SEQUENCE LISTING

<110> CARY, Stephen P. L.
KRTOLICA, Ana
LE MOAN, Natacha
WINGER, Jonathan A.
LEONG, Kevin G.

<120> MODULATION OF TUMOR IMMUNITY BY
PROTEIN-MEDIATED O2 DELIVERY

<130> 627042000940

<140> Not Yet Assigned
<141> Concurently Herewith

<150> 62/134,523
<151> 2015-03-17

<160> 30

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 555
<212> DNA
<213> Thermoanaerobacter tengcongensis

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gaggatattg atgacgatga ggttaggaga atttttgcta aggtgagtga aaaaactggt 180
aaaaatgtca acgaaatatg gagagaggta ggaaggcaga acataaaaac tttcagcgaa 240
tggtttccct cctattttgc agggagaagg ctagtgaatt ttttaatgat gatggatgag 300
gtacacctac agcttaccaa gatgataaaa ggagccactc ctccaaggct tattgcaaag 360
cctgttgcaa aagatgccat tgaaatggag tacgtttcta aaagaaagat gtacgattac 420
tttttagggc ttatagaggg tagttctaaa tttttcaagg aagaaatttc agtggaagag 480
gtcgaaagag gcgaaaaaga tggcttttca aggctaaaag tcaggataaa atttaaaaac 540
cccgtttttg agtga 555

<210> 2
<211> 184
<212> PRT
<213> Thermoanaerobacter tengcongensis

<400> 2
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Tyr Gly Asn Asp Val Val Asp Glu Ser Leu Lys Ser Val Gly Trp Glu
20 25 30
Pro Asp Arg Val Ile Thr Pro Leu Glu Asp Ile Asp Asp Asp Glu Val
35 40 45
Arg Arg Ile Phe Ala Lys Val Ser Glu Lys Thr Gly Lys Asn Val Asn
50 55 60
Glu Ile Trp Arg Glu Val Gly Arg Gln Asn Ile Lys Thr Phe Ser Glu
65 70 75 80
Trp Phe Pro Ser Tyr Phe Ala Gly Arg Arg Leu Val Asn Phe Leu Met
85 90 95
Met Met Asp Glu Val His Leu Gln Leu Thr Lys Met Ile Lys Gly Ala
100 105 110
Thr Pro Pro Arg Leu Ile Ala Lys Pro Val Ala Lys Asp Ala Ile Glu
115 120 125
Met Glu Tyr Val Ser Lys Arg Lys Met Tyr Asp Tyr Phe Leu Gly Leu
130 135 140
Ile Glu Gly Ser Ser Lys Phe Phe Lys Glu Glu Ile Ser Val Glu Glu
145 150 155 160
Val Glu Arg Gly Glu Lys Asp Gly Phe Ser Arg Leu Lys Val Arg Ile

165 170 175
Lys Phe Lys Asn Pro Val Phe Glu
180

<210> 3
<211> 81
<212> DNA
<213> Thermoanaerobacter tengcongensis

<400> 3
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gtattacttt ctacctttt a 81

<210> 4
<211> 27
<212> PRT
<213> Thermoanaerobacter tengcongensis

<400> 4
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Asp Gly Glu Trp Val Leu Leu Ser Thr Phe Leu
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<210> 5
<211> 690
<212> DNA
<213> Thermoanaerobacter tengcongensis

<400> 5
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gaggatattg atgacgatga ggttaggaga atttttgcta aggtgagtga aaaaactggt 180
aaaaatgtca acgaaatatg gagagaggta ggaaggcaga acataaaaac tttcagcgaa 240
tggtttccct cctattttgc agggagaagg ctagtgaatt ttttaatgat gatggatgag 300
gtacacctac agcttaccaa gatgataaaa ggagccactc ctccaaggct tattgcaaag 360
cctgttgcaa aagatgccat tgaaatggag tacgtttcta aaagaaagat gtacgattac 420
tttttagggt ttatagaggg tagttctaaa tttttcaagg aagaaatttc agtggaagag 480
gtcgaaagag gcgaaaaaga tggcttttca aggctaaaag tcaggataaa atttaaaaac 540
cccgtttttg agtataagaa aaatctcgag ggcagcggcg gttatattcc tgaagctcca 600
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<210> 6
<211> 225
<212> PRT
<213> Thermoanaerobacter tengcongensis

