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<110> WUHAN NEUROPHTH BIOLOGICAL TECHNOLOGY LIMITED COMPANY

<120> COMPOSITIONS AND METHODS FOR TREATING LEBER'S HEREDITARY OPTIC NEUROPATHY

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<223> COX10-ND1-3'UTR*

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<223> COX10-opt_ND1-3'UTR*

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agctgttcac caaggagccc ctgaagcccg ccaccagcac catcaccctg tacatcaccg 480

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acgggggctc ccgcgtggcc gtctcggcgc ctgcgtgacc tccccgccgg cgggatgtgg 240

cgactacgtc gggccgctgt ggcctgatgg ccaacctgct gctgctgatc gtgcccatcc 300

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<220>
<223> beta-actin-A primer

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<210> 87
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<210> 88
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<220>
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<400> 88
agtgcgttcg tagtttgag 19

<210> 89
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<220>
<223> ND6-R primer

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<210> 91
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agtgtgggtt tagtaatg 18

<210> 92
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<210> 95
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gctccccgct tagcccacgg agtgactgtg gttgtggtgg gggggttctt aaaataactt 180

tttagccccc gtcttcctat tttgagtttg gttcagatct taagcagctc catgcaactg 240

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ggtggctgaa ggattctaga gaacctttg ttcttgcaag gaaaacaaga atccaaaacc 360

agtgactgtt ctgtga 376

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<211> 146
<212> DNA
<213> Homo sapiens

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ctgtgtaggc tgcacaagag ccttgattga agatatattc tttctgaaca gtatttaagg 120

tttccaataa aatgtacacc cctcag 146

<210> 113
<211> 1956
<212> DNA
<213> Homo sapiens

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agcacttgct tgatgtatct ttggcgtgtg tgctactctc atctgtgtgt atgtgtgttg 180

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gaagaggagt gaaacaaaaa ctgtcagcta tgtgtgcctg gtctgggatc cttctctggg 1920

tgacagtggc atcatgaatc ttagaatcag ctcccc 1956

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<211> 411
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aaaaaataga ttcaaatgtg ttatcctctc tctgaaacgc ttcctataac tcgagtttat 300

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ctttgtattc tgggctaaga ttcattaaaa actagctgct cttaacttac a 411

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<213> Homo sapiens

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tctggaacac aagaagagaa attgctgggt ttagaacaag attataaacg aattcggtgc 120

tcagtgatca cttgacagtt ttttttttt ttaaatatta cccaaaatgc tccccaaata 180

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tccctcttgg ctgcccccag gtatttactg tggagaacat tgcataggaa tgtctggaaa 1380

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<211> 288
<212> DNA
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tgcaaacatt aatgtgaaat aaattgaatt taatgttgaa tactttcagg cattcactta 180

ataaagacac tgttaagcac tgttatgctc agtcatacac gcgaaaggta caatgtcttt 240

tagctaattc taattaaaaa ttacagactg gtgtacaaga tacttgtg 288

<210> 117
<211> 83
<212> DNA
<213> Homo sapiens

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gtgctgccca ccctccagct gcc 83

<210> 118
<211> 66
<212> DNA
<213> Homo sapiens

<400> 118
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aactta 66

<210> 119
<211> 214
<212> DNA
<213> Homo sapiens

<400> 119
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gtactgcaga atacagtaag ctgctctatt gtagcatttc ttgatgttgc ttagtcactt 120

atttcataaa caacttaatg ttctgaataa tttcttacta aacattttgt tattgggcaa 180

gtgattgaaa atagtaaatg ctttgtgtga ttga 214

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<211> 286
<212> DNA
<213> Homo sapiens

<400> 120
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ttcctgaact atgacacatg aatatgtggg ctaagaaata gttcctcttg ataaataaac 120

aattaacaaa tactttggac agtaagtctt tctcagttct taatgataat gcagggcact 180

tactagcata agaattggtt tgggatttaa ctgtttatga agctaacttg atttccgtgt 240

tttgttaaaa tttcattgtt ctagcacatc tttaactgtg atagtt 286

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<211> 721
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tggtggagag gcctccctgg ctgcctctgg gaggggtgct gccttgtaga tggagcaagt 120

gagcactgag ggtctggtgc caatcctgta ggcacaaaac cagaagtttc tacattctct 180

atttttgtta atcatcttct ctttttccag aatttggaag ctagaatggt gggaatgtca 240

gtagtgccag aaagagagaa ccaagcttgt ctttaaagtt actgatcaca ggacgttgct 300

ttttcactgt ttcctattaa tcttcagctg aacacaagca aaccttctca ggaggtgtct 360

cctaccctct tattgttcct cttacgctct gctcaatgaa accttcctct tgagggtcat 420

tttccttttct gtattaatta taccagtgtt aagtgacata gataagaact ttgcacactt 480

caaatcagag cagtgattct ctcttctctc ccctttttcct tcagagtgaa tcatccagac 540

tcctcatgga taggtcgggt gttaaagttg ttttgattat gtacctttg atagatccac 600

ataaaaagaa atgtgaagtt ttcttttact atcttttcat ttatcaagca gagacctttg 660

ttgggaggcg gtttgggaga acacatttct aatttgaatg aaatgaaatc tattttcagt 720

g 721

<210> 122
<211> 163
<212> DNA
<213> Homo sapiens

<400> 122
cagaagaagt gacggctggg ggcacagtgg gctgggcgcc cctgcagaac atgaaccttc 60

cgctcctggc tgccacaggg tcctccgatg ctggcctttg cgcctctaga ggcagccact 120

catggattca agtcctggct ccgcctcttc catcaggacc act 163

<210> 123
<211> 60
<212> DNA
<213> Homo sapiens

<400> 123
agaggacaca ctctgcaccc ccccacccca cgaccttggc ccgagcccct ccgtgaggaa 60

<210> 124
<211> 65
<212> DNA
<213> Rattus norvegicus

<400> 124
agcccttccg ccaggctgtg tgtcaggccc gtggtgggtg ttttgtagta gtgtagagca 60

ttgca 65

<210> 125
<211> 231
<212> DNA
<213> Homo sapiens

<400> 125
cttatgttct gtgcgcattc tggcaggaat tctgtctctt cagagactca tcctcaaaac 60

aagacttgac actgtgtcct tgccccagtc ctaggaactg tggcacacag agatgttcat 120

tttaaaaacg gatttcatga aacactcttg tacttatgtt tataagagag cactgggtag 180

ccaagtgatc ttcccattca cagagttagt aaacctctgt actacatgct g 231

<210> 126
<211> 28
<212> PRT
<213> Homo sapiens

<400> 126

Met Ala Ala Ser Pro His Thr Leu Ser Ser Arg Leu Leu Thr Gly Cys
1 5 10 15

Val Gly Gly Ser Val Trp Tyr Leu Glu Arg Arg Thr
20 25

<210> 127
<211> 29
<212> PRT
<213> Homo sapiens

<400> 127

Met Ser Val Leu Thr Arg Leu Leu Leu Arg Gly Leu Thr Arg Leu Gly
1 5 10 15

Ser Ala Ala Pro Val Arg Arg Ala Arg Ile His Ser Leu
20 25

<210> 128

<211> 10
<212> PRT
<213> Homo sapiens

<400> 128

Met Trp Arg Leu Arg Arg Ala Ala Val Ala
1 5 10

<210> 129
<211> 28
<212> PRT
<213> Homo sapiens

<400> 129

Met Ala Ala Ser Pro His Thr Leu Ser Ser Arg Leu Leu Thr Gly Cys
1 5 10 15

Val Gly Gly Ser Val Trp Tyr Leu Glu Arg Arg Thr
20 25

<210> 130
<211> 122
<212> PRT
<213> Saccharomyces cerevisiae

<400> 130

Met Ala Phe Lys Ser Phe Ile Tyr Ser Lys Gly Tyr His Arg Ser Ala
1 5 10 15

Ala Gln Lys Lys Thr Ala Thr Ser Phe Phe Asp Ser Ser Tyr Gln Tyr
20 25 30

Leu Arg Gln Asn Gln Gly Leu Val Asn Ser Asp Pro Val Leu His Ala
35 40 45

Ser His Leu His Pro His Pro Val Val Val Ala Asn Val Asn Tyr Asn
50 55 60

Asn Val Asp Asp Ile Leu His Pro His Asp Leu Asp Ser Ser Ile Asn
65 70 75 80

```
Asn Thr Asn Asn Pro Leu Thr His Glu Glu Leu Leu Tyr Asn Gln Asn
                85                  90                  95


Val Ser Leu Arg Ser Leu Lys Gln Gln Gln Ser Thr Asn Tyr Val Asn
            100                 105                 110


Asn Asn Asn Asn Asn Gln His Arg Tyr Tyr
        115                 120


<210>  131
<211>  174
<212>  PRT
<213>  Larimichthys crocea

<400>  131

Met Arg Lys Arg Ser Leu Arg Cys His Leu Trp Ser Ala Asn Ala Ser
1               5                   10                  15


Leu Ser Pro Arg Lys Asp Glu Val Thr Ser Arg Lys Glu Ser Glu Asn
            20                  25                  30


Leu Val Lys Gly Lys Lys Asn Lys Lys Ser His Leu His Leu Leu Leu
        35                  40                  45


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


Ser Lys Glu Cys Cys Lys Glu Leu Gly Leu Leu Phe Thr Ser Leu Ile
65                  70                  75                  80


His Ser Ile Gly Ser Phe Pro Phe Asp Glu Glu Pro Lys Ala Ala Ala
                85                  90                  95


Val Phe Leu Pro Gly Ser Leu Pro Gln Leu Thr Val Leu Val Leu Ala
            100                 105                 110


Pro Gly Ser Gly Ser Cys Pro Thr Gly Lys Ser Thr Pro His Leu Ala
        115                 120                 125


Ala Ser Gly Arg Asn Ala Glu Leu Leu Arg Pro Gln Asn Ser Met Ile
```

