SEQUENCE LISTING

<110> REGENERON PHARMACEUTICALS, INC.

<120> NON-HUMAN ANIMALS HAVING A LIMITED LAMBDA LIGHT CHAIN REPERTOIRE EXPRESSED FROM THE KAPPA LOCUS AND USES THEREOF

<130> 2010794-2050

<140>
<141>

<150> 62/857,712
<151> 2019-06-05

<160> 73

<170> PatentIn version 3.5

<210> 1
<211> 317
<212> DNA
<213> Mus sp.

<400> 1
gccagcccaa gtcttcgcca tcagtcaccc tgtttccacc ttcctctgaa gagctcgaga 60

ctaacaaggc cacactggtg tgtacgatca ctgatttcta cccaggtgtg gtgacagtgg 120

actggaaggt agatggtacc cctgtcactc agggtatgga gacaacccag ccttccaaac 180

agagcaacaa caagtacatg gctagcagct acctgaccct gacagcaaga gcatgggaaa 240

ggcatagcag ttacagctgc caggtcactc atgaaggtca cactgtggag aagagtttgt 300

cccgtgctga ctgttcc 317

<210> 2
<211> 314
<212> DNA
<213> Mus sp.

<400> 2
gtcagcccaa gtccactccc actctcaccg tgtttccacc ttcctctgag gagctcaagg 60

aaaacaaagc cacactggtg tgtctgattt ccaacttttc cccgagtggt gtgacagtgg 120

cctggaaggc aaatggtaca cctatcaccc agggtgtgga cacttcaaat cccaccaaag 180

agggcaacaa gttcatggcc agcagcttcc tacatttgac atcggaccag tggagatctc 240

acaacagttt tacctgtcaa gttacacatg aaggggacac tgtggagaag agtctgtctc 300

ctgcagaatg tctc 314

<210> 3
<211> 314
<212> DNA
<213> Mus sp.

<400> 3
gtcagcccaa gtccactccc acactcacca tgtttccacc ttcccctgag gagctccagg 60

aaaacaaagc cacactcgtg tgtctgattt ccaatttttc cccaagtggt gtgacagtgg 120

cctggaaggc aaatggtaca cctatcaccc agggtgtgga cacttcaaat cccaccaaag 180

aggacaacaa gtacatggcc agcagcttct tacatttgac atcggaccag tggagatctc 240

acaacagttt tacctgccaa gttacacatg aaggggacac tgtggagaag agtctgtctc 300

ctgcagaatg tctc 314

<210> 4
<211> 106
<212> PRT
<213> Mus sp.

<400> 4
Gly Gln Pro Lys Ser Ser Pro Ser Val Thr Leu Phe Pro Pro Ser Ser
1 5 10 15

Glu Glu Leu Glu Thr Asn Lys Ala Thr Leu Val Cys Thr Ile Thr Asp
20 25 30

Phe Tyr Pro Gly Val Val Thr Val Asp Trp Lys Val Asp Gly Thr Pro
35 40 45

Val Thr Gln Gly Met Glu Thr Thr Gln Pro Ser Lys Gln Ser Asn Asn
50 55 60

```
Lys Tyr Met Ala Ser Ser Tyr Leu Thr Leu Thr Ala Arg Ala Trp Glu
65                  70                  75                  80


Arg His Ser Ser Tyr Ser Cys Gln Val Thr His Glu Gly His Thr Val
                85                  90                  95


Glu Lys Ser Leu Ser Arg Ala Asp Cys Ser
            100                 105


<210> 5
<211> 105
<212> PRT
<213> Mus sp.

<400> 5
Gly Gln Pro Lys Ser Thr Pro Thr Leu Thr Val Phe Pro Pro Ser Ser
1               5                   10                  15


Glu Glu Leu Lys Glu Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asn
            20                  25                  30


Phe Ser Pro Ser Gly Val Thr Val Ala Trp Lys Ala Asn Gly Thr Pro
        35                  40                  45


Ile Thr Gln Gly Val Asp Thr Ser Asn Pro Thr Lys Glu Gly Asn Lys
    50                  55                  60


Phe Met Ala Ser Ser Phe Leu His Leu Thr Ser Asp Gln Trp Arg Ser
65                  70                  75                  80


His Asn Ser Phe Thr Cys Gln Val Thr His Glu Gly Asp Thr Val Glu
                85                  90                  95


Lys Ser Leu Ser Pro Ala Glu Cys Leu
            100                 105


<210> 6
<211> 105
<212> PRT
```

<213> Mus sp.

<400> 6
Gly Gln Pro Lys Ser Thr Pro Thr Leu Thr Met Phe Pro Pro Ser Pro
1   5   10   15

Glu Glu Leu Gln Glu Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asn
            20   25   30

Phe Ser Pro Ser Gly Val Thr Val Ala Trp Lys Ala Asn Gly Thr Pro
        35   40   45

Ile Thr Gln Gly Val Asp Thr Ser Asn Pro Thr Lys Glu Asp Asn Lys
    50   55   60

Tyr Met Ala Ser Ser Phe Leu His Leu Thr Ser Asp Gln Trp Arg Ser
65   70   75   80

His Asn Ser Phe Thr Cys Gln Val Thr His Glu Gly Asp Thr Val Glu
                85   90   95

Lys Ser Leu Ser Pro Ala Glu Cys Leu
            100   105

<210> 7
<211> 314
<212> DNA
<213> Rattus sp.

