

SEQUENCE LISTING

<110> YEDA RESEARCH AND DEVELOPMENT CO. LTD.
 AHARONI, Asaph
 SONAWANE, Prashant
 ITKIN, Maxim
 JOZWIAK, Adam

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<130> P-79520-PC1

<150> 61/831,164

<151> 2013-06-05

<150> PCT/IL2014/050497

<151> 2014-06-02

<150> 14/895,059

<151> 2015-12-01

<150> 16/123,248

<151> 2018-09-06

<150> IL 268269

<151> 2019-07-25

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<213> Solanum Lycopersicum

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Phe Phe Glu Thr Leu Ser Pro Met Ser Leu Asp Val Thr Thr Leu Leu
35 40 45

Pro Asn Ile Pro Thr Ser Asn Ser Ile Glu Ser Pro Val Thr Pro Glu
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Glu Thr Lys Glu Pro Ser Val Ala Cys Glu Asp Ala Pro Gln Asp Trp
65 70 75 80

Arg Arg Phe Ile Gly Val Arg Arg Arg Gln Trp Gly Thr Phe Ser Ala
85 90 95

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

Tyr Glu Ser Pro Arg Asp Ala Ala Leu Ala Tyr Asp Gln Ala Ala Tyr
115 120 125

Lys Ile Arg Gly Thr Lys Val Arg Leu Asn Phe Pro Asp Leu Ile Gly
130 135 140

Ser Asp Val Pro Met Pro Pro Arg Val Thr Ala Arg Arg Arg Thr Arg
145 150 155 160

Ser Arg Ser Arg Ser Pro Glu Pro Leu Thr Thr Ser Ser Ser Ser Ser
165 170 175

Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Glu Asn Gly Thr Lys
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Gln Asp Trp Arg Arg Phe Ile Gly Val Arg Arg Arg Gln Trp Gly Thr
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Phe Ser Ala Glu Ile Arg Asp Pro Asn Arg Arg Gly Ala Arg Leu Trp

100

105

110

Leu Gly Thr Tyr Glu Ser Pro Gln Asp Ala Ala Leu Ala Tyr Asp Gln
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Ala Ala Tyr Lys Ile Arg Gly Thr Lys Ala Arg Leu Asn Phe Pro Asp
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Arg Thr Arg Ser Arg Ser Arg Ser Pro Glu Pro Ser Thr Thr Ser Ser
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Pro Gly Pro Val Glu Gly Ser Val Glu His Ser Gln Ile Ile Arg Asn
35 40 45

Gly Ser Thr His Glu Asp Asp Ile Val Ile Asn Pro Thr Leu Leu Ala
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Ser Val Gln Ser Phe Val Glu Pro Asn Leu Thr Ala Ala Ala Leu Tyr
65 70 75 80

Arg Ala Thr His Asp Ser His Met Ala Ala Asp Glu Ala Ile Ala Phe
85 90 95

Asn Met Pro Leu Gln Pro Asn Leu Phe Glu Asn Ala Ser Val Glu Pro
100 105 110

Ser Pro Asp Ala Glu His Pro Ser Gln Thr Gln Ser Leu Cys Trp Pro
115 120 125

Asp Lys Arg Asp Thr Ile Glu Ser Glu Val Leu Ser Tyr Gly Arg Asn
130 135 140

Asp Gln Glu Glu Val Lys Phe Asp Gly Glu Ala Val Gly Arg Ser His
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Ala Tyr Ser Gln Arg Leu Leu Asn Ile Ile Asn Gln Thr Leu Ala Ser
165 170 175

Val Gly Val Asp Pro Ser Leu Ala Asp Val Arg Val Gln Leu Asp Ile
180 185 190

Ser Lys Lys Thr Ser Ser Gly Ala Thr Thr Thr Arg Leu Ser Ser Gly
195 200 205

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ttgctttcga gtgccagag cttttagtaa ccgaacttga ctgctgctgc tttatataga	240
gcaacacacg attctcatat ggcagcggat gaagcaattg cctttaacat gccactgcaa	300
cctaatttat ttgaaaatgc atctgttgaa ccatctcctg atgctgagca cccttcccag	360
ccacaatcat tatgttggcc aggtaaacga gatacaattg agtcggaggt tctgagctat	420
ggcagaaatg atcaggaaga agtgaaatgc gatggtgaag cagttgcaag atcacatgcg	480
tatactcaaa ggtaggttgc ttaatatcat aaaccagaca ctagcatctg tgggagtgga	540
tccttcactg gccgatgtta gagtacagct tgatatcagc aaaaaaccaa gcagtggagc	600
cacaactaca acattaagca gtgaagagaa ctatgatggt gctcctaaaa ggcttaggac	660
agaaggtagt atgtgattgt caatctagca tggttccact cctaattttt ctgcatcttg	720
tcattgtttc gatggggaga tacttgaagt ggttggtctc tgtggatgag gtggtgcaca	780
aacagcttat ggttgtccag ttaggtttcc atttaaatat gagaagctgc attgtcattc	840
ttaagggtat ttagagtcga ctttggaaat tctgtcagtg tgatgtggtt atgcctatcg	900
atttgagatg cctccatgga tctggtttca tagttgatat ttaaacaggg aaatttgaag	960
ttgtttcaaa tgtcagcatg aagaatttta	990

<210> 22
 <211> 342
 <212> PRT
 <213> Solanum Lycopersicum

<400> 22

Met Ala Asp Leu Leu Ser Asn Trp Ser Ser Thr Leu Glu Ala Val Pro

1	5	10	15
Lys Ser His Cys Ile Pro Glu His Glu Arg Pro Ser Asp Pro Val Glu	20	25	30
Ile Gly Asp Ser Ile Pro Val Ile Asp Leu Gly Lys Ala Asn Gly Glu	35	40	45
Glu Arg Ser Val Val Val Lys Asp Leu Leu Lys Ala Phe Glu Glu Tyr	50	55	60
Gly Phe Phe Gln Ile Ile Asn His Gly Val Pro Val Asp Leu Met Asp	65	70	75
Glu Ala Met Lys Val Tyr Lys Glu Phe Phe Ser Leu Pro Ala Glu Glu	85	90	95
Lys Glu Asn Tyr Ala Lys Asp Ala Ala Asn Asn Thr Asn Arg Gly Ala	100	105	110
Ala Thr Leu Tyr Ser Ser Ser Ala Lys His Tyr Asp Ser Glu Glu His	115	120	125
Arg Tyr Trp Arg Asp Val Leu Glu His Ser Cys Asn Leu Asp Gly Glu	130	135	140
Asp Lys Lys Thr Trp Pro Asp Asn Pro Pro Arg Tyr Arg Glu Val Ile	145	150	155
Gly Ala Tyr Gly Asp Glu Leu Arg Arg Val Ser Lys Val Ile Leu Gly	165	170	175
Met Leu Ser Glu Gly Leu Gly Leu Glu Ala Gly Phe Phe Asp Lys Glu	180	185	190
Leu Gly Gln Arg Met Leu Val Asn His Tyr Pro Ala Cys Pro Asn Pro	195	200	205
Ser Leu Thr Leu Gly Val Gly Gly His Cys Asp Pro Asn Leu Ile Thr	210	215	220

Ile Ile Gln Gln Glu Val Tyr Gly Leu Gln Ile Leu Lys Asp Asp Lys
225 230 235 240

Trp Ile Gly Val Gln Pro Ile Arg Asn Ala Phe Val Val Asn Ser Gly
245 250 255

Leu Pro Ile Thr Val Tyr Ser Asn Gly Lys Leu Thr Ser Val Ala His
260 265 270

Arg Val Val Thr Asn Thr Thr Glu Ser Arg Thr Ser Ile Gly Thr Phe
275 280 285

Ile Cys Pro His Glu Ile Val Glu Pro Ala Lys Ala Leu Val Gly Pro
290 295 300

Glu Asn Pro Pro Gln Phe Lys Pro Phe His Trp Gly Ile Asp Phe Met
305 310 315 320

Pro His Tyr Leu Ser Lys Lys Ser Val Tyr His Ala Ser Leu Glu Pro
325 330 335

Phe Lys Thr Glu Ala Asn
340

<210> 23
<211> 341
<212> PRT
<213> Solanum tuberosum

<400> 23

Met Ala Asp Leu Leu Ser Asn Trp Ser Ser Thr Leu Glu Ala Val Pro
1 5 10 15

Pro Ser His Cys Ile Pro Val His Glu Arg Pro Ser Asp Pro Val Glu
20 25 30

Ile Val Asp Asn Ile Pro Val Ile Asp Leu Gly Lys Ala Asn Gly Glu
35 40 45

Glu Arg Ser Val Val Val Lys Glu Leu Leu Lys Ala Phe Glu Glu Tyr
50 55 60

Gly Phe Phe Gln Ile Ile Asn His Gly Val Pro Val Asp Leu Met Asp
65 70 75 80

Glu Ala Met Lys Val Tyr Lys Glu Phe Phe Ser Leu Pro Ala Ala Glu
85 90 95

Lys Ala Glu Tyr Ala Lys Asp Ala Ala Asn Asp Thr Asn Arg Gly Ala
100 105 110

Ala Thr Leu Tyr Ser Ser Ser Ala Lys His Tyr Asp Ser Glu Glu His
115 120 125

Arg Tyr Trp Arg Asp Val Leu Glu His Ser Cys Asn Leu Asp Gly Lys
130 135 140

Asp Lys Lys Thr Trp Pro Ser Asn Pro Pro Arg Tyr Arg Glu Val Ile
145 150 155 160

Gly Ala Tyr Gly Asp Glu Leu Arg Arg Val Ser Lys Val Ile Leu Gly
165 170 175

Leu Leu Ala Glu Gly Leu Gly Leu Glu Ala Gly Phe Phe Asp Thr Glu
180 185 190

Leu Gly Gln Arg Met Leu Val Asn His Tyr Pro Ala Cys Pro Asp Pro
195 200 205

Ser Leu Thr Leu Gly Val Gly Gly His Cys Asp Pro Asn Leu Ile Thr
210 215 220

Ile Ile Gln Gln Glu Val Tyr Gly Leu Gln Ile Leu Lys Asp Asp Lys
225 230 235 240

Trp Ile Gly Val Gln Pro Ile Arg Asn Ala Phe Val Val Asn Ser Gly
245 250 255

Leu Pro Ile Thr Val Val Ser Asn Gly Lys Leu Thr Ser Val Ala His
260 265 270

Arg Val Val Thr Asn Thr Thr His Ser Arg Thr Ser Ile Gly Thr Phe
 275 280 285

Ile Cys Pro His Asp Ile Val Glu Pro Ala Lys Ala Leu Val Gly Pro
 290 295 300

Glu Asn Pro Pro Gln Phe Lys Ser Phe Asn Trp Gly Ile Asp Phe Met
 305 310 315 320

Pro His Tyr Leu Ser Lys Lys Ser Val Tyr His Ala Ser Leu Glu Pro
 325 330 335

Phe Lys Ile Asp Ala
 340

<210> 24
 <211> 1726
 <212> DNA
 <213> Solanum Lycopersicum

<400> 24
 aaaaaatatt tgtttttaaa atgtgtaatt tttagtggca tgctctaaaa aaaaataaaa 60
 ttatctgagc atcagttttg gttatgcaat ttccttcct ataaatggcc ctccatatct 120
 caaatgagat atcaaacaat ttgcagaagt agtagtatta acatttagaa gataactttg 180
 tttcccaggt aaataaatca ataaatcctc cttttctttg tttgtttgtt tatttgttga 240
 gatatttatg atttttgggt ttggtttaga ttgattgtca atggcggatc ttctctcgaa 300
 ctgggtcaagc acattagaag cagttcctaa aagtcattgc atcccagagc atgaaagacc 360
 atcagatcca gttgaaattg gcgacagtat tccagtcatt gatttgggaa aagctaattg 420
 tgaagaacga agtgttgttg tttaaagatct gttgaaagct tttgaagaat atgggttttt 480
 tcaggtagc aactctgttt cttttttttt tgttcccgtt aatgtgaaat tgaaatgatg 540
 atatatgaac aaacagataa tcaatcatgg agtacctgta gatctaattg atgaagcaat 600
 gaaagtgtac aaagaatttt tcagtcttcc agctgaagaa aaagaaaatt atgcaaaaga 660
 tgcagctaata aataccaata ggggtgcagc tacactgtac agtagcagtg ctaagcatta 720
 tgattcagag gagcatcggt actggagaga tgtgttgga catagctgca atcttgatgg 780
 agaagacaaa aaaacttggc ccgataacc tccaagatat aggtacctac ctatctaaac 840

