCCAACTGAAGCAGCAGCTAGAACAGGA
AATTTTCAAAATCGACTCCTATACCAACCTAGTTTTACAGTACCTGCGTT
TAGAAAGTTTCCATGATGATTTGGTCTTAAAGCAGGTTCAAATTGAGGAC
TTGGTCAAGGAAATAATTCGTAAATATGCTCTTTTCTTTATTCAAAAAGG
CTTAAATGTCAATCTACATGACCTTGATAAAGAAATCGTGACGGATAAAA
AGTGGCTGCTAGTGGTTATTGAGCAAATCATCTCAAACAGTCTCAAGTAC
ACCAAGGAAGGTGGTCTGGAGATTTATATGGATGACCAAGAGCTTTGTAT
CAAAGATACGGGAATCGGGATAAAAAACAGTGATGTCCTCCGAGTATTTG
AACGTGGCTTTTCAGGATACAATGGCCGTTTGACCCAGCAGTCCTCTGGA
CTTGGCCTTTATCTATCTAAGAAAATTTCTGAAGAACTGGGGCACCAGAT
TCGTATCGAGTCTGAGGTCGGAAAAGGAACGACAGTGCGGATTCAGTTTG
CTCAAGTGAACTTAGTCCTTGAGTAA

4211.2

(SEQ. ID. NO. 351)

ATGGAACTTAATACACACAATGCTGAAATCTTGCTCAGTGCAGCTAATAA
GTCCCACTATCCGCAGGATGAACTGCCAGAGATTGCCCTAGCAGGGCGTT
CAAATGTTGGTAAATCCAGCTTTATCAACACTATGTTGAACCGTAAGAAT
CTCGCCCGTACATCAGGAAAACCTGGTAAAACCCAGCTCCTGAACTTTTT
TAACATTGATGACAAGATGCGCTTTGTGGATGTGCCTGGTTATGGCTATG
CTCGTGTTTCTAAAAAGGAACGTGAAAAGTGGGGGTGCATGATTGAGGAG
TACTTAACGACTCGGGAAAATCTCCGTGCGGTTGTCAGTCTAGTTGACCT
TCGTCATGACCCGTCAGCAGATGATGTGCAGATGTACGAATTTCTCAAGT
ATTATGAGATTCCAGTCATCATTGTGGCGACCAAGGCGGACAAGATTCCT
CGTGGTAAATGGAACAAGCATGAATCAGCAATCAAAAAGAAATTAAACTT
TGACCCGAGTGACGATTTCATCCTCTTTTCATCTGTCAGTAAGGCAGGGA
TGGATGAGGCTTGGGATGCAATCTTAGAAAAATTGTGA

TABLE 1-continued

4211.3

(SEQ. ID. NO. 352)

ATGACAAAGAAACAACTTCACTTGGTGATTGTGACAGGGATGAGTGGCGC
AGGGAAAACTGTAGCCATTCAGTCCTTCGAGGATCTAGGTTATTTCACCA
TTGATAATATGCCGCCAGCTCTCTTGCCTAAGTTTTTGCAGCTGGTTGAA
ATTAAGGAAGACAATCCTAAGTTGGCCTTGGTAGTGGATATGCGTAGCCG
TTCTTTCTTTTCAGAGATTCAAGCTGTTTTGGATGAGTTGGAAAATCAAG
ATGGTTTGGATTTCAAAATCCTCTTTTTGGATGCGGCTGATAAGGAATTC
CTCGCTCGTTACAAGGAAACCAGACGGAGTCACCCACTAGCAGCAGACGG
TCGTATTTTAGATGGAATCAAGTTGGAACGTGAACTCTTGGCACCTTTGA
AAAATATGAGCCAAAATGTGGTGGATACGACTGAACTCACTCCACGTGAG
cTGCGCAAAACCCTTGCAGAGCAGTTTTCAGACCAAGAACAAGCCCAGTC
TTTCCGTATCGAAGTCATGTCTTTCGGATTTAAGTATGGAATCCCGATTG
ATGCGGACTTGGTCTTTGATGTCCGTTTCTTGCCAAATCCCTATTATTTA
CCAGAACTGAGAAACCAAACGGGTGTGGATGAACCTGTTTATGATTATGT
CATGAACCATCCTGAGTCAGAAGACTTTTATCAACATTTATTGGCCTTGA
TTGAGCCGATTCTGCCAAGTTACCAAAAGGAAGGTAAGTCCGTTTTGACC
ATTGCCATGGGATGTACGGGTGGACAACACCGTAGTGTGGCATTTGCTAA
ACGCTTGGCGCAGGACTTATCCAAGAATTGGTCTGTTAATGAAGGGCATC
GCGACAAAGACCGCAGAAAGGAAACGGTAAACCGTTCATGA

4211.4

(SEQ. ID. NO. 353)

ATGAGAAAACCAAAGATAACGGTGATTGGTGGAGGGACTGGAAGTCCCGT
CATTCTAAAAAGTCTGCGGGAAAAAGATGTGGAAATCGCAGCTATCGTGA
CGGTGGCAGATGATGGTGGTTCTTCAGGTGAACTCCGAAAAAATATGCAA
CAGTTGACACCGCCAGGTGATCTTCGTAATGTCCTTGTGGCCATGTCGGA
TATGCCTAAGTTTTATGAGAAGGTCTTTCAGTATCGGTTCTCTGAGGATG
CCGGAGCCTTTGCTGGCCATCCATTGGGAAATCTCATCATTGCTGGCTTG
TCAGAAATGCAGGGTCAACCTATAATGCCATGCAGTTATTGAGCAAATTT
TTCCATACAACAGGGAAAATTTATCCTTCCAGTGACCATCCTTTGACCCT
TCATGCAGTCTTTCAGGATGGGACAGAAGTGGCTGGAGAGAGTCATATTG
TAGACCATCGAGGCATAATTGACAATGTCTATGTGACCAATGCCCTAAAC
GATGATACGCCTCTGGCCAGCCGTCGAGTAGTGCAGACCATCCTTGAAAG
TGACATGATTGTCCTAGGGCCAGGTTCCCTCTTTACCTCTATTTTGCCCA
ATATCGTGATTAAGGAAATTGGGCGGGCTCTTTTGGAAACCAAGGCAGAA
ATTGCCTATGTCTGCAATATCATGACCCAACGTGGGGAGACGGAACACTT
TACAGATAGCGACCACGTGGAAGTCTTGCATCGTCACCTTGGTCGCCCTT
TTATCGACACTGTCTTGGTGAATATTGAAAAAGTGCCTCAGGAATACATG
AATTCCAACCGTTTTGATGAATACTTAGTGCAAGTGGAACACGATTTTGT
AGGTCTTTGTAAGCAAGTTTCGCGCGTGATTTCATCTAACTTCCTTCGTC
TGGAAAATGGCGGTGCCTTCCACGATGGAGATTTGATTGTGGACGAGTTG
ATGCGCATTATACAGGTGAAAAAATGA

4213.1

(SEQ. ID. NO. 354)

ATGAAAAATTTGATAAAGTTGCTAATAATTAGATTGATTGTTAACTTAGC
AGACAGTGTATTTTATATAGTAGCATTGTGGCACGTTAGCAATAATTATT
CTTCGAGCATGTTCTTAGGAATATTTATTGCAGTAAATTATCTACCGGAT
TTGTTACTAATCTTTTTTGGACCAGTTATTGACAGAGTAAATCCGCAAAA
AATTCTTATAATATCAATTTTGGTTCAATTAGCAGTGGCTGTAATATTTT
TATTATTATTAAACCAAATATCATTTTGGGTGATAATGAGTCTAGTGTTT
ATTTCAGTAATGGCTAGCTCCATAAGTTACGTGATAGAAGATGTGTTGAT
TCCTCAAGTGGTAGAATATGATAAGATTGTATTTGCAAATTCTCTTTTTA
GTATTTCGTATAAAGTATTAGATTCTATTTTTAATTCATTCGCATCATTT
TTACAGGTGGCAGTAGGATTTATTTTATTGGTTAAGATAGATATAGGCAT
ATTTTTACTTGCTCTATTTATATTGTTGTTGTTAAAATTTAGAACTAGCA
ATGCGAATATAGAAAACTTCTCTTTCAAATATTACAAGAGAGAAGTGTTG
CAAGGTACAAAGTTTATTTTAAATAATAAATTATTATTTAAAACCAGTAT
TTCTTTAACGCTTATAAACTTTTTTATTCATTTCAGACAGTAGTTGTACC
GATTTTTTCTATTCGATATTTTGATGGTCCGATTTTTTATGGTATTTTTT
TAACTATTGCTGGTTTGGGTGGTATATTGGGAAATATGCTAGCGCCAATC
GTAATAAAATATTTAAAATCGAATCAAATTGTTGGTGTATTTCTTTTTTT
GAACGGCTCAAGTTGGTTAGTAGCAATTCTTATAAAAGACTATACTTTAT
CACTTATTTTATTTTTCGTTTGTTTTATGTCTAAAGGAGTCTTCAATATT
ATTTTTAATTCGTTGTACCAACAAATACCTCCACATCAACTTCTTGGTAG
GGTAAATACTACCATTGATTCTATTATTTCTTTTGGAATGCCAATTGGTA
GTTTAGTTTGCAGGAACGCTTATTGATTTGAATATTGAATTAGTGTTAAT
TGCTATTAGCATACCTTATTTTTTGTTTTCTTATATTTTTTATACGGATA
ATGGATTGAAAGAATTTAGTATATATTAG

4213.2

(SEQ. ID. NO. 355)

ATGATGTCTAACAAAAATAAGGAAATTCTGATTTTTGCGATTCTCTATAC
AGTCCTCTTTATGTTTGATGGCGTTAAATTGCTGGCTTCTTTAATGCCAT
CTGCCATTGCAAATTATCTTGTTTATGTAGTTTTAGCTCTATATGGCTCC
TTCTTGTTCAAGGATAGATTGATCCAACAATGGAAGGAGATTAGAAAGAC
TAAAAGAAAATTCTTCTTTGGAGTCTTAACAGGATGGCTCTTTCTCATTC
TGATGACTGTTGTCTTTGAATTTGTATCAGAGATGTTGAAGCAGTTTGTG
GGACTAGATGGACAAGGTCTAAATCAGTCTAATATTCAAAGTACCTTTCA
AGAACAACCACTACTGATAGCTGTTTTTGCTTGTGTCATTGGACCTCTGG
TAGAAGAATTATTTTTCCGTCAGGTCTTATTGCATTACTTGCAGGAACGG
TTGTCAGGTTTACTAAGCATTATTCTGGTAGGACTTGTTTTTGCTCTGAC
TCATATGCACAGTTTGGCTCTATCAGAGTGGATTGGTGCAGTTGGTTACT
TAGGTGGAGGCCTTGCCTTTTCTATTATTTATGTGAAAGAAAAAGAGAAT
ATCTACTATCCCCTACTTGTTCACATGTTAAGCAACAGCCTCTCCTTAAT
CATTTTAGCTATCAGTATAGTAAAATGA

4224.1

(SEQ. ID. NO. 356)

TTGAAAAAGCCAATTATCGAATTCAAAAACGTCTCTAAAGTTTTTGAAGA
CAGCAACACCAAGGTTCTCAAAGACATCAACTTTGAGTTGGAAGAAGGGA
AATTCTACACCCTTCTAGGTGCATCTGGTTCGGGGAAATCAACTATCCTA
AACATTATTGCAGGTTTACTGGATGCGACGACAGGAGATATCATGCTAGA
CGGTGTTCGTATCAATGATATTCCAACCAACAAGCGCGACGTACATACCG
TCTTCCAATCCTATGCCTTGTTCCCACATATGAATGTGTTTGAAAATGTT
GCCTTTCCACTTCGCTTGCGTAAAATTGATAAGAAAGAAATCGAGCAGCG
TGTAGCGGAAGTTCTCAAGATGGTTCAGTTGGAAGGTTATGAAAAACGTT
CCATCCGCAAACTTTCTGGAGGACAACGTCAGCGTGTGGCCATCGCCCGT
GCTATCATCAACCAACCCCGTGTGGTCTTGTTGGACGAGCCTTTATCAGC
GCTGGACTTGAAATTGAGAACAGACATGCAGTACGAATTGCGTGAATTAC
AACAACGATTGGGCATTACCTTTGTCTTTGTCACTCACGATCAGGAAGAA
GCTCTTGCCATGAGTGACTGGATTTTCGTTATGAATGATGGCGAGATTGT
CCAGTCTGGAACCCCTGTGGACATCTACGATGAGCCAATCAACCACTTTG
TTGCCACCTTTATCGGGGAGTCAAACATCTTGCCAGGTACCATGATTGAG
GACTACTTGGTCGAATTTAACGGCAAACGCTTTGAAGCGGTTGATGGTGG
GATGAAGCCAAATGAACCTGTTGAGGTCGTTATTCGTCCAGAGGACTTGC
GCATTACCCTTCCTGAAGAAGGCAAGCTCCAAGTTAAGGTCGATACCCAG
CTTTTCCGTGGAGTTCATTATGAAATTATCGCCTATGACGAACTTGGAAA
TGAATGGATGATCCACTCAACCCGTAAGGCTATCGTGGGTGAGGAAATCG
GTCTGGACTTTGAACCAGAAGACATCCACATCATGCGTCTCAATGAAACC
GAAGAAGAGTTCGATGCTCGTATTGAGGAGTACGTAGAAATCGAAGAGCA
AGAAGCAGGTTTGATCAATGCAATCGAGGAGGAAAGAGATGAAGAAAACA
AGCTCTAA

4252.1

(SEQ. ID. NO. 357)

ATGAAATCAATGAGAATCTTATTTTTGTTAGCTTTAATTCAAATCAGTTT
GAGTAGCTGTTTCCTATGGAAGGAATGCATCTTGTCCTTTAAACAAAGTA
CAGCTTTTTTCATCGGAAGCATGGTTTTCGTTTCAGGAATCTGTGCTGGA
GTAAATTATCTTTATACCCGTAAGCAAGAAGTCCATAGTGTCCTAGCCAG
TAAGAAGTCGGTGAAGCTTTTTTACAGTATGTTACTCTTAATTAATTTGT
TAGGAGCTGTTCTTGTTTTGTCAGATAACTTGTTCATCAAAAATACGCTG
CAGCAAGAATTAGTTGACTTTTTATTGCCATCCTTCTTTTTCCTATTTGG
GCTAGATTTGCTGATTTTTTTACCCTTGAAAAAATACGTGCGCGATTTTC
TTGCTATGCTGGACAGAAAAAAGACAGTGTTGGTGACTATTTTAGCAACA
CTTCTTTTCTTAAGAAATCCAATGACCATTGTCTCACTTCTGATTTATAT
TGGACTGGGCTTGTTTTTTGCAGCCTATCTTGTCCCAAATTCGGTTAAGA
AGGAAGTTTCCTTTTTATGGTCATATTTTCCGAGATCTTGTATTGGTCAT
TGTTACGCTCATTTTCTTTTAG

4252.2

(SEQ. ID. NO. 358)

ATGGTTAAAAAAATTATTGGAATGGTGCTAGCTTTACTTTCTGTAACTGT
AGTAGGAGTAGGTGTTTTTGCTTATACTATTTATCAACAAGGGACAGAAA
CCTTAGCTAAAACCTATAAAAAAAATCGGTGAAGAAACCAAGGTTATTGAA
GCGACTGAACCTCTAACCATTCTGTTAATGGGAGTGGACACCGGAAATGT
TGAACGAACTGAAACTTGGGTCGGTAGAAGTGATAGCATGATCTTGATGA
CAGTGAATCCTAAAACGAAAAAAACAACAATGATGAGTTTAGAGCGGGAT
ATTCGACGCGCATTGAATCAGGGAATGGTCAGGCTCATGAAGCGAAACTG
AACTCAGCATATGCAGATGGTGGAGCAGAGCTTGCTATAGAAACCATTCA
AAAAATGATGAATATCCATATTGATCGCTATGTGATGGTCAATATGAGAG
GATTGCAAAAACTAGTGGATGCAGTAGGAGGTATTACAGTCAATAATATC
CTAGGTTTCCCAATTTCTATCAGTGACCAAGAAGAATTTAATACTATTTC
TATCGGTGTTGGGGAGCAACATATTGGGGGAGAAGAAGCCCTAGTCTATG
CACGAATGCGTTACCAAGATCCTGAGGGGGATTATGGTCGTCAAAAACGT
CAACGTGAAGTTATTCAAAAAGTCATGGAAAAAGCTCTCAGTTTAAATAG
CATTGGTCATTATCAAGAGATTCTAAAAGCTTTGAGTGACAATATGCAGA
CCAATATTGATTTGTCTGCAAAAAGTATCCCTAACTTGCTAGGCTATAAA
GATTCATTTAAAACCATTGAAACTCAGCAGTTGCAGGGTGAAGGAGAGAT
ACTTCAAGGTGTTTCTTACCAGATTGTTTCGAGAGCACATATGTTGGAAA

TABLE 1-continued

TGCAAAATCTACTCCGACGTTCTTTGGGACAAGAAGAAGTTACTCAGCTT
GAAACCAATGCGGTTTTATTTGAAGATTTATTTGGCAGAGCACCTGTTGG
TGATGAAGATAATTAA

4256.2

(SEQ. ID. NO. 359)

ATGAAAAAACAAGCCTATGTCATTATTGCTCTCACCTCCTTCCTATTTGT
CTTTTTTTTCTCCCACAGCTTGCTGGAAATACTTGATTTTGACTGGTCTA
TCTTTTTGCACGATGTCGAAAAAACAGAAAAATTTGTCTTTTTATTGTTG
GTTTTCAGCATGTCCATGACCTGTCTCTTAGCCCTGTTTTGGCGAGGGAT
CGAAGAGCTTTCTCTAAGAAAAATGCAGGCTAATCTCAAGCGTTTATTAG
CAGGGCAAGAAGTGGTTCAGGTTGCAGATCCAGATTTGGATGCCAGTTTC
AAGTCCTTATCAGGTAAACTTAACCTTTTGACAGAGGCTCTTCAAAAAGC
TGAAAATCAGAGCCTTGCTCAGGAAGAGGAAATCATCGAGAAGGAACGGA
AGCGAATTGCTCGGGATTTGCACGATACAGTCAGTCAGGAGTTGTTTGCG
GCCCACATGATTTTATCGGGTATCAGTCAGCAGGCTTTGAAATTGATAGA
GAAAAGATGCAGACCCAGTTGCAGAGTGTCACAGCTATTTTAGAAACAGC
CCAGAAGGATTTGCGGGTTTTGCTCTTGCATTTGCGACCAGTTGAACTGG
AGCAGAAGAGCTTGATAGAAGGGATTCAAATTCTTTTAAAAGAGCTTGAG
GACAAGAGTGATCTTAGGGTTAGTCTCAAGCAGAATATGACGAAATTGCC
TAAGAAAATCGAGGAGCATATCTTCCGTATCCTGCAAGAGTTGATTAGCA
ATACCCTCCGCCATGCCCAGGCATCTTGCCTAGATGTCTACCTCTATCAG
ACAGATGTTGAATTGCAACTGAAGGTGGTGGACAATGGGATTGGTTTCCA
GTTAGGGAGCTTAGACGACTTGAGTTATGGACTGCGAAATATCAAGGAGC
GGGTTGAAGATATGGCTGGAACAGTTCAACTCTTGACAGCTCCCAAGCAA
GGGCTGGCGGTTGATATCCGTATTCCCCTGTTAGATAAGGAATGA

4263.1

(SEQ. ID. NO. 360)

ATGATTGTTTCCATTATTTCTCAAGGATTTGTCTGGGCTATTCTAGGTCT
GGGAATCTTTATGACATTTAGGATTTTAAACTTTCCAGATATGACGACAG
AAGGTTCCTTCCCTCTTGGGGGAGCTGTTGCTGTCACTTTGATAACCAAA
GGCGTGAACCCATTTTTAGCGACACTTGTTGCTGTAGGAGCAGGTTGTTT
GGCTGGAATGGCAGCAGGCCTTCTTTATACAAAAGGGAAGATCCCAACCT
TGCTCTCAGGGATTTTGGTGATGACTTCTTGTCACTCAATCATGCTCTTG
ATTATGGGACGTGCGAATTTAGGCCTGCTGGAACCAAGCAAATTCAGGAT
GTTTGCCTTTTGATTCGGATTTGAATCAACTCTTGACAGGTCTCATCTTT
GTGAGTATTGTTATTGCTCTCATGCTCTTTTTCTTGGACACTAAACTCGG
ACAAGCCTATATTGCTACAGGGGATAATCCTGATATGGCTAGAAGTTTCG
GGATTCATACTGGACGCATGGAGCTCATGGGCTTGGTCTTATCAAATGGT
GTGATTGCCCTTGCAGGTGCCCTCATTGCTCAGCAAGAAGGTTATGCCGA
TGTGTCTCGAGGGATCGGGGTTATCGTTGTGGGGCTTGCAAGTTTGATTA
TTGGAGAAGTTATTTTCAAGAGTTTGAGCTTGGCAGAGCGTTTGGTTACT
ATCGTTGTAGGTTCTATCGCTTATCAATTTTTAGTGTGGGCAGTTATCGC
ACTTGGCTTTAATACAAGTTACCTTCGTTTATACAGTGCCTTGATTTTAG
CAGTCTGCCTCATGATTCCAACATTTAAGCAAACAATCTTGAAAGGAGCC
AAGTTAAGCAAATGA

4346.1

(SEQ. ID. NO. 361)

ATGAAAAAAATGAAAGTTTGGTCTACTGTACTTGCAACGGGAGTTGCTCT
TACTACACTTGCTGCTTGCTCTGGAGGTTCAAATTCTACGACTGCTTCTT
CATCTGAAGAAAAAGCTGATAAAAGTCAAGAATTAGTTATCTATTCGAAC
TCAGTCTCAAATGGTCGTGGTGATTGGTTAACTGCTAAAGCAAAAGAAGC
TGGTTTTAATATAAAAATGGTTGATATCGCTGGCGCTCAATTAGCAGACC
GTGTTATTGCTGAGAAGAATAATGCAGTTGCAGATATGGTATTTGGAATT
GGTGCTGTTGATTCAAATAAAATTAGAGATCAAAAATTACTAGTACAGTA
CAAGCCTAAATGGTTAGATAAAATTGATCAATCTTTATCAGATAAAGATA
ATTATTATAATCCTGTGATTGTTCAACCATTAGTTTTAATTGGGGCGCCT
GATGTAAAAGAAATGCCTAAAGATTGGACTGAATTAGGTAGTAAGTATAA
AGGTAAATATTCAATTTCTGGTCTTCAAGGAGGTACAGGACGGGCAATTC
TAGCAAGTATCTTAGTTCGATACCTTGATGATAAAGGTGAATTAGGTGTT
TCCGAAAAAGGTTGGGAAGTAGCAAAAGAATATTTGAAAAATGCATACAC
TCTTCAAAAGGGAGAAAGTTCAATTGTTAAGATGTTAGACAAAGAAGATC
CAATACAATATGGAATGATGTGGGGTTCTGGTGCATTAGTTGGACAAAAA
GAACAAAATGTTGTTTTCAAAGTTATGACTCCTGAGATTGGTGTACCATT
TGTAACTGAACAAACTATGGTTTTAAGCACTAGTAAAAAACAAGCGTTAG
CTAAAGAATTTATTGATTGGTTTGGTCAATCAGAAATTCAAGTAGAATAT
AGTAAGAACTTTGGATCTATTCCTGCAAATAAAGATGCCCTCAAAGATCT
ACCTGAAGATACGAAGAAATTTGTTGATCAAGTGAAACCACAAAATATTG
ACTGGGAAGCTGTTGGAAAGCATTTGGATGAATGGGTAGAAAAAGCTGAA
TTAGAATACGTACAATAA

TABLE 1-continued

4346.2

(SEQ. ID. NO. 362)

ATGATTAAATTTGATAATATTCAAATTAAATATGGTGATTTTGTTGCAAT
TGATAATCTGAATTTAGATATACATGAAGGGGAATTTTTTACATTTCTTG
GGCCTTCAGGATGTGGTAAATCAACTACTTTGAGAGCATTGGTAGGTTTT
CTAGATCCATCATCAGGAAGTATTGAAGTTAATGGAACAGATGTCACTCA
TTTGGAACCTGAAAAGCGTGGAATTGGTATTGTATTTCAATCTTATGCGC
TATTTCCAACTATGACTGTTTTTGATAATATTGCATTTGGTTTAAAGTTA
AGAAGGTAGCTCCAGATGTTATTAAAGCTAAAGTATCAGCAGTGGCAGCA
AAAATTAAGATCTCTGATCAACAGTTACAGCGTAATGTATCAGAATTATC
TGGGGGTCAACAACAAAGGGTAGCATTGGCTCGTGCTCTGGTTCTTGAAC
CTAAAATTCTTTGTCTAGATGAACCATTGTCAAACCTTGACGCAAAATTA
CGTGTAGATTTGAGAAAAGAGTTGAAAAGACTTCAAAAAGAGTTAGGTAT
TACTACTTTATATGTTACTCATGATCAAGAGGAAGCCTTGACTTTATCTG
ATAGAATTGCAGTCTTTAACAATGGATACATCGAACAGGTCGGTACACCA
GTAGAGATTTATCATAATTCTCAAACTGAATTTGTATGTGATTTTATTGG
AGATATTAATGTTTTGACCGATGAAACAGTCCACGAAGTATTATTGAAAA
ATACAAGCGTTTTCTTAGAGGATAAAAAAGGATACATTCGATTAGAGAAA
GTTCGATTCAATCGTGAAACTGAACAAGATTTTATTCTAAAAGGGACAAT
TATTGATGTTGAGTTTTCTGGAGTTACAATTCACTATACAATAAAAGTTT
CTGAAAGTCAGATTCTTAATGTAACAAGTATTGATAGTCAGGCTGCTATT
AGATCTGTCGGAGAAAGTGTGGAATTATTTATCACACCATCAGACGTTCT
GCAATTTTAA

4346.3

(SEQ. ID. NO. 363)

ATGCGTCATAAATTAAATTTAAAAGATTGGCTTATTCGTTTAGGGTTAAT
CTGGTTCTTAGTAACATTTATTATTTATCCAAACTTTGATCTAGTAGTGA
ATGTATTTGTAAAAGGAGGAGAATTTTCCCTTGATGCTGTACATCGTGTT
CTAAAATCTCAGAGGGCACTTCAGAGTATTATGAACAGTTTTAAGTTAGC
ATTTTCACTCATTATTACAGTTAATGTCGTAGGTATTCTTTGTGTTCTAT
TTACAGAGTACTTTGATATTAAAGGTGCTAAAATTTTAAAATTAGGTTAT
ATGACCTCTTTAATTTATGGAGGAGTGGTTTTAGCGACTGGATATAAATT
TGTCTATGGTCCTTATGGATTGATTACAAAATTTTTACAAAATGTTATCC
CTTCTTTAGACCCTAACTGGTTTATTGGGTATGGTGCAGTCTTATTCATT
ATGACATTTTCAGGAACTGCTAATCATACATTGTTTTTAACAAATACAAT
TCGAAGCGTTGACTATCACACTATTGAGGCTGCTCGAAATATGGGAGCAA
AACCATTTACTGTTTTCCGAAAAGTAGTGTTACCAACCTTAATTCCAACT
CTATTTGCACTTACTATTATGGTTTTTCTTAGTGGTTTATCTGCAGTAGC
AGCACCCATGATTGTTGGTGGTAAAGAATTTCAAACTATAAATCCAATGA
TTATTACATTTGCAGGGATGGGGAATTCTCGTGATTTAGCTGCCCTACTT
GCAATTATTTTAGGTATTGCAACTACAATTTTGCTTACTATCATGAATAA
GATAGAAAAAGGTGGAAATTATATTTCTATCTCTAAGACTAAAGCGCCTC
TTAAAAAACAAAAAATTGCGTCTAAGCCTTGGAATATCATTGCTCACATT
GTAGCATATGGATTGTTCACAGTTTTCATGCTTCCACTAATTTTTATAGT
ATTATACTCATTTACAGATCCAGTTGCAATTCAAACAGGTAACTTAACAT
TATCAAACTTTACTTTAGAAAATTATCGCTTATTCTTTAGTAATAGTGCG
GCATTCTCTCCATTCTTGGTCAGCTTTATTTATTCTATTATTGCTGCGAC
AACAGCAACAATTCTCGCAGTTGTATTTGCTCGTGTTGTCAGAAAACATA
AATCTCGTTTTGATTTCTTATTTGAATATGGTGCTCTACTTCCTTGGTTA
CTACCAAGTACACTTTTAGCAGTAAGTTTATTATTTACTTTTAATCAGCC
ACAATTTCTTGTCTTGAATCAGATTTTGGTAGGTAGTTTGGTAATTCTAC
TTATTGCATATATAGTTGTAAAAATCCCATTTTCTTATAGAATGGTACGT
GCTATTTTATTTAGTGTTGATGATGAGATGGAAGATGCAGCAAGAAGTAT
GGGTGCTTCACCTTTTTATACTATGATGAAGGTTATCATTCCATTTATTT
TACCGGTTGTTCTCTCTGTTATTGCTTTAAACTTTAACTCTTTATTAACT
GACTTCGACTTATCTGTATTCCTTTACCATCCCCTAGCTCAACCATTAGG
TATTACGATTCGATCTGCAGGTGATGAAACAGCAACATCTAATGCACAAG
CTCTGGTATTTGTTTATACAATTGTTCTGATGATTATTTCTGGAACGGTA
TTATACTTCACACAAAGACCGGGCGTAAAGTAAGGAAATAA

TABLE 2

(SEQ ID. NO. 1)

MEELVTLDCLFIDRTKIEANANKYSFVWKKTTEKFSAKLQEQIQVYFQEE
ITPLLIKYAMFDKKQKRGYKESAKNLANWHYNDKEDSYTHPDGWYYRFHH
TKYQKTQTDFQQEIKVYYADEPESAPQKGLYMNERYQNLKAKECQALLSP
QGRQIFAQRKIDVEPVFGQIKASLGYKRCNLRGKRQVRIDMGLVLMANNL
LKYSKMKZ

(SEQ ID. NO. 2)

MGKGHWNRKRVYSIRKFAVGACSVMIGTCAVLLGGNIAGESVVYADETLI
THTAEKPKEEKMIVEEKADKALETKNIVERTEQSEPSSTEAIASEKKEDS

TABLE 2-continued

AVTPKEEKVSAKPEEKAPRIESQASNQEKPLKEDAKAVTNEEVNQMIEDR
KVDFNQNWYFKLNANSKEAKPDADVSTWKKLDLPYDWSIFNDFDHESPAQ
NEGGQLNGGEAWYRKTFKLDEICDLKKNVRLTFDGVYMDSQVYVNGQLVG
HYPNGYNQFSYDITKYLQKDGRENVIAVHAVNKQPSSRWYSGSGIYRDVT
LQVTDKVHVEKNGTTILTPKLEEQQHGKVETHVTSKIVNTDDKDHELVAE
YQIVERGGHAVTGLVRTASRTLKAHESTSLDAILEVERPKLWTVLNDKPA
LYELITRVYRDGQLVDAKKDLFGYRYYHWTPNEGFSLNGERIKFHGVSLH
HDHGALGAEENYKAEYRRLKQMKEMGVNSIRTTHNPASEQTLQIAAELGL
LVQEEAFDTWYGGKKPYDYGRFFEKDATHPEARKGEKWSDFDLRTMVERG
KNNPAIFMWSIGNEIGEANGDAHSLATVKRLVKVIKDVDKTRYVTMGADK
FRFGNGSGGHEKIADELDAVGFNYSEDNYKALRAKHPKWLIYGSETSSAT
RTRGSYYRPERELKHSNGPERNYEQSDYGNDRVGWGKTATASWTFDRDNA
GYAGQRWTGTDYIGEPTPWHNQNQTPVKSSYFGIVDTAGIPKHDFYLYQS
QWVSVKKKPMVHLLPHWNWENKELASKVADSEGKIPVRAYSNASSVELFL
NGKSLGLKTFNKKQTSDORTYQEGANANELYLEWKVAYQPGTLEAIARDE
SGKEIARDKITTAGKPAAVRLIKEDHAIAADGKDLTYIYYEIVDSQGNVV
PTANNLVRPQLHGQGQLVOVDNGEQASRERYKAQADGSWIRKAFNGKGVA
IVKSTEQAGKFTLTAHSDLLKSNQVTVFTGKKEGQEKTVLGTEVPKVQTI
IGEAPEMPTTVPFVYSDGSRAERPVTWSSVDVSKPGIVTVKGMADGREVE
ARVEVIALKSELPVVKRIAPNTDLNSVDKSVSYVLIDGSVEEYEVDKWEI
AEEDKAKLAIPGSRIQATGYLEGQPIHATLVVEEGNPAAPAVPTVTVGGE
AVTGLTSQKPMQYPXLAYGAKLPEVTASAKNAAVTVLQASAANGMRASII
IQPKDGGPLQTYAIQFLEEAPKIAHLSLQVEKADSLKEDQTVKLSVRAHY
QDGTQAVLPADKVTFSTSGEGEVAIRKGMLELHKPGAVTLNAEYEGAKDQ
VELTIQANTEKKIAQSIRPVNVVTDLHQEPSLPATVTVEYDKGFPKTHKV
TWQAIPKEKLDSYQTFEVLGKVEGIDLEARAKVSVEGIVSVEEVSVTTPI
AEAPQLPESVRTYDSNGHVSSAKVAWDAIRPEQYAKEGVVVNGRLEGTQL
TTKLHVRVSAQTEQGANISDQWTGSELPLAFASDSNPSDPVSNVNDKLIS
YNNQPANRWTNWNRTNPEASVGVLFGDSGILSKRSVDNLSVGFHEDHGVG
VPKSYVIEYYVGKTVPTAPKNPSFVGNEDHVFNDSANWKPVTNLKAPAQL
KAGEMNHFSFDKVETYAVRIRMVKADNKRGTSITEVQIFAKQVAAAKQGQ
TRIQVDGKDLANFNPDLTDYYLESVDGKVPAVTASVSNNGLATVVPSVRE
GEPVRVLAKAENGDILGEYRLHFTKDKSLLSHKPVAAVKQARLLQVGQAL
ELPTKVPVYFTGKDGYETKDLTVEWEEVPAENLTKAGQFTVRGRVLGSNL
VAEITVRVTDKLGETLSDNPNYDENSNQAFASATNDIDKNSHDRVDYLND
GDHSENRRWTNWSPTPSSNPEVSAGVIFRENGKIVERTVTQGKVQFFADS
GTDAPSKLVLERYVGPEFEVPTYYSNYQAYDADHPFNNPENWEAVPYRAD
KDIAAGDEINVTFKAIKAKAMRWRMERKADKSGVAMIEMTFLAPSELPQE
STQSKILVDGKELADFAENRQDYQITYKGQRPKVSVEENNQVASTVVOSG
EDSFPVLVRLVSESGKQVKEYRIHLTKEKPVSEKTVAAVQEDLPKIEFVE
KDLAYKTVEKKDSTLYLGETRVEQEGKVGKERIEFAINPDGSKEEKLREV
VEVPTDRIVLVGTKPVAQEAKKPQVSEKADTKPIDSSEASQTNKAQLPST
GSAASQAAVAAGLTLLGLSAGLVVTKGKKEDZ