<400> 7
gtcagcccaa gtccactccc acactcacag tatttccacc ttcaactgag gagctccagg 60

gaaacaaagc cacactggtg tgtctgattt ctgatttcta cccgagtgat gtggaagtgg 120

cctggaaggc aaatggtgca cctatctccc agggtgtgga cactgcaaat cccaccaaac 180

agggcaacaa atacatcgcc agcagcttct tacgtttgac agcagaacag tggagatctc 240

gcaacagttt tacctgccaa gttacacatg aagggaacac tgtggagaag agtctgtctc 300

ctgcagaatg tgtc 314

<210> 8
<211> 314
<212> DNA
<213> Rattus sp.

<400> 8
accaacccaa ggctacgccc tcagtcaccc tgttcccacc ttcctctgaa gagctcaaga 60

ctgacaaggc tacactggtg tgtatggtga cagatttcta ccctggtgtt atgacagtgg 120

tctggaaggc agatggtacc cctatcactc agggtgtgga gactacccag cctttcaaac 180

agaacaacaa gtacatggct accagctacc tgcttttgac agcaaaagca tgggagactc 240

atagcaatta cagctgccag gtcactcacg aagagaacac tgtggagaag agtttgtccc 300

gtgctgagtg ttcc 314

<210> 9
<211> 314
<212> DNA
<213> Rattus sp.

<400> 9
gtcagcccaa gtccactccc acactcacag tatttccacc ttcaactgag gagctccagg 60

gaaacaaagc cacactggtg tgtctgattt ctgatttcta cccgagtgat gtggaagtgg 120

cctggaaggc aaatggtgca cctatctccc agggtgtgga cactgcaaat cccaccaaac 180

agggcaacaa atacatcgcc agcagcttct tacgtttgac agcagaacag tggagatctc 240

gcaacagttt tacctgccaa gttacacatg aagggaacac tgtggaaaag agtctgtctc 300

ctgcagagtg tgtc 314

<210> 10
<211> 314
<212> DNA
<213> Rattus sp.

<400> 10
accaacccaa ggctacgccc tcagtcaccc tgttcccacc ttcctctgaa gagctcaaga 60

ctgacaaggc tacactggtg tgtatggtga cagatttcta ccctggtgtt atgacagtgg 120

tctggaaggc agatggtacc cctatcactc agggtgtgga gactacccag cctttcaaac 180

agaacaacaa gtacatggct accagctacc tgcttttgac agcaaaagca tgggagactc 240

atagcaatta cagctgccag gtcactcacg aagagaacac tgtggagaag agtttgtccc 300

gtgctgagtg ttcc 314

<210> 11
<211> 105
<212> PRT
<213> Rattus sp.

<400> 11
Gly Gln Pro Lys Ser Thr Pro Thr Leu Thr Val Phe Pro Pro Ser Thr
1 5 10 15

Glu Glu Leu Gln Gly Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp
20 25 30

Phe Tyr Pro Ser Asp Val Glu Val Ala Trp Lys Ala Asn Gly Ala Pro
35 40 45

Ile Ser Gln Gly Val Asp Thr Ala Asn Pro Thr Lys Gln Gly Asn Lys
50 55 60

Tyr Ile Ala Ser Ser Phe Leu Arg Leu Thr Ala Glu Gln Trp Arg Ser
65 70 75 80

Arg Asn Ser Phe Thr Cys Gln Val Thr His Glu Gly Asn Thr Val Glu
85 90 95

Lys Ser Leu Ser Pro Ala Glu Cys Val
100 105

<210> 12
<211> 105
<212> PRT
<213> Rattus sp.

<400> 12

```
Asp Gln Pro Lys Ala Thr Pro Ser Val Thr Leu Phe Pro Pro Ser Ser
1               5                   10                  15


Glu Glu Leu Lys Thr Asp Lys Ala Thr Leu Val Cys Met Val Thr Asp
            20                  25                  30


Phe Tyr Pro Gly Val Met Thr Val Val Trp Lys Ala Asp Gly Thr Pro
        35                  40                  45


Ile Thr Gln Gly Val Glu Thr Thr Gln Pro Phe Lys Gln Asn Asn Lys
    50                  55                  60


Tyr Met Ala Thr Ser Tyr Leu Leu Leu Thr Ala Lys Ala Trp Glu Thr
65                  70                  75                  80


His Ser Asn Tyr Ser Cys Gln Val Thr His Glu Glu Asn Thr Val Glu
                85                  90                  95


Lys Ser Leu Ser Arg Ala Glu Cys Ser
            100                 105


<210> 13
<211> 105
<212> PRT
<213> Rattus sp.

<400> 13
Gly Gln Pro Lys Ser Thr Pro Thr Leu Thr Val Phe Pro Pro Ser Thr
1               5                   10                  15


Glu Glu Leu Gln Gly Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp
            20                  25                  30


Phe Tyr Pro Ser Asp Val Glu Val Ala Trp Lys Ala Asn Gly Ala Pro
        35                  40                  45


Ile Ser Gln Gly Val Asp Thr Ala Asn Pro Thr Lys Gln Gly Asn Lys
    50                  55                  60
```

Tyr Ile Ala Ser Ser Phe Leu Arg Leu Thr Ala Glu Gln Trp Arg Ser
65 70 75 80

Arg Asn Ser Phe Thr Cys Gln Val Thr His Glu Gly Asn Thr Val Glu
85 90 95

Lys Ser Leu Ser Pro Ala Glu Cys Val
100 105

<210> 14
<211> 105
<212> PRT
<213> Rattus sp.