tatgtatggt ttagcaatta atttcctct tttcttacac atgtattttg gttgtacttc	900
agggaggtta ttggtgccta tgggtgatgaa ttgagaaggg tgagcaaagt tatcttgggt	960
atgttaagtg aagggctagg tttggaggca gggttctttg acaaagaact tgggcagaga	1020
atgcttgta atcactatcc agcatgtcca aatccaagtt taactttggg agttggtgga	1080
cattgtgatc ctaatctcat aaccattatc caacaagaag tctatggtct tcaaattattg	1140
aaggatgaca aatggattgg tgtgcagcct attcgcaatg catttggtggt taattctggt	1200
ttaccaatta cggtatgtat gtgtgtaggt cttctctaac accccctttt tttcttctct	1260
tataatgttt gctatgcata caggtatata gcaatggaaa gctaactagt gttgcacatc	1320
gtgtggtgac aaacacaact gagtcacgaa cctccattgg tacttttatt tgcccacatg	1380
agattgttga acctgcaaaa gcacttgttg gtcctgagaa tcctccacag ttcaaaccct	1440
tccattgggg aatcgatttt atgccacatt acctcagcaa gaaatcagtg taccacgctt	1500
cattggagcc cttcaaaaaca gaagctaatt aagcattaag gatatatcaa atctatgctg	1560
ctgctgctac tacttctttt aatttccact gaaataagag ctttaattca aaatgtcttt	1620
ctagtttgta ttctacttac ttcatgaata agaaacttcc aatcctattc tctactgggt	1680
tcgatctaca tgaatatttt attattttcca ttgcattttc aatcag	1726

<210> 25
 <211> 1422
 <212> DNA
 <213> Solanum Lycopersicum

<400> 25	
aaaaaatatt tgtttttaaa atgtgtaatt tttagtggca tgctctaaaa aaaaataaaa	60
ttatctgagc atcagttttg gttatgcaat ttccttcct ataaatggcc ctccatatct	120
caaatgagat atcaaacaat ttgcagaagt agtagtatta acatttagaa gataactttg	180
tttcccagat tgattgtcaa tggcggatct tctctgaac tgggtcaagca cattagaagc	240
agttcctaaa agtcattgca tcccagagca tgaaagacca tcagatccag ttgaaattgg	300
cgacagtatt ccagtcattg atttgggaaa agctaattgg gaagaacgaa gtgttggtgt	360
taaagatctg ttgaaagctt ttgaagaata tgggtttttt cagataatca atcatggagt	420
acctgtagat ctaatggatg aagcaatgaa agtgtacaaa gaatttttca gtcttccagc	480
tgaagaaaaa gaaaattatg caaagatgc agctaataat accaataggg gtgcagctac	540

actgtacagt agcagtgcta agcattatga ttcagaggag catcgttact ggagagatgt	600
gttggaacat agctgcaatc ttgatggaga agacaaaaaa acttggcccg ataaccctcc	660
aagatatagg gaggttattg gtgcctatgg tgatgaattg agaaggggtga gcaaagttat	720
cttgggtatg ttaagtgaag ggctaggttt ggaggcaggg ttctttgaca aagaacttgg	780
gcagagaatg cttgtgaatc actatccagc atgtccaaat ccaagtttaa ctttgggagt	840
tggtggacat tgtgataccta atctcataac cattatccaa caagaagtct atggtcttca	900
aatattgaag gatgacaaat ggattgggtgt gcagcctatt cgcaatgcat ttgtgggttaa	960
ttctgggttta ccaattacgg tatatagcaa tggaaagcta actagtgttg cacatcgtgt	1020
ggtgacaaac acaactgagt cacgaacctc catttggtact tttatttgcc cacatgagat	1080
tgttgaacct gcaaaagcac ttgttgggtcc tgagaatcct ccacagttca aacccttcca	1140
ttggggaatc gatTTTTatgc cacattacct cagcaagaaa tcagtgtacc acgcttcatt	1200
ggagcccctt aaaacagaag ctaattaagc attaaggata tatcaaactc atgctgctgc	1260
tgctactact tcttttaatt tccactgaaa taagagcttt aattcaaaat gtctttctag	1320
tttgtattct acttacttca tgaataagaa acttccaatc ctattctcta ctggtttcga	1380
tctacatgaa tattttatta tttccattgc attttcaatc ag	1422

<210> 26
 <211> 1619
 <212> DNA
 <213> Solanum tuberosum

<400> 26	
ctttgttatg caattttctt ccctataaat ggccctccat agctcaaag agatatcaga	60
caatttaaag aagtactatt aacatttaga agatttcttt ctttcccagg taaataaatc	120
attttccctc tttccttctt gctctttctt tgtttatttg ttcagatttt tacccttttt	180
gttttggtta gattcattga caatggcgga ctttctttca aactgggtcaa gcacattaga	240
agcagttcct ccaagtcatt gcatcccagt gcatgaaaga ccatcgatc cagttgaaat	300
tgtggacaat attccagtca ttgatttggg aaaagctaag ggtgaagaac gaagtgttgt	360
tgtaaagaa cttttgaaag cttttgaaga atatgggttt tttcagggtt attatttata	420
caatagtaca actctgttct tttttctttt tttttcttat tgtattttaa aatgatctga	480

aattgaaatg atgaaataga taatcaatca tggagtaccc gtagatctaa tggatgaagc	540
aatgaaagtg tacaaagaat ttttcagtct gccagcagca gagaaagcag aatatgcaaa	600
ggatgcagct aatgatacaa ataggggtgc agctacactg tacagtagca gcgctaagca	660
ttatgattca gaggagcatc gttactggag agatgtcttg gaacatagct gcaatcttga	720
tgggaaagac aaaaaaactt ggcctagtaa ccctccaaga tataggtacc tacctaaact	780
atgcttagca aaattccctc ttgttatttt tcttacctag tatttgcttg tccttcaggg	840
aggttattgg tgcatatgga gatgaattga gaagggtgag caaagttatc ttgggtctgt	900
tagctgaagg gctaggtttg gaggcagggt tctttgacac agaacttggg cagagaatgc	960
ttgtgaatca ctatccagca tgcccagatc caagtttaac cttgggagtt ggtggacatt	1020
gtgatcctaa tctcataacc attatccaac aagaagtgta tggctctcaa atattgaagg	1080
atgacaaatg gattggtgtg cagcctatcc gcaatgcatt tgtggtcaat tctggtttac	1140
caattacggg aggtgtaaca ctttctctta attttcatgg tctacaagcg attctcttat	1200
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catcgtgtgg tgacaaacac aactcattca cgaacctcca ttggtacttt tatttgccca	1320
cacgatattg ttgagcctgc aaaagcactt gttggtccgg agaatcctcc acagttcaaa	1380
tcctttaatt ggggaattga ttttatgcca cattacctca gcaagaaatc agtttaccac	1440
gcatcattgg agcccttcaa aatcgatgct taagcatttg tgtgccagaa ggatcaagtc	1500
tatgctgcta cttttaattt ccactaaaat aagagcttta atttacaatg tctttctagt	1560
ttgtatccta ctttgttac ctatttcatg aataagaatc tttctttcct attctcttc	1619

<210> 27
 <211> 1292
 <212> DNA
 <213> Solanum tuberosum

<400> 27	
ctttgttatg caattttctt ccctataaat ggccctccat agctcaaag agatatcaga	60
caatttaaag aagtactatt aacatttaga agatttcttt ctttccaga ttcatgaca	120
atggcggacc ttctttcaaa ctggtcaagc acattagaag cagttcctcc aagtcattgc	180
atcccagtg atgaaagacc atcgatcca gttgaaattg tggacaatat tccagtcatt	240
gatttgggaa aagctaattg tgaagaacga agtgttggtt ttaaagaact tttgaaagct	300

tttgaagaat atgggttttt tcagataatc aatcatggag taccgtaga tctaattgat	360
gaagcaatga aagtgtacaa agaatttttc agtctgccag cagcagagaa agcagaatat	420
gcaaaggatg cagctaataa tacaatatagg ggtgcagcta cactgtacag tagcagcgct	480
aagcattatg attcagagga gcatcgttac tggagagatg tcttggaaca tagctgcaat	540
cttgatggga aagacaaaaa aacttggcct agtaaccctc caagatatag ggagggttatt	600
ggtgcatatg gagatgaatt gagaagggtg agcaaagtta tcttgggtct gttagctgaa	660
gggctagggt tggaggcagg gttctttgac acagaacttg ggcagagaat gcttgtgaat	720
cactatccag catgcccaga tccaagttta accttgggag ttggtggaca ttgtgaccc	780
aatctcataa ccattatcca acaagaagtg tatggtcttc aaatattgaa ggatgacaaa	840
tggattgggtg tgcagcctat ccgcaatgca tttgtggtca attctgggtt accaattacg	900
gtagtttagca atggaaagct aactagtgtt gcacatcgtg tggtgacaaa cacaactcat	960
tcacgaacct ccattggtac ttttatttgc ccacacgata ttgttgagcc tgcaaaagca	1020
cttgttggtc cggagaatcc tccacagttc aaatccttta attggggaat tgattttatg	1080
ccacattacc tcagcaagaa atcagtttac cacgcatcat tggagccctt caaaatcgat	1140
gcttaagcat ttgtgtgcca gaaggatcaa gtctatgctg ctacttttaa tttccactaa	1200
aataagagct ttaatttaca atgtctttct agtttgtatc ctacctttgt tacctatttc	1260
atgaataaga atctttcttt cctattctct tc	1292

<210> 28
 <211> 220
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Syn. Polynuc1.