<400> 6
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Tyr Gly Asn Asp Val Val Asp Glu Ser Leu Lys Ser Val Gly Trp Glu
20 25 30
Pro Asp Arg Val Ile Thr Pro Leu Glu Asp Ile Asp Asp Asp Glu Val
35 40 45
Arg Arg Ile Phe Ala Lys Val Ser Glu Lys Thr Gly Lys Asn Val Asn
50 55 60
Glu Ile Trp Arg Glu Val Gly Arg Gln Asn Ile Lys Thr Phe Ser Glu
65 70 75 80
Trp Phe Pro Ser Tyr Phe Ala Gly Arg Arg Leu Val Asn Phe Leu Met
85 90 95
Met Met Asp Glu Val His Leu Gln Leu Thr Lys Met Ile Lys Gly Ala
100 105 110
Thr Pro Pro Arg Leu Ile Ala Lys Pro Val Ala Lys Asp Ala Ile Glu
115 120 125
Met Glu Tyr Val Ser Lys Arg Lys Met Tyr Asp Tyr Phe Leu Gly Phe

130 135 140
Ile Glu Gly Lys Phe Phe Lys Glu Glu Ile Glu Glu Val Glu Arg Gly
145 150 155 160
Glu Lys Asp Gly Phe Ser Arg Leu Lys Val Arg Ile Lys Phe Lys Asn
165 170 175
Pro Val Phe Glu Tyr Lys Lys Asn Leu Glu Gly Ser Gly Gly Tyr Ile
180 185 190
Pro Glu Ala Pro Arg Asp Gly Gln Ala Tyr Val Arg Lys Asp Gly Glu
195 200 205
Trp Val Leu Leu Ser Thr Phe Leu Arg Gly Ser His His His His His
210 215 220
His
225

<210> 7
<211> 663
<212> DNA
<213> Thermoanaerobacter tengcongensis

<400> 7
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gaggatattg atgacgatga ggttaggaga atttttgcta aggtgagtga aaaaactggt 180
aaaaatgtca acgaaatatg gagagaggta ggaaggcaga acataaaaac tttcagcgaa 240
tggtttccct cctattttgc agggagaagg ctagtgaatt ttttaatgat gatggatgag 300
gtacacctac agcttaccaa gatgataaaa ggagccactc ctccaaggct tattgcaaag 360
cctgttgcaa aagatgccat tgaaatggag tacgtttcta aaagaaagat gtacgattac 420
tttttagggt ttatagaggg tagttctaaa tttttcaagg aagaaatttc agtggaagag 480
gtcgaaagag gcgaaaaaga tggcttttca aggctaaaag tcaggataaa atttaaaaac 540
cccgtttttg agtataagaa aaatctcgag ggcagcggcg gttatattcc tgaagctcca 600
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tga 663

<210> 8
<211> 167
<212> PRT
<213> Thermoanaerobacter tengcongensis

<400> 8
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Asp Asp Glu Leu Lys Gly Glu Asp Arg Ile Thr Leu Glu Asp Ile Asp
20 25 30
Asp Asp Glu Arg Arg Ile Phe Ala Lys Glu Lys Thr Gly Lys Asn Asn
35 40 45
Glu Ile Arg Glu Gly Arg Gln Asn Ile Lys Thr Phe Glu Phe Phe Ala
50 55 60
Gly Arg Arg Leu Asn Phe Leu Met Met Met Asp Glu His Leu Gln Leu
65 70 75 80
Thr Lys Met Ile Lys Gly Ala Thr Arg Leu Ile Ala Lys Ala Lys Asp
85 90 95
Ala Ile Glu Met Glu Lys Arg Lys Met Asp Phe Leu Gly Phe Ile Glu
100 105 110
Gly Lys Phe Phe Lys Glu Glu Ile Glu Glu Glu Arg Gly Glu Lys Asp
115 120 125
Gly Phe Arg Leu Lys Arg Ile Lys Phe Lys Asn Phe Glu Lys Lys Asn
130 135 140
Leu Glu Gly Gly Gly Ile Glu Ala Arg Asp Gly Gln Ala Arg Lys Asp
145 150 155 160
Gly Glu Leu Leu Thr Phe Leu
165