130 135 140

Val Arg Gln Phe Thr Cys Arg Gly Thr Ile Ser Ser His Leu Cys Ala
145 150 155 160

His Leu Arg Lys Pro His Asp Ser Arg Asn Met Ala Arg Pro
165 170

<210> 132
<211> 56
<212> PRT
<213> Trypanosoma brucei

<400> 132

Met Leu Arg Arg Thr Ser Phe Asn Phe Thr Gly Arg Ala Met Ile Ser
1 5 10 15

Arg Gly Ser Pro Glu Trp Ser His Arg Leu Asp Leu Lys Lys Gly Lys
20 25 30

Lys Thr Thr Met Met His Lys Leu Gly Thr Ser Lys Pro Asn Asn Ala
35 40 45

Leu Gln Tyr Ala Gln Met Thr Leu
50 55

<210> 133
<211> 46
<212> PRT
<213> Neurospora crassa

<400> 133

Met Ile Ser Arg Ser Ala Leu Ser Arg Gly Ser Gln Leu Ala Leu Arg
1 5 10 15

Arg Pro Ala Ala Ala Lys Thr Ala Gln Arg Gly Phe Ala Ala Ala Ala
20 25 30

Ala Ser Pro Ala Ala Ser Tyr Glu Pro Thr Thr Ile Ala Gly
35 40 45

<210> 134
<211> 128
<212> PRT
<213> Homo sapiens

<400> 134

```
Met Pro Glu Leu Ile Leu Tyr Val Ala Ile Thr Leu Ser Val Ala Glu
1               5                   10                  15


Arg Leu Val Gly Pro Gly His Ala Cys Ala Glu Pro Ser Phe Arg Ser
            20                  25                  30


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


Pro Ala Thr Ala Pro His Pro Leu Lys Met Phe Ala Cys Ser Lys Phe
    50                  55                  60


Val Ser Thr Pro Ser Leu Val Lys Ser Thr Ser Gln Leu Leu Ser Arg
65                  70                  75                  80


Pro Leu Ser Ala Val Val Leu Lys Arg Pro Glu Ile Leu Thr Asp Glu
                85                  90                  95


Ser Leu Ser Ser Leu Ala Val Ser Cys Pro Leu Thr Ser Leu Val Ser
            100                 105                 110


Ser Arg Ser Phe Gln Thr Ser Ala Ile Ser Arg Asp Ile Asp Thr Ala
        115                 120                 125
```

<210> 135
<211> 115
<212> PRT
<213> Homo sapiens

<400> 135

```
Met Tyr Arg Leu Met Ser Ala Val Thr Ala Arg Ala Ala Ala Pro Gly
1               5                   10                  15


Gly Leu Ala Ser Ser Cys Gly Arg Arg Gly Val His Gln Arg Ala Gly
```

20 25 30

Leu Pro Pro Leu Gly His Gly Trp Val Gly Gly Leu Gly Leu Gly Leu
35 40 45

Gly Leu Ala Leu Gly Val Lys Leu Ala Gly Gly Leu Arg Gly Ala Ala
50 55 60

Pro Ala Gln Ser Pro Ala Ala Pro Asp Pro Glu Ala Ser Pro Leu Ala
65 70 75 80

Glu Pro Pro Gln Glu Gln Ser Leu Ala Pro Trp Ser Pro Gln Thr Pro
85 90 95

Ala Pro Pro Cys Ser Arg Cys Phe Ala Arg Ala Ile Glu Ser Ser Arg
100 105 110

Asp Leu Leu
115

<210> 136
<211> 140
<212> PRT
<213> Schizosaccharomyces pombe

<400> 136

Met Thr Val Leu Ala Pro Leu Arg Arg Leu His Thr Arg Ala Ala Phe
1 5 10 15

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

Asn Ser Cys Ser Ala Val Arg Arg Tyr Gly Thr Gly Phe Ser Asn Asn
35 40 45

Leu Arg Ile Lys Lys Leu Lys Asn Ala Phe Gly Val Val Arg Ala Asn
50 55 60

Ser Thr Lys Ser Thr Ser Thr Val Thr Thr Ala Ser Pro Ile Lys Tyr
65 70 75 80

```
Asp Ser Ser Phe Val Gly Lys Thr Gly Gly Glu Ile Phe His Asp Met
                85                  90                  95


Met Leu Lys His Asn Val Lys His Val Phe Gly Tyr Pro Gly Gly Ala
            100                 105                 110


Ile Leu Pro Val Phe Asp Ala Ile Tyr Arg Ser Pro His Phe Glu Phe
        115                 120                 125


Ile Leu Pro Arg His Glu Gln Ala Ala Gly His Ala
    130                 135                 140


<210>  137
<211>  125
<212>  PRT
<213>  Glycine max

<400>  137

Met Ile Leu Cys Pro Leu Glu Ala Phe Ile Val Gln His Ile Leu Thr
1               5                   10                  15


Ile Ser Val Met Gly Leu Leu Ser Cys Phe Arg Ser Thr Val Leu Arg
            20                  25                  30


Lys Cys Ser Lys Gly Ser Ser Gly Met Ser Arg Phe Leu Tyr Thr Asn
        35                  40                  45


Asn Phe Gln Arg Asn Leu Ile Ser Ser Gly Gly Asn Glu Ser Tyr Tyr
    50                  55                  60


Gly Tyr Phe Asn Arg Arg Ser Tyr Thr Ser Leu Tyr Met Gly Thr Gly
65                  70                  75                  80


Thr Val Gly Gly Ile Thr Ser Ala Arg Ile Arg Val Pro Asn Val Gly
                85                  90                  95


Cys Glu Gly Phe Met Cys Ser Ser His Leu Ser Ile Thr Gln Arg Asn
            100                 105                 110
```

Ser Arg Leu Ile His Ser Thr Ser Lys Ile Val Pro Asn
        115   120   125

<210> 138
<211> 107
<212> PRT
<213> Chlamydomonas reinhardtii

<400> 138

Met Ala Leu Gln Gln Ala Ala Pro Arg Val Phe Gly Leu Leu Gly Arg
1   5   10   15

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

Phe Lys Asn Gln Gly Phe Asn Gly Ser Leu Gln Ser Val Glu Asn His
        35   40   45

Val Tyr Ala Gln Ala Phe Ser Thr Ser Ser Gln Glu Glu Gln Ala Ala
    50   55   60

Pro Ser Ile Gln Gly Ala Ser Gly Met Lys Leu Pro Gly Met Ala Gly
65   70   75   80

Ser Met Leu Leu Gly Lys Ser Arg Ser Gly Leu Arg Thr Gly Ser Met
                85   90   95