<400> 28	
atgagtattg taattgatga tgatgaaatc ttctctttac ctagccttga tgaacttgaa	60
tccatcacac atcttcttta tgacgacgat tccgattttt tcgaaactct ttccccaatg	120
agtttagatg ttacaacatt attgcctaatt attcctacct ccaattcaat tgaatcccc	180
gtaacaccgg aggaaacaaa agaaccatct gtggcgtgtg	220

<210> 29
<211> 251
<212> DNA
<213> Artificial Sequence

<220>
<223> Syn. Polynucl.

<400> 29
cggatcttct ctcgaactgg tcaagcacat tagaagcagt tcctaaaagt cattgcatcc 60
cagagcatga aagaccatca gatccagttg aaattggcga cagtattcca gtcattgatt 120
tgggaaaagc taatggtgaa gaacgaagtg ttgttgtaa agatctgttg aaagcttttg 180
aagaatatgg gttttttcag ataatcaatc atggagtacc tgtagatcta atggatgaag 240
caatgaaagt g 251

<210> 30
<211> 2142
<212> DNA
<213> Solanum Lycopersicum

<400> 30
atgaaaaaaa ccatggagct caacaaaagc actgttccac aacctatcac caccgtatac 60
cgactccaca tgttcatcca ctcaataatc atgcttgcat taatatacta ccgtgtatct 120
aatttgttta aattcgaaaa cattctcagt ttacaagcac ttgcttgggc gctcatcact 180
tttggatgaat ttagtttcat tctcaagtgg ttcttcggac aaggctactcg ttggcgcccc 240
gttgaacgag atgttttccc tgaaaacatt acttgcaaag attccgatct accgccaatt 300
gacgtaatgg tattcactgc caatcctaag aaagagccaa ttgtagatgt catgaacact 360
gtgatatccg caatggctct tgattatccc accgataaat tggctgtgta tctcgctgat 420
gatggaggat gtccattgtc gttgtacgcc atggaacaag cgtgtttgtt tgcaaagcta 480
tggttacctt tctgtagaaa ctatggaatt aaaacgagat gcccaaaagc atttttttct 540
ccgttaggag atgatgaccg tgttcttaag aatgatgatt ttgctgctga aatgaaagaa 600
attaaattga aatatgaaga gttccagcag aagggtggaac atgctggtga atctggaaaa 660
atcaatggta acgtagtgcc tgatagagct tcgcttatta aggtaataaa cgagagggag 720
aacgaaaaga gtgtggatga tatgacgaaa atgcccttgc tagtttatgt atcccgtgaa 780
agaagattca accgtcttca tcatttcaag ggtggatctg caaatgctct acttcgagtt 840

tctggaataa tgagtaatgc cccctatgta ctggtgttag attgtgattt cttctgtcat	900
gatccaatat cagctaggaa ggcaatgtgt tttcatcttg atccaaagct atcatctgat	960
ttagcctatg ttcagttccc tcaagtcttt tacaatgtca gcaagtcaga tatttatgat	1020
gtcaaaatta gacaggctta caagacaata tggcatggaa tggatggtat ccaaggccca	1080
gtgttatctg ggactgggta ttttctcaag aggaaagcgt tatacacaag tccaggagta	1140
aaagaggcgt atcttagttc accggaaaag ctttttgga ggagtaaaag gtttcttgct	1200
tcattagagg agaaaaatgg ttatgttaag gcagataaag tcatatcaga agatatcata	1260
gaggaagcta agatgttagc tacttgtgca tatgaggatg gcacacattg gggtaagag	1320
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aaagggtgga catctactta tttgtatcca gacaggccat ctttcttggg ttgtgcccc	1440
gttgatatgc aaggtttctc atcacagctc atcaaaggg ttgctgcact tacacaagct	1500
ggtttatcac atctcaatcc catcacttat ggtttgagta gtaggatgag gactctcaa	1560
tgcatgtgct atgcctatth gatgtatthc actctthatt cttggggaat ggttatgtat	1620
gctagtgttc cttctattgg cttttgttt gacttccaag tctatcctga ggtacatgat	1680
ccgtggtttg cagtgtatgt gattgctthc atatcgacaa ttttgagaa tatgtcggag	1740
tcaattccag aagggggatc agttaaaacg tggatggatgg aatacagggc attgatgatg	1800
atgggagtta gcgcaatatg gttaggagga ttgaaagcta tatatgacaa gatagtcgga	1860
acacaaggag agaaattgta tttgtcggac aaggcaattg acaaggaaaa gctcaagaaa	1920
tacgagaagg gcaaatthga tttccaagga atagggatac ttgctctgcc actgatagca	1980
ttttccgtgt tgaacctcgt aggttctatt gttggagcta atcatgtctt tattactatg	2040
aactacgcag gcgtgctggg ccaactctc gtatcatcgt tcttcgtctt tgttgcgtc	2100
actgttgtca ttgatgtgt atcttctta aaggttctt aa	2142

<210> 31
 <211> 713
 <212> PRT
 <213> Solanum Lycopersicum

<400> 31

Met	Lys	Lys	Thr	Met	Glu	Leu	Asn	Lys	Ser	Thr	Val	Pro	Gln	Pro	Ile
1				5				10					15		

Thr Thr Val Tyr Arg Leu His Met Phe Ile His Ser Ile Ile Met Leu
20 25 30

Ala Leu Ile Tyr Tyr Arg Val Ser Asn Leu Phe Lys Phe Glu Asn Ile
35 40 45

Leu Ser Leu Gln Ala Leu Ala Trp Ala Leu Ile Thr Phe Gly Glu Phe
50 55 60

Ser Phe Ile Leu Lys Trp Phe Phe Gly Gln Gly Thr Arg Trp Arg Pro
65 70 75 80

Val Glu Arg Asp Val Phe Pro Glu Asn Ile Thr Cys Lys Asp Ser Asp
85 90 95

Leu Pro Pro Ile Asp Val Met Val Phe Thr Ala Asn Pro Lys Lys Glu
100 105 110

Pro Ile Val Asp Val Met Asn Thr Val Ile Ser Ala Met Ala Leu Asp
115 120 125

Tyr Pro Thr Asp Lys Leu Ala Val Tyr Leu Ala Asp Asp Gly Gly Cys
130 135 140

Pro Leu Ser Leu Tyr Ala Met Glu Gln Ala Cys Leu Phe Ala Lys Leu
145 150 155 160

Trp Leu Pro Phe Cys Arg Asn Tyr Gly Ile Lys Thr Arg Cys Pro Lys
165 170 175

Ala Phe Phe Ser Pro Leu Gly Asp Asp Asp Arg Val Leu Lys Asn Asp
180 185 190

Asp Phe Ala Ala Glu Met Lys Glu Ile Lys Leu Lys Tyr Glu Glu Phe
195 200 205

Gln Gln Lys Val Glu His Ala Gly Glu Ser Gly Lys Ile Asn Gly Asn
210 215 220

Val Val Pro Asp Arg Ala Ser Leu Ile Lys Val Ile Asn Glu Arg Glu
225 230 235 240

Asn Glu Lys Ser Val Asp Asp Met Thr Lys Met Pro Leu Leu Val Tyr
245 250 255

Val Ser Arg Glu Arg Arg Phe Asn Arg Leu His His Phe Lys Gly Gly
260 265 270

Ser Ala Asn Ala Leu Leu Arg Val Ser Gly Ile Met Ser Asn Ala Pro
275 280 285

Tyr Val Leu Val Leu Asp Cys Asp Phe Phe Cys His Asp Pro Ile Ser
290 295 300

Ala Arg Lys Ala Met Cys Phe His Leu Asp Pro Lys Leu Ser Ser Asp
305 310 315 320

Leu Ala Tyr Val Gln Phe Pro Gln Val Phe Tyr Asn Val Ser Lys Ser
325 330 335

Asp Ile Tyr Asp Val Lys Ile Arg Gln Ala Tyr Lys Thr Ile Trp His
340 345 350

Gly Met Asp Gly Ile Gln Gly Pro Val Leu Ser Gly Thr Gly Tyr Phe
355 360 365

Leu Lys Arg Lys Ala Leu Tyr Thr Ser Pro Gly Val Lys Glu Ala Tyr
370 375 380

Leu Ser Ser Pro Glu Lys His Phe Gly Arg Ser Lys Arg Phe Leu Ala
385 390 395 400

Ser Leu Glu Glu Lys Asn Gly Tyr Val Lys Ala Asp Lys Val Ile Ser
405 410 415

Glu Asp Ile Ile Glu Glu Ala Lys Met Leu Ala Thr Cys Ala Tyr Glu
420 425 430

Asp Gly Thr His Trp Gly Gln Glu Ile Gly Tyr Ser Tyr Asp Cys His
435 440 445

Leu Glu Ser Thr Phe Thr Gly Tyr Leu Leu His Cys Lys Gly Trp Thr
450 455 460

Ser Thr Tyr Leu Tyr Pro Asp Arg Pro Ser Phe Leu Gly Cys Ala Pro
465 470 475 480

Val Asp Met Gln Gly Phe Ser Ser Gln Leu Ile Lys Trp Val Ala Ala
485 490 495

Leu Thr Gln Ala Gly Leu Ser His Leu Asn Pro Ile Thr Tyr Gly Leu
500 505 510

Ser Ser Arg Met Arg Thr Leu Gln Cys Met Cys Tyr Ala Tyr Leu Met
515 520 525

Tyr Phe Thr Leu Tyr Ser Trp Gly Met Val Met Tyr Ala Ser Val Pro
530 535 540

Ser Ile Gly Leu Leu Phe Asp Phe Gln Val Tyr Pro Glu Val His Asp
545 550 555 560

Pro Trp Phe Ala Val Tyr Val Ile Ala Phe Ile Ser Thr Ile Leu Glu
565 570 575

Asn Met Ser Glu Ser Ile Pro Glu Gly Gly Ser Val Lys Thr Trp Trp
580 585 590

Met Glu Tyr Arg Ala Leu Met Met Met Gly Val Ser Ala Ile Trp Leu
595 600 605

Gly Gly Leu Lys Ala Ile Tyr Asp Lys Ile Val Gly Thr Gln Gly Glu
610 615 620

Lys Leu Tyr Leu Ser Asp Lys Ala Ile Asp Lys Glu Lys Leu Lys Lys
625 630 635 640

Tyr Glu Lys Gly Lys Phe Asp Phe Gln Gly Ile Gly Ile Leu Ala Leu
645 650 655

Pro Leu Ile Ala Phe Ser Val Leu Asn Leu Val Gly Phe Ile Val Gly
660 665 670

Ala Asn His Val Phe Ile Thr Met Asn Tyr Ala Gly Val Leu Gly Gln
675 680 685

Leu Leu Val Ser Ser Phe Phe Val Phe Val Val Val Thr Val Val Ile
690 695 700

Asp Val Val Ser Phe Leu Lys Val Ser
705 710

<210> 32
<211> 2142
<212> DNA
<213> Solanum pennellii

<400> 32
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cgactccaca tgttcatcca ctcaataatc atgcttgcac taatatacta ccgtgtatct 120
aatttgttta aattcgaaaa cattctcagt ttacaagcac ttgcttggct actcatcact 180
tttggatgaat ttagtttcat tctcaagtgg ttcttcggac aaggaactcg ttggcgcccc 240
gttgaacgag atgttttccc tgaaaacatt acttgcaaag attccgatct accgccaatt 300
gacgtaatgg tgttactgc caatcctaag aaagagccaa ttgtagatgt catgaacact 360
gtgatatccg caatggctct tgattatccc accgataaat tggctgtgta tctggccgat 420
gatggaggat gtccattgtc cttgtacgcc atggaacaag catgtttgtt tgcaaagcta 480
tggttacctt tctgtagaaa gtatggaatt aaaacgagat gcccaaaagc atttttttct 540
ccgttaggag atgatgaccg tgttcttaag aatgatgatt ttgctgctga aatgaaagaa 600
attaaattga aatatgaaga gttccagcag aacgtggaac atgctggtga atctggaaaa 660
atcaatggca acgtagtgc tgacagagct tcgcttatta aggtaataaa cgagagggag 720
aacgaaaaga gtgtcgatga ttttaacgaa atgcccttgc tagtttatgt atcccgtgaa 780
agaagattca accgtcttca tcatttcaag ggtggatctg caaatgctct acttcgagtt 840
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gatccgatat cagctaggaa agcaatgtgt tttcatcttg atccaaagct atcatctgat 960