<210> 9
<211> 564
<212> DNA
<213> Legionella pneumophila

<400> 9
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tcctacaccc tggtagatca aattattatg gatagtcatt tgaagtccca tggtgcctac 120
acgtctatcg gtacatactc tcccaaagaa ttatttcaat tggttaaagc gcttgctatg 180
aaaaatggca aaccaacatc agtgatttta caagaatatg gtgagtattt gtttgaggtt 240
tttgcaaaaa aatatcctca atttttcagg gaaaaaaagt cggtgtttca atttttggaa 300
gcgcttgaaa cacatattca tttcgaagtg aaaaaattgt atgactatac tgaactaccc 360
cattttgaat gccaatatca cagtcaaaat caaatggaaa tgatttacac ttcttcgcgt 420
cctttggccg attttgcgga aggtttaata aaaggttgta ttaaatatca taaagaaaac 480
atgactattg ttcgtgaaaa tctgcctgca aaaacaggct ttaaggtaag atttgtatta 540
acaaaaggcg atcctgatga gtga 564

<210> 10
<211> 187
<212> PRT
<213> Legionella pneumophila

<400> 10
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Glu Lys Ser Glu Ser Tyr Thr Leu Val Asp Gln Ile Ile Met Asp Ser
            20   25   30
His Leu Lys Ser His Gly Ala Tyr Thr Ser Ile Gly Thr Tyr Ser Pro
        35   40   45
Lys Glu Leu Phe Gln Leu Val Lys Ala Leu Ala Met Lys Asn Gly Lys
    50   55   60
Pro Thr Ser Val Ile Leu Gln Glu Tyr Gly Glu Tyr Leu Phe Glu Val
65   70   75   80
Phe Ala Lys Lys Tyr Pro Gln Phe Phe Arg Glu Lys Lys Ser Val Phe
                85   90   95
Gln Phe Leu Glu Ala Leu Glu Thr His Ile His Phe Glu Val Lys Lys
            100   105   110
Leu Tyr Asp Tyr Thr Glu Leu Pro His Phe Glu Cys Gln Tyr His Ser
        115   120   125
Gln Asn Gln Met Glu Met Ile Tyr Thr Ser Ser Arg Pro Leu Ala Asp
    130   135   140
Phe Ala Glu Gly Leu Ile Lys Gly Cys Ile Lys Tyr His Lys Glu Asn
145   150   155   160
Met Thr Ile Val Arg Glu Asn Leu Pro Ala Lys Thr Gly Phe Lys Val
                165   170   175
Arg Phe Val Leu Thr Lys Gly Asp Pro Asp Glu
            180   185

<210> 11
<211> 543
<212> DNA
<213> Legionella pneumophila

<400> 11
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ggcacttact cggatacaga atttcagcaa ttgattaagg ccattgcgaa gaggaccaat 180
cagcacgctt ctgttttttt agaggccttt ggtgaataca tgtttcctat cttatcgagt 240
aagtgcgcaa ttttttaaa aaaggacatg acattaaaag aatttttaaa aagcattgat 300
ggaacaattc atgtggaagt agaaaagtta tacccagatg aaacattacc taccattagc 360
tatgaagagc ctgctgcaaa ccaattggtt atggtgtatc gatcgcatag aagactctgt 420
catttgcaa tggggctcat ccagggagca gcgcaacatt ttaaaaagaa aattaccatt 480
aagcagactc actgcatgtt aaaaaaagat gatcattgtc gtttggagat tacctttgag 540
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<210> 12
<211> 180
<212> PRT
<213> Legionella pneumophila

<400> 12

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 1               5                  10                  15
Phe Gly Ile Glu Thr Trp Asp Gln Leu Val Ser Ser Leu Asp Leu Pro
            20                  25                  30
Ser Gly Gly Ser Tyr Thr Ala Gly Gly Thr Tyr Ser Asp Thr Glu Phe
        35                  40                  45
Gln Gln Leu Ile Lys Ala Ile Ala Lys Arg Thr Asn Gln His Ala Ser
    50                  55                  60
Val Phe Leu Glu Ala Phe Gly Glu Tyr Met Phe Pro Ile Leu Ser Ser
65                  70                  75                  80
Lys Cys Ala Ile Phe Leu Lys Lys Asp Met Thr Leu Lys Glu Phe Leu
                85                  90                  95
Lys Ser Ile Asp Gly Thr Ile His Val Glu Val Glu Lys Leu Tyr Pro
            100                 105                 110
Asp Glu Thr Leu Pro Thr Ile Ser Tyr Glu Glu Pro Ala Ala Asn Gln
        115                 120                 125
Leu Val Met Val Tyr Arg Ser His Arg Arg Leu Cys His Phe Ala Met
    130                 135                 140
Gly Leu Ile Gln Gly Ala Ala Gln His Phe Lys Lys Lys Ile Thr Ile
145                 150                 155                 160
Lys Gln Thr His Cys Met Leu Lys Lys Asp Asp His Cys Arg Leu Glu
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Ile Thr Phe Glu
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<210> 13
<211> 1158
<212> DNA
<213> Homo sapiens