Val Pro Phe Ala Ala Gln Gln Ala Met Asn Met
            100   105

<210> 139
<211> 87
<212> PRT
<213> Homo sapiens

<400> 139

Met Trp Arg Leu Arg Arg Ala Ala Val Ala Cys Glu Val Cys Gln Ser
1   5   10   15

Leu Val Lys His Ser Ser Gly Ile Lys Gly Ser Leu Pro Leu Gln Lys

20 25 30

Leu His Leu Val Ser Arg Ser Ile Tyr His Ser His His Pro Thr Leu
35 40 45

Lys Leu Gln Arg Pro Gln Leu Arg Thr Ser Phe Gln Gln Phe Ser Ser
50 55 60

Leu Thr Asn Leu Pro Leu Arg Lys Leu Lys Phe Ser Pro Ile Lys Tyr
65 70 75 80

Gly Tyr Gln Pro Arg Arg Asn
85

<210> 140
<211> 56
<212> PRT
<213> Homo sapiens

<400> 140

Met Ala Val Leu Trp Arg Leu Ser Ala Val Cys Gly Ala Leu Gly Gly
1 5 10 15

Arg Ala Leu Leu Leu Arg Thr Pro Val Val Arg Pro Ala His Ile Ser
20 25 30

Ala Phe Leu Gln Asp Arg Pro Ile Pro Glu Trp Cys Gly Val Gln His
35 40 45

Ile His Leu Ser Pro Ser His His
50 55

<210> 141
<211> 162
<212> PRT
<213> Homo sapiens

<400> 141

Met Ala Ala Ile Leu Gly Asp Thr Ile Met Val Ala Lys Gly Leu Val
1 5 10 15

```
Lys Leu Thr Gln Ala Ala Val Glu Thr His Leu Gln His Leu Gly Ile
            20                  25                  30


Gly Gly Glu Leu Ile Met Ala Ala Arg Ala Leu Gln Ser Thr Ala Val
        35                  40                  45


Glu Gln Ile Gly Met Phe Leu Gly Lys Val Gln Gly Gln Asp Lys His
    50                  55                  60


Glu Glu Tyr Phe Ala Glu Asn Phe Gly Gly Pro Glu Gly Glu Phe His
65                  70                  75                  80


Phe Ser Val Pro His Ala Ala Gly Ala Ser Thr Asp Phe Ser Ser Ala
                85                  90                  95


Ser Ala Pro Asp Gln Ser Ala Pro Pro Ser Leu Gly His Ala His Ser
            100                 105                 110


Glu Gly Pro Ala Pro Ala Tyr Val Ala Ser Gly Pro Phe Arg Glu Ala
        115                 120                 125


Gly Phe Pro Gly Gln Ala Ser Ser Pro Leu Gly Arg Ala Asn Gly Arg
    130                 135                 140


Leu Phe Ala Asn Pro Arg Asp Ser Phe Ser Ala Met Gly Phe Gln Arg
145                 150                 155                 160


Arg Phe



<210>  142
<211>  117
<212>  PRT
<213>  Oryza sativa

<400>  142

Met Ala Leu Leu Leu Arg His Ser Pro Lys Leu Arg Arg Ala His Ala
1               5                   10                  15
```

```
Ile Leu Gly Cys Glu Arg Gly Thr Val Val Arg His Phe Ser Ser Ser
            20                  25                  30


Thr Cys Ser Ser Leu Val Lys Glu Asp Thr Val Ser Ser Ser Asn Leu
        35                  40                  45


His Pro Glu Tyr Ala Lys Lys Ile Gly Gly Ser Asp Phe Ser His Asp
    50                  55                  60


Arg Gln Ser Gly Lys Glu Leu Gln Asn Phe Lys Val Ser Pro Gln Glu
65                  70                  75                  80


Ala Ser Arg Ala Ser Asn Phe Met Arg Ala Ser Lys Tyr Gly Met Pro
                85                  90                  95


Ile Thr Ala Asn Gly Val His Ser Leu Phe Ser Cys Gly Gln Val Val
            100                 105                 110


Pro Ser Arg Cys Phe
        115


<210>  143
<211>  66
<212>  PRT
<213>  Neurospora crassa

<400>  143

Met Ala Ser Thr Arg Val Leu Ala Ser Arg Leu Ala Ser Gln Met Ala
1               5                   10                  15


Ala Ser Ala Lys Val Ala Arg Pro Ala Val Arg Val Ala Gln Val Ser
            20                  25                  30


Lys Arg Thr Ile Gln Thr Gly Ser Pro Leu Gln Thr Leu Lys Arg Thr
        35                  40                  45


Gln Met Thr Ser Ile Val Asn Ala Thr Thr Arg Gln Ala Phe Gln Lys
    50                  55                  60


Arg Ala
```

65

<210> 144
<211> 44
<212> PRT
<213> Homo sapiens

<400> 144

Met Leu Ala Ala Arg Leu Val Cys Leu Arg Thr Leu Pro Ser Arg Val
1 5 10 15

Phe His Pro Ala Phe Thr Lys Ala Ser Pro Val Val Lys Asn Ser Ile
20 25 30

Thr Lys Asn Gln Trp Leu Leu Thr Pro Ser Arg Glu
35 40

<210> 145
<211> 68
<212> PRT
<213> Homo sapiens

<400> 145

Met Ala Ser Arg Val Leu Ser Ala Tyr Val Ser Arg Leu Pro Ala Ala
1 5 10 15

Phe Ala Pro Leu Pro Arg Val Arg Met Leu Ala Val Ala Arg Pro Leu
20 25 30

Ser Thr Ala Leu Cys Ser Ala Gly Thr Gln Thr Arg Leu Gly Thr Leu
35 40 45

Gln Pro Ala Leu Val Leu Ala Gln Val Pro Gly Arg Val Thr Gln Leu
50 55 60

Cys Arg Gln Tyr
65

<210> 146
<211> 67
<212> PRT

<213> Homo sapiens

<400> 146

```
Met Phe Ala Cys Ala Lys Leu Ala Cys Thr Pro Ser Leu Ile Arg Ala
1               5                   10                  15


Gly Ser Arg Val Ala Tyr Arg Pro Ile Ser Ala Ser Val Leu Ser Arg
            20                  25                  30


Pro Glu Ala Ser Arg Thr Gly Glu Gly Ser Thr Val Phe Asn Gly Ala
        35                  40                  45


Gln Asn Gly Val Ser Gln Leu Ile Gln Arg Glu Phe Gln Thr Ser Ala
    50                  55                  60


Ile Ser Arg
65
```

<210> 147
<211> 273
<212> PRT
<213> Artificial Sequence

<220>
<223> crATP6_hsADCK3

<400> 147

```
Met Ala Leu Gln Gln Ala Ala Pro Arg Val Phe Gly Leu Leu Gly Arg
1               5                   10                  15


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


Phe Lys Asn Gln Gly Phe Asn Gly Ser Leu Gln Ser Val Glu Asn His
        35                  40                  45


Val Tyr Ala Gln Ala Phe Ser Thr Ser Ser Gln Glu Glu Gln Ala Ala
    50                  55                  60


Pro Ser Ile Gln Gly Ala Ser Gly Met Lys Leu Pro Gly Met Ala Gly
65                  70                  75                  80
```

```
Ser Met Leu Leu Gly Lys Ser Arg Ser Gly Leu Arg Thr Gly Ser Met
                85                  90                  95

Val Pro Phe Ala Ala Gln Gln Ala Met Asn Met Gly Gly Met Ala Ala
            100                 105                 110

Ile Leu Gly Asp Thr Ile Met Val Ala Lys Gly Leu Val Lys Leu Thr
        115                 120                 125

Gln Ala Ala Val Glu Thr His Leu Gln His Leu Gly Ile Gly Gly Glu
    130                 135                 140

Leu Ile Met Ala Ala Arg Ala Leu Gln Ser Thr Ala Val Glu Gln Ile
145                 150                 155                 160

Gly Met Phe Leu Gly Lys Val Gln Gly Gln Asp Lys His Glu Glu Tyr
                165                 170                 175

Phe Ala Glu Asn Phe Gly Gly Pro Glu Gly Glu Phe His Phe Ser Val
            180                 185                 190

Pro His Ala Ala Gly Ala Ser Thr Asp Phe Ser Ser Ala Ser Ala Pro
        195                 200                 205

Asp Gln Ser Ala Pro Pro Ser Leu Gly His Ala His Ser Glu Gly Pro
    210                 215                 220

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

Gly Gln Ala Ser Ser Pro Leu Gly Arg Ala Asn Gly Arg Leu Phe Ala
                245                 250                 255

Asn Pro Arg Asp Ser Phe Ser Ala Met Gly Phe Gln Arg Arg Phe Gly
            260                 265                 270

Gly
```

<210> 148
<211> 132
<212> PRT
<213> Artificial Sequence

<220>
<223> ncATP9_ncATP9

<400> 148

Met Ala Ser Thr Arg Val Leu Ala Ser Arg Leu Ala Ser Gln Met Ala
1   5   10   15

Ala Ser Ala Lys Val Ala Arg Pro Ala Val Arg Val Ala Gln Val Ser
            20   25   30

Lys Arg Thr Ile Gln Thr Gly Ser Pro Leu Gln Thr Leu Lys Arg Thr
        35   40   45

Gln Met Thr Ser Ile Val Asn Ala Thr Thr Arg Gln Ala Phe Gln Lys
    50   55   60

Arg Ala Met Ala Ser Thr Arg Val Leu Ala Ser Arg Leu Ala Ser Gln
65   70   75   80

Met Ala Ala Ser Ala Lys Val Ala Arg Pro Ala Val Arg Val Ala Gln
                85   90   95

Val Ser Lys Arg Thr Ile Gln Thr Gly Ser Pro Leu Gln Thr Leu Lys
            100   105   110

Arg Thr Gln Met Thr Ser Ile Val Asn Ala Thr Thr Arg Gln Ala Phe
        115   120   125