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tgcattgtgct atgcctatct gatgtatttc actctttatt cttggggaat ggttatgtat	1620
gctagtgttc cttctattgg ctttttgttt ggcttccaag tctaccctga ggtacatgat	1680
ccatggtttg cagtgtatgt gattgctttc atatcgacaa ttttggagaa tatgtcggag	1740
tcaattccag aagggggatc agttaaaccg tggatggatgg aatacagggc attgatgatg	1800
atgggagtta gcgcaatatg gttaggagga ttgaaagcta tatatgacaa gatagtcgga	1860
acacaaggag agaaattgta tttgtcggac aaggcaattg acaaggaaaa gctcaagaaa	1920
tacgagaagg gcaaatttga tttccaagga atagggatac ttgctctgcc attgatagca	1980
ttttccgtgt tgaacctcgt aggcttcatt gttggagcta atcatgtctt tattactatg	2040
aactacgcag gcgtgctggg ccaactcctc gtatcatcat tcttcgtctt tgttgtcgtc	2100
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<210> 33
 <211> 713
 <212> PRT
 <213> Solanum pennellii

<400> 33

Met	Lys	Lys	Thr	Met	Glu	Leu	Asn	Lys	Ser	Thr	Val	Pro	Gln	Pro	Ile
1				5				10				15			

Thr	Thr	Val	Tyr	Arg	Leu	His	Met	Phe	Ile	His	Ser	Ile	Ile	Met	Leu
			20				25					30			

Ala Leu Ile Tyr Tyr Arg Val Ser Asn Leu Phe Lys Phe Glu Asn Ile
35 40 45

Leu Ser Leu Gln Ala Leu Ala Trp Leu Leu Ile Thr Phe Gly Glu Phe
50 55 60

Ser Phe Ile Leu Lys Trp Phe Phe Gly Gln Gly Thr Arg Trp Arg Pro
65 70 75 80

Val Glu Arg Asp Val Phe Pro Glu Asn Ile Thr Cys Lys Asp Ser Asp
85 90 95

Leu Pro Pro Ile Asp Val Met Val Phe Thr Ala Asn Pro Lys Lys Glu
100 105 110

Pro Ile Val Asp Val Met Asn Thr Val Ile Ser Ala Met Ala Leu Asp
115 120 125

Tyr Pro Thr Asp Lys Leu Ala Val Tyr Leu Ala Asp Asp Gly Gly Cys
130 135 140

Pro Leu Ser Leu Tyr Ala Met Glu Gln Ala Cys Leu Phe Ala Lys Leu
145 150 155 160

Trp Leu Pro Phe Cys Arg Lys Tyr Gly Ile Lys Thr Arg Cys Pro Lys
165 170 175

Ala Phe Phe Ser Pro Leu Gly Asp Asp Asp Arg Val Leu Lys Asn Asp
180 185 190

Asp Phe Ala Ala Glu Met Lys Glu Ile Lys Leu Lys Tyr Glu Glu Phe
195 200 205

Gln Gln Asn Val Glu His Ala Gly Glu Ser Gly Lys Ile Asn Gly Asn
210 215 220

Val Val Pro Asp Arg Ala Ser Leu Ile Lys Val Ile Asn Glu Arg Glu
225 230 235 240

Asn Glu Lys Ser Val Asp Asp Leu Thr Lys Met Pro Leu Leu Val Tyr
245 250 255

Val Ser Arg Glu Arg Arg Phe Asn Arg Leu His His Phe Lys Gly Gly
260 265 270

Ser Ala Asn Ala Leu Leu Arg Val Ser Gly Ile Met Ser Asn Ala Pro
275 280 285

Tyr Val Leu Val Leu Asp Cys Asp Phe Phe Cys His Asp Pro Ile Ser
290 295 300

Ala Arg Lys Ala Met Cys Phe His Leu Asp Pro Lys Leu Ser Ser Asp
305 310 315 320

Leu Ala Tyr Val Gln Phe Pro Gln Val Phe Tyr Asn Val Ser Lys Ser
325 330 335

Asp Ile Tyr Asp Val Lys Ile Arg Gln Ala Tyr Lys Thr Ile Trp His
340 345 350

Gly Met Asp Gly Ile Gln Gly Pro Val Leu Ser Gly Thr Gly Tyr Phe
355 360 365

Leu Lys Arg Lys Ala Leu Tyr Thr Ser Pro Gly Val Lys Glu Ala Tyr
370 375 380

Leu Ser Ser Pro Glu Lys His Phe Gly Arg Ser Lys Lys Phe Leu Ala
385 390 395 400

Ser Leu Glu Glu Lys Asn Gly Tyr Val Lys Ala Asp Lys Val Ile Ser
405 410 415

Glu Asp Ile Ile Glu Glu Ala Lys Ile Leu Ala Thr Cys Ala Tyr Glu
420 425 430

Asp Gly Thr His Trp Gly Gln Glu Ile Gly Tyr Ser Tyr Asp Cys His
435 440 445

Leu Glu Ser Thr Phe Thr Gly Tyr Leu Leu His Cys Lys Gly Trp Thr
450 455 460

Ser Thr Tyr Leu Tyr Pro Asp Arg Pro Ser Phe Leu Gly Cys Ala Pro
465 470 475 480

Val Asp Met Gln Gly Phe Ser Ser Gln Leu Ile Lys Trp Val Ala Ala
485 490 495

Leu Thr Gln Ala Gly Leu Ser His Leu Asn Pro Ile Thr Tyr Gly Leu
500 505 510

Ser Ser Arg Met Arg Thr Leu Gln Cys Met Cys Tyr Ala Tyr Leu Met
515 520 525

Tyr Phe Thr Leu Tyr Ser Trp Gly Met Val Met Tyr Ala Ser Val Pro
530 535 540

Ser Ile Gly Leu Leu Phe Gly Phe Gln Val Tyr Pro Glu Val His Asp
545 550 555 560

Pro Trp Phe Ala Val Tyr Val Ile Ala Phe Ile Ser Thr Ile Leu Glu
565 570 575

Asn Met Ser Glu Ser Ile Pro Glu Gly Gly Ser Val Lys Thr Trp Trp
580 585 590

Met Glu Tyr Arg Ala Leu Met Met Met Gly Val Ser Ala Ile Trp Leu
595 600 605

Gly Gly Leu Lys Ala Ile Tyr Asp Lys Ile Val Gly Thr Gln Gly Glu
610 615 620

Lys Leu Tyr Leu Ser Asp Lys Ala Ile Asp Lys Glu Lys Leu Lys Lys
625 630 635 640

Tyr Glu Lys Gly Lys Phe Asp Phe Gln Gly Ile Gly Ile Leu Ala Leu
645 650 655

Pro Leu Ile Ala Phe Ser Val Leu Asn Leu Val Gly Phe Ile Val Gly
660 665 670

Ala Asn His Val Phe Ile Thr Met Asn Tyr Ala Gly Val Leu Gly Gln
675 680 685

Leu Leu Val Ser Ser Phe Phe Val Phe Val Val Val Thr Val Val Ile
690 695 700

Asp Val Val Ser Phe Leu Lys Val Ser
705 710

<210> 34
<211> 2148
<212> DNA
<213> Solanum tuberosum

<400> 34
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aatttgttta aattcgaaaa cattctgagt ttacaagcac ttgcttgggt actcatcact 180
tttggatgaat ttagtttcat tctcaagtgg ttcttcggac aaggaactcg ttatcgccct 240
gttgaaagag atgttttccc tgaaaacata acttgcaaag attccgatct accaccaatt 300
gacgtaatgg tattcactgc caatcctaag aaagagccaa ttgtggatgt catgaacact 360
gtgatatccg caatggctct tgattatcct acggataaat tggctgtgta tctggctgat 420
gatggaggat gtcctttgtc attgtacgcc atggaagaag catgtgtgtt tgcaaagctg 480
tggctacctt tctgtaggaa gtatggaatt aaaactagat gccctaaagc gtttttttct 540
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 caagagattg gttattcata cgattgtcat ttggagagca cttttactgg ttatctatta 1380
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 caagctgggt tatcacatct caatcccatc acttatggct ttagtagcag gatgaaaact 1560
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 aagaaatacg agaaggggaa atttgatttc caaggaatag ggatacttgc tgtaccattg 1980
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 actatgaact acgcagggtg gcttggccaa ctctcgtat catccttctt cgtctttgtc 2100
 gtggtcactg ttgtcattga tgtcgtttct ttcttaaagg tttcttaa 2148

<210> 35
 <211> 711
 <212> PRT
 <213> Solanum tuberosum

<400> 35

Met Glu Leu Asn Lys Ser Thr Val Pro Gln Pro Ile Thr Thr Ile Tyr
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Arg Leu His Met Phe Ile His Ser Ile Ile Met Val Ala Leu Ile Tyr
 20 25 30

