

FIG. 1A

P2086 Non-lipidated Variant Nucleic Acid Sequences

>A04 Variant Nucleic Acid Sequence (SEQ ID NO: 1)
 TGCAGCAGCGGAGGCGGGTGTGCGCCGCGACATCGGCACGGGGCTTGCCGATGCACATAACTGCGCCGCTCGACC
 ATAAAGACAAAGGTTTGAAATCCCTGACATTGGAAGACTCCATTCCCAAAAACGGAACTGACCTGTGCGCACAAAGGTGC
 GGAAAAAATTTCAAAGCCGGGACAAAGACAAACAGCCTCAACACGGGCAAACTGAAGAACGACAAAAATCAGCCGCTTCGAC
 TTCGTGCAAAAAATCGAAGTGGACGGACAAACCATCACACTGGCAAGCGGCGAATTTCAAATATACAAACAGGACCACTCCG
 CCGTCGTTGCCCTACAGATTGAAAAAATCAACAACCCCGACAAAAATCGACAGCCTGATAAAACCAACGCTCCTTCCTTGTCTAG
 CGGTTTGGGCGGAGAACATACCGCCTTCAACCAACTGCCCGGCGACAAAAGCCGAGTATCACGGCAAAAGCATTCAGCTCCGAC
 GATGCCGGCGGAAAACTGACCTATACCATAGATTTCGCCGCAACAGGGACACCGCAAAATCGAAACACCTGAAAAACACCCG
 AGCAAAATGTCGAGCTTGCCGCGCGAACTCAAAGCAGATGAAAAATCACACGCGTCATTTTGGCGACACGCGCTACGG
 CAGCGAAGAAAAAGGCATTTACCACCTCGCCCTTTTCGGCGACCGGCCCAAGAAATCGCCGGCTCGGCAACCCGTGAAGATA
 GGGGAAAAGGTTCACGAAATCGGCATCGCCGGCAACAGTAG

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>A05 Variant Nucleic Acid Sequence (SEQ ID NO: 2)
 TGCAGCAGCGGAAGCGGAGGCGGGTGTGCGCCGCGACATCGGCACAGGGCTTGCCGATGCACATAACTGCGCCGCG
 TCGACCATAAAGACAAAGGTTTGAAATCCCTGACATTGGAAGACTCCATTTCCTCAAAACGGAACTGACCTGTGCGCAC
 AGGTGCGGAAAAAATTTCAAAGTGGCGACAAAGACAAACAGTCTCAATACAGGCAAAATGAAGAACGACAAAAATCAGCCGCG
 TTCGACTTTGTGCAAAAAATCGAAGTGGACGGACAAACCATCACGCTGGCAAGCGCGAATTTCAAATATACAAACAGGACC
 ACTCCGCGCTCGTTGCCCTACAGATTGAAAAAATCAACAACCCCGACAAATCGACAGCCTGATAAAACCAACGCTCCTTCCT
 TGTACGCGGTTTGGCGGAGAACATACCGCCTTCAACCAACTGCCCGCGCAAAAGCCGAGTATCACGGCAAAAGCATTCAGC
 TCCGACGATGCCCGGGAAAACTGACCTATACCATAGATTTCGCCGCAACAGGGACACGGCAAAATCGAACACCTGAAAA
 CACCCGAGCAGAAATGTCGAGCTTGCCCTCCGCGAACTCAAAGCAGATGAAAAATCACACGCGTCATTTTGGCGACACGCG
 CTACGGCAGCGAAGAAAGGCATTTACCACCTCGCTCTTTTCGGCGACCGGCCCCAAGAAATCGCCGGCTCGGCAACCCGTG
 AAGATAAGGGAAAAAGGTTCACGAAATCGGCATCGCCGGCAACAGTAG

FIG. 1B

>A12 Variant Nucleic Acid Sequence (SEQ ID NO: 3)
 TGCAGCAGCGAGGCGGGTGTGCGCGCGACATCGCGCGGGCTTGCCGATGCACATAACCGCACCGCTCGACCATAAAG
 ACAAAAAGTTTGCCAGTCTTTGACGCTGGATCAGTCCGTGAGGAAAAACGAGAAACTGAAAGCTGGCGGCACAAGGTGCGGAAAA
 AACTTATGGAAACGGCGACAGCCTCAATACGGGCAAAATTGAAGAACGACAAAGGTAGCCGCTTCGACTTTATCCGTCAAATC
 GAAGTGGACGGACAACCATCACGCTGGCAAGCGGGAATTTCAAATATACAAACAGAACCACTCCGCCGTCGTTGCCCTAC
 AGATTGAAAAAATCAACAACCCGACAAAAATCGACAGCCTGATAAACCAACGCTCCTTGTCTCAGCGGTTTGGCGGGAGA
 ACATACCGCCTTCAACCAACTGCCCTGACGGCAAAAGCCGAGTATCACGGCAAAAGCATTCAGTCCGACGACCCGAACGGCAGG
 CTGCACACTACTCCATTGATTTTACCAAAAAACAGGGTTACGGCAGAAATCGAACACCTGAAAAACGCCGAGCAGAAATGTCGAGC
 TTGCCCTCCGCCGAACCTCAAAGCAGATGAAAAATCACACGCCGTCATTTTGGCGGACACGCGCTACGGCGCGAAGAAAAAGG
 CACTTACCACCTCGCCCTTTTTCGGCGACCGGCCCAAGAAATCGCCGGCTCGGCAACCCGTGAAGATAAGGAAAAAGGTTTCAC
 GAAATCGGCATCGCCGGCAACAGTAG

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>A12-2 Variant Nucleic Acid Sequence (SEQ ID NO: 4)
 TGCAGCAGCGAGGCGGGTGTGCGCGCGACATTTGGTGGGGCTTGCCGATGCACATAACCGCACCGCTCGACCATAAAG
 ACAAAAAGTTTGCCAGTCTTTGACGCTGGATCAGTCCGTGAGGAAAAACGAGAAACTGAAAGCTGGCGGCACAAGGTGCGGAAAA
 AACTTATGGAAACGGCGACAGCCTCAATACGGGCAAAATTGAAGAACGACAAAGGTAGCCGCTTCGACTTTATCCGTCAAATC
 GAAGTGGACGGACAACCATCACGCTGGCAAGCGGGAATTTCAAATATACAAACAGAACCACTCCGCCGTCGTTGCCCTAC
 AGATTGAAAAAATCAACAACCCGACAAAAATCGACAGCCTGATAAACCAACGCTCCTTGTCTCAGCGGTTTGGCGGGAGA
 ACATACCGCCTTCAACCAACTGCCCTGACGGCAAAAGCCGAGTATCACGGCAAAAGCATTCAGTCCGACGACCCGAACGGCAGG
 CTGCACACTACTCCATTGATTTTACCAAAAAACAGGGTTACGGCAGAAATCGAACACCTGAAAAACGCCGAGCAGAAATGTCGAGC
 TTGCCCTCCGCCGAACCTCAAAGCAGATGAAAAATCACACGCCGTCATTTTGGCGGACACGCGCTACGGCGCGAAGAAAAAGG
 CACTTACCACCTCGCCCTTTTTCGGCGACCGGCCCAAGAAATCGCCGGCTCGGCAACCCGTGAAGATAAGGAAAAAGGTTTCAC
 GAAATCGGCATCGCCGGCAACAGTAG

