SEQ ID NO: 1

```
Met Pro Phe Val Asn Lys Gln Phe Asn Tyr Lys Asp Pro Val Asn Gly
1               5                  10                  15
Val Asp Ile Ala Tyr Ile Lys Ile Pro Asn Ala Gly Gln Met Gln Pro
            20                  25                  30
Val Lys Ala Phe Lys Ile His Asn Lys Ile Trp Val Ile Pro Glu Arg
        35                  40                  45
Asp Thr Phe Thr Asn Pro Glu Glu Gly Asp Leu Asn Pro Pro Pro Glu
    50                  55                  60
Ala Lys Gln Val Pro Val Ser Tyr Tyr Asp Ser Thr Tyr Leu Ser Thr
65                  70                  75                  80
Asp Asn Glu Lys Asp Asn Tyr Leu Lys Gly Val Thr Lys Leu Phe Glu
                85                  90                  95
Arg Ile Tyr Ser Thr Asp Leu Gly Arg Met Leu Leu Thr Ser Ile Val
            100                 105                 110
Arg Gly Ile Pro Phe Trp Gly Gly Ser Thr Ile Asp Thr Glu Leu Lys
        115                 120                 125
Val Ile Asp Thr Asn Cys Ile Asn Val Ile Gln Pro Asp Gly Ser Tyr
    130                 135                 140
Arg Ser Glu Glu Leu Asn Leu Val Ile Ile Gly Pro Ser Ala Asp Ile
145                 150                 155                 160
Ile Gln Phe Glu Cys Lys Ser Phe Gly His Glu Val Leu Asn Leu Thr
                165                 170                 175
Arg Asn Gly Tyr Gly Ser Thr Gln Tyr Ile Arg Phe Ser Pro Asp Phe
            180                 185                 190
Thr Phe Gly Phe Glu Glu Ser Leu Glu Val Asp Thr Asn Pro Leu Leu
        195                 200                 205
Gly Ala Gly Lys Phe Ala Thr Asp Pro Ala Val Thr Leu Ala His Glu
    210                 215                 220
Leu Ile His Ala Gly His Arg Leu Tyr Gly Ile Ala Ile Asn Pro Asn
225                 230                 235                 240
Arg Val Phe Lys Val Asn Thr Asn Ala Tyr Tyr Glu Met Ser Gly Leu
                245                 250                 255
Glu Val Ser Phe Glu Glu Leu Arg Thr Phe Gly Gly His Asp Ala Lys
            260                 265                 270
Phe Ile Asp Ser Leu Gln Glu Asn Glu Phe Arg Leu Tyr Tyr Tyr Asn
        275                 280                 285
Lys Phe Lys Asp Ile Ala Ser Thr Leu Asn Lys Ala Lys Ser Ile Val
    290                 295                 300
Gly Thr Thr Ala Ser Leu Gln Tyr Met Lys Asn Val Phe Lys Glu Lys
305                 310                 315                 320
Tyr Leu Leu Ser Glu Asp Thr Ser Gly Lys Phe Ser Val Asp Lys Leu
                325                 330                 335
Lys Phe Asp Lys Leu Tyr Lys Met Leu Thr Glu Ile Tyr Thr Glu Asp
            340                 345                 350
Asn Phe Val Lys Phe Phe Lys Val Leu Asn Arg Lys Thr Tyr Leu Asn
        355                 360                 365
Phe Asp Lys Ala Val Phe Lys Ile Asn Ile Val Pro Lys Val Asn Tyr
    370                 375                 380
Thr Ile Tyr Asp Gly Phe Asn Leu Arg Asn Thr Asn Leu Ala Ala Asn
385                 390                 395                 400
Phe Asn Gly Gln Asn Thr Glu Ile Asn Asn Met Asn Phe Thr Lys Leu
                405                 410                 415
Lys Asn Phe Thr Gly Leu Phe Glu Phe Tyr Lys Leu Leu Cys Val Arg
            420                 425                 430
Gly Ile Ile Thr Ser Lys Thr Lys Ser Leu Asp Lys Gly Tyr Asn Lys
        435                 440                 445
Ala Leu Asn Asp Leu Cys Ile Lys Val Asn Asn Trp Asp Leu Phe Phe
    450                 455                 460
```

```
Ser Pro Ser Glu Asp Asn Phe Thr Asn Asp Leu Asn Lys Gly Glu Glu
465                 470                 475                 480
Ile Thr Ser Asp Thr Asn Ile Glu Ala Ala Glu Glu Asn Ile Ser Leu
                485                 490                 495
Asp Leu Ile Gln Gln Tyr Tyr Leu Thr Phe Asn Phe Asp Asn Glu Pro
            500                 505                 510
Glu Asn Ile Ser Ile Glu Asn Leu Ser Ser Asp Ile Ile Gly Gln Leu
        515                 520                 525