<400> 14
Asp Gln Pro Lys Ala Thr Pro Ser Val Thr Leu Phe Pro Pro Ser Ser
1 5 10 15

Glu Glu Leu Lys Thr Asp Lys Ala Thr Leu Val Cys Met Val Thr Asp
20 25 30

Phe Tyr Pro Gly Val Met Thr Val Val Trp Lys Ala Asp Gly Thr Pro
35 40 45

Ile Thr Gln Gly Val Glu Thr Thr Gln Pro Phe Lys Gln Asn Asn Lys
50 55 60

Tyr Met Ala Thr Ser Tyr Leu Leu Leu Thr Ala Lys Ala Trp Glu Thr
65 70 75 80

His Ser Asn Tyr Ser Cys Gln Val Thr His Glu Glu Asn Thr Val Glu
85 90 95

Lys Ser Leu Ser Arg Ala Glu Cys Ser
100 105

<210> 15
<211> 315

<212> DNA
<213> Homo sapiens

<400> 15
cccaaggcca accccacggt cactctgttc ccgccctcct ctgaggagct ccaagccaac 60

aaggccacac tagtgtgtct gatcagtgac ttctacccgg gagctgtgac agtggcttgg 120

aaggcagatg gcagccccgt caaggcggga gtggagacga ccaaaccctc caaacagagc 180

aacaacaagt acgcggccag cagctacctg agcctgacgc ccgagcagtg gaagtcccac 240

agaagctaca gctgccaggt cacgcatgaa gggagcaccg tggagaagac agtggccct 300

acagaatgtt catag 315

<210> 16
<211> 317
<212> DNA
<213> Homo sapiens

<400> 16
gtcagcccaa ggctgccccc tcggtcactc tgttcccgcc ctcctctgag gagcttcaag 60

ccaacaaggc cacactggtg tgtctcataa gtgacttcta cccgggagcc gtgacagtgg 120

cttggaaagc agatagcagc cccgtcaagg cgggagtgga gaccaccaca ccctccaaac 180

aaagcaacaa caagtacgcg gccagcagct atctgagcct gacgcctgag cagtggaagt 240

cccacagaag ctacagctgc caggtcacgc atgaagggag caccgtggag aagacagtgg 300

cccctacaga atgttca 317

<210> 17
<211> 315
<212> DNA
<213> Homo sapiens

<400> 17
cccaaggctg ccccctcggt cactctgttc ccaccctcct ctgaggagct tcaagccaac 60

aaggccacac tggtgtgtct cataagtgac ttctacccgg gagccgtgac agttgcctgg 120

aaggcagata gcagccccgt caaggcgggg gtggagacca ccacaccctc caaacaaagc 180

aacaacaagt acgcggccag cagctacctg agcctgacgc ctgagcagtg gaagtcccac 240

aaaagctaca gctgccaggt cacgcatgaa gggagcaccg tggagaagac agttgcccct 300

acggaatgtt catag 315

<210> 18
<211> 321
<212> DNA
<213> Homo sapiens

<400> 18
ggtcagccca aggctgcccc atcggtcact ctgttcccgc cctcctctga ggagcttcaa 60

gccaacaagg ccacactggt gtgcctgatc agtgacttct acccgggagc tgtgaaagtg 120

gcctggaagg cagatggcag ccccgtcaac acgggagtgg agaccaccac accctccaaa 180

cagagcaaca acaagtacgc ggccagcagc tacctgagcc tgacgcctga gcagtggaag 240

tcccacagaa gctacagctg ccaggtcacg catgaaggga gcaccgtgga gaagacagtg 300

gcccctgcag aatgttcata g 321

<210> 19
<211> 317
<212> DNA
<213> Homo sapiens

<400> 19
gtcagcccaa ggctgccccc tcggtcactc tgttcccacc ctcctctgag gagcttcaag 60

ccaacaaggc cacactggtg tgtctcgtaa gtgacttcta cccgggagcc gtgacagtgg 120

cctggaaggc agatggcagc cccgtcaagg tgggagtgga gaccaccaaa ccctccaaac 180

aaagcaacaa caagtatgcg gccagcagct acctgagcct gacgcccgag cagtggaagt 240

cccacagaag ctacagctgc cgggtcacgc atgaagggag caccgtggag aagacagtgg 300

cccctgcaga atgctct 317

<210> 20
<211> 104
<212> PRT
<213> Homo sapiens

<400> 20
Pro Lys Ala Asn Pro Thr Val Thr Leu Phe Pro Pro Ser Ser Glu Glu
1   5   10   15

Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr
            20   25   30

Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Gly Ser Pro Val Lys
        35   40   45

Ala Gly Val Glu Thr Thr Lys Pro Ser Lys Gln Ser Asn Asn Lys Tyr
    50   55   60

Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His
65   70   75   80

Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu Lys
                85   90   95

Thr Val Ala Pro Thr Glu Cys Ser
            100

<210> 21
<211> 105
<212> PRT
<213> Homo sapiens

<400> 21
Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu
1   5   10   15

Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe
            20   25   30

Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val
        35   40   45

Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys
    50   55   60

```
Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser
65                  70                  75                  80


His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu
                85                  90                  95


Lys Thr Val Ala Pro Thr Glu Cys Ser
            100                 105


<210> 22
<211> 104
<212> PRT
<213> Homo sapiens

<400> 22
Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu
1               5                   10                  15


Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr
            20                  25                  30


Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys
        35                  40                  45


Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr
    50                  55                  60


Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His
65                  70                  75                  80


Lys Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu Lys
                85                  90                  95


Thr Val Ala Pro Thr Glu Cys Ser
            100


<210> 23
```

<211> 105
<212> PRT
<213> Homo sapiens

<400> 23
Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu
1   5   10   15

Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe
            20   25   30

Tyr Pro Gly Ala Val Lys Val Ala Trp Lys Ala Asp Gly Ser Pro Val
        35   40   45

Asn Thr Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys
    50   55   60

Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser
65   70   75   80

His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu
                85   90   95

Lys Thr Val Ala Pro Ala Glu Cys Ser
            100   105

<210> 24
<211> 105
<212> PRT
<213> Homo sapiens

<400> 24
Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu
1   5   10   15

Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Val Ser Asp Phe
            20   25   30

Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Gly Ser Pro Val
        35   40   45

Lys Val Gly Val Glu Thr Thr Lys Pro Ser Lys Gln Ser Asn Asn Lys
50 55 60

Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser
65 70 75 80

His Arg Ser Tyr Ser Cys Arg Val Thr His Glu Gly Ser Thr Val Glu
85 90 95

Lys Thr Val Ala Pro Ala Glu Cys Ser
100 105

<210> 25
<211> 532
<212> DNA
<213> Mus sp.

<400> 25
gggctgatgc tgcaccaact gtatccatct tcccaccatc cagtgagcag ttaacatctg 60

gaggtgcctc agtcgtgtgc ttcttgaaca acttctaccc caaagacatc aatgtcaagt 120

ggaagattga tggcagtgaa cgacaaaatg gcgtcctgaa cagttggact gatcaggaca 180

gcaaagacag cacctacagc atgagcagca ccctcacgtt gaccaaggac gagtatgaac 240

gacataacag ctatacctgt gaggccactc acaagacatc aacttcaccc attgtcaaga 300

gcttcaacag gaatgagtgt tagagacaaa ggtcctgaga cgccaccacc agctccccag 360

ctccatccta tcttcccttc taaggtcttg gaggcttccc cacaagcgac ctaccactgt 420

tgcggtgctc caaacctcct ccccacctcc ttctcctcct cctccctttc cttggctttt 480

atcatgctaa tatttgcaga aaatattcaa taaagtgagt ctttgcactt ga 532

<210> 26
<211> 106
<212> PRT
<213> Mus sp.

<400> 26

```
Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln
1               5                   10                  15

Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr
            20                  25                  30

Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln
        35                  40                  45

Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr
    50                  55                  60

Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg
65                  70                  75                  80

His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro
                85                  90                  95

Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
            100                 105
```

<210> 27
<211> 521
<212> DNA
<213> Rattus sp.

<400> 27
gggctgatgc tgcaccaact gtatctatct tcccaccatc cacggaacag ttagcaactg 60

gaggtgcctc agtcgtgtgc ctcatgaaca acttctatcc cagagacatc agtgtcaagt 120

ggaagattga tggcactgaa cgacgagatg gtgtcctgga cagtgttact gatcaggaca 180

gcaaagacag cacgtacagc atgagcagca ccctctcgtt gaccaaggct gactatgaaa 240

gtcataacct ctatacctgt gaggttgttc ataagacatc atcctcaccc gtcgtcaaga 300

gcttcaacag gaatgagtgt tagacccaaa ggtcctgagg tgccacctgc tccccagctc 360

cttccaatct tccctcctaa ggtcttggag acttccccac aagcgaccta ccactgttgc 420

ggtgctccaa acctcctccc cacctcatcc tccttccttt ccttggcttt gatcatgcta 480

atatttgggg aatattaaat aaagtgaatc tttgcacttg a 521

<210> 28
<211> 106
<212> PRT
<213> Rattus sp.