FIG. 1C

>A22 Variant Nucleic Acid Sequence (SEQ ID NO: 5)
 TGCAGCAGCGGAGCGGGTGTGCGCGCGACATCGGCGGGGCTTGCCGATGCACTAACCGCACCGCTCGACCATAAAG
 ACAAAAGTTTGCCAGTCTTTGACGCTGGATCAGTCCGTGAGGAAAAACGAGAAACTGAAAGCTGGCGGCACAAGGTGCGGAAAA
 AACTTATGGAACCGGCACAGCCTCAATACGGGCAAAATTGAAGAACGACAAAGGTGAGCCGCTTCGACTTTATCCGTCAAATC
 GAAGTGGACGGCAGCTCATTTACCTTGGAGAGCGGAGAGTTCCAAATATACAAACAGGACCACTCCGCCGTCGTTGCCCTAC
 AGATTGAAAAAATCAACACCCCGACAAAATCGACAGCCTGATAAACCAACGCTCCTTCTGTGACGGGTTTGGGTGGAGA
 ACATACCGCCTTCAACCAACTGCCCAGCGGCAAGCCGAGTATCACGGCAAAAGCATTCAGTCCGACGATGCTGGCGGAAAA
 CTGACCTATACCATAGATTTGCGCGCAACACAGGACACGCAAAATCGAACACTTGAAAAACACCCGAGCAAAATGTCGAGC
 TTGCCCTCCGCCAACTCAAAGCAGATGAAAAATCACACGCCGTCAATTTGGCGGACACGCGCTACGGCGCGAAGAAAAAGG
 CACTTACCACCTCGCCCTTTTCGGCGACCGCGCCCAAGAAATCGCCGGCTCGGCAACCCGTGAAGATAAGGAAAAAGGTTTCAC
 GAAATCGGCATCGCGGCAACAGTAG

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>B02 Variant Nucleic Acid Sequence (SEQ ID NO: 6)
 TGCAGCAGCGGAGCGGGAAGCGGAGCGGGGTGTGCGCGCGACATCGGCGGGGCTTGCCGATGCACATAACCGCAC
 CGCTCGACCATAAAGACAAAGGTTTGAAATCCCTGACATTGGAAGACTCCATTTCCCAAAACGGAACACTGACCCGTGTCGGC
 ACAAGTGGGAAAGAACTTTCAAAGCCGGGACAAAGACAAACAGTCTCAACACAGGCAAACTGAAGAACGACAAAAATCAGC
 CGCTTCGACTTTATCCGTCAAATCGAAGTGACGGCAGCTCATTTACCTTGGAGAGCGGAGAGTTCCAAGGTACAAACAAA
 GCCATTCCGCCCTTAACCGCCCTTCAGACCGAGCAAGTACAAGACTCGGAGCATTCGGGAAAGATGGTTGCGAAACGCCAGTT
 CAGAAATCGGCGACATAGTGGCGCAACATACATCTTTTGACAAGCTTCCCAAGACGTCAATGGCGACATATCGCGGACGGCG
 TTCGGTTCAGACGATGCCGGCGGAAAACTGACCTACACCATAGATTTTCGCCGCCAAGCAGGACACGGCAAAATCGAACATTT
 TGAAATCGCCTGAATCAATGTTGACCTGGCCGCCGATATCAAGCCGGATGAAAAACACCATGCGCTCATCAGCGGTTTC
 CGTCCTTTACAACCAAGCGAGAAAGGCAGTTACTCTCTAGGCATCTTTTGGCGGGCAAGCCAGGAAAGTTGCCGGCAGCGCG
 GAAGTGGAACCGCAACGGCATACGCCATATCGGTCTTTGCCGCCAAGCAATAA

FIG. 1D

>B03 Variant Nucleic Acid Sequence (SEQ ID NO: 7)
 TGCAGCAGCGAGGCGGGTGTGCGCGCCGACATCGCGCGGGGCTTGCCGATGCACATAACCGCACCGCTCGACCATAAAG
 ACAAAAAGTTTGCAGTCTTTGACGCTGGATCAGTCCGTGAGGAAAAACGAGAAACTGAAAGCTGGCGGCACAAAGGTGCGGAAAA
 AACTTATGGAAACGGCGACAGCCTTAATACGGGCAAAATTGAAGAACGACAAGGTGAGCCGTTTCGACTTTATCCGTCAAATC
 GAAGTGGACGGCAGCTCATTTACCTTTGAGAGCGGAGAGTTCCAAGTGTACAAACAAAAGCCATTCCGCCCTTAAACCGCCCTTC
 AGCCGAGCAAGAACAGATCCAGAGCATTCGGGGAAGATGGTTGCGAAACGCCGGTTCAAATACTGGCGACATAGCGGGCGA
 ACATACATCTTTTGACAAAGCTTCCCAAGACGTGATGCGGACATATCGCGGGACGGCGTTTCGGTTCAGACGATGCCCGCGGA
 AAACTGACCTATACATAGATTTTGCTGCCAAAACAGGGACACGGCAAAATCGAAACATTTGAAATCGCCGAACTCAATGTCTG
 AGCTTGCCACCGCCTATATCAAGCCGGATGAAAAACACCATGCGGTGTCATCAGCGGTTCCGTCCTTTACAATCAAGACGAGAA
 AGGCAGTTACTCCCTCGGTATCTTTGGCGGGCAAGCCAGGAAAGTTGCCGGCAGCGGGAAGTGGAACCCGCAACGGGCATA
 CACCATATCGGTCTTGCCGCCAAGCAATAA

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>B09 Variant Nucleic Acid Sequence (SEQ ID NO: 8)
 TGCAGCAGCGAGGCGGGTGTGCGCGCCGACATCGGTGCGGGGCTTGCCGATGCACATAACCGCACCGCTCGACCATAAAG
 ACAAGGTTTGCAGTCTTTAACGCTGGATCAGTCCGTGAGGAAAAACGAGAAACTGAAAGCTGGCGGCACAAAGGTGCGGAAAA
 AACTTATGGAAACGGCGACAGCCTTAATACGGGCAAAATTGAAGAACGACAAGGTGAGCCGTTTCGACTTTATCCGTCAAATC
 GAAGTGGACGGGAAGCTCATTTACCTTTGAGAGCGGAGAGTTCCAAGTGTACAAACAAAAGCCATTCCGCCCTTAAACCGCCCTTC
 AGACCGAGCAAGTACAAGACTCGGAGGATTCGGGGAAGATGGTTGCGAAACGCCAGTTCAGAATCGCGGACATAGCGGGCGA
 ACATACATCTTTTGACAAAGCTTCCCAAGCGGCAGTGCGACATATCGCGGGACGGCGTTTCGGTTCAGACGATGCTGGCGGA
 AAACTGACCTATACATAGATTTGCGCGCCCAAGCAGGGACACGGCAAAATCGAAACATTTGAAATCGCCCGAACTCAATGTCTG
 AGCTTGCCACCGCCTATATCAAGCCGGATGAAAAACGCCATGCGGTATCAGCGGTTCCGTCCTTTACAACCAAGACGAGAA
 AGGCAGTTACTCCCTCGGTATCTTTGGCGGGCAAGCCAGGAAAGTTGCCGGCAGCGGGAAGTGGAACCCGCAACGGGCATA
 CACCATATCGGTCTTGCCGCCAAGCAGTAA