Glu Leu Met Pro Asn Ile Glu Arg Phe Pro Asn Gly Lys Lys Tyr Glu
    530                 535                 540
Leu Asp Lys Tyr Thr Met Phe His Tyr Leu Arg Ala Gln Glu Phe Glu
545                 550                 555                 560
His Gly Lys Ser Arg Ile Ala Leu Thr Asn Ser Val Asn Glu Ala Leu
                565                 570                 575
Leu Asn Pro Ser Arg Val Tyr Thr Phe Phe Ser Ser Asp Tyr Val Lys
            580                 585                 590
Lys Val Asn Lys Ala Thr Glu Ala Ala Met Phe Leu Gly Trp Val Glu
        595                 600                 605
Gln Leu Val Tyr Asp Phe Thr Asp Glu Thr Ser Glu Val Ser Thr Thr
    610                 615                 620
Asp Lys Ile Ala Asp Ile Thr Ile Ile Ile Pro Tyr Ile Gly Pro Ala
625                 630                 635                 640
Leu Asn Ile Gly Asn Met Leu Tyr Lys Asp Asp Phe Val Gly Ala Leu
                645                 650                 655
Ile Phe Ser Gly Ala Val Ile Leu Leu Glu Phe Ile Pro Glu Ile Ala
            660                 665                 670
Ile Pro Val Leu Gly Thr Phe Ala Leu Val Ser Tyr Ile Ala Asn Lys
        675                 680                 685
Val Leu Thr Val Gln Thr Ile Asp Asn Ala Leu Ser Lys Arg Asn Glu
    690                 695                 700
Lys Trp Asp Glu Val Tyr Lys Tyr Ile Val Thr Asn Trp Leu Ala Lys
705                 710                 715                 720
Val Asn Thr Gln Ile Asp Leu Ile Arg Lys Lys Met Lys Glu Ala Leu
                725                 730                 735
Glu Asn Gln Ala Glu Ala Thr Lys Ala Ile Ile Asn Tyr Gln Tyr Asn
            740                 745                 750
Gln Tyr Thr Glu Glu Glu Lys Asn Asn Ile Asn Phe Asn Ile Asp Asp
        755                 760                 765
Leu Ser Ser Lys Leu Asn Glu Ser Ile Asn Lys Ala Met Ile Asn Ile
    770                 775                 780
Asn Lys Phe Leu Asn Gln Cys Ser Val Ser Tyr Leu Met Asn Ser Met
785                 790                 795                 800
Ile Pro Tyr Gly Val Lys Arg Leu Glu Asp Phe Asp Ala Ser Leu Lys
                805                 810                 815
Asp Ala Leu Leu Lys Tyr Ile Tyr Asp Asn Arg Gly Thr Leu Ile Gly
            820                 825                 830
Gln Val Asp Arg Leu Lys Asp Lys Val Asn Asn Thr Leu Ser Thr Asp
        835                 840                 845
Ile Pro Phe Gln Leu Ser Lys Tyr Val Asp Asn Gln Arg Leu Leu Ser
    850                 855                 860
Thr Phe Thr Glu Tyr Ile Lys Asn Ile Ile Asn Thr Ser Ile Leu Asn
865                 870                 875                 880
Leu Arg Tyr Glu Ser Asn His Leu Ile Asp Leu Ser Arg Tyr Ala Ser
                885                 890                 895
Lys Ile Asn Ile Gly Ser Lys Val Asn Phe Asp Pro Ile Asp Lys Asn
            900                 905                 910
Gln Ile Gln Leu Phe Asn Leu Glu Ser Ser Lys Ile Glu Val Ile Leu
        915                 920                 925
Lys Asn Ala Ile Val Tyr Asn Ser Met Tyr Glu Asn Phe Ser Thr Ser
    930                 935                 940
```

```
Phe Trp Ile Arg Ile Pro Lys Tyr Phe Asn Ser Ile Ser Leu Asn Asn
945                 950                 955                 960
Glu Tyr Thr Ile Ile Asn Cys Met Glu Asn Asn Ser Gly Trp Lys Val
                965                 970                 975
Ser Leu Asn Tyr Gly Glu Ile Ile Trp Thr Leu Gln Asp Thr Gln Glu
            980                 985                 990
Ile Lys Gln Arg Val Val Phe Lys  Tyr Ser Gln Met Ile  Asn Ile Ser
        995                 1000                1005
Asp Tyr  Ile Asn Arg Trp Ile  Phe Val Thr Ile Thr  Asn Asn Arg
    1010                1015                1020
Leu Asn  Asn Ser Lys Ile Tyr  Ile Asn Gly Arg Leu  Ile Asp Gln
    1025                1030                1035
Lys Pro  Ile Ser Asn Leu Gly  Asn Ile His Ala Ser  Asn Asn Ile
    1040                1045                1050