(SEQ ID. NO. 3)

MKIMKXKYWTLAILFFCLFNNSVTAQEIPKNLDGNITHTQTSESFSESDE
KQVDYSNKNQEEVDQNKFRIQIDKTELPVTTDKHLEKNCCKLELEPQINN
DIVNSESNNLLGEDNLDNKIKENVSHLDNRGGNIEHDKDNLESSIVRXYE
WDIDKVTGGGESYKLYSKSNSKVSIAILDSGVDLQNTGLLKNLSNMSKNY
VPNKGYLGKEEGEEGIISDIQDRLGHGTAVVAQIVGDDNINGVNPHVNIN
VYRIFGKSSASPDWIVKAWDAVDDGNDHNLSTGQYLMIDGEYEDGTNDFE
TFLKYKKAIDYANQKGVIIVAALGNDSLNVSNQSDLLKLISSRIZKVRKP
GLVVDVPSYFSSTISVGGIDRIGNLSDFSNKGDSDAIYAPAGSTLSLSEL
GLNNFINAEKYKEDWIFSATLGGYTYLYGNSFAAPKVSGAIAMIIDKYKL
KDQPYNYMFVKKFWKKHYQZ

(SEQ ID. NO. 4)

MKKTWKVFLTLVTALVAVVLVACGQGTASKDNKEAELKXVDFILDWTPNT
NHTGLYVAKEKGYFKEAGVDVDLKLPPEESSSDLVINGKAPFAVYFQDYM
AKKLEKGAGITAVAAIVEHNTSGILSRKSDNVSSPKDLVGKKYGTWNDPT
ELAMLKTLVESQGGDFEKVEKVPNNDSNSITPIANGVFDTAWIYYGWDGI
LAKSQGVDANFMYLKDYVKEFDYYSPVIIANNDYLKDNKEEARKVIQAIK
KGYQYAMEHPEEAADILIKNAPELKEKRDFVIESQKYLSKEYASDKEKWG
QFDAARWNAFYKWDKENGILKEDLTDKGFTNEFVKZ

(SEQ. ID. NO. 5)

MKRTWRNSFVTNLNTPFMIGNIEJPNRTVLAPMAOVTNSAFRTIAKELGA
GLVVMEMVSDKGIQYNNEKTLHMLHIDEGENPVSIQLFGSDEDSLARAAE
FIQENTKTDIVDINMGCPVNKIVKNEAGAMWLKDPDKIYSIINIVQSVLD
IPLTVKIMRTGWADPSLAVENALAAEAAGVSALAMHGRTREQMYTGHADL
ETLYKVAQALTICIPPFIANGDIRTVQEAKQRIEEVGADAVMIGRAAMGNP
YLFNQINHYFETGEILPDLTFEDKMKIAYEHLKRLINLKGENVAVRERGL
APHYLRGTSGTSGAAKLRGAISQASTLAEIETLLQLEKAZ

TABLE 2-continued

(SEQ. ID. NO. 6)

MIKNPKLLTKSFLRSFAILGGVGLVIHIAIYLTFPFYYIQLEGEKFNESA
RVFTEYLKTKTSDEIPSLLQSYSKSLTISAHLKRDIVDKRLPLVHDLDIK
DGKLSNYIVMLDMSVSTADGKQVTVQFVHGVDVYKEAKNILLLYLPYTFL
VTIAPSFVFSYFYTKRLLNPLFYISEVTSKMQDLDDNIRFDERJCDEVGE
VGKQINGMYEELLKVIYELESRNEQIVKLQNQKVSFVRGASHELKTPLAS
LRMLENMQHNIGDYKDHPKYIAKSINKIDQMSHLLEEvLESSKFQEWTEC
RETTVKPVLVDILSRYQELAHSIGVTIENQLTDATRVVMSLRALDKVLTN
LISNAIKYSDKNGRVHSEQDGYLSIKNTCAPLSDQELEHLFDFYHSQIVT
DKDESSGLGLY1VNNILESYQMDYSFLPYEHGMEFKISLZ

(SEQ. ID. NO. 7)

MYLGDLMEKAECGQFSILLQESQTTVKAVMEETGFSKATLTKYVTLLNDK
ALDSGLELAIHSEDENLRLSIGAATKGRDIRSLFLESAVKYQILVYLLYH
QQFLAHQLAQELVISEATLGRHLAGLNQILSEFDLSIQNGRWRGPEHQIH
YFYFCLFKVWSSQEWEGHMQKPERKQEIANLEEICGASLSAGQKLDLVLW
AHISQQRLRVNACQFQVIEEKMRCYPDNIFYLRLLRKVPSFFAGQHIPLG
VEDGEMMIFFSFLLSHRILPLHTMEYILGFGGQLADLLTQLIQEMKKEEL
LGDYTEDHVTYELSQLCAQVYLYKGYILQDRYKYQLENRHPYLLMEHDFK
ETAEEIFHALPAFQQGTDLDKKILWEWLQLIEYMAEGGQHMRIGLDLTSG
FLVFSRMAAILKRYLEYNRFITTIEAYDPSRHYDLLVTNNPIHKKEQTPV
YYLKNDLDMEDLVAIRQLLFTZ

(SEQ. ID. NO. 8)

MEFSKKTRELSIKKMQERTLDLLHGGGITGAGVALQAAASGLETGLIEMQ
DFAEGTSSRSTKLVHGGLRYLKQFDVEVVSDTVSERAVVQQIAPHIPKSD
PMLLPVYDEDGATFSLFRLKVAMDLYDLLAGVSNTPAANKVLSKDQVLER
QPNLKKEGLVGGGVYLDFRNNDARLVIENIKRANQDGALANHKAEGFLFD
ESGKITGVVARDLLTDQVFEIKARLVINTTGPWSDKVRNLSNKGTQPSQM
RKGVHLVVDSSKIKVSQPVYFDTGLGDGRMVFVLPRENKTYEGTTDTDYT
GDLEHPKVTQEDVDYLLGIVNNRFPESNITIDDIESSWAGLRPLIAGNSA
SDYNGGNNGTISDESFDNLIATVESYLSKEKTREDVESAVSKLESSTSEK
HLDPSAVSRGSSLDRDDNGLLTLAGGKITDYRKMAEGAMERVVDIICAEF
DRSFKLINSKTYPVSGGELNPANVDSEIEAFAQLGVSRGLDSKEAHYLAN
LYGSNAPKVFALAHSLEQAPLSLADTLSHYAMRNELLTLSPVDFLLRRTN
HMLFMRDSLDSIVEPILDEMGRFYDWTEEEKATYRADVEAALANNDLAEL
KNZ

(SEQ. ID. NO. 9)

MMNELFGEFLGTLIILLGNGVVAGVVLPKTKSNSSGWIVITMGWGIAVAV
AVFVSGKLSPAYLNPAVTIGVALKGGLPWASVLPYILAQFAGAMLGQILV
WLQFKPHYEAEENAGNILATFSTGPAIKDTVSNLISEILGTFVLVLTIPA
LGLYDFQAGIGTFAVGTLIVGIGLSLGGTTGYALNPARDLGPRIMHSILP
IPNKGDGDWSYAWIPVVGPVIGAALAVLVFSLFZ

(SEQ. ID. NO. 10)

MTKKKERISVIHREKILWLKWYFMRDKEQPKYSVLERKMFDAAKNQDMLA
YQKYATIKQTSEADIRVQTSEADILEAVKEVYVYNHMNVIGACQRILFIS
QSPAYDKLNKWPNIYSDLYFSVVPLPKMGVYHEMVGIZ

(SEQ. ID. NO. 11)

MKNSNEAEMKLLYTDIRTSLTEILTREAEELVAAGKRVFYIAPNSLSFEK
ERAVLEYLSQQASFSITVTRFAQMARYLVLNDLPAKTTLDDIGLGLAFYK
CLAELDPKDLRVYGAIKQDPQLIQQLIELYHEMTKSQMSFLDLENLTDED
KRADLLLIFEKVTAYLNQGQLAQESQLSHLIEAIENDKVSSDFNQIALVI
DGFTRFSAEEERVVDLLHGKGVEWIGAYASKKAYTSPFSEGNLYQAVKFL
HHLASKYQTPAQDCSQTHEKMDSFDKASRLLESSYDFSELALDVDEKDRE
NLQIWSCLTQKEELELVARSIRQKLHENSDLSYKHFRJLLGDVASYQLSL
KTIFDQYQIPFYLGRSEAMAHHPLTQFVESILALKRYRPRQEDLINLLRT
DLYTDLSQSDIDAFEQYIRYLGINGLPAFQQTFTKSHHGKFNLERLNVLR
LRILAPLETLFASRKQKAEKLLQKWSVFLKEGAVTKQLQDLTITLEAVEQ
ERQAEVWKAFCNVLEQFATVFAGSQVSLEDFLALLHSGMSLSQYRTIPAT
VDTVLVQSYDLIAPLTADFVYAIGLTQDNLPKISQNTSLLTDEERQNLNQ
ATEEGVQLLIASSENLKKNRYTMLSLVNSARKQLFLSAPSLFNESESKES
AYLQELIHFGFRRREKRMNHKGLSKEDMGSYHSLLSSLVAYHQQGEMSDT
EQDLTFVKVLSRVIGKKLDQQGLENPAIPTSPSSKTLAKDTLQALYPAKQ
EFYLSTSGLTEFYRNEYSYFLRYVLGLQEELRLHPDARSHGNFLHRFEAL
QLPNEDSFDQRLEQAIQETSQERBFSAIYQESLEAQITKEVLLDVARTTG
HILRHNPAIETIKEEANFGGKDQAFIQLDNGRSVFVRGKVDRIDRLKANG
AIGVVDYKSSLTQFQFPHFFNGLNSQLPTYLAALKREGEQNFFGAMYLEM
AEPVQSLMAVKSLAGAVVEASKSMKYQGLFLEKESSYLGEFYNKNKANQL
TDEEFQLLLDYNAYLYKKAAEKILAGRFAINPYTENGRSIAPYVQQHQAI
TGFEANYHLGQARFLEKLDLADGKRLVGEKLKQAWLEKIREELNRZ

TABLE 2-continued

(SEQ. ID. NO. 12)

MKLIPFLSEEEIQKLQEAEANSSKEQKKTAEQIEAIYTSAQNILVSASAG
SGKTFVMAERLDQLARGVEISQLFISTFTVKAATELKERLEKJCISKKIQ
ETDDVDLKQHLGRQLADLPNAAIGTMDSFTQKFLGKHGYLLDIAPNFRIL
QNQSEQULENEVFHEVFEAHYQGKQKETFSHLLKNFAGRGKDERGLRQQV
YKIYDFLQSTSNPQKWLSESFLKGFEKADFTSEKEKLTEQIKQALWDLES
FFRYHLDNDAKEIAKAAYLENVQLILWDEEGSLNQESDSQAYQAVLARVV
AISKEKNGRALTNASRKADLKPLADAYNEERKTQFAKLGQISDQIAILDY
QERYHGDTWKLAKTFQSFMSDFVEAYRQRKRQENAPEFADISHYTIEILE
NFPQVRESYQERFHEVMVDEYQDTNHIQERMLELLSNGHNRFMVGDIKQS
IYRFRQADPQCFNEKFQRYAQNPQEGRLIILKENFRSSSEVLSATNDVFE
RLMDQEVGEINYDNKHQLVFANTKLTPNPDNKAAFLLYDKDDTGEEEESQ
RETKLTGEMRLVIKEILKLHQEKGVAFKRIALLTSSRSRNOQILLALSEY
GEPVKTDGEQNNYLQSLEVQVMLDTLRVIHNPLQDYALVALMKSPMFGFD
EDELARLSLQKAEDGVHENLYEKLVNAQKMASSQKGLIHTALAEKLKQFM
DILASWRLYAKTHSLYDLIWKIYNDRFYYDYVGALPNGPARQANLYALAL
RADQFEKSNFEKGLSRFIRMIDQVLEAQHDLASVAVAPPKDAVELMTIHK
SKGLEFPYVFILNMDQDINKQDSMSEVILSRQNGLGVKYIAKMETGAVED
HYPKTIKLSIPSLTYRQNEEELQLASYSEQMRLLYVAMTRAEKKLYLVGK
GSREKLESKEYPAAKNGKLNSNTRLQARNFQDWLWAISKVFTKDKLNFSY
RFIGEDQLTREAIGELETKSPLQDSSQADNRQSDTIKEALEMLKEVEVYN
TLHRAAIELPSVQTPSQUCKPYEPVMDMEGVEIAGQGQSVGKKISFDLPD
FSTKEKVTGAEIGSATHELMQRIDLSQQLTLASLTETLKQVQTSQAVRDK
INLDKILAFFDTVLGQEILANTDHLYREQPFSMLKRDQKSQEDFVVRGIL
DGYLLYENKIVLFDYKTDRYDEPSQLVDRYRGQLALYEEALSRAYSIENI
EKYLILLGKDEVQVVKVZ

(SEQ. ID. NO. 13)

MELARHAESLGVDALATIPPIYFRLPEYSVAKYWNDISSAAPNTDYVCYN
IPQLAGVALTPSLYTEMLKNPRVIGVKNSSMPVQDIQTFVSLGGEDMIVF
NGPDEQFLGGRLMGARAGIGGTYGAMPELFLKLNQLIADKDLETARELQY
AINAHGKLTSAHGNMYGVIKEVLKINBGLNIGSVRSPLTPVTEEDRPVVE
AAAALIRETKERFLZ

(SEQ. ID. NO. 14)

MYKTKCLREKLVLFLKIFFPIUYQFANYSASFVDTAMTGQYNTMDLAGVS
MATSTWNPPFTPLTGIVSALVPIIGHHLGRGKKEEVASDFYQFIYLALGL
SVVLLGMVLPLAPIILNHIGLEAAVAAVAVRYLWFLSIGIIPLLLFSVIR
SLLDSLGLTKLSMYLMLLLLPLNSGFNYLLIYGAFGVPELGGAGAGLGTS
LAYWVLLGISVLVLFKQEKLKALHLEKRIPLNMDKIKEGVRLGLPIGGTV
FAEVAIFSVVGLIMAKFSPLIIASHQSAMNFSSLMYAFPMSISSAMAIVV
SYEVGAKRFDDAKTYIGLGRWTALIFAAFTLTFLYIFRGNVASLYGNDPK
FIDLTVRFLTYSLFFQLADTFAAPLQGILRGYKDTVIPFYLGLLGYWGVA
IPVYAIZ

(SEQ. ID. NO. 15)

MSTLAKIEALLFVAGEDGIRVRQLAELLSLPPTGIQQSLGKLAQKYEKDP
DSSLALIETSGAYRLVTKPQFAEILKEYSKAPINQSLSRALETLIIAYKQ
PITRIEIDAIRGVNSSGALAKLQAFDLIKEDGKKEVLGRPNLYWITDYFL
DYMGINHLEELPVIDELEIQAQESQLFGERIEEDENQZ

(SEQ. ID. NO. 16)

MDTMISRFFRHLPEALKSLKRNGWMTVAAVSSVMITLTLVAIFASVIFNT
AKLATDIENNVRVVVYIRKDVEDNSQTIEKEGQTVTNNDYHKVYDSLKNM
STVKSVTFSSKEEQYEKLTEIMGDNWKIFEGDANPLYDAYIVEANTPNDV
KTIAEDAKKIEGVSEVQDGGANTERLFKLASFIRVWGLGIAALLIFIAVF
LISNTIRITIISRSREIQIMRLVGAKNSYIRGPFLLEGAFIGLLGAIAPS
VLVFIVYQIVYQSVNKSLVGQNLSMISPDLFSPLMIALLFVIGVFIGSLG
SQGISMRRFLKIZ

(SEQ. ID. NO. 17)

MKKVRFIFLALLFFLASPEGAMASDGTWQGGQYLKEDGSQAANEWVFDTH
YQSWFYIKADANYAENEWLKQGDDYFYLKSGGYMAKSEWVEDKGAFYYLD
QDGKMKRNAWVGTSYVGATGAKVIEDWVYDSQYOAWFYIKADGQHAEKEW
LQIKGKDYYFKSGGYLLTSQWINQAYVNASGAKVQQGWLFDKQYQSWFYI
KBNGNYADKEWIFENGFHYYYLKSGGYMAANEWEWDKESWFYLKFDGKMA
EKEWVYDSHSQAWYYFKSGGYMTANEWIWDKESWFYLKSDGKIAEKEWVY
DSHSQAWYYFKSGGYMTANEWIWDKESWFYLKSDGKIAEKEWVYDSHSQA
WYYFKSGGYMAKNETVDGYQLGSDGKWLGGKTTNENAAYYQVVPVTANVY
DSDGEKLSYISQGSVVWLDKDRKSDDKRLAITISGLSGYMKTEDLQALDA
SKDFIPYYESDGHRFYHYVAQNASIPVASHLSDMEVGKKYYSADGLHFDG
FKLENPFLFICDLTEATNYSAEELDKVFSLLNINNSLLENKGATFKEAEE
HYHINALYLLAHSALESNWGRSKIAKDKNNFFGITAYDITPYLSAKTFDD
VDKGILGATKWIKENYIDRGRTFLGNKASGMNVEYASDPYWGEKIASVMM
KINEKLGGKDZ

TABLE 2-continued

(SEQ. ID. NO. 18)

MKKVLQKYWAWAFVVIPLLLQAIPFYVPMFQGAFYSFTNWTGLTYNYKFV
GLNNFKLLFMDPKFMNAIGFTAIIAIAMVVEIALCIARVLNSKIKGQTFF
RAWFFFPAVLSGLTVALIFKQVFNYGLPAIGNALHIEFFQTSLLGTKWGA
IFAAVFVLLWQOVAMPEIIFLAGLQSIPTEITEAARIDGATSKQVFWNIE
LPYLLPSVSMVFELALKGGLTAFDQVFAMTGGGPNNAITSLGLLVYNYAF
KNNQFGYANAIAVILFFLIVVISHQLRVSKKFEIZ

(SEQ. ID. NO. 19)

MMKQDERKALIGKYILLILGSVLILVPLLATLFSSFKPTKDIVDNFFGFF
TNFTWDNFSRLLADGIGGYYWNSVVITVLSLLAVMIFIPMAAYSIARNMS
KRKAFTIMYTLLILGIIFVPFQVIMIPITVMMSKLGLANTPGLILLYLTY
AIPQTLFLYVGYIKISIPESLDEAAEIDGANQFTTYFRIIFPMMKPMHAT
TMIINALWFWNDFMLPLLVLNRDSKMWTLPLFQYNYAGQYFNDYGPSFAS
YVVGIISITIVYLFFQRHIHSGMSNGAVKZ

(SEQ. ID. NO. 20)

MKSILQKMGEHPMLLLFLSYSTVISILAQNWMGLVASVGMFLFTIFFLHY
QSILSHKFFRLILQFVLFGSVLSAAFASLEHPQIVKKPNYAPLSPNMQVW
HQNRAEVTFFNPNYYGIICCFCIMIAPYLFTTTKLNWLKVFCVIAGPVNL
FGLNFTQNRTAFPAIIAGAIIYLFTTTKNWKAFWLSIGVFAIGLSFLFSS
DLGVRMGTLDSSMEERISIWDAGMALFKQNPFWGEGPLTYMNSYPRIHAP
YHEHAHSLYIDTILSYGIVGTILLVLSSVAPVRLMMDMSQESGKRPIIGL
YLSFLTVVAVHGIFDLALFWIQSGFIFLLVMCSIPLEHRMLVSDMTDZ

(SEQ. ID. NO. 21)

MSKMDVQKIIAPMMKFVNMRGIIALIKDGMLAILPLTVVGSLFLIMGQLP
FEGLNKSIASVFGANWTEPPMQVYSGTPAIMGLISCFSIAYSYAKNSGVE
ALPAGVLSVSAFFILLRSSYIPKQGEAIGDAISKVWFGGQGHGAHIGLVV
GSIYTFFIKRKIVIKMPEQVPQAIAKQFEAMIPAVIFLSSMIVYILAKSL
TNGGTFIEMIYSAIQVPLQGLTGSLYGAIGIAFFISFLWWFGVHGQSVVN
GVTALLLSNLDANKAMLASANLSLENGAHIVTQQFLDSFLTLSGSGITFG
LVVAMLFAAKSKQYQALGKVAAFPAIFNVNEPVVFGFPEVMNPVMFVPFI
LVPVLAAVIVYGAIATGFMQPFSGVTLPWSTPAILSGFLVGGWQGVETQL
VILAMSTLVYFPFFKVQDRLAYQNEIKQSZ

(SEQ. ID. NO. 22)

MKKKDLVDQLVSEIETGKVRTLGIYGHGASGKSTFAQELYQALDSTTVNL
LETDPYITSGRHLVVPKDAPNQKVTASLPVAHELESLQRDILACRRVWMS
Z

(SEQ. ID. NO. 23)

MKKRYLVLTALLALSLAACSQEKTKNEDGETKTEQTAKADGTVGSKSQGA
AQKKAEVVNKGDYYSIQGKYDEIIVANKHYPLSKDYNPGENPTAKAELVK
LIKAMQEAGPPISDHYSGFRSYETQTKLYQDYVNQDGKAAADRYSARPGY
SEHQTGLAFDVIGTDGDLVTEEKAAQWLLDHAADYGFVVRYLKGKEKETG
YMAEEWHLRYVGKEAIKEIAASGLSLEEYYGFEGGDYVDZ

(SEQ. ID. NO. 24)

MREPDFLNHFLKKGYFKKHAKAVLALSGGLDSMFLFKVLSTYQKELEEEL
ILAHVNHKQRIESDWEEKELRKLAAEAELPIYISNFSGEFSEARARNFRY
DFFQEVMKKTGATALVTAHHADDQVETIFMRLIRGTRLRYLSGIKEKQVV
GEIEIIRPFLHFQKKDFPSIFHFEDTSNQENHYFRNRIRNSYLPELEKEN
PRFRDAILGIGNEILDYDLAIAELSNNINVEDLQQLPSYSESTQRVLLQT
YLNRFPDLNLTKAQFAEVQQILKSKSQYRHPIKNGYELEKEYQQFQICKI
SPQADEKBDELVLHYQNQVAYQGYLFSFGLPLEGELIQQIPVSRETSIHI
RHRKTGDVLIKNGHRKKLRRLFIDLKIPMEKRNSALIIEQFGEIVSILGI
ATNNLSKKTKNDIMNTVLYIEKIDRZ

(SEQ. ID. NO. 25)

MRKPLIILLLPSFLTISKVVSTEKEVVYTSKEIYYLSQSDFGIYFRBKLS
SPMVYGEVPVYANEDLVVESGKLTPKTSFQITEWRLNKQGIPVPKLSNHQ
FIAADKRFLYDQSEVTPTIICKVWLESDFKLYNSPYDLKEVKSSLSAYSQ
VSIDKTMFVEGREFLHIDQAGWVAKESTSEEDNRMSKVQEMLSEKYQKDS
FSIYVKQLTTGKSAGINQDEKMYAASVLKLSYLYYTQEKINEGLYQLDTT
VKYVSAVNDFPGSYKPEGSGSLPKKEDNKEYSLKDUTKVSKESDNVAHNL
LGYYISNQSDATFKSKMSAIMGDDWDPKEKLISSKMAGKFMEAIYNQNGF
VLESLTKTDFDSQRIAKGVSVKVAHKIGDADEFKHDTGVVYADSPFILSI
FTKNSDYDTISKIAKDVYEVLKZ

(SEQ. ID. NO. 26)

MKKQNNGLIKNPFLWLLFIFFLVTGFQYFYSGNNSGGSQQINYTELVQEI
TDGNVKELTYQPNGSVIEWSGVYKNPKSTKEETGIQFFTPSVTKVEKFTS
TILPADITVSELQKLATDHKAEVTVKHBSSSGIWINLLVSWPFGILFFFL
FSNIMGNMGGGNGRNPMSFGRSKAXANKBDIKVRFSDVAGAEEEKQELVE
VVEFLKDPKRFKLGARIPAGVLLEGPPGTGKLLLAKAVAGEAGVPFFSDS

TABLE 2-continued

GSDLVEMFVGVGASRVRSLFEDAKKAAPAIIFIDEIDAVGRQRGVGLGGG
NFRTRQTLNQLLIEMDGFEGNEGIIVIAATNSDVLDPALLRPGRFDRKVL
VGRPDVKGEAILKVHAKNKPLAEDVDLKLVAQQTPGFGFVGADLENVLNE
AALVAARRNSIIDASDIDEAEDRVIAGPSKKKDKTVSQKERELVAYHEAG
HIVGLVLSNARVVHKVTIVPRGRAGGYMIALPKEDQMLEDMKEQLAGLMG
GRVAEEIIFNVQITGASNDFEQATQMARMVIVTEYGMSEKLGPVQYEGNH
AMLGAQSPQSEQTAYEIDEEVRSLLNEARINKAAEHQSNRETHKLLEALL
KYETLDSTQIKALYETGKMPEAVEEESHALSYDEVKSKMNDEKZ

(SEQ. ID. NO. 27)

MKRSSLLVRMVISIFLVFLILLALVGTFYYQSSSSAIEATIEGNSQSQTS
HFIQSYIKKLETTSTGLTQQTDVLAYAENPSQDKVEGIRDLFLTILKSDK
DLKTVVLVTKSGQVISTDDSVQMKTSSDMMAEDWYQKAIHQGAMPVLTPA
RKSDSQWVISVTQELVDAKGANLGVLRLDSYETLEAYLNQLQLGQQGFAF
IINENHEFVYHPQHTVYSSSSKMEAMKPYDTGQGYTPGHKSYVSQEKIAG
TDWTVLGVSSLEKLDQVRSQLLWTLLGASVTSLLVCLCLVWFSLKRWIAP
LKDLRETMLEIASGAQNLRAKEVGAYELREVTRQFNAMLDQIDQLMVAIR
SQEETTRQYQLQALSSQINPHFLYNTLDTIIWMAEFHDSQRVVQVTKSLA
TYFRLALNQGKDLICLSDEINHVRQYLFIQKQRYGDKLEYEINENVAFDN
LVLPKLVLQPLVENALYHGIKEKEGQGHIKLSVQKQDSGLVIREDDGVGF
QDAGDSSQSQLKRGGVGLQNVDQRLKLHPGANYHMKIDSRPQKGTKVEIY
INRIETSZ

(SEQ. ID. NO. 28)

MKRSSLLVRMVISIFLVFLILLALVGTIYYQSSSSAIEATIEGNSQTTIS
QTSHFIQSYIKKLETTSTGLTQQTDVLAYAENPSQDKVEGIRDLFLTILK
SDKDLKTVVLVTKSGQVISTDDSVQMKTSSDMMAEDWYQKAIHQGAMPVL
TPARKSDSQWVISVTQELVDAKGANLGVLRLDISYETLEAYLNQLQLGQQ
GFAFIINENHEFVYHPQHTVYSSSSKMEAMKPYIDTGQGYTPGHKSYVSQ
EKIAGTDWTVLGVSSLEKLDQVRSQLLWTLLGASVTSLLVCLCLVWFSLK
RWIAPLKDLRETMLEIASGAQNLRKEVGAYELREVTRQFNAMLDQIDQLM
VAIRSQEET1RQYQLQALSSQINPHFLYNTLDTUWMAEFHDSQRVVQVTK
SLATYFRLALNQGKDLICLSDENHVRQYLPIQKQRYGDKLEYEINENVAF
DNLVLPKLVLQPLVENALYHGIKEKEGQGHIKLSVQKQDSGLVIRIEDDG
VGFQDAGDSSQSQLKRGGVGLQNVDQRLKLHFGANYHMKIDSRPQKGTKV
EIYINRIETSZ

(SEQ. ID. NO. 29)

MFFKLLREALKVKQVRSKILETIFWLVFRIGTSITVPGVNANSLNALSGL
SFLNMLSLVSGNALKNFSIFALGVSPYITASIVVQLLQMDILPKFVEWGK
QGEVGRRKLNQATRYIALVLAFVQSIGITAGFNTLAGAQLIKTALTPQVF
LTIGIILTAGSMIVTWLGEQETDKGYGNGVSMHFAGWSSIPEMIQGIYVD
YFVNVPSSRITSSIIFVHLIITVLLIIYFTTYVQQAEYKIPIQYTKVAQG
APSSSYLPLKVNPAGVIPVIFASSITAAPAAILQFLSATGHDWAWVRVAQ
EMLATTSPTGIAMYALLIILFTFFYTFVQINPEKAAERYKRVVPISMEFV
LVKVQKNICLNFFVVLQLLVPSSLVZ

(SEQ. ID. NO. 30)

MDIRQVTETIAMIIEEQNFDIRTITMGISLLDCIDPDENRAAEKIYQKIT
TKAANLVAVGDEIAAELGIPIVNKRVSVTPISLIGAATDATDYVVLAKAL
DKAAKE1GVDFIGGFSALVQKGYQICGDEIILINSIPRALAETDKVCSSV
NIGSTKSGINMTAVADMGRIIKETANLSDMGVAKLVVFANAVEDNPFMAG
AFHGVGEADVIINVGVSGPGVVKRALEKVRGQSPDVVAETVKKTAFKITR
IGQLVGQMASERLGVEFGIVDLSLAPTPAVGDSVARVLEEMGLETVGTHG
TTAALALLNDQVKKGGVMACNQVGGLSGAFIPVSEDEGMEAAVQNGSLNL
EKLEAMTAICSVGLDMIAIPEDTPAETIAAMIADEAAIGVINMKTTAVRI
IPKGKEGDMIEIGGLLGTAPVMKVNGASSVDFISRGGQIPAPIHSFKNZ

(SEQ. ID. NO. 31)

MTQIIDGKALAAKLQGQLAEKTAKLKEETGLVPGLVVILVGDNPASQVYV
RNKERSALAAGFRSEVVRVPETITQEELLDLIAKYNQDPAWHGILVQLPL
PKHIDEEAVLLAIDPEKDVDGFHPLNMGRLWSGHPVMIPSTPAGIMEMFH
EYGIDLEGKNAVVIGRSNIVGKPMAQLLLAKNATVTLTHSRTHNLSKVAA
XADILVVAIGRAKFVTADFVKPGAVVIDVGMNRDENGKLCGDVDYEAVAP
LASHITPVPGGVGPMTITMLMEQTYQAALRTLDRKZ

(SEQ. ID. NO. 32)

MSKFNRIHLVVLDSVGIGAAPDANNFVNAGVPDGASDTLGHISKTVGLNV
PNMAKIGLGNIPRETPLKTVAAESNPTGYATKLEEVSLGKDTTGHWEIMG
LNITEPFDTFWNGFPEE1LTKIEEFSGRKVIREANKPYSGTAVIYDFGPR
QMSTGELHYTSADPVLQIAAHEDIIPLDELYRICEYARSITLERPALLGR
IIARPYVGEPGNFTRTANRRDLAVSPFFPTVLDKLNEAGIDTYAVGKIND
IFNGAGINHDMGHNKSNSHGIDTLLKTMGLAEFEKGFSFTNLVDFDALYG
HRRNAHGYRDCLHEPDERLPEHAAMRENDLLLITADHGNDPTYAGTDHTR
EYIPLLAYSPAFKGNGLIPVGHFADISATVADNFGVETAMIGESFLDKLV
Z

TABLE 2-continued

(SEQ. ID. NO. 33)

MFISISAGLVTFLLTLVEPAFIQFYRKAQITGQQMNEDVKQHQAKAGTPT
MGGLVPLITSVLVAFFFALFSSQFSNNVGMIILFILVLYGLVGFLDDFLK
VFRKINEGLNPKQKLALQLLGGVIFYLFYERGGDILSVPGYPVHLGFFYI
PFALFWLVGFSNAVNLTDGVDGLASISVVISLSAYGVIAYVQGQMDLLLV
ILAMIGGLLGFFIPNHKPAKVFMGDVGSLALGGMLAAISMALHQEWTLLU
GIVYVFEFTSVMMQVSYFKLTGGKPIFRMTPVHHHFELGGLSGKGNPWSE
WKVDFFFWGVGLLASLLTLAILYLMZ