<400> 13

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ataatatatg atgactccaa aacttatgat ttggttgctg ctgcaagcaa agtcctcaat 180
ctcaatgctg gagaaatcct ccaaatgttt gggaagatgt ttttcgtctt ttgccaagaa 240
tctggttatg atacaatctt gcgtgtcctg ggctctaatg tcagagaatt tctacagaac 300
cttgatgctc tgcacgacca ccttgctacc atctacccag gaatgcgtgc accttccttt 360
aggtgcactg atgcagaaaa gggcaaagga ctcattttgc actactactc agagagagaa 420
ggacttcagg atattgtcat tggaatcatc aaaacagtgg cacaacaaat ccatggcact 480
gaaatagaca tgaaggttat tcagcaaaga aatgaagaat gtgatcatac tcaattttta 540
attgaagaaa aagagtcaaa agaagaggat ttttatgaag atcttgacag atttgaagaa 600
aatggtaccc aggaatcacg catcagccca tatacattct gcaaagcttt tccttttcat 660
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ccccagctcc agcctgggaa ttgcagcctt ctgtctgtct tctcgctggt tcgtcctcat 780
attgatatta gtttccatgg gatcctttct cacatcaata ctgtttttgt attgagaagc 840
aaggaaggat tgttggatgt ggagaaatta gaatgtgagg atgaactgac tgggactgag 900
atcagctgct tacgtctcaa gggtcaaatg atctacttac ctgaagcaga tagcatactt 960
tttctatgtt caccaagtgt catgaacctg gacgatttga caaggagagg gctgtatcta 1020
agtgacatcc ctctgcatga tgccacgcgc gatcttgttc ttttgggaga acaatttaga 1080
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<210> 14
<211> 385
<212> PRT
<213> Homo sapiens

<400> 14

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

<210> 15
<211> 651
<212> DNA
<213> Homo sapiens

<400> 15
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tatgatgaca tcatcaccat taagctcatc caagaagcct gcaaggttct ggatgtgtcc 180
atggaagcca ttctgaagct ctttggcgaa tacttcttta agttctgtaa gatgtctggc 240
tatgacagga tgctgcggac acttggagga aatctcaccg agtttattga aaacctagat 300
gcactccaca gttacctggc actgtcctat caggaaatga acgcaccatc ctttcgagtg 360
gaggaaggag ctgacggggc gatgcttctc cactactact cagacagaca tggtctgtgt 420
cacattgtac caggtatcat tgaagctgtg gccaaggact tctttgacac tgatgtggcc 480
atgagtatcc tggatatgaa cgaagaggtg gaaaggacag ggaagaaaga acatgttgtg 540
tttctggtcg tgcagaaggc tcacagacag ataagaggag caaaggcaag ccggccacaa 600
ggcagtgagg acagccaggc agaccaggag gctctccagg gaacactcct t 651

<210> 16
<211> 217
<212> PRT
<213> Homo sapiens

<400> 16
Met Tyr Gly Phe Ile Asn Thr Cys Leu Gln Ser Leu Val Thr Glu Lys

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 1               5                  10                  15
Phe Gly Glu Glu Thr Trp Glu Lys Leu Lys Ala Pro Ala Glu Val Gln
            20                  25                  30
Asp Val Phe Met Thr Tyr Thr Val Tyr Asp Asp Ile Ile Thr Ile Lys
        35                  40                  45
Leu Ile Gln Glu Ala Cys Lys Val Leu Asp Val Ser Met Glu Ala Ile
    50                  55                  60
Leu Lys Leu Phe Gly Glu Tyr Phe Phe Lys Phe Cys Lys Met Ser Gly
65                  70                  75                  80
Tyr Asp Arg Met Leu Arg Thr Leu Gly Gly Asn Leu Thr Glu Phe Ile
                85                  90                  95
Glu Asn Leu Asp Ala Leu His Ser Tyr Leu Ala Leu Ser Tyr Gln Glu
            100                 105                 110
Met Asn Ala Pro Ser Phe Arg Val Glu Glu Gly Ala Asp Gly Ala Met
        115                 120                 125
Leu Leu His Tyr Tyr Ser Asp Arg His Gly Leu Cys His Ile Val Pro
    130                 135                 140
Gly Ile Ile Glu Ala Val Ala Lys Asp Phe Phe Asp Thr Asp Val Ala
145                 150                 155                 160
Met Ser Ile Leu Asp Met Asn Glu Glu Val Glu Arg Thr Gly Lys Lys
                165                 170                 175
Glu His Val Val Phe Leu Val Val Gln Lys Ala His Arg Gln Ile Arg
            180                 185                 190
Gly Ala Lys Ala Ser Arg Pro Gln Gly Ser Glu Asp Ser Gln Ala Asp
        195                 200                 205
Gln Glu Ala Leu Gln Gly Thr Leu Leu
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<210> 17
<211> 1158
<212> DNA
<213> Rattus norvegicus