FIG. 1E

>B22 Variant Nucleic Acid Sequence (SEQ ID NO: 9)
 TGCAGCAGCGGCGGGTGTGCGCGCCGACATCGCGCGGTGCTTGCCGATGCACATAACCGCACCGCTCGACCATAAAG
 ACAAAAGTTTGCGAGTCTTTGACGCTGGATCAGTCCGTGAGGAAAAACGAGAAACTGAAAGCTGGCGGCACAAGGTGCGGAAAA
 AACTTATGGAAACGGCGACAGCCTCAATACGGGCAAAATTGAAGAACGACAAAGTCAAGCTTCGACTTTATCCGTCAAATC
 GAAGTGGACGGCAGCTCATTTACCTTGGAGAGCGGAGAGTTCCAAGTGTACAAACAAAGCCATTCCGCCTTAAACCGCCCTTC
 AGCCGAGCAAAGTACAAGATTCCGAGCATTCAGGGAAGATGGTTGCGAAACGCCAGTTCAGAATCGGCGATATAGCGGGTGA
 ACATACATCTTTTGACAAAGCTTCCCGAAGCGGCGAGGCGACATATCGCGGGACGGCATTCGGTTCAGACGATGCCAGTGGGA
 AAACTGACCTACACCATAGATTTCGCCGCCAAGCAGGACACGGCAAAATCGAAACATTTGAAATCGCCAGAACTCAATGTTG
 ACCTGGCCGCTCCGATATCAAGCCGGATAAAAAACGCCATGCCGTCAATCAGCGGTTCCGTCCTTTACAAACCAAGCCGAGAA
 AGGCAGTTACTCTCTAGGCATCTTTGGCGGGCAAGCCAGGAAAGTTGCCGGCAGCGCAGAAAGTGGAACCCGCAACGGGCATA
 CGCCATATCGGTCTTGCCGCCAAGCAGTAA

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>B24 Variant Nucleic Acid Sequence (SEQ ID NO: 10)
 TGCAGCAGCGGAGGGGTGGTGTGCGCGCCGACATCGGTGCGGGGCTTGCCGATGCACATAACCGCACCGCTCGACCATAAAG
 ACAAGGTTTGCGAGTCTTTGACGCTGGATCAGTCCGTGAGGAAAAACGAGAAACTGAAAGCTGGCGGCACAAGGTGCGGAAAA
 AACTTATGGAAACGGTGACAGCCTCAATACGGGCAAAATTGAAGAACGACAAAGTCAAGCTTCGACTTTATCCGCCAAATC
 GAAGTGGACGGCAGCTCATTTACCTTGGAGAGTGGAGAGTTCCAAGTATACAAACAAAGCCATTCCGCCTTAAACCGCCCTTC
 AGACCGAGCAAATACAAGATTCCGAGCATTCGGGAAGATGGTTGCGAAACGCCAGTTCAGAATCGGCGACATAGCGGGCGA
 ACATACATCTTTTGACAAAGCTTCCCGAAGCGGCGAGGCGACATATCGCGGGACGGCGTTCGGTTCAGACGATGCCGGCGGA
 AAACTGACCTACACCATAGATTTCGCCGCCAAGCAGGGAACGGCAAAATCGAAACATTTGAAATCGCCAGAACTCAATGTCG
 ACCTGGCCGCGCGATATCAAGCCGGATGAAAACGCCATGCCGTCAATCAGCGGTTCCGTCCTTTACAAACCAAGCCGAGAA
 AGGCAGTTACTCCCTCGGTATCTTTGGCGGGAAGCCAGGAAAGTTGCCGGCAGCGCGGAAAGTGAAAAACCGTAAACGGCATA
 CGCCATATCGGCCTTGCCGCCAAGCAATAA

FIG. 1F

>B44 Variant Nucleic Acid Sequence (SEQ ID NO: 11)
TGCAGCAGCGGCGGGAAGCGGAGCGGCGGTGTGCGCCGCCGACATCGGCGGGGGCTTGCCGATGCACATAACCGCAC
CGCTCGACCATAAAGACAAAGGTTTGAAATCCCTGACATTGGAAGACTCCATTTCCTCAAAACGGAAACACTGACCCCTGTCTGGC
ACAAGGTGCGGAAAGAACTTTCAAAGCCGGGACAAAAGACAAACAGTCTCAACACAGGCAAACTGAAGAACGACAAAAATCAGC
CGCTTCGACTTTATCCGTCAAATCGAAGTGGACGGGAGCTCATTAACCTTGGAGAGCGGAGAGTTCCTCAAGTGTACAAACAAA
GCCATTCCGCCCTTAACCGCCCTTCAGACCGAGCAAGTACAGACTCGGAGCATTCGGGAAAGATGGTTGCCGAAACGCCAGTT
CAGAAATCGGCGACATAGTGGGCGAACAATACATCTTTTGGCAAGCTTCCCAAAAGACGTCAATGGCGACATATCGCGGGACGGCG
TTCGGTTCAGACGATGCCGGCGGAAACTGACCTACACATAGATTTCGCCCGCCCAAGCAGGACACGGCAAAATCGAACATT
TGAAATCGCCAGAACTCAATGTTGACCTGGCCGCGCGATATCAAGCCGGATGAAAAACACCATGCCGTATCAGCGGTTTC
CGTCCCTTTACAACCAAGCCGAGAAAGGCAGTTACTCTCTAGGCATCTTTGGCGGGCAAGCCCAGGAAAGTTGCCCGGCAGCGCG
GAAGTGAAACCGCAACGGCATAACGCCATATCGGTCTTGCCCGCCCAAGCAATAA

FIG. 2A

P2086 Non-lipidated Variant Amino Acid Sequences

>A04 Variant Amino Acid Sequence (SEQ ID NO: 12)
CSSGGGGGVAADIGTGLADALTAPLDHKDKGLKSLTLEDSIPQNGTLTLSAQGAETTFKAGDKDNSLNTGKLKNDKISRFD
 FVQKIEVDGQTITLASGEFQIYKQDHSVVALQIEKINNPDKIDSLINQRSFLVSLGGEHTAFNQLPGDKAEYHGKAFSSD
 DAGGKLTYTIDFAAKQGHGKIEHLKTPEQNVELAAAEKADEKSHAVILGDTRYGSEEKGTYHLALFGDRAQEIAGSATVKI
 GEKVHEIGIAGKQ

>A05 Variant Amino Acid Sequence (SEQ ID NO: 13)
CSSGSGSGGGVAADIGTGLADALTAPLDHKDKGLKSLTLEDSISQNGTLTLSAQGAETTFKVGDKDNSLNTGKLKNDKISR
 FDFVQKIEVDGQTITLASGEFQIYKQDHSVVALQIEKINNPDKIDSLINQRSFLVSLGGEHTAFNQLPSGKAEYHGKAFS
 SDDAGGKLTYTIDFAAKQGHGKIEHLKTPEQNVELASAEKADEKSHAVILGDTRYGSEEKGTYHLALFGDRAQEIAGSATV
 KIREKVHEIGIAGKQ

>A12 Variant Amino Acid Sequence (SEQ ID NO: 14)
CSSGGGGVAAADIGAGLADALTAPLDHKDKSLQSLTLDQSVRKNEKKLAAQGAETTYGNGDSLNTGKLKNDKVSRFDFIRQI
 EVDGQTITLASGEFQIYKQNHSAVVALQIEKINNPDKIDSLINQRSFLVSLGGEHTAFNQLPDGKAEYHGKAFSSDDPNGR
 LHYSIDFTKKQGYRIEHLKTPEQNVELASAEKADEKSHAVILGDTRYGGEKGTYHLALFGDRAQEIAGSATVKIREKVH
 EIGIAGKQ

>A22 Variant Amino Acid Sequence (SEQ ID NO: 15)
CSSGGGGVAAADIGAGLADALTAPLDHKDKSLQSLTLDQSVRKNEKKLAAQGAETTYGNGDSLNTGKLKNDKVSRFDFIRQI
 EVDGQLITLESGEFQIYKQDHSVVALQIEKINNPDKIDSLINQRSFLVSLGGEHTAFNQLPSGKAEYHGKAFSSDDAGGK
 LTYTIDFAAKQGHGKIEHLKTPEQNVELASAEKADEKSHAVILGDTRYGGEKGTYHLALFGDRAQEIAGSATVKIREKVH
 EIGIAGKQ