(SEQ. ID. NO. 34)

LFKKNKDELNIALPAMGENFLQMLMGMVDSYLVAHLGLIAISGVSVAGNI
MYQAIRALGAAISSVLSKSIGQKDQSKLAYNVTEALKITLLLSILLGFLS
IFAGKSMIGLLGTERDVAESGGLYLSLVGGSIVLLGLMTSLGALIRATHN
PRLPLYVSFLSNALNILFSSLAIFVLDMGIAGVAWGTIVSRLVGLVILWS
QLKLPYGKPTFGLDKELLTLALPAAGERLMMRAGDVVHALVVSFGTEAVA
GNAIGEVLTQFNYMPAFGVATATVMLLARAVGEDDWKRVASLSKQTLFLS
LFMLPLSFSIYVLGVPLTHLYTDSLAVEASVLVTLFSLLGTPMTTGTVIY
TAVWQGLGNARLPFYATSIGMWCIRIGTGYLMGIVLGWGLPGIWAGSLLD
NGFRWLFLRYRYQRYMSLKGZ

(SEQ. ID. NO. 35)

MQTQEKRSQAAVLGLQHLAMYSGSILVPIMIATALGYSAEQLTYLISTDI
FMCGVATFLQLQLNKYFGIGLPVVLGVAFQSVAPLIMIGQSHGSGAMFGA
LIASGIYVVLVSGIFSKVANLFPSIVTGSVITTIGLTLIPVAIGNMGNNV
PEPTGQSLLAAITVLIILNIFTKGFIKSISILIGLVVGTAIAATMGLVDF
SPVAVAPLVHPTPLYFG,PTFEISSIVMMCIIATVSMVESTGVYLALSDI
TKDPIDSTRLRNGYREGLAVLLGGIFNTFPYTGFSQNVGLVKLSGIKKRL
PIYYAAGFLVLLGLLPKFGALAQIIPSSVLGGAMLVMFGFVSIQGMQILA
RVDFANNEHNFLIAAVSIAGVGLNNSNLFVSMPTAFQMFFSNGIVVASLL
AIVLNAVLNHKKKZ

(SEQ. ID. NO. 36)

MKDRKEYLQDKGKVTVNDLAQALGKDSSKDFRELIKTLLMERKHQIRFEE
DGSLTLEIKKKHEITLKGIFHAHKNGFGFVSLEGEEDDLFVGKNDVNYAI
DGDTVEVVHCKVADRNKGTAAEAKIIDILEHSLTTVVGQIVLDQEKPKYA
GYISKNQK1SQPIYVKKPALKLEGTEVLKVPEDKYPSKKHDFFVASVLDV
VGHSTDVGIDVLEVLESMDIVSEPPEAVVKEAESVPDAPSQKDMEGRLDL
RDEDGADAKDLDOAVHIKALKNGNLEPGVHADVSYYEGSALDKEALNRTS
VYVTDRVVPMLPERSNGICSLNPQVDRLTQSAIMEIDKHGRVVNTQTVIK
TSFRMTYSDVNDILAGDEEKEYHKIVSSIELMAKLHETLENMRVKRGALN
FDTNEAKILVDKQGKPVDIVLRQRGIAERMIESFMLMANETVAEHFSKLD
LPRYIHEBPKAEKVQKFIDYASSFGLRIYGTASELSQEALQDIMRAVEGB
PYADVLSMMLRSMQQARYSEHNHGHYGLAADYYTHFTSPIRRYPDLLVHR
MIRDYGRSKEIAEHFEQVIPEIATQSSNRERRAIEAEREVEAMKKAEYME
EYVGEEYDAVVSSIVKFGLFVELPNTVEGLINTNLPEFYHFNERDLTLRG
EKSGITFRVGQQIRIRVERADKMTGEIDFSFVPSEDFDVIEKGLKQSSRS
GRGRDSNRRSDKKEDKRKSGRSNDKRKHSQKDKKKKGKKPFYKEVAKKGA
KHGKGRGKGRRTKZ

(SEQ. ID. NO. 37)

MGTTGFTIIDLIILIVYLLAVLVAGIYFSKKEMKGKEFFKGDGSVPWYVT
SVSIFATMLSPISFLGLAGSSYAGSWLWFAQLGMVVAIPLTHIILPIFAR
DIDTAYDYLDKRFNSKALRISALLFIIYQLGRMSUMYLPSAGLSVLTGID
INILIILMGVVAIVYSYTGGLKSVLWTDFIQGVILJSGVVLALFVLIANI
KGGFGAVAETLANGKFLAANEKLFDPNLLSNSIFLIVMGSGPTILSSYAS
SQDLVQRFTTTQNIKKLNKMLFTNGVLSLATAVFYLIGTGLYVFYQVQNA
DSAASNIPQDQIFMYFIAYQLPVGITGLILAAIYAASQSTISTGLNSVAT
SWTLDIQDVISKNMSDNRRTKIAQFVSLAVGLPSIGVSIVMAHSDIKSAY
EWFNSPMGLVLGLLGGVRLGVSKKANKQGAYAALPIVMVFICYFLPPTAV
SYWAYSLISISVSVVSGYIVSVLTGNKVSAPKYTTIEDITEIKADSSWEV
RMZ

(SEQ. ID. NO. 38)

MKFSKKYAGSAVIVSLSLCAYALNQHRSQENKDNNRVSYVDGSQSSQKSE
NLTPDQVSQKEGIQAEQAEQIVIKITDQGYVTSHGDHYHYYNGKVPYDAL
FSEELLMKDPNYQLKDADIVNEVKGGYUKVDGKYYVYLKDAAHADNVRTK
DEINRQKQEHVKDNEKVNSNVAVARSQGRYTNDGYVPNPADIIEDTGNAY
IVPHGGHYHYIPKSDLSASELAAAKAHLGKNMQPSQLSYSSTASDNNTQS
VAKGSTSKPANKSENLQSLLKELYDSPSAQRYSESDGLVIDPAKIISRTP
NGVAIPHGDHYHPIPYSKLSALEEKTARVPISGTGSTVSTNAKPNEVVSS
LGSLSNPSSLTTSKELSSASDGYIFNPKDIVEETATAYWRHGDHFHYIPK
SNQIGQPTLPNNSLATPSPSLPINPGTSHEKHEEDGYGFDANRIIAEDES
GFVMSHGDHNHYFFKKDLTEEQIKVRKNIZ

TABLE 2-continued

(SEQ. ID. NO. 39)

MKKRAIVAVIVLLLIGLDQLVKSYIVQQIPLGEVRSWIPNFVSLTYLQNR
GAAPSILQDQQLLFAVITLVVVIGAIWYLHKHMEDSFWMVLGLTLUAGGL
GNFIDRVSQGPVVDMFHLDFINFAIFNVADSYLTVGVIILLIAMLKEEIN
GNZ

(SEQ. ID. NO. 40)

MNTNLASFIVGLHDENDRFYFVQKDGQTYALAKEEGQHTVGDTVKGFAYT
DMKQKLRLTTLEVTATQDQFGWGRVTEVRKDLGVFVDTGLPDKEIVVSLD
ILPELKELWPKXGDQLYIRLEVDKKDRIWGLLAYQEDFQRLARPAYNNMQ
NQNWPAIVYRKLSGTFVYLPENNNMLGFIHPSERYAEPRLGQVLDARVIG
FREVDRTLNLSLKPRSFEMLENDAQMILTYLSSNGGFMTLNDKSSPDDIK
ATFGISKGQFKKALGGLMKAGKIKQDQFGTELIZ

(SEQ. ID. NO. 41)

MKDVSLFLLKKVFKSRLNWIVLALFVSVLGVTFYLNSQTANSHSLESRLE
SR1AANERAINENEEKLSQMSDTSSEEYQFAXNNLDVQKNLLTRKTEILT
LLKEGRWKEAYYLQWQDEBKNYEFVSNDPTASPGLKMGVDRERKIYQALY
PLNIKAHTLEFPTHGIDQIVWILEVIIPSLFVVAIIFMLTQLFAERYQNH
LDTAHLYPVSKVTFAISSLGVGVGYVTVLFIGICGFSPLVGSLISGFGQL
DYPYNYSLVNQEVTIGKIQDVLFPGLLLAFLAFIVIVEVVYLIAYPFKQK
MPVLFLSLIGIVGLLFGIQTIQPLQRIAHLIPFTYLRSVEILSGRLPKQI
DNVDLNWSMGMVLLPCLIIFLLLGILFISRWGSSQKICEFFNRFZ

(SEQ. ID. NO. 42)

MMKFILDIVSTPAILVALIAILGLVLQKKKLPDIIKGGIKTFVGPLVVSG
GAGIVQNSLNPFGTMPEHAPHLSOVVPNNEAIVAVAUITYGSATAMIMFA
GMVFNILIARFTRFKYIFLTGHHTLYMACMIAVILSVAGFTSLPLILLGG
LALGUMSISPAFVQKYMVQLTGNDKVALGHFSSLGYWLSGFTGSLIGDKS
KSTEDIICPPKSLAPLRDSTVSITLSMAVIYUVAIFAGSEYIEKEISSGT
SGLVYALQLAGQFAAGVFVLAGVRLILGEIVPAPKGISERLVPNSKPALD
CPIVYTYAPNAVLIGFTSSFVGGLVSMVIMIASGTVVILPGVVPHFFCGA
TAGVTGNASGGVRGATIGAPLQGILISFLPVFLMPVLGGLGFQGSTFSDA
DFGLSGIILGMLNQFGSQAGIVIGLVLILAVMFGVSPIKKPSATEEZ

(SEQ. ID. NO. 43)

MIKTFLSALSVILFSIPIITYSFPPSSNLNZWLSTQPILAQIYAFPLATA
TMAAILSFLFFFLSFYKKNKQIRFYSGILLLLSLILLLFGTDKTLSSASN
KTKTLKLVTWNVANQIEAQHIERIFSKFDADMAIFPELATNIRGEQENQR
IKLLFHQVGLSMANYDIFTSPPTNSGIAPVTVIVKXSYGFYTEAKTFHTT
RFGTIVLHSRKQNIPDIIALHTAPPLPGLMEIWKQDLNIIHNQLASKYPK
AIIAGDFNATMRHGALAKISSHRDALNALPPFERGTWNSQSPKLFNATID
HILLPKNHYYVKDLDIVSFQNSDHRCIFTEITFZ

(SEQ. ID. NO. 44)

MNPIQRSWAYVSRKRLRSFLILLVLLAGISACLTLMKSNKTVESNLYKSL
NTSPSIKKIENGQTFKLSDLASVSKIKGLENVSPELEVAKLKDKEAVTGE
QSVERDDLSAADNNLVSLTALEDSSKDVTFTSSAFNLKEGRLHLQKGDSK
KILHEELAKKNGSLHDKIGLDAGQSESGKGQTVEFEIIGWSGKKQEKFTG
LSSDFSENQVFTDYESSQTLLGNSEAQVSAARFYVENPKEMDGLMKQVEN
IALENQGYQVEKENKAFEQIKDSVATFQTPLTIFLYGMLIAGAGALILVL
SLWLRERVYEVGILLALGKGKSS1FLQFCLEVVLVSLGALLPAFVAGNAI
TTYLLQTLLASGDQASLQDTLAKASSLTSILSFAESYVFLVLLSCLSVAL
CFLFLFRKSPKEILSSISZ

(SEQ. ID. NO. 45)

MLHNAFAYVTRKFFKSIVTFLIILLMASLSLVGLSIKGATAKASQETFKN
ITNSFSMQINRRVNQGTPRGAGNEKGEDIKKITENKAIESYVKRINAIGD
LTGYDLIETPETKKNLTADRAKRFGSSLMITGVNDSSKEDKFVSGSYKLV
EGEHLTNDDKDKILLHKDLAAKHGWKVGDKVKLDSNIYDADNEKGAKETV
EVTIKGLFDGHNKSAVTYSQELYENTAITDIHTAAKLYGYTEDTAIYGDA
TFFVTADKNLDDVMKELNGISGINWKSYTLVKSSSNYPALEQSISGMYXM
ANLLFWGSLSPSVLLLALLLSLWINARRKEVGILLSIGLKQASILGQFIT
ESILIAIPALVSAYFLANYTARAIGNTVLANVTSGVAKQASKAAQASNLG
GGAEVDGFSKTLSSLD1SIQTSDFIIIFVLALVLVVLVMALASSNLLRKQ
PKELLLDGEZ

(SEQ. ID. NO. 46)

MSQDKQMKAVSPLLQRVINISSIVGGVGSLIFCIWAYQAGILQSKETLSA
FIQQAGIWGPPLFIFLQILQTVVPIIPGALTSVAGVFIYGHIIGTIYNYI
GIVIGCAIIFYLVRLYGAAFVQSVVSKRTYDKYIDWLDKGNRFDRFFIFM
MIWPISPADFLCMLAALTKMSFKRYMTIIILTKPFTLVVYTYGLTYIIDF
EWQMLZ

TABLE 2-continued

(SEQ. ID. NO. 47)

MRNMWVIKETYLRHVESWSFFFMVISPFLFLGISVGIGHLQGSSMAKNNK
VAVVTTVPSVAEGLKNVNGVNFDYKDEASAKEAIKEEKLKGYLTIDQEDS
VLKAVYHGETSLENGIKFEVTGTLNELQNQLNRSTASLSQEQEKRLAQTI
QFTEKIDEAKENXKFIQTIAAGALGFFLYMILITYAGVTAQEVASEKGTK
IMEVVPSSIRASHYFYARMMALFLVILTHIGIYVVGGLAAVLLFKDLPFL
AQSGILDHLGDAISLNTLLFILISLFMYVVLAAFLGSMVSRPEDSGKALS
PLMILIMGGFFGVTALGAAGDNLLLKIGSYIPPISTFFMPFRTINDYAGG
AEAWISLALTVWAVVATGFIGRMYASLVLQTDDLGIWKTFKRALSYKZ

(SEQ. ID. NO. 48)

MTETIKLMIKAHTSVRRFKEQEIPQVDLNEILTAAQMASSWKNFQSYSVI
VVRSQEKKDALYELVPQEAIRQSAVFLLFVGDLNRAEKGARLHTDTFQPQ
GVEGLLISSVDAALAGQNALLAAESLGYGGVHGLVRYKSEEVAELFNLPD
YYTYSVFGMALGVPNQHHDMKPRLPLENVVFEEEYQEQSTEAIQAYDRVQ
ADYAGARATTSWSQRLAEQFGQAEPSSTRKNLEQKKLLZMLKLIAIVGTN
SKRSTNRQLLQYMQKHFTDKAEIELVEIKAIPVFNKPADKQVPAEILEIA
AKIEEADGVHGTPEYDHSIPAVLMSALAWLSYGIYPLLNKPIMITGASYG
TLGSSRAQLQLRQILNAPEIKANVLPDEFLLSHSLQAFNPSGDLVDLDVI
KKLDAIFDDPRIFVKITEKLRNAQELLRKDAEDFDWENLZ

(SEQ. ID. NO. 49)

MNTYQLNNGVEIPVLGFGTFICAKDGEEAYRAVLEALKAGYRHIDTAAIY
QNEESVGQAIKDSGVPREEMFVTTKLWNSQQTYSQTRQALEKSIEKLGLD
YLDLYLIHWPNPKPLRENDAWFTRNAEVWRAMEDLYQEGKIRAIGVSNFL
PHHLDALLETATIVPAVNQVRLAPGVYQDQVVAYCREKGILLEAWGPPGQ
GELFDSKQVQEIAANHGKSVAQLALAWSLAEGFLPLPKSVTTSRIQANLD
CFGIELSHEERETLKTIAVQSGAPRVDDVDFZ

(SEQ. ID. NO. 50)

MRCKMLDPIAIQLGPLAIRWYALCIVTGLILAVYLTMKEAPRKKIIPDDL
DPILVAFPLAILGARLYYVIFRFDYYSQNLGEIFAIWNGGLAIYGGLITG
ALVLYIFADRKLINTWDFLDIAAPSVMIAQSLGRWGNFFNQEAYGATVDN
LDYLPGRRDQMYIEGSYRQPTFLYESLWNLLGFALILIERRKWKSLRRGH
ITAFYLIWYGFGRMVIEGMRTDSLMFFGFRVSQWLSVVLIGLGIMIVIYQ
NRKKAPYYITEEENZ

(SEQ. ID. NO. 51)

MGKLSSILLGTVSGAALALFLTSDKGKQVCSQAQDPLDDLREDPEYAKEQ
VCEKLTEVKEQATDFVLKTKEQVESGEITVDSILAQTKSYAFQATEASKN
QLNNLKEQWQEKAEALDDSEEIVIDITEEZ

(SEQ. ID. NO. 52)

MKTKLIFWGSMLFLLSLSILLTIYLAWIFYPMEIQWLNLTNRVYLKPETI
QYNFHILMNYLTNPFSQVLQMPDFRSSAAGLNHFAVVKNLFHLVQLVALV
TLPSFYVFVNRIVKKDFLSLYRKSLLALVVLPVMIGLGGVLIGFDQFFTL
FHQILFVGDDTWLFDPAKDPVIMILPETFFLHAFLLFFALYENFFGYLYL
KSRRKZ

(SEQ. ID. NO. 53)

MTYHFTEEYDHVIGAGHAGVEASLAASRMGCKVLLATINIEMLAFMPCNP
SIGGSAKGIVVREVDALGGEMAKTIDKTYIQMKMLNTGKGPAVRALRAQA
DKELYSKEMRKTVENQENLTLRQTMIDEILVEDGKVVGVRTATHQEYAAK
AVNTTGTALRGEIIIGDLKYSSGPNHSLASINLADNLKELGLEIGRFKTG
TPPRVKASSINYDVTEIQPGDEVPNHFSYTSRDEDYVKDQVPCWLTYTNG
TSHEUQNNLHRAPMFTGVVKGVGPRYCPSIEDKIVRFADKERHQLFLEPE
GRNTEEVYVQGLSTSLPEDVQRDLVHSIKGLENAEMMRTGYAIEYDMVLP
HQLRATLETKKISGLFTAGQTNGTSGYEEAAGQGUAGINAALKIQGKPEL
ILKRSDGYIGVMIDDLVTKGTIEPYRLLTSRAEYRLILRHDNADMRLTEM
GREIGLVDDERWARFEIKICNQFDNEMKRLDSIKLKPVKETNAKVEEMGF
KPLTDAVTAKEFLRRPEVSYQDVVAFIGPAAEDLDDKIIELIETEIKYEG
YISKAMDQVAKMKRMEEKRIPANIDWDDIDSIATEARQKFKUNPETIGQA
SRISGVNPADISILMVYLEGKNRSISKTLQKSKZ

(SEQ. ID. NO. 54)

MTKQVLLVDDEEHILKLLDYHLSKEGFSTQLVTNGRKALALAETEPFDFI
LLDIMLPQLDGMEVCKRLRAKGVKTPIMMVSAKSDEFDKVLALELGADDY
LTKPFSPRELLARVKAVLRRTKGEQEGDDSDNIADDSWLFGTLKVYPERH
EVYKANKLLSLTPKEFESDKNPFFEVFKVSKVTAQZ

(SEQ. ID. NO. 55)

MTTFKDGFLWGGAVAAHQLEGGWQEGGKGISVADVMTAGRHGVAREITLG
VLEGKYYPNHEAIDFYHRYKEDIALFAEMGFKCPRTSIAWTRFPKGDELE
PNEEGLQFYDNLPDECLKNGIEPVITLSHFEMPYHLVTEYGGWKNRKLID
FPAREAEVVFKRYKDKVKYWMTFNEINNQANYQEDFAPFTNSGIVYEEGD
NREAIMYQAAHYELVASARAVKIGHEINPDFQIYYMSFAIDSHRENNPYD

TABLE 2-continued

YLETEDLVKNNYVKASEWEWQIDPEGLRYALNWFTDHYHLPLFNENGFGM
DQVAADGMVHDDYREYLGAHIREMKKAVVEDGVDLMGYTPWGCIDLVSAG
TGEMRKRYGFIYVDKDDNGKGSYNRSPKKFGWYKEVISSNGESVEZ

(SEQ. ID. NO. 56)

MDQQNGLFGFLENHVMGPMGKLAQPKVVLTAAGMAAVPFWGSMFLVFSIL
PQAPSPPWADIFSASFDKFTSLYMVANYATMGSLSLYFVLSLAYELTKIY
AEEEELNMNPLNGALLALMAFVMTVPQUFDGGMMKTSLKEGAVIADGWAM
GNVVARFGTTGIFTAHMAIVTVLIYRMCVKHNWVIKMPEAVPEGVSRGPT
ALVPGFVVAFVVIFINGLLVAMGTDIKVLMPFGFVSNLTNSWIGLMUYLL
TQLLWWGIHGANIVFAFVSPIALANMAENAAGGHFAVAGEFSNMFLVIAG
GSGATLGLCLYIAFASKSEQLKIGRSVVPALFNINEPLILGLPIIYNPAL
AIPFILAPMVTATIYYVANSLNFIKPIIAQVPWPTPVGIGAFLGTADLRA
VLVALVCAFAAPLVYLPFTRVYDQKLVKEEQGIZ

(SEQ. ID. NO. 57)

MKKFYVSPIFPILVGLIAFGVLSTFIIFVNNNLLTVLILPLFVGGYVFLF
KKLRVHYTRSDVEQIQYVNHQAEESLTALLEQMPVGVMKLNLSSGEVEWF
NPYAELILTKEGDFDLEAVQTIIKASVGNPSTYAKLGEKRYAVHMDASSG
VLYFVDVSREQAITDELVTSRPVIGVSVDNYDDLEDETSESDISQENSFV
ANFISEFSEKHMMFSRRVSMDRFYLFTDYTVLEGLMNDKFSVIDAFREES
KQRQLPLTLSMGFSYGDGNHDEIGKVALLNLNLAEVRGGDQVVVKENDST
KNPVYFGGGSAASTIKRTRTRTRAMMTASDKIRSVDQVFVVGHKNLDMDA
LGSAVGMQLFASNVIENSYALYDEEQMSPDIERAVSFIEKEGVTKLLSVK
DAMGMVTNRSLLILVDHSKTALTLSKEFYDLFTQTIVIDHHRRPQDFPDN
AVITYIESGASSASELVTELIQPQNSKKNRLSRMQASVLMAOMMLDTKNF
TSRVTSRTFDVASYLRTRGSDSIAIQEIAATDFEEYREVNEULQGRKLGS
DVLIAEAKDMKCYDTVVISKAADAMLAMSGIEASFVLAKNTQOFISLSAR
SRSKLNVQR1MEELGGGGHFNLAAAQIKDVTLSEAGEKLTEIVLNEMKEK
EKEEZ

(SEQ. ID. NO. 58)

MKEKNMWKELLNRAGWILVFLLAVLLYQVPLVVTSILTLKEVALLQSGLI
VAGLSIVVLALFIMGARKTKLASFNFSFFRAKDLARLGLSYLVIVGSNIL
GSILLQLSNETTTANQSQINDMVQNSSIISSFFLLALLAPICEEILCRGI
VPKKIFRGKENLGFVVGTIVFALLHQPSNLPSLLIYGGMSTVLSVIAYKT
QRLEMSILLHMIVNGIAFCLLALVVIMSRTLGISVZ

(SEQ. ID. NO. 59)

MKEKNMWKELLNRAGWILVFLLAVLLYQVPLVVTSILTLKEVALLQSGLI
VAGLSIVVLALFIMGARKTKLASFNFSFFRAKDLARLGLSYLVIVGSNLG
SILLQLSNETITANQSQINDMVQNSSLISSPFLLALLAPICEEILCRGIV
PKKIPRGKENILGFVVGTWFALLHQPSNLPSLLIYGGMSTVLSWAYKTQR
LEMSILLHMIVNGIAFCLLALVVIMSRTLGISVZ

(SEQ. ID. NO. 60)

MDTQKIEAAVKMUEAVGEDANREGLQETPARVARMYQEIFSGLGQTAEEH
LSKSFEIIDDNMVVEKDIFFHTMCEHHFLPFYGRAHIAYIPDGRVAGLSK
LARTVEVYSKKPQIQERLNIEVADALMDYLGAKGAFVVIEAEHMCMSMRG
VRKPGTATUTVARGLFETDKDLRDQAYRLMGLZMKDLFLKRKQAFRKECL
GYLRYVLNDHFVLFLLVLLGFLAYQYSQLLQHFPENHWPILLFVGITSVL
LLLWGGTATYMEAPDKLFLLVGEEEIKLHLKRQTGISLVFWLFVQTLFLL
LFAPLFLAMGYGLPVFLLYVLLLGVGKYFHFCQKASKFFTETGLDWDYVI
SQESKRKQVLLRFFALFTQVKGISNSVKRRAYLDFILKAVQKVPGKIWQN
LYLRSYLRNGDLFALSLRLLLLSLLAQVFIEQAWIATAVVVLFNYLLLPQ
LLALYHAFDYQYLTQLFPLDKGQKEKGLQEVVRGLTSFVLLVELVVGLIT
FQEKLALLALLGAGLVLLVLYLPYQVKRQMQDZ

(SEQ. ID. NO. 61)

MRKSIVLAADNAYLIPLETTIKSVLYHNRDVDFYILNSDIAPEWPKLLGR
KMEVVNSTIRSVHIDKELFESYKTGPHINYASYFRFFATEVVESDRVLYL
DSDIIVTGELATLFEIDLKGYSIGAVDDVYAYEGRKSGFNTGMLLMDVAK
WKEHSIVNSLLELAAEQNQVVNLGDQSILNIYFEDNWLALDKTYNYMVGI
DEYHLAQECERLDDNPPTIVHYASHDKPWNTYSISRLRELWWVYRDLDWS
EIAFQRSDLNYFERSNQSKKQVMLVTWSADIKHLEYLVQRLPDWHPHLAA
PCDCSEELTSLSQYTNVTVYQNVLHSRIDWLLDDSEVYLDINTGGEVFNV
VTRAQESGKICIFAFDITRKSMDDGLYDGIFSVERPDDLVDRMKNIEIEZ

(SEQ. ID. NO. 62)

MTKIYSSIAVKKGLFTSFLLFIYVLGSRIILPFVDLNTKDFLGGSTAYLA
FSAALTOGNLRSLSIFSVGLSPWMSAMILWQMFSFSKRLGLTSTSIEIQD
RkKMYLTLLIAVIQSLAVSLRLPVQSSYSAILVVLMNTILLIAGTFFLVW
LSDLNASMGIGGSIVILLSSMVLNIPODVLETFQTVHIPTGHVLLALLTL
VFSYLLALMYRARYLVPVNKIGLHNRFKRYSYLEIMLNPAGGMPYMYVMS
FLSVPAYLFILLGFIFPNHSGLAALSKEIMVGKPLWVYVYISVLFLFSII
FAFVTMNGEEIADRMKKSGEYIYGIYPGADTSRFINRLVLRFSVIGGLFN

TABLE 2-continued

VIMAGGPMLFVLFDEKLLRLAMIPGLFMMFGGMIFTIRDEVKALRLNETY
RPLIZ

(SEQ. ID. NO. 63)

MSSLSDQELVAKTVEFRQRLSEGESLDDILVEAFAVVREADKRILGMFPY
DVQVMGAIVMHYGNVAEMNTGEGKTLTATMPVYLNAPSGEGVMVVTPNEY
LSKRDAEEMGQVYRFLGLTXGVPFTEDPKKEMKASEKKLIYASDWTTINS
NLGPDYLNDNLASNEEGKFLRPFNYVUDEIDDILLDSAQTPLIIAGSPRV
QSNYYAIIDTLVTTLVEGWYIPKEEKEEVWLTTKGAKSAENELGIDNLYK
EEHASFARHLVYAIRAHKLFTKDKDYHRGNEMVLVDKGTGRLMEMTKLQG
GLHQAIEAKEHVKLSPETRAMASITYQSLPKMFNKISGMTGTGKVAEKEF
IETYNMSVVRIPTNRPRQRIDYPDNLYITLPEKVYASLEYIKQYHAKGNP
LLVFVGSVEMSQLYSSLLFREGIAHNVLNANNAAREAQIISESGQMGAVT
VATSMAGRGTDCKLGKGVAELGGUVIGTERMESQRIDLQIRGRSGRQGDP
GMSKFFVSLEDDVIKKFGPSWVHKKYKDYQVQDMTQPEVLKGRKYRKLVE
KAQHASDSAGRSARRQTLEYAESMNIQRDIVYKERNRLIDGSRDLEDVVV
DIIERYTEEVAADHYASRELLFWPIVTNISFHVKEVPDYIDVTDKTAVRS
FMKQVIDKELSEKKELLNQHDLYEQPLRLSLLKAIDDNWVEQVDYLQQLS
MAIGGQSASQKNPEVEYYQEAYAGFEAMKEQIHADMVRNLLMGLVEVTPK
GEIVTHFPZ

(SEQ. ID. NO. 64)

MIGTFAAALVAVLANRVPIEITPNSANTEIAPPDGIGQVLSNLLLKLVDN
PVNALLTANYIRILSWAVIFGIAMREASKNSQELLKTIADVTSKIVEWII
NLAPFGILGLVFKISDKGVGSLANYGILLVLLVTTMLPVAPVVNPLIAPF
FMRRNPYPLVWNCLRVSGVTAPFTRSSATNTPVNMKLCMDLGLNPDTYSV
SIPLOSTINMAGVAITINLLTLAAVNTLGTPVDFATAFVLSVVAAISSCD
ASGIAGGSLLUPVACSLFGISNDIAIQIVGVGPVIGVQDSCETALNSSTD
VLFTAVAEYAATRKKZ

(SEQ. ID. NO. 65)

MSISQRTTKLILATCLACLLAYFLNLSSAVSAGIIALLSLSDTRRSTLKL
ARNRLFSMLLALAIGVLAFHLSGFHIWSLGLYLAVPLAYKMGWEIGITPS
TVLVSHLLVQESTSPDLLVNEFLLFAIGTGFALLVNLYMPSREEEIQHYH
TLVEEKDILQRFKYYLSRGDGRNRAQLVAELDTLLKEALRLVYLDHSDHL
FHQTDYHIHYFEMRQRQSRILRNMAQQINTCHLAASESLILAQLFSKAGQ
LSQTNPASDLLDEIERYLEVFRNRSLPKTREEPETRATLLQLLREAKTFI
QVKVDFYQKYRQZ

(SEQ. ID. NO. 66)

MEIMSLAIAVFAVIIGLVIGYVSISAKM1SSQEAAELMLLNAEQEATNLR
GQAEREADLLVNEAKRESKSLKKEALLEAKEEARKYREEVDAEFKSERQE
LKQIESRLTERATSLDRXDDNLTSKEQTLEQKEQSISDRAKNLDAREEQL
EEVERQKEAELERIGALSQAEARDIILAQTSENLTREIASRIREAEQEVK
ERSDKMAKDILVQAMQRIAGEYVAESTNSTVHLPDDTMKGRIIGRGRNIR
TFESLTGVDVIIDDTPEVVTLSGFDPIRREIARMTMEMLLKDGRIHPARI
EELVEKNRQEIDNKIREYGEAAAYEIGAPNLHPDLMKIMGRLQPRTSYGQ
NVLRHSIEVAKLAGIMASELGENAALARRAGFLHDIGKAIDHEVEGSHVE
IGMELARKYKEPPVVVNTIASHHGDVEAESVIAVIVAAADALSAARPGAR
SESLESYIKRLHDLEEIANGFEGVQTSFALQAGREIRIMVNPGKIKDDKV
TILAHKVRKKIENNLDYPGNIKVTVIRELRAVDYAKZ

(SEQ. ID. NO. 67)

MMLKPSIDTLLDKVPSKYSLVILBAKRAHELEAGAPATQGFKSEKSTLRA
LEEIESGNVTIHPDPEGKREAVRRRIEEEKRRKEEEEKKIKEQIAKEKED
GEKIZ

(SEQ. ID. NO. 68)

MSAYQLPTVWQDEASNQGAFTGLNRPTAGARFEQNLPKGEQAFQLYSLGT
PNGVKVTILLEELLEAGFKEAAYDLYKIAIMDGDQFGSDPFKLNPNSKIP
ALLDQSGTENVRVFESAHILLYLAEKFGAFLPSNPVEKVEVLNWLFWQAG
AAPFLGGGFGHFFNYAPEKLEYPINRFTMEVKRQLDLLDKELAQKPYIAG
NDYTIADIAIWSWYGQLVQGNLYQGSAKFLDASSYQNLVKWAEKANRPAV
KRGLEVTYTEIKZ

(SEQ. ID. NO. 69)

LASLITSIIMFYVGFDVLRDTIQKILSREETVIDPLGATLGIISAAIMFV
VYLYNTRLSKKSNSNALKAAAKDNLSDAVTSLGTAIAILASSFNYPIVDK
LVAIIITFFILKTAYDIFIESSFSLSDGFDDRLLEDYQKAIMEIPKISKV
KSQRGRTYGSNIYLDITLEMNPDLSVFESHEIADQVESMLEERPGVFDTD
VHIEPAPIPEDEILDNVYKKLLMREQLIDQGNQLEELLTDDFVYIRQDGE
QMDKEAYKTKKELNSAIKDIQITSISQKTKLICYELDGIIHTSIWRRMET
WQNIFHQET
KKEZ

TABLE 2-continued

(SEQ. ID. NO. 70)

MTIKLVATDMDGTFLDGNGRFDMDRLKSLLVSYKEKGIYFAVASGRGFLS
LEKLPAGVRDDIIFIAENGSLVEYQGQDLYEATMSRDFYLATFEKLKTSP
YVDINKLLLTGKKGSYVLDTVDETYLKVSQHYNENIQKVASLEDITDDIF
KFTTNFTEETLEDGEAWVNENVPGVKAMTTGFESIDIVLDYVDKGVAIVE
LVKKLGITMDQVMAFGDNLNDLHMMQVVGHPVAPENARPEILELAKTVIG
HHKERSVIAYMHGLZ