<400> 28
Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Thr Glu Gln
1 5 10 15

Leu Ala Thr Gly Gly Ala Ser Val Val Cys Leu Met Asn Asn Phe Tyr
20 25 30

Pro Arg Asp Ile Ser Val Lys Trp Lys Ile Asp Gly Thr Glu Arg Arg
35 40 45

Asp Gly Val Leu Asp Ser Val Thr Asp Gln Asp Ser Lys Asp Ser Thr
50 55 60

Tyr Ser Met Ser Ser Thr Leu Ser Leu Thr Lys Ala Asp Tyr Glu Ser
65 70 75 80

His Asn Leu Tyr Thr Cys Glu Val Val His Lys Thr Ser Ser Ser Pro
85 90 95

Val Val Lys Ser Phe Asn Arg Asn Glu Cys
100 105

<210> 29
<211> 320
<212> DNA
<213> Homo sapiens

<400> 29
gaactgtggc tgcaccatct gtcttcatct tcccgccatc tgatgagcag ttgaaatctg 60

gaactgcctc tgttgtgtgc ctgctgaata acttctatcc cagagaggcc aaagtacagt 120

ggaaggtgga taacgccctc caatcgggta actcccagga gagtgtcaca gagcaggaca 180

gcaaggacag cacctacagc ctcagcagca ccctgacgct gagcaaagca gactacgaga 240

aacacaaagt ctacgcctgc gaagtcaccc atcagggcct gagctcgccc gtcacaaaga 300

gcttcaacag gggagagtgt 320

<210> 30
<211> 106
<212> PRT
<213> Homo sapiens

<400> 30
Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
1 5 10 15

Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
20 25 30

Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
35 40 45

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
50 55 60

Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
65 70 75 80

His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
85 90 95

Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
100 105

<210> 31
<211> 2992
<212> DNA
<213> Artificial Sequence

<220>
<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 31
ggcgcgccac ctgcagtgta cacctgaggt gacatggttc tgaacatcac tttccccatt 60