Tyr Arg Val Ser Asn Leu Phe Lys Phe Glu Asn Ile Leu Ser Leu Gln
 35 40 45

Ala Leu Ala Trp Val Leu Ile Thr Phe Gly Glu Phe Ser Phe Ile Leu
50 55 60

Lys Trp Phe Phe Gly Gln Gly Thr Arg Tyr Arg Pro Val Glu Arg Asp
65 70 75 80

Val Phe Pro Glu Asn Ile Thr Cys Lys Asp Ser Asp Leu Pro Pro Ile
85 90 95

Asp Val Met Val Phe Thr Ala Asn Pro Lys Lys Glu Pro Ile Val Asp
100 105 110

Val Met Asn Thr Val Ile Ser Ala Met Ala Leu Asp Tyr Pro Thr Asp
115 120 125

Lys Leu Ala Val Tyr Leu Ala Asp Asp Gly Gly Cys Pro Leu Ser Leu
130 135 140

Tyr Ala Met Glu Glu Ala Cys Val Phe Ala Lys Leu Trp Leu Pro Phe
145 150 155 160

Cys Arg Lys Tyr Gly Ile Lys Thr Arg Cys Pro Lys Ala Phe Phe Ser
165 170 175

Pro Leu Gly Asp Asp Glu Arg Val Leu Lys Asn Asp Asp Phe Asp Ala
180 185 190

Glu Met Lys Glu Ile Lys Leu Lys Tyr Glu Glu Phe Gln Gln Asn Val
195 200 205

Glu Arg Ala Gly Glu Ser Gly Lys Ile Asn Gly Asn Val Val Pro Asp
210 215 220

Arg Ala Ser Phe Ile Lys Val Ile Asn Asp Arg Lys Ala Glu Ser Glu
225 230 235 240

Lys Ser Ala Asp Asp Leu Thr Lys Met Pro Leu Leu Val Tyr Val Ser
245 250 255

Arg Glu Arg Arg Phe Asn Arg Leu His His Phe Lys Gly Gly Ser Ala
260 265 270

Asn Ala Leu Leu Arg Val Ser Gly Ile Met Ser Asn Ala Pro Tyr Ile
275 280 285

Leu Val Leu Asp Cys Asp Phe Phe Cys His Asp Pro Ile Ser Ala Arg
290 295 300

Lys Ala Met Cys Phe His Leu Asp Pro Lys Leu Ser Ser Asp Leu Ala
305 310 315 320

Tyr Val Gln Phe Pro Gln Val Phe Tyr Asn Val Ser Lys Ser Asp Ile
325 330 335

Tyr Asp Val Lys Ile Arg Gln Ala Tyr Lys Thr Ile Trp His Gly Met
340 345 350

Asp Gly Ile Gln Gly Pro Val Leu Ser Gly Thr Gly Tyr Phe Leu Lys
355 360 365

Arg Lys Ala Leu Tyr Thr Ser Pro Gly Val Lys Glu Glu Tyr Leu Ser
370 375 380

Ser Pro Glu Lys His Phe Gly Arg Ser Lys Lys Phe Leu Ala Ser Leu
385 390 395 400

Glu Glu Lys Asn Gly Tyr Val Lys Ala Glu Lys Val Ile Ser Glu Asp
405 410 415

Ile Val Glu Glu Ala Lys Thr Leu Ala Thr Cys Ala Tyr Glu Asp Gly
420 425 430

Thr His Trp Gly Gln Glu Ile Gly Tyr Ser Tyr Asp Cys His Leu Glu
435 440 445

Ser Thr Phe Thr Gly Tyr Leu Leu His Cys Lys Gly Trp Arg Ser Thr
450 455 460

Tyr Leu Tyr Pro Asp Arg Pro Ser Phe Leu Gly Cys Ala Pro Val Asp
465 470 475 480

Met Gln Gly Phe Ser Ser Gln Leu Ile Lys Trp Val Ala Ala Leu Thr
485 490 495

Gln Ala Gly Leu Ser His Leu Asn Pro Ile Thr Tyr Gly Phe Ser Ser
500 505 510

Arg Met Lys Thr Leu Gln Cys Met Cys Tyr Ala Tyr Leu Ile Tyr Phe
515 520 525

Thr Leu Tyr Ser Trp Gly Met Val Leu Tyr Ala Ser Val Pro Ser Ile
530 535 540

Gly Leu Leu Phe Gly Phe Gln Val Tyr Pro Asp Val His Asp Pro Trp
545 550 555 560

Phe Ala Val Tyr Val Ile Ala Phe Ile Ser Ala Ile Leu Glu Asn Met
565 570 575

Ser Glu Ser Ile Pro Asp Gly Gly Ser Phe Lys Ser Trp Trp Met Glu
580 585 590

Tyr Arg Ala Leu Met Met Met Gly Val Ser Ala Ile Trp Leu Gly Gly
595 600 605

Leu Lys Ala Ile Leu Asp Arg Ile Ile Gly Thr Glu Gly Glu Lys Leu
610 615 620

Tyr Leu Ser Asp Lys Ala Ile Asp Lys Glu Lys Leu Lys Lys Tyr Glu
625 630 635 640

Lys Gly Lys Phe Asp Phe Gln Gly Ile Gly Ile Leu Ala Val Pro Leu
645 650 655

Ile Ala Phe Ser Leu Leu Asn Leu Val Gly Phe Ile Val Gly Ala Asn
660 665 670

His Val Phe Ile Thr Met Asn Tyr Ala Gly Val Leu Gly Gln Leu Leu
675 680 685

Val Ser Ser Phe Phe Val Phe Val Val Val Thr Val Val Ile Asp Val
690 695 700

Val Ser Phe Leu Lys Val Ser
705 710

<210> 36
<211> 2148
<212> DNA
<213> Solanum chacoense

<400> 36
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aatttgttta aattcgaaaa cattctgagt ttacaagcac ttgcttgggt actcatcact 180
tttggatgaat ttagtttcat tctcaagtgg ttcttcggac aaggaactcg ttggcgcctt 240
gttgaaagag atgttttccc tgaaaacata acttgcaaag attccgatct accaccaatt 300
gacgtaatgg tattcactgc caatcctaag aaagagccaa ttgtggatgt catgaacact 360
gtgatatccg caatggctct agattatcct acggataaat tggctgtgta tctggctgat 420
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tggctacctt tctgtaggaa gtatggaatt aaaaccagat gccctaaagc gtttttttct 540
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ggcccagtgt tatcaggaac tggttatttt ctgaagagga aggcgttata cacgagtcca 1140
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cttgcttcac tagaggagaa aaatggttat gttaaggcag agaaagtcac atcagaagat	1260
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caagagatcg gttattcata cgattgtcat ttggagagca cttttactgg ttatctatta	1380
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caagctgggtt tatcacatct caatcccatc acttatggct tgagtagcag gatgaaaact	1560
ctccaatgca tgtgctatgc ctatttgata tatttcactc tttattcttg gggaatgggt	1620
ctatatgcta gtattccttc tattgggtctt ttgtttggct tccaagtcta tccggaggta	1680
catgatccat ggtttgcagt gtatgtgatt gctttcatat cgacaatttt ggagaatatg	1740
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atgatgatgg gagttagtgc aatatgggta ggaggattga aagctatatt agacaagata	1860
atcggaacag aaggagagaa attgtatttg tcagacaagg caattgacaa ggaaaagctc	1920
aagaaatacg agaaggggaa atttgatttc caaggaatag ggatacttgc tgtaccattg	1980
atagcatttt ccctgttgaa cctggtaggc ttcatgttg gagctaataca tgtctttatt	2040
actatgaact acgcaggtgt gcttggccaa ctctctgtat catccttctt cgtctttgtc	2100
gtggtcactg ttgtcattga tgtcgtttct ttcttaaagg tttcttaa	2148

<210> 37
 <211> 715
 <212> PRT
 <213> Solanum chacoense

<400> 37

Met	Lys	Lys	Thr	Met	Glu	Leu	Asn	Lys	Ser	Thr	Val	Pro	Gln	Pro	Ile
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Thr	Thr	Ile	Tyr	Arg	Leu	His	Met	Phe	Val	His	Ser	Ile	Ile	Met	Ala
		20						25					30		

Ala	Leu	Ile	Tyr	Tyr	Arg	Val	Ser	Asn	Leu	Phe	Lys	Phe	Glu	Asn	Ile
		35						40				45			