(SEQ. ID. NO. 71)

MADIKLIALDLDGTLLITTDKRLTDRTKETLQAARDRGIKVVLTTGRPLK
AMDFFLHELGTDGQEDEYTITFNGGLVQKNTGEILDKTVFSYDDVARLYE
ETEKLSLPLDAISEGTVYQIQSDQELYAKFNPALTFVPVDFEDLSSQMTY
NKCVTAFAQEPLDAAEQKISPELFDQYEIFKSREMLLEWSPKNVHKATGL
AKLISHLGIDQSQVMACGDEANDLSMIEWAGLGVAMQNAVPEVKAAANVV
TPMTNDEEAVAWAIEEYVLKENZ

(SEQ. ID. NO. 72)

MESLLILLLIANLAGLFLIWQRQDRQEKHLSKSLEDQADHLSDQLDYRFD
QARQASQLDQKDLEVVVSDRLQEVRKELHQGLTQVRQEMTDNLLQTRDKT
DQRLQALQESNEQRLEQMRQTVEEKLEKTLQTRLQASFETVSKQLESVNR
GLDEMQTVARDVGALNKVLSGTKTRGALGELQLGQHEDIMTPAQYEREYA
TVENSSERVEYAIKLPGQGDQEYVYLPIDSKFPLADYYRLEEAYETGDKD
EIERCRKSLLASVKRFARDIRNKYIAPPRTTNFGVLFVPTEGLYSEIVRN
PVFFDDLRREEQIWAGPSTLSALLNSLSVGFKTLNIQKSADHISKTLASV
KTEFGKFGGILVKAQKHLQHASGNIDELLNRRTIAIERTLRHIELSEGEP
ALDLLHFQENEEEYEDZ

(SEQ. ID. NO. 73)

MKISHMKKDELFEGFYLIKSADLRQTRAGKNYLAFTFQDDSGEIDGKLWD
AQPHNIEAFTAGKVVHMKGRREVYNNTPQVNQITLRLPQAGEPNDPADFK
VKSPVDVIKEIRDYMSQMIFKIENPVWQRIVRNLYTKYDKEFYSYPAAIC
TNHHAFETGLAYHTATMVRLADALSEVYQLNKSLLYAGIMLHDLAKVIEL
TGPDQTEYTVRGNLLGHIALIDSEITKTVMELGIDDTKEEVVLLRHVILS
HHGLLEYGSPVRPRIMEAEIIHMIDNLDASMMMMSTALALVDKGEMTNKI
FAMDNRSFYKPDLDZ

(SEQ. ID. NO. 74)

MSEKAKKGFKMPSSKTVLLIIIAIMAVLTFIPAGAPIEGIYETQPQNPQG
IWDVLMAPIRAMLGTHPEEGSLIKBTSAAIDVAPRLMVGGFLGIVNKTGA
LDVGIASIVKKYKGREKMLILVLMPLFALGGTTYGMGEETMAFYPLLVPV
MMAVGFDSLTGVAIILLGSQIGCLASTLNPFATGIASATAGVGTGDGVLR
LIFWVTLTALSTWFVYRYADKIQKDPTKSLVYSTRKEDLKHFNVEESSSV
ESTLSSKQKSVLFLPVLTFILMVLSRPWTDLGVTIPDDFNTWLTGLPVIG
NIVGSSTSALGTWYFPEGAMLFAFMGILIGVIYGLKEDKUSSFMNGAADL
LSVALIVAIARGIQVIMNDGMITDTILNWGKEGLSGISSQVFIVVTYIFY
LPMSFLIPSSSGLASATMGIMAPLGEFVNVRPSLIITAYQSASGVLNLIA
PTSGIVMGALALGRINIGTWWKFMGKLVVAIIVVTIALLLLGTPLPFLZ

(SEQ. ID. NO. 75)

MSNSFVKLLVSQLFANLADIFFRVTIIANIYUSKSVIATSLVPILIGISS
FVASLLVPLVTKRLALNRVLSLSQFGKTILLAILVGMPTVMQSVAPLVTY
LFVVAISILDGFAAPVSYAIVPRYATDLGKANSALSMTGEAVQLIGWGLG
GLLFATIGLLPTTCINLVLYIISSFLMLFLPNAEVEVLESETNLEILLKG
WKLVARNPRLRLIWSANLLEFSNTIWVSSHLVFVTELLNKTESYWGYSNT
AYSIGIIISGLLRISEKFLAAKWEPQLFTPNLIVFIQNPCLSLDPGWFLF
SPNGCFLLDKKEFPLYGISVEKNTKRKETHMNSLPNHHIQNKSFYQLSFD
GGHLTQYGGLIFFQELFSQLKLKERISKYLVTNDQRRYCRYSDSDILVQP
LPQLLTGYGTDYACKELSADAYFPKLLEGGQLASQPRFSRTDEETVHSLR
CLNLELVEFFLQPHQLNQLIVDEDSTHFTTYGKQEGVAYNAHYRAHGYHP
LYAFEGKTGYCFNAQLRPGNRYCSEEADSFTTPVLERFNQLLFRMDSGFA
TPKLYDLIEKTGQYYUKLKKNTVLSRLGDLSLPCQDEDLTILPHSAYSET
LYQAGSWSHKRRVCQFSERKEONLPYDVISLVTNMTSGTSQDQFQLYRGR
GQAENFIKEMKBGFFGDKTDSSTLIKNEVRMMMSCIAYNLYLFLKHLAGG
DFQTLTIKRFRMLHVVGKCVRTGRKQLLKLSSLYAYSELFSALYSRIRKV
NLNLPVPYEPPRRKASLMMHZ

(SEQ. ID. NO. 76)

MMEFFQQLPHLEPYGNPQYFVYVIAATLPIFIGLFFKKRFAWYEVLVSLF
FIVTMLVGGKTNQLAALGIYLCWEILLLLFYKHYRKDGKWVFYLVSFLSL
LPIIFVKVQPAINGTQSLLGFLGISYLTPRSVGIVIELRDGVIKDPTLWE
FLRFLLFMPTFSSGPIDRFKRFNENYQAIPERDELMDMLDESVRYIMWGF
LYKFILAHVLGETLLPPLKNLALQSGGFFNLYALAVMYTFGLELFFDFAG
YSMPALAISNLMGIRSPINFNKPFLSRDLKEFWNRWHMSLSFWFRDFVPM
RMVMVLTRKKVFKNRNVTSSMAYIVNMLMGFWHGVTWYYIAYGLFHGLGL
VINDAWVRKKKTLNKERKKAGKAALPENRWIQLLGMVVTFHVVMLSFLIF
SGFLNNLWFKKZ

TABLE 2-continued

(SEQ. ID. NO. 77)

MLKRLWMIFGPVLIAGLLVFLLIFFYPTEMHHNLGAEKRSAVATTIDSFK
ERSQKVRALSDPNVRFVPFFGSSEWLRFDGAHPAVLAEKYNRSYRYLLGQ
GGAASLNQYFGMQQMLPQLENKQVVYVISPQWFSKNGYDPAAPQQYPNGD
QLTSFLKHQSGDQASQYAATRLLQQPPNVAMKDLVQKLASKEELSTADNE
MIELLARFNERQASFFGQFSVRGYVNYDKHVAKYLKILPDQPSYQAIEDV
VKADAEKTSNNEMGMENYPYNEQIKKDLKKLKDSQKSPTYLKSPEYNDLQ
LVLTQFSKSKVNPIFIIPPVNKKWMNYAGLREDMYQQTVQKIRYQLESQG
FTNIADFSKDGGEPFFMKDTIHLGWLGWLAFDKAVDPFLSNPTPAPTYHL
NERFFSKDWATYDGDVKEFQZ

(SEQ. ID. NO. 78)

MEKNLKALKQTTDQEGPAIEPEKAEDTKTVQNGYFEDAAVKDRTLSDYAG
NWQSVYPFLEDGTFDQVFDYKAKLTGKMTQAEYKAYYTKGYHTDVTKINI
TDNTMEFVQGGQSKKYTYKYVGKKILTYKKGNRGVRFLFEATDADAGQFK
YVQFSDHNVAPVKAEHFHIFFGGTSQEALFEEMDNWPTYYPDNLSGQEIA
QEMLAHZ

(SEQ. ID. NO. 79)

MKDGHLLAHHIRLLNGRIFQKLLSQDPEALYRGEQGKILAVLWNSETGCA
TATDIALATGLANNTLTTMIKKLEEQKLVIVSPCGKDKRKKYLVLTELGK
SQKEVGHRVSQKLDTIFYKGFSEEEIHQFEGFQERILANLKEKGNEVZ

(SEQ. ID. NO. 80)

MTNLIATFQDRFSDWLTALSQHLQLSLLTLLLAILLAIPLAVFLRYHEKL
ADWVLQIAGIFQTIPSLALLGLFIPLMGIGTLPALTALVLYAIFPILQNT
GLKGIDPNLQEAGIAFGMTRWERLKIFEIPLAMPVIMSGIRTAAVLIGTA
TLAALIGAGGLGSPILLGIDRNNASLILIGALSSAVLAIAFNFLLKVMEK
KLRTSGFALVALLLGLSYSPALLVQKEKENLVIAGKIGPEPEILANMYKL
LIEENTSMTATVKPNPGKTSFLYEALKKGDIDIYPEETGTVTESLLQPSP
KVSHEPEQVYQVARDGIAKQDHLAYLICPMSYQNTYAVAVPKKIAQEYGL
KTISDLKKVEGQLKAGFTLEFNDREDGNKGLQSMYGLNLNVATIEPALRY
QAIQSGDIQITDAYSTDAELERYDLQVLEDDKQLFPPYQGAPLMKEALLK
KHPELERVLNTLAGKITESQMSQLNYQVGVEGKSAKQVAKEFLQEQGLLK
KZ

(SEQ. ID. NO. 81)

MMHTYLQKKIENIKTTLGEMSGGYRRMVAAMADLGFSGTMKAIWDDLPAH
RSFAQWIYLLVLGSFPLWLELVYEHRIVDWIGMICSLTGIICVIFVSEGR
SNYLFGLINSVIYLILALQKGFYGEVLTTLYFTVMQPIGLLVIYQAQFKK
EKQEFVARKLDGKGWTKYLSISVLWWLAFGFIYQSIGANRPYRDSITDAT
NGVGQILMTAVYREQWIFWAATNVFSIYLWWGESLQIQGKYLIYLINSLV
GWYQWSKAAKQNTDLLNZ

(SEQ. ID. NO. 82)

MRNMKAKYAVWVAPFLNLTYAIVEFIAGGVFGSSAVLADSVHDLGDAIAI
GISAFLETISNREEDNQYTLGYKRFSLLGALVTAVILVTGSVLVILENVT
KILHPQPVNDEGILWLGILTINLLSLVVGKGKTKNESILSLHFLEDTLGW
VAVILMAIVLRFTDWYILDPLLSLVISFFILSKALPRFWSTLKIFLDAVP
EGLDIKQVKSGLERDNVASLNQLNLWTMDALEKNAIVHVCLKEMEHMETC
KESIRIFLKDCGFQNITIEIDADLETHQTHKRKVCDLERSYEHQHZ

(SEQ. ID. NO. 83)

MIEYKNVALRYTEKDVLRDVNLQIEDGEFMVLVGPSGSGKTTMLKMINPL
LEPTDGNIYMDGKRIKDYDERELRLSTGYVLQAIALIPNLTVAENIALIP
EMKGWSKEEITKKTEELLAKVGLPVAEYGHRLPSELSGGEQQRVGIVLRA
MIGQPICIFLMDEPFSALDAISRKQLQVLTKELIEFGMTTIFVTHDTDEA
LKLADRJAVLQDGEIRQVANPETILKAPATDFVADLPGGSVHDZ

(SEQ. ID. NO. 84)

MSAVAISAMTKVMQETHGNPSSIHGHGRQAGKLLREARQELAQLLRTKPQ
HIFFTSGGTEGNNTTIIGYCLRHQEQGKHIITTAIEHHAVLETIDYLVQH
FGFEATIIQPENQEITAQQIQKALRDDTILVSTMFVNNETGNLLPIAEIG
QILKQHPAAYHVDAVQAIGKIPHSEELGIDFLTASAHKFHGPKGIGFLYA
SSMDFDSYLHGGDQEQKRAGTENLPAIVGMVAALKEDLEKQEEHFQHVQN
LETAFLAELEGIQYYLNRGKHHLPYVLNIGFPGQKNDLLLLRLDLAGIST
GSACTAGVVQSSHVLEAMYGANSERLKESLRISLSPQNTVEDLQTLAKTL
KEUGGZ

(SEQ. ID. NO. 85)

MLFKLSKEKIELGLSRLSPARRIFLSFALVILLGSLLLSLOFVQVESSRA
TYFDHLFTAVSAVCVTGLSTLPVAHTYNIWGQIICLLLIQIGGLGLMTFI
GVFYIQSKQKLSLRATIQDSFSYGSLRFVYSIFLTTFLVESLGAILLSFR
LIPQLGWGRGLFSSIFLAISAFCNAGPDNLGSTSLFAFQTDLLVNLVIAG
LIITGGLGPMVWFDLAGHVGRKKKGRLHFHTKLVLLLTIGLLLFGTATTL

TABLE 2-continued

FLEWNNAGTIGNLPVADKVLVSFFQTVTMRTAGFSTIDYTQAHPVTLLIY
ILQMFLGGAPGGTAGGLKITTFFVLLVFARSELLGLPHANVARRTIAPRT
VQKSFSFIIFLMSFLIGILLGITAKGNPPFIHLVFETISALSTVGVTANL
TPDLGKLALSVIMPLMFMGRIGPLTLFVSLADYXPEKKDMIHYMKADISI
GZ

(SEQ. ID. NO. 86)
MSDRTIGILGLGIFGSSVLAALAKQDMNIIAIDDHAERINQFEPVLARGV
IGDITDEELLRSAGIDTCDTVVVATGENLESSVLAVMHCKSLGVPTVIAK
VKSQTAKKVLEKIGADSVISPEYEMGQSLAQTILFHNSVDVFQLDKNVSI
VEMKIPQSWAGQSLSKLDLRGKYNLNILGFREQENSPLDVEFGPDDLLKA
DTYILAVINNQYLDTLVALNSZ

(SEQ. ID. NO. 87)
MKLLSIAISSYNAAAYLHYCVESLVIGGEQVGILIINDGSQDQTQEIAEC
LASKYPNIVRAIYQENKCHGGAVNRGLVEASGRYFKVVDSDDWVDPRAYL
KILETLQELESKGQEVDVFVTNFVYEKEGQSRKKSMSYDSVLPVRQIFGW
DQVGNFSKGQYTMMHSLIYRTDLLRASQFZ

(SEQ. ID. NO. 88)
MKFNPNQRYTRWSRRLSVGVASVVVASGFFVLVGQPSSVRADGLNPTPGQ
VLPEETSGTKEGDLSEKPGDTVLTQAKPEGVTGNTNSLPTPTERTEVSEE
TSPSSLDTLPBKDEEAQKNPELTDVLXETVDTADvDGTQASPAERRPEQV
KGGVKENTKDSIDVPAAYLEKAEGKGPFTAGVNQVIPYELFAGDGMLTRL
LLKASDNAPWSDNGTAKNPALPPLEGLTICGKYFYEVDLNGNTVGKQGQA
UDQLRANGTQTYKATVKVYGNKDGKADLTNLVATKNVDININGLVAKETV
QKAVADNVKDSIIDVPAAYLEKGEGPTAGVNHVIPYELFAGDGMLTRLLL
LSDKAPWSDNGDAKNPALSPLGENVKTKGQYFYQVALDGNVAGKEKQALI
DQFRANGTQTYSATVNVYGNKDGKPDLDNIVATKKVTLNNGLSKETVQKA
VADNVKDSIDVPAAYLEKAKGEGPFTAGVNHVIPYELFAGDGMLTRLLLK
ASDKAPWSDNGDAKNPALSPLGENVKTKGQYFYQLALDGNVAGKEKQALI
DQFRANGTQTYSATVNVYGNKDGKPDLDNIVATKXVTININGLISKETVQ
KAVADNVKTVSMFQQPTZ

(SEQ. ID. NO. 89)
MKLKSYILVGYIISTLLTILVVFWAVQKMLIAKGEIYFLLGMTIVASLVG
AGISLFLLLPVFTSLGKLKEHAKRVAAKDFPSNLEVQGPVEFQQLGQTFN
EMSHDLQVSFDSLEESEREGLMIAQLSHDIKTPITSIQATVEGILDGIIK
ESEQAHYLATIGRQTERLNKLVEELNFLTLNTARNQVETTSKDSIFLDKL
LIECMSEFQFLIEQERRDVHLQVIPESARIEGDYAKLSRJLVNEITVSSQ
YGLGSTETLVLNLSGSENKAZ

(SEQ. ID. NO. 90)
MFGQTAQHGLTNSLKDFWIFLLNIGPQLAFFCQMLRCSRSVEQGTGNHRR
EFNMIQQIFSHFGMTHLGQIKLVYQESIDLELLVNALNHHLLIDRLVLTP
NQITIEIDRQIVHGLDLLKGRXDKEIIDIKSMFRQLELASTQQICPNQRV
HHGILAFGEISDLVPAKNLPNRQDZ

(SEQ. ID. NO. 91)
MEHLATYPSTYGGAPAALGWLAVGLSGMGSAYGVGKAGQSAAALLKEQPE
KFASALILQLLPGTQOLYGFVIGLIWLQLTPSLPLEKGVAYFVALPIA1V
GYFSAKHQGNVAVAGMQILAKRPKEFMKGAILAAMVETYAILAIWVSFIL
TLRVZ

(SEQ. ID. NO. 92)
MLKSEKQSRYQMLNEELSFLLEGETNVLANLSNASALIKSRFPNTVFAGF
YLFDGKELVLGPFQGGVSCIIRIALGKGVCGEAAGHFQETVIVGDVTTYL
NYISCDSLAKSEIVVPMMKNGQLLGVLDLDSSEIEDYDAMDRDYLEQFVA
ILLEKTAWDFTMFEEKSZ

(SEQ. ID. NO. 93)
MSVLEKDLHVEIEGKEILKGVNLTLTGEAAIMGPNGTGKSAAIMGNPNYE
VTKGEVLFDGVNILELEVDERARMGLFLAMQYPSEIPGITNAEFLRAAMN
AGKEDDEKISVREFITKLDEKMELLNMKEEMAERYLNEGFSGGEKKRNEI
LQLLMLEPTFALLDEIDSGLDIDALKVVSKGVNAMRGEGFGAMIITTHYQ
RLLNYITPDVVHVMMEGRVVLSGGPELAARLEREGYAKLAEELGYDYKEE
LZ

(SEQ. ID. NO. 94)
MPYKRQRSFSMALSKLDSLYMAVVADHSKNPHHQGKLEDAEQISLNNPTC
GDVINLSVKFDAEDRLEDIAFLNGCTISTASASMMTDAVLGKKQEILELA
T1FSEMVQGQKDERQDQLGDAAGVAKFPQPJKCATWNALKIENQEKQZ

(SEQ. ID. NO. 95)
MKIQDLLRKDVMLLDLQATEKTAVIDEMIKNLTDHGYVTDEFETFKEGIL
AREALTSTGLGIAMPHSKNAAVKEATVLFAKSNKGVDYESLDGQATDLFF

TABLE 2-continued

MIAAPEGANDTHLAALAELSQYLMKDGFADKLRQATSADQVIELFDQASE
KTEELVQAPANDSGDFIVAVTACTTGIAHTYMAQEALQKVAAEMGVGIKV
ETNGASGVGNQLTAEDIRKAKAIIIAADKAVEMDRFDGKPLINRPVADGI
RKTEELINLALSGDTEVYRANGAJ(AATASNEKQSLGGALYLMSGVSQML
PFVIGGGIMIALAFLIDGALGVPNENLGNLGSYHELASMFMKIGGAAFGL
MLPVFAGYVAYSIAEKPGLVAGFVAGALAKEGFAFGKIPNDFLGGLGGGS
AVLLGIVLGGMMAVDMGGPVNKAAYVFGTGTLAATVSSGGSVAMAAVMAG
GMVPPLAIFVATLLFVLVGAIVSGVVYGYLRKPQAZ

(SEQ. ID. NO. 96)
MANKNTSTTRRRPSKAELERKEAIQRMLISLGIAILLIFAAFKLGAAGIT
LYNLIRLLVGSLAYLAIFGLLIYLFFFKWIRKQEGLLSGFFTIFAGLLLI
FEAYLVWKYGLDKSVLKGTMAQVVTDLTGFRTTSFAGGGLIGVALYPTAF
LFSNIGTYFIGSLILVGSLLVSPWSVYDIAEFSRGFAKWWEGHERRXEER
FVKQEEKARQKAEKEARLEQEETEKALLDLPPVDMETGEILTEEAVQNLP
PIPEEKWVEPEIlLPQAELKFPEQEDDSDDEDVQVDFSAKEALEYKLPSL
QLFAPDKPKDQSKEKKWRENIKILEATFASFGIKVTVERAEIGPSVTKYE
VKPAVGVRVNRISNLSDDLALALAAKDVRIEAPIPGKSUGTEVPNSDIAT
VSFELWEQSQTKAENFLEIPLGKAVNGTARAFDLSKMPHLLVAGSTGSGK
SVAVNGIIASILMKARPDQVKFMMVDPKMVELSVYNDIPILLJPVVTNPR
KASKALQKVVDEMENRYELFAKVGVRNIAGFNAKVEEFNSQSEYKQIPLP
FIVVIVDELADLMMVASKBVEDAIIRLGQKARAAGIHMILATQRPSVDVI
SGUKANVPSRVAFAVSSGTDSRTLDNGAEKLLGRGDMLFKPIDENHPVRL
QGSFISDDDVERIVNPIKTQADADYDESFDPGEVSENEGEFSDGDAGGDP
LFEEAXSLVIETQKASASMIQRRLSVGFNRATRLMEELEIAGVIGPAEGT
KPPJCVLQQZ

(SEQ. ID. NO. 97)
MSYFKKYKFDKSQFKLGMRTKTGIAVFLVLLIFGFGWKGLQIGALTAVFS
LRESFDESVHFGTSRILGNSIGGLYALVFLLNTFFWEAWVTLVVVPICTM
LTIMTNVAMNNCAGVIGGVAAMLHTLSPSGETILYVFVRVLETFMGVFVA
UVNYDIDRIRLFLEKKEKZ

(SEQ. ID. NO. 98)
MNKSEHRHQLIRAUTKNKIHTQAELQALLAENDIQVTQATLSRDIKNMNL
SKVREEDSAYYVLNNGSISKWEKRLELYMEDALVWMRPVQHQVLLKTLPG
LAQSFGSHDTLSFPDAATLCGNDVCLIICEDADTAQKCFEELKKFAPPFF
FEEZ

(SEQ. ID. NO. 99)
MCSIKLNALSYMGRVLNIFPPItTGTYVARVLDRTDYGYFNSVDTILSFFL
PFATYGVYNYGLRAISNVKDNKKDLNRTFSSLFYLCIACTILTRAVYILA
YPLFFTDNPIVKKVYLVMGIQLIAQFSIEWVNBALENYSILFYKTAFRIL
MLVSIFLPVKNEHDEVVYTLVMSLTLINYLSYFWKRDIKLVKIHLSDFKP
LFLPLTAMLVANANMLVFTTLDRLFLVICTGIDVNVSYAQRJVTVIAGVV
TGAIGVSVPRLSYYLGKGDKEAYVSLVNRCSRIFNPFHPLSFGLMVLGNA
ILLYGSEKYIGGGILTSLFAFRTULALDTILGSQILFTNGYHKRTVYTVF
AGLLNLGLNSLLFFNHVAPEYYLLTRMLSETSLLVFYIIFEHRKQLIHLG
HIFSYTVRYSLFSLSWAIYFUNFVYPVDMVINLPFLINTGLIVLLSAISY
ISLLVFRKDStFYEFLNHVLALKNKFKKSZ

(SEQ. ID. NO. 100)
MELFMKITNYEIYXLKKSGLTNQQILICVLEYGENVDQELLLGDIADISG
CRNPAVFMERYPQIDDAHLSKEFQKFPSPSILDDCYPWDLSEIYDAPVLL
FYKGNLDLLKFPKVAVVGSRACSKQGAKSVEKVIQGLENELVIVSGLAXG
DTAAHMAALQNGGKTAVIGTGLDVFPKANKRLQDYIGNDHLVLSEYGPGE
QPLKHFPARNRIAGLCRGVIVAEAKMRSGSLTCERAMEEGRDVFAIPGSI
LDGLSDGCIIMLIQEGAKLVTSGQDVLAEFEPZ

(SEQ. ID. NO. 101)
MKQLTVEDAKQIELEILDYIDTLCKKIININYIINYGTLIGAVRHEGFIP
WDDDIDLSMPRBDYQRFINIFQKEKSKYKLLSLERDKNYNNFIKTDSTRK
IIDTRNTKTYESGIIDIFPDRFDDPKVIDTCYKESKLLSFSKHKNWYKDS
LLKDWIRTAFWLLLRPVSPRYFANKIEKEIQKYSRENGQYMAFIPSKFKE
KEVFPSGTFDKTIDLPPENLSLPAPEKPDTILTQFYGDYMTLPPEEKRFY
SHEFHAYKLEDZ

(SEQ. ID. NO. 102)
MIKINHLTITQNKDLRDLVSDLTMTIQDGEKVAIIGEEGNGKSTLLKLMG
EALSDPTIKGNIQSDYQSLAYPQKVPEDLKKKTLHDYFFLDSIDLDYSIL
YRLAEELHFDSNRFASDQEIGNLSGGEALKIQLIHELAICPFEILFLDEP
SNDLDLETVDWLKGQIQKTRQTVTFISHDEDPLSETADTIVLRLVKHRKE
AETHVEHLDYDSYSEQRKANFAKQSQQAANNQRAYDKTMEKIRRVKQNVE
TALRATKDSTAGRLLAKKMKTVLSQEKRYEKAAQSMTQKPLEEEQIQLFF
SDIQPLPASKVLVQLEKENLSIDDRVLVQKLQLTVRGQEKIGIIGPNGVG
KSTLLAKLQRLLNDKREISLGIMPQDYHXJCLQLDLSPIAYLSKTGEKEE

TABLE 2-continued

LQKQSHLASLNFSYPMQHQRSLSGGQQGKLLLLDLVLRKPNFLLLDEPTR
NPSPTSQPQIRKLFATYPGGLITVSHDRRFLKEVCSIIYRMTEHGLKLVN
LEDLZ

(SEQ. ID. NO. 103)
MKPKTFYNLLAEQNLPLSDQQKEQFERYFELLVEWNEKINLTAITDKEEV
YLKNFYDSIAPILQGLIPNETIKLLDIGAGAGFPSLPMKILYPELDVTII
DSLNKRINFLQLLAQELDLNGVHFYHGRAEDFAQDKNFRAQYDFVTARAV
ARMQVLSELTIPYLKVGGKLLALKASNAPEELLEAKNALNLLFSKVEDNL
SYALPNRDPRYITVVEKKKETPNKYPRKAGMPNKRPLZ

(SEQ. ID. NO. 104)
MSIKUAVDIDGTLVNSQKEITPEVFSAIQDAKEAGVKVVIATGRPIAGVA
ICLLDDLQLRDEGDYVVTFNGALVQETATGHEIISSLTYEDYLDMEFLSR
KLGVHMHAITKDGIYTANRNIGKYTVHESTLVSMPYRTPEEMAGKJVKCM
FIDEPEIPEIKKIAKYITKTNDESGVAHAIRTWVLZ

(SEQ. ID. NO. 105)
MTWIILGVIALIVIIVSYNGLVKNRMQTKEAWSQIDVQLKRRNDLLPNLI
ETVKGYAYEGLEKVAELRNQVTSPAEAMKASDALTRQVSGIFAVAESYPD
LKASANPVICLQEELTNTENKSYSRQLYNSVVSNYNVKLETFSNIIAGMF
GFKAADFLQTPEEEKSVPKVDPSGLGDZ

(SEQ. ID. NO. 106)
MLFDQIASNKRKTWILLLVFFLLLALVGYAVGYLIRSGLGGLVIALIIGF
IYALSMIFQSTEVMSMNGAREVDEQTAPDLYHVVEDMALVAQIPMPRVFI
IDDPALNAFATGSNPQNAAVAATSGLLAIMNREELEAVMGHEVSHIRNYD
IRISTIAVALASAITMLSSMAGRMMWWGGAGRRRSDDDRDGNGLEIIMLV
VSLLAIVLAPLAATLVQLAISRQREFLADASSVELTRNPQGMINALDKLD
NSKPMSRHVDDASSALYINDPKKGGGFQKLFYTHPPtSERIERLKQMZ

(SEQ. ID. NO. 107)
MKLNIQEIRKQSEGLNFEQTLDLVDDLRARNQEILDVKDILAVGKVQYED
RMYFLDYQLSYTIVLASSRSMEPVELVESYPVTEVPMEGATNQLDQEVLD
DDLVLPIENGELDLAESVSDNLLNIPIKVLTAEEBAGQCPISGNDWQIMT
EEEYQAQKAVKKEENSPFAGLQGLFDGD
EZ

(SEQ. ID. NO. 108)
MKRQLALVVPSGGQDSRTCLWVMQHYETVEAVTFAYGQRMHLEQRRREIA
KEQGRHHILDMSLLGQITAQPDFATIHSYIPDKLCVESKSLKLYLFSYRN
HGDFHENCNTIGKDLVNLLDPRYLEVWGKFTPRGGISDPYYNYGKQGTKY
EGLAEQRLFQHDLYPEKIDNRZ

(SEQ. ID. NO. 109)
MTETVEDKVSHS**n***GLDILKGIVAAGAVISGTVATQTKVFTNESAVLEKT
VEKTDALATNDTVVLGTISTSNSASSTSLSASESASTSASESASTSASTS
ASTSASESASTSASTSISASSTVVGSQTAAATEATAKXVEEDRKKPASDY
VASVTNVNLQSYAgRRKRSVDSIEQLLASIKNAAVSGNTVNGAPAINASL
NLAKSETKVYTGEGVDSVYRVPIYYKLKVTNDGSKLTFTYTVTYVNPKTN
DLGNISSMRPGYSYNSGTSTQTMLTLGSDLGKPSGVKNYITDKNGRQVLS
YNTSTMTRQGSGYTWGNGAQMNGFFAKXGYGLTSSWTVPITGTDTSFTFT
PYAARTDRIGINYFNGGGKVVESSITSQSLSQSKSLSVSASQSASASAST
SASASASTSASASASTSASASASTSASVSASTSASASASTSASASASTSA
SESASTSASASASTSASASASTSASASASTSASESASTSASASASTSASE
SASTSASASASTSASASASTSASGSASTSTSASASTSASASASTSASASA
SISASESASTSASESASTSTSASASTSASESASTSASASASTSASASAST
SASASASTSASASTSASESASTSASASASTSASASASTSASASASTSASA
SASTSASVSASTSASASASTSASASASTSASESASTSASASASTSASASA
STSASASASTSASESASTSASASASTSASESASTSASASASTSASASAST
SASGSASTSTSASASTSASASASTSASASASISASESASTSASESASTST
SASASTSASESASTSASASASTSASASASTSASASARQVRRPQPVHLNRM
QPVRQPQQVLVHQLQHQRVHRLQHQPVPRLQRQPVRQLQQVPVLQSQHQQ
VLQPQHRQVPRLQQAHQHLNQRRQAPQLQQVPVRQPQRRQVRQPQQVLVH
QLQHQRVHRLRRQPVHQSQQVPVRQLPHQQVPRLQQAPVRRLQQVLAPQP
QPQPVRQPQQVSQRLNRIIQRVRPLQQVLAPQPQRQQVHRLQRQRVRLNR
HQRVRPLQQVLAPQPQRQQVHRLQHQRVRPLQQVLAPQPQRQQVHRLQRQ
RVRLSQHQRVRQPQQAHQLLNLHQPVRQPQHRQAPQLQQVPVRQPQRRQV
RRLQQVPVRQPQQVPVRQPQRRQVRRPQPVHLNRNQPVRQPQQVLVHQLQ
MQRVHRLQHQPVHQSQQVPVRQPRINKCLGFSKYZ

(SEQ. ID. NO. 110)
MGVETWFYSSICWLALGLGSVWKFPYMTAANGGGGFLLIFLLSTILIGPL
LLAEALGRSAGVSAIKTFGKLGKNNKYNIGWIGAFALFLLSFYSVIGGWT
LVYLGIEFGKLFQLGGTGDYAQLFTSfLSNPAIALGAQAAPILLNIFIVS
RGVQKGIERASKVMMPLLFIVFVFIIGRSLSLPNAMEGVLYPDSKLTSTG

TABLE 2-continued

LLYALGQSFALSLGVTVMLTYASYLDKXTNLVQSGISIVAMNISISIMAG
LAFQARSPFNQSEGGPSLLVLPQLIDKMPFGTUYVLFLLLFLFATVTFSV
VMLEINVDNITNQDNSKRAXWSVILGLTFVFGTPSALSYGVMADVHIFGK
TFFDAMDFLVSNLLMPFGALYLSLTGYTFKKALAMEELHLDERAWKQGLF
QVWLFLLRFFVSSFQSSSLWSSLPNLCNQKGLEZ