FIG. 2B

>B02 Variant Amino Acid Sequence (SEQ ID NO: 16)
 CSSGGGGGVAADIGAGLADALTAPLDHKDKGLSLTLEDSISQNGTLTSAQGAERTFKAGDKDNLNTGKLKNDKIS
 RFD~~FIRQ~~IEVDGQLITLESGEFQYKQSHSALTALQTEQVQDSEHSGKMVAKRQFRIGDIVGEHTSFDKLPKDVMATYRGTA
 FGSDDAGGKLT~~YT~~IDFAAKQGHGKIEHLKSPELNVDLAAADIKPDEKHHAVISGSVLYNQAEKGSYSLSGIFGGQAQEVAGSA
 EVETANGIRHIGLAAKQ

>B03 Variant Amino Acid Sequence (SEQ ID NO: 17)
 CSSGGGGVAAADIGAGLADALTAPLDHKDKLSLTLDDQSVRKNEKCLKLAAQGAEKTYGNGDSLNTGKLKNDKVS~~R~~FD~~FIRQ~~I
 EVDGQLITLESGEFQYKQSHSALTALQTEQEQDPEHSGKMVAKR~~R~~FKIGDIAGEHTSFDKLPKDVMATYRGTA~~FGS~~DDAGG
 KLT~~YT~~ITIDFAAKQGHGKIEHLKSPELNVELATAYIKPDEKHHAVISGSVLYNQDEKGSYSLSGIFGGQAQEVAGSAE~~VE~~TANGI
 HHIGLAAKQ

>B09 Variant Amino Acid Sequence (SEQ ID NO: 18)
 CSSGGGGVAAADIGAGLADALTAPLDHKDKGLQSLTLDDQSVRKNEKCLKLAAQGAEKTYGNGDSLNTGKLKNDKVS~~R~~FD~~FIRQ~~I
 EVDGK~~L~~ITLESGEFQYKQSHSALTALQTEQVQDSEDSGKMVAKRQFRIGDIAGEHTSFDKLPKGSATYRGTA~~FGS~~DDAGG
 KLT~~YT~~ITIDFAAKQGHGKIEHLKSPELNVELATAYIKPDEKRRHAVISGSVLYNQDEKGSYSLSGIFGGQAQEVAGSAE~~VE~~TANGI
 HHIGLAAKQ

>B22 Variant Amino Acid Sequence (SEQ ID NO: 19)
 CSSGGGGVAAADIGAVLADALTAPLDHKDKLSLTLDDQSVRKNEKCLKLAAQGAEKTYGNGDSLNTGKLKNDKVS~~R~~FD~~FIRQ~~I
 EVDGQLITLESGEFQYKQSHSALTALQTEQVQDSEHSGKMVAKRQFRIGDIAGEHTSFDKLP~~EG~~GRATYRGTA~~FGS~~DDASG
 KLT~~YT~~ITIDFAAKQGHGKIEHLKSPELNVDLAAADIKPDKRRHAVISGSVLYNQAEKGSYSLSGIFGGQAQEVAGSAE~~VE~~TANGI
 RHIGLAAKQ

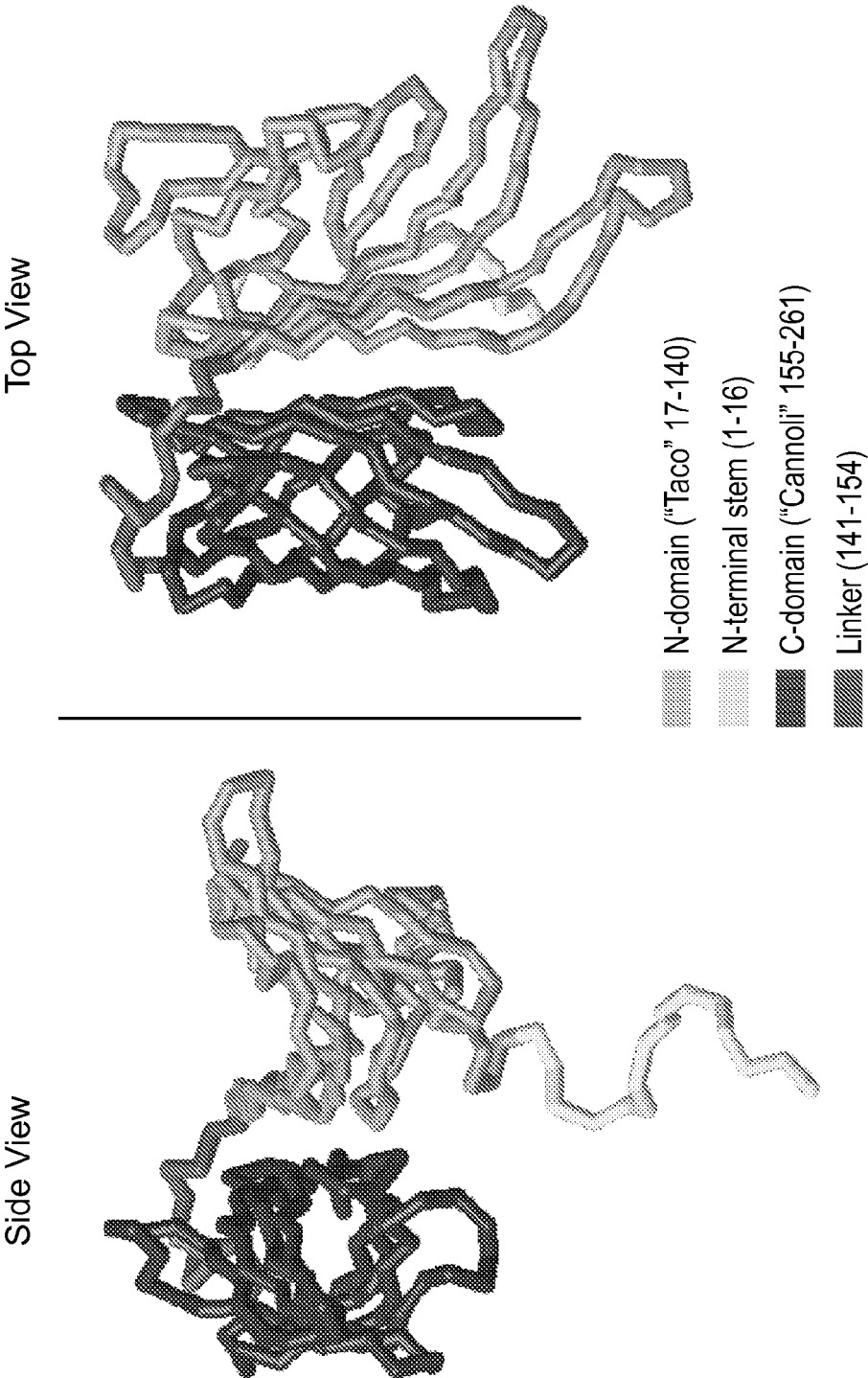
FIG. 2C

>B24 Variant Amino Acid Sequence (SEQ ID NO: 20)
CSSGGGVAADIGAGLADALTAPLDHKDKGLQSLTLDQSVRKNEKLLAAQGAEKTYGNGDSLNTGKLKNDKVSRRFDFIRQI
EVDGQLITLESGEFQVYKQSHSALTAFQTEQIQDSEHSGKMVAKRQFRIGDIAGEHTSFDKLP EGGRATYRGTAFGSDDAGG
KLTYTTIDFAAKQGNQKIEHLKSPELNVDLAAADIKPDGKRHAVISGSVLYNQAEKGSYSLGIFGGKAQEVAGSAEVTVNGI
RHIGLAAKQ