<400> 17

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ataatctacg atgattccaa aacctatgac ttggtggctg ctgcgagcaa agtcctcaac 180
ctcaatgctg gtgaaatcct gcagatgttt gggaagatgt ttttcgtctt ctgtcaagag 240
tctggctatg ataccatctt gcgtgtcctg ggatctaatg tcagggagtt tttgcagaac 300
ctcgacgccc tgcacgacca cctcgccacc atctacccag ggatgcgcgc accttccttc 360
cggtgcaccg atgcagaaaa aggcaaaggg ctcattctgc actactactc ggaaagagag 420
gggcttcagg acattgtgat cgggattatc aagactgtag ctcaacagat ccatggcact 480
gagatagaca tgaaggttat tcagcaaaga agtgaagaat gtgatcatac ccaattttta 540
attgaagaaa aagaatcaaa agaagaggat ttttatgaag atctggacag gtttgaagag 600
aacggtaccc aggactcccg tatcagcccg tacaccttct gcaaagcgtt tccttttcac 660
atcatatttg accgggacct agtagtcacg cagtgtggaa atgctatcta cagagtgctc 720
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attgacatca gtttccacgg gattctttca cacatcaata ccgtctttgt actgagaagc 840
aaggaagggt tgctggatgt tgagaaactt gaatgtgagg atgaactgac tggggcagag 900
attagctgcc tccgtctcaa aggccaaatg atctatttac cggaagcaga tagcatcctc 960
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agtgacatcc ctctccatga tgctacacga gacctggtcc ttttgggaga acagttccgg 1080
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agggctttgg aggattga                                              1158
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<210> 18
<211> 385
<212> PRT
<213> Rattus norvegicus

<400> 18

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Tyr Gly Pro Glu Val Trp Glu Asp Ile Lys Lys Glu Ala Gln Leu Asp
            20                  25                  30
Glu Glu Gly Gln Phe Leu Val Arg Ile Ile Tyr Asp Asp Ser Lys Thr
        35                  40                  45
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Tyr Asp Leu Val Ala Ala Ala Ser Lys Val Leu Asn Leu Asn Ala Gly
    50                  55                  60
Glu Ile Leu Gln Met Phe Gly Lys Met Phe Phe Val Phe Cys Gln Glu
65                  70                  75                  80
Ser Gly Tyr Asp Thr Ile Leu Arg Val Leu Gly Ser Asn Val Arg Glu
                85                  90                  95
Phe Leu Gln Asn Leu Asp Ala Leu His Asp His Leu Ala Thr Ile Tyr
            100                 105                 110
Pro Gly Met Arg Ala Pro Ser Phe Arg Cys Thr Asp Ala Glu Lys Gly
        115                 120                 125
Lys Gly Leu Ile Leu His Tyr Tyr Ser Glu Arg Glu Gly Leu Gln Asp
    130                 135                 140
Ile Val Ile Gly Ile Ile Lys Thr Val Ala Gln Gln Ile His Gly Thr
145                 150                 155                 160
Glu Ile Asp Met Lys Val Ile Gln Gln Arg Ser Glu Glu Cys Asp His
                165                 170                 175
Thr Gln Phe Leu Ile Glu Glu Lys Glu Ser Lys Glu Glu Asp Phe Tyr
            180                 185                 190
Glu Asp Leu Asp Arg Phe Glu Glu Asn Gly Thr Gln Asp Ser Arg Ile
        195                 200                 205
Ser Pro Tyr Thr Phe Cys Lys Ala Phe Pro Phe His Ile Ile Phe Asp
    210                 215                 220
Arg Asp Leu Val Val Thr Gln Cys Gly Asn Ala Ile Tyr Arg Val Leu
225                 230                 235                 240
Pro Gln Leu Gln Pro Gly Lys Cys Ser Leu Leu Ser Val Phe Ser Leu
                245                 250                 255
Val Arg Pro His Ile Asp Ile Ser Phe His Gly Ile Leu Ser His Ile
            260                 265                 270
Asn Thr Val Phe Val Leu Arg Ser Lys Glu Gly Leu Leu Asp Val Glu
        275                 280                 285
Lys Leu Glu Cys Glu Asp Glu Leu Thr Gly Ala Glu Ile Ser Cys Leu
    290                 295                 300
Arg Leu Lys Gly Gln Met Ile Tyr Leu Pro Glu Ala Asp Ser Ile Leu
305                 310                 315                 320
Phe Leu Cys Ser Pro Ser Val Met Asn Leu Asp Asp Leu Thr Arg Arg
                325                 330                 335
Gly Leu Tyr Leu Ser Asp Ile Pro Leu His Asp Ala Thr Arg Asp Leu
            340                 345                 350
Val Leu Leu Gly Glu Gln Phe Arg Glu Glu Tyr Lys Leu Thr Gln Glu
        355                 360                 365
Leu Glu Ile Leu Thr Asp Arg Leu Gln Leu Thr Leu Arg Ala Leu Glu
    370                 375                 380
Asp
385
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<210> 19
<211> 1158
<212> DNA
<213> Rattus norvegicus