(SEQ. ID. NO. 111)
MLKKWQLKDVILLAFLSIFFC3GVFVGSGYVYNELSLLLTPLGLQAFANE
ILFGLWCMAAPIAAIFVPRVGSATIGEVLAALAEVLYGSQFGLGALLSGF
VQGLGSEFGFIVTKNRYESWLSLTANSIGITLVSFVYEYIKLGYYAFSLP
FVLSLLVVRFISVYFFCTILVRAIVKLYHQFATGGKAZ

(SEQ. ID. NO. 112)
MVKVATQTPHSLLLILSLETSFIPSIALTLSVVAPCILFMLYYRRFKMLA
WMLLLAILPSFANYWAVQLHGDASQAVMLGTRAFVTVCIGLVFVSSVSLK
ELLLYLAQKGLSRSWSYALIVVFNSFPLQQEIKSLKEACLLRGQELHFWS
PLIYSKVLMTVFRWRHLYLRALSAHGYDEHAQLKNSYRTFYPKKTKLIYL
LFFLLLQTSLLZ

(SEQ. ID. NO. 113)
MRKHQLQVHKLTLSMMALDVVLTPRIEGMAPMSSVVNLAGIMMGPVYALA
MATVRAFXRNfFRQGIPPLALTGATFGALLAGLFYKYGRKFHYSALGEIL
GTGUGSIVSYPVMVLFTGSAAKLSWFEYTPREFGATLIGTALSFIAFRFL
KQEFFKKVQGYFFSERIDZ

(SEQ. ID. NO. 114)
MQETNPFPIGSSSLIHCFLNEISCEMLANGILALGCKPVMADDSREVLDF
IKQSQALNLGHLSAEKEKJJRMAASYANQSSLPMVVDAVGVRSSIRKSLV
KDLLDYRPRVLKGNMSEIRSLVGLKHHGVGVDASAJCDQETEDLLQVLKD
WCQTYPGMSFLVTGPKDLVVSKNQVAVLGNGCTELDWITGTGDLVGALTA
VFLSQGKTGPEASCLAVSYLNIAAEKIVVQOMGLEEFRYQVLNQLSLLRR
DENWLDTIKGEVYEZ

(SEQ. ID. NO. 115)
MNHKAILSDVMGNATALEAVL&DAXNQGASEYWLLGDIFLPGPGANDLVA
LLKDLPPASVRGNWDDRVLEALDGQYGLEDPQEVQLLRMTQYLMERMDPA
TIVWLRSLPLLEKKEIDGLRFSISHNLPDKNYGGDLLVENDTEKFDQLLD
AETDVAVYGHVHKQLLRYGSQGQQIINPGSIGMPYFNWEALKNHRSQYAV
IEVEDGELLNIQFRKVAYDYEAELELAKSKGLPFIEMYEELRRDDNYQGH
NLELLASLIEKHGYVEDVKNFFDFLZ

(SEQ. ID. NO. 116)
MNVQIVRIIPTLKANNRKLNETFYIETLGMKALLEESAFLSLGDQTGLEK
LVLEEAPSMRTRKVEGRKKLARLIVKVENPLEIEGTTDSIHRLYKGQNGY
AFEIPSPEDDLILIHAEDDIASLVEVGEKPEQTDLASKEISMELHLDIFL
ESSEIGASLDFIPAQGQDLTVDNTVTWDLSMLKFLVNELDLSLRQKFEST
EYFIPKSEKGKDNVELWEVZ

(SEQ. ID. NO. 117)
MKWTKHIIKKIEEQIEAGIYPGASFAYFKDNQWTEFYLGQSDPEHGLQTE
AGLVYDLASVSKVVGVGTVCTFLWEIGQLDIDRLVIDFLPESDYPDTIRQ
LLTRATDLDPPIPNRDLLTAPELKEAMFHLNRSQPAFLYSDVHPLLLGFL
EFNQDLDVILKDQVWKPWGMTETKFGPVELAVPTVRGVEAGIVHDPKARL
LGREAGSAGLFSTIKDLQIFLEHYLADDFALNQNFSPLDDKERSLAWNLE
GDWLDHTGYTGTFIMWNRQKQEATFLSNRTYEKDERAQWILDRINQVMNL
IEEZ

(SEQ. ID. NO. 118)
MMKKTYNHILVWGVIFYSICIVCFCFTPQEQSTVGVGTPGIQHLGRLVFL
LTPFNSLWKLGEVSDIGQLCWIFLQNILNVFLFFPLIFQLLYLFPNLRKT
KKVLLFSFLVSLGIECTQLILDFFFDFNRVFEIDDLWTNTLGGYLAWLLY
KRLHKVRNZ

(SEQ. ID. NO. 119)
MKIPLLTFLARHKFVYVLLTLLFLALVYRDVLMYFFDIHAPDLAKFDGQA
IKNDLLKSALDFRILQNLGQSFIIPIIIVLLGFQYIELKNXVLRLSRBVS
YQGLKRKLTLQVASIPCLIYLVTVLUAHTYFFGTFSPLGWNSLSDGSGLQ
RLLDGEIKSYLFFTCVLLIGIFINAIYFLQIVDYVGNVTRSAITYLMFLW
LGSMLLYSALPYYMVPMTSLMQASYGDVSLMKLPYILYIVPYMVLEICYE
DNVZ

(SEQ. ID. NO. 120)
MFKVLQKVGKAFMLPIAILPAAGLLLGLGGALSNPRTIATYPILDNSIFQ
SIFQVMSSAGEVVFSNLSLLLCVGLCIGLAKRDKGTAALAGVTGYLVMTA
TUALVKLFMAEGSAIDTGVIGALVVGIVAVYLHNRYNNIQLPSALGGGSP
PISFSSILIGFVFFVWPPFQQLLVSTGGYSQAGPIGTLYGFLMRLSGAVG

TABLE 2-continued

LHHIIYPMTYTELGGVETVAGQTVGAQKIPAQLADLAHSGLFREGTREAG
RFSTMMFGLPAACLAMYHSVPKNRRKKYAGLFGVALTSFITGITEPIEFM
FLPVSPVLYVHAFLDGVSPFIADVLNISIGNTFSGGVIDFRLFGILQGNA
KTNWVLQIPGLIWSVLYYIIFRWFTQNVLTRGEEVDSKEISESADSTSNT
ADYLKQDSLQIIRALGGSNNIEDVDACVTRLRVAVEVNQVDKALLKQIGA
VDVIEVKGGIQAIYGAKAILYKNSINEILGVDDZ

(SEQ. ID. NO. 121)
MKFRKLACVLAGAAVLGLAACGNSGGSKDAAKSGGDGAKTEITWWAFPVF
TQEKTGDGVGTYEKSUEAFEKANPDIKVKLETDFKSGPEKNTAIEAGTAP
DVLFDAPGRIIQYGKNGKLAELNDLFTDEFVKDVNNENRVQASKAGDKAY
MYPISSAPFYMAMNKKMLEDAGVANLVKEGWITDDFEKVLKALKDKGYTP
GSLFSSGQGGDQGTRAFISNLYSGSVTDEKVSKYTRDDPKFVKGLEKATS
WIKDNLINNGSQFDGGADIQNFANGQTSYTILWAPAQNGIQAKLLEASKV
EVVEVPFPSDEGKPALEYLVNGFAVNNKDDKKVAASKKIQFIADDKEWGP
KDVVRTGAFPVRTSFGKLYEDKRMETSGWTQSPYYNTIDGFAEMRTLWPM
LQSVSNGDEKPADALKAFTEKANETIKKAMKQZ

(SEQ. ID. NO. 122)
MQSTEKKPLTAFTVISTIILLLLTVLFIPPFYWILTGAFKSQPDTIVIPP
QWFPKMPTMENFQQLMVQNPALQWMWNSVFISLVTMFLVCATSSLAGYVL
AKKRFYGQRILFAIFIAAMALPKQVVLVPLVRIVNFMGHDTLWAVILPLI
GWPFGVFLMKQFSENIPTELLESAKIDGCGEIRTFWSVAPPVKPGFAALA
IPTFINTWNDYFMQLVMLTSRNNLTISLGVATMQAEMATNYGLMAGAALA
AVPIVTVFLVFQKSTQGITMGAVKGZ

(SEQ. ID. NO. 123)
MKIMFKNFNNILLNRCIVLLLRIVLMMILINHLLSTAVQKQDAVIFFKRE
LSFSYNDYSEANLEIPICLLLNLSIFMVGWLSVILLESDLADHYHHLIRY
QSSSFFDYTRKRLVVISKFFTQDLFVWFLGLLPLGIHFKTVALFFLLAQL
MMLYLLLSYUALISAGAGFSFFLYPLAFVGQEWMMDHIVTVYLVLLSLLV
MLVSRLESKFKKGZ

(SEQ. ID. NO. 124)
MGKGEMGKGVIGLEFDSEVLVNKAPTLQLANGKTATFLTQYDSICTLLPA
VDKEDIGQEIIFIAKGSIESMHNLPVNLAGARVPGVNGSKAAVHEVPEFT
GGVNGTEPAVHEIAEYKGSDSLVTLTTGKDYTYKAPLAQQALPETGNKES
DLLASLGLTAFLGLFTLGKXREQZ

(SEQ. ID. NO. 125)
MKKTFFLLVLGLFCLLPLSVIAIDFKINSYQGDLYIHADNTAEFRQKIVY
QFEEDFKGQIVGLGRAGKMPSGFDIDPHPKIQAAKNGAELADVTSEVTEA
DGYTVRVYNPGQEGDIVEVDLVWNL,KNLLPLYDDIAELNWQPLTDSSES
IEKFEFHVRGDKGAEKLFFTGKLBGTIEKSNLDYTIRLDNLPAKRGVELH
AYWPRTDFASARDQGLKGNRLEENKIEDSIVREKDQSKQLVTWVLPSILS
ISLLLSVCYFIYRRKTRPSVKYAKNHRLYEPPMELEPMVLSEAVY5TSLE
EVSPLVKGAGKFTFDQLIQATLLDVIDRGNVSIISEGDAVGLRLVKEDGL
SSFEKDCLNLAFSGKICEETLSNLFADYKVSDSLYRRAKVSDEKRIQARG
LQLKSSPEEVLNQMQEGVRKRVSFWGLPDYYRPLTGGEKALQVGMGALTL
PLFIGFGLFLYSLDVNGYLYLPLPILGFLGLVLSVFYYWKLRLDNRDGVL
NBAGAEVYYLWTSFENMLRIARLDQAELESVVWNRLLVYATLFGYADKVS
HLMKVNQIQVENPDINLYVAYGWHSTYHSTAQMSHYASVANTASTYSVSS
GSGSSGGGFSGGGGGGSIGAFZ

(SEQ. ID. NO. 126)
MKKVRKIFQKAVAGLCCISQLTASSIVALAETPETSPAIGKVVIKBTOEG
GALLGDAVFELKNNTDGTTVSQRTEAQTGEAIFSNIKPGTYTLTEAQPPV
GYKPSTKQWTVEVEKNGRTTVQGEQVENREEALSDQYPQTGTYPDVQTPY
QUCVDGSEKNGQHKALNPNPYERVPEGTLSKRIYQVNNLDDNQYGIELTV
SGKTVYEQKDKSVPLDVVILLDNSNSMSNIRNKNARRAERAGEATRSLID
KTSDSENRVALVTYASTIFDGTEFTVBKGVADKNGKRLNDSLFwNYDQTS
VITNTKDYSYLKLTNDKNDIVELKNKVPTEAEDHDGNRLMYQFGATFTQK
ALMKADEILTQQARQNSQKVIFHITDGVPTMSYPINFNHATFAPSYQNQL
NAFFSKSPNKDGLLSDRTQATSGEITIVRGDGQSYQMFTDKTVYEKGAPA
AFPVKPEKYSEMKAAGYAVGDPNGGYWLNWRESILAYPFNSNTAKITNHG
DPTRWYYNGNIAPDGYDVFTVGIGINGDPGTDEATATSFMQSISSKPENY
TNVTDTRKILEQLNRYFHTIVTEKKSENGTITDPMGELIDLQLGTDGRFD
PADYTLTANDGSRLENGQAVGGPQNDGGLLKNAKVLYDRREKRIRVTGLY
LGTDEKVTLTYNVRLNDEFVSNKFYDTNGIfLRLHPKEVEQNTVRDFPIP
KIRDVRKYPEITSKEKKLGDIBFIKVNKNDKKPLRGAVFSLQKQHPDYPD
IYGAIDQNGTYQNVRTGEDGLTFKNLSDGKYRLFENSEPAGYKPVQNKPI
VAFQIVNGEVRDVTSVPQDIPAGYEFTNDKHYRRNEPIPPKREYPRTGGI
GMLPFYLIGCMMMGGVLLYRRKHPZ

TABLE 2-continued

(SEQ. ID. NO. 127)
MKSINKFLTMLAALLLTASSLFSAATVFAAGTTTTSVTVHKLLATDGDMD
KIANELETGNYAGNKVGVLPANAKEIAGTLTGSKAVPIEIELPLNDVVDA
HVYPKNTEAKPKIDKDFKGKANPDTPRVDKDTPVNHQVGDVVEYEIVTKI
PALANYATANWSDRMTEGLAFNKGTVVTVDDVALEAGDYALTEVATGFDL
KLTDAGLAKVNDQNAEKTVKITYSATLNDKAIVEVPESNDVTINYGNNPD
HGNTPKPNKPNENGDLTLTKTWVDATGAPIPAGAEATFDLVNAQTGKVVQ
TVTLDKNTVTVNGLDKNTEYKFVERSIKGYSADYQEITTAGEIAVKNWKD
ENPKPLDTEPKVVTYGKKFVKVNDKDNRIAGAEFEWVADKDNENVVKLVS
DAQGRFEITGLLAGTYYLEETKQPAGYALLTSRQKFEVTATSYSATGQGI
EYTAGSGKDDATKVVNKKITIPQTGGIGTIIFAVAGAAIMGIAVYAYVKN
NKDEDQLAZ

(SEQ. ID. NO. 128)
MTMQKMQKMSRJFFVMALCPSLVWGAHAVQAQEDHTLVLQLENYQEVVSQ
LPSRDGHRLQVWKLDDSYSYDDRVQIVRDLHSWDENKLSSFKKTSFEMTF
LENQIEVSHIPNGLYYVRSUQTDAVSYPAEPLFEMTDQTVEPLVIVAKJC
TDTMVKLIKVDQDHNRLEGVGFKLVSVARDVSEKEVPLIGEYRYSSSGQV
GRTLYTDKGEIPVRNLPLGNYRYKEVELAGYAVTTLDTDVQLVDHQLVTI
TVVNQKLPRGNVDFMKVDORTNTSLQGAMFKVMKEESGHYTPVLQNGKEV
VVTSGKDGRFRVEGLEYGTYYLWELQAPTGYVQLTSPVSFTIGKDTRKEL
VTVVKNNKRRJDVPDTGEETLVYLDACCHVVWZ

(SEQ. ID. NO. 129)
MSHIYLSIFTSLLLMLGLVNVAQADEYLRIGMEAAYAPFNWTQDDDSNGA
VKIDGTNQYANGYDVQIAKKAKDLGKEPLVVKTKWEGLVPALTSGKIDMI
IAGMSAERICQEIAFSSSYYTSEPVLLVKKDSAYAS&YLDDPNGAKITSQ
QGVYLYNLL4QIPGAKICITAMGDFAQMRQALEAGVDAYVSERPEALTAE
AANSKFKMIQVEPGFKGEEDTAIAIGLRKNDNRISQINASIETSKDDQVA
LMDRMIKEQPAEATITEETSSSFFSQVAKILSENWQQLLRGAGITLLISV
GTIIGLIIGLAIGVFRTAPLSENKVIYGLQKLVGWVLNVYIEIRGTPMVQ
SMVIYYGTAQAFGINLDRTLAAIFIVSINTGAYMTEVRGGILAVDKGQFE
AATALGMTHNQTMRKWLPQVVRNILPATGNEFVINIKDTSVLNVISVVEL
YFSGNTVATQTYQYFQTFRIIAVIYFVLTFTVTRILRFIERRMDMDTYTR
OANQMQTEDLKZ

(SEQ. ID. NO. 130)
MTQAILEIKHLKKSYGQNEVLKDSLTHKGEVISIIGSSGSGKSTFLRINL
LETPTDGQYHGQNVLEKGYDLTQYREKLGMVFQSFNLFENLNVLENTIVA
QTRVLKRERTEAEKIAKENLEKVGMGERYWQAKPKQLSGGQKQRVALARA
LSMNPDAILFDETSALDPEMVGEVLKIMQDLAQEGLTMIVVTHEMEFARD
VSHRVFMDKGVLAEEGKPEDLFTNPKEDRTKEFLQRYLKZ

(SEQ. ID. NO. 131)
MKKYQLLFSAVFSYLFFVFSLSQLTLIVQNYWQFSSQGNLPWIQNILSLL
FIGVMIVVLVQGHGYLFPJPPJCKWLWYSLTVLVLVQISFNVQTAKHVQS
TAEGWAVLIGYSGTNFAELGIYALFFLVPLMEELYRGLLQHAFFKRFGLD
LLLPSILFALPHFSSLPSLLDIFVFATVGIIFAGLTRYTKSIYPSYAVHV
INNIVATFPFLLTFLHRVLGZ

(SEQ. ID. NO. 132)
MNKKQWLGLGLVAVAAVGLAACGNRSSRNAASSSDVKTKIVTDTGGVDDK
SFNQSAWEGLQAWGKEHNKDNGFTYFQSTSEADYANNLQQAAGSYNLIFG
VGFALNNAVKDAAKEHTDLNYYLIDDVIKDQKNVASVTFADNESGYLAGV
AAAKTTKTKQVGFVGGIESEVISRFEAGFKAGVASVDPISKVQVDYAGSF
GDAAKGKTIAAQYAAGADIVYQVAGGTGAGVFAEAKSLNESRPENEKVWI
GVDRDQEAEGKYTSKDGKESNFVLVSTLKQVGTTVKDISNKAERGEFPGG
QVIVYSLKDKGVDLAVTNLEEGKKAVEDAKAKILDGSVKPEKZ

(SEQ. ID. NO. 133)
MSKKLQQISVPLISVFLGILLGAIVMWIFGYDAIWGYEELPYTAFGSLRG
IGEIFRAMGPLVLIGLGFAVASRAGFPNVGLPGQALAGWILSGWFALSHP
DMPRPLMILATIVIALIAGGIVGAIPGILRAYLGTS2VIVTIMMNYIVLY
VGNAPIHAPPKDFMQSTDSTIRVGANATYQTPWLAELTGNSRMNIGIFFA
IIAVAVIWFMLKKTRLGFEIRAVGLNPMASEYAGISAKRTHLSMIISGAL
AGLGGAVEGLGTFQNVYVQGSSLAIGFNGMAVSLLAANSPIGILPAAFLF
GVLQVGAPGMNAAQVPSELVSIVTASIIFFVSVEYLIERPVKPKKQVKGG
KZ

(SEQ. ID. NO. 134)
MGVKKLKLTSLLGSLLITACATNGVTSDITAESADWSKLVYFFAEIIRFL
SFDISIGVGuLFRVLIRTVLLPVQVQMVASRKMQEAQPRIKALREQYPGR
DMESRTKLEQEMRKVFKEMGVRQSDSLWPILIQMPVILALFQALSRVDFL
KTGHFLWINLGSVDTRLVLPILAAVFTPLSTWLSNKALSERNGATTAMMY
GIPVLIRPAVYAPGGVALYWTVSNAYQVLQTYFLNNPFKIIAEREAVVQA
QKDLENRKRKAKKKAQKTKZ

TABLE 2-continued

(SEQ. ID. NO. 135)
MVIDPFANELDYYLVSHFHSDHIDPYTAAAILNNPKLEHVKFIGPYHCGR
IWEGWGVKERFLVVKPGDTIELKDMKIHAVESFDRTCLVTLPVNGADETG
GELAGLAVTDEEMAQKAVNYIPETPGGTIYHGADSHFSNYFAJCHGKDFK
IDVALNNYGENPVGIQDKMTSIDLLRMAENLRTKVIIPVHYDIWSNFMAS
TNEILELwKMRKDRLQYDFHPFIwEVGGKYTYPQDQHLVEYHHPRGFDDC
FEQDSNIQFKALLZ

(SEQ. ID. NO. 136)
MFLSGWLSFANYIHDLLVLFPDSPFLNAFESAIAAPLVEELSCVFVTM4P
VRXKSTLTGIASOLCFQMIKNGYIRTDLPEGFDFISRILERJISGIASHW
TFSGLAVVGVYLLYRAYKC3QKVGKKQGLIFLGLALGTHFLFNSPFVELE
TEIPLAIPVVTAIALYGFYMAYCFVEKHNELMTZ

(SEQ. ID. NO. 137)
MKVEPRCDVLSRMSHFFIRILIMLQELVERSWAIRQAYHELEVKHHDSKV
RRVEEDLLALSNDIGNPQRLVMTKQGRYYDETPYTLEQKLSENIWWLLEL
SQRLDIDILTEMENFLSDKEKQLNVRTWKZ

(SEQ. ID. NO. 138)
MLDWKQFFLAYLRSRSRLFIYLLSLAFLVLLFQFLASLGIYFLYFPPLCC
FVTILFRWDILVETQVYRQELLYGEREAKSPLEIALAEKLEAREMELYQQ
RSKAERKLTDLLDYYTLWVHQIKTPIAASQLLVAEVVDRQLKQQLEQEIF
ICIDSYTNLVLQYLRLESPHDDLVLKQVQIEDLVKEIIRKYALFRQKGLN
VNLHDLDKEIVTDKJCwLLVVIEQIISNSLKYTKEGGLEIYMDDQELCIK
DTGIGIKNSDVLRVFERGFSGYNGRLTQQSSGLGLYLSKKISEELGHQIR
IESEVGKGTRVRIQFAQVNLVLEZ

(SEQ. ID. NO. 139)
MELNTHNAEILLSAANKSHYPQDELPEIALAGRSNVGKSSFINTMLNRXN
LARTSGKPGQLLNFFNIDDKMRFVDVPGYGYARVSKKEREKWGCMIEEYL
TRRENLAVVSLVDLRHDPSADDVQMYEFLKYYEIPVIRVATKADKIPRGK
WNKHESAIKKKLNFDPSDDFILFSSVSKAGMDEAWDAILEKLZ

(SEQ. ID. NO. 140)
MTKKQLHLVVTGMSGAGKTVAIQSFBDLGYFEDNMPPALLPKFLQLVEIK
EDNPKLALVVDMRSRSFFSEIQAVLDELENQDGLDPKILLDAADKELVAR
YKETRRSHPLAADGRLDGIgLRELLAPLKNMSQNVVDRRELTPRELRITL
AEQFSDQEQAQSFPJEVMSFGIKYGIPIDADLVFDVRFLPNPYYLPELRN
QTGVDEPVYDYVMNHPESEDFYQHLLALIEPILPSYQKEGKSVLTIAMGC
TGGQMRSVAFAKRLAQDLSKNWSVNEGHPDKDRRKETVNRSZ

(SEQ. ID. NO. 141)
MRKPKITVIGGGTGSPVTLKSLREKDVEAAIVTVADDGGSSGELRKNMQQ
LTPPGDLRNVLVAMSDMPKFYEKVFQYRFSEDAGAFAGHPLGNLUAGLEM
QGSTYNAMQLLSKFPHRGKYPSSDHPLTLVFQTEVAGHIVDMRGIIDNEV
LHRLRPFIDTVLVNEKVPEYMNSNRPDEYLVQVEHDFVGLCKQVSRVISS
NPLPENGGAIDLIVDELMRIQVKKZ

(SEQ. ID. NO. 142)
MKNLIKLLIUVNLADSVFYIVALWHVSNNYSSSMFLGFIAVNYLPDLLLI
GPVDRVNPQKILIILVQLAVAVIFTLLLNQISFWVIMSLVFSVMASSISY
VIEDVLIQVVEYDKIVFANSLFSISYKVLDSFNSFFLQVAVGILLVKIDI
GIPLLALFILLLLKRTSNANIENFSFKYYKREVLQGTHFILNNGLLFTSI
SLTLINFFYSFQTVVVPFSIRYGPIJYGIPLTGLGGILGNMLAPIVIKYL
KSNQVGVFLFLNGSSWLVAIVIKDYTLSLILFFVCFMSKGVNIINSLYQQ
IPPHQLLGRVNTTIDSIISFGMPIGSLVAGTLIDLNIELLVLIAISIPYF
LFSYLFYTDNGLKEFSIYZ

(SEQ. ID. NO. 143)
MMSNKNKEILIFAILYTVLFMFDGVKLLASLMPSAIANYLVYVVLALYGS
FLFKDRLIQQWKEIRKTKRKFFFGVLTGWLFLILMTVVFEFVSEMLKQFV
GLDGQGLNQSNIQSTFQEQPLLIAVFACVIGPLVEELFFRQVLLHYLQER
LSGLLSIILVGLVFALTHMHSLALSEWIGAVGYLGGGLAFSIIYVKEKEN
IYYPLLVHMLSNSLSLIILAISIVKZ

(SEQ. ID. NO. 144)
LKKPIIEFKNVSKVFEDSNTCVLKDNFELEEGICYTLLGASGSGKSTILN
HAGLLDATRGDIMLDGVRINDPTIKRDVHTVFQSYALFPHMNVFENVAFP
LRLRKIDKKEIEQRVAEVLKMVQLEGYEKRSLRKLSGGQRQRVAIARAII
NQPRVVLLDEPLSALDLKLRTDMQYELRELQQRLGITFVFVTHDQEALAM
SDWTVMNDGETVQSGTPVDIYDEPINHFVATFGBSNILPGTMIEDYLVEF
NGKREAVDGGMKPNEPVEVVIRPEDLRTLPEEGKLQVKVDTQLFRGVHYE
UAYDELGNEWMIHSTRKAVGEEGLDFBPEDIHIMRLNETEEEFDAPJEEY
VEIEEQEAGLINAIEEERDEENKLZ

TABLE 2-continued

(SEQ. ID. NO. 145)
MKSMRILFLLALIQISLSSCFLWKECILSFKQSTAFFIGSMVFVSGICAG
VNYLYTRKQEVHSVLASKKSVKLFYSMLLLNLLGAVLVLSDNLFKNLQQE
LVDFLLPSFFLFGLDLLIFLPLKXYVRDFLAMLDRXTVLVTILATLLFLR
NPMTVSLLIYIGLGLFFAAYLVPNSVKKEVSFYGHIRDLVLVIVTLIFFZ

(SEQ. ID. NO. 146)
MVKKIIGMVLALLSVTVVGVGVFAYTIYQQGTETLAIZTYKKIGEETKVI
EATEPLTILLMGVURGNVERTETWVGRSDSMILMTVNPKTKRITMMSLER
DILTRIESGNGQAHEAKLNSAYADGGAELAIETIQKMMNIHIDRYVMVNM
RGLQKLVDAVGGRRVNNLGFPISSDQEENTSIGVGEQHIGGEEALVYARM
RYQDPEGDYGRQKRQREVIQKVMEKALSLNSIGHYQEILKALSDNMQTNI
DLSAKSPNLLGYPZDSFKTIETQQLQGEGEILQGVSYQIVSRAHMLEMQN
LLRRSLGQEEVTQLETNAVLFEDLFGRAPVGDEDNZ

(SEQ. ID. NO. 147)
MKKQAYVUALTSFLFVFFFSHSLLEILDFDWSIFLHDVEKTEKFVFLLLV
FSMSMTCLLALFwRGIEELSLRKMQANLKRLLAGQEVVQVADPDLDASFK
SLSGKLNLLTEALQKAENQSLAQEEEIIEKERKRIARDLHDTVSQELFAA
HMILSGISQQALKLDREKMQTQLQSVTAILETAQKDLRVLLLHLRPVELE
QKSLIEGIQILLKELEDKSDLRVSLKQNMTKLPKKLEEHIFRJLQELSNT
LRHAQASCLDVYLYQTDVELQLKVVDR4GIGFQLGSLDDLSYGLRNIKER
VEDMAGTVQLLTAPKQGLAVDIRIPLLDKEZ

(SEQ. ID. NO. 148)
MIVSIISQGFVWAILGLGIFMTFRILNFPDMTTEGSIPLGGAVAVTLITK
GVNPFLATLVAVGAGCLAGMAAGLLYTKGKIPTLLSGILVMTSCHSIMLL
IMGRANLGLLGTKQIQDVLPFDSDLNQLLTGLRFVSRVXALMLPLLDTKL
GQAYIATGDNPDMARSFGHTGRMELMGLVLSNGVIALAOALAQQEGYADV
SRGGVIVVGLASLIIGEVISLAEPVTIVVGSIAYQFLVWAVIAIOFNTSY
LRLYSALILAVCLMUTFKQTILKGAJCLSKZ

(SEQ. ID. NO. 149)
MKKMKVWSTVLATGVALTRLAACSGGSNSTTASSSEEKADKSQELVIYSN
SVSNGRGDWLTAXAEAGFNIKMVDIAGAQLADRVLAEKNNAVADMVFGIG
AVDSNKIRDQKLLVQYKPKWLDKIDQSLSDKDNYYNPVIVQPLVLIGAPD
VKEMPKDWTELGSKYKGKYSISGLQGGTGRALASILVRYLDDKGELGVSE
KGWEVAICEYLKNAYTLQKOESSIVKMLDKEDPIQYGMMWGSGALVGQKE
QNVVPKVMTPEIGVPFVTEQTMVLSTSKKQALAKEFIDWFGQSEIQVEYS
KNFGSIPANKDALKDLPEDTKKFVDQVKPQNIDWEAVGKHLDEWVEKAEL
EYVQZ

(SEQ. ID. NO. 150)
MIKFDNIQIKYGDFVAIDNLNLDHEGEFTFLGPSGCGKSTLRALVGFLDP
SSGSIEVNGTDVTHLEPEKRGIGVFQSYALFPTMTVDNIAFGLKVKKVAP
DVIKAKVSAVAAKIKISDQQLQRNVSELSGGQQQRVALARLVLEPKILCL
DEPLSNLDAKLRVDLRKELKRLQKELGRITLYVTHDQEEALTLSDRIAVF
NNGYIEQVGTPVEIYHNSQTEVCDPIGDNVLTDETVHEVLLKNTSVFLED
KKGYIRLEKVRFNRETEQDFLKGTUDVEFSGVTEHYTIKVSESQILNVTS
IDSQAARSVGESVELFITPSDVLQFZ

(SEQ. ID. NO. 151)
MRHKLNLKDWLRLGLRWFLVTRIYPNFDLVVNVFVKGGESLDAVHRVLKQ
PALQSMNSPSLIVNVVGILCVLFTEYFDIKGAKZLKLGYMTSLIYGGVVL
ATGYKFVYGPYGLITKFLQNVIPSLDPNWPIGYGAVLFIMTFSGTANHTL
FLTNTHSVDYTIEARNMGKPVFRICVVLPTLITLFALTIMVFLSGLSAVA
APMIVGGKEFQTINPMIITFAGMGNSRDLAALLAIILGIATTILLTIMNK
IEKGGNYISISKTKAPLKKQKIASKPWNIIAHIVAYGLFTVFMLPLIFIV
LYSPTDPVVIALNFNSLLTDFDLSVFLYHPLAQPLGITIPSAGDETATSN
AQALVF\RYTIVLMIISGTVLYPTQPJGPJVPJ CZ

TABLE 3

ID201-4106.4

(SEQ. ID. NO. 168)
ATGATAAAAAATCCTAAATTATTAACCAAGTCTTTTTTAAGAAGTTTTGC
AATTCTAGGTGGTTGGTCTAGTCATTCATATAGCTATTTATTTGACCTTT
CCTTTTTATTATATTCAACTGGAGGGGGAAAAGTTTAATGAGAGCGCAAG
AGTGTTTACGGAGTATTTAAAGACTAAGACATCTGATGAAATTCCAAGCT
TACTCCAGTCTTATTCAAAGTCCTTGACCATATCTGCTCACCTTAAAAGA
GATATTGTAGATAAGCGGCTCCCTCTTGTGCATGACTTGGATATTAAAGA

TABLE 3-continued

TGGAAAGCTATCAAATTATATCGTGATGTTAGATATGTCTGTTAGTACAG
CAGATGGTAAACAOGTAACCGTGCAATTTGTTCACGGGGTGGATGTCTAC
AAAGAAGCAAAGAATATTTTGCTTTTGTATCTCCCATATACATTTTTGGT
TACAATTGCTTTTTCCTTTGTTTTTTCTTATTTTTATACTAAACGCTTGC
TCAATCCTCTTTTTTACATTTCAGAAGTGACTAGTAAAATGCAAGATTTG
GATGACAATATTCGTTTTGATGAAAGTAGGAAAGATGAAGTTGGTGAAGT
TGGAAAACAGATTAATGGTATGTATGAGCACTTGTTGAAGGTTATTTATG
AGTTGGAAAGTCGTAATGAGCAAATTGTAAAATTGCAAAATCAAAAGGTT
TCCTTTGTCCGCGGAGCATCACATGAGTTGAAAACCCCTTTAGCCAGTCT
TAGAATTATCCTAGAGAATATGCAGCATAATATTGGAGATTACAAAGATC
ATCCAAAATATATTGCAAAGAGTATAAATAAGATTGACCAGATGAGCCAC
TTATTAGAAGAAGTACTGGAGTCTTCTAAATTCCAAGAGTGGACAGAGTG
TCGTGAGACCTTGACTGTTAAGCCAGTTTTAGTAGATATTTTATCACGTT
ATCAAGAATTAGCTCATTCAATAGGTGTTACAATTGAAAATCAATTGACA
GATGCTACCAGGGTCGTCATGAGTCTTAGGGCATTGGATAAGGTTTTGAC
AAACCTGATTAGTAATGCAATTAAATATTCAGATAAAAATGGGCGTGTAA
TCATATCCCAGCAAGATGGCTATCTCTCTATCAAAAATACATGTGCGCCT
CTAAGTGACCAAGAACTAGAACATTTATTTGATATATTCTATCATTCTCA
AATCGTGACAGATAAGGATGAAAGTTCCGGTTTGGGTCTTTACATTGTGA
ATAATATTTTAGAAAGCTATCAAATGGATTATAGTTTTCTCCCTTATGAA
CACGGTATCGAATTTAAGATTACCTTATAG