Gln Lys Arg Ala
    130

<210> 149
<211> 119
<212> PRT
<213> Zea mays

<400> 149

Met Ala Leu Leu Arg Ala Ala Val Ser Glu Leu Arg Arg Arg Gly Arg
1 5 10 15

Gly Ala Leu Thr Pro Leu Pro Ala Leu Ser Ser Leu Leu Ser Ser Leu
20 25 30

Ser Pro Arg Ser Pro Ala Ser Thr Arg Pro Glu Pro Asn Asn Pro His
35 40 45

Ala Asp Arg Arg His Val Ile Ala Leu Arg Arg Cys Pro Pro Leu Pro
50 55 60

Ala Ser Ala Val Leu Ala Pro Glu Leu Leu His Ala Arg Gly Leu Leu
65 70 75 80

Pro Arg His Trp Ser His Ala Ser Pro Leu Ser Thr Ser Ser Ser Ser
85 90 95

Ser Arg Pro Ala Asp Lys Ala Gln Leu Thr Trp Val Asp Lys Trp Ile
100 105 110

Pro Glu Ala Ala Arg Pro Tyr
115

<210> 150
<211> 391
<212> PRT
<213> Artificial Sequence

<220>
<223> ncATP9_zmLOC100282174_spilv1_ncATP9

<400> 150

Met Ala Ser Thr Arg Val Leu Ala Ser Arg Leu Ala Ser Gln Met Ala
1 5 10 15

Ala Ser Ala Lys Val Ala Arg Pro Ala Val Arg Val Ala Gln Val Ser
20 25 30

```
Lys Arg Thr Ile Gln Thr Gly Ser Pro Leu Gln Thr Leu Lys Arg Thr
        35                  40                  45

Gln Met Thr Ser Ile Val Asn Ala Thr Thr Arg Gln Ala Phe Gln Lys
    50                  55                  60

Arg Ala Met Ala Leu Leu Arg Ala Ala Val Ser Glu Leu Arg Arg Arg
65                  70                  75                  80

Gly Arg Gly Ala Leu Thr Pro Leu Pro Ala Leu Ser Ser Leu Leu Ser
                85                  90                  95

Ser Leu Ser Pro Arg Ser Pro Ala Ser Thr Arg Pro Glu Pro Asn Asn
            100                 105                 110

Pro His Ala Asp Arg Arg His Val Ile Ala Leu Arg Arg Cys Pro Pro
        115                 120                 125

Leu Pro Ala Ser Ala Val Leu Ala Pro Glu Leu Leu His Ala Arg Gly
    130                 135                 140

Leu Leu Pro Arg His Trp Ser His Ala Ser Pro Leu Ser Thr Ser Ser
145                 150                 155                 160

Ser Ser Ser Arg Pro Ala Asp Lys Ala Gln Leu Thr Trp Val Asp Lys
                165                 170                 175

Trp Ile Pro Glu Ala Ala Arg Pro Tyr Met Thr Val Leu Ala Pro Leu
            180                 185                 190

Arg Arg Leu His Thr Arg Ala Ala Phe Ser Ser Tyr Gly Arg Glu Ile
        195                 200                 205

Ala Leu Gln Lys Arg Phe Leu Asn Leu Asn Ser Cys Ser Ala Val Arg
    210                 215                 220

Arg Tyr Gly Thr Gly Phe Ser Asn Asn Leu Arg Ile Lys Lys Leu Lys
225                 230                 235                 240
```

```
Asn Ala Phe Gly Val Val Arg Ala Asn Ser Thr Lys Ser Thr Ser Thr
                245                 250                 255


Val Thr Thr Ala Ser Pro Ile Lys Tyr Asp Ser Ser Phe Val Gly Lys
            260                 265                 270


Thr Gly Gly Glu Ile Phe His Asp Met Met Leu Lys His Asn Val Lys
        275                 280                 285


His Val Phe Gly Tyr Pro Gly Gly Ala Ile Leu Pro Val Phe Asp Ala
    290                 295                 300


Ile Tyr Arg Ser Pro His Phe Glu Phe Ile Leu Pro Arg His Glu Gln
305                 310                 315                 320


Ala Ala Gly His Ala Met Ala Ser Thr Arg Val Leu Ala Ser Arg Leu
                325                 330                 335


Ala Ser Gln Met Ala Ala Ser Ala Lys Val Ala Arg Pro Ala Val Arg
            340                 345                 350


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


Thr Leu Lys Arg Thr Gln Met Thr Ser Ile Val Asn Ala Thr Thr Arg
    370                 375                 380


Gln Ala Phe Gln Lys Arg Ala
385                 390


<210>  151
<211>  455
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  zmLOC100282174_hsADCK3_crATP6 _hsATP5G3

<400>  151

Met Ala Leu Leu Arg Ala Ala Val Ser Glu Leu Arg Arg Arg Gly Arg
```

```
1               5                   10                  15

Gly Ala Leu Thr Pro Leu Pro Ala Leu Ser Ser Leu Leu Ser Ser Leu
            20                  25                  30

Ser Pro Arg Ser Pro Ala Ser Thr Arg Pro Glu Pro Asn Asn Pro His
        35                  40                  45

Ala Asp Arg Arg His Val Ile Ala Leu Arg Arg Cys Pro Pro Leu Pro
    50                  55                  60

Ala Ser Ala Val Leu Ala Pro Glu Leu Leu His Ala Arg Gly Leu Leu
65                  70                  75                  80

Pro Arg His Trp Ser His Ala Ser Pro Leu Ser Thr Ser Ser Ser Ser
                85                  90                  95

Ser Arg Pro Ala Asp Lys Ala Gln Leu Thr Trp Val Asp Lys Trp Ile
            100                 105                 110

Pro Glu Ala Ala Arg Pro Tyr Met Ala Ala Ile Leu Gly Asp Thr Ile
        115                 120                 125

Met Val Ala Lys Gly Leu Val Lys Leu Thr Gln Ala Ala Val Glu Thr
    130                 135                 140

His Leu Gln His Leu Gly Ile Gly Gly Glu Leu Ile Met Ala Ala Arg
145                 150                 155                 160

Ala Leu Gln Ser Thr Ala Val Glu Gln Ile Gly Met Phe Leu Gly Lys
                165                 170                 175

Val Gln Gly Gln Asp Lys His Glu Glu Tyr Phe Ala Glu Asn Phe Gly
            180                 185                 190

Gly Pro Glu Gly Glu Phe His Phe Ser Val Pro His Ala Ala Gly Ala
        195                 200                 205

Ser Thr Asp Phe Ser Ser Ala Ser Ala Pro Asp Gln Ser Ala Pro Pro
```

210 215 220

Ser Leu Gly His Ala His Ser Glu Gly Pro Ala Pro Ala Tyr Val Ala
225 230 235 240

Ser Gly Pro Phe Arg Glu Ala Gly Phe Pro Gly Gln Ala Ser Ser Pro
245 250 255

Leu Gly Arg Ala Asn Gly Arg Leu Phe Ala Asn Pro Arg Asp Ser Phe
260 265 270

Ser Ala Met Gly Phe Gln Arg Arg Phe Met Ala Leu Gln Gln Ala Ala
275 280 285

Pro Arg Val Phe Gly Leu Leu Gly Arg Ala Pro Val Ala Leu Gly Gln
290 295 300

Ser Gly Ile Leu Thr Gly Ser Ser Gly Phe Lys Asn Gln Gly Phe Asn
305 310 315 320

Gly Ser Leu Gln Ser Val Glu Asn His Val Tyr Ala Gln Ala Phe Ser
325 330 335

Thr Ser Ser Gln Glu Glu Gln Ala Ala Pro Ser Ile Gln Gly Ala Ser
340 345 350

Gly Met Lys Leu Pro Gly Met Ala Gly Ser Met Leu Leu Gly Lys Ser
355 360 365

Arg Ser Gly Leu Arg Thr Gly Ser Met Val Pro Phe Ala Ala Gln Gln
370 375 380

Ala Met Asn Met Met Phe Ala Cys Ala Lys Leu Ala Cys Thr Pro Ser
385 390 395 400

Leu Ile Arg Ala Gly Ser Arg Val Ala Tyr Arg Pro Ile Ser Ala Ser
405 410 415

Val Leu Ser Arg Pro Glu Ala Ser Arg Thr Gly Glu Gly Ser Thr Val

420 425 430

Phe Asn Gly Ala Gln Asn Gly Val Ser Gln Leu Ile Gln Arg Glu Phe
435 440 445

Gln Thr Ser Ala Ile Ser Arg
450 455

<210> 152
<211> 348
<212> PRT
<213> Artificial Sequence

<220>
<223> zmLOC100282174_hsADCK3_hsATP5G3

<400> 152

Met Ala Leu Leu Arg Ala Ala Val Ser Glu Leu Arg Arg Arg Gly Arg
1 5 10 15

Gly Ala Leu Thr Pro Leu Pro Ala Leu Ser Ser Leu Leu Ser Ser Leu
20 25 30

Ser Pro Arg Ser Pro Ala Ser Thr Arg Pro Glu Pro Asn Asn Pro His
35 40 45

Ala Asp Arg Arg His Val Ile Ala Leu Arg Arg Cys Pro Pro Leu Pro
50 55 60

Ala Ser Ala Val Leu Ala Pro Glu Leu Leu His Ala Arg Gly Leu Leu
65 70 75 80

Pro Arg His Trp Ser His Ala Ser Pro Leu Ser Thr Ser Ser Ser Ser
85 90 95

Ser Arg Pro Ala Asp Lys Ala Gln Leu Thr Trp Val Asp Lys Trp Ile
100 105 110

Pro Glu Ala Ala Arg Pro Tyr Met Ala Ala Ile Leu Gly Asp Thr Ile
115 120 125

```
Met Val Ala Lys Gly Leu Val Lys Leu Thr Gln Ala Ala Val Glu Thr
    130                 135                 140

His Leu Gln His Leu Gly Ile Gly Gly Glu Leu Ile Met Ala Ala Arg
145                 150                 155                 160

Ala Leu Gln Ser Thr Ala Val Glu Gln Ile Gly Met Phe Leu Gly Lys
                165                 170                 175

Val Gln Gly Gln Asp Lys His Glu Glu Tyr Phe Ala Glu Asn Phe Gly
            180                 185                 190

Gly Pro Glu Gly Glu Phe His Phe Ser Val Pro His Ala Ala Gly Ala
        195                 200                 205

Ser Thr Asp Phe Ser Ser Ala Ser Ala Pro Asp Gln Ser Ala Pro Pro
    210                 215                 220

Ser Leu Gly His Ala His Ser Glu Gly Pro Ala Pro Ala Tyr Val Ala
225                 230                 235                 240

Ser Gly Pro Phe Arg Glu Ala Gly Phe Pro Gly Gln Ala Ser Ser Pro
                245                 250                 255

Leu Gly Arg Ala Asn Gly Arg Leu Phe Ala Asn Pro Arg Asp Ser Phe
            260                 265                 270

Ser Ala Met Gly Phe Gln Arg Arg Phe Met Phe Ala Cys Ala Lys Leu
        275                 280                 285

Ala Cys Thr Pro Ser Leu Ile Arg Ala Gly Ser Arg Val Ala Tyr Arg
    290                 295                 300

Pro Ile Ser Ala Ser Val Leu Ser Arg Pro Glu Ala Ser Arg Thr Gly
305                 310                 315                 320

Glu Gly Ser Thr Val Phe Asn Gly Ala Gln Asn Gly Val Ser Gln Leu
                325                 330                 335
```