>B44 Variant Amino Acid Sequence (SEQ ID NO: 21)
CSSGGGSGGGVAADIGAGLADALTAPLDHKDKGLKSLTLEDISI SQNGTLTLSAQGAERTFKAGDKDNSLNTGKLKNDKIS
RFD FIRQIEVDGQLITLESGEFQVYKQSHSALTALQTEQVQDSEHSGKMVAKRQFRIGDIVGEHTSFGKLPKDV MATYRGTA
FGSDDAGGKLTYYTIDFAAKQGHGKIEHLKSPELNVDLAAADIKPDEKHHAVISGSVLYNQAEKGSYSLGIFGGQAQEVAGSA
EVTANGIRHIGLAAKQ

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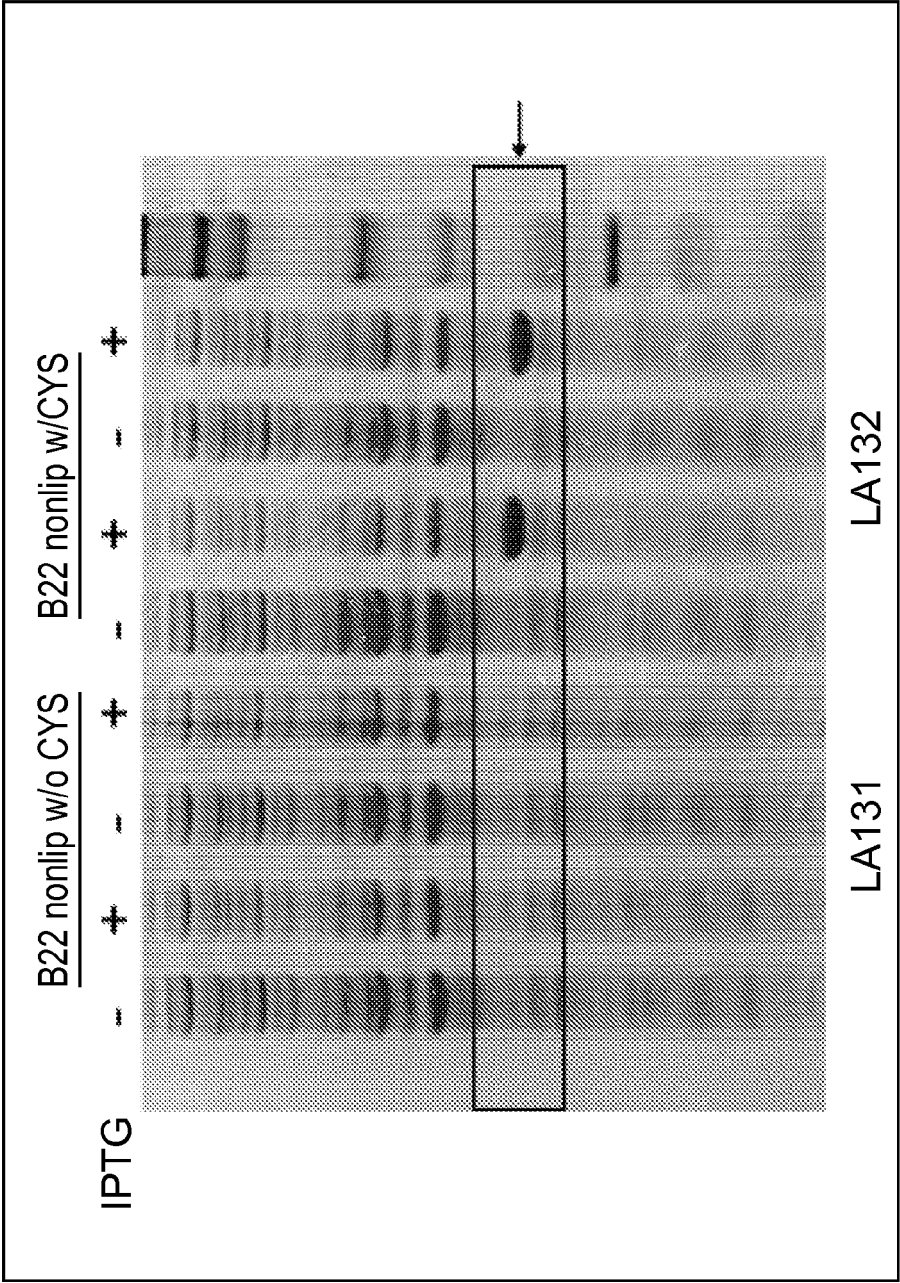
FIG. 3



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FIG. 4

Removal of N-terminal Cys Results in Loss of Expression in *E. coli*



Similar results were obtained for the CYS-minus A22 construct.

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FIG. 5

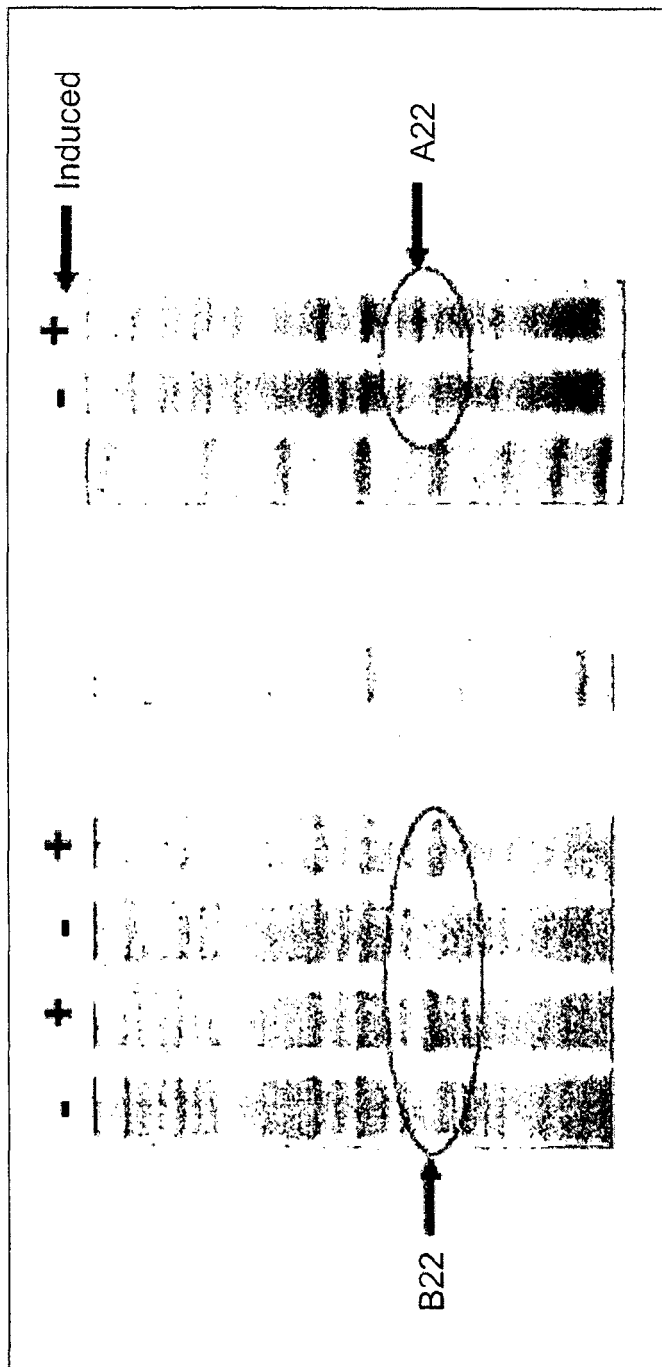
Effect of Gly/Ser Stalk Length on Non-lipidated ORF2086 Variant Expression