(SEQ. ID. NO. 152)

MIKNPKLLTLSFLRSFAILGGVGLVIHIAIYLTFPFYYIQLEGEKFNESA
RVFTEYLKTKTSDEIPSLLQSYSKSLTISAHLKRDIVDKRLPLVHDLDIK
DGKLSNYIVMLDMSVSTADGKQVTVQFVHGVDVYKEAKNILLLYLPYTFL
VTIAFSFVFSYFYTKRLLNPLFYISEVTSKMQDLDDNIRFDESRKDEVGE
VGKQINGMYEHLLKVIYELESRNEQIVKLIQNQKVSFVRGASHELKTPLA
SLRILENMQHNIGDYKDHPKYIAKSINKIDQMSHLLEEVLESSKFQEWTE
CRETLTVKPVLVDILSRYQELAHSTGVTTENGLTDATRVVMSLRALDKVL
TNLTSNATTCYSDJGRVIISEQDGYLSIKNTCAPLSDQELEHLFDIFYHS
QIVTDKDESSGLGLYIVNNILESYQMDYSFLPYEHGMEFKISLZ

ID202-41069

(SEQ. ID. NO. 169)

ATGGATAAAATTATTAAAACTATATCAGAAAGCGGAGCCTTTCGTGCTTT
TGTCCTTGATAGCACTGAAACCGTCCGCACTGCTCAAGAAAAACATCAAA
CCCAAGCTAGCTCAACTGTAGCGCTTGGTCGAACTCTTATCGCTAGCCAG
ATTCTCGCAGCCAATGAAAAAGGAAATACCAAACTTACAGTTAAGGTGTT
GGGATCTAGCTCTCTAGGTGCTATTATCACCGTCGCTGATACCAAGGGGA
ACGTCAAAGGCTATGTTCAAAATCCTGGTGTTGACATCAAAAAGACTGCG
ACTGGTGAAGTCCTAGTCGGACCTTTTGTTGGAAATGGTCAATTCCTCGT
TATCACAGACTACGGTACTGGAAATCCTTACAACTCTATAACTCCCCTCA
TCTCTGGAGAAATCGGTGAAGACCTTGCCTTTTACCTTACTGAAAGCCAA
CAAACGCCTTCAGCGGTCGGCCTCAATGTCCTTTTGGACGAGGAAGACAA
GGTCAAGGTTGCAGGTGGTTTCCTAGTTCAAGTCTTGCCAGGAGCCAAGA
AAGAAGAGATTGCTCGCTTTGAAAAACGCATCCAAGAAATGCCAGCTATC
TCTACTCTTCTCGAAACGTTTCCAATGTGACTGTAGCCATGAACGCTTTA
TGAACGCTCTTGCCAGCCTTCCAAGCTCAGACTTACAGGAAATGAAAGAG
GAAGACCACGGGGCAGAAATCACTTGTCAATTCTGCCAAACTACTTACAA
CTTTGATGAAAAGGACCTGGAGGAACTCATTCGTGACAAATCTTAA

(SEQ. ID. NO. 153)

MDKIIKTISESGAFRAFVLDSTETVRTAQEKHQTQASSTVALGRTLIASQ
ILAANEKGNTKLTVKVLGSSSLGAIITVADTKCNV1CGYVQPCVDTKKTA
TGEVLVGPFVGNGQFLVTTDYGTG&PYNSTTPLTSGETGEDLAFYLTESQ
QTPSAVGLNLLDEEDKVKVAGGFLVQVLPGAKKEETARFETCRTQEMPAT
STLLESDDHIEALLKATYGDEAYKRLSEEEIRFQCDCSHERFMNALASLP
SSDLQEMKEEDHGAEITCQFCQTTYNFDEKDLEELIRDKSZ

ID203-4115

(SEQ. ID. NO. 170)

ATGAAATCAATAACTAAAAAGATTAAAGCAACTCTTGCAGGAGTAGCTGC
CTTGTTTGCAGTATTTGCTCCATCATTTGTATCTGCTCAAGAATCATCAA
CTTACACTGTTAAAGAAGGTGATACACTTTCAGAAATCGCTGAAACTCAC
AACACAACAGTTGAAAAATTGGCAGAAAACAACCACATTGATAACATTCA
TTTGATTTATGTTGATCAAGAGTTGGTTATCGATGGCCCTGTAGCGCCTG
TTGCAACACCAGCGCCAGCTACTTATGCGGCACCAGCCGCTCAAGATGAA
ACTGTTTCAGCTCCAGTAGCAGAAACTCCAGTAGTAAGTGAAACAGTTGT
TTCAACTGTAAGCGGATCTGAAGCAGAAGCCAAAGAATGGATCGCTCAAA
AAGAATCAGGTGGTAGTATACAGCTACAAATGGACGTTATATCGGACGTT
ACCAATTAA

TABLE 3-continued

(SEQ. ID. NO. 154)

MKSITKKIKATLAGVAALFAVFAPSFVSAQESSTYTVKEGDTLSEIAETH
NTTVEKLAENNHTDNTHLTYVDQELVIDGPVAPVATPAPATYAAPAAQDE
TVSAPVAETPVVSETVVSTVSGSEAEAKEWIAQKESGGSIQLQMDVISDV
TNZ

ID204-4111.7

(SEQ. ID. NO. 171)

ATGAATTTAGGAGAATTTTGGTACAATAAAATAAATAAGAACAGAGGAAG
AAGGTTAATGAAGAAAGTAAGATTTATTTTTTTAGCTCTGCTATTTTTCT
TAGCTAATCCAGAGGGTGCAATGGCTAGTGATGGTACTTGGCAAGGAAAA
AGTATCTGAAAGAAGATGGCAGTCAAGCAGCAAATGAGTGGGTTTTTGAT
ACTCATTATCAATCTTGGTTCTATATAAAAGCAGATGCTAACTATGCTGA
AAATGAATGGCTAAAGCAAGGTGACGACTATTTTTACCTCAAATCTGGTG
GCTATATGGCCAAATCAGAATGGGTAGAAGACAAGGGAGCCTTTTATTAT
CTTGACCAAGATGGAAAGATGAAAAGAAATGCTTGGGTAGGAACTTCCTA
TGTTGGTGCAACAGGTGCCAAAGTAATAGAAGACTGGGTCTATGATTCTC
AATACGATGCTTGGTTTTATATCAAAGCAGATGGACAGCACGCAGAGAAA
GAATGGCTCCAAATTAAAGGGAAGGACTATTATTTCAAATCCGGTGGTTA
TCTACTGACAAGTCAGTGGATTAATCAAGCTTATGTGAATGCTAGTGGTG
CCAAAGTACAGCAAGGTTGGCTTTTTGACAAACAATACCAATCTTGGTTT
TACATCAAAGAAAATGGAAACTATGCTGATAAAGAATGGATTTTCGAGAA
TGGTCACTATTATTATCTAAAATCCGGTGGCTACATGGCAGCCAATGAAT
GGATTTGGGATAAGGAATCTTGGTTTTATCTCAAATTTGATGGGAAAATG
GCTGAAAAAGAATGGGTCTACGATTCTCATAGTCAAGCTTGGTACTACTT
CAAATCCGGTGGTTACATGACAGCCAATGAATGGATTTGGGATAAGGAAT
CTTGGTTTTATCTCAAATCTGATGGGAAAATAGCTGAAAAAGAATGGGTC
TACGATTCTCATAGTCAAGCTTGGTACTACTTCAAATCCGGTGGTTACAT
GACAGCCAATGAATGGATTTGGGATAAGGAATCTTGGTTTTACCTCAAAT
CTGATGGGAAAATAGCTGAAAAAGAATGGGTCTACGATTCTCATAGTCAA
GCTTGGTACTACTTCAAATCTGGTGGCTACATGGCGAAAAATGAGACAGT
AGATGGTTATCAGCTTGGAAGCGATGGTAAATGGCTTGGAGGAAAAACTA
CAAATGAAAATGCTGCTTACTATCAAGTAGTGCCTGTTACAGCCAATGTT
TATGATTCAGATGGTGAAAAGCTTTCCTATATATCGCAAGGTAGTGTCGT
ATGGCTAGATAAGGATAGAAAAAGTGATGACAAGCGCTTGGCTATTACTA
TTTCTGGTTTGTCAGGCTATATGAAAACAGAAGATTTACAAGCGCTAGAT
GCTAGTAAGGACTTTATCCCTTATTATGAGAGTGATGGCCACCGTTTTTA
TCACTATGTGGCTCAGAATGCTAGTATCCCAGTAGCTTCTCATCTTTCTG
ATATGGAAGTAGGCAAGAAATATTATTCGGCAGATGGCCTGCATTTTGAT
GGTTTTAAGCZTGAGAATCCCTTCCTTTTCAAAGATTTAACAGAGGCTAC
AAACTACAGTGCTGAAGAATTGGATAAGGTATTTAGTTTGCTAAACATTA
ACAATAGCCTTTTGGAGAACAAGGGCGCTACTTTTAAGGAAGCCGAAGAA
CATTACCATATCAATGCTCTTTATCTCCTTGCCCATAGTGCCCTAGAAAG
TAACTGGGGAAGAAGTAAAATTGCCAAAGATAAGAATAATTTCTTTGGCA
TTACAGCCTATGATACGACCCCTTACCTTTCTGCTAAGACATTTGATGAT
GTGGATAAGGGAATTTTAGGTGCAACCAAGTGGATTAAGGAAAATTATAT
CGATAGGGGAAGAACTTTCCTTGGAAACAAGGCTTCTGGTATGAATGTGG
AATATGCTTCAGACCCTTATTGGGGCGAAAAAATTGCTAGTGTGATGATG
AAAATCAATGAAAGCTAGGTGGCAAAGATTAG

(SEQ. ID. NO. 155)

MNLGEFWYNKINKNRGRRLMKKVRFIFLALLFFLASPEGAMASDGTWQGK
QYLKEDGSQAANEWVFDTHYQSWFYIKADANYAENEWLKQGDDYFYLKSG
GYMAKSEWVEDKGAFYYLDQDGKMKRNAWVGTSYVGATGAKVIEDWVYDS
QYDAWFYIKADGQHAEKEWLQIKGKDYYFKSGGYLLTSQWINQAYVNASG
AKVQQGWFDKQYQSWFYTKENGNYADKEWIFENGHYYYLKSGGYMAANEW
IWDKESWFYLKFDGKMAEKEWVYDSHSQAWYYFKSGGYMTANEWTWDKES
WFYLKSDGKIAEKEWVYDSHSQAWYYFKSGGYMTANEWIWDKESWFYLKS
DGKIAEKEWVYDSHSQAWYYFKSGGYMAKNETVDGYQLGSDGKWLGGKTT
NENAAYYQVVPVTANVYDSDGEKLSYISQGSVVWLDKDRKSDDKRLAITI
SGLSGYMKTEDLQALDASKDFIPYYESDGHRFYHYVAQNASIPVASHLSD
MEVGKKYYSADGLHFDGFKLENPFLFKDLTEATNYSAEELDKVFSLLNIN
NSLLENKGATFKEAEEHYHINALYLLAHSALESNWGRSKIAKDKNNFFGI
TAYDTTPYLSAKTFDDVDKGILGATKWIKENYIDRGRTFLGNKASGMNVE
YASDPYWGEKIASVNNKINEKLGGKDZ

ID205-41181.1

(SEQ. ID. NO. 172)

ATGAAAAAATTAGGTACATTACTCGTTCTCTTTCTTTCTGCAATCATTCT
TGTAGCATGTGCTAGCGGAAAAAAAGATACAACTTCTGGTCAAAAACTAA
AAGTTGTTGCTACAAACTCAATCATCGCTGATATTACTAAAAATATTGCT
GGTGCAAAATTGACCTTCATAGTATCGTTCCGATTGGGCAAGACCCACAC
GAATACGAACCACTTCCTGAAGACGTTAAGAAAACTTCTGAGGCTAAATT
TGATTTTCTATAACGGTATCAACCTTGAAACAGGTGGCAATGCTTGGTTT

TABLE 3-continued

ACAAAATTGGTAGAAAATGCCAAGAAAACTGAAAACAAAGACTACTTCGC
AGTCAGCGACGGCGTTGATGTTATCTACCTTGAAGGTCAAAATGAAAAAG
GAAAAGAAGACCCACACGCTTGGCTTAACCTTGAAAACGGTATTATTTTT
GCTAAAAATATCGCCAAACAATTGAGCGCCAAAGACCCTAACAATAAAGA
ATTCTCATGAAAAAAATCTCAAAGAATATACTGATAAGTTAGACAAACTT
GATAAAGAAAGTAAGGATAAATTTAATAAGATCCCTGCTGAAAAGAAACT
CCATTGTAACCAGCGAAAGGAGCATTCAAATACTTCTCTAAAGCCTATGG
TGTCCCAAGTGCTTTACATCTGGGAAATCAATACTGAAGAAGAAGGAACT
CCTGAACAAATCAAGACCTTGGTTGAAAAACTTCGCCAAACAAAACTTCC
ATCACTCTTTGTAGAATCAAGTGTGGATGACCGTCCAATGAAAACTGTTT
CTCAAGACACAAACATCCCAATCTACGCTCAAATCTTTACTGACTCTATC
GCAGAACAAGGTCCCGAAGGCGACAGCTACTACAGCATGATGAAATACAA
CCTTGACAAGATTGCTGAAGGATTGGCAAAATAA

(SEQ. ID. NO. 156)

MKKLGTLLVLFLSAIILVACASGKKDTTSGQKLKVVATNSIIADITKNIA
GDKIDLHSIVPIGQDPHEYEPLPEDVKKTSEANLIFYNGINLETGGNAWF
TKLVENAKKTENKDYFAVSDGVDVIYLEGQNEKGKEDPHAWLNLENGIIF
AKNIAKQLSAKDPNNKEFYEKNLKEYTDKLDKLDKESKDKFNKIPAEKKL
IVTSEGAFKYFSKAYGVPSAYIWEINTEEEGTPEQIKTLVEKLRQTKVPS
LFVESSVDDRPMKTVSQDTNIPIYAQIFTDSIAEQGKEGDSYYSMMKYNL
DKIAEGLAKZ

ID206-41191.1

(SEQ. ID. NO. 173)

ATGGAATGGTATAAAAAAATCGGACTTCTTGCAACTACAGGTTTAGCTTT
GTTTGGGCTCGGCGCTTGCTCCAACTATGGTAAATCTGCGGATGGCACAG
TGACCATCGAGTATTTCAACCAGAAAAAAGAAATGACCAAAACCTTGGAA
GAAATCACTCGTGATTTTGAGAAGGAAAACCCTAAGATCAAGGTCAAAGT
CGTCAATGTACCAAATGCTGGTGAAGTATTGAAGACACGCGTTCTCGCAG
GAGATGTGCCTGATGTGGTCAATATTTACCCACAGTCCATCGAACTGCAA
GAATGGGCAAAAGCAGGTGTTTTTGAAGATTGACCAACAAAGACTACCTG
AAACGCGTGAAAATGGCTACGCTGAAAAATATGCTGTAAACGAAAAAGTT
TACAACGTTCCTTTTACAGCTAATGCTTATGGAATTTACTACAACAAAGA
TAAATTCGAAGAACTGGGCTTGAAGGTTCCTGAAACCTGGGATGAATTTG
AACAGTTAGTCAAAGATATCGTTGCTAAAGGACAAACACCATTTGGAATT
GCAGGTGCAGATGCTTGGACACTCAATGGTTACAATCAATTAGCCTTTGC
GACAGCAACAGGTGGAGGAAAAGAAGCAAATCAATACCTTCGTTATTCTC
AACCAAATGCCATTAAATTGTCGGATCCGATTATGAAAGATGATATCAAG
GTCATGGACATCCTTCGCATCAATGGATCTAAGCAAAAGAACTGGGAAGG
TGCTGGCTATACCGATGTTATCGGAGCCTTCGCACGTGGGGATGTCCTCA
TGACACCAATGGGTCTTGGGCGATCACAGCGATTAATGAACAAAAACCGA
ACTTTAAGATTGGGACCTTCATGATTCCAGGAAAAGAAAAAGGACAAAGC
TTAACCGTTGGTGCGGGAGACTTGGCATGGTCTATCTCAGCCACCACCAA
ACATCCAAAAGAAGCCAATGCCTTTGTGGAATATATGACCCGTCCAGAAG
TCATGCAAAAATACTACGATGTGGACGGATCTCCAACAGCGATCGAAGGG
GTCAAACAAGCAGGAGAAGATTCACCGCCTTGCTGGTATGACCGAATATG
CCTTTACGGATCGTCACTTGGTCTGGTTGCAACAATACTGGACCAGTGAA
GCAGACTTCCATACCTTGACCATGAACTATGTCTTGACCGGTGATAAACA
AGGCATGGTCAATGATTTGAATGCCTTCTTTAACCCGATGAAAGCGGATG
TGGATTAG

(SEQ. ID. NO. 157)

MEWYKKIGLLATTGLALFGLGACSNYGKSADGTVTIEYFNQKKEMTKTLE
EITRDFEKENPKIKVKVVNVPNAGEVLKTRVLAGDVPDVVNIYPQSIELQ
EWAKAGVFEDLSNKDYLKRVKNGYAEKYAVNEKVYNVPFTANAYGIYYNK
DKFEELGLKVPETWDEFEQLVKDIVAKGQTPFGIAGADAWTLNGYNQLAF
ATATGGGKEANQYLRYSQPNAIKLSDPIMKDDIKVMDILRTNGSKQKNWE
GAGYTDVIGAFARGDVLMTPNGSWAITAINEQKPNDKIGTFMIPGKEKGQ
SLTVGAGDLAWSISATTKHPKEANAFVEYMTRPEVMQKYYDVDGSPTAIE
GVKQAGEDSPLAGMTEYAFTDRHLVWLQQYWTSEADFHTLTMNYVLTGDK
QGMVNDLNAFFNPMKADVDZ

ID207-4123.1

(SEQ. ID. NO. 174)

ATGAAGAAAATCAAACCGCATGGACCGTTACCAAGTCAGACTCAGCTAGC
TTATCTGGGAGATGAACTAGCAGCTTTTATCCACTTCGGTCCTAATACCT
TTTATGACCAAGAATGGGGGACTGGACAGGAGGATCCTGAGCGCTTTAAC
CCGAGTCAGTTGGATGCGCGTGAGTGGGTTCGTGTGCTCAAGGAAACGGG
CTTCAAAAAGTTGATTTTGGTGGTCAAGCACCACGATGGCTTTGTCCTTT
ATCCGACAGCTCACACAGATTATTCGGTTAAGGTCAGTCCTTGGAGGAGA
GGAAAGGGCGAGTTGCTCCTTGAAGTATCCCAAGCTGCCACAGAGTTTGA
TATGGATATGGGGGTCTACCTGTCACCGTGGGATGCCCATAGTCCCCTCT
ATCATGTGGACCGAGAAGCGGACTACAATGCCTATTATCTGGCTCAGTTG

TABLE 3-continued

AAGGAAATCTTATCAAATCCTAACTATGGGAATGCTGGTAAGTTCGCTGA
GGTTTGGATGGATGGTGCCAGAGGAGAGGGCGCGCAAAAGGTTAATTATG
AATTTGAAAAATGGTTTGAAACCATTCGTGACCTGCAGGGCGATTGCTTG
ATTTTTTCAACAGAAGGCACCAGTATCCGCTGGATTGGCAATGAACGAGG
GTATGCAGGTGATCCACTGTGGCAAAAGGTGAATCCTGATAAACTAGGAA
CAGAAGCAGAGCTGAACTATCTTCAGCACGGGGATCCCTCGGGCACGATT
TTTTCAATCGGAGAGGCAGATGTTTCCATCCGTCCAGGCTGGTTCTACCA
TGAGGATCAGGATCCTAAGTCTCTCGAGGAGTTGGTCGAAATCTACTTTC
ACTCAGTAGGGCGAGGAACTCCACTCTTGCTTAATATTCCGCCGAATCAA
GCTGGGCTCTTTGATGCAAAGGATATTGAACGACTTTATGAATTTGCGAC
CTATCGCAATGAGCTCTATAAAGAAGATTTGGCTCTGGGAGCTGAGGTAT
CTGGTCCAGCTCTTTCCGCAGACTTTGCTTGTCGCCATTTGACAGACGGC
CTTGAGACCAGCTCTTGGGCAAGCGATGCAGACTTGCCCATCCAGTTAGA
ACTCGACTTAGGTTCTCCTAAAACTTTTGATGTAATTGAGTTAAGAGAAG
ATTTGAAGCTAGGGCCCGAATCGCTGCTTTTCATGTGCAAGTAGAGGTGG
ATGGTGTCTGGCAGGAGTTTGGTTCGGGTCATACTGTTGGTTACAAACGT
CTCTTACGAGGAGCAGTTGTTGAGGCACAGAAGATACGTGTAGTCATTAC
AGAATCACAGGCCTTTGCCTTTGTTGACCAAGATTTCCCTTTATAAAACT
CCTGGATTATCAAAAAAAGAAGTTGTTCAGGAACTAGCATTTGCAGAAAA
AAGCCTAGCTGTGGCAAAGGGAGAAAATGCCTATTTTACAGTTAAGCGCA
GAGAATGTAGTGGTCCTTTAGAAGCTAAGATTTCGATTCAACCGGGGACA
GGTGTCCATGGTGTCGCCTATCAGGATGAGATTCAAGTCCTTGCGTTTCA
AACTGGTGAGACTGAAAAAAGTCTGACGCTACCAACCTTGTATTTCGCAG
GAGATAAAACCTTGGATTTCTATCTGAACCTAACGGTGGATGGTCAGCTT
GTGGATCAACTTCAAGTCCAAGTTTCATAA

(SEQ. ID. NO. 158)

MKKIKPHGPLPSQTQLAYLGDELAAFIHFGPNTFYDQEWGTGQEDPERFN
PSQLDAREWVRVLKETGFKKLILVVKHHDGFVLYPTAHTDYSVKVSPWRR
GKGDLLLEVSQAATEFDMDMGVYLSPWDAHSPLYHVDREADYNAYYLAQL
KEILSNPNYGNAGKFAEVWMDGARGEGAQKVNYEFEKWFETIRDLQGDCL
IFSTEGTSIRWIGNERGYAGDPLWQKVNPDKLGTEAELNYLQHGDPSGTI
FSIGEADVSIRPGWFYHEDQDPKSLEELVEIYFSHVGRVGTPLLLNIPPN
QAGLFDAKDIERLYEFATYRNELYKEDLALGAEVSGPALSADFACRHLTD
GLETSSWASDADLPIQLELDLGSPKTFDVIELREDLKLGQRIAAFHVQVE
VDGVWQEFGSGHTVGYKRLLRGAVVEAQKTRVVTTESQAPPLLTKTSLYK
TPGLSKKEVVQELAFAEKSLAVAKGENAYFTVKRRECSGPLEAKISIQPG
TGVHGVAYQDEIQVLAFQTGETEKSLTLPTLYFAGDKTLKFYLNLTVDGQ
LVDQLQVQVSV

ID208-4125.12

(SEQ. ID. NO. 175)

ATGCTTGAAAGACTGAAAAGAATACATTATATGTTTTGGATCAGTTTAAT
TTTTATGATTTTCCCCATCCTGTCTGTAGTGACTGGGTGGCTTTCTGCCT
GGCATTTATTGATTGATATTCTATTTGTAGTGGCATATTTGGGTGTTTTA
ACAACTAAGAGCCAGCGCCTATCTTGGCTATATTGGGGCCTCATGCTGAC
TTATGTAGTTGGGAATACTGCCTTTGTTGCTGTTAATTATATCTGGTTTT
TCTTTTTCCTATCCAATCTCTTAAGTTATCATTTCAGCGTACGTAGTTTA
AAGTCTTTACATGTCTGGACTTTTCTTCTTGCTCAAGTCCTTGTTGTGGG
GCAACTGTTGATTTTTCAGAGAATCGAAGTTGAGTTTCTATTCTATCTAC
TTGTAATTCTTACTTTTGTCGATTTAATGACTTTTGGATTGGTTCGGATT
CGTATTGTCGAGGATTTGAAAGAAGCTCAGGTCAAGCAAAATGCTCAGAT
AAATCTATTGCTTGCTGAAAATGAACGTAGTCGTATCGGTCAGGATTTGC
ATGATAGTCTGGGACATACCTTTGCTATGCTGAGTGTCAAGACAGATTTA
GCCTTGCAGTTATTTCAGATGGAGCTTATCCACAGGTGGAAAGGAATTAA
AGAAATTCACCAGATAGCAGGATCCATGA

(SEQ. ID. NO. 159)

MLERLKRTHNYMFWTSLTFMTFPTLSVVTGWLSAWHLLTDFLFVVAYLGV
LTTKSQRLSWLYWGLMLTYVVGNTAFVAVNYIWFFFFLSNLLSYHFSVRS
LKSLHVWTFLLAQVLVVGQLLIFQRIEVEFLFYLLVILTFVOLMTFGLVR
IRIVEDLKEAQVKQNAQINLLLAENERSRIGQDLHDSLGHTFAMLSVKTD
LALQLFQMEAYPQVEKELKEIHQISKDPZ

ID290-4126.3

(SEQ. ID. NO. 176)

ATGAATGATAAGTTAAAAATCTTCTTGTTGCTAGGAGTATTTTTTCTAGC
CATAACCGGTTTCTATGTTCTATTGATACGAAATGCAGGGCAGACAGATG
CCTCGCAAATTGAAAAGGCGGCAGTTAGCCAAGGAGGAAAAGCAGTGAAA
AAAACAGAAATTAGTAAAGACGCAGACTTGCACGAAATTTATCTAGCTGG
AGGTTGTTTCTGGGGAGTGGAGGAATATTTCTCACGTGTTCCCGGGGTGA
CGGATGCCGTTTCAGGCTATGCAAATGGTAGAGGAGAAACAACCAAGTAC
GAATTGATTAACCAAACAGGTCATGCAGAAACCGTCCATGTCACCTATGA
TGCCAAGCAAATTTCTCTCAAGGAAATCCTGCTTCACTATTTCCGCATTA

TABLE 3-continued

TCAATCCAACCAGCAAA)*ATAAACAAGGAAATGATGTGGGGACCCAGTA
CCGTACTGGTGTTTATTACACAGATGACAAGGATTTGGAAGTGATTAACC
AAGTCTTTGATGAGGTGGCTAAGAAATACGATCAACCTCTAGCAGTTGAA
AAGGAAAACTTGAAGAATTTTGTGGTGGCTGAGGATTACCATCAAGACTA
TCTAAAGAAAAATCCAAATGGCTACTGCCATATCAATGTTAATCAGGCGG
CCTATCCTGTCATTGATGCCAGCAAATATCCAAAACCAAGTGATGAGGAA
TTGAAAAAGACCCTGTCACCTGAGGAGTATGCAGTTACCCAGGAAAATCA
AACAGAACGAGCTTTCTCAAACCGTTACTGGGATAAATTTGAATCCGGTA
TCTATGTGGATATAGCAACTGGGGAACCTCTCTTTTCATCAAAAGACAAA
TTTGAGTCTGGTTGTGGCTGGCCTAGTTTTACCCAACCCATCAGTCCAGA
TGTTGTCACCTACAAGGAAGATAAGTCCTACAATATGACGCGTATGGAAG
TGCGGAGCCGAGTAGGAGATTCTCACCTTGGGCATGTCTTTACGGATGGT
CCACAGGACAAGGGCGGCTTACGTTACTGTATCAATAGCCTCTCTATCCG
CTTTATTCCCAAAGACCAAATGGAAGAAAAAGgcTACGCTTATTTACTAG
ATTATGTTGATTAA

(SEQ. ID. NO. 160)

MNDKLKIFLLLGVFFLAITGFYVLLIRNAGQTDASQIEKAAVSQGGKAVK
KTEISKDADLHETYTAGGCFWGVEEYFSRVPGVTDAVSGYANGRGETTKY
ELINOTGHAETVHVTYDAKQISLKEILLHYFRIINPTSKNKQGNDVGTQY
RTGVYYTDDKDLEVINQVFDEVAKKYDQPLAVEKENLKNFVVAEDYHQDY
LKKNPNGYCHINVNQAAYPVIDASKYPKPSDEELKKTLSPEEYAVTQENQ
TERAFSNRYWDKFESGIYVDIATGEPLFSSKDKFESGCGWPSFTQPISPD
VVTYKEDKSYNMTRMEVRSRVGDSHLGMVFTDGPQDKGGLRYCINSLSIR
FIPKDQMEEKGYAYLLDYVDZ

ID210-4127.1

(SEQ. ID. NO. 177)

ATGAAAAAGAAATGGATGTATTATGCTGCTTGTTCTTCTAATGAATCTGC
CGATGACAGTTCATCTGATAAAGGAGACGGCGGTTCGCTAGTCGTTTATT
CACCAAACTCAGAGGGCTTAATTGGAGCAACTATTCCTGCCTTTGAAGAA
AAATATGGTATCAAAGTAGAACTGATTCAAGCTGGTACTGGAGAACTTTT
CAAAA)ACTAGAGTCAGAAAAAGAAGTTCCTGTAGCTGATGTTATCTTTG
GTGGTTCTTATACACAATATACTACCCACGGAGAACTCTTTGAAAACTAT
ACTTCAAAAGAAAATGATAATGTTATCAAAGAATATCAAAACACAACTCG
CTACTCTACTCCTTATACACTAGATGGTAGTGTTTTAATCGTCAACCCTG
ATTTAACTAAAGGCATGAACATCGAAGGATATAACGATCTTTTCAAACCT
GAACTAAAAGGAAAAATCGCAACTGCTGACCCAGCAAACTCTTCTAGCGC
CTTTGCTCAATTAACAAATATGCTACAAGCTCAAGGTGGTTAACAAAGAT
GATAAGGCTTGGTCTTATGTAAAAGATCTTTTCACACTTATTGATGGTAA
AATCGGTTCAGTTCATCTAGTGTCTATAAAGTAGTCGCTGATGGAGAAAT
GGCTGTTGGTCTCTCTTATGAAGATCCAGCAGTTAAACTCTTAAATGACG
GAGCTAACATTAAGGTAGTCTATCCAAAAGAAGGAACCGTCTTCCTACCT
GCTAGTGCTGCTATCGTTAAAAAATCTAAAAATATGGAAAATGCCAAGAA
ATTTATCGATTTTATTATCTCTCAAGAAGTACAAGATACACTTGGTACAA
CCACTACTAACCGTCCTGTTCGTAAAAATGCTAAAACAAGCGAAAACATG
AAACCAATTGACAAAATCAAAACACTCACTGAAGATTATGATTATGTCAT
CAAGAATAAATCAGATATCGTTAAGAAATACAACGAAGTCTTTACAGATA
TCCAATCTAAACAGTAA

(SEQ. ID. NO. 161)

MKKKWMYYAACSSNESADDSSSDKGDGGSLVVYSPNSEGLIGATIPAFEE
KYGIKVELIQAGTGELFKKLESEKEVPVADVIFGGSYTQYTTHGELFENY
TSKENDNVIKEYQNTTGYSTPYTLDGSVLIVNPDLTKGMNIEGYNDLFKP
ELKGKIATADPANSSSAFAQLTNMLQAQGGYKDDKAWSYVKDLFTLIDGK
IGSSSSVYKVVADGEMAVGLSYEDPAVKLLNDGANIKVVYPKEGTVFLPA
SAAIVKKSKNMENAKKFIDFIISQEVQDTLGTTTTNRPVRKAKTSENMKP
IDKIKTLTEDYDYVIKNKSDIVKKYNEVFTDIQSKQZ

ID211-4127.2

(SEQ. ID. NO. 178)

ATGAGTGAGATCAAAATTATTAACGCCAAAAAAATCTACCACGATGTCCC
TGTTATTGAGAATTTGAACATTACAATTCCAAAAGGAAGTCTCTTTACCC
TTCTTGGAGCTTCAGGATGTGGGAAAACGACCCTTCTTCGTATGATTGCA
GGTTTCAACAGTATCGAAGGTGGAGAATTTTACTTCGATGATACAAAAAT
CAATAATATGGAACCCAGCAAACGCAATATCGGGATGGTTTTCCAAAACT
ACGCTATTTTCCCACATTTGACTGTCCGAGACAACGTTGCTTTTGGTCTT
ATGCAAAAGAAGGTTCCAAAAGAAGAATTGATTCAACAGACCAACAAGTA
TCTTGAACTCATGCAAATTGCTCAATATGCGGATCGAAAGCCCGATAAAC
TCAGTGGTGGACAACAACAACGTGTCACCTTGGCATGCGCCTTAGCGGTT
AATCCAAGTGTTCTCCTCATGGACGAGCCACTTAGTAATCTGGAGGCCAA
ACTTCGCTTGGATATGCGTCAAGCCATCCGAGAAATCCAACACGAAGTGG
GAATTACAACTGTTTATGTAACCCACGACCAAGAAGAAGCCATGGCTATT
TCAGACCAAATTGCTGTTATGAAAGATGGGGTGATCCAACAAATCGGCCG