Met Phe  Lys Leu Asp Gly Cys  Arg Asp Thr His Arg  Tyr Ile Trp
    1055                1060                1065
Ile Lys  Tyr Phe Asn Leu Phe  Asp Lys Glu Leu Asn  Glu Lys Glu
    1070                1075                1080
Ile Lys  Asp Leu Tyr Asp Asn  Gln Ser Asn Ser Gly  Ile Leu Lys
    1085                1090                1095
Asp Phe  Trp Gly Asp Tyr Leu  Gln Tyr Asp Lys Pro  Tyr Tyr Met
    1100                1105                1110
Leu Asn  Leu Tyr Asp Pro Asn  Lys Tyr Val Asp Val  Asn Asn Val
    1115                1120                1125
Gly Ile  Arg Gly Tyr Met Tyr  Leu Lys Gly Pro Arg  Gly Ser Val
    1130                1135                1140
Met Thr  Thr Asn Ile Tyr Leu  Asn Ser Ser Leu Tyr  Arg Gly Thr
    1145                1150                1155
Lys Phe  Ile Ile Lys Lys Tyr  Ala Ser Gly Asn Lys  Asp Asn Ile
    1160                1165                1170
Val Arg  Asn Asn Asp Arg Val  Tyr Ile Asn Val Val  Val Lys Asn
    1175                1180                1185
Lys Glu  Tyr Arg Leu Ala Thr  Asn Ala Ser Gln Ala  Gly Val Glu
    1190                1195                1200
Lys Ile  Leu Ser Ala Leu Glu  Ile Pro Asp Val Gly  Asn Leu Ser
    1205                1210                1215
Gln Val  Val Val Met Lys Ser  Lys Asn Asp Gln Gly  Ile Thr Asn
    1220                1225                1230
Lys Cys  Lys Met Asn Leu Gln  Asp Asn Asn Gly Asn  Asp Ile Gly
    1235                1240                1245
Phe Ile  Gly Phe His Gln Phe  Asn Asn Ile Ala Lys  Leu Val Ala
    1250                1255                1260
Ser Asn  Trp Tyr Asn Arg Gln  Ile Glu Arg Ser Ser  Arg Thr Leu
    1265                1270                1275
Gly Cys  Ser Trp Glu Phe Ile  Pro Val Asp Asp Gly  Trp Gly Glu
    1280                1285                1290
Arg Pro  Leu
    1295
```

SEQ ID NO: 2

```
Cys Val Arg Gly Ile Ile Thr Ser Lys Thr Lys Ser Leu Asp Lys Gly
1               5                   10                  15
Tyr Asn Lys Ala Leu Asn Asp Leu Cys
            20                  25
```

SEQ ID NO: 3

```
Cys Val Arg Gly Ile Ile Pro Phe Lys Thr Lys Ser Leu Asp Glu Gly
1               5                   10                  15
Tyr Asn Lys Ala Leu Asn Asp Leu Cys
            20                  25
```

SEQ ID NO: 4

```
Cys Val Arg Gly Ile Ile Pro Phe Lys Thr Lys Ser Leu Asp Glu Gly
1               5                   10                  15
Tyr Asn Lys Ala Leu Asn Asp Leu Cys
            20                  25
```

SEQ ID NO: 5

```
Cys Val Arg Gly Ile Ile Pro Phe Lys Thr Lys Ser Leu Asp Glu Gly
1               5                   10                  15
Tyr Asn Lys Ala Leu Asn Tyr Leu Cys
            20                  25
```

SEQ ID NO: 6

```
Cys Val Arg Gly Ile Ile Thr Ser Lys Thr Lys Ser Leu Asp Glu Gly
1               5                   10                  15
Tyr Asn Lys Ala Leu Asn Glu Leu Cys
            20                  25
```

SEQ ID NO: 7

```
Cys Val Arg Gly Ile Ile Thr Ser Lys Thr Lys Ser Leu Asp Glu Gly
1               5                   10                  15
Tyr Asn Lys Ala Leu Asn Asp Leu Cys
            20                  25
```

SEQ ID NO: 8

```
Val Gln Gly Gln Ser Val Lys Gly Val Gly Lys Thr Ser Leu Asp Gly
1               5                   10                  15
Leu Val Asn Ile Asp Val Thr Tyr Gly Asn Gly Lys Tyr Tyr Leu Lys
            20                  25                  30
Asp Ser Asn Lys Asn Ile Tyr Leu Tyr Asp Leu Lys Asn Gln Val Asp
        35                  40                  45
Glu Tyr Asp Leu Tyr Asn Tyr Leu Ser Arg Pro Asn Tyr Lys Gln Ile
    50                  55                  60
Leu Met Ser Lys Ser Glu Leu Ile Ser Asn Tyr Asn Asn Asn Phe Ile
65                  70                  75                  80
Ala Asn Asn Gln Val Asn Ser Val Asp Ala Tyr Val Asn Thr Asn Lys
                85                  90                  95
Thr Tyr Asp Tyr Tyr Lys Asn Lys Leu Asn Arg Asn Ser Ile Asp Asn
            100                 105                 110
```

```