Ile Gln Arg Glu Phe Gln Thr Ser Ala Ile Ser Arg
340 345

<210> 153
<211> 185
<212> PRT
<213> Artificial Sequence

<220>
<223> ncATP9_zmLOC100282174

<400> 153

Met Ala Ser Thr Arg Val Leu Ala Ser Arg Leu Ala Ser Gln Met Ala
1 5 10 15

Ala Ser Ala Lys Val Ala Arg Pro Ala Val Arg Val Ala Gln Val Ser
20 25 30

Lys Arg Thr Ile Gln Thr Gly Ser Pro Leu Gln Thr Leu Lys Arg Thr
35 40 45

Gln Met Thr Ser Ile Val Asn Ala Thr Thr Arg Gln Ala Phe Gln Lys
50 55 60

Arg Ala Met Ala Leu Leu Arg Ala Ala Val Ser Glu Leu Arg Arg Arg
65 70 75 80

Gly Arg Gly Ala Leu Thr Pro Leu Pro Ala Leu Ser Ser Leu Leu Ser
85 90 95

Ser Leu Ser Pro Arg Ser Pro Ala Ser Thr Arg Pro Glu Pro Asn Asn
100 105 110

Pro His Ala Asp Arg Arg His Val Ile Ala Leu Arg Arg Cys Pro Pro
115 120 125

Leu Pro Ala Ser Ala Val Leu Ala Pro Glu Leu Leu His Ala Arg Gly
130 135 140

Leu Leu Pro Arg His Trp Ser His Ala Ser Pro Leu Ser Thr Ser Ser

145 150 155 160

Ser Ser Ser Arg Pro Ala Asp Lys Ala Gln Leu Thr Trp Val Asp Lys
165 170 175

Trp Ile Pro Glu Ala Ala Arg Pro Tyr
180 185

<210> 154
<211> 455
<212> PRT
<213> Artificial Sequence

<220>
<223> hsADCK3_zmLOC100282174_crATP6 _hsATP5G3

<400> 154

Met Ala Ala Ile Leu Gly Asp Thr Ile Met Val Ala Lys Gly Leu Val
1 5 10 15

Lys Leu Thr Gln Ala Ala Val Glu Thr His Leu Gln His Leu Gly Ile
20 25 30

Gly Gly Glu Leu Ile Met Ala Ala Arg Ala Leu Gln Ser Thr Ala Val
35 40 45

Glu Gln Ile Gly Met Phe Leu Gly Lys Val Gln Gly Gln Asp Lys His
50 55 60

Glu Glu Tyr Phe Ala Glu Asn Phe Gly Gly Pro Glu Gly Glu Phe His
65 70 75 80

Phe Ser Val Pro His Ala Ala Gly Ala Ser Thr Asp Phe Ser Ser Ala
85 90 95

Ser Ala Pro Asp Gln Ser Ala Pro Pro Ser Leu Gly His Ala His Ser
100 105 110

Glu Gly Pro Ala Pro Ala Tyr Val Ala Ser Gly Pro Phe Arg Glu Ala
115 120 125

```
Gly Phe Pro Gly Gln Ala Ser Ser Pro Leu Gly Arg Ala Asn Gly Arg
    130                 135                 140

Leu Phe Ala Asn Pro Arg Asp Ser Phe Ser Ala Met Gly Phe Gln Arg
145                 150                 155                 160

Arg Phe Met Ala Leu Leu Arg Ala Ala Val Ser Glu Leu Arg Arg Arg
                165                 170                 175

Gly Arg Gly Ala Leu Thr Pro Leu Pro Ala Leu Ser Ser Leu Leu Ser
            180                 185                 190

Ser Leu Ser Pro Arg Ser Pro Ala Ser Thr Arg Pro Glu Pro Asn Asn
        195                 200                 205

Pro His Ala Asp Arg Arg His Val Ile Ala Leu Arg Arg Cys Pro Pro
    210                 215                 220

Leu Pro Ala Ser Ala Val Leu Ala Pro Glu Leu Leu His Ala Arg Gly
225                 230                 235                 240

Leu Leu Pro Arg His Trp Ser His Ala Ser Pro Leu Ser Thr Ser Ser
                245                 250                 255

Ser Ser Ser Arg Pro Ala Asp Lys Ala Gln Leu Thr Trp Val Asp Lys
            260                 265                 270

Trp Ile Pro Glu Ala Ala Arg Pro Tyr Met Ala Leu Gln Gln Ala Ala
        275                 280                 285

Pro Arg Val Phe Gly Leu Leu Gly Arg Ala Pro Val Ala Leu Gly Gln
    290                 295                 300

Ser Gly Ile Leu Thr Gly Ser Ser Gly Phe Lys Asn Gln Gly Phe Asn
305                 310                 315                 320

Gly Ser Leu Gln Ser Val Glu Asn His Val Tyr Ala Gln Ala Phe Ser
                325                 330                 335
```

```
Thr Ser Ser Gln Glu Glu Gln Ala Ala Pro Ser Ile Gln Gly Ala Ser
            340                 345                 350


Gly Met Lys Leu Pro Gly Met Ala Gly Ser Met Leu Leu Gly Lys Ser
        355                 360                 365


Arg Ser Gly Leu Arg Thr Gly Ser Met Val Pro Phe Ala Ala Gln Gln
    370                 375                 380


Ala Met Asn Met Met Phe Ala Cys Ala Lys Leu Ala Cys Thr Pro Ser
385                 390                 395                 400


Leu Ile Arg Ala Gly Ser Arg Val Ala Tyr Arg Pro Ile Ser Ala Ser
                405                 410                 415


Val Leu Ser Arg Pro Glu Ala Ser Arg Thr Gly Glu Gly Ser Thr Val
            420                 425                 430


Phe Asn Gly Ala Gln Asn Gly Val Ser Gln Leu Ile Gln Arg Glu Phe
        435                 440                 445


Gln Thr Ser Ala Ile Ser Arg
    450                 455


<210>  155
<211>  455
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  crATP6 _hsADCK3_zmLOC100282174_hsATP5G3

<400>  155

Met Ala Leu Gln Gln Ala Ala Pro Arg Val Phe Gly Leu Leu Gly Arg
1               5                   10                  15


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


Phe Lys Asn Gln Gly Phe Asn Gly Ser Leu Gln Ser Val Glu Asn His
```

```
        35                  40                  45

Val Tyr Ala Gln Ala Phe Ser Thr Ser Ser Gln Glu Glu Gln Ala Ala
    50                  55                  60

Pro Ser Ile Gln Gly Ala Ser Gly Met Lys Leu Pro Gly Met Ala Gly
65                  70                  75                  80

Ser Met Leu Leu Gly Lys Ser Arg Ser Gly Leu Arg Thr Gly Ser Met
                85                  90                  95

Val Pro Phe Ala Ala Gln Gln Ala Met Asn Met Met Ala Ala Ile Leu
            100                 105                 110

Gly Asp Thr Ile Met Val Ala Lys Gly Leu Val Lys Leu Thr Gln Ala
        115                 120                 125

Ala Val Glu Thr His Leu Gln His Leu Gly Ile Gly Gly Glu Leu Ile
    130                 135                 140

Met Ala Ala Arg Ala Leu Gln Ser Thr Ala Val Glu Gln Ile Gly Met
145                 150                 155                 160

Phe Leu Gly Lys Val Gln Gly Gln Asp Lys His Glu Glu Tyr Phe Ala
                165                 170                 175

Glu Asn Phe Gly Gly Pro Glu Gly Glu Phe His Phe Ser Val Pro His
            180                 185                 190

Ala Ala Gly Ala Ser Thr Asp Phe Ser Ser Ala Ser Ala Pro Asp Gln
        195                 200                 205

Ser Ala Pro Pro Ser Leu Gly His Ala His Ser Glu Gly Pro Ala Pro
    210                 215                 220

Ala Tyr Val Ala Ser Gly Pro Phe Arg Glu Ala Gly Phe Pro Gly Gln
225                 230                 235                 240

Ala Ser Ser Pro Leu Gly Arg Ala Asn Gly Arg Leu Phe Ala Asn Pro
```

```
                245                 250                 255

Arg Asp Ser Phe Ser Ala Met Gly Phe Gln Arg Arg Phe Met Ala Leu
            260                 265                 270

Leu Arg Ala Ala Val Ser Glu Leu Arg Arg Arg Gly Arg Gly Ala Leu
        275                 280                 285

Thr Pro Leu Pro Ala Leu Ser Ser Leu Leu Ser Ser Leu Ser Pro Arg
    290                 295                 300

Ser Pro Ala Ser Thr Arg Pro Glu Pro Asn Asn Pro His Ala Asp Arg
305                 310                 315                 320

Arg His Val Ile Ala Leu Arg Arg Cys Pro Pro Leu Pro Ala Ser Ala
                325                 330                 335

Val Leu Ala Pro Glu Leu Leu His Ala Arg Gly Leu Leu Pro Arg His
            340                 345                 350

Trp Ser His Ala Ser Pro Leu Ser Thr Ser Ser Ser Ser Ser Arg Pro
        355                 360                 365

Ala Asp Lys Ala Gln Leu Thr Trp Val Asp Lys Trp Ile Pro Glu Ala
    370                 375                 380

Ala Arg Pro Tyr Met Phe Ala Cys Ala Lys Leu Ala Cys Thr Pro Ser
385                 390                 395                 400

Leu Ile Arg Ala Gly Ser Arg Val Ala Tyr Arg Pro Ile Ser Ala Ser
                405                 410                 415

Val Leu Ser Arg Pro Glu Ala Ser Arg Thr Gly Glu Gly Ser Thr Val
            420                 425                 430

Phe Asn Gly Ala Gln Asn Gly Val Ser Gln Leu Ile Gln Arg Glu Phe
        435                 440                 445

Gln Thr Ser Ala Ile Ser Arg
```