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

Ser Phe Ile Leu Lys Trp Phe Phe Gly Gln Gly Thr Arg Trp Arg Pro
65 70 75 80

Val Glu Arg Asp Val Phe Pro Glu Asn Ile Thr Cys Lys Asp Ser Asp
85 90 95

Leu Pro Pro Ile Asp Val Met Val Phe Thr Ala Asn Pro Lys Lys Glu
100 105 110

Pro Ile Val Asp Val Met Asn Thr Val Ile Ser Ala Met Ala Leu Asp
115 120 125

Tyr Pro Thr Asp Lys Leu Ala Val Tyr Leu Ala Asp Asp Gly Gly Cys
130 135 140

Pro Leu Ser Leu Tyr Ala Met Glu Glu Ala Cys Val Phe Ala Lys Leu
145 150 155 160

Trp Leu Pro Phe Cys Arg Lys Tyr Gly Ile Lys Thr Arg Cys Pro Lys
165 170 175

Ala Phe Phe Ser Pro Leu Gly Asp Asp Asp Arg Val Leu Lys Asn Asp
180 185 190

Asp Phe Asp Ala Glu Met Lys Glu Ile Lys Leu Lys Tyr Glu Glu Phe
195 200 205

Gln Gln Asn Val Glu Arg Ala Gly Glu Ser Gly Lys Ile Asn Gly Asn
210 215 220

Val Val Pro Asp Arg Ala Ser Phe Ile Lys Val Ile Asn Asp Arg Lys
225 230 235 240

Thr Glu Ser Glu Lys Ser Ala Asp Asp Leu Thr Lys Met Pro Leu Leu
245 250 255

Val Tyr Val Ser Arg Glu Arg Arg Phe Asn Arg Leu His His Phe Lys
260 265 270

Gly Gly Ser Ala Asn Ala Leu Leu Arg Val Ser Gly Ile Met Ser Asn
275 280 285

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

Ile Ser Ala Arg Lys Ala Met Cys Phe His Leu Asp Pro Lys Leu Ser
305 310 315 320

Ser Asp Leu Ala Tyr Val Gln Phe Pro Gln Val Phe Tyr Asn Val Ser
325 330 335

Lys Ser Asp Ile Tyr Asp Val Lys Ile Arg Gln Ala Tyr Lys Thr Ile
340 345 350

Trp His Gly Met Asp Gly Ile Gln Gly Pro Val Leu Ser Gly Thr Gly
355 360 365

Tyr Phe Leu Lys Arg Lys Ala Leu Tyr Thr Ser Pro Gly Val Lys Glu
370 375 380

Glu Tyr Leu Ser Ser Pro Glu Lys His Phe Gly Arg Ser Lys Lys Phe
385 390 395 400

Leu Ala Ser Leu Glu Glu Lys Asn Gly Tyr Val Lys Ala Glu Lys Val
405 410 415

Ile Ser Glu Asp Ile Val Glu Glu Ala Lys Thr Leu Ala Thr Cys Ala
420 425 430

Tyr Glu Asp Gly Thr His Trp Gly Gln Glu Ile Gly Tyr Ser Tyr Asp
435 440 445

Cys His Leu Glu Ser Thr Phe Thr Gly Tyr Leu Leu His Cys Lys Gly
450 455 460

Trp Thr Ser Thr Tyr Leu Tyr Pro Asp Arg Pro Ser Phe Leu Gly Cys
465 470 475 480

Ala Pro Val Asp Met Gln Gly Phe Ser Ser Gln Leu Ile Lys Trp Val
485 490 495

Ala Ala Leu Thr Gln Ala Gly Leu Ser His Leu Asn Pro Ile Thr Tyr
500 505 510

Gly Leu Ser Ser Arg Met Lys Thr Leu Gln Cys Met Cys Tyr Ala Tyr
515 520 525

Leu Ile Tyr Phe Thr Leu Tyr Ser Trp Gly Met Val Leu Tyr Ala Ser
530 535 540

Ile Pro Ser Ile Gly Leu Leu Phe Gly Phe Gln Val Tyr Pro Glu Val
545 550 555 560

His Asp Pro Trp Phe Ala Val Tyr Val Ile Ala Phe Ile Ser Thr Ile
565 570 575

Leu Glu Asn Met Ser Glu Ser Ile Pro Glu Gly Gly Ser Phe Lys Ser
580 585 590

Trp Trp Met Glu Tyr Arg Ala Leu Met Met Met Gly Val Ser Ala Ile
595 600 605

Trp Leu Gly Gly Leu Lys Ala Ile Leu Asp Lys Ile Ile Gly Thr Glu
610 615 620

Gly Glu Lys Leu Tyr Leu Ser Asp Lys Ala Ile Asp Lys Glu Lys Leu
625 630 635 640

Lys Lys Tyr Glu Lys Gly Lys Phe Asp Phe Gln Gly Ile Gly Ile Leu
645 650 655

Ala Val Pro Leu Ile Ala Phe Ser Leu Leu Asn Leu Val Gly Phe Ile
660 665 670

Val Gly Ala Asn His Val Phe Ile Thr Met Asn Tyr Ala Gly Val Leu
675 680 685

Gly Gln Leu Leu Val Ser Ser Phe Phe Val Phe Val Val Val Thr Val
690 695 700

Val Ile Asp Val Val Ser Phe Leu Lys Val Ser
705 710 715

<210> 38
<211> 2058
<212> DNA
<213> Solanum melongena

<400> 38
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gatgtcatgg ttttactgc aaatcctaag aaagagccaa ttgtggatgt catgaacact 360
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ttcttaaagg attcttaa	2058

<210> 39
 <211> 685
 <212> PRT
 <213> Solanum melongena

<400> 39

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		20						25					30		

Ala	Leu	Ile	Tyr	Tyr	Arg	Val	Ser	Asn	Leu	Ala	Lys	Phe	Glu	Asn	Ile
		35						40				45			

Leu	Ser	Leu	Gln	Ala	Leu	Ala	Trp	Ala	Leu	Ile	Thr	Leu	Gly	Glu	Leu
	50					55					60				

Cys	Phe	Ile	Val	Lys	Trp	Phe	Phe	Gly	Gln	Gly	Thr	Arg	Trp	Arg	Pro
65					70					75					80

Val Asp Arg Asp Val Phe Pro Glu Asn Ile Thr Cys Pro Asp Ser Glu
85 90 95

Leu Pro Pro Ile Asp Val Met Val Phe Thr Ala Asn Pro Lys Lys Glu
100 105 110

Pro Ile Val Asp Val Met Asn Thr Val Ile Ser Ala Met Ala Leu Asp
115 120 125

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

Pro Leu Thr Leu Tyr Ala Met Glu Glu Ala Cys Ser Phe Ala Lys Leu
145 150 155 160

Trp Leu Pro Phe Cys Arg Lys Tyr Gly Ile Lys Thr Arg Cys Pro Lys
165 170 175

Ala Phe Phe Ser Pro Leu Gly Glu Asp Asp Arg Val Leu Lys Ser Asp
180 185 190

Asp Phe Val Ser Glu Met Lys Glu Met Lys Ser Lys Tyr Glu Glu Phe
195 200 205

Gln Gln Asn Val Asp Arg Ala Gly Glu Ser Gly Lys Ile Lys Gly Asp
210 215 220

Val Val Pro Asp Arg Pro Ala Phe Leu Lys Val Leu Asn Asp Arg Lys
225 230 235 240

Thr Glu Asn Glu Lys Ser Ala Asp Asp Leu Thr Lys Met Pro Leu Leu
245 250 255

Val Tyr Val Ser Arg Glu Arg Arg Thr His Arg Arg His His Phe Lys
260 265 270

Gly Gly Ser Ala Asn Ala Leu Leu Arg Val Ser Gly Ile Ile Ser Asn
275 280 285

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

Ile Ser Ala Arg Lys Ala Met Cys Phe His Leu Asp Pro Lys Leu Ser
305 310 315 320

Pro Asp Leu Ala Tyr Val Gln Phe Pro Gln Val Phe Tyr Asn Val Ser
325 330 335

Lys Ser Asp Ile Tyr Asp Val Lys Ile Arg Gln Ala Tyr Lys Thr Ile
340 345 350

Trp His Gly Met Asp Gly Ile Gln Gly Pro Val Leu Ser Gly Thr Gly
355 360 365

Tyr Phe Leu Lys Lys Lys Ala Leu Tyr Thr Ser Pro Gly Leu Lys Asp
370 375 380

Glu Tyr Leu Ser Ser Pro Glu Lys His Phe Gly Thr Ser Arg Lys Phe
385 390 395 400

Ile Ala Ser Leu Glu Glu Asn Asn Tyr Val Lys Gln Glu Lys Val Ile
405 410 415

Ser Glu Asp Ile Ile Glu Glu Ala Lys Arg Leu Ala Thr Cys Ala Tyr
420 425 430

Glu Asp Gly Thr His Trp Gly Gln Glu Ala Asn Arg Pro Ser Phe Leu
435 440 445

Gly Cys Ala Pro Val Asp Met Gln Gly Phe Ser Ser Gln Leu Ile Lys
450 455 460

Trp Val Ala Ala Leu Thr Gln Ala Gly Leu Ser His Leu Asn Pro Ile
465 470 475 480

Thr Tyr Gly Phe Lys Ser Arg Met Arg Thr Leu Gln Val Leu Cys Tyr
485 490 495

Ala Tyr Leu Met Tyr Phe Ser Leu Tyr Ser Trp Gly Met Val Leu His
500 505 510

Ala Ser Val Pro Ser Ile Gly Leu Leu Ser Gly Ile Lys Ile Tyr Pro
515 520 525

Glu Val Tyr Asp Pro Trp Phe Val Val Tyr Val Ile Ala Phe Ile Ser
530 535 540

Thr Ile Leu Glu Asn Met Ser Glu Ser Ile Pro Glu Gly Gly Ser Val
545 550 555 560

Lys Thr Trp Trp Met Glu Tyr Arg Ala Leu Met Met Met Gly Val Ser
565 570 575

Ala Ile Trp Leu Gly Gly Val Lys Ala Ile Val Asp Lys Ile Ile Gly
580 585 590

Thr Gln Gly Glu Lys Leu Tyr Leu Ser Asp Lys Ala Ile Asp Lys Glu
595 600 605

Lys Leu Lys Lys Tyr Glu Lys Gly Lys Phe Asp Phe Gln Gly Ile Gly
610 615 620

Ile Leu Ala Val Pro Leu Ile Thr Phe Ser Val Leu Asn Leu Val Gly
625 630 635 640

Phe Leu Val Gly Ile Asn Gln Val Leu Ile Thr Met Lys Phe Ala Gly
645 650 655

Val Leu Gly Gln Leu Leu Val Ser Ser Phe Phe Val Phe Val Val Val
660 665 670

Thr Val Val Ile Asp Val Val Ser Phe Leu Lys Asp Ser
675 680 685

<210> 40
<211> 2136
<212> DNA
<213> Capsicum annuum

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ttcgaaaacg tcctcacttt acaagcattt gcatgggggc ttatcacctt aggtgaaatt	180
tgtttcattg tcaagtgggt ctttgggtcaa gggactcgtt ggcgccccgt tgtcaggaggaa	240
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ttcactgcca atcccaagaa agagccaatt gtggatgtca tgaacactgt gatatccgca	360
atggctcttg attacccgac ggataaattg gctgtgtatc tggctgatga tggaggatgc	420
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aagagtgccg acgatataac gaaaatgcct ttgctagtat acgtatcccg tgaaagaaga	780
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tcgggaactg ggtattttct gaagaggaaa gcgttataca cgagtccagg tctaaaggat	1140
gagtatctta tttcaccgga aaagcatttc ggatcaagta gaaagttcat tgcttctcta	1200
gaggagaaca atggttatgt taagcaagag aaactcataa cagaagatat tatagaggaa	1260
gcgaagacct tgtctacttg tgcatacgag gatggtacac gatggggcga agagatcgg	1320
tataacctaca attgccattt ggagagcact tttaccggct atcttttgca ctgcaaaggg	1380
tggacatcaa catatttgta tccagaaagg ccatctttct tgggttgtgc cccagttgat	1440
atgcaaggat tctcctcaca actcacaaaa tgggttgctg cactcacaca agctgggtcta	1500
tcacatctca atcccatcac ttacggcatg aagagcagga ttaagactat ccaatgcttg	1560
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<210> 41
 <211> 711
 <212> PRT
 <213> Capsicum annuum

<400> 41

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Arg Leu His Met Phe Leu His Ser Leu Ile Met Leu Ala Leu Val Tyr
 20 25 30