TABLE 3-continued

ACCAAAAGAACTCTATCATAAACCAGCTAATGAGTTTGTGGCAACCTTTA
TCGGACGCACAAATATTATCCCTGCCAATCTTGAAAAACGGAGCGACGGC
GCTTATATCGTCTTTTCGAGATGGCTATGCCCTTCGAATGCCAGCTCTTG
ATCAGGTTGAGGAGCAAGCTATTCATGTAAGCATTCGTCCCGAAGAGTTT
ATCAAAGATGAATCTGGAGATATTGAAGGAACTATTAGAGATAGCGTCTA
TCTTGGACTAAATACGGATTATTTCATTGAGACAGGTTTTGCCTCAAAAA
TTCAAGTTAGTGAAGAATCAACTTTTGAAGAAGATCTACAAAAAGGCAAT
CGTATTCGTCTACGAATCAATACGCAAAAATTAAACATCTTTTCTGCAGA
TGGTTCCCAAAACCTGATAAAAAGGAGTCAACCATGGAACGTAA

(SEQ. ID. NO. 162)

MSEIKIINAKKIYHDVPVEINLNITIPKGSLFTLLGASGCGKTTLLRMIA
GFNSIEGGEFYFDDTKINNMEPSKRNIGMVFQNYAIFPHLTVRDNVAFGL
MQKKVPKEELIQQTNKYLELMQIAQYADRKPDKLSGGQQRVTLACALAVN
PSVLLMDEPLSNLEAKLRLDMRQAIREIQHEVGITTVYVTHDQEEAMAIS
DQIAVMKDGVIQQIGRPKELYHKPANEFVATFIGRTNIIPANLEKRSDGA
YIVFSDGYALRMPALDQVEEQAIHVSIRPEEFIKDESGDIEGTIRDSVYL
GLNTDYFIETGFASKIQVSEESTFEEDLQKGNRIRLRINTQKLNIFSADG
SQNLIKGVNHGTZ

ID212-4136.1

(SEQ. ID. NO. 179)

ATGAAGAAAAAATTATTGGCAGGTGCCATCACACTATTATCAGTAGCAAC
TTTAGCACGTTGTTCGAAAGGGTCAGAAGGTGCAGACCTTATCAGCATGA
AAGGGGATGTCATTACAGAACATCAATTTTATGAGCAAGTGAAAACGAAC
CCTTCAGCCCAACAAGTCTTGTTAAATATGACCATCCAAAAAGTTTTTGA
AAAACAATATGGCTCAGAGCTTGATGATAAAGAGGTTGATGATACTATTG
CCGAAGAAAAAAAAACAATATGGCGAAAACTACCAACGTGTCTTGTCACAA
GCAGGTATGACTCTTGAAACACGTAAAGCTCAAATTCGTACAAGTAAATT
AGTTGAGTTGGCAGTTAAGAAGGTAGCAGAAGCTGAATTGACAGATGAAG
CCTATAAGAAAGCCTTTGATGAGTACACTCCAGATGTAACGGCTCAAATC
ATCCGTCTTAATAATGAAGATAAGGCCAAAGAAGTTCTCGAAAAAGCCAA
GGCAGAAGGTGCTGATTTTGCTCAATTAGCCAAAGATAATTCAACTGATG
AAAAAACAAAAGAAAATGGTGGAGAAATTACCTTTGATTCTGCTTCAACA
GAAGTACCTGAGCAAGTCAAAAAAGCCGCTTTCGCTTTAGATGTGGATGG
TGTTTGTGATGTGATTACAGCAACTGGCACACAAGCCTACAGTAGCCAAT
ATTACATTGTAAAACTCACTAAGAAAACAGAAAAATCATCTAATATTGAT
GACTACAAAGAAAAATTAAAAACTGTTATCTTGACTCAAAAACAAAATGA
TTCAACATTTGTTCAAAGCATTATCGGAAAAGAATTGCAAGCAGCCAATA
TCAAGGTTAAGGACCAAGCCTTCCAAAATATCTTTACCCAATATATCGGT
GGTGGAGATTCAAGCTCAAGCAGTAGTACATCAAACGAATAG

(SEQ. ID. NO. 163)

MKKKLLAGAITLLSVATLAACSKGSEGADLISKMKGDVITEHQFYEQVKS
NPSAQQVLLNMTIQKVFEKQYGSELDDKEVDDTIAEEKKQYGENYQRVLS
QAGMTLETRKAQIRTSKLVELAVKKVAEAELTDEAYKKAFDEYTPDVTAQ
IIRLNNEDKAKEVLEKAKAEGADGAQLAKDNATDEKTKENGGEITFDSAS
TEVPEQVKKAAFALDVDGVSDVITATGTQAYAAQYYIVKLTKKTEKSSNI
DDYKEKLKTVILTQKQNDSTFVQSIIGKELQAANIKVKDQAFQNIFTQYI
GGGDSSSSSSTSNEZ

ID213-4137.3

(SEQ. ID. NO. 180)

ATGAAAAAAAAATATTAAACAATATGTAACCTTAGGTACTGTAGTGGTATT
ATCAGCATTTGTTGCTAACTCAGTTGCAGCTCAGGAGACTGAAACTTCTG
AAGTATCAACACCAAAGTTGGTGCAACCTGTTGCACCAACGACTCCGATT
TCGGAAGTACAACCTACATCGGATAACTCTTCGGAAGTTACTGTACAACC
TCGAACAGTTGAAACTACTGTTAAGGATCCATCTTCTACAGCGGAAGAAA
CTCCTGTCTTAGAAAAAAATAATGTTACTTTAACAGGGGGCGGAGAAAAT
GTTACTAAAGAGTTAAAGGATAAATTTACTAGCGGTGACTTTACTGTAGT
GATTAAGTACAATCAGTCAAGTGAGAAAGGCTTACAAGCTCTGTTTGGAA
TATCTAATTCCAAACCCGGTCAACAAAATAGTTATGTAGATGTGTTCCTT
AGAGACAATGGTGAGTTGGGGATGGAAGCGCGTGATACTTCTTCCAATAA
AAATAACCTAGTATCCAGACCTGCTTCAGTTTGGGGTAAGTACAAACAAG
AGGCTGTGACTAACACTGTTGCAGTAGTAGCAGATTCAGTCAAAAAAACA
TATTCTTTATACGCAAATGGTACAAAAGTAGTAGAAAAGAAAGTGGATAA
TTTCCTAAACATCAAGGATATTAAAGGTATTGATTACTATATGCTTGGGG
GAGTGAAACGTGCAGGAAAAACGGCGTTTGGTTTTAACGGAACACTAGAA
AATATCAAATTCTTTAATAGTGCATTGGATGAAGAAACTGTTAAAAAGAT
GACAACAAACGCTGTTACTGGACATTTAATTTATACGGCTAATGATACAA
CAGGTTCTAACTATTTCCGTATTCCAGTTCTGTATACTTTTAGCAATGGT
CGGGTATTTTCAACGATTGACGCTCGTTACGGTGGAACTCATGATTTCTT
GAATAAAATTAATATTGCTACAAGTTATAGTGATGATAATGGTAAGACAT
GGACTAAACCAAAATTAACATTGGCATTCGATGATTTTGCGCCAGTACCA

TABLE 3-continued

TTAGAATGGCCTCGTGAAGTTGGTGGACGTGACTTACAAATCAGCGGTGG
TGCAACCTATATTGACTCTGTTATTGTTGAAAAAAAGAACAAACAAGTAC
TCATGTTTGCTGATGTGATGCCTGCTGGAGTAAGTTTTAGAGAAGCAACT
AGAAAAGATTCAGGTTATAAACAAATTGATGGTAATTATTACCTTAAATT
AAGGAAACAAGGTGATACTGATTACAATTATACTATTCGTGAGAATGGTA
CTGTATACGACGATCGTACCAACAGACCAACTGAATTTTCAGTAGATAAA
AATTTCGGTATTAAACAAAATGGTAATTATTTGACGGTAGAGCGG

(SEQ. ID. NO. 164)

MKKNIKQYVTLGTVVVLSAFVANSVAAQETETSEVSTPKLVQPVAPTTPS
IEVQPTSDNSSEVTVQPRTVETTVKDPSSTAEETPVLEKNNVTLTGGGEN
VTKELKDKFTSGDFTVVIKYNQSSEKGLQALFGISNSKPGQQNSYVDVFL
RDNGELGMEARDTSSNKNNLVSRPASVWGKYKQEAVTNTVAVVADSVKKT
YSLYANGTKVVEKKVDNFLNIKDIKGIDYYMLGGVKRAGKTAFGPNGTLE
NIKFFNSALDEETVKKMTTNAVTGHLITYANDTTGSNYFRIPVLYTFSNG
RVFSSIDARYGGTHDFLNKINIATSYSDDNGKTWTKPKLTLAFDDFAPVP
LEWPREVGGRDLQISGGATYIDSVIVEKKNKQVLMFADVMPAGVSFREAT
RKDSGYKQIDGNYYLKLRKQGDTDYNYTIRENGTVYDDRTNRPTEFSVDK
NFGIKQNGNYLTVER

UD214-4185

ATGAAAAAATTTAGCCTATTACTAGCTATCCTACCATTTTTGGTTGCCTG
TGAGAATCAAGCTACACCCAAAGAGACTAGCGCTCAAAAGACAATCGTCC
TTGCTACAGCTGGCGACGTGCCACCATTTGACTACGAAGACAAGGGCAAT
CTGACAGGCTTTGATATCGAAGTTTTAAAGGCAGTAGATGAAAAACTCAG
CGACTACGAGATTCAATTCCAAAGAACCGCCTGGGAGAGCATCTTCCCAG
GACTTGATTCTGGTCACTATCAGGCTGCGGCCAATAACTTGAGTTACACA
AAAGAGCGTGCTGAAAAATACCTTTACTCGCTTCCAATTTCCAACAATCC
CCTCGTCCTTGTCAGCAACAAGAAAAATCCTTTGACTTCTCTTGACCAGA
TCGCTGGTAAAACAACACAAGAGGATACCGGAACTTCTAACGCTCAATTC
ATCAATAACTGGAATCAGAAACACACTGATAATCCCGCTACAATTAATTT
TTCTGGTGAGGATATTGGTAAACGAATCCTAGACCTTGCTAACGGAGAGT
TTGATTTCCTAGTTTTTGACAAGGTATCCGTTCAAAAGATTATCAAGGAC
CGTGGTTTAGACCTCTCAGTCGTTGATTTACCTTCTGCAGATACGGGGAG
CAATTATATCATTTTCTCAAGCGACCAAAAAGAGTTTAAAGAGCAATTTG
ATAAAGCGCTCAAAGAACTCTATCAAGACGGAACCCTTGAAAACTCAGCA
ATACCTATCTAGGTGGTTCTTACCTCCCAGATCAATCTCAGTTACAATAA

(SEQ. ID. NO. 165)

NKKFSLLLAILPFLVACENQATPKETSAQKTIVLATAGDVPPFDYEDKGN
LTGFDIEVLKAVDEKLSDYEIQFQRTAWESIFPGLDSGHYQAAANNLSYT
KERAEKYLYSLPISNNPLVLVSNKKNPLTSLDQIAGKTTQEDTGTSNAQF
INNWNQKHTDNPATINFSGEDIGKRILDLANGEFDFLVFDKVSVQKIIKD
RGLDLSVVDLPSADSPSNYIIFSSDQKEFKEQFDKALKELYQDGTLEKLS
NTYLGGSYLPDQSQLQZ

ID215-4211.1

(SEQ. ID. NO. 182)

ATGAAAAAAAAATAGTTTATATATCATATCCTCACTCTTTTTTGCTTGTGT
CTTATTTGTCTATGCTACGGCGACGAATTTTCAAAACAGTACCAGTGCTA
GGCAGGTAAAAACGGAAACCTATACTAATACAGTAACAAATGTCCCTATT
GACATACGCTATAATAGTGATAAGTATTTTATTAGCGGTTTTGCTTCAGA
AGTATCAGTGGTCTTGACTGGTGCAAATCGCCTATCGCTAGCTAGTGAAA
TGCAAGAAAGTACACGTAAATTCAAGGTTACTGCTGACCTAACAGATGCC
GGTGTTGGAACGATTGAAGTTCCTTTGAGCATTGAAGATTTACCCAATGG
GCTGACCGCTGTGGCGACTCCGCAAAAAATTACAGTCAAGATTGGTAAGA
AGGCTCAGAAGGATAAGGTAAAGATTGTACCAGAGATTGACCCTAGTCAA
ATTGATAGTCGGGTACAAATTGAAAATGTCATGGTGTCAGATAAAGAAGT
GTCTATTACGAGTGACCAAGAGACATTGGATAGAATTGATAAGATTATCG
CTGTTTTGCCAACTAGCGAACGTATAACAGGTAATTACAGTGGTTCAGTA
CCTTTGCAGGCAATCGACCGCAATGGTGTTGTCTTACCGGCAGTTATCAC
TCCGTTTGATACAATAATGAAGGTGACTACAAAACCAGTAGCACCAAGTT
CAAGCACATCAAATTCAAGTACAAGCAGTTCATCGGAGACATCTTCGTCA
ACGAAACGAACTAGTTCAAAAACGAATTAA

(SEQ. ID. NO. 166)

NKKNSLYIISSLFFACVLFVYATATNFQNSTSARQVKTETYNTVTNVPID
IRYNSDKYFISGFASEVSVVLTGANRLSLASEMQESTRKFKVTADLTDAG
VGTIEVPLSIEDLPNGLTAVATPQKITVKIGKKAQKDKVKIVPEIDPSQI
DSRVQIENVMVSDKEVSITSDQETLDRIDKIIAVLPTSERITGNYSGSVP
LQAIDRNGVVLPAVITPFDTIMKVTTKPVAPSSSTSNSSTSSSSETSSST
KATSSKTNZ

TABLE 3-continued

ID216-4127.3

ATGTTGATTGGCGAAGGGTATCGGACTTTCCCTGTCCTGATTTATACCCA
ATTTATTAGCGAGGTTGGAGGAAATTCTGCTTTTGCAATTATGGCGATTA
TCATTGCCTTGGCAATTTTCCTTATCCAAAAACACATTGCAAACCGCTAC
AGTTTCAGCATGAATCTGCTCCATCCAATTGAGCCTAAAAAAACTACAAA
AGGAAAAATGGCTGCCATTTATGCAACAGTCTACGGAATTATCTTTATCT
CTGTTTTACCTCAAATCTACTTAATTTATACCTCTTTCCTAAAAACATCA
GGTATGGTATCTGTTAAAGGTTATTCTCCAAACAGTTACAAGGTAGCTTT
CCATCGTATGGGATCTGCTATTTTCAATACCATTCGTATCCCTTTGATTG
CCTTAGTTCTAGTTGTTCTATTTGCGACATTTATCTCCTACCTAGCCGTT
AGAAAACGGAATTTGTTTACAAACTTAATTGACAGCCTCAGTATGGTACC
TTATATTGTACCAGGAACCGTTCTAGGGATTGCCTTCATTTCTTCCTTCA
ATACTGGTCTATTTGGAAGTGGATTTCTTATGATTACAGGGACTGCTTTC
ATCTTGATTATGTCTCTATCTGCCAGAAGATTACCTTATACTATTCGCTC
ATCTGTTGCTAGCTTACAACAAATAGCACCAAGTATTGAAGAAGCTGCTG
AAAGCTTAGGAAGTAGTCGTCTCAATACCTTTGCTAAGATTACAACTCCA
ATGATGCTATCTGGTATCATTTCTGGAGCCATCTTATCTTGA

(SEQ. ID. NO. 167)

MLIGEGYRTFPVLIYTQFISEVGGNSAFAIMAIIIALAIFLIQKHIANRY
SFSMNLLHPEIPKKTTKGKMAAIYATVYGIIFISVLPQITLIYTSFLKTS
GMVSVKGYSPNSYKVAFHRMGSAIFNTIRIPLIALVLVVLFATFISYLAV
RKRNLFTNLIDSLSMVPYIVPGTVLGIAFISSFNTGLFGSGFLMITGTAF
ILIMSLSARRLPYTIRSSVASLQQIAPSIEEAAESLGSSRLNTFAKITTP
MMLSGIISGAILSZ

TABLE 4

ID301

(SEQ. ID. NO. 196)

ATGAATAAGAAAAAAAGATTTTAACAAGTCTAGCCAGCGTCGATATCTTA
GGGGCTGGTTTTGTTACGTCTCAGCCTACTTTTGTAAGAGCAGAAGAATC
TCCACAAGTTGTCGAAAAATCTTCATTAGAGAAGGAAATATGAGGAAGCA
AAAGCAAAAGCTGATACTGCCAAGAAAGATTACGAAACGGCTAAAAAGAA
AGCAGAAGACGCTCAGAAAAAGTATGAAGATGATCAGAAGAGAACTGAGG
AGAAAGCTCGAAAAGAAGCAGAAGCATCTCAAAAATTGAATGATGTGGCG
CTTGTTGTTCAAAATGCATATAAAGAGTACCGAGAAGTTCAAAATCAACG
TAGTAAATATAAATCTGACGCTGAATATCAGAAAAAATTAACAGAGGTCG
ACTCTAAAATAGAGAAGGCTAGGAAAGAGCAACAGGACTTGCAAAATAAA
TTTAATGAAGTAAGAGCAGTTGTAGTTCCTGAACCAAATGCGTTGGCTGA
GACTAAGAAAAAAGCAGAAGAAGCTAAAGCAGAAGAAAAAGTAGCTAAGA
GAAAATATGATTATGCAACTCTAAAGGTAGCACTAGCGAAGAAAGAAGTA
GAGGCTAAGGAACTTGAAATTGAAAAACTTCAATATGAAATTTCTACTTT
GGAACAAGAAGTTGCTACTGCTCAACATCAAGTAGATAATTTGAAAAAAC
TTCTTGCTGGTGCGGATCCTGATGATGGCACAGAAGTTATAGAAGCTAAA
TTAAAAAAAGGAGAAGCTGAGCTAAACGCTAAACAAGCTGAGTTAGCAAA
AAAACAAACAGAACTTGAAAAACTTCTTGACAGCCTTGATCCTGAAGGTA
AGACTCAGGATGAATTAGATAAAGAAGCAGAAGAAGCTGAGTTGGATAAA
AAAGCTGATGAACTTCAAAATAAAGTTGCTGATTTAGAAAAAGAAATTAG
TAACCTTGAAATATTACTTGGAGGGGCTGATCCTGAAGATGATACTGCTG
CTCTTCAAAATAAATTAGCTGCTAAAAAAGCTGAGTTAGCAAAAAAACAA
ACAGAACTTGAAAAACTTCTTGACAGCCTTGATCCTGAAGGTAAGACTCA
GGATGAATTAGATAAAGAAGCAGAAGAAGCTGAGTTGGATAAAAAAGCTG
ATGAACTTCAAAATAAAGTTGCTGATTTAGAAAAAGAAATTAGTAACCTT
GAAATATTACTTGGAGGGGCTGATTCTGAAGATGATACTGCTGCTCTTCA
AAATAAATTAGCTACTAAAAAAGCTGAATTGGAAAAAACTCAAAAAGAAT
TAGATGCAGCTCTTAATGAGTTAGGCCCTGATGGAGATGAAGAAGAAACT
CCAGCGCCGGCTCCTCAACCAGAGCAACCAGCTCCTGCACCAAAACCAGA
GCAACCAGCTCCAGCTCCAAAACCAGAGCAACCAGCTCCTGCACCAAAAC
CAGAGCAACCAGCTCCAGCTCCAAAACCAGAGCAACCAGCTCCAGCTCCA
AAACCAGAGCAACCAGCTAAGCCGGAGAAACCAGCTGAAGAGCCTACTCA
ACCAGAAAAACCAGCCACTCCAAAAACAGGCTGGAAACAAGAAAACGGTA
TGTGGTATTTCTACAATACTGATGGTTCAATGGCAATAGGTTGGCTCCAA
AACAACGGTTCATGGTACTACCTAAACGCTAACGGCGCTATGGCAACAGG
TTGGGTGAAAGATGGAGATACCTGGTACTATCTTGAAGCATCAGGTGCTA
TGAAAGCAAGCCAATGGTTCAAAGTATCAGATAAATGGTACTATGTCAAC
AGCAATGGCGCTATGGCGACAGGCTGGCTCCAATACAATGGCTCATGGTA
CTACCTCAACGCTAATGGTGATATGGCGACAGGATGGCTCCAATACAACG
GTTCATGGTATTACCTCAACGCTAATGGTGATATGGCGACAGGATGGGCT
AAAGTCAACGGTTCATGGTACTACCTAAACGCTAACGGTGCTATGGCTAC
AGGTTGGGCTAAAGTCAACGGTTCATGGTACTACCTAAACGCTAACGGTT
CAATGGCAACAGGTTGGGTGAAAGATGGAGATACCTGGTACTATCTTGAA

TABLE 4-continued

GCATCAGGTGCTATGAAAGCAAGCCAATGGTTCAAAGTATCAGATAAATG
GTACTATGTCAATGGCTTAGGTGCCCTTGCAGTCAACACAACTGTAGATG
GCTATAAAGTCAATGCCAATGGTGAATGGGTTTAA

(SEQ. ID. NO. 184)

MNKKKMILTSLASVAILGAGFVTSQPTFVRAEESPQVVEKSSLEKKYEEA
KAKADTAKKDYETAKKKAEDAQKKYEDDQRKTEEKARKEAEASQKLNDVA
LVVQNAYKEYREVQNQRSKYKSDAEYQKKLTEVDSKIEKARKEQQDLQNK
FNEVRAVVVPEPNALAETKKKAEEAKAEEKVAKRKYDYATLKVALAKKEV
EAKELEIEKLQYEISTLEQEVATAQHQVDNLKKLLAGADPDDGTEVIEAK
LKKGEAELNAKQAELAKKQTELEKLLDSLDPEGKTQDELDKEAEEAELDK
KADELQNKVADLEKEISNLEILLGGADPEDDTAALQNKLAAKKAELAKKQ
TELEKLLDSLDPEGKTQDELDKEAEEAELDKKADELQNKVADLEKEISNL
EILLGGADSEDDTAALQNKLATKKAELEKTQKELDAALNELGPDGDEEET
PAPAPQPEQPAPAPKPEQPAPAPKPEQPAPAPKPEQPAPAPKPEQPAPAP
KPEQPAKPEKPAEEPTQPEKPATPKTGWKQENGMWYFYNTDGSMAIGWLQ
NNGSWYYLNANGAMATGWNVKDGDTWYYLEASGAMKASQWFKVSDKWYYV
NSNGAMATGWLQYNGSWYYLNANGDMATGWLQYNGSWYYLNANGDMATGW
AKVNGSWYYLNANGAMATGWAKVNGSWYYLNANGSMARTGWVKEGDTWYY
LEASGAMKASQWFKVSDKWYYVNGLGALAVNTTVDGYKVNANGEWVZ

ID302

(SEQ. ID. NO. 197)

ATGTTTGCATCAAAAAGCGAAAGAAAAGTACATTATTCAATTCGTAAATT
TAGTGTTGGAGTAGCTAGTGTAGTTGTTGCCAGTCTTGTTATGGGAAGTG
TGGTTCATGCGACAGAGAACGAGGGAGCTACCCAAGTACCCACTTCTTCT
AATAGGGCAAATGAAAGTCAGGCAGAACAAGGAGAACAACCTAAAAAACT
CGATTCAGAACGAGATAAGGCAAGGAAAGAGGTCCAGGAATATGTAAAAA
AAATAGTGGGTGAGAGCTATGCAAAATCAACTAAAAAGCGACATACAATT
ACTGTAGCTGCCAGTCTTGTTATGGGAAGTGTGGTTCATGCGACAGAGAA
CGAGGGAGCTACCCAAGTACCCACTTCTTCTAATAAGATACTGATGATGG
AGAGTCGATCAAAAGTAGATGAAGCTGTGTCTAAGTTTGAAAAGGACTCA
TCTTCTTCGTCAAGTTCAGACTCTTCCACTAAACCGGAAGCTTCAGATAC
AGCGAAGCCAAACAAGCCGACAGAACCAGGAGAAAAGGTAGCAGAAGCTA
AGAAGAAGGTTGAAGAAGCTGAGAAAAAAGCCAAGGATCAAAAAGAAGAA
GATCGTCGTAACTACCCAACCATTACTTACAAAACGCTTGAACTTGAAAT
TGCTGAGTCCGATGTGGAAGTTAAAAAAGCGGAGCTTGAACTAGTAAAAG
TGAAAGCTAACGAACCTCGAGACGAGCAAAAAATTAAGCAAGCAGAAGCG
GAAGTTGAGAGTAAACAAGCTGAGGCTACAAGGTTAAAAAAATCAAGACA
GATCGTGAAGAAGCAGAAGAAGAAGCTAAACGAAGAGCAGATGCTAGATG
CGAAGTCTTCAGATTCTAGCGTAGGTGAAGAAACTCTTCCAAGCCCATCC
CTGAAACCAGAAAAAAAGGTAGCAGAAGCTGAGAAGAAGGTTGAAGAAGC
TAAGAAAAAAGCCGAGGATCAAAAAGAAGAAGATCGCCGTAACTACCCAA
CCAATACTTAGAAAACGCTTGAACTTGAAATTGCTGAGTCCGATGTGGAA
GTTAAAAAAGCGGAGCTTGAACTAGTAAAAGAGGAAGCTAAGGAACCTCG
AAACGAGGAAAAAGTTAAGCAAGCAAAAGCGGAAGTTGAGAGTAAAAAAG
CTGAGGCTACAAGGTTAGAAAAAATCAAGACAGATCGTAAAAAAGCAGAA
GAAGAAGCTAAACGAAAAGCAGCAGAAGAAGATAAAGTTAAAGAAAAACC
AGCTGAACAACCACAACCAGCGCCGGCTCCAAAAGCAGAAAAACCAGCTC
CAGCTCCAAAACCAGAGAATCCAGCTGAACAACCAAAAGCAGAAAAACCA
GCTGATCAACAAGCTGAAGAAGACTATGCTCGTAGATCAGAAGAAGAATA
TAATCGCTTGACTCAACAGCAACCGCCAAAAACTGAAAAACCAGCACAAC
CATCTACTCCAAAAACAGGCTGGAAACAAGAAAACGGTATGTGGTACTTC
TACAATACTGATGGTTCAATGGCGACAGGATGGCTCCAAAACAATGGCTC
ATGGTACTACCTCAACAGCAATGGCGCTATGGCGACAGGATGGCTCCAAA
ACAATGGTTCATGGTACTATCTAAACGCTAATGGTTCAATGGCAACAGGA
TGGCTCCAAAACAATGGTTCATGGTACTACCTAAACGCTAATGGTTCAAT
GGCGACAGGATGGCTCCAATACAATGGCTCATGGTACTACCTAAACGCTA
ATGGTTCAATGGCGACAGGATGGCTCCAATACAATGGCTCATGGTACTAC
CTAAACGCTAATGGTGATATGGCGACAGGTTGGGTGAAAGATGGAGATAC
CTGGTACTATCTTGAAGCATCAGGTGCTATGAAAGCAAGCCAATGGTTCA
AAGTATCAGATAAATGGTACTATGTCAATGGCTCAGGTGCCCTTGCAGTC
AACACAACTGTAGATGGCTATGGAGTCAATGCCAATGGTGAATGGGTAAA
CTAA

(SEQ. ID. NO. 185)

MFASKSERKVHYSIRKFSVGVASVVVASLVMGSVVHATENEGATQVPTSS
NRANESQAEQGEQPKKLDSERDKARKEVEEYVKKIVGESYASKTKKRHTI
TVALVENELNNIKNEYLNKIVESTSESQLQILMMESRSKVDEABSGEKDS
SSSSSSDSSTKPEASDTAKPNKPTEPGEKVAEAKKKVEEAEKKAKDQKEE
DRRNYPTITYKTLELEIAESDVEVKKAELELVKVKANEPRDEQKIKQAEA
EVESKQAEATRLKIKTDREEAEEEAKRRADAKEQGKPKGRAKRGVPGELA
TPDKKENDAKSSDSSVGEETLPSPSLKPEKKVAEAEKKVEEAKKKAEDQK
EEDRRNYPTNTYKTLELEIAESDVEVKKAELELVKEEAKEPRNEEKVKQA
KAEVESKKAEATRLEKIKTDRKKAEEEAKRKAAEEDKVKEKPAEQPQPAP

TABLE 4-continued

APKAEKPAPAPKPENPAEQPKAEKPADQQAEEDYARRSEEEYNRLTQQQP
PKTEKPAQPSTPKTGWKQENGMWYFYNTDGSMATGWLQNNGSWYYLNSNG
AMATGWLQNNGSWYYLNANGSMATGWLQNNGSWYYLNANGSMATGWLQYN
GSWYYLNANGSMATGWLQYNGSWYYLNANGDMATGWVKDGDTWYYLEASG
AMKASQWFKVSDKWYYVNGSGALAVNTTVDGYGVNANGEWVNZ

ID303

(SEQ. ID. NO. 198)

ATGGTAAAAAGACGTATAAGGAGAGGGACGAGAGAACCTGAAAAAGTTGT
TGTTCCTGAGCAATCATCTATTCCTCGTATCCTGTATCTGTTACATCTAA
CCAAGGAACAGATGTAGCAGTAGAACCAGCTAAAGCAGTTGCTCCAACAA
CAGACTGGAAACAAGAAAATGGTATGTGGTATTTTTATAATACTGATGGT
TCCATGGCAACAGGTTGGGTACAAGTTAATAGTTCATGGTACTACCTCAA
CAGCAACGGTTCTATGAAAGTCAATCAATGGTTCCAAGTTGGTGGTAAAT
GGTATTATGTAAATACATCGGGTGAGTTAGCGGTCAATACAAGTATAGAT
GGCTATAGAGTCAATGATAATGGTGAATGGGTGCGTTAA

(SEQ. ID. NO. 186)

MVKRRIRRGRREPEKVVVPEQSSIPSYPVSVTSNQGTDVAVEPAKAVAPT
TDWKQENGMWYFYNTDGSMATGWVQVNSSWYYLNSNGMKVNQWFQVGGKW
YYVNTSGELEVNTSIDGYRVNDNGEWVRZ

ID304

(SEQ. ID. NO. 199)

CTGAATACAAGTTTTGTTCATGCTGCTGATGGGATTCAATATGTCAFAGA
TGATACTAGAGATAAAGAAGAGGGAATAGAGTATGATGACGCTGACAATG
GGGATATTATTGTAAAAGTAGCGACTAAACCTAAGGTAGTAACCAAGAAA
ATTTCAAGTACGCGAATTCGTTATGAAAAAGATGAAACAAAAGACCGTAG
TGAAAATCCTGTTACAATTGATGGAGAGGATGGCTATGTAACTACGACAA
GGACCTACGATGTTAATCCAGAGACTGGTTATGTTACCGAACAGGTTACT
GTTGATAGAAAAGAAGCCACGGATACAGTTATCAAAGTTCCAGCTAAAAG
CAAGGTTGAAGAAGTTCTTGTTCCATTTGCTACTAAATATGAAGCAGACA
ATGACCTTTCTGCAGGACAGGAGCAAGAGATTACTCTAGGAAAGAATGGG
AAAACAGTTACAACGATAACTTATAATGTAGATGGAAAGAGTGGACAAGT
AACTGAGAGTACTTTAAGTCAAAAAAAAGACTCTCAAACAAGAGTTGTTA
AAAAAAGAACCAAGCCCCAAGTTCTTGTCCAAGAAATTCCAATCGAAACA
GAATATCTCGATGGCCCAACTCTTGATAAAAGTCAAGAAGTAGAAGAAGT
AGGAGAAATTGGTAAATTACTCTTACTACAATCTATACTGTAG

(SEQ. ID. NO. 187)

LNTSFVHAADGIQYVRDDTRDKEEGIEYDDADNGDIIVKVATKPKVVTKK
ISSTRIRYEKDETKDRSENPVTIDGEDGYVTTTRTYDVNPETGYVTEQVT
VDRKEATDTVIKVPAKSKVEEVLVPFATKYEADNDLSAGQEQEITLGKNG
KTVTTITYNVDGKSGQVTESTLSQKKDSQTRVVKKRTKPQVLVQEIPIET
EYLDGPTLDKSQEVEEVGEIGKLLLLQSILZ

ID305

(SEQ. ID. NO. 200)

ATGAAGCTTTTGAAAAAAATGATGCAAATCGCACTAGCCACATTTTTCTT
CGGTTTGTTAGCGACAAATACAGTATTTGCAGATGATTCTGAAGGATGGC
AGTTTGTCCAAGAAAATGGTAGAACCTACTACAAAAAGGGGGATCTAAAA
GAAACCTACTGGAGAGTGATAGATGGGAAGTACTATTATTTTGATCCTTT
ATCCGGAGAGATGGTTGTCGGCTGGCAATATATACCTGCTCCACACAAGG
GGGTTACGATTGGTCCTTCTCCAAGAATAGAGATTGCTCTTAGACCAGAT
TGGTTTTATTTTGGTCAAGATGGTGTATTACAAGAATTTGTTGGCAAGCA
AGTTTTAGAAGCAAAAACTGCTACGAATACCAACAAACATCATGGGGAAG
AATATGATAGCCAAGCAGAGAAACGAGTCTATTATTTTGAAGATCAGCGT
AGTTATCATACTTTAAAAACTGGTTGGATTTATGAAGAGGGTCATTGGTA
TTATTTACAGAAGGATGGTGGCTTTGATTCGCGCATCAACAGATTCACGG
TTGGAGAGCTAGCACGTGGTTGGGTTAAGGATTACCCTCTTACGTATGAT
GAAGAGAAGCTAAAAGCAGCTCCATGGTACTATCTAAATCCAGCAACTGG
CATTATGCAAACAGGTTGGCAATATCTAGGTAATAGATGGTACTACCTCC
ATTCGTCAGGAGCTATGGCAACTGGCTGGTATAAGGAAGGCTCAACTTGG
TACTATCTAGATGCTGAAAATGGTGATATGAGAACTGGCTGGCAAAACCT
TGGGAACAAATGGTACTATCTCCGTTCATCAGGAGCTATGGCAACTGGTT
GGTATCAGGAAAGTTCGACTTGGTACTATCTAAATGCAAGTAATGGAGAT
ATGAAAACAGGCTGGTTCCAAGTCAATGGTAACTGGTACTATGCCTATGA
TTCAGGTGCTTTAGCTGTTAATACCACAGTAGGTGGTTACTACTTAAACT
ATAATGGTGAATGGGTTAAGTAA