450 455

<210> 156
<211> 285
<212> PRT
<213> Artificial Sequence

<220>
<223> hsADCK3_zmLOC100282174

<400> 156

Met Ala Ala Ile Leu Gly Asp Thr Ile Met Val Ala Lys Gly Leu Val
1 5 10 15

Lys Leu Thr Gln Ala Ala Val Glu Thr His Leu Gln His Leu Gly Ile
20 25 30

Gly Gly Glu Leu Ile Met Ala Ala Arg Ala Leu Gln Ser Thr Ala Val
35 40 45

Glu Gln Ile Gly Met Phe Leu Gly Lys Val Gln Gly Gln Asp Lys His
50 55 60

Glu Glu Tyr Phe Ala Glu Asn Phe Gly Gly Pro Glu Gly Glu Phe His
65 70 75 80

Phe Ser Val Pro His Ala Ala Gly Ala Ser Thr Asp Phe Ser Ser Ala
85 90 95

Ser Ala Pro Asp Gln Ser Ala Pro Pro Ser Leu Gly His Ala His Ser
100 105 110

Glu Gly Pro Ala Pro Ala Tyr Val Ala Ser Gly Pro Phe Arg Glu Ala
115 120 125

Gly Phe Pro Gly Gln Ala Ser Ser Pro Leu Gly Arg Ala Asn Gly Arg
130 135 140

Leu Phe Ala Asn Pro Arg Asp Ser Phe Ser Ala Met Gly Phe Gln Arg
145 150 155 160

```
Arg Phe Gly Gly Met Ala Leu Leu Arg Ala Ala Val Ser Glu Leu Arg
                165                 170                 175


Arg Arg Gly Arg Gly Ala Leu Thr Pro Leu Pro Ala Leu Ser Ser Leu
            180                 185                 190


Leu Ser Ser Leu Ser Pro Arg Ser Pro Ala Ser Thr Arg Pro Glu Pro
        195                 200                 205


Asn Asn Pro His Ala Asp Arg Arg His Val Ile Ala Leu Arg Arg Cys
    210                 215                 220


Pro Pro Leu Pro Ala Ser Ala Val Leu Ala Pro Glu Leu Leu His Ala
225                 230                 235                 240


Arg Gly Leu Leu Pro Arg His Trp Ser His Ala Ser Pro Leu Ser Thr
                245                 250                 255


Ser Ser Ser Ser Ser Arg Pro Ala Asp Lys Ala Gln Leu Thr Trp Val
            260                 265                 270


Asp Lys Trp Ile Pro Glu Ala Ala Arg Pro Tyr Gly Gly
        275                 280                 285


<210>  157
<211>  394
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  hsADCK3_zmLOC100282174_crATP6

<400>  157

Met Ala Ala Ile Leu Gly Asp Thr Ile Met Val Ala Lys Gly Leu Val
1               5                   10                  15


Lys Leu Thr Gln Ala Ala Val Glu Thr His Leu Gln His Leu Gly Ile
            20                  25                  30


Gly Gly Glu Leu Ile Met Ala Ala Arg Ala Leu Gln Ser Thr Ala Val
```

```
        35                  40                  45

Glu Gln Ile Gly Met Phe Leu Gly Lys Val Gln Gly Gln Asp Lys His
    50                  55                  60

Glu Glu Tyr Phe Ala Glu Asn Phe Gly Gly Pro Glu Gly Glu Phe His
65                  70                  75                  80

Phe Ser Val Pro His Ala Ala Gly Ala Ser Thr Asp Phe Ser Ser Ala
                85                  90                  95

Ser Ala Pro Asp Gln Ser Ala Pro Pro Ser Leu Gly His Ala His Ser
            100                 105                 110

Glu Gly Pro Ala Pro Ala Tyr Val Ala Ser Gly Pro Phe Arg Glu Ala
        115                 120                 125

Gly Phe Pro Gly Gln Ala Ser Ser Pro Leu Gly Arg Ala Asn Gly Arg
    130                 135                 140

Leu Phe Ala Asn Pro Arg Asp Ser Phe Ser Ala Met Gly Phe Gln Arg
145                 150                 155                 160

Arg Phe Gly Gly Met Ala Leu Leu Arg Ala Ala Val Ser Glu Leu Arg
                165                 170                 175

Arg Arg Gly Arg Gly Ala Leu Thr Pro Leu Pro Ala Leu Ser Ser Leu
            180                 185                 190

Leu Ser Ser Leu Ser Pro Arg Ser Pro Ala Ser Thr Arg Pro Glu Pro
        195                 200                 205

Asn Asn Pro His Ala Asp Arg Arg His Val Ile Ala Leu Arg Arg Cys
    210                 215                 220

Pro Pro Leu Pro Ala Ser Ala Val Leu Ala Pro Glu Leu Leu His Ala
225                 230                 235                 240

Arg Gly Leu Leu Pro Arg His Trp Ser His Ala Ser Pro Leu Ser Thr
```