<400> 19

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<210> 20
<211> 385
<212> PRT
<213> Rattus norvegicus

<400> 20

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Tyr	Gly	Pro	Glu	Val	Trp	Glu	Asp	Ile	Lys	Lys	Glu	Ala	Gln	Leu	Asp
			20					25					30		
Glu	Glu	Gly	Gln	Phe	Leu	Val	Arg	Ile	Ile	Tyr	Asp	Asp	Ser	Lys	Thr
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Tyr	Asp	Leu	Val	Ala	Ala	Ala	Ser	Lys	Val	Leu	Asn	Leu	Asn	Ala	Gly
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Glu	Ile	Leu	Gln	Met	Phe	Gly	Lys	Met	Phe	Phe	Val	Phe	Cys	Gln	Glu
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Ser	Gly	Tyr	Asp	Thr	Ile	Leu	Arg	Val	Leu	Gly	Ser	Asn	Val	Arg	Glu
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Phe	Leu	Gln	Asn	Leu	Asp	Ala	Leu	His	Asp	His	Leu	Ala	Thr	Ile	Tyr
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Pro	Gly	Met	Arg	Ala	Pro	Ser	Phe	Arg	Cys	Thr	Asp	Ala	Glu	Lys	Gly
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Lys	Gly	Leu	Ile	Leu	His	Tyr	Tyr	Ser	Glu	Arg	Glu	Gly	Leu	Gln	Asp
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Ile	Val	Ile	Gly	Ile	Ile	Lys	Thr	Val	Ala	Gln	Gln	Ile	His	Gly	Thr
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Glu	Ile	Asp	Met	Lys	Val	Ile	Gln	Gln	Arg	Ser	Glu	Glu	Cys	Asp	His
				165					170					175	
Thr	Gln	Phe	Leu	Ile	Glu	Glu	Lys	Glu	Ser	Lys	Glu	Glu	Asp	Phe	Tyr
			180					185					190		
Glu	Asp	Leu	Asp	Arg	Phe	Glu	Glu	Asn	Gly	Thr	Gln	Asp	Ser	Arg	Ile
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Ser	Pro	Tyr	Thr	Phe	Cys	Lys	Ala	Phe	Pro	Phe	His	Ile	Ile	Phe	Asp
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Arg	Asp	Leu	Val	Val	Thr	Gln	Cys	Gly	Asn	Ala	Ile	Tyr	Arg	Val	Leu
225					230					235					240
Pro	Gln	Leu	Gln	Pro	Gly	Lys	Cys	Ser	Leu	Leu	Ser	Val	Phe	Ser	Leu
				245					250					255	
Val	Arg	Pro	His	Ile	Asp	Ile	Ser	Phe	His	Gly	Ile	Leu	Ser	His	Ile
			260					265					270		
Asn	Thr	Val	Phe	Val	Leu	Arg	Ser	Lys	Glu	Gly	Leu	Leu	Asp	Val	Glu
		275					280					285			
Lys	Leu	Glu	Cys	Glu	Asp	Glu	Leu	Thr	Gly	Ala	Glu	Ile	Ser	Cys	Leu
	290					295					300				
Arg	Leu	Lys	Gly	Gln	Met	Ile	Tyr	Leu	Pro	Glu	Ala	Asp	Ser	Ile	Leu
305					310					315					320
Phe	Leu	Cys	Ser	Pro	Ser	Val	Met	Asn	Leu	Asp	Asp	Leu	Thr	Arg	Arg
				325					330					335	
Gly	Leu	Tyr	Leu	Ser	Asp	Ile	Pro	Leu	His	Asp	Ala	Thr	Arg	Asp	Leu
			340					345					350		
Val	Leu	Leu	Gly	Glu	Gln	Phe	Arg	Glu	Glu	Tyr	Lys	Leu	Thr	Gln	Glu
		355					360					365			
Leu	Glu	Ile	Leu	Thr	Asp	Arg	Leu	Gln	Leu	Thr	Leu	Arg	Ala	Leu	Glu
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385															