Tyr Arg Leu Ser Asn Leu Phe Tyr Phe Glu Asn Val Leu Thr Leu Gln
 35 40 45

Ala Phe Ala Trp Gly Leu Ile Thr Leu Gly Glu Ile Cys Phe Ile Val
 50 55 60

Lys Trp Phe Phe Gly Gln Gly Thr Arg Trp Arg Pro Val Val Arg Glu
 65 70 75 80

Val Phe Leu Asp Asn Ile Thr Cys Gln Asp Ser Glu Leu Pro Ala Leu
 85 90 95

Asp Val Met Val Phe Thr Ala Asn Pro Lys Lys Glu Pro Ile Val Asp
 100 105 110

Val Met Asn Thr Val Ile Ser Ala Met Ala Leu Asp Tyr Pro Thr Asp
 115 120 125

Lys Leu Ala Val Tyr Leu Ala Asp Asp Gly Gly Cys Pro Leu Thr Leu
130 135 140

Tyr Ala Met Glu Glu Ala Cys Ser Phe Ala Lys Leu Trp Leu Pro Phe
145 150 155 160

Cys Arg Lys Tyr Gly Ile Lys Thr Arg Cys Pro Lys Ala Phe Phe Ser
165 170 175

Pro Leu Gly Glu Asp Asp Arg Ile Leu Lys Asn Asp Asp Phe Val Ala
180 185 190

Glu Met Lys Glu Ile Lys Leu Lys Tyr Glu Glu Phe Gln Gln Asn Val
195 200 205

Asn Leu Ala Gly Glu Ser Gly Lys Ile Lys Gly Asp Val Val Pro Asp
210 215 220

Arg Ala Ser Phe Ile Lys Val Ile Asn Asp Arg Lys Met Glu Asn Lys
225 230 235 240

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

Arg Glu Arg Arg Phe Asn Ser Arg His His Phe Lys Gly Gly Ser Ala
260 265 270

Asn Ala Leu Leu Arg Val Ser Gly Ile Met Ser Asn Ala Pro Tyr Leu
275 280 285

Leu Val Leu Asp Cys Asp Phe Phe Cys His Asp Pro Thr Ser Ala Arg
290 295 300

Lys Ala Met Cys Phe His Leu Asp Pro Lys Leu Ser Pro Ser Leu Ala
305 310 315 320

Tyr Val Gln Phe Pro Gln Val Phe Tyr Asn Val Ser Lys Ser Asp Ile
325 330 335

Tyr Asp Val Lys Ile Arg Gln Ala Tyr Lys Thr Ile Trp His Gly Met
340 345 350

Asp Gly Ile Gln Gly Pro Val Leu Ser Gly Thr Gly Tyr Phe Leu Lys
355 360 365

Arg Lys Ala Leu Tyr Thr Ser Pro Gly Leu Lys Asp Glu Tyr Leu Ile
370 375 380

Ser Pro Glu Lys His Phe Gly Ser Ser Arg Lys Phe Ile Ala Ser Leu
385 390 395 400

Glu Glu Asn Asn Gly Tyr Val Lys Gln Glu Lys Leu Ile Thr Glu Asp
405 410 415

Ile Ile Glu Glu Ala Lys Thr Leu Ser Thr Cys Ala Tyr Glu Asp Gly
420 425 430

Thr Arg Trp Gly Glu Glu Ile Gly Tyr Thr Tyr Asn Cys His Leu Glu
435 440 445

Ser Thr Phe Thr Gly Tyr Leu Leu His Cys Lys Gly Trp Thr Ser Thr
450 455 460

Tyr Leu Tyr Pro Glu Arg Pro Ser Phe Leu Gly Cys Ala Pro Val Asp
465 470 475 480

Met Gln Gly Phe Ser Ser Gln Leu Thr Lys Trp Val Ala Ala Leu Thr
485 490 495

Gln Ala Gly Leu Ser His Leu Asn Pro Ile Thr Tyr Gly Met Lys Ser
500 505 510

Arg Ile Lys Thr Ile Gln Cys Leu Cys Tyr Ala Tyr Leu Met Tyr Phe
515 520 525

Ser Leu Tyr Ser Trp Gly Met Val Leu His Ala Ser Val Pro Ser Ile
530 535 540

Ser Leu Leu Leu Gly Ile Gln Val Tyr Pro Glu Val Tyr Asp Pro Trp
545 550 555 560

Phe Ala Val Tyr Val Leu Ala Phe Ile Ser Thr Ile Leu Glu Asn Met
565 570 575

Ser Glu Ser Ile Pro Glu Gly Gly Ser Val Lys Thr Trp Trp Met Glu
580 585 590

Tyr Arg Ala Leu Met Met Met Gly Val Ser Ala Ile Trp Leu Gly Gly
595 600 605

Val Lys Ala Ile Val Glu Lys Ile Ile Gly Thr Gln Gly Glu Lys Leu
610 615 620

Tyr Leu Ser Asp Lys Ala Ile Asp Lys Glu Lys Leu Lys Lys Tyr Glu
625 630 635 640

Lys Gly Lys Phe Asp Phe Gln Gly Ile Gly Ile Leu Ala Val Pro Leu
645 650 655

Ile Thr Phe Ser Ala Leu Asn Leu Val Gly Phe Met Val Gly Ala Asn
660 665 670

Gln Val Ile Leu Thr Met Lys Phe Glu Ala Leu Leu Gly Gln Leu Leu
675 680 685

Val Ser Ser Phe Phe Val Phe Val Val Val Thr Val Val Ile Asp Val
690 695 700

Leu Ser Phe Leu Lys Asp Ser
705 710

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<211> 270
<212> DNA
<213> Artificial Sequence

<220>
<223> Syn. Polynucl.

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tagaaactat ggaattaaaa cgagatgccc aaaagcattt ttttctccgt taggagatga 180

tgaccgtggtt cttagaatg atgattttgc tgctgaaatg aaagaaatta aattgaaata	240
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<210> 43
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Syn. Polynucl.

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taggaagtat ggaattaaaa ctagatgccc taaagcgttt ttttctcctt taggagatga	180
tgaacgtggt cttagaatg atgattttga tgctgaaatg aaagaaatta aattgaaata	240
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<210> 44
 <211> 447
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Syn. Polynucl.

<400> 44	
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tgaccgtgta ttgaagagt atgactttgt ttctgaaatg aaagaaatga agtcaaaata	240
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agtgctgat agaccgcgt ttcttaaggt actaaatgac aggaagacgg agaacgagaa	360
gagtgacagac gatttaacta aaatgccttt gctagtatac gtatcccgtg aaagaagaac	420
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<210> 45
 <211> 2292

<212> DNA

<213> *Spinacia oleracea*

<400> 45

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gaggtcgaag atgctcgccg cgatTTTTTtac aataatcggT ttaaagtgaA gccttgtaac	180
gatctcttat ggcgttttca gttcttaaga gagaaaaact tcaagcaaac catacctcaa	240
gtgaaggTgg gtgacgggga ggagatcaca tatgagaccg cctcgacgac attaaagaga	300
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<210> 46
 <211> 1452
 <212> DNA
 <213> *Spinacia oleracea*

<400> 46	
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ccctatctct	agcctccttc
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tagaaccg	gggtacaagc
taccccg	caagatggg
	120
tggccggtg	tgggcgagtc
atttgaattt	tttcaaaccg
ggtggaaagg	ttaccggaa
	180
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gaacaagtac	acccaagcc
aagtgttcaa	gacttccatc
	240
gtaggagaaa	aggttgcggt
tttatgtggc	gcggcgggta
acaagttctt	gtactcaaac
	300
gagaacaagt	tagtacaagc
ttggtggcct	agctctgttg
ataagatctt	tccttcttct
	360
acccaaactt	cctccaaaga
agaggctaag	aagatgcgga
aactcctccc	taacttcctc
	420
aagcccagg	ctttacatag
gtacataccc	atcatggata
gcattgccat	ccggcacatg
	480
gagtccgggt	gggagggaaa
ggacaaggta	gaagtcttcc
ctttggctaa	gaattacacc
	540
ttctggctgg	cttgccgact
cttcttaagc	gtcaggagacc
cggctcatgt	agccaagttc
	600

tccgaaccat tcaacgacat agccgcaggg atcatctcga tgccaatcga cctccccgga	660
acacccttca accgagggat caagtcgtct aacgtcgtaa ggaaagagtt gagggccatc	720
ataaagcaga ggaaacttga cttagcagat ggcaaggctt cacctacaca agatattctg	780
tctcatatgt tgttgacttg tactgaagat ggcaagttta tgagtgaaat ggatattgct	840
gataagattc tgggacttct tatttggtgga catgatactg ctagtgcttc ttgtactttt	900
gttgtaagt ttcttgctga gcttcctcac atatatgaag gtgtctacaa agagcaaattg	960
gagatagcaa attcaaaaaa agcaggagaa cttctaaatt gggaggacat aaaaaaatg	1020
aaatactcat ggaatgtagc ttgtgaagtt atgcgtttgg ctctccact tcaaggtggt	1080
ttcaggggaag ccctttctga tttcatgtat aacggattcc aaatcccaa gggctggaag	1140
ttatattgga gtgcaaattc aacacatatg aacccggaat gcttcccgga gcccaagacg	1200
ttcgacccat cgaggttcga cggtagcgga ccagcaccat acacatacgt ccccttcgga	1260
ggaggaccga gaatgtgccc gggcaaggag tatgcaaggc tagagatatt agtgttcatg	1320
cacaacgttg tcaagaggtt taaatgggaa aaaatgcttc ctgatgagaa ggttattgtc	1380
aatcccatgc ctatcccaga acatggcctt cctgtccgcc ttttcctca tcctcgaact	1440
gtagctgctt aa	1452

<210> 47
 <211> 279
 <212> DNA
 <213> Spinacia oleracea

<400> 47	
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ttccttttct ataaccacca tacaaccggg gtttaccgcg taccgcggg cgagatgggg	120
tggccggtgg tgggcgactc gtttgaattt tttcaaaccg ggtggaacgg ttaccggaa	180
aatttcatct ttgatagact caacaaatac accccaagcc aagtgttcaa gactttcatc	240
ctaagagaaa aggttggtgtt ttatttgaga aggttgtag	279