(SEQ. ID. NO. 188)

MKLLKKMMQIALATFFFGLLATNTVFADDSEGWQFVQENGRTYYKKGDLK
ETYWRVIDGKYYYFDPLSGEMVVGWQYIPAPHKGVTIGPSPRIEIALRPD

TABLE 4-continued

WFYFGQDGVLQEFVGKQVLEAKTATNTNKHHGEEYDSQAEKRVYYFEDQR
SYHTYLHSSGAMATGWYKEGSTWYYLDAENGDMRTGWQNLGNKWYYLRSS
GAMATGWYQESSTWYYLNASNGDMKTGWFQVNGNWYYAYDSGALAVNTTV
GGYYLNYNGEWVKZ

ID306

(SEQ. ID. NO. 201)

TTGGCTGGTAGATATGGTTCTGCTGTTCAGTGTACAGAAGTGACTGCCTC
AAACCTTTCAACAGTTAAAACTAAAGCTACGGTTGTAGAAAAACCACTGA
AAGATTTTAGAGCGTCTACGTCTGATCAGTCTGGTTGGGTGGAATCTAAT
GGTAAATGGTATTTCTATGAGTCTGGTGATGTGAAGACAGGTTGGGTGAA
AACAGATGGTAAATGGTACTATTTGAATGACTTAGGTGTCATGCAGACTG
GATTTGTAAAATTTTCTGGTAGCTGGTATTACTTGAGCAATTCAGGTGCT
ATGTTTACAGGCTGGGGAACAGATGGTAGCAGATGGTTCTACTTTGACGG
CTCAGGAGCTATGAAGACAGGCTGGTACAAGGAAAATGGCACTTGGTATT
ACCTTGACGAAGCAGGTATCATGAAGACAGGTTGGTTTAAAGTCGGACCA
CACTGGTACTATGCCTACGGTTCAGGAGCTTTGGCTGTGAGCACAACAAC
ACCAGATGGTTACCGTGTAAATGGTAATGGTGAATGGGTAAACTAG

(SEQ. ID. NO. 189)

LAGRYGSAVQCTEVTASNLSTVKTKATVVEKPLKDFRASTSDQSGWVESN
GKWYFYESGDVKTGWVKTDGKWYYLNDLGVMQTGFVKFSGSWYYLSNSGA
MFTGWGTDGSRWFYFDGSGAMKTGWYKENGTWYYLDEAGIMKTGWFKVGP
HWYYAYGSGALAVSTTTPDGYRVNGNGEWVNZ

ID307

(SEQ. ID. NO. 200)

ATGAAAATTTTGAAAAAAACTATGCAAGTTGGACTGACAGTATTTTTCTT
TGGTTTGCTAGGGACCAGTACAGTATTTGCAGATGATTCTGAAGGATGGC
AGTTTGTCCAAGAAAACGGAAGAACCTACTACAAAAAGGGGACCTCAAA
GAAACCTACTGGCGAGTGATTGATGGTAAGTACTATTATTTTGATTCTCT
ATCTGGAGAGATGGTTGTCGGCTGGCAATATATCCCGTTTCCATCTAAAG
GTAGTACAATTGGTCCTTACCCAAATGGTATCAGATTAGAAGGTTTTCCA
AAGTCAGAGTGGTACTACTTCGATAAAAATGGAGTGCTACAAGAGTTTGT
TGGTTGGAAAACATTAGAGATTAAAACTAAAGACAGTGTTGGAAGAAAGT
ACGGGGAAAAACGTGAAGATTCAGAAGATAAAGAAGAGAAGCGTTATTAT
ACGAACTATTACTTTAATCAAAATCATTCTTTAGACACACGTTCGCTTTA
TGATCAGTCTAACTCGTATTATCTAGCTAAGACGGAAATTAATGGAGAAA
ACTACCTTGGTGGTGAAAGACGTGCGGGGTGGATAAACGATGATTCGACT
TGGTACTACCTAGATCCAACAACTGGTATTATGCAAACAGGTTGGCAATA
TCTAGGTAATAAGTGGTACTACCTCCGTTCCTCAGGAGCAATGGCCACTG
GCTGGTATCAGGAAGGTACCACTTGGTATTATTTAGACCACCCAAATGGC
GATATGAAAACAGGTTGGCAAAACCTTGGGAACAAATGGTACTATCTCCG
TTCATCAGGAGCTATGGCAACTGGTTGGTATCAAGATGGTTCAACTTGGT
ACTACCTAAATGCAGGTAATGGAGACATGAAGACAGGTTGGTTCCAGGTC
AATGGCAACTGGTACTATGCTTAT

(SEQ. ID. NO. 190)

MKILKKTMQVGLTVFFFGLLGTSTVFADDSEGWQFVQENGRTYYKKGDLK
ETYWRVIDGKYYYFDSLSGEMVVGWQYIPFPSKGSTIGPYPGIRLEGFPK
SEWYYFDIOGVLQEFVQWKTLEILKTISVGRKYGEKREDSEDKEEKRYYT
NYYFNQNHSLETGWLYSQSNWYYLAKTEINGENYLGGERRAGWINDDSTW
YYLDPTTGIMQTGWQYLGNKWYYLRSSGAMATGWYQEGTTWYYLDHPNGD
MKTGWQNLGNKWYYLRSSGAMATGWYQDGSTWYYLNAGNGDMKTGWFQVN
GNWYYAYSSGALAVNTTVDGYSVNYNGEWVRZ

ID308

(SEQ. ID. NO. 203)

ATGAAAAAGAAATTAACTAGTTTAGCACTTGTAGGCGCTTTTTTAGGTTT
GTCATGGTATGGGAATGTTCAGGCTGAAGAAAGTTCAGGAAATAAAATCC
ACTTTATCAATGTTCAAGAAGGTGGCAGTGATGCGATTATTCTTGAAAGC
AATGGACATTTTGCCATGGTGGATACAGGAGAAGATTATGATTTCCCAGA
TGGAAGTGATTCTCGCTATCCATGGAGAGAAGGAATTGAAACGTCTTATA
AGCATGTTCTAACAGACCGTGTCTTTCGTCGTTTGAAGGAATTGGGTGTC
CAAAAACTTGATTTTATTTTGGTGACCCATACCCACAGTGATCATATTGG
AAATGTTGATGAATTACTGTCTACCTATCCAGTTGACCGAGTCTATCTTA
AGAAATATAGTGATAGTCGTATTACTAATTCTGAACGTCTATGGGATAAT
CTGTATGGCTATGATAAGGTTTTACAGACTGCTGCAGAAAAAGGTGTTTC
AGTTATTCAAAATATCACACAAGGGGATGCTCATTTTCAGTTTGGGGACA
TGGATATTCAGCTCTATAATTATGAAAATGAAACTGATTCATCGGGTGAA
TTAAAGAAAATTTGGGATGACAATTCCAATTCCTTGATThGCGTGGTGAA
AGTCAATGGCAAGAAAATTTACCTTGGGGGCGATTTAGATAATGTTCATG
GAGCAGAAGACAAGTATGGTCCTCTCATTGGAAAAGTTGATTTGATGAAG

TABLE 4-continued

TTTAATCATCACCATGATACCAACAAATCAAATACCAAGGATTTCATTAA
AAATTTGAGTCCGAGTTTGATTGTTCAAACTTCGGATAGTCTACCTTGGA
AAAATGGTGTTTGATAGTGAGTATGTTAATTGGCTCAAAGAACGAGGAAT
TGAGAGAATCACGCAGCCAGCAAAGACTATGATGCAACAGTTTTTGATAT
TCGAAAAGACGGTTTTGTCAATATTTCAACATCCTACAAGCCGATTCCAA
GTTTTCAAGCTGGTTGGCATAAGAGTGCATATGGGAACTGGTGGTATCAA
GCGCCTGATTCTACAGGAGAGTATGCTGTCGGTTGGAATGAAATCGAAGG
TGAATGGTATTACTTTAACCAAACGGGTATCTTGTTACAGAATCAATGGA
AAAAATGGAACAATCATTGGTTCTATITGACAGACTCTGGTGCTTCTGCT
AAAAATTGGAAGAAAATCGCTGGAATCTGGTATTATTTTAACAAAGAAAA
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GATGTTGATGGTTCTATGAAGACAGGATGGCTTCAATATATGGGGCAATG
GTATTACTTTGCTCCATCAGGGGAAATGAAAATGGGCTGGGTAAAAGATA
AAGAAACCTGGTACTATATGGATTCTACTGGTGTCATGAAGACAGGTGAG
ATAGAAGTTGCTGGTCAACATTATTATCTGGAAGATTCAGGAGCTATGAA
GCAAGGCTGGCATAAAAAGGCAAATGATTGGTATTTCTACAAGACAGACG
GTTCACGAGCTGTGGGTTGGATCAAGGACAAGGATAAATGGTACTTCTTG
AAAGAAAATGGTCAATTACTTGTGAACGGTAAGACACCAGAAGGTTATAC
TGTGGATTCAAGTGGTGCCTGGTTAGTGGATGTTTCGATCGAGAAATCTG
CTACAATTAAAACTACAAGTCATTCAGAAATAAAAGAATCCAAAGAAGTA
GTGAAAAAGGATCTTGAAAATAAAGAAACGAGTCAACATGAAAGTGTTAC
AAATTTTTCAACTAGTCAAGATTTGACATCCTCAACTTCACAAAGCTCTG
AAACGAGTGTAAACAAATCGGAATCAGAACAGTAG

(SEQ. ID. NO. 191)

MKKKLTSLALVGAFLGLSWYGNQAQESSGNKIHFINVQEGGSDAIILESN
GHFAMVDTGEDYDFPDGSDSRYPWREGIETSYKHVLTDRVFRRLKELGVQ
KLDFILVTHTHSDHIGNAHFQGDMDIQLYNYENETDSSGELKKIWDDNSN
LSISVVKVNGKKIYLGGDLDNVHGAHGQFGDMDIQLYNYENETDSSGELK
KIWDDNSNSLISVVKVNGKKIYLGGDLDNVHGAEDKYGPLIGKVDLMKFN
HHHDTNKSNTKDFIKNLSPSLIVQTSDSLPWJGVDDSRYVNWLKERGILE
RINAASKDYDATVFDIRKDGFVNISTSYKPIPSFQAGWHKSAYGNWWYQA
PDSTGEYAVGWNEIEGEWYYFNQTGILLQNQWKKWNNHWFYLTDSGASAK
NWKKIAGIWYYFNKENQMEIGWIQDKEQWYYLDVDGSMKTGWLQYMGQWY
YFAPSGEMKMGWVKDKETWYYMDSTGVMKTGEIEVAGQHYYLEDSGAMKQ
GWHKKANDWYFYKTDGSRAVGWIKDKDKWYFLKENGQLLVNGKTPEGYTV
DSSGAWLVDVSIEKSATIKTTSHSEIKESKEVVKKDLENKETSQHESVTM
FSTSQDLTSSTSQSSETSVNKSESEQZ

ID309

(SEQ. ID. NO. 204)

ATGGAAATTAATGTGAGTAAATTAAGAACAGATTTGCCTCAAGTCGGCGT
GCAACCATATAGGCAAGTACACGCACACTCAACTGGGAATCCGCATTCAA
CCGTACAGAATGAAGCGGATTATCACTGGCGGAAAGACCCAGAATTAGGT
TTTTTCTCGCACATTGTTGGGAACGGTTGCATCATGCAGGTAGGACCTGT
TGATAATGGTGCCTGGGACGTTGGGGGCGGTTGGAATGCTGAGACCTATG
CAGCGGTTGAACTGATTGAAAGCCATTCAACCAAAGAAGAGTTCATGACG
GACTACCGCCTTTATATCGAACTCTTACGCAATCTAGCAGATGAAGCAGG
TTTGCCGAAAACGCTTGATACAGGGAGTTTAGCTGGAATTAAAACGCACG
AGTATTGCACGAATAACCAACCAAACAACCACTCAGACCACGTTGACCCT
TATCCATATCTTGCTAAATGGGGCATTAGCCGTGAGCAGTTTAAGCATGA
TATTGAGAACGGCTTGACGATTGAAACAGGCTGGCAGAAGAATGACACTG
GCTACTGGTACGTACATTCAGACGGCTCTTATCCAAAAGACAAGTTTGAG
AAAATCAATGGCACTTGGTACTACTTTGACAGTTCAGGCTATATGCTTGC
AGACCGCTGGAGGAAGCACACAGACGGCAACTGGTACTGGTTCGACAACT
CAGGCGAAATGGCTACAGGCTGGAAGAAAATCGCTGATAAGTGGTACTAT
TTCAACGAAGAAGGTGCCATGAAGACAGGCTGGGTCAAGTACAAGGACAC
TTGGTACTACTTAGACGCTAAAGAAGGCGCCATGGTATCAAATGCCTTTA
TCCAGTCAGCGGACGGAACAGGCTGGTACTACCTCAAACCAGACGGAACA
CTGGCAGACAAGCCAGAATTCACAGTAGAGCCAGATGGCTTGATTACAGT
AAAATAA

(SEQ. ID. NO. 192)

MEINVSKLRTDLPQVGVQPURQVHAHSTGNPHSTVQNEADYHWRKDPELG
FFSHIVGNGCIMQVGPVDNGAWDVGGGWNAETYAAVELIESHSTKEEFMT
DYRLIELLRNLADEAGLPKTLDTGSLAGIKTHEYCTNNQPNNHSDHVDPY
PYLAKWGISREQFKHDIENGLTIETGWQKNDTGYWYVHSDGSYPKDKFEK
INGTWYYFDSSGYMLADRWRKHTDGNWYWFDNSGEMATGWKKIADKWYYF
NEEGAMKTGWVKYKDTWYYLDAKEGAMVSNAFIQSADGTGWYYLKPDGTL
ADKPEFTVEPDGLITVKZ

TABLE 4-continued

ID310

(SEQ. ID. NO. 205)

ATGGGCACAACAGGATTTACAATAATTGACTTAATTATCTTGATTGTTTA
TTTACTTGCGGTGTTGGTTGCAGGTATCTATTTCTCTAAAAAAGAGATGA
AAGGAAAAAGAGTTCTTTAAAGGAGATGGTTCGGTTCTTCGGTATGTTACT
TCGGTATCCATTTTTGCCACAATGCTCAGTCCGATTTCCTTCTTGGGACT
CGCTGGTAGCTCTTATGCAGGTAGCTGGATTTTATGGTTTGCTCAATTAG
GGATGGTAGTAGCTATTCCACTGACAATTCGTTTTATCTTACCTATCTTT
GCACGGATAGACATCGATACGGCATATGATTACTTGGATAAACGTTTTAA
TTCTAAAGCACTTCGTATTATTTCAGCACTCTTGTTTATTATTTATCAAT
TGGGACGTATGTCTATCATTATGTACCTCCCATCAGCTGGTTTATCAGTA
TTCAGAGGAATTGACATCAATATTTTGATTATTTTGATGGGTGTAGTTGC
AATTGTTTATTCTTATACTGGTGGTCTAAAATCCGTATTATGGACAGACT
TTATTCAAGGTGTGATTCTGATTAGTGGTGTCGTTTTAGCTTTATTTGTA
CTGATTGCTAATATTAAAGGTGGCTTTGGTGCAGTAGCAGAAACATTAGC
AAACGGGAAATTCCTTGCTGCAAATGAAAAACTTTTCGATCCTAACTTGC
TTTCAAACTCCATCTTTTTAATTGTGATGGGTTCAGGCTTTACAATCTTG
TCTTCCTATGCTTCATCTCAAGATTTGGTTCAACGTTTTACTACAACACA
AAATATTAAGAAACTTAATAAGATGTTGTTCACAAAGCCTGTTTTGTCAC
TTGCAACTGCAACAGTCTTTTACTTGATTGGTACAGGCTTGTACGTATTC
TATCAAGTACAAAATGCAGATAGTGCAGCTAGCAATATCCCTCAAGACCA
AATCTTTATGTACTTTATTGCATACCAGTTACCAGTAGGTATCACAGGTT
TGATCTTGGCAGCGATTTATGCAGCATCTCAATCAACTATTTCAACAGGT
TTGAACTCTGRTGCAACTTCATGGACATTGGATATTCAAGATGTCATTTC
TAAAAATATGTCAGACAATCGTCGTACGAAAATTGCACAATTCGTATCTC
TAGCAGTAGGTTTATTCTCAATTGGTGTTTCCATTGTCATGGCTCACTCA
GATATTAAATCTGCATACGAATGGTTCAATAGTTTCATGGGACTTGTACT
TGGTCTACTTGGTGGTGTATTTATTCTTGGATTTGTTTCTAAAAAAGCAA
ATAAACAAGGTGCTTATGCAGCGCTGATTGTATCAACCATCGTCATGGTA
TTTATTAAATACTTCCTTCCTCCAACAGCTGTTAGCTACTGGGCATATTC
ATTGATTTCAATCTCTGTATCAGTAGTTTCAGGTTATATTGTATCTGTTC
TTACTGGAAATAAAGTATCTGCACCTAAATATACAACGATRCATGATATT
ACAGAAATTAAAGCGGATTCAAGTTGGGAAGTTCGTCACTAA

(SEQ. ID. NO. 193)

MGTTGFTIIDLIILIVYLLAVLVAGIYFSKKEMKGKEFFKGDGSVPWYVT
SVSIFATMLSPISFLGLAGSSYAGSWILWFAQLGMVVAIPLTIRFILPIF
ARIDIDRAYDYLDKRFNSKALRIISALLFIIYQLGRMSIIMYLPSAGLSV
LTGIDINILIILMGVVAIVYSYTGGLKSVLWTDFIQGVILISGVVLALFV
LIANIKGGFGAVAETLANGKFLAANEKLFDPNLLSNSIFLIVMGSGFTIL
SSYASSQDLVQRFTTTQNIKKLN14LFTNGVLSLATAIVFYLIGTGLYVF
YQVQNADSAASNIPQDQIFMYFIAYQLPVGITGLILAAIYAASQSTISTG
LNSVATSWTLDIQDVISKNMSDNRRTKIAQFVSLAVGLFSIGVSIVMAHS
DIKSAYEWFNSFNGLVLGLLGGVFILGFVSKKANKQGAYAALIVSTIVMV
FIKYFLPPTAVSYWAYSLISISVSVVSGYIVSVLTGNKVSAPKYTTIHDI
TEIKADSSWEVRHZ

ID311

(SEQ. ID. NO. 206)

ATGAAAATTAATAAAAAATATCTAGCAGGTTCAGTGGCAGTCCTTGCCCT
AAGTGTTTGTTCCTATGAGCTTGGTCGTCACCAAGCTGGTCAGGATAAGA
AAGAGTCTAATCGAGTTGCTTATATAGATGGTGATCAGGCTCGTCAAAAG
GCAGAAAACTTGACACCAGATGAAGTCAGTAAGAGGGAGGGGATCAACGC
CGAACAAATCCTCATCAAGATTACGGATCAAGGTTATGTGACCTCTCATG
GAGACCATTATCATTACTATAATGGCAAGCTCCCTTATGATGCCATCATC
AGTGAAGAGCTCCTCATGAAAGATCCGAATTATCAGTTGAAGGATTCAGA
CATTGTCAATGAAATCAAGGGTGGTTATGTCATCAAGGTAGACGGAAAAT
ACTATGTTThCCTTAAGGATGCAGCTCATGCGGATAATATTCGGACAAAA
GAAGAGATTAAACGTCAGAAGCAGGAACGCAGTCATAATCACGGGTCAGG
AGCTAACGATCATGCAGTAGCTGCAGCCAGAGCCCAAGGACGCTATACAA
CGGATGATGGGTATATCTTCAATGCATCTGATATCATTGAGGACACGGGT
GATGCTTATATCGTTCCTCACGGCGACCATTACCATTACATTCCTAAGAA
TGAGTTATCAGCTAGCGAGTTAGCTGCTGCAGAAOCCTATTGGAATGGGA
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CAACCAAGATTGTCAGAGAACCACAATCTGACTGTCACTCAAACTTATCA
TCAAAATCAAGGGGAAAACATTICAAGCCTTTTACGTGAATHGTATGCTA
AACCCTTATCAGAACGCCCATTGGAATCTGATGGCCTTATTTTCGACCCA
GCGCAAATCACAAGTCGAACCCCCAGAGGTGTAGCTGTCCCTCATGGTAA
CCATTACCACTTTATCCCTTATGAACAAATCTCTGAATTGGAAAAACGAA
TTGCTCGTATTATTCCCCTTCGTTATCGTTCAAACCATTGGGTACCAGAT
TCAAGACCAGAACAACCAAGTCCACAATCGACTCCGGAACCTAGTCCAAG
TCCGCAACCTGCACCAAATCCTCAACCAGCTCCAAGCAATCCAATTGATG
AGAAATTGGTCAAAGAAGCTGTTCGAAAAGTAGGCGATGGTTATGTCTTT
GAGGAGAATGGAGTTTCTCGTTATATCCCAGCCAAGGATCTTTCAGCAGA

TABLE 4-continued

AACAGCAGCAGGCATTGATAGCAAACTGGCCAAGCAGGAAAGTTTATCTC
ATAAGCTAGGAGCTAAGAAAAACTGACCTCCCATCTAGTGATCGAGAATT
TTACAATAAGGCTTATGACTTACTAGCAAGAATTCACCAAGATTTACTTG
ATAATAAAGGTCGACAAGTTGATTTYGAGGCTTTGGATAACCTGTTGGAA
CGACTCAAGGATGTCCCAAGTGATAAAGTCAAGTTAGTGGATGATATTCT
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TGATGAGGGGGATGCCTATGTAACTCCACATATGACCCATAGCCACTGGA
TTAAAAAAGATAGTTTGTCTGAAGCTGAGAGAGCGGCAGCCCAGGCTTAT
GCTAAAGAGAAAGGTTTGACCCCTCCTTCGACAGACCATCAGGATTCAGG
AAATACTGAGGCAAAAGGAGCAGAAGCTATCTACAACCGCGTGAAAGCAG
CTAAGAAGGTGCCACTTGATCGTATGCCTTACAATCTTCAATATACTGTA
GAAGTCAAAAACGGTAGTTTAATCATACCTCATTATGACCATTACCATAA
CATCAAATTTGAGTGGTTTGACGAAGGCCTTTATGAGGCACCTAAGGGGT
ATACTCTTGAGGATCTTTTGGCGACTGTCAAGTACTATGTCGAACATCCA
AACGAACGTCCGCATTCAGATAATGGTTTTGGTAACGCTAGCGACCATGT
TCAAAGAAACAAAAATGGTCAAGCTGATACCAATCAAACGGAAAAACCAA
GCGAGGAGAAACCTCAGACAGAAAAACCTGAGGAAGAAACCCCTCGAGAA
GAGAAACCGCAAAGCGAGAAACCAGAGTCTCCAAAACCAACAGAGGAACC
AGAAGAATCACCAGAGGAATCAGAAGAACCTCAGGTCGAGACTGAAAAGG
TTGAAGAAAAACTGAGAGAGGCTGAAGATTTACTTGGAAAAATCCAGGAT
CCAATTATCAAGTCCAATGCCAAAGAGACTCTCACAGGATTAAAAAATAA
TTTACTATTTGGCACCCAGGACAACAATACTATTATGGCAGAAGCTGAAA
AACTATTGGCTTTATTAAAGGAGAGTAAGTAA

(SEQ. ID. NO. 194)

MKINKKYLAGSVAVLALSVCSYELGRHQAGQDKKESNRVAYIDGDQAGQK
EANLTPDEVSKREGINAEQIVIKITDQGYVTSHGDHYHYYNGKVPYDAII
SEELLMKDPNYQLKDSDIVNEIKGGYVIKVDGKYYVYLKDAAHADNIRTK
EEIKRQKQERSHNHGSGANDHAVAAARAQGRYTTDDGTIFNASDIIEDTG
DAYIVPHGDHYHYIPKNELSASELAAAEAYWNGKQGSRPSSSSSYNANPA
QPRLSENWNTTVTPTYHQNQGENISSLLRELYAKPLSERJVESDGLIFDP
AOITSRTARGVAVPHGNHYHFIPYEQMSELEKRIARIIPLRYRSNHWVPD
SRPEQPSPQSTPEPSPSPQPAP4PQPAPSNPIDEKLVKEAVRKVGDGYVF
EENGVSRYIPAKDLSAETAAGIDSKLAKQESLSHKLGAKKTDLPSSDREF
YNKAYDLLARIHQDLLDNKGRQVDFEALDNLLERLKDVPSDKVKLVDDIL
AFLAPIRHPERLGKPNAQITYTDDEIQVAKLAGKYTTEDGYIFDPRDITS
DEGDAYVTPHMTHSHWIKKDSLSEAERAAAQAYAKEKGLTPPSTDHQDSG
NTEAKGAEIYNRNKAAKKVPLDRMPYNLQYTVEVKNGSLIIPHYDHYHNI
KFEWFDEGLYEAPKGYTLESLLATVKYYVEHPNERPHSDNGFGNASDHVQ
RNKNGQADTNQT3EKPSEEKPQTEKPEEETPREEKPQSEKPESPKPTEEP
EEPSPEESEEPQVETEKVEEKLREADEDLLGKIQDPIIKSNAKETLTGLK
NNLLFGTQDNNTIMAEAEKLLALLKESKZ

ID312

(SEQ. ID. NO. 307)

ATGGAGGGATTGGTTAGAGTGCATTTATTGCCTGTATTTGGCGATTACAA
GCTATCTAAACTTACTACGCCTATTCTTCAACAGCAAGTAAACAAATGGG
CTGACAAGGCAATAAAGGCGAAAAAGGGGCATTTGCTAACTACTCTTTGC
TCCATAACATGAATAAGCGTATTTTGAAATATGGCGTAGCTATCCAGGTA
ATACAATACAACCCAGCTAATGATGTCATCGTTCCACGCAAACAGCAAAA
AGAAAAGGCTGCTGTCAAATACTTAGACAACAAAGAATTAAAACAGTTTC
TTGATTATTTAGATGCTCTGGATCAATCAAATTATGAGAACTTATTTGAT
GTTGTTCTGTATAAGACTTTATTGGCCACTGGTTGCCGTATTAGTGAGGC
TCTGGCTCTTGAATGGTCTGATATTGACCTAGAAAGCGGTGTTATCAGCA
TCAATAAGACACTAAACCGCTATCAGGAAATAAACTCACCTAAATCAAGC
GCTGGTTATCGTGATATACCAATAGACAAAGCCACATTACTTTTACTGAA
ACAATACAAAAACCGTCAACAAATTCAGTCTTGGAAATTAGGCCGATCTG
AAACAGTTGTATTCTCTGTATTTACGGAGAAATATGCTTATGCTTGTAAC
TTACGCAAACGCCTAAATAAGCATTTTGATGCTGCTGGAGTAACTAACGT
ATCATTTCATGGTTTCCGCCATACACATACTACTATGATGCTCTATGCTC
AGGTTAGCCCAAAAGATGTTCAGTATAGATTAGGCCACTCTAATTTAATG
ATCACTGAAAATACTTACTGGCATACTAACCAAGAGAATGCAAAAAAAGC
CGTCTCAAATTATGAAACAGCTATCAACAATTTATAA

(SEQ. ID. NO. 195)

MEGLVRVHLLPVFGDYKLSKLTTPILQQQVNKWADKANKGEKGAFANYSL
LHNMNKRILKYGVAIQVIQYNPANDVIVPRKQQKEKAAVKYLDNKELKQF
LDYLDALDQSNYQNLFDVVLYKTLLATGCRISEALALEWSDIDLESGVIS
INKTLNRYQEINSPKSSAGYRDIPIDKATLLLLKQYKNRQQIQSWKLGRS
ETVVFSVFTEKYAYACNLRKRLNKHGDAAGVTVNSFHGFHTHTTMMLYAQ
VSPKDVQYRLGHSNLMITENTYWHTNQENAKKAVSNYETAINNLZ

SEQUENCE LISTING

The patent application contains a lengthy "Sequence Listing" section. A copy of the "Sequence Listing" is available in electronic form from the USPTO web site (http://seqdata.uspto.gov/?pageRequest=docDetail&DocID=US20080260768A1). An electronic copy of the "Sequence Listing" will also be available from the USPTO upon request and payment of the fee set forth in 37 CFR 1.19(b)(3).

1-20. (canceled)

21. An isolated *Streptococcus pneumoniae* polypeptide comprising:

(a) SEQ ID NO: 1-167, 184-195; or

(b) a homologue, derivative, or fragment of a sequence of (a) that retains the antigenicity or immunogenicity of the sequence from which it is derived.

22. The polypeptide of claim **21**, wherein said polypeptide is a homologue or derivative having at least 60%, 70%, 80%, 90%, or 95% sequence similarity with the sequence from which it is derived.

23. A fusion protein comprising the polypeptide of claim **21**.

24. An immunogenic and/or antigenic composition comprising the polypeptide of claim **21** and one or more excipients, diluents, or adjuvants.

25. The composition of claim **24**, wherein said composition is an antigenic composition.

26. The composition of claim **24**, wherein said composition is an immunogenic composition.

27. The composition of claim **24**, wherein said composition is a vaccine.

28. The polypeptide of claim **21**, wherein said sequence is SEQ ID NO: 163.

29. An isolated *Streptococcus pneumoniae* nucleic acid molecule comprising:

(a) SEQ ID NO: 168-183, 196-363, or an RNA equivalent thereof;

(b) a sequence that is complementary to a sequence of (a);

(c) a sequence that codes for the same polypeptide as a sequence of (a) or (b);

(d) a sequence that shares at least 50% sequence similarity with a sequence of (a), (b), or (c); or

(e) a sequence that codes for a homologue, derivative, or fragment of the polypeptide encoded by a sequence of (a), (b), (c), or (d); and

wherein the polypeptide coded for by the sequence of (b), (c), (d), or (e) retains the antigenicity or immunogenicity of the polypeptide encoded by the sequence from which it is derived.

30. The nucleic acid of claim **29**, wherein said nucleic acid is a homologue or derivative having at least 60%, 70%, 80%, 90%, or 95% sequence similarity with the sequence from which it is derived.

31. An immunogenic and/or antigenic composition comprising the nucleic acid of claim **29** and one or more excipients, diluents, or adjuvants.

32. The composition of claim **31**, wherein said composition is an antigenic composition.

33. The composition of claim **31**, wherein said composition is an immunogenic composition.

34. The composition of claim **31**, wherein said composition is a vaccine.

35. The nucleic acid of claim **29**, wherein said sequence is SEQ ID NO: 179.

36. An isolated antibody or fragment thereof that binds to a *Streptococcus pneumoniae* polypeptide comprising:

(a) SEQ ID NO: 1-167, 184-195; or

(b) a homologue, derivative, or fragment of a sequence of (a) that retains the antigenicity of the polypeptide encoded by the sequence from which it is derived.

37. The antibody or fragment thereof of claim **36**, wherein said antibody is monoclonal.

38. The antibody or fragment thereof of claim **36**, wherein said antibody is polyclonal.

39. The antibody or fragment thereof of claim **36**, wherein said antibody is humanised.

40. The antibody or fragment thereof of claim **36**, wherein said antibody is chimeric.

41. A composition comprising the antibody or fragment thereof of claim **36** and one or more excipients, diluents, or adjuvants.

42. The antibody or fragment thereof of claim **36**, wherein said polypeptide is SEQ ID NO: 163.

43. A method for the detection and/or diagnosis of *Streptococcus pneumoniae* comprising contacting a test sample with a probe for at least one nucleic acid of claim **29**, wherein the presence of said nucleic acid is indicative of *Streptococcus pneumoniae*.

44. The method of claim **43**, wherein said test sample is tissue, blood, or saliva.

45. A method for the detection and/or diagnosis of *Streptococcus pneumoniae* comprising contacting a test sample with at least one antibody of claim **36**, wherein the presence of a polypeptide bound by said antibody is indicative of *Streptococcus pneumoniae*.

46. The method of claim **45**, wherein said test sample is tissue, blood, or saliva.

47. A method of determining whether a polypeptide of claim **21** represents a potential anti-microbial target, comprising inactivating said polypeptide and determining whether the *Streptococcus pneumoniae* is still viable.

48. A method for the treatment or prophylaxis of *Streptococcus pneumoniae* infection comprising administering an agent capable of antagonizing, inhibiting, or otherwise interfering with the function or expression of a polypeptide of claim **21**.

* * * * *

专利名称(译)	肺炎链球菌蛋白质和核酸分子		
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申请(专利权)人(译)	赛诺菲巴斯德有限公司		
当前申请(专利权)人(译)	赛诺菲巴斯德有限公司		
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IPC分类号	A61K39/00 C07K16/00 C07H21/04 A61K39/09 A61K47/00 A61P43/00 C07K14/315 C12Q1/68 G01N33/53		
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外部链接	Espacenet USPTO		

摘要(译)

公开了来自肺炎链球菌的蛋白质抗原以及编码它们的核酸序列。还描述了它们在疫苗和筛选方法中的用途。