<210> 21
<211> 2229
<212> DNA
<213> Rattus norvegicus

<400> 21
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tatgatgaca tcatcaccat taagctcatc caagaagcct gcaaggttct ggatgtgtcc 180
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cacattgtac caggtatcat tgaagctgtg gccaaggact tctttgacac tgatgtggcc 480
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<210> 22
<211> 742
<212> PRT
<213> Rattus norvegicus

<400> 22
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Asp Val Phe Met Thr Tyr Thr Val Tyr Asp Asp Ile Ile Thr Ile Lys
        35   40   45
Leu Ile Gln Glu Ala Cys Lys Val Leu Asp Val Ser Met Glu Ala Ile
    50   55   60
Leu Lys Leu Phe Gly Glu Tyr Phe Phe Lys Phe Cys Lys Met Ser Gly
65   70   75   80
Tyr Asp Arg Met Leu Arg Thr Leu Gly Gly Asn Leu Thr Glu Phe Ile
                85   90   95
Glu Asn Leu Asp Ala Leu His Ser Tyr Leu Ala Leu Ser Tyr Gln Glu
            100   105   110
Met Asn Ala Pro Ser Phe Arg Val Glu Glu Gly Ala Asp Gly Ala Met
        115   120   125
Leu Leu His Tyr Tyr Ser Asp Arg His Gly Leu Cys His Ile Val Pro
    130   135   140
Gly Ile Ile Glu Ala Val Ala Lys Asp Phe Phe Asp Thr Asp Val Ala
145   150   155   160
Met Ser Ile Leu Asp Met Asn Glu Glu Val Glu Arg Thr Gly Lys Lys
                165   170   175