Protein Variant	Coomassie Expression w/o N-term Cys	Extra Gly/Ser?
B01 CSSGGGSGGGVTADIGTGLADALTAP	Yes	Yes (+5)
B44 CSSGGGSGGGVAAADIGAGLADALTAP	Yes	Yes (+5)
A05 CSSGGGSGGGVAAADIGTGLADALTAP	Yes	Yes (+4)
A22 CSSGGGSGGGVAAADIGAGLADALTAP	No*	No
B22 CSSGGGSGGGVAAADIGAVLADALTAP	No*	No
A19 CSSGGGSGGGVAAADIGAGLADALTAP	No*	No

*Yes if add back N-term Cys

FIG. 7

Codon Optimization Increases Expression of Non-lipidated B22 and A22 Variants



N-terminal B09 Gly codon changes applied to B22 and A22

FIG. 8A

> SEQ ID NO: 43

AGCTCTGGAGGTGGAGGAAGCGGGGGCGGTGGAGTTGCAGCAGACACATTGGAGCAGGATTAGCAGATGCACCTGACGGCACCGT
TGGATCATAAAGACAAAGGCTTGAAATCGCTTACCTTAGAAGATTCTATTTACAAAAATGGCACCCCTTACCTTGTCCGGCGCA
AGCGCTGAACGTACTTTTAAAGCCGGTGACAAAAGATAATAGCTTAAATACAGGTAAACTCAAAAATGATAAAAATCTCGCGT
TTTGATTTTCATTTCGTCAAAATCGAAGTAGATGGCCAACTTATTACATTAGAAAAGCGGTGAATTCCAAGTATATAACAATCCC
ATTACAGCACTTACAGCATTGCAAACCGAACAGGTCCAAAGACTCAGAACATTCCGGCAAAATGGTAGCTAAACGTCAATTCCG
CATCGGTGACATTGTCGGTGAACATACAAAGCTTCGGAAAAATTACCAAAAAGATGTGATGGCGACCTATCGCGGTACGGCATTT
GGATCAGATGATGCAGGCGGTAAATTAACTTATACAAATTGACTTTGCAGCAAAACAAGGACATGGCAAAATTGAACATTTAA
AATCTCCCGAACTTAACGTAGATCTCGCAGCAGCAGATATTAAACCAGATGAAAAACACCCACGCAGTCATTTTCAGGTTCAGT
TTTATACAATCAGGCAGAAAAAGGTTTCGTACTCTTTAGGTATTTTGGCGGGCAAGCTCAAGAAAGTTGCAGGTAGCGCAGAA
GTAGAAACGGCAAAATGGCAATTCGTCACATTGGGTTAGCGCGAAACAATAA

> SEQ ID NO: 44

SSGGGSGGGGVAADIGAGLADALTAPLDHKDKGLKSLTLEDSISQNGTTLTSAQGAERTFKAGDKDNSLNTGKLKNDKISR
FDFIRQIEVDGQLITLESGEFQYKQSHSALTALQTEQVQDSEHSGKMVAKRQFRIGDIVGEHTSFGKLPKDVMATYRGTA
GSDDAGGKLTYTIDFAAKQGHGKIEHLKSPELNVDLAAADIKPDEKHHAVISGSVLYNQAEKGSYSLSLIFGGQAQEVAGSAE
VETANGIRHIGLAAKQ.

FIG. 8B**> SEQ ID NO: 51**

AGCAGCGGAGCGCGGAAGCGGAGCGCGCGGTGTCTGCCGCCGACATCGGCGCGGGGCTTGCCGATGCACATAACCGCACCGC
 TCGACCATAAAGACAAAGTTTGAAATCCCTGACATTGGAAGACTCCATTTCCCAAAACGGAACACTGACCTGTGCGGCACA
 AGGTGCGGAAAGAACTTCAAAGCGCGGACAAAAGACAACAGTCTCAACACAGGCAAACTGAAGAACGACAAAAATCAGCCGC
 TTCGACTTTATCCGTCAAAATCGAAGTGGACGGCAGCTCATTAACCTTGGAGAGCGGAGAGTTCGAAGTGTACAAACAAAGCC
 ATTCCGCCCTTAACCGCCCTTCAGACCGAGCAAGTACAAGACTCGGAGCATTCGCGGAAGATGGTTGCCGAAACGCCAGTTTCAG
 AATCGCGCATAGTGGCGAACATACATCTTTTGGCAAGCTTCCCAAGACGTCAATGGCGACATATCGCGGACGCGGCTTC
 GGTTCAGACGATGCCGGCGGAAAACTGACCTACACCATAGATTTCGCCGCCAAGCAGGACACGGCAAAATCGAACATTTGA
 AATCGCCAGAACTCAATGTTGACCTGGCCGCCCGGATATCAAGCCGGATGAAAAACACCATGCCGTCTCAGCGGTTCCGT
 CCTTTACAACCAAGCCGAGAAAGGCAGTTACTCTCTAGGCATCTTTGGCGGGCAAGCCAGGAAAGTTGCCGGCAGCGCGGAA
 GTGGAACCGCAACGGCATACGCCATATCGGTCTTGGCCGCCAAGCAATAA

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> SEQ ID NO: 45

AGCTCTGGAGGTGGAGGAAGCGGGCGGTGGAGTTGCAGCAGACATTGGAGCAGGATTAGCAGATGCACATGACGGCACCGT
 TGGATCATAAAGACAAAGGCTTGCCAGTCGCTTACCTTAGATCAGTCTGTCTCAGGAAAAATGAGAAACTTAAAGTTGGCGGCGCA
 AGCGCTGAAAAAACTTATGGAAAACGGTGACAGCTTAAATACAGGTAAACTCAAAATGATAAAAGTCTCGCGTTTGTATTTC
 ATTCTCAAAATCGAAGTAGATGGCAAGCTTATTACATTAGAAAAGCGGTGAATTCCAAGTATATAAACAAATCCCATTTCAGCAC
 TTACAGCATTGCAAAACCGAACAGGTCCAAGACTCAGAAGATTCCGGCAAAATGGTAGCTAAACGTCAATTCCGCATCGGTGA
 CATTCGCGGTGAACATACAAGCTTCGACAAAATTACCAAAAGCGGCAGTCCGACCTATCGCGGTACGGCATTTGGATCAGAT
 GATGCAAGCGGTAAATTAACTTATACAATTGACTTTGCAGCAAAAACAAGGACATGGCAAAATTGAACATTTAAAATCTCCCG
 AACTTAACGTAGAGCTCGCAACCGCATATATTAAACCAGATGAAAAACGCCACGCAGTCAATTTCAGGTTTCAGTTTATACAA
 TCAGGACGAAAAAGGTTCTGTACTCTTTAGGTATTTTGGCGGGCAAGCTCAAGAAAGTTGCAGGTAGCGCAGAAAGTAGAAACG
 GCAAAATGGCATTCACCACATTGGGTTAGCGCGCAACAATAA

FIG. 8C

>SEQ ID NO: 50

SSGGGSGGGVAAADIGAGLADALTAPLDHKDKGLQSLTLDQSVRKNEKCLKLAAQGAEKTYGNGDSLNTGKLKNDKVSREFD
FIRQIEVDGKLITLESGEFQVKQSHSALTALQTEQVQDSEDSGKMVAKRQFRIGDIAGEHTSFDKLPKGGSATYRGTAFG
SDDAGGKLITYIDFAAKQGHGKIEHLKSPELNVELATAYIKPDEKRHAVISGSVLYNQDEKGSYSLGIFGGQAQEVAGSAE
VETANGIHHIGLAAKQ