245 250 255

Ser Ser Ser Ser Ser Arg Pro Ala Asp Lys Ala Gln Leu Thr Trp Val
260 265 270

Asp Lys Trp Ile Pro Glu Ala Ala Arg Pro Tyr Gly Gly Met Ala Leu
275 280 285

Gln Gln Ala Ala Pro Arg Val Phe Gly Leu Leu Gly Arg Ala Pro Val
290 295 300

Ala Leu Gly Gln Ser Gly Ile Leu Thr Gly Ser Ser Gly Phe Lys Asn
305 310 315 320

Gln Gly Phe Asn Gly Ser Leu Gln Ser Val Glu Asn His Val Tyr Ala
325 330 335

Gln Ala Phe Ser Thr Ser Ser Gln Glu Glu Gln Ala Ala Pro Ser Ile
340 345 350

Gln Gly Ala Ser Gly Met Lys Leu Pro Gly Met Ala Gly Ser Met Leu
355 360 365

Leu Gly Lys Ser Arg Ser Gly Leu Arg Thr Gly Ser Met Val Pro Phe
370 375 380

Ala Ala Gln Gln Ala Met Asn Met Gly Gly
385 390

<210> 158
<211> 574
<212> PRT
<213> Artificial Sequence

<220>
<223> ncATP9_zmLOC100282174_spilv1_GNFP_ncATP9

<400> 158

Met Ala Ser Thr Arg Val Leu Ala Ser Arg Leu Ala Ser Gln Met Ala
1 5 10 15

```
Ala Ser Ala Lys Val Ala Arg Pro Ala Val Arg Val Ala Gln Val Ser
            20                  25                  30

Lys Arg Thr Ile Gln Thr Gly Ser Pro Leu Gln Thr Leu Lys Arg Thr
        35                  40                  45

Gln Met Thr Ser Ile Val Asn Ala Thr Thr Arg Gln Ala Phe Gln Lys
    50                  55                  60

Arg Ala Met Ala Leu Leu Arg Ala Ala Val Ser Glu Leu Arg Arg Arg
65                  70                  75                  80

Gly Arg Gly Ala Leu Thr Pro Leu Pro Ala Leu Ser Ser Leu Leu Ser
                85                  90                  95

Ser Leu Ser Pro Arg Ser Pro Ala Ser Thr Arg Pro Glu Pro Asn Asn
            100                 105                 110

Pro His Ala Asp Arg Arg His Val Ile Ala Leu Arg Arg Cys Pro Pro
        115                 120                 125

Leu Pro Ala Ser Ala Val Leu Ala Pro Glu Leu Leu His Ala Arg Gly
    130                 135                 140

Leu Leu Pro Arg His Trp Ser His Ala Ser Pro Leu Ser Thr Ser Ser
145                 150                 155                 160

Ser Ser Ser Arg Pro Ala Asp Lys Ala Gln Leu Thr Trp Val Asp Lys
                165                 170                 175

Trp Ile Pro Glu Ala Ala Arg Pro Tyr Met Thr Val Leu Ala Pro Leu
            180                 185                 190

Arg Arg Leu His Thr Arg Ala Ala Phe Ser Ser Tyr Gly Arg Glu Ile
        195                 200                 205

Ala Leu Gln Lys Arg Phe Leu Asn Leu Asn Ser Cys Ser Ala Val Arg
    210                 215                 220
```

```
Arg Tyr Gly Thr Gly Phe Ser Asn Asn Leu Arg Ile Lys Lys Leu Lys
225                 230                 235                 240


Asn Ala Phe Gly Val Val Arg Ala Asn Ser Thr Lys Ser Thr Ser Thr
                245                 250                 255


Val Thr Thr Ala Ser Pro Ile Lys Tyr Asp Ser Ser Phe Val Gly Lys
            260                 265                 270


Thr Gly Gly Glu Ile Phe His Asp Met Met Leu Lys His Asn Val Lys
        275                 280                 285


His Val Phe Gly Tyr Pro Gly Gly Ala Ile Leu Pro Val Phe Asp Ala
    290                 295                 300


Ile Tyr Arg Ser Pro His Phe Glu Phe Ile Leu Pro Arg His Glu Gln
305                 310                 315                 320


Ala Ala Gly His Ala Val Ser Gly Glu Gly Asp Ala Thr Tyr Gly Lys
                325                 330                 335


Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp
            340                 345                 350


Pro Thr Leu Val Thr Thr Leu Thr Tyr Gly Val Gln Cys Phe Ser Arg
        355                 360                 365


Tyr Pro Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro
    370                 375                 380


Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn
385                 390                 395                 400


Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn
                405                 410                 415


Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu
            420                 425                 430
```

```
Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met
        435                 440                 445


Ala Asp Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His
    450                 455                 460


Asn Ile Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn
465                 470                 475                 480


Thr Pro Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu
                485                 490                 495


Ser Thr Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Met Ala Ser Thr
            500                 505                 510


Arg Val Leu Ala Ser Arg Leu Ala Ser Gln Met Ala Ala Ser Ala Lys
        515                 520                 525


Val Ala Arg Pro Ala Val Arg Val Ala Gln Val Ser Lys Arg Thr Ile
    530                 535                 540


Gln Thr Gly Ser Pro Leu Gln Thr Leu Lys Arg Thr Gln Met Thr Ser
545                 550                 555                 560


Ile Val Asn Ala Thr Thr Arg Gln Ala Phe Gln Lys Arg Ala
                565                 570


<210>  159
<211>  810
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  ncATP9_zmLOC100282174_spilv1_lcSirt5_osP0644B06.24-2_hsATP5G2_ncA
       TP9

<400>  159

Met Ala Ser Thr Arg Val Leu Ala Ser Arg Leu Ala Ser Gln Met Ala
1               5                   10                  15
```

```
Ala Ser Ala Lys Val Ala Arg Pro Ala Val Arg Val Ala Gln Val Ser
            20                  25                  30

Lys Arg Thr Ile Gln Thr Gly Ser Pro Leu Gln Thr Leu Lys Arg Thr
        35                  40                  45

Gln Met Thr Ser Ile Val Asn Ala Thr Thr Arg Gln Ala Phe Gln Lys
    50                  55                  60

Arg Ala Met Ala Leu Leu Arg Ala Ala Val Ser Glu Leu Arg Arg Arg
65                  70                  75                  80

Gly Arg Gly Ala Leu Thr Pro Leu Pro Ala Leu Ser Ser Leu Leu Ser
                85                  90                  95

Ser Leu Ser Pro Arg Ser Pro Ala Ser Thr Arg Pro Glu Pro Asn Asn
            100                 105                 110

Pro His Ala Asp Arg Arg His Val Ile Ala Leu Arg Arg Cys Pro Pro
        115                 120                 125

Leu Pro Ala Ser Ala Val Leu Ala Pro Glu Leu Leu His Ala Arg Gly
    130                 135                 140

Leu Leu Pro Arg His Trp Ser His Ala Ser Pro Leu Ser Thr Ser Ser
145                 150                 155                 160

Ser Ser Ser Arg Pro Ala Asp Lys Ala Gln Leu Thr Trp Val Asp Lys
                165                 170                 175

Trp Ile Pro Glu Ala Ala Arg Pro Tyr Met Thr Val Leu Ala Pro Leu
            180                 185                 190

Arg Arg Leu His Thr Arg Ala Ala Phe Ser Ser Tyr Gly Arg Glu Ile
        195                 200                 205

Ala Leu Gln Lys Arg Phe Leu Asn Leu Asn Ser Cys Ser Ala Val Arg
    210                 215                 220
```

```
Arg Tyr Gly Thr Gly Phe Ser Asn Asn Leu Arg Ile Lys Lys Leu Lys
225                 230                 235                 240


Asn Ala Phe Gly Val Val Arg Ala Asn Ser Thr Lys Ser Thr Ser Thr
                245                 250                 255


Val Thr Thr Ala Ser Pro Ile Lys Tyr Asp Ser Ser Phe Val Gly Lys
            260                 265                 270


Thr Gly Gly Glu Ile Phe His Asp Met Met Leu Lys His Asn Val Lys
        275                 280                 285


His Val Phe Gly Tyr Pro Gly Gly Ala Ile Leu Pro Val Phe Asp Ala
    290                 295                 300


Ile Tyr Arg Ser Pro His Phe Glu Phe Ile Leu Pro Arg His Glu Gln
305                 310                 315                 320


Ala Ala Gly His Ala Met Arg Lys Arg Ser Leu Arg Cys His Leu Trp
                325                 330                 335


Ser Ala Asn Ala Ser Leu Ser Pro Arg Lys Asp Glu Val Thr Ser Arg
            340                 345                 350


Lys Glu Ser Glu Asn Leu Val Lys Gly Lys Lys Asn Lys Lys Ser His
        355                 360                 365


Leu His Leu Leu Leu Phe Thr Ala Ser Lys Ile Gly Thr Asp Ser Val
    370                 375                 380


Phe Asp Val Gln Lys Ser Lys Glu Cys Cys Lys Glu Leu Gly Leu Leu
385                 390                 395                 400


Phe Thr Ser Leu Ile His Ser Ile Gly Ser Phe Pro Phe Asp Glu Glu
                405                 410                 415


Pro Lys Ala Ala Ala Val Phe Leu Pro Gly Ser Leu Pro Gln Leu Thr
            420                 425                 430
```

```
Val Leu Val Leu Ala Pro Gly Ser Gly Ser Cys Pro Thr Gly Lys Ser
        435                 440                 445

Thr Pro His Leu Ala Ala Ser Gly Arg Asn Ala Glu Leu Leu Arg Pro
    450                 455                 460

Gln Asn Ser Met Ile Val Arg Gln Phe Thr Cys Arg Gly Thr Ile Ser
465                 470                 475                 480

Ser His Leu Cys Ala His Leu Arg Lys Pro His Asp Ser Arg Asn Met
                485                 490                 495

Ala Arg Pro Met Ala Leu Leu Leu Arg His Ser Pro Lys Leu Arg Arg
            500                 505                 510

Ala His Ala Ile Leu Gly Cys Glu Arg Gly Thr Val Val Arg His Phe
        515                 520                 525

Ser Ser Ser Thr Cys Ser Ser Leu Val Lys Glu Asp Thr Val Ser Ser
    530                 535                 540

Ser Asn Leu His Pro Glu Tyr Ala Lys Lys Ile Gly Gly Ser Asp Phe
545                 550                 555                 560

Ser His Asp Arg Gln Ser Gly Lys Glu Leu Gln Asn Phe Lys Val Ser
                565                 570                 575

Pro Gln Glu Ala Ser Arg Ala Ser Asn Phe Met Arg Ala Ser Lys Tyr
            580                 585                 590

Gly Met Pro Ile Thr Ala Asn Gly Val His Ser Leu Phe Ser Cys Gly
        595                 600                 605

Gln Val Val Pro Ser Arg Cys Phe Met Pro Glu Leu Ile Leu Tyr Val
    610                 615                 620

Ala Ile Thr Leu Ser Val Ala Glu Arg Leu Val Gly Pro Gly His Ala
625                 630                 635                 640
```

```
Cys Ala Glu Pro Ser Phe Arg Ser Ser Arg Cys Ser Ala Pro Leu Cys
                645                 650                 655

Leu Leu Cys Ser Gly Ser Ser Ser Pro Ala Thr Ala Pro His Pro Leu
            660                 665                 670

Lys Met Phe Ala Cys Ser Lys Phe Val Ser Thr Pro Ser Leu Val Lys
        675                 680                 685

Ser Thr Ser Gln Leu Leu Ser Arg Pro Leu Ser Ala Val Val Leu Lys
    690                 695                 700

Arg Pro Glu Ile Leu Thr Asp Glu Ser Leu Ser Ser Leu Ala Val Ser
705                 710                 715                 720

Cys Pro Leu Thr Ser Leu Val Ser Ser Arg Ser Phe Gln Thr Ser Ala
                725                 730                 735

Ile Ser Arg Asp Ile Asp Thr Ala Met Ala Ser Thr Arg Val Leu Ala
            740                 745                 750

Ser Arg Leu Ala Ser Gln Met Ala Ala Ser Ala Lys Val Ala Arg Pro
        755                 760                 765

Ala Val Arg Val Ala Gln Val Ser Lys Arg Thr Ile Gln Thr Gly Ser
    770                 775                 780

Pro Leu Gln Thr Leu Lys Arg Thr Gln Met Thr Ser Ile Val Asn Ala
785                 790                 795                 800

Thr Thr Arg Gln Ala Phe Gln Lys Arg Ala
                805                 810
```