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Glu His Val Val Phe Leu Val Val Gln Lys Ala His Arg Gln Ile Arg
            180                 185                 190
Gly Ala Lys Ala Ser Arg Pro Gln Gly Ser Glu Asp Ser Gln Ala Asp
        195                 200                 205
Gln Glu Ala Leu Gln Gly Thr Leu Leu Arg Met Lys Glu Arg Tyr Leu
    210                 215                 220
Asn Ile Pro Val Cys Pro Gly Glu Lys Ser His Ser Thr Ala Val Arg
225                 230                 235                 240
Ala Ser Val Leu Phe Gly Lys Gly Pro Leu Arg Asp Thr Phe Gln Pro
                245                 250                 255
Val Tyr Pro Glu Arg Leu Trp Val Glu Glu Glu Val Phe Cys Asp Ala
            260                 265                 270
Phe Pro Phe His Ile Val Phe Asp Glu Ala Leu Arg Val Lys Gln Ala
        275                 280                 285
Gly Val Asn Ile Gln Lys Tyr Val Pro Gly Ile Leu Thr Gln Lys Phe
    290                 295                 300
Ala Leu Asp Glu Tyr Phe Ser Ile Ile His Pro Gln Val Thr Phe Asn
305                 310                 315                 320
Ile Ser Ser Ile Cys Lys Phe Ile Asn Ser Gln Phe Val Leu Lys Thr
                325                 330                 335
Arg Lys Glu Met Met Pro Lys Ala Arg Lys Ser Gln Pro Met Leu Lys
            340                 345                 350
Leu Arg Gly Gln Met Ile Trp Met Glu Ser Leu Arg Cys Met Ile Phe
        355                 360                 365
Met Cys Ser Pro Asn Val Arg Ser Leu Gln Glu Leu Glu Glu Ser Lys
    370                 375                 380
Met His Leu Ser Asp Ile Ala Pro His Asp Thr Thr Arg Asp Leu Ile
385                 390                 395                 400
Leu Leu Asn Gln Gln Arg Leu Ala Glu Met Glu Leu Ser Cys Gln Leu
                405                 410                 415
Glu Lys Lys Lys Glu Glu Leu Arg Val Leu Ser Asn His Leu Ala Ile
            420                 425                 430
Glu Lys Lys Lys Thr Glu Thr Leu Leu Tyr Ala Met Leu Pro Glu His
        435                 440                 445
Val Ala Asn Gln Leu Lys Glu Gly Arg Lys Val Ala Ala Gly Glu Phe
    450                 455                 460
Glu Thr Cys Thr Ile Leu Phe Ser Asp Val Val Thr Phe Thr Asn Ile
465                 470                 475                 480
Cys Ala Ala Cys Glu Pro Ile Gln Ile Val Asn Met Leu Asn Ser Met
                485                 490                 495
Tyr Ser Lys Phe Asp Arg Leu Thr Ser Val His Asp Val Tyr Lys Val
            500                 505                 510
Glu Thr Ile Gly Asp Ala Tyr Met Val Val Gly Gly Val Pro Val Pro
        515                 520                 525
Val Glu Ser His Ala Gln Arg Val Ala Asn Phe Ala Leu Gly Met Arg
    530                 535                 540
Ile Ser Ala Lys Glu Val Met Asn Pro Val Thr Gly Glu Pro Ile Gln
545                 550                 555                 560
Ile Arg Val Gly Ile His Thr Gly Pro Val Leu Ala Gly Val Val Gly
                565                 570                 575
Asp Lys Met Pro Arg Tyr Cys Leu Phe Gly Asp Thr Val Asn Thr Ala
            580                 585                 590
Ser Arg Met Glu Ser His Gly Leu Pro Ser Lys Val His Leu Ser Pro
        595                 600                 605
Thr Ala His Arg Ala Leu Lys Asn Lys Gly Phe Glu Ile Val Arg Arg
    610                 615                 620
Gly Glu Ile Glu Val Lys Gly Lys Gly Lys Met Thr Thr Tyr Phe Leu
625                 630                 635                 640
Ile Gln Asn Leu Asn Ala Thr Glu Asp Glu Ile Met Gly Arg Pro Ser
                645                 650                 655
Ala Pro Ala Asp Gly Lys Glu Val Cys Thr Pro Gly Asn Gln Val Arg
            660                 665                 670
Lys Ser Pro Ala Val Pro Arg Asn Thr Asp His Gln Gln Gln Val Tyr
        675                 680                 685
Lys Gly Asp Pro Ala Asp Ala Ser Asn Glu Val Thr Leu Ala Gly Ser
    690                 695                 700
Pro Val Ala Gly Arg Asn Ser Thr Asp Ala Val Asn Asn Gln Pro Ser
705                 710                 715                 720
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Pro Asp Glu Thr Lys Thr Ser Val Val Ala Ser Gly Pro Val Leu Ser
725 730 735
Ala Phe Cys Val Val Leu
740

<210> 23
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 23
Cys Ala Ala Thr Cys Gly Ala Gly Ala Cys Cys Cys Thr Gly Gly Thr
1 5 10 15
Gly Gly Ala

<210> 24
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 24
Gly Cys Ala Cys Ala Cys Ala Cys Thr Cys Cys Ala Gly Gly Cys Cys
1 5 10 15
Cys Thr

<210> 25
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 25
Cys Ala Ala Cys Cys Ala Gly Ala Cys Ala Thr Gly Gly Gly Thr Cys
1 5 10 15
Cys Ala Cys

<210> 26
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 26
Gly Thr Thr Ala Ala Cys Gly Ala Ala Ala Ala Gly Gly Cys Cys Cys
1 5 10 15
Ala Cys Ala Gly Ala
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<210> 27
<211> 21

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 27
Gly Thr Thr Gly Thr Gly Gly Ala Thr Cys Cys Ala Gly Thr Cys Ala
 1   5   10   15
Cys Cys Thr Cys Thr
            20

<210> 28
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 28
Gly Ala Thr Thr Cys Thr Cys Ala Gly Thr Gly Thr Gly Cys Thr Gly
 1   5   10   15
Gly Thr Cys Ala Cys
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<210> 29
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 29
Cys Ala Ala Gly Gly Ala Gly Gly Ala Ala Gly Cys Thr Thr Ala Thr
 1   5   10   15
Cys Thr Ala Thr Gly Ala Ala
            20

<210> 30
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 30
Ala Thr Thr Thr Gly Ala Cys Gly Ala Ala Gly Gly Cys Gly Ala Ala
 1   5   10   15
Gly Ala Ala Gly Cys Thr
            20