Lys Gly Met Asn Ile Asn Gly Phe Val His Val Gly Arg Asn Tyr Gly
        115                 120                 125
Asn Ala Phe Trp Tyr Gly Pro Tyr Asp Gly Met Phe Phe Gly Asp Gly
    130                 135                 140
Asp Gly Ile Tyr Phe Ser Ser Leu Ala Lys Ser Leu Asp Val Val Gly
145                 150                 155                 160
His Glu Leu Ser His Gly Val Thr Asn Lys Glu Ser Asn Leu Lys Tyr
                165                 170                 175
Glu Asn Glu Ser Gly Ala Leu Asn Glu Ser Phe Ser Asp Ile Met Gly
            180                 185                 190
Val Ala Val Glu Gly Lys Asn Phe Val Leu Gly Glu Asp Cys Trp Val
        195                 200                 205
Ala Gly Gly Val Met Arg Asp Met Glu Asn Pro Ser Arg Gly Gly Gln
    210                 215                 220
Pro Ala His Met Lys Asp Tyr Lys Tyr Lys Thr Met Asn Asp Asp Asn
225                 230                 235                 240
Gly Gly Val His Thr Asn Ser Gly Ile Ile Asn His Ala Ala Tyr Leu
                245                 250                 255
Val Ala Asp Gly Ile Glu Lys Thr Gly Ala Lys Asn Ser Lys Asp Ile
            260                 265                 270
Met Gly Lys Ile Phe Tyr Thr Ala Asn Cys Tyr Lys Trp Asp Glu Thr
        275                 280                 285
Thr Asn Phe Ala Lys Cys Arg Asn Asp Val Val Gln Val Thr Lys Glu
    290                 295                 300
Leu Tyr Gly Glu Asn Ser Asn Tyr Val Lys Ile Val Glu Lys Ala Phe
305                 310                 315                 320
Asp Gln Val Gly Ile Thr Ala Thr Pro Gln Leu Pro Leu
                325                 330
```

SEQ ID NO: 9

```
Met Lys Ser Lys Lys Leu Leu Ala Thr Val Leu Ser Ala Val Ile Thr
1               5                   10                  15
Phe Ser Thr Val Ser Ala Val Tyr Ala Ala Pro Val Gly Lys Glu Ser
            20                  25                  30
Lys Val Glu Pro Lys Thr Thr Thr Ile Thr Trp Glu Lys Asn Glu Gln
        35                  40                  45
Asn Thr Lys Lys Ala Ala Thr Asp Ile Thr Glu Lys Lys Phe Asn Asn
    50                  55                  60
Ser Glu Glu Ile Thr Lys Phe Phe Glu Lys Asn Ile Ser Lys Phe Gly
65                  70                  75                  80
Val Gln Lys Gly Ser Leu Lys Asn Thr Lys Thr Val Lys Asp Glu Lys
                85                  90                  95
Gly Lys Thr Asn Tyr His Met Ile Tyr Glu Val Glu Gly Ile Pro Val
            100                 105                 110
Tyr Tyr Gly Arg Ile Val Phe Thr Thr Glu Lys Asp Ser Ser Met Asp
        115                 120                 125
Ser Ile Asn Gly Arg Ile Asp Thr Val Phe Glu Asn Gly Asn Trp Lys
    130                 135                 140
Asn Lys Ile Lys Leu Ser Lys Glu Asp Ala Ile Ala Lys Ala Lys Asn
145                 150                 155                 160
Asp Ile Lys Asp Glu Lys Ala Thr Ser Lys Lys Thr Asp Leu Tyr Leu
                165                 170                 175
Tyr Asn Phe Glu Gly Lys Pro Tyr Val Val Tyr Leu Val Asp Leu Ile
            180                 185                 190
Thr Asp Asn Gly Ser Trp Thr Val Phe Val Asn Ala Glu Asp Gly Ser
        195                 200                 205
```

```
Ile Val Asn Lys Phe Asn Asn Thr Pro Thr Leu Ile Asp Thr Lys Asp
    210                 215                 220
Gln Lys Leu Pro Asn Ala Lys Lys Ile Lys Asp Glu Ala Lys Lys Ala
225                 230                 235                 240
Ser Asn Ala Asn Asn Val Ile Asp Val Gln Gly Gln Ser Val Lys Gly
                245                 250                 255
Val Gly Lys Thr Ser Leu Asp Gly Leu Val Asn Ile Asp Val Thr Tyr
            260                 265                 270
Gly Asn Gly Lys Tyr Tyr Leu Lys Asp Ser Asn Lys Asn Ile Tyr Leu
        275                 280                 285
Tyr Asp Leu Lys Asn Gln Val Asp Glu Tyr Asp Leu Tyr Asn Tyr Leu
    290                 295                 300