gaaggcccga gtgacctatc acttgcttct caaaattcag gaactaggtg actctaggag 120

agtgcacagg aagctttctg catattcttt caagagattt cgaggtcact gactcttttt 180

tcaagactta aacacaaaat ccacatccat cattcttgcg taaagagacc attcttttt 240

ttttgagatg gagtctcgct ctgttgccca agctggagtg cagtggcatg atctcggctc 300

actgcaagct ctgtcttctg ggttcatgcc cttctcctgc ctcagcctcc caagtagctg 360

ggactacagg cacccgccgc catgcccggc taatttttg tatttttag tggagatggg 420

gtttcaacat gttggccaga atggtcttga tctcttgacc tcgtgatcca cccgccttgg 480

cctcccaaag tgctgggatt acaggtgtga gccactgcac ccggcccaag atggggtttc 540

atcatgttga cctggctggt ctcaaactcc caacctcaag tgatccactc acttcagcct 600

cccaaagtgc tgggatgaca ggcgtgagcc acagtgcccg gcctagtaca ttgtttaaat 660

ggtgcatgta aaacctcatg gtactacaac tgcctggtga cagactcacc agagtaaata 720

actatcctgc tgttctccaa ccacatggga ttccccaaac aaagatttgt tgagtccaag 780

atgcatcatg ccagaactct tgcagtcata cacataattt gtttcatttt aataaatacg 840

gttatctttt ttcttcagtt tattgttttt aatgtatcat cttctaggtt tcattacaca 900

tcaaagatga ataatttctc tcatctttag gacatgctga aaacactcat tagtgatttt 960

gaacagtatt atttcctaaa catcctagtt ggaatggttg atcctaaaag ctaccatgtg 1020

tcaggctcac ctgagtgcag actgtggtct aaacaagcta aagttttaat tcttccatct 1080

tcaaatacgg agcatatttg cttgttttgc tctttagcaa aacactgcaa agtcattcgc 1140

caggatctcc tgcagactgg cattcagtga tggagaacag actcctaggt gagatccctg 1200

gtcacaggat ccagatgact atgactgcaa gtctggaaaa gaagagacag aacaaagatt 1260

taccagcata accctctgag aatgtgcccc agccatcctg gagggaagag ctccctattg 1320

acccagcact gcagaatcca cagaggaagg acagctctgg ccaccaggga gcagccacac 1380

gacaagagag gacccggtgt ccccacaggt gaggaaatga gtccatgggg ctggtcagtg 1440

ctctcgattt cattctgcca taacaggact ttgtgtagtc accacctgag tcctatacag 1500

tgaacagcca aggagacatg gacagattca cccctgagga acccagtaga atgtgaagtc 1560

tgccctgagg tcacgaagaa aagactcggg gggctgcctg gcctggccct gatggagggg 1620

gccatggaca gaacaacggg gaggcagggg tgtctctgag aggctctggt caccttgtca 1680

tacaatggtg gtgtacaatg tcgcaccatg gacactaggg ggcgcctgcg caccattcct 1740

gagaagactg ggtgtgatga gagcaggacc agcgccacct gtcctgcttg gtgccctatg 1800

cttagggctc acagatgtca actctccacc ccctgggacc acacagcccc acccctggca 1860

ctctctgaca tcctcaggca gaggagcttg acccagggcc cagggtggga tcagaaagct 1920

ggagggtctg atttgcatgg atggaccctc cttctctcag agtataaaga ggggcaggga 1980

gagacttggg gaagctctgc ttcagctgtg agcgcagaag gcaggactcg ggacaatctt 2040

catcatgacc tgctcccctc tcctcctcac ccttctcatt cactgcacag gtgcccagac 2100

acagggtcag gggaggggtc caggaagccc atgaggccct gctttctcct tctctctcta 2160

gaccaagaat caccgtgtct gtgtctctcc tgcttccagg gtcctgggcc cagtctgtgt 2220

tgacgcagcc gccctcagtg tctgcggccc caggacagaa ggtcaccatc tcctgctctg 2280

gaagcagctc caacattggg aataattatg tatcctggta ccagcagctc ccaggaacag 2340

cccccaaact cctcatttat gacaataata agcgaccctc agggattcct gaccgattct 2400

ctggctccaa gtctggcacg tcagccaccc tgggcatcac cggactccag actggggacg 2460

aggccgatta ttactgcgga acatgggata gcagcctgag tgctgtggta ttcggcggag 2520

ggaccaagct gaccgtccta ggtaagtaat ttttcactat tgtcttctga aatttgggtc 2580

tgatggccag tattgacttt tagaggctta aataggagtt tggtaaagat tggtaaatga 2640

gggcatttaa gatttgccat gggttgcaaa agttaaactc agcttcaaaa atggatttgg 2700

agaaaaaaag attaaattgc tctaaactga atgacacaaa gtaaaaaaaa aaagtgtaac 2760

taaaaaggaa cccttgtatt tctaaggagc aaaagtaaat ttatttttgt tcactcttgc 2820

caaatattgt attggttgtt gctgattatg catgatacag aaaagtggaa aaatacattt 2880

tttagtcttt ctccctttg tttgataaat tattttgtca gacaacaata aaaatcaata 2940

gcacgcccta agatgccatt tcattacctc tttctccgca cccgacatag at 2992

<210> 32
<211> 497
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 32
atgacctgct cccctctcct cctcaccctt ctcattcact gcacaggtgc ccagacacag 60

ggtcagggga ggggtccagg aagcccatga ggccctgctt tctccttctc tctctagacc 120

aagaatcacc gtgtctgtgt ctctcctgct tccagggtcc tgggcccagt ctgtgttgac 180

gcagccgccc tcagtgtctg cggccccagg acagaaggtc accatctcct gctctggaag 240

cagctccaac attgggaata attatgtatc ctggtaccag cagctcccag gaacagcccc 300

caaactcctc atttatgaca ataataagcg accctcaggg attcctgacc gattctctgg 360

ctccaagtct ggcacgtcag ccaccctggg catcaccgga ctccagactg gggacgaggc 420

cgattattac tgcggaacat gggatagcag cctgagtgct gtggtattcg gcggagggac 480

caagctgacc gtcctag 497

<210> 33
<211> 388
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 33
atgacctgct cccctctcct cctcaccctt ctcattcact gcacagggtc ctgggcccag 60

tctgtgttga cgcagccgcc ctcagtgtct gcggccccag gacagaaggt caccatctcc 120

tgctctggaa gcagctccaa cattgggaat aattatgtat cctggtacca gcagctccca 180

ggaacagccc ccaaactcct catttatgac aataataagc gaccctcagg gattcctgac 240

cgattctctg gctccaagtc tggcacgtca gccaccctgg gcatcaccgg actccagact 300

ggggacgagg ccgattatta ctgcggaaca tgggatagca gcctgagtgc tgtggtattc 360

ggcggaggga ccaagctgac cgtcctag 388

<210> 34
<211> 129
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 34
Met Thr Cys Ser Pro Leu Leu Leu Thr Leu Leu Ile His Cys Thr Gly
1 5 10 15

Ser Trp Ala Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala
20 25 30

Pro Gly Gln Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile
35 40 45

Gly Asn Asn Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro
50 55 60

Lys Leu Leu Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp
65 70 75 80

Arg Phe Ser Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr
85 90 95

Gly Leu Gln Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp
100 105 110

Ser Ser Leu Ser Ala Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val
115 120 125

Leu

<210> 35
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 35
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
1 5 10 15

Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
20 25 30

Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45

Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65 70 75 80

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
85 90 95

Ser Ala Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 36
<211> 3003
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 36
ggcgcgccac ctgcagtgta cacctgaggt gacatggttc tgaacatcac tttccccatt 60

gaaggcccga gtgacctatc acttgcttct caaaattcag gaactaggtg actctaggag 120

agtgcacagg aagctttctg catattcttt caagagattt cgaggtcact gactcttttt 180

tcaagactta aacacaaaat ccacatccat cattcttgcg taaagagacc attcttttt 240

ttttgagatg gagtctcgct ctgttgccca agctggagtg cagtggcatg atctcggctc 300

actgcaagct ctgtcttctg ggttcatgcc cttctcctgc ctcagcctcc caagtagctg 360

ggactacagg cacccgccgc catgcccggc taatttttg tatttttag tggagatggg 420

gtttcaacat gttggccaga atggtcttga tctcttgacc tcgtgatcca cccgccttgg 480

cctcccaaag tgctgggatt acaggtgtga gccactgcac ccggcccaag atggggtttc 540

atcatgttga cctggctggt ctcaaactcc caacctcaag tgatccactc acttcagcct 600

cccaaagtgc tgggatgaca ggcgtgagcc acagtgcccg gcctagtaca ttgtttaaat 660

ggtgcatgta aaacctcatg gtactacaac tgcctggtga cagactcacc agagtaaata 720

actatcctgc tgttctccaa ccacatggga ttccccaaac aaagatttgt tgagtccaag 780

atgcatcatg ccagaactct tgcagtcata cacataattt gtttcatttt aataaatacg 840

gttatctttt ttcttcagtt tattgttttt aatgtatcat cttctaggtt tcattacaca 900

tcaaagatga ataatttctc tcatctttag gacatgctga aaacactcat tagtgatttt 960

gaacagtatt atttcctaaa catcctagtt ggaatggttg atcctaaaag ctaccatgtg 1020

tcaggctcac ctgagtgcag actgtggtct aaacaagcta aagttttaat tcttccatct 1080

tcaaatacgg agcatatttg cttgttttgc tctttagcaa aacactgcaa agtcattcgc 1140

caggatctcc tgcagactgg cattcagtga tggagaacag actcctaggt gagatccctg 1200

gtcacaggat ccagatgact atgactgcaa gtctggaaaa gaagagacag aacaaagatt 1260

taccagcata accctctgag aatgtgcccc agccatcctg gagggaagag ctccctattg 1320

acccagcact gcagaatcca cagaggaagg acagctctgg ccaccaggga gcagccacac 1380

gacaagagag gacccggtgt ccccacaggt gaggaaatga gtccatgggg ctggtcagtg 1440

ctctcgattt cattctgcca taacaggact ttgtgtagtc accacctgag tcctatacag 1500

tgaacagcca aggagacatg gacagattca cccctgagga acccagtaga atgtgaagtc 1560

tgccctgagg tcacgaagaa aagactcggg gggctgcctg gcctggccct gatggagggg 1620

gccatggaca gaacaacggg gaggcagggg tgtctctgag aggctctggt caccttgtca 1680

tacaatggtg gtgtacaatg tcgcaccatg gacactaggg ggcgcctgcg caccattcct 1740

gagaagactg ggtgtgatga gagcaggacc agcgccacct gtcctgcttg gtgccctatg 1800

cttagggctc acagatgtca actctccacc ccctgggacc acacagcccc acccctggca 1860

ctctctgaca tcctcaggca gaggagcttg acccagggcc cagggtggga tcagaaagct 1920

ggagggtctg atttgcatgg atggaccctc cttctctcag agtataaaga ggggcaggga 1980

gagacttggg gaagctctgc ttcagctgtg agcgcagaag gcaggactcg ggacaatctt 2040

catcatggcc tgggctctgc tgctcctcac cctcctcact cagggcacag gtgacgcctc 2100

cagggaaggg gcttcaggga cctctgggct gatccttggt ctcctgctcc tcaggctcac 2160

cggggcccag cactgactca ctggcatgtg tttctccctc tttccagggt cctgggccca 2220

gtctgccctg actcagcctg cctccgtgtc tgggtctcct ggacagtcga tcaccatctc 2280

ctgcactgga accagcagtg acgttggtgg ttataactat gtctcctggt accaacagca 2340

cccaggcaaa gcccccaaac tcatgattta tgaggtcagt aatcggccct caggggtttc 2400

taatcgcttc tctggctcca agtctggcaa cacggcctcc ctgaccatct ctgggctcca 2460

ggctgaggac gaggctgatt attactgcag ctcatataca agcagcagca ctctcgtggt 2520

attcggcgga gggaccaagc tgaccgtcct aggtaagtaa tttttcacta ttgtcttctg 2580

aaatttgggt ctgatggcca gtattgactt ttagaggctt aaataggagt ttggtaaaga 2640

ttggtaaatg agggcattta agatttgcca tgggttgcaa aagttaaact cagcttcaaa 2700

aatggatttg gagaaaaaaa gattaaattg ctctaaactg aatgacacaa agtaaaaaaa 2760

aaaagtgtaa ctaaaaagga acccttgtat ttctaaggag caaaagtaaa tttatttttg 2820

ttcactcttg ccaaatattg tattggttgt tgctgattat gcatgataca gaaaagtgga 2880

aaaatacatt ttttagtctt tctccctttt gtttgataaa ttattttgtc agacaacaat 2940

aaaaatcaat agcacgccct aagatgccat ttcattacct ctttctccgc acccgacata 3000

gat 3003

<210> 37
<211> 508
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 37
atggcctggg ctctgctgct cctcaccctc ctcactcagg gcacaggtga cgcctccagg 60

gaaggggctt cagggacctc tgggctgatc cttggtctcc tgctcctcag gctcaccggg 120

gcccagcact gactcactgg catgtgtttc tccctctttc cagggtcctg ggcccagtct 180

gccctgactc agcctgcctc cgtgtctggg tctcctggac agtcgatcac catctcctgc 240

actggaacca gcagtgacgt tggtggttat aactatgtct cctggtacca acagcaccca 300

ggcaaagccc ccaaactcat gatttatgag gtcagtaatc ggccctcagg ggtttctaat 360

cgcttctctg gctccaagtc tggcaacacg gcctccctga ccatctctgg gctccaggct 420

gaggacgagg ctgattatta ctgcagctca tatacaagca gcagcactct cgtggtattc 480

ggcggaggga ccaagctgac cgtcctag 508

<210> 38

<211> 391
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 38
atggcctggg ctctgctgct cctcaccctc ctcactcagg gcacagggtc ctgggcccag 60

tctgccctga ctcagcctgc ctccgtgtct gggtctcctg gacagtcgat caccatctcc 120

tgcactggaa ccagcagtga cgttggtggt tataactatg tctcctggta ccaacagcac 180

ccaggcaaag cccccaaact catgatttat gaggtcagta atcggccctc aggggtttct 240

aatcgcttct ctggctccaa gtctggcaac acggcctccc tgaccatctc tgggctccag 300

gctgaggacg aggctgatta ttactgcagc tcatatacaa gcagcagcac tctcgtggta 360

ttcggcggag ggaccaagct gaccgtccta g 391

<210> 39
<211> 130
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 39
Met Ala Trp Ala Leu Leu Leu Leu Thr Leu Leu Thr Gln Gly Thr Gly
1 5 10 15

Ser Trp Ala Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser
20 25 30

Pro Gly Gln Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val
35 40 45

Gly Gly Tyr Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala

```
    50                  55                  60

Pro Lys Leu Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser
65                  70                  75                  80

Asn Arg Phe Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile
                85                  90                  95

Ser Gly Leu Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr
            100                 105                 110

Thr Ser Ser Ser Thr Leu Val Val Phe Gly Gly Gly Thr Lys Leu Thr
        115                 120                 125

Val Leu
    130


<210> 40
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      polypeptide"

<400> 40
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1               5                   10                  15

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20                  25                  30

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
        35                  40                  45

Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
    50                  55                  60
```

Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser
85 90 95

Ser Thr Leu Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 41
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic primer"

<400> 41
gggacgaggc cgattattac tg 22

<210> 42
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic probe"

<400> 42
cggaacatgg gatagcagcc tga 23

<210> 43
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic

primer"

<400> 43
cctccgccga ataccaca 18

<210> 44
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic primer"

<400> 44
gcatcaccgg actccagact 20

<210> 45
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic probe"

<400> 45
cgaggccgat tattactgcg gaaca 25

<210> 46
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic primer"

<400> 46
aggacggtca gcttggtc 18

<210> 47

<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
primer"

<400> 47
caggactcgg gacaatcttc atc 23

<210> 48
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
probe"

<400> 48
atggcctggg ctctgctgct c 21

<210> 49
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
primer"

<400> 49
tgtgccctga gtgaggag 18

<210> 50
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic

primer"

<400> 50
agcgcagaag gcaggactc 19

<210> 51
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic probe"

<400> 51
acaatcttca tcatggcctg ggctc 25

<210> 52
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic primer"

<400> 52
cgtcacctgt gccctgag 18

<210> 53
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic primer"

<400> 53
tgttgcccaa gctggagtg 19

<210> 54

<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
probe"

<400> 54
tggcatgatc tcggctcact gc 22

<210> 55
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
primer"

<400> 55
gaggctgagg caggagaa 18

<210> 56
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
primer"

<400> 56
ggccactcac aagacatcaa c 21

<210> 57
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic

probe"

<400> 57
tcacccattg tcaagagctt caaca 25

<210> 58
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic primer"

<400> 58
cgtctcagga cctttgtctc taac 24

<210> 59
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic primer"

<400> 59
tccttgttac ttcataccat cctct 25

<210> 60
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic probe"

<400> 60
ttccttcctc aggccagccc 20

<210> 61

<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
primer"

<400> 61
agggtgactg atggcgaaga ct 22

<210> 62
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
primer"

<400> 62
tccaggcacc ctgtctttg 19

<210> 63
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
probe"

<400> 63
aaagagccac cctctcctgc aggg 24

<210> 64
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic

primer"

<400> 64
aagtagctgc tgctaacact ctgact 26

<210> 65
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic primer"

<400> 65
aggtgagggt acagataagt gttatgag 28

<210> 66
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic probe"

<400> 66
ccattatgat gctccatgcc tctctgttc 29

<210> 67
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic primer"

<400> 67
tgacaaatgc cctaattata gtgatca 27

<210> 68

<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
primer"

<400> 68
ggtggagagg ctattcggc 19

<210> 69
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
probe"

<400> 69
tgggcacaac agacaatcgg ctg 23

<210> 70
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
primer"

<400> 70
gaacacggcg gcatcag 17

<210> 71
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic

primer"

<400> 71
tgcggccgat cttagcc 17

<210> 72
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic probe"

<400> 72
acgagcgggt tcggcccatt c 21

<210> 73
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic primer"

<400> 73
ttgaccgatt ccttgcgg 18