> SEQ ID NO: 46

AGCTCTGGAGGTGGAGGAGTTGCAGCAGACATTGGAGCAGGATTAGCAGATGCACCTGACGGCACCGTTGGATCATAAAGAC
AAAGGCTTGCAGTCGGCTTACCTTAGATCAGTCTGTCAAGGAAAAATGAGAAACTTAAAGTTGGCGGCGCAAGCGCTGAAAAA
ACTTATGGAAACGGTGACAGCTTAAATACAGGTAAACTCAAAAATGATAAAGTCTCGCGTTTGTGATTTCAATTCGTCAAATC
GAAGTAGATGGCAAGCTTATTACATTAGAAAAGCGGTGAATTCCAAGTATATAAACAAATCCCATTACAGCACTTACAGCATTG
CAAAACCGAACAGGTCCAAAGACTCAGAAAGATTCCGGCAAAAATGGTAGCTAAACGTCAATTCGCGCATCGGTGACATTGCGGGT
GAACATACAAGCTTCGACAAAATTACCAAAAAGCGGCAGTGGACCTATCGCGGTACGGCATTTGGATCAGATGATGCAGGC
GGTAAATTAACTTATACAATTGACTTTGCAGCAAAAACAAGGACATGGCAAAAATTGAACATTTAAAAATCTCCGAACTTAAC
GTAGAGCTCGCAACCGCATATATTAAACCAAGATGAAAAACGCCACGCAGTCAATTCAGGTTCAAGTTTTATACAAATCAGGAC
GAAAAAGGTTTCGTACTCTTTAGGTAATTTTGGCGGGCAAGCTCAAGAAGTTGCAGGTAGCGCAGAAAGTAGAAAAACGGCAAAAT
GGCATTCAACACATTGGGTTAGCGGCGGAAACAATAA

FIG. 8D

>SEQ ID NO: 47

AGCAGCGGGGGGGTGGAGTTGCAGCAGACATTTGGAGCAGGATTAGCAGATGCACCTGACGGCACCGTTGGATCATAAAGACA
AAGGCTTGCAAGTCGCTTACCTTAGATCAGTCTGTGAGGAAAAATGAGAAACTTAAAGTTGGCGGCGCAAGCGCTGAAAAAAC
TTATGGAAAAACGGTGACAGCTTAAATACAGGTAACCTCAAAAAATGATAAAGTCTCGCGTTTGGATTTCATTTCGTCAAATCGAA
GTAGATGGCAAGCTTATTACATTAGAAAAGCGGTGAATTCCAAAGTATATAAACAAATCCCATTCAGCACATTACAGCATTTGCAAA
CCGAACAGGTTCCAAAGACTCAGAAAGATTCCGGGCAAAATGGTAGCTAAACGTCAATTCCGCATCGGTGACATTGCCGGGTGAACA
TACAAGCTTCGACAAAATTACCAAAAAGCGGCAGTGCAGCTATCGCGGTACGGCATTTGGATCAGATGATGCAGGCGGTAAA
TTAACTTATACAAATTGACTTTGCAGCAAAAACAAGGACATGGCAAAAATTGAACATTTAAAAATCTCCCGAACTTAACGTAGAGC
TCGCAACCGCATATATTAAACCAGATGAAAAACGCCACGCAGTCA TTTTCAGGTTTCAGTTTATACAAATCAGGACGAAAAAGG
TTTCGTACTCTTTAGGTATTTTGGCGGGCAAGCTCAAGAAAGTTGCAGGTAGCGCAGAAAGTAGAAAACGGCAAAATGGCATTCAC
CACATTGGGTTAGCGGCGAAACAATAA

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>SEQ ID NO: 48

AGCAGCGGAGGGGGGGTGTGCGCCGCCGACATCGGTGCGGGGCTTGCCGATGCACATAACCGCACCGCTCGACCCATAAAGACA
AAGGTTTGCAAGTCTTTAAACACTGGATCAGTCCGTGAGGAAAAACGAGAAACTGAAAGCTGGCGGCACAAGGTGCGGAAAAAAC
TTATGGAAAACGGCGACAGCCTTAATACGGGCAAAATTGAAGAACGACAAGGTACGCCGCTTCGACTTTATCCGTCAAATCGAA
GTGGACGGGAAGCTCATTTACCTTTGGAGAGCGGAGAGTTCCAAGTGTACAAAACAAAGCCATTCCGCCCTTAAACCGCCCTTCAGA
CCGAGCAAGTACAAGACTCGGAGGATTCCGGGAAGATGGTTGCGAAAACGCCAGTTTCAGAAATCGGCGACATAGCGGGCGAAACA
TACATCTTTTGACAAAGCTTCCAAAAGCGGCAGTGCACATATCGCGGACGGCGTTTCGGTTCAGACGATGCTGGCGGAAAA
CTGACCTATACTATAGATTTCGCCGCCAAGCAGGACACGGCAAAAATCGAAACATTTGAAAATCGCCCGAACTCAATGTCGAGC
TTGCCACCGCCCTATATCAAGCCGGATGAAAAACGCCATGCCGTTATCAGCGGTTCCGTCTTTACAAACCAAGACGAGAAAGG
CAGTTACTCCCTCGGTATCTTTGGCGGGCAAGCCCAGGAAAGTTGCCGGCAGCGGGAAGTGGAACCGCAACCGCATACAC
CATATCGGTCTTGCCGCGCAAGCAGTAA

FIG. 8E

>SEQ ID NO: 49

SSGGGGVAADIGAGLADALTAPLDHKDKGLQSLTLDQSVRKNEKLKLAQAQAEKTYGNGDSLNTGKLKNDKVSRLFDFIRQIE
VDGKLITLESGEFQYKQSHSALTALQTEQVQDSEDSGKMVAKRQFRIGDIAGEHTSFDKLPKGGSATYRGTAFGSD
DAGGKLTYTIDFAAKQGHGKIEHLKSPELNVELATAYIKPDEKRHAVISGSVLYNQDEKGSYSGLIFGGQAQEVAGSAEVEET
ANGIHHIGLAAKQ

>SEQ ID NO: 54

AGCAGCGGAAGCGGAAGCGGGGGGTGTCGCCGCCGACATCGGCACAGGGCTTGCCGATGCACATAACTGCGCCGCTCG
ACCATAAAGACAAAGGTTTGAAATCCCTGACATTGGAAGACTCCATTTCCTCCAAAACGGAACACTGACCCCTGTCGGCACAAAG
TGCGGAAAAAAGCTTCAAAAGTCGGCGACAAAAGACAAACAGTCTCAATACAGGCAAAATTGAAGAACGACAAAAATCAGCCGCTTC
GACTTTGTGCAAAAAATCGAAATGGACGGACAAACCATCACGCTGGCAAGCGGCGAAATTTCAAAATATACAAACAGGACCCACT
CCGCCGTCGTTGCCCTACAGATTGAAAAAATCAACAACCCCGACAAAAATCGACAGCCTGATAAAACCAACGCTCCTTCCTTGT
CAGCGGTTTGGCGGAGAACATACCGCCTTCAACCAACTGCCAGCGCAAAAGCCGAGTATCAGGCAAAAGCATTCAGCTCC
GACGATGCCGGCGGAAAACTGACCTATACCATAGATTTTGGCGCCAAACAGGGACACGCGCAAAATCGAACACCTGAAAAACAC
CCGAGCAGAAATGTCGAGCTTGCCCTCCGCCGAACTCAAAGCAGATGAAAAATCACACGCCGTCAATTTGGCGGACACGCGCTA
CGGCAGCGAAGAAAAAGGCACCTTACCACTCGCTCTTTTCGGCGACCGAGCCCAAGAAATCGCCGGCTCGGCAACCGTGAAG
ATAAGGGAAGGTTTACGAAATCGGCATCGCCGGCAACAGTAG

>SEQ ID NO: 55

SSGSGGGGVAADIGTGLADALTAPLDHKDKGLKSLTLEDSISQNGTLTLSAQGAETFKVGDKDNSLNTGKLKNDKISRF
DFVQKIEVDGQTTITLASGEFFQYKQDHSVAVVALQIEKINNPDKIDSLINQRSFLVSLGGEHTAFNQLPSGKAIEYHGKAFFS
DDAGGKLTYTIDFAAKQGHGKIEHLKTPEQNVELASAEKADEKSHAVILGDTTRYGSEEKGTYHLALFGDRAQEIAGSATVK
IREKVHEIGIAGKQ.