Ser Arg Pro Asn Tyr Lys Gln Ile Leu Met Ser Lys Ser Glu Leu Ile
305                 310                 315                 320
Ser Asn Tyr Asn Asn Asn Phe Ile Ala Asn Asn Gln Val Asn Ser Val
                325                 330                 335
Asp Ala Tyr Val Asn Thr Asn Lys Thr Tyr Asp Tyr Tyr Lys Asn Lys
            340                 345                 350
Leu Asn Arg Asn Ser Ile Asp Asn Lys Gly Met Asn Ile Asn Gly Phe
        355                 360                 365
Val His Val Gly Arg Asn Tyr Gly Asn Ala Phe Trp Tyr Gly Pro Tyr
    370                 375                 380
Asp Gly Met Phe Phe Gly Asp Gly Asp Gly Ile Tyr Phe Ser Ser Leu
385                 390                 395                 400
Ala Lys Ser Leu Asp Val Val Gly His Glu Leu Ser His Gly Val Thr
                405                 410                 415
Asn Lys Glu Ser Asn Leu Lys Tyr Glu Asn Glu Ser Gly Ala Leu Asn
            420                 425                 430
Glu Ser Phe Ser Asp Ile Met Gly Val Ala Val Glu Gly Lys Asn Phe
        435                 440                 445
Val Leu Gly Glu Asp Cys Trp Val Ala Gly Gly Val Met Arg Asp Met
    450                 455                 460
Glu Asn Pro Ser Arg Gly Gly Gln Pro Ala His Met Lys Asp Tyr Lys
465                 470                 475                 480
Tyr Lys Thr Met Asn Asp Asp Asn Gly Gly Val His Thr Asn Ser Gly
                485                 490                 495
Ile Ile Asn His Ala Ala Tyr Leu Val Ala Asp Gly Ile Glu Lys Thr
            500                 505                 510
Gly Ala Lys Asn Ser Lys Asp Ile Met Gly Lys Ile Phe Tyr Thr Ala
        515                 520                 525
Asn Cys Tyr Lys Trp Asp Glu Thr Thr Asn Phe Ala Lys Cys Arg Asn
    530                 535                 540
Asp Val Val Gln Val Thr Lys Glu Leu Tyr Gly Glu Asn Ser Asn Tyr
545                 550                 555                 560
Val Lys Ile Val Glu Lys Ala Phe Asp Gln Val Gly Ile Thr Ala Thr
                565                 570                 575
Pro Gln Leu Pro Leu
            580
```

SEQ ID NO: 10

```
atggttcaag gtcaaagcgt taaaggagta ggaaaaacta gcttggatgg actagtaaat  60
attgatgtaa cttatggaaa tggaaaatac tatttaaaag atagcaacaa aaatatttat  120
ctatatgact taaaaaatca agttgatgaa tatgatctat acaattatct tagtagacct  180
aactataaac aaatattaat gagcaaatct gaattaatat ctaattacaa taataatttt  240
atagccaaca atcaggttaa ttctgtagat gcttatgtaa acacaaataa aacctatgat  300
tattataaaa acaaattaaa tagaaacagt attgataata agggtatgaa tattaatggg  360
tttgttcatg taggtagaaa ttatggtaat gctttttggt acggtccata tgatgggatg  420
ttctttggcg atggcgacgg aatatacttc tcttcccttg caaaatcttt agatgttgta  480
```

```
ggccacgaat taagtcatgg tgtaacaaat aaagagtcta atcttaaata tgaaaatgaa  540
tctggtgccc taaatgaatc tttctcagat attatgggag tagctgttga gggtaaaaac  600
tttgtactag gtgaagattg ctgggttgct ggaggagtaa tgagagatat ggaaaatcca  660
tccagaggag gccaaccagc tcatatgaaa gattataaat acaaaactat gaatgacgat  720
aacggtggtg ttcatacaaa ttcaggtata ataaaccatg ctgcttattt agttgcagat  780
ggaatagaaa aaactggtgc aaaaaatagt aaagatatta tgggaaaaat attctataca  840
gctaattgct ataaatggga tgaaacaaca aattttgcta agtgcagaaa tgatgtagtc  900
caagttacta aagaacttta tggcgaaaat agcaactatg taaaaattgt tgaaaaagct  960
tttgaccaag ttggaataac tgctacacct caattaccat tataa                 1005
```

SEQ ID NO: 11

```
atgaaaagta aaaaattatt agctacagtg ctaagtgccg tgatcacttt ttctactgtt  60
tctgcagttt atgctgcgcc tgtaggaaaa gaaagtaaag ttgaaccaaa aactacaaca  120
ataacttggg aaaaaaatga acaaaatact aaaaaagctg ctactgatat aactgaaaag  180
aaatttaaca attctgagga gataactaaa ttctttgaaa aaaatatatc taaatttggt  240
gtacaaaaag gttctcttaa aaacaccaag actgtaaaag acgaaaaagg taaaactaac  300
tatcatatga tttatgaagt agaaggtata cctgtatact atggaagaat tgtttttaca  360
actgaaaaag actcctccat ggattctata aacggtagaa ttgatactgt ttttgaaaat  420
gggaattgga aaaacaaaat caaactatca aaagaagatg ctatagcaaa agctaaaaat  480
gatattaaag atgaaaaagc aactagtaaa aagaccgatt tatatctgta taattttgag  540
ggcaaacctt atgtagttta tttagtagat ctaattacag acaacgggag ttggacggtt  600
ttcgttaatg ctgaggatgg ttctatagta aataaattta ataatactcc tactttaatt  660
gatactaaag atcaaaaatt acccaatgct aaaaaaatta aagatgaagc taaaaaagct  720
agtaatgcaa ataatgtaat tgatgttcaa ggtcaaagcg ttaaaggagt aggaaaaact  780
agcttggatg gactagtaaa tattgatgta acttatggaa atggaaaata ctatttaaaa  840
gatagcaaca aaaatattta tctatatgac ttaaaaaatc aagttgatga atatgatcta  900
tacaattatc ttagtagacc taactataaa caaatattaa tgagcaaatc tgaattaata  960
tctaattaca ataataattt tatagccaac aatcaggtta attctgtaga tgcttatgta  1020
aacacaaata aaacctatga ttattataaa aacaaattaa atagaaacag tattgataat  1080
aagggtatga atattaatgg gtttgttcat gtaggtagaa attatggtaa tgctttttgg  1140
tacggtccat atgatgggat gttctttggc gatggcgacg gaatatactt ctcttccctt  1200
gcaaaatctt tagatgttgt aggccacgaa ttaagtcatg gtgtaacaaa taaagagtct  1260
aatcttaaat atgaaaatga atctggtgcc ctaaatgaat ctttctcaga tattatggga  1320
gtagctgttg agggtaaaaa ctttgtacta ggtgaagatt gctgggttgc tggaggagta  1380
atgagagata tggaaaatcc atccagagga ggccaaccag ctcatatgaa agattataaa  1440
tacaaaacta tgaatgacga taacggtggt gttcatacaa attcaggtat aataaaccat  1500
gctgcttatt tagttgcaga tggaatagaa aaaactggtg caaaaaatag taaagatatt  1560
atgggaaaaa tattctatac agctaattgc tataaatggg atgaaacaac aaattttgct  1620
aagtgcagaa atgatgtagt ccaagttact aaagaacttt atggcgaaaa tagcaactat  1680
gtaaaaattg ttgaaaaagc ttttgaccaa gttggaataa ctgctacacc tcaattacca  1740
ttataa                                                            1746
```

SEQ ID NO: 12

```
Val Pro Pro Thr Pro Gly Ser Ala Trp Ser His Pro Gln Phe Glu Lys
1               5                   10                  15
```

SEQ ID NO: 13

```
Cys Val Arg Gly Ile Ile Thr Ser Lys Thr Lys Ser Leu Asp Glu Gly Tyr
1               5                   10                  15
Asn Lys Ala Leu Asn Asp Leu Cys
        20
```

SEQ ID NO: 14

```
Cys Val Arg Gly Ile Ile Pro Phe Lys Thr Lys Ser Leu Asp Glu Gly Tyr
1               5                  10                  15
Asn Lys Ala Leu Asn Asp Leu Cys
            20
```

SEQ ID NO: 15

```
Met Pro Phe Val Asn Lys Gln Phe Asn Tyr Lys Asp Pro Val Asn Gly
1               5                  10                  15
Val Asp Ile Ala Tyr Ile Lys Ile Pro Asn Ala Gly Gln Met Gln Pro
            20                  25                  30
Val Lys Ala Phe Lys Ile His Asn Lys Ile Trp Val Ile Pro Glu Arg
        35                  40                  45
Asp Thr Phe Thr Asn Pro Glu Glu Gly Asp Leu Asn Pro Pro Pro Glu
    50                  55                  60
Ala Lys Gln Val Pro Val Ser Tyr Tyr Asp Ser Thr Tyr Leu Ser Thr
65                  70                  75                  80
Asp Asn Glu Lys Asp Asn Tyr Leu Lys Gly Val Thr Lys Leu Phe Glu
                85                  90                  95
Arg Ile Tyr Ser Thr Asp Leu Gly Arg Met Leu Leu Thr Ser Ile Val
            100                 105                 110
Arg Gly Ile Pro Phe Trp Gly Gly Ser Thr Ile Asp Thr Glu Leu Lys
        115                 120                 125
Val Ile Asp Thr Asn Cys Ile Asn Val Ile Gln Pro Asp Gly Ser Tyr
    130                 135                 140
Arg Ser Glu Glu Leu Asn Leu Val Ile Ile Gly Pro Ser Ala Asp Ile
145                 150                 155                 160
Ile Gln Phe Glu Cys Lys Ser Phe Gly His Glu Val Leu Asn Leu Thr
                165                 170                 175
Arg Asn Gly Tyr Gly Ser Thr Gln Tyr Ile Arg Phe Ser Pro Asp Phe
            180                 185                 190
Thr Phe Gly Phe Glu Glu Ser Leu Glu Val Asp Thr Asn Pro Leu Leu
        195                 200                 205
Gly Ala Gly Lys Phe Ala Thr Asp Pro Ala Val Thr Leu Ala His Glu
    210                 215                 220
Leu Ile His Ala Gly His Arg Leu Tyr Gly Ile Ala Ile Asn Pro Asn
225                 230                 235                 240
Arg Val Phe Lys Val Asn Thr Asn Ala Tyr Tyr Glu Met Ser Gly Leu
                245                 250                 255
Glu Val Ser Phe Glu Glu Leu Arg Thr Phe Gly Gly His Asp Ala Lys
            260                 265                 270
Phe Ile Asp Ser Leu Gln Glu Asn Glu Phe Arg Leu Tyr Tyr Tyr Asn
        275                 280                 285
Lys Phe Lys Asp Ile Ala Ser Thr Leu Asn Lys Ala Lys Ser Ile Val
    290                 295                 300
Gly Thr Thr Ala Ser Leu Gln Tyr Met Lys Asn Val Phe Lys Glu Lys
305                 310                 315                 320
Tyr Leu Leu Ser Glu Asp Thr Ser Gly Lys Phe Ser Val Asp Lys Leu
                325                 330                 335
Lys Phe Asp Lys Leu Tyr Lys Met Leu Thr Glu Ile Tyr Thr Glu Asp
            340                 345                 350
Asn Phe Val Lys Phe Phe Lys Val Leu Asn Arg Lys Thr Tyr Leu Asn
        355                 360                 365
Phe Asp Lys Ala Val Phe Lys Ile Asn Ile Val Pro Lys Val Asn Tyr
    370                 375                 380
Thr Ile Tyr Asp Gly Phe Asn Leu Arg Asn Thr Asn Leu Ala Ala Asn
385                 390                 395                 400
Phe Asn Gly Gln Asn Thr Glu Ile Asn Asn Met Asn Phe Thr Lys Leu
                405                 410                 415
Lys Asn Phe Thr Gly Leu Phe Glu Phe Tyr Lys Leu Leu Cys Val Arg
```

```
                420                 425                 430
Gly Ile Ile Thr Ser Lys Thr Lys Ser Leu Asp Lys Gly Tyr Asn Lys
        435                 440                 445
Ala Leu Asn Asp Leu Cys Ile Lys Val Asn Asn Trp Asp Leu Phe Phe
    450                 455                 460
Ser Pro Ser Glu Asp Asn Phe Thr Asn Asp Leu Asn Lys Gly Glu Glu
465                 470                 475                 480
Ile Thr Ser Asp Thr Asn Ile Glu Ala Ala Glu Glu Asn Ile Ser Leu
                485                 490                 495
Asp Leu Ile Gln Gln Tyr Tyr Leu Thr Phe Asn Phe Asp Asn Glu Pro
            500                 505                 510
Glu Asn Ile Ser Ile Glu Asn Leu Ser Ser Asp Ile Ile Gly Gln Leu
        515                 520                 525
Glu Leu Met Pro Asn Ile Glu Arg Phe Pro Asn Gly Lys Lys Tyr Glu
    530                 535                 540
Leu Asp Lys Tyr Thr Met Phe His Tyr Leu Arg Ala Gln Glu Phe Glu
545                 550                 555                 560
His Gly Lys Ser Arg Ile Ala Leu Thr Asn Ser Val Asn Glu Ala Leu
                565                 570                 575
Leu Asn Pro Ser Arg Val Tyr Thr Phe Phe Ser Ser Asp Tyr Val Lys
            580                 585                 590
Lys Val Asn Lys Ala Thr Glu Ala Ala Met Phe Leu Gly Trp Val Glu
        595                 600                 605
Gln Leu Val Tyr Asp Phe Thr Asp Glu Thr Ser Glu Val Ser Thr Thr
    610                 615                 620
Asp Lys Ile Ala Asp Ile Thr Ile Ile Ile Pro Tyr Ile Gly Pro Ala
625                 630                 635                 640
Leu Asn Ile Gly Asn Met Leu Tyr Lys Asp Asp Phe Val Gly Ala Leu
                645                 650                 655
Ile Phe Ser Gly Ala Val Ile Leu Leu Glu Phe Ile Pro Glu Ile Ala
            660                 665                 670
Ile Pro Val Leu Gly Thr Phe Ala Leu Val Ser Tyr Ile Ala Asn Lys
        675                 680                 685
Val Leu Thr Val Gln Thr Ile Asp Asn Ala Leu Ser Lys Arg Asn Glu
    690                 695                 700
Lys Trp Asp Glu Val Tyr Lys Tyr Ile Val Thr Asn Trp Leu Ala Lys
705                 710                 715                 720
Val Asn Thr Gln Ile Asp Leu Ile Arg Lys Lys Met Lys Glu Ala Leu
                725                 730                 735
Glu Asn Gln Ala Glu Ala Thr Lys Ala Ile Ile Asn Tyr Gln Tyr Asn
            740                 745                 750
Gln Tyr Thr Glu Glu Glu Lys Asn Asn Ile Asn Phe Asn Ile Asp Asp
        755                 760                 765
Leu Ser Ser Lys Leu Asn Glu Ser Ile Asn Lys Ala Met Ile Asn Ile
    770                 775                 780
Asn Lys Phe Leu Asn Gln Cys Ser Val Ser Tyr Leu Met Asn Ser Met
785                 790                 795                 800
Ile Pro Tyr Gly Val Lys Arg Leu Glu Asp Phe Asp Ala Ser Leu Lys
                805                 810                 815
Asp Ala Leu Leu Lys Tyr Ile Tyr Asp Asn Arg Gly Thr Leu Ile Gly
            820                 825                 830
Gln Val Asp Arg Leu Lys Asp Lys Val Asn Asn Thr Leu Ser Thr Asp
        835                 840                 845
Ile Pro Phe Gln Leu Ser Lys Tyr Val Asp Asn Gln Arg Leu Leu Ser
    850                 855                 860
Thr Phe Thr Glu Tyr Ile Lys Asn Ile Ile Asn Thr Ser Ile Leu Asn
865                 870                 875                 880
Leu Arg Tyr Glu Ser Lys His Leu Ile Asp Leu Ser Arg Tyr Ala Ser
                885                 890                 895
Lys Ile Asn Ile Gly Ser Lys Val Asn Phe Asp Pro Ile Asp Lys Asn
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            900                 905                 910
Gln Ile Gln Leu Phe Asn Leu Glu Ser Ser Lys Ile Glu Val Ile Leu
        915                 920                 925
Lys Lys Ala Ile Val Tyr Asn Ser Met Tyr Glu Asn Phe Ser Thr Ser
    930                 935                 940
Phe Trp Ile Arg Ile Pro Lys Tyr Phe Asn Lys Ile Ser Leu Asn Asn
945                 950                 955                 960
Glu Tyr Thr Ile Ile Asn Cys Met Glu Asn Asn Ser Gly Trp Lys Val
                965                 970                 975
Ser Leu Asn Tyr Gly Glu Ile Ile Trp Thr Leu Gln Asp Thr Lys Glu
            980                 985                 990
Ile Lys Gln Arg Val Val Phe Lys Tyr Ser Gln Met Ile Asn Ile Ser
        995                 1000                1005
Asp Tyr Ile Asn Arg Trp Ile Phe Val Thr Ile Thr Asn Asn Arg Leu
    1010                1015                1020
Asn Lys Ser Lys Ile Tyr Ile Asn Gly Arg Leu Ile Asp Gln Lys Pro
1025                1030                1035                1040
Ile Ser Asn Leu Gly Asn Ile His Ala Ser Asn Lys Ile Met Phe Lys
                1045                1050                1055
Leu Asp Gly Cys Arg Asp Thr His Arg Tyr Ile Trp Ile Lys Tyr Phe
            1060                1065                1070
Asn Leu Phe Asp Lys Glu Leu Asn Glu Lys Glu Ile Lys Asp Leu Tyr
        1075                1080                1085
Asp Asn Gln Ser Asn Ser Gly Ile Leu Lys Asp Phe Trp Gly Asp Tyr
    1090                1095                1100
Leu Gln Tyr Asp Lys Pro Tyr Tyr Met Leu Asn Leu Tyr Asp Pro Asn
1105                1110                1115                1120
Lys Tyr Val Asp Val Asn Asn Val Gly Ile Arg Gly Tyr Met Tyr Leu
                1125                1130                1135
Lys Gly Pro Arg Gly Ser Val Met Thr Thr Asn Ile Tyr Leu Asn Ser
            1140                1145                1150
Ser Leu Tyr Arg Gly Thr Lys Phe Ile Ile Lys Lys Tyr Ala Ser Gly
        1155                1160                1165
Asn Lys Asp Asn Ile Val Arg Asn Asn Asp Arg Val Tyr Ile Asn Val
    1170                1175                1180
Val Val Lys Asn Lys Glu Tyr Arg Leu Ala Thr Asn Ala Ser Gln Ala
1185                1190                1195                1200
Gly Val Glu Lys Ile Leu Ser Ala Leu Glu Ile Pro Asp Val Gly Asn
                1205                1210                1215
Leu Ser Gln Val Val Val Met Lys Ser Lys Asn Asp Lys Gly Ile Thr
            1220                1225                1230
Asn Lys Cys Lys Met Asn Leu Gln Asp Asn Asn Gly Asn Asp Ile Gly
        1235                1240                1245
Phe Ile Gly Phe His Gln Phe Asn Asn Ile Ala Lys Leu Val Ala Ser
    1250                1255                1260
Asn Trp Tyr Asn Arg Gln Ile Glu Arg Ser Ser Arg Thr Leu Gly Cys
1265                1270                1275                1280
Ser Trp Glu Phe Ile Pro Val Asp Asp Gly Trp Gly Glu Arg Pro Leu
                1285                1290                1295
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