<210> 160
<211> 459
<212> PRT
<213> Homo sapiens

<400> 160

```
Met Leu Lys Leu Ile Val Pro Thr Ile Met Leu Leu Pro Leu Thr Trp
```

```
1               5                   10                  15

Leu Ser Lys Lys His Met Ile Trp Ile Asn Thr Thr Thr His Ser Leu
            20                  25                  30

Ile Ile Ser Ile Ile Pro Leu Leu Phe Phe Asn Gln Ile Asn Asn Asn
        35                  40                  45

Leu Phe Ser Cys Ser Pro Thr Phe Ser Ser Asp Pro Leu Thr Thr Pro
    50                  55                  60

Leu Leu Met Leu Thr Thr Trp Leu Leu Pro Leu Thr Ile Met Ala Ser
65                  70                  75                  80

Gln Arg His Leu Ser Ser Glu Pro Leu Ser Arg Lys Lys Leu Tyr Leu
                85                  90                  95

Ser Met Leu Ile Ser Leu Gln Ile Ser Leu Ile Met Thr Phe Thr Ala
            100                 105                 110

Thr Glu Leu Ile Met Phe Tyr Ile Phe Phe Glu Thr Thr Leu Ile Pro
        115                 120                 125

Thr Leu Ala Ile Ile Thr Arg Trp Gly Asn Gln Pro Glu Arg Leu Asn
    130                 135                 140

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

Leu Ile Ala Leu Ile Tyr Thr His Asn Thr Leu Gly Ser Leu Asn Ile
                165                 170                 175

Leu Leu Leu Thr Leu Thr Ala Gln Glu Leu Ser Asn Ser Trp Ala Asn
            180                 185                 190

Asn Leu Met Trp Leu Ala Tyr Thr Met Ala Phe Met Val Lys Met Pro
        195                 200                 205

Leu Tyr Gly Leu His Leu Trp Leu Pro Lys Ala His Val Glu Ala Pro
```

210 215 220

Ile Ala Gly Ser Met Val Leu Ala Ala Val Leu Leu Lys Leu Gly Gly
225 230 235 240

Tyr Gly Met Met Arg Leu Thr Leu Ile Leu Asn Pro Leu Thr Lys His
245 250 255

Met Ala Tyr Pro Phe Leu Val Leu Ser Leu Trp Gly Met Ile Met Thr
260 265 270

Ser Ser Ile Cys Leu Arg Gln Thr Asp Leu Lys Ser Leu Ile Ala Tyr
275 280 285

Ser Ser Ile Ser His Met Ala Leu Val Val Thr Ala Ile Leu Ile Gln
290 295 300

Thr Pro Trp Ser Phe Thr Gly Ala Val Ile Leu Met Ile Ala His Gly
305 310 315 320

Leu Thr Ser Ser Leu Leu Phe Cys Leu Ala Asn Ser Asn Tyr Glu Arg
325 330 335

Thr His Ser Arg Ile Met Ile Leu Ser Gln Gly Leu Gln Thr Leu Leu
340 345 350

Pro Leu Met Ala Phe Trp Trp Leu Leu Ala Ser Leu Ala Asn Leu Ala
355 360 365

Leu Pro Pro Thr Ile Asn Leu Leu Gly Glu Leu Ser Val Leu Val Thr
370 375 380

Thr Phe Ser Trp Ser Asn Ile Thr Leu Leu Leu Thr Gly Leu Asn Met
385 390 395 400

Leu Val Thr Ala Leu Tyr Ser Leu Tyr Met Phe Thr Thr Thr Gln Trp
405 410 415

Gly Ser Leu Thr His His Ile Asn Asn Met Lys Pro Ser Phe Thr Arg

420 425 430

Glu Asn Thr Leu Met Phe Met His Leu Ser Pro Ile Leu Leu Leu Ser
435 440 445

Leu Asn Pro Asp Ile Ile Thr Gly Phe Ser Ser
450 455

<210> 161
<211> 174
<212> PRT
<213> Homo sapiens

<400> 161

Met Met Tyr Ala Leu Phe Leu Leu Ser Val Gly Leu Val Met Gly Phe
1 5 10 15

Val Gly Phe Ser Ser Lys Pro Ser Pro Ile Tyr Gly Gly Leu Val Leu
20 25 30

Ile Val Ser Gly Val Val Gly Cys Val Ile Ile Leu Asn Phe Gly Gly
35 40 45

Gly Tyr Met Gly Leu Met Val Phe Leu Ile Tyr Leu Gly Gly Met Met
50 55 60

Val Val Phe Gly Tyr Thr Thr Ala Met Ala Ile Glu Glu Tyr Pro Glu
65 70 75 80

Ala Trp Gly Ser Gly Val Glu Val Leu Val Ser Val Leu Val Gly Leu
85 90 95

Ala Met Glu Val Gly Leu Val Leu Trp Val Lys Glu Tyr Asp Gly Val
100 105 110

Val Val Val Val Asn Phe Asn Ser Val Gly Ser Trp Met Ile Tyr Glu
115 120 125

Gly Glu Gly Ser Gly Leu Ile Arg Glu Asp Pro Ile Gly Ala Gly Ala
130 135 140

```
Leu Tyr Asp Tyr Gly Arg Trp Leu Val Val Val Thr Gly Trp Thr Leu
145                 150                 155                 160


Phe Val Gly Val Tyr Ile Val Ile Glu Ile Ala Arg Gly Asn
                165                 170


<210>  162
<211>  316
<212>  PRT
<213>  Homo sapiens

<400>  162

Met Ala Asn Leu Leu Leu Leu Ile Val Pro Ile Leu Ile Ala Met Ala
1               5                   10                  15


Phe Leu Met Leu Thr Glu Arg Lys Ile Leu Gly Tyr Met Gln Leu Arg
            20                  25                  30


Lys Gly Pro Asn Val Val Gly Pro Tyr Gly Leu Leu Gln Pro Phe Ala
        35                  40                  45


Asp Ala Ile Lys Leu Phe Thr Lys Glu Pro Leu Lys Pro Ala Thr Ser
    50                  55                  60


Thr Ile Thr Leu Tyr Ile Thr Ala Pro Thr Leu Ala Leu Thr Ile Ala
65                  70                  75                  80


Leu Leu Leu Trp Thr Pro Leu Pro Met Pro Asn Pro Leu Val Asn Leu
                85                  90                  95


Asn Leu Gly Leu Leu Phe Ile Leu Ala Thr Ser Ser Leu Ala Val Tyr
            100                 105                 110


Ser Ile Leu Trp Ser Gly Trp Ala Ser Asn Ser Asn Tyr Ala Leu Ile
        115                 120                 125


Gly Ala Leu Arg Ala Val Ala Gln Thr Ile Ser Tyr Glu Val Thr Leu
    130                 135                 140
```

```
Ala Ile Ile Leu Leu Ser Thr Leu Leu Met Ser Gly Ser Phe Asn Leu
145                 150                 155                 160


Ser Thr Leu Ile Thr Thr Gln Glu His Leu Trp Leu Leu Leu Pro Ser
                165                 170                 175


Trp Pro Leu Ala Met Met Trp Phe Ile Ser Thr Leu Ala Glu Thr Asn
            180                 185                 190


Arg Thr Pro Phe Asp Leu Ala Glu Gly Glu Ser Glu Leu Val Ser Gly
        195                 200                 205


Phe Asn Ile Glu Tyr Ala Ala Gly Pro Phe Ala Leu Phe Phe Met Ala
    210                 215                 220


Glu Tyr Thr Asn Ile Ile Met Met Asn Thr Leu Thr Thr Thr Ile Phe
225                 230                 235                 240


Leu Gly Thr Thr Tyr Asp Ala Leu Ser Pro Glu Leu Tyr Thr Thr Tyr
                245                 250                 255


Phe Val Thr Lys Thr Leu Leu Leu Thr Ser Leu Phe Leu Trp Ile Arg
            260                 265                 270


Thr Ala Tyr Pro Arg Phe Arg Tyr Asp Gln Leu Met His Leu Leu Trp
        275                 280                 285


Lys Asn Phe Leu Pro Leu Thr Leu Ala Leu Leu Met Trp Tyr Val Ser
    290                 295                 300


Met Pro Ile Thr Ile Ser Ser Ile Pro Pro Gln Thr
305                 310                 315
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