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FIG. 8F**> SEQ ID NO: 57**

SSGGGSGGGGTADIGTGLADALTAPLDHKDKGLKSLTLEDSISQNGTLTLSAQGAEKTYGNGDSLNTGKLNKDKVSRFDF
IRQIEVDGQLITLESGEFQVYKQSHSALTALQTEQEQDPEHSEKMWAKRRFRIGDIAGEHTSFDKLPKDVMATYRGTAFGSD
DAGGKLTYTIDFAAKQGHGKIEHLKSPELNVDLAVAYIKPDEKHHAVISGSVLYNQDEKGSYSLSLGFGEKAQEVAGSAEVE
ANGIHHIGLAAKQ

> GenBank AY330406 (SEQ ID NO: 58)

CSSGGGSGGGVTADIGTGLADALTAPLDHKDKGLKSLTLEDSISQNGTLTLSAQGAEKTYGNGDSLNTGKLNKDKVSRFD
FIRQIEVDGQLITLESGEFQVYKQSHSALTALQTEQEQDPEHSEKMWAKRRFRIGDIAGEHTSFDKLPKDVMATYRGTAFGS
DDAGGKLTYTIDFAAKQGHGKIEHLKSPELNVDLAVAYIKPDEKHHAVISGSVLYNQDEKGSYSLSLGFGEKAQEVAGSAEVE
TANGIHHIGLAAKQ

>GenBank FJ184191 (SEQ ID NO: 59)

CSSGGGGVAADIGAGLADALTAPLDHKDKGLQSLILDQSVRKNEKCLKAAQGAEKTYGNGDSLNTGKLNKDKVSRFDFIRQI
EVDGQLITLESGEFQVYKQSHSALTALQTEQVQDSEHSGKMVAKRQFRIGDIAGEHTSFDKLPKGGRATYRGTAFFSSDDAGG
KLIYTIIDFAAKQGHGKIEHLKSPELNVDLAAADIKPDEKHHAVISGSVLYNQAEKGSYSLSLGFGGKAQEVAGSAEVKTVNGI
RHIGLAAKQ

> GenBank AY330385 (SEQ ID NO: 60)

CSSGGGGVAADIGAGLADALTAPLDHKDKSLQSLTLDQSVRKNEKCLKAAQGAEKTYGNGDSLNTGKLNKDKVSRFDFIRQI
EVDGQLITLESGEFQVYKQSHSALTALQTEQVQDSEHSGKMVAKRQFRIGDIAGEHTSFDKLPKGGRATYRGTAFFGSDDASG
KLTYTIDFAAKQGHGKIEHLKSPELNVDLAAADIKPDKKRHAVISGSVLYNQAEKGSYSLSLGFGGQAQEVAGSAEVE
RHIGLAAKQ

FIG. 8G

> SEQ ID NO: 61

GGCAGCAGCGGAGCGGGGTGTCGCCGCCGACATCGGCGCGGTGCTTGCCGATGCACCTAACCCGACCGCTCGACCATAAAG
ACAAAAAGTTTGACGTCTTTGACGCTGGATCAGTCCGTCAAGAAAAACGAGAAACTGAAAGCTGGCGGCACAAGTGCGGAAAA
AACTTATGGAACGCGGACAGCCTCAATACGGGCAAAATTGAAGAACGACAAGGTAGCCGCTTCGACTTTATCCGTCAAATC
GAAGTGACGGGCAGCTCATTTACCTTGAGAGCGGAGAGTTCCAAAGTGTAACAACAAAGCCATTCCGCCCTTAACCGCCCTTC
AGACCGAGCAAGTACAAGATTCCGGAGCATTCAGGGAAGATGGTTGCGAAACGCCAGTTCAGAAATCGGCGGATATAGCGGGTGA
ACATACATCTTTTGACAAAGCTTCCCGAAGCGGCGAGCGACATATCGCGGACGGCATTCGGTTCAGACGATGCCAGTGGA
AAACTGACCTACACCATAGATTTCGCCGCCAAGCAGGACACGGCAAAATCGAAATCGCCAGAACTCAATGTTG
ACCTGGCCGCTCCGATATCAAGCCGGATAAAAAACGCCATGCCGTCAATCAGCGGTTCCGTCCTTTACAAACCAAGCCGAGAA
AGGCAGTTACTCTCTAGGCATCTTTGGCGGGCAAGCCCAGGAAAGTTGCCGGCAGCGCAGAAAGTGGAACCCGCAACCGGCATA
CGCCATATCGGTCTTGCCGCCAAGCAGTAA

> SEQ ID NO: 62

GSSGGGGVAADIGAVLADALTAPLDHKDKSLQSLTDQSVRKNEKCLKAAQGAEKTYGNGDSLNTGKLNKDKVSRFDFIRQI
EVDGQLITLESGEFQYKQSHSALTALQTEQVQDSEHSGKMVAKRQFRIGDIAGEHTSFDKLP EGGRATYRGTAFGSDDASG
KLTYTIDFAAKQCHGKIEHLKSPELNVDLAASDIKPKRRAVISGSVLYNQAEEKSYSLSLIGFGGQAQEVAGSAEVEETANGI
RHIGLAAKQ

FIG. 8H

> SEQ ID NO: 63

GGCAGCAGCGGCGGGGTGTCGCCGCCGACATCGGCGCGGGGCTTGCCGATGCACCTAACCCGACCGCTCGACCATAAAG
ACAAAAATTTCAGTCTTTGACGCTGGATCAGTCCGTGAGGAAAAACGAGAAACTGAAAGCTGGCGGCACAAGTGCGGAAAA
AACTTATGGAAACGGCGACAGCCTCAATACGGGCAAAATTGAAGAACGACAAGGTGAGCCGCTTCGACTTTATCCGTCAAATC
GAAGTGACGGGCAGCTCATTTACCTTGGAGAGCGGAGAGTTCCAAATATACAAACAGGACCACTCCGCCGTCGTTGCCCTAC
AGATTGAAAAAATCAACAAACCCGACAAATCGACAGCCTGATAAACCAACGCTCCTTCTGTGACGCGGTTTGGGTGGAGA
ACATACCGCCTTCAACCAACTGCCCAGCGGCAAAAGCCGAGTATCACGGCAAAAGCATTCAGCTCCGACGATGCTGGCGGAAAA
CTGACCTATACCATAGATTTCGCCGCCAAACAGGGACACGGCAAAATCGAAACACCCGAGCAAAATGTCGAGC
TTGCCTCCGCGGAATCAAAGCAGATGAAAAATCACACGCCGTCATTTTGGGCGACACGCGCTACGGCGCGGAGAAAAAGG
CACTTACCACCTCGCCCTTTTCGGCGACCGCCCAAGAAATCGCCGGCTCGGCAACCGTGAAGATAAGGGAAAAAGTTTCAC
GAAATCGGCATCGCCGGCAACAGTAA

> SEQ ID NO: 64

GSSGGGVAADIGAGLADALTAPLDHKDKSLQSLTLDQSVRKNEKLKLAQQAEKTYGNGLSLNTGKLKNDKVSFRDFIRQI
EVDGQLITLESGEFQIYKQDHSVVVALQIEKINNPDKIDSLINQRSFLVSGLGGEHTAFNQLPSGKAEYHGKAFSSDDAGGK
LTYTIDFAAKQGHGKIEHLKTPEQNVELASAEKKADEKSHAVILGDTRYGGEEKGTYYHLALFGDRAQEIAGSATVKIREKVH
EIGIAGKQ