<210> 48
 <211> 483
 <212> PRT
 <213> Spinacia oleracea

<400> 48

Met Glu Leu Phe Phe Met Cys Gly Leu Val Leu Phe Leu Ser Leu Ser
1 5 10 15

Leu Ala Ser Phe Phe Leu Phe Tyr Asn His His Arg Thr Arg Gly Tyr
20 25 30

Lys Leu Pro Pro Gly Lys Met Gly Trp Pro Val Val Gly Glu Ser Phe
35 40 45

Glu Phe Phe Gln Thr Gly Trp Lys Gly Tyr Pro Glu Lys Phe Ile Phe
50 55 60

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

Val Gly Glu Lys Val Ala Val Leu Cys Gly Ala Ala Gly Asn Lys Phe
85 90 95

Leu Tyr Ser Asn Glu Asn Lys Leu Val Gln Ala Trp Trp Pro Ser Ser
100 105 110

Val Asp Lys Ile Phe Pro Ser Ser Thr Gln Thr Ser Ser Lys Glu Glu
115 120 125

Ala Lys Lys Met Arg Lys Leu Leu Pro Asn Phe Leu Lys Pro Glu Ala
130 135 140

Leu His Arg Tyr Ile Pro Ile Met Asp Ser Ile Ala Ile Arg His Met
145 150 155 160

Glu Ser Gly Trp Glu Gly Lys Asp Lys Val Glu Val Phe Pro Leu Ala
165 170 175

Lys Asn Tyr Thr Phe Trp Leu Ala Cys Arg Leu Phe Leu Ser Val Glu
180 185 190

Asp Pro Ala His Val Ala Lys Phe Ser Glu Pro Phe Asn Asp Ile Ala
195 200 205

Ala Gly Ile Ile Ser Met Pro Ile Asp Leu Pro Gly Thr Pro Phe Asn
210 215 220

Arg Gly Ile Lys Ser Ser Asn Val Val Arg Lys Glu Leu Arg Ala Ile
225 230 235 240

Ile Lys Gln Arg Lys Leu Asp Leu Ala Asp Gly Lys Ala Ser Pro Thr
245 250 255

Gln Asp Ile Leu Ser His Met Leu Leu Thr Cys Thr Glu Asp Gly Lys
260 265 270

Phe Met Ser Glu Met Asp Ile Ala Asp Lys Ile Leu Gly Leu Leu Ile
275 280 285

Gly Gly His Asp Thr Ala Ser Ala Ser Cys Thr Phe Val Val Lys Phe
290 295 300

Leu Ala Glu Leu Pro His Ile Tyr Glu Gly Val Tyr Lys Glu Gln Met
305 310 315 320

Glu Ile Ala Asn Ser Lys Lys Ala Gly Glu Leu Leu Asn Trp Glu Asp
325 330 335

Ile Gln Lys Met Lys Tyr Ser Trp Asn Val Ala Cys Glu Val Met Arg
340 345 350

Leu Ala Pro Pro Leu Gln Gly Gly Phe Arg Glu Ala Leu Ser Asp Phe
355 360 365

Met Tyr Asn Gly Phe Gln Ile Pro Lys Gly Trp Lys Leu Tyr Trp Ser
370 375 380

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

Phe Asp Pro Ser Arg Phe Asp Gly Thr Gly Pro Ala Pro Tyr Thr Tyr
405 410 415

Val Pro Phe Gly Gly Gly Pro Arg Met Cys Pro Gly Lys Glu Tyr Ala
420 425 430

Arg Leu Glu Ile Leu Val Phe Met His Asn Val Val Lys Arg Phe Lys
435 440 445

Trp Glu Lys Met Leu Pro Asp Glu Lys Val Ile Val Asn Pro Met Pro
450 455 460

Ile Pro Glu His Gly Leu Pro Val Arg Leu Phe Pro His Pro Arg Thr
465 470 475 480

Val Ala Ala

<210> 49
<211> 763
<212> PRT
<213> Spinacia oleracea

<400> 49

Met Trp Arg Leu Lys Val Gly Glu Gly Ala Asn Asp Pro Tyr Leu Tyr
1 5 10 15

Ser Thr Asn Asn Phe Val Gly Arg Gln Thr Trp Glu Phe Asp Pro Asn
20 25 30

Tyr Gly Thr Pro Glu Asp Ile Gln Glu Val Glu Asp Ala Arg Arg Asp
35 40 45

Phe Tyr Asn Asn Arg Phe Lys Val Lys Pro Cys Asn Asp Leu Leu Trp
50 55 60

Arg Phe Gln Phe Leu Arg Glu Lys Asn Phe Lys Gln Thr Ile Pro Gln
65 70 75 80

Val Lys Val Gly Asp Gly Glu Glu Ile Thr Tyr Glu Thr Ala Ser Thr
85 90 95

Thr Leu Lys Arg Ala Val Asn Ile Phe Thr Ala Leu Gln Ser Glu His
100 105 110

Gly His Trp Pro Ala Glu Ile Ala Gly Pro Gln Phe Phe Leu Pro Pro

115

120

125

Leu Val Phe Cys Leu Tyr Ile Thr Gly Asp Leu Asn Ser Val Phe Gly
 130 135 140

Pro Glu His Arg Arg Glu Ile Leu Arg Ser Ile Tyr Tyr His Gln Asn
 145 150 155 160

Glu Asp Gly Gly Trp Gly Leu His Ile Glu Gly His Ser Thr Met Phe
 165 170 175

Cys Thr Ala Leu Asn Tyr Ile Cys Leu Arg Met Leu Gly Ile Gly Pro
 180 185 190

Asp Glu Gly Asp Asp Asn Ala Cys Pro Arg Ala Arg Lys Trp Ile Leu
 195 200 205

Asp His Gly Ser Val Thr His Ile Pro Ser Trp Gly Lys Thr Trp Leu
 210 215 220

Ser Ile Leu Gly Leu Phe Asp Trp Ser Gly Ser Asn Pro Met Pro Pro
 225 230 235 240

Glu Phe Trp Ile Leu Pro Thr Phe Leu Pro Met His Pro Ala Lys Met
 245 250 255

Trp Cys Tyr Cys Arg Met Val Tyr Met Pro Met Ser Tyr Leu Tyr Gly
 260 265 270

Lys Arg Phe Val Gly Pro Ile Thr Pro Leu Ile Lys Gln Leu Arg Glu
 275 280 285

Glu Leu Tyr Asn Glu Pro Phe Glu Gln Ile Ser Trp Lys Lys Met Arg
 290 295 300

His Leu Cys Ala Pro Glu Asp Leu Tyr Tyr Pro His Pro Leu Ile Gln
 305 310 315 320

Asp Leu Met Trp Asp Ala Leu Tyr Leu Phe Thr Glu Pro Leu Leu Thr
 325 330 335

Arg Trp Pro Phe Asn Lys Leu Ile Arg Lys Lys Ala Leu Glu Val Thr
340 345 350

Met Glu His Ile His Tyr Glu Asp Glu Asn Ser Arg Tyr Ile Thr Ile
355 360 365

Gly Cys Val Glu Lys Val Leu Cys Met Leu Ala Cys Trp Val Glu Asp
370 375 380

Pro Lys Gly Asp His Tyr Lys Lys His Leu Ala Arg Val Gln Asp Tyr
385 390 395 400

Ile Trp Ile Ala Glu Asp Gly Leu Lys Met Gln Ser Phe Gly Ser Gln
405 410 415

Gln Trp Asp Cys Gly Phe Ser Val Gln Ala Leu Leu Ala Ser Asn Leu
420 425 430

Ser Leu Asp Glu Ile Gly Pro Ala Leu Lys Lys Gly His Phe Phe Ile
435 440 445

Lys Glu Ser Gln Val Lys Asp Asn Pro Ser Gly Asp Phe Lys Ala Met
450 455 460

His Arg His Ile Ser Lys Gly Ser Trp Thr Phe Ser Asp Gln Asp His
465 470 475 480

Gly Trp Gln Val Ser Asp Cys Thr Ala Glu Gly Leu Lys Cys Cys Leu
485 490 495

Ile Leu Ser Thr Met Pro Pro Glu Ile Val Gly Glu Lys Met Asp Pro
500 505 510

Glu Arg Leu Tyr Asp Ser Val Asn Val Leu Leu Ser Leu Gln Ser Asn
515 520 525

Lys Gly Gly Leu Ala Ala Trp Glu Pro Ala Gly Ala Gln Glu Trp Leu
530 535 540

Glu Val Leu Asn Pro Thr Glu Phe Phe Glu Asp Ile Val Ile Glu His

545		550		555		560
Glu Tyr Val Glu Cys Thr Ala Ser Ala Ile Gln Ala Leu Ile Met Phe						
		565		570		575
Lys Lys Leu Tyr Pro Gly His Arg Lys Lys Glu Ile Glu Asn Phe Val						
		580		585		590
Val Asn Ala Val Lys Tyr Leu Glu Asn Thr Gln Tyr Pro Ser Gly Gly						
		595		600		605
Trp Tyr Gly Asn Trp Gly Ile Cys Phe Ile Tyr Gly Thr Trp Phe Ala						
		610		615		620
Leu Gly Gly Leu Ala Ala Gly Gly Lys Thr Tyr Tyr Asn Cys Ala Ala						
		625		630		635
Val Arg Lys Gly Val Asp Phe Leu Leu Thr Thr Gln Lys Glu Asp Gly						
		645		650		655
Gly Trp Gly Glu Ser Tyr Ile Ser Cys Pro Asn Lys Glu Phe Val Pro						
		660		665		670
Ile Glu Gly Lys Ser Asn Leu Val Gln Thr Gly Trp Ala Leu Met Gly						
		675		680		685
Leu Leu His Ala Gly Gln Ala Glu Arg Asp Pro Thr Pro Leu His Arg						
		690		695		700
Ala Ala Lys Leu Leu Ile Asn Ser Gln Leu Glu Asn Gly Asp Phe Pro						
		705		710		715
Gln Gln Glu Ile Thr Gly Val Phe Met Lys Asn Cys Met Leu His Tyr						
		725		730		735
Pro Met Tyr Arg Ser Ile Tyr Pro Leu Trp Ala Ile Ala Glu Tyr Arg						
		740		745		750
Lys Arg Val Ser Leu Pro Ser Ile Asn Ser Thr						
		755		760		

<210> 50
 <211> 92
 <212> PRT
 <213> Spinacia oleracea

<400> 50

Met Glu Phe Phe Phe Leu Cys Gly Leu Val Phe Tyr Phe Ser Ile Ser
 1 5 10 15

Leu Ala Ser Phe Phe Leu Phe Tyr Asn His His Thr Thr Arg Val Tyr
 20 25 30

Pro Leu Pro Ala Gly Glu Met Gly Trp Pro Val Val Gly Asp Ser Phe
 35 40 45

Glu Phe Phe Gln Thr Gly Trp Asn Gly Tyr Pro Glu Asn Phe Ile Phe
 50 55 60

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

Leu Arg Glu Lys Val Val Phe Tyr Leu Arg Arg Leu
 85 90

<210> 51
 <211> 1563
 <212> DNA
 <213> Spinacia oleracea

<400> 51

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tggaagattg tgaattgggt ttggtttaca ccaaaaaggc ttgagaagtt tctaagaaaa	120
caaggtttag atggaaattc atacagattt ttgttgggtg atctcaaaga tatgtctaaa	180
atgcgtaaag aagctagaca aaaacctatt ccttttactc atgacttctt tcatcgtatc	240
ttgcctttcc acaatcacca tttcaataaa tacggggaaa gcttcttttc atggatgggg	300
cctataccag ttgtgaatgt tgcagaacaa gagcaagtaa aggggtgtgtt cactaggata	360
aaagagtttc agaaggccaa attaaacca cttgttgcac tgcttgtccc tggacttgtg	420
agcgtgaag gtgataaatg ggtcaagcac aggaagctca tcaaccggc ttttcatatg	480

gaaaagctta agcttatgca tccagcattt ggcgccagtg ttttggatat ggtgaacaag	540
tgggagaaga tagtatctaa aacagggttcc tctgaagtgg atgtgtggcc gtttgtttcc	600
agcctgactg cagatgctat ctctcgtgct gcttttggca gtagctatga tgaaggaaga	660
aagatatttg agttggttct tgaacaaact gaaatcaccc tacgccttct gcaatcagtt	720
tatatccctg gatggatgta tgtgccaaca aagaccaaca ggaggatgaa aacagtaaac	780
tctgaaatac aaaatttatt aaccgggata atcgttaaga gaaagaaggc aatggaggcc	840
ggcgaagctg ccaaggatga tttgttgggg atattgttgg agtccaacta caaagatact	900
gaaaatgttc tcagtaataa gaaaaaacta agcatgactt tccaggaatt gattgatgag	960
tgcaaaactgt tctacttagc agggcaagag tcgacctcgg tgttgctagc atggacaatg	1020
attctgttgg gaaagcacac agagtggcaa gcacgagcac gagaagaagt agttgcaacg	1080
tttggtaaaa acgaacctga ttttgaaggc ttaaaccatt tgaagatagt gacaatgata	1140
ctgaatgagg tgttgaggtt gtaccctcca gtgtgtacaa tcaccgtaa gaatttcaac	1200
cacgacgtac agcttggaaa tctgacagtc cctcgtggtg ctatggttac gatgtcagca	1260
tatcgtattc aaagagatcc taaaatatgg ggtgatgatg caaaagagtt taaccacag	1320
agattttcag aaggggttgc aaaggctaca aaggggaata ttgcattctt tccgtttggt	1380
tgggggccgc gaatttgcac cggacagaac tttgcactta ttgaagctaa aatggcagtg	1440
tccatggttt tacaacgctt ttcttttgag ctatcacctg cttatactca tgctcctacc	1500
actