SEQUENCE LISTING

<110> MORPHOTEK INC.

<120> FOLATE RECEPTOR ALPHA AS A DIAGNOSTIC AND PROGNOSTIC MARKER FOR FOLATE RECEPTOR ALPHA-EXPRESSING CANCERS

<130> 118557-01420

<140> PCT/US2011/059411
<141> 2011-11-04

<150> 61/508,444
<151> 2011-07-15

<150> 61/410,497
<151> 2010-11-05

<160> 90

<170> PatentIn version 3.5

<210> 1
<211> 10
<212> PRT
<213> Artificial Sequence

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

<400> 1
Gly Phe Thr Phe Ser Gly Tyr Gly Leu Ser
1 5 10

<210> 2
<211> 17
<212> PRT
<213> Artificial Sequence

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

<400> 2
Met Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 3
<211> 10
<212> PRT
<213> Artificial Sequence

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

<400> 3
His Gly Asp Asp Pro Ala Trp Phe Ala Tyr
1 5 10

<210> 4
<211> 12
<212> PRT
<213> Artificial Sequence

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

<400> 4
Ser Val Ser Ser Ser Ile Ser Ser Asn Asn Leu His
1 5 10

<210> 5
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 5
Gly Thr Ser Asn Leu Ala Ser
1 5

<210> 6
<211> 11
<212> PRT
<213> Artificial Sequence

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

<400> 6
Gln Gln Trp Ser Ser Tyr Pro Tyr Met Tyr Thr
1 5 10

<210> 7
<211> 449
<212> PRT
<213> Artificial Sequence

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

<400> 7
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

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Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe Ser Gly Tyr
            20                  25                  30

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

Ala Met Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60

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

Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Gly Val Tyr Phe Cys
                85                  90                  95

Ala Arg His Gly Asp Asp Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly
            100                 105                 110

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

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
    130                 135                 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145                 150                 155                 160

Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu
                165                 170                 175

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
    210                 215                 220

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro
225                 230                 235                 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            260                 265                 270
```

```
Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val
    290                 295                 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320

Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys
                325                 330                 335

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350

Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr
        355                 360                 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385                 390                 395                 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
                405                 410                 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            420                 425                 430

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
        435                 440                 445

Lys
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<210> 8
<211> 217
<212> PRT
<213> Artificial Sequence

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

<400> 8

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Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                   10                  15

Asp Arg Val Thr Ile Thr Cys Ser Val Ser Ser Ser Ile Ser Ser Asn
            20                  25                  30
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```
Asn Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Pro Trp
        35                  40                  45

Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser
    50                  55                  60

Gly Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln
65                  70                  75                  80

Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Tyr Pro
                85                  90                  95

Tyr Met Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr
            100                 105                 110

Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu
        115                 120                 125

Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro
    130                 135                 140

Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly
145                 150                 155                 160

Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr
                165                 170                 175

Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His
            180                 185                 190

Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val
        195                 200                 205

Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215
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<210> 9
<211> 468
<212> PRT
<213> Artificial Sequence

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

<400> 9

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Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1               5                   10                  15
```

```
Val His Ser Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
            20                  25                  30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe
        35                  40                  45

Ser Gly Tyr Gly Leu Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
    50                  55                  60

Glu Trp Val Ala Met Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Ala
65                  70                  75                  80

Asp Ser Val Lys Gly Arg Phe Ala Ile Ser Arg Asp Asn Ala Lys Asn
                85                  90                  95

Thr Leu Phe Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Gly Val
            100                 105                 110

Tyr Phe Cys Ala Arg His Gly Asp Asp Pro Ala Trp Phe Ala Tyr Trp
        115                 120                 125

Gly Gln Gly Thr Pro Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
    130                 135                 140

Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr
145                 150                 155                 160

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
                165                 170                 175

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
            180                 185                 190

Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr
        195                 200                 205

Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn
    210                 215                 220

His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser
225                 230                 235                 240

Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu
                245                 250                 255

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
            260                 265                 270

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
```

```
        275                 280                 285

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
    290                 295                 300

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr
305                 310                 315                 320

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
                325                 330                 335

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro
            340                 345                 350

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
        355                 360                 365

Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val
    370                 375                 380

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
385                 390                 395                 400

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
                405                 410                 415

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
            420                 425                 430

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
        435                 440                 445

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
    450                 455                 460

Ser Pro Gly Lys
465


<210> 10
<211> 236
<212> PRT
<213> Artificial Sequence

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

<400> 10
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1               5                   10                  15
```

```
Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala
            20                  25                  30

Ser Val Gly Asp Arg Val Thr Ile Thr Cys Ser Val Ser Ser Ser Ile
        35                  40                  45

Ser Ser Asn Asn Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
    50                  55                  60

Lys Pro Trp Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Ser
65                  70                  75                  80

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser
                85                  90                  95

Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Trp Ser
            100                 105                 110

Ser Tyr Pro Tyr Met Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
        115                 120                 125

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
    130                 135                 140

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
145                 150                 155                 160

Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
                165                 170                 175

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
            180                 185                 190

Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
        195                 200                 205

Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
    210                 215                 220

Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
225                 230                 235
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<210> 11
<211> 1407
<212> DNA
<213> Artificial Sequence

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

polynucleotide"

<400> 11
atgggatgga gctgtatcat cctcttcttg gtagcaacag ctacaggtgt ccactccgag 60

gtccaactgg tggagagcgg tggaggtgtt gtgcaacctg gccggtccct gcgcctgtcc 120

tgctccgcat ctggcttcac cttcagcggc tatgggttgt cttgggtgag acaggcacct 180

ggaaaaggtc ttgagtgggt tgcaatgatt agtagtggtg gtagttatac ctactatgca 240

gacagtgtga agggtagatt tgcaatatcg cgagacaacg ccaagaacac attgttcctg 300

caaatggaca gcctgagacc cgaagacacc ggggtctatt tttgtgcaag acatggggac 360

gatcccgcct ggttcgctta ttggggccaa gggaccccgg tcaccgtctc ctcagcctcc 420

accaagggcc catcggtctt ccccctggca ccctcctcca agagcacctc tgggggcaca 480

gcggccctgg gctgcctggt caaggactac ttccccgaac cggtgacggt gtcgtggaac 540

tcaggcgccc tgaccagcgg cgtgcacacc ttcccggctg tcctacagtc ctcaggactc 600

tactccctca gcagcgtggt gaccgtgccc tccagcagct tgggcaccca gacctacatc 660

tgcaacgtga atcacaagcc cagcaacacc aaggtggaca agaaagttga gcccaaatct 720

tgtgacaaaa ctcacacatg cccaccgtgc ccagcacctg aactcctggg gggaccgtca 780

gtcttcctct tccccccaaa acccaaggac accctcatga tctcccggac ccctgaggtc 840

acatgcgtgg tggtggacgt gagccacgaa gaccctgagg tcaagttcaa ctggtacgtg 900

gacggcgtgg aggtgcataa tgccaagaca aagccgcggg aggagcagta caacagcacg 960

taccgtgtgg tcagcgtcct caccgtcctg caccaggact ggctgaatgg caaggagtac 1020

aagtgcaagg tctccaacaa agccctccca gcccccatcg agaaaaccat ctccaaagcc 1080

aaagggcagc cccgagaacc acaggtgtac accctgcccc catcccggga tgagctgacc 1140

aagaaccagg tcagcctgac ctgcctggtc aaaggcttct atcccagcga catcgccgtg 1200

gagtgggaga gcaatgggca gccggagaac aactacaaga ccacgcctcc cgtgctggac 1260

tccgacggct ccttcttctt atattcaaag ctcaccgtgg acaagagcag gtggcagcag 1320

gggaacgtct tctcatgctc cgtgatgcat gaggctctgc acaaccacta cacgcagaag 1380

agcctctccc tgtctccgg gaaatga 1407

<210> 12
<211> 711
<212> DNA
<213> Artificial Sequence

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

<400> 12
atgggatgga gctgtatcat cctcttcttg gtagcaacag ctacaggtgt ccactccgac 60

atccagctga cccagagccc aagcagcctg agcgccagcg tgggtgacag agtgaccatc 120

acctgtagtg tcagctcaag tataagttcc aacaacttgc actggtacca gcagaagcca 180

ggtaaggctc caaagccatg gatctacggc acatccaacc tggcttctgg tgtgccaagc 240

agattcagcg gtagcggtag cggtaccgac tacaccttca ccatcagcag cctccagcca 300

gaggacatcg ccacctacta ctgccaacag tggagtagtt acccgtacat gtacacgttc 360

ggccaaggga ccaaggtgga aatcaaacga actgtggctg caccatctgt cttcatcttc 420

ccgccatctg atgagcagtt gaaatctgga actgcctctg ttgtgtgcct gctgaataac 480

ttctatccca gagaggccaa agtacagtgg aaggtggata acgccctcca atcgggtaac 540

tcccaggaga gtgtcacaga gcaggacagc aaggacagca cctacagcct cagcagcacc 600

ctgacgctga gcaaagcaga ctacgagaaa cacaaagtct acgcctgcga agtcacccat 660

cagggcctga gctcgcccgt cacaaagagc ttcaacaggg gagagtgtta a 711

<210> 13
<211> 110
<212> PRT
<213> Artificial Sequence

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

<400> 13
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Ser Val Ser Ser Ser Ile Ser Ser Asn
20 25 30

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

Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln
65 70 75 80

Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Tyr Pro
85 90 95

Tyr Met Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 14
<211> 110
<212> PRT

<213> Artificial Sequence

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

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

Asp Arg Val Thr Ile Thr Cys Ser Val Ser Ser Ser Ile Ser Ser Asn
20 25 30

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

Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln
65 70 75 80

Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Tyr Pro
85 90 95

Tyr Met Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 15
<211> 110
<212> PRT
<213> Artificial Sequence

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

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

Asp Arg Val Thr Ile Thr Cys Ser Val Ser Ser Ser Ile Ser Ser Asn
20 25 30

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

Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln
65 70 75 80

Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Tyr Pro
85 90 95

Tyr Met Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 16
<211> 110
<212> PRT
<213> Artificial Sequence

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

<400> 16
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Ser Val Ser Ser Ser Ile Ser Ser Asn
20 25 30

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

Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln
65 70 75 80

Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Tyr Pro
85 90 95

Tyr Met Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 17
<211> 119
<212> PRT
<213> Artificial Sequence

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

<400> 17
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg Pro Ser Gln
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Ala Ser Gly Phe Thr Phe Ser Gly Tyr

```
            20                  25                  30

Gly Leu Ser Trp Val Arg Gln Pro Pro Gly Arg Gly Leu Glu Trp Val
        35                  40                  45

Ala Met Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60

Lys Gly Arg Val Thr Met Leu Arg Asp Thr Ser Lys Asn Gln Phe Ser
65                  70                  75                  80

Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg His Gly Asp Asp Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly
            100                 105                 110

Ser Leu Val Thr Val Ser Ser
        115
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<210> 18
<211> 119
<212> PRT
<213> Artificial Sequence

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

<400> 18

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Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg Pro Ser Gln
1               5                   10                  15

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

Gly Leu Ser Trp Val Arg Gln Pro Pro Gly Arg Gly Leu Glu Trp Val
        35                  40                  45

Ala Met Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60

Lys Gly Arg Phe Ala Ile Ser Arg Asp Asn Ser Lys Asn Gln Phe Ser
65                  70                  75                  80

Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg His Gly Asp Asp Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly
            100                 105                 110
```

Ser Leu Val Thr Val Ser Ser
115

<210> 19
<211> 119
<212> PRT
<213> Artificial Sequence

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

<400> 19
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg Pro Ser Gln
1 5 10 15

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

Gly Leu Ser Trp Val Arg Gln Pro Pro Gly Arg Gly Leu Glu Trp Val
35 40 45

Ala Met Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Val Thr Met Leu Arg Asp Thr Ser Lys Asn Ser Leu Phe
65 70 75 80

Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg His Gly Asp Asp Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser
115

<210> 20
<211> 119
<212> PRT
<213> Artificial Sequence

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

<400> 20
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg Pro Ser Gln
1 5 10 15

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

```
Gly Leu Ser Trp Val Arg Gln Pro Pro Gly Arg Gly Leu Glu Trp Val
        35                  40                  45

Ala Met Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60

Lys Gly Arg Val Thr Met Leu Arg Asp Thr Ser Lys Asn Gln Phe Ser
65                  70                  75                  80

Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Ile Tyr Ile Cys
                85                  90                  95

Ala Arg His Gly Asp Asp Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly
            100                 105                 110

Ser Leu Val Thr Val Ser Ser
        115
```

<210> 21
<211> 119
<212> PRT
<213> Artificial Sequence

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

<400> 21

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1               5                   10                  15

Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Thr Phe Ser Gly Tyr
            20                  25                  30

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

Ala Met Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60

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

Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Gly Val Tyr Phe Cys
                85                  90                  95

Ala Arg His Gly Asp Asp Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly
            100                 105                 110
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Thr Pro Val Thr Val Ser Ser
115

<210> 22
<211> 119
<212> PRT
<213> Mus sp.

<220>
<221> MOD_RES
<222> (3)..(3)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (6)..(6)
<223> Any amino acid

<400> 22
Gln Val Xaa Leu Gln Xaa Ser Gly Gly Asp Leu Val Lys Pro Gly Gly
1 5 10 15

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

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

Ala Met Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Ala Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65 70 75 80

Leu Gln Met Ser Ser Leu Lys Ser Asp Asp Thr Ala Ile Tyr Ile Cys
85 90 95

Ala Arg His Gly Asp Asp Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ala
115

<210> 23
<211> 110
<212> PRT
<213> Mus sp.

<400> 23
Asp Ile Glu Leu Thr Gln Ser Pro Ala Leu Met Ala Ala Ser Pro Gly
1 5 10 15

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

```
Asn Leu His Trp Tyr Gln Gln Lys Ser Glu Thr Ser Pro Lys Pro Trp
        35                  40                  45

Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Leu Arg Phe Arg
    50                  55                  60

Gly Phe Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu
65                  70                  75                  80

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

Tyr Met Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100                 105                 110
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<210> 24
<211> 962
<212> DNA
<213> Homo sapiens

<400> 24

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tcaaggttaa acgacaagga cagacatggc tcagcggatg acaacacagc tgctgctcct       60

tctagtgtgg gtggctgtag taggggaggc tcagacaagg attgcatggg ccaggactga      120

gcttctcaat gtctgcatga acgccaagca ccacaaggaa aagccaggcc ccgaggacaa      180

gttgcatgag cagtgtcgac cctggaggaa gaatgcctgc tgttctacca acaccagcca      240

ggaagcccat aaggatgttt cctacctata tagattcaac tggaaccact gtggagagat      300

ggcacctgcc tgcaaacggc atttcatcca ggacacctgc ctctacgagt gctccccaa       360

cttggggccc tggatccagc aggtggatca gagctggcgc aaagagcggg tactgaacgt      420

gcccctgtgc aaagaggact gtgagcaatg gtgggaagat tgtcgcacct cctacacctg      480

caagagcaac tggcacaagg gctggaactg gacttcaggg tttaacaagt gcgcagtggg      540

agctgcctgc caacctttcc atttctactt ccccacaccc actgttctgt gcaatgaaat      600

ctggactcac tcctacaagg tcagcaacta cagccgaggg agtggccgct gcatccagat      660

gtggttcgac ccagcccagg gcaaccccaa tgaggaggtg gcgaggttct atgctgcagc      720

catgagtggg gctgggccct gggcagcctg gcctttcctg cttagcctgg ccctaatgct      780

gctgtggctg ctcagctgac ctccttttac cttctgatac ctggaaatcc ctgccctgtt      840

cagccccaca gctcccaact atttggttcc tgctccatgg tcgggcctct gacagccact      900

ttgaataaac cagacaccgc acatgtgtct tgagaattat ttggaaaaaa aaaaaaaaaa      960

aa                                                                     962
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<210> 25
<211> 257

<212> PRT
<213> Homo sapiens

<400> 25
Met Ala Gln Arg Met Thr Thr Gln Leu Leu Leu Leu Leu Val Trp Val
1 5 10 15

Ala Val Val Gly Glu Ala Gln Thr Arg Ile Ala Trp Ala Arg Thr Glu
20 25 30

Leu Leu Asn Val Cys Met Asn Ala Lys His His Lys Glu Lys Pro Gly
35 40 45

Pro Glu Asp Lys Leu His Glu Gln Cys Arg Pro Trp Arg Lys Asn Ala
50 55 60

Cys Cys Ser Thr Asn Thr Ser Gln Glu Ala His Lys Asp Val Ser Tyr
65 70 75 80

Leu Tyr Arg Phe Asn Trp Asn His Cys Gly Glu Met Ala Pro Ala Cys
85 90 95

Lys Arg His Phe Ile Gln Asp Thr Cys Leu Tyr Glu Cys Ser Pro Asn
100 105 110

Leu Gly Pro Trp Ile Gln Gln Val Asp Gln Ser Trp Arg Lys Glu Arg
115 120 125

Val Leu Asn Val Pro Leu Cys Lys Glu Asp Cys Glu Gln Trp Trp Glu
130 135 140

Asp Cys Arg Thr Ser Tyr Thr Cys Lys Ser Asn Trp His Lys Gly Trp
145 150 155 160

Asn Trp Thr Ser Gly Phe Asn Lys Cys Ala Val Gly Ala Ala Cys Gln
165 170 175

Pro Phe His Phe Tyr Phe Pro Thr Pro Thr Val Leu Cys Asn Glu Ile
180 185 190

Trp Thr His Ser Tyr Lys Val Ser Asn Tyr Ser Arg Gly Ser Gly Arg
195 200 205

Cys Ile Gln Met Trp Phe Asp Pro Ala Gln Gly Asn Pro Asn Glu Glu
210 215 220

Val Ala Arg Phe Tyr Ala Ala Ala Met Ser Gly Ala Gly Pro Trp Ala
225 230 235 240

Ala Trp Pro Phe Leu Leu Ser Leu Ala Leu Met Leu Leu Trp Leu Leu

245 250 255

Ser

<210> 26
<211> 27
<212> PRT
<213> Artificial Sequence

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

<220>
<221> MOD_RES
<222> (7)..(7)
<223> Any amino acid

<220>
<221> VARIANT
<222> (12)..(12)
<223> /replace="His"

<220>
<221> misc_feature
<222> (12)..(12)
<223> /note="Residue given in the sequence has no preference with respect to the annotation for said positions"

<220>
<221> MOD_RES
<222> (13)..(13)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (18)..(18)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (20)..(20)
<223> Any amino acid

<220>
<221> VARIANT
<222> (21)..(21)
<223> /replace="Glu"

<220>
<221> misc_feature
<222> (21)..(21)
<223> /note="Residue given in the sequence has no preference with respect to the annotation for said positions"

<220>
<221> MOD_RES
<222> (24)..(25)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (27)..(27)
<223> Any amino acid

<400> 26
Thr Glu Leu Leu Asn Val Xaa Met Asn Ala Lys Trp Xaa Lys Glu Lys
1   5   10   15

Pro Xaa Pro Xaa Asp Lys Leu Xaa Xaa Gln Xaa
            20   25

<210> 27
<211> 12
<212> PRT
<213> Artificial Sequence

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

<400> 27
Arg Ala Ser Ser Thr Val Ser Tyr Ser Tyr Leu His
1   5   10

<210> 28
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 28
Gly Thr Ser Asn Leu Ala Ser
1   5

<210> 29
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 29
Gln Gln Tyr Ser Gly Tyr Pro Leu Thr
1   5

<210> 30
<211> 107
<212> PRT
<213> Artificial Sequence

<220>

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

<400> 30
Pro Ala Ile Met Ser Ala Ser Pro Gly Glu Lys Val Thr Met Thr Cys
1 5 10 15

Arg Ala Ser Ser Thr Val Ser Tyr Ser Tyr Leu His Trp Tyr Gln Gln
20 25 30

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

Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Ser
50 55 60

Tyr Ser Leu Thr Ile Ser Ser Val Glu Ala Glu Asp Ala Ala Thr Tyr
65 70 75 80

Tyr Cys Gln Gln Tyr Ser Gly Tyr Pro Leu Thr Phe Gly Ala Gly Thr
85 90 95

Lys Leu Glu Leu Lys Arg Ala Asp Ala Ala Pro
100 105

<210> 31
<211> 6
<212> PRT
<213> Artificial Sequence

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

<400> 31
Ser Gly Tyr Tyr Trp Asn
1 5

<210> 32
<211> 16
<212> PRT
<213> Artificial Sequence

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

<400> 32
Tyr Ile Lys Ser Asp Gly Ser Asn Asn Tyr Asn Pro Ser Leu Lys Asn
1 5 10 15

<210> 33
<211> 7

<212> PRT
<213> Artificial Sequence

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

<400> 33
Glu Trp Lys Ala Met Asp Tyr
1 5

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

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

<400> 34
Glu Ser Gly Pro Gly Leu Val Arg Pro Ser Gln Ser Leu Ser Leu Thr
1 5 10 15

Cys Ser Val Thr Gly Tyr Ser Ile Thr Ser Gly Tyr Tyr Trp Asn Trp
20 25 30

Ile Arg Gln Phe Pro Gly Ser Arg Leu Glu Trp Met Gly Tyr Ile Lys
35 40 45

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

Ile Thr Arg Asp Thr Ser Lys Asn Gln Phe Phe Leu Lys Leu Asn Ser
65 70 75 80

Val Thr Thr Glu Asp Thr Ala Thr Tyr Phe Cys Thr Arg Glu Trp Lys
85 90 95

Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala
100 105 110

Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu Ala Pro Gly Cys Gly Asp
115 120 125

Thr

<210> 35
<211> 15
<212> PRT
<213> Artificial Sequence

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

<400> 35
Arg Ala Ser Glu Ser Val Asp Thr Tyr Gly Asn Asn Phe Ile His
1 5 10 15

<210> 36
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 36
Leu Ala Ser Asn Leu Glu Ser
1 5

<210> 37
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 37
Gln Gln Asn Asn Gly Asp Pro Trp Thr
1 5

<210> 38
<211> 110
<212> PRT
<213> Artificial Sequence

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

<400> 38
Pro Ala Ser Leu Ala Val Ser Leu Gly Gln Arg Ala Thr Ile Ser Cys
1 5 10 15

Arg Ala Ser Glu Ser Val Asp Thr Tyr Gly Asn Asn Phe Ile His Trp
20 25 30

Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Leu Ala
35 40 45

Ser Asn Leu Glu Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser
50 55 60

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Arg Thr Asp Phe Thr Leu Thr Ile Asp Pro Val Glu Ala Asp Asp Ala
65                  70                  75                  80


Ala Thr Tyr Tyr Cys Gln Gln Asn Asn Gly Asp Pro Trp Thr Phe Gly
                85                  90                  95


Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Asp Ala Ala Pro
            100                 105                 110


<210> 39
<211> 5
<212> PRT
<213> Artificial Sequence

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

<400> 39
His Pro Tyr Met His
1               5


<210> 40
<211> 17
<212> PRT
<213> Artificial Sequence

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

<400> 40
Arg Ile Asp Pro Ala Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe Gln
1               5                   10                  15


Gly


<210> 41
<211> 10
<212> PRT
<213> Artificial Sequence

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

<400> 41
Glu Glu Val Ala Asp Tyr Thr Met Asp Tyr
1               5                   10


<210> 42
<211> 126
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<212> PRT
<213> Artificial Sequence

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

<400> 42
Gly Ala Glu Leu Val Lys Pro Gly Ala Ser Val Lys Leu Ser Cys Thr
1 5 10 15

Ala Ser Gly Phe Asn Ile Lys His Pro Tyr Met His Trp Val Lys Gln
20 25 30

Arg Pro Asp Gln Gly Leu Glu Trp Ile Gly Arg Ile Asp Pro Ala Asn
35 40 45

Gly Asn Thr Lys Tyr Asp Pro Lys Phe Gln Gly Lys Ala Thr Ile Thr
50 55 60

Ala Asp Thr Ser Ser Asn Thr Ala Tyr Leu Gln Leu Ser Ser Leu Thr
65 70 75 80

Ser Glu Asp Thr Ala Val Tyr Tyr Cys Gly Arg Glu Glu Val Ala Asp
85 90 95

Tyr Thr Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
100 105 110

Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu Ala Pro Val
115 120 125

<210> 43
<211> 11
<212> PRT
<213> Artificial Sequence

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

<400> 43
Ser Ala Ser Gln Gly Ile Asn Asn Phe Leu Asn
1 5 10

<210> 44
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 44
Tyr Thr Ser Ser Leu His Ser
1 5

<210> 45
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 45
Gln His Phe Ser Lys Leu Pro Trp Thr
1 5

<210> 46
<211> 106
<212> PRT
<213> Artificial Sequence

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

<400> 46
Thr Ser Ser Leu Ser Ala Ser Leu Gly Asp Arg Val Thr Ile Ser Cys
1 5 10 15

Ser Ala Ser Gln Gly Ile Asn Asn Phe Leu Asn Trp Tyr Gln Gln Lys
20 25 30

Pro Asp Gly Thr Val Lys Leu Leu Ile Tyr Tyr Thr Ser Ser Leu His
35 40 45

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr
50 55 60

Ser Leu Thr Ile Ser Asn Leu Glu Pro Glu Asp Ile Ala Ile Tyr Tyr
65 70 75 80

Cys Gln His Phe Ser Lys Leu Pro Trp Thr Phe Gly Gly Gly Thr Lys
85 90 95

Leu Glu Ile Lys Arg Ala Asp Ala Ala Pro
100 105

<210> 47
<211> 5
<212> PRT
<213> Artificial Sequence

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

<400> 47
Ser Tyr Ala Met Ser
1 5

<210> 48
<211> 17
<212> PRT
<213> Artificial Sequence

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

<400> 48
Glu Ile Gly Ser Gly Gly Ser Tyr Thr Tyr Tyr Pro Asp Thr Val Thr
1 5 10 15

Gly

<210> 49
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 49
Glu Thr Thr Ala Gly Tyr Phe Asp Tyr
1 5

<210> 50
<211> 112
<212> PRT
<213> Artificial Sequence

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

<400> 50
Ser Gly Gly Gly Leu Val Arg Pro Gly Gly Ser Leu Lys Leu Ser Cys
1 5 10 15

Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr Ala Met Ser Trp Val Arg
20 25 30

Gln Ser Pro Glu Lys Arg Leu Glu Trp Val Ala Glu Ile Gly Ser Gly
35 40 45

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Gly Ser Tyr Thr Tyr Tyr Pro Asp Thr Val Thr Gly Arg Phe Thr Ile
    50                  55                  60

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

Arg Ser Glu Asp Thr Ala Ile Tyr Tyr Cys Ala Arg Glu Thr Thr Ala
                85                  90                  95

Gly Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
            100                 105                 110
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<210> 51
<211> 11
<212> PRT
<213> Artificial Sequence

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

<400> 51
Arg Thr Ser Glu Asn Ile Phe Ser Tyr Leu Ala
1   5   10

<210> 52
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 52
Asn Ala Lys Thr Leu Ala Glu
1   5

<210> 53
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 53
Gln His His Tyr Ala Phe Pro Trp Thr
1   5

<210> 54
<211> 106

<212> PRT
<213> Artificial Sequence

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

<400> 54
Pro Ala Ser Leu Ser Ala Ser Val Gly Glu Thr Val Thr Ile Thr Cys
1 5 10 15

Arg Thr Ser Glu Asn Ile Phe Ser Tyr Leu Ala Trp Tyr Gln Gln Lys
20 25 30

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

Glu Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Gln Phe
50 55 60

Ser Leu Lys Ile Asn Ser Leu Gln Pro Glu Asp Phe Gly Ser Tyr Tyr
65 70 75 80

Cys Gln His His Tyr Ala Phe Pro Trp Thr Phe Gly Gly Gly Ser Lys
85 90 95

Leu Glu Ile Lys Arg Ala Asp Ala Ala Pro
100 105

<210> 55
<211> 5
<212> PRT
<213> Artificial Sequence

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

<400> 55
Gly Tyr Phe Met Asn
1 5

<210> 56
<211> 17
<212> PRT
<213> Artificial Sequence

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

<400> 56
Arg Ile Phe Pro Tyr Asn Gly Asp Thr Phe Tyr Asn Gln Lys Phe Lys
1 5 10 15

Gly

<210> 57
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 57
Gly Thr His Tyr Phe Asp Tyr
1 5

<210> 58
<211> 128
<212> PRT
<213> Artificial Sequence

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

<400> 58
Gly Pro Glu Leu Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys
1 5 10 15

Ala Ser Asp Tyr Ser Phe Thr Gly Tyr Phe Met Asn Trp Val Met Gln
20 25 30

Ser His Gly Lys Ser Leu Glu Trp Ile Gly Arg Ile Phe Pro Tyr Asn
35 40 45

Gly Asp Thr Phe Tyr Asn Gln Lys Phe Lys Gly Arg Ala Thr Leu Thr
50 55 60

Val Asp Lys Ser Ser Ser Thr Ala His Met Glu Leu Arg Ser Leu Ala
65 70 75 80

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

Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser Ala Lys Thr
100 105 110

Thr Pro Pro Ser Val Tyr Pro Leu Ala Pro Gly Ser Ala Ala Gln Thr
115 120 125

<210> 59

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

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

<400> 59
agggccagct caactgtaag ttacagttac ttgcac 36

<210> 60
<211> 21
<212> DNA
<213> Artificial Sequence

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

<400> 60
ggcacatcca acttggcttc t 21

<210> 61
<211> 27
<212> DNA
<213> Artificial Sequence

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

<400> 61
cagcagtaca gtggttaccc actcacg 27

<210> 62
<211> 323
<212> DNA
<213> Artificial Sequence

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

<400> 62
ccagcaatca tgtctgcatc tccaggggaa aaggtcacca tgacctgcag ggccagctca 60

actgtaagtt acagttactt gcactggtac cagcagaagt caggtgcctc cccccaactc 120

tggatttatg gcacatccaa cttggcttct ggagtccctg ctcgcttcag tggcagtggg 180

tctgggacct cttactctct cacaatcagc agtgtggagg ctgaagatgc tgccacttat 240

tactgccagc agtacagtgg ttacccactc acgttcggtg ctgggaccaa gctggagctg 300

aaacgggctg atgctgcacc aac 323

<210> 63
<211> 18
<212> DNA
<213> Artificial Sequence

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

<400> 63
agtggttatt actggaac 18

<210> 64
<211> 48
<212> DNA
<213> Artificial Sequence

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

<400> 64
tacataaagt ccgacggtag caataattac aacccatctc tcaaaaat 48

<210> 65
<211> 21
<212> DNA
<213> Artificial Sequence

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

<400> 65
gagtggaagg ctatggacta c 21

<210> 66
<211> 389
<212> DNA
<213> Artificial Sequence

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

<400> 66
gagtcaggac ctggcctcgt gagaccttct cagtctctgt ctctcacctg ctctgtcact 60

ggctactcca tcaccagtgg ttattactgg aactggatcc ggcagtttcc aggaagcaga 120

ctggaatgga tgggctacat aaagtccgac ggtagcaata attacaaccc atctctcaaa 180

aatcgaatct ccatcactcg tgacacatct aagaaccagt ttttcctgaa gttgaattct 240

gtgactactg aggacacagc tacatatttc tgtacaaggg agtggaaggc tatggactac 300

tggggtcagg gaacctcagt caccgtctcc tcagccaaaa caacaccccc atcagtctat 360

ccactggccc ctgggtgtgg agatacaac 389

<210> 67
<211> 45
<212> DNA
<213> Artificial Sequence

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

<400> 67
agagccagtg aaagtgttga tacttatggc aataatttta tacac 45

<210> 68
<211> 21
<212> DNA
<213> Artificial Sequence

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

<400> 68
cttgcatcca acctagaatc t 21

<210> 69
<211> 27
<212> DNA
<213> Artificial Sequence

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

<400> 69
cagcaaaata atggggatcc gtggacg 27

<210> 70
<211> 331
<212> DNA
<213> Artificial Sequence

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

<400> 70
ccagcttctt tggctgtgtc tctagggcag agggccacca tatcctgcag agccagtgaa 60

agtgttgata cttatggcaa taattttata cactggtacc agcagaaacc aggacagcca 120

cccaaactcc tcatttatct tgcatccaac ctagaatctg gggtccctgc caggttcagt 180

ggcagtgggt ctaggacaga cttcaccctc accattgatc ctgtggaggc tgatgatgct 240

gcaacctatt actgtcagca aaataatggg gatccgtgga cgttcggtgg aggcaccaag 300

ctggagatca aacgggctga tgctgcacca a 331

<210> 71
<211> 15
<212> DNA
<213> Artificial Sequence

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

<400> 71
cacccctata tgcac 15

<210> 72
<211> 51
<212> DNA
<213> Artificial Sequence

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

<400> 72
aggattgatc ctgcgaatgg taatactaaa tatgacccga agttccaggg c 51

<210> 73
<211> 30
<212> DNA
<213> Artificial Sequence

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

<400> 73
gaggaggtgg cggactatac tatggactac 30

<210> 74
<211> 380
<212> DNA
<213> Artificial Sequence

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

<400> 74
ggggcagagc ttgtgaagcc aggggcctca gtcaagttgt cctgcacagc ttctggcttc 60

aacattaaac acccctatat gcactgggtg aagcagaggc ctgaccaggg cctggagtgg 120

attggaagga ttgatcctgc gaatggtaat actaaatatg acccgaagtt ccagggcaag 180

gccactataa cagcagacac atcctccaac acagcctacc tacagctcag cagcctgaca 240

tctgaggaca ctgccgtcta ttactgtggt agagaggagg tggcggacta tactatggac 300

tactggggtc aaggaacctc agtcaccgtc tcctcagcca aaacaacagc cccatcggtc 360

tatccactgg cccctgtgtg 380

<210> 75
<211> 33
<212> DNA
<213> Artificial Sequence

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

<400> 75
agtgcaagtc agggcattaa caatttttta aac 33

<210> 76
<211> 21
<212> DNA
<213> Artificial Sequence

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

<400> 76
tacacatcaa gtttacactc a 21

<210> 77
<211> 27
<212> DNA
<213> Artificial Sequence

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

<400> 77
cagcacttta gtaagcttcc gtggacg 27

<210> 78
<211> 320
<212> DNA
<213> Artificial Sequence

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

<400> 78
acatcctccc tgtctgcctc tctgggagac agagtcacca tcagttgcag tgcaagtcag 60

ggcattaaca atttttaaa ctggtatcag cagaaaccag atggcactgt taaactcctg 120

atctattaca catcaagttt acactcagga gtcccatcaa ggttcagtgg cagtgggtct 180

gggacagatt attctctcac catcagcaac ctggaacctg aagatattgc catatactat 240

tgtcagcact ttagtaagct tccgtggacg ttcggtggag gcaccaagct ggaaatcaaa 300

cgggctgatg ctgcaccaac 320

<210> 79
<211> 15
<212> DNA
<213> Artificial Sequence

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

<400> 79
agctatgcca tgtct 15

<210> 80
<211> 51
<212> DNA
<213> Artificial Sequence

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

<400> 80
gaaattggta gtggtggtag ttacacctac tatccagaca ctgtgacggg c 51

<210> 81
<211> 27
<212> DNA
<213> Artificial Sequence

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

<400> 81
gaaactacgg cgggctactt tgactac 27

<210> 82
<211> 336
<212> DNA
<213> Artificial Sequence

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

<400> 82
tctgggggag gcttagtgag gcctggaggg tccctgaaac tctcctgtgc agcctctgga 60

ttcactttca gtagctatgc catgtcttgg gttcgccagt ctccagagaa gaggctggag 120

tgggtcgcag aaattggtag tggtggtagt tacacctact atccagacac tgtgacgggc 180

cgattcacca tctccagaga caatgccaag agcaccctgt acctggaaat gagcagtctg 240

aggtctgagg acacggccat ctattactgt gcaagggaaa ctacggcggg ctactttgac 300

tactggggcc aaggcaccac tctcacagtc tcctca 336

<210> 83
<211> 33
<212> DNA
<213> Artificial Sequence

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

<400> 83
cgaacaagtg agaatatttt cagttattta gca 33

<210> 84
<211> 21
<212> DNA
<213> Artificial Sequence

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

<400> 84
aatgcaaaaa ccttagcaga g 21

<210> 85
<211> 27
<212> DNA
<213> Artificial Sequence

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

<400> 85
caacatcatt atgcttttcc gtggacg 27

<210> 86
<211> 320
<212> DNA
<213> Artificial Sequence

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

<400> 86
ccagcctccc tatctgcatc tgtgggagaa actgtcacca tcacatgtcg aacaagtgag 60

aatattttca gttatttagc atggtatcag cagaaacagg gaatatctcc tcagctcctg 120

gtctataatg caaaaacctt agcagagggt gtgccatcaa ggttcagtgg cagtggatca 180

ggcacacagt tttctctgaa gatcaacagc ctgcagcctg aagattttgg gagttattac 240

tgtcaacatc attatgcttt tccgtggacg ttcggtggag gctccaagct ggaaatcaaa 300

cgggctgatg ctgcaccaac 320

<210> 87
<211> 15
<212> DNA
<213> Artificial Sequence

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

<400> 87
ggctacttta tgaac 15

<210> 88
<211> 51
<212> DNA
<213> Artificial Sequence

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

<400> 88
cgtatttttc cttacaatgg tgatactttc tacaaccaga agttcaaggg c 51

<210> 89
<211> 21
<212> DNA
<213> Artificial Sequence

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

<400> 89
gggactcatt actttgacta c 21

<210> 90
<211> 386
<212> DNA
<213> Artificial Sequence

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

<400> 90
ggacctgagc tggtgaagcc tggggcttca gtgaagatat cctgcaaggc ttctgattac 60

tcttttactg gctactttat gaactgggtg atgcagagcc atggaaagag ccttgagtgg 120

attggacgta tttttcctta caatggtgat actttctaca accagaagtt caagggcagg 180

gccacattga ctgtagacaa atcctctagc acagcccaca tggagctccg gagcctggca 240

tctgaggact ctgcagtcta tttttgtgca agagggactc attactttga ctactggggc 300

caaggcacca ctctcactgt ctcctcagcc aaaacgacac ccccatctgt ctatccactg 360

gcccctggat ctgctgccca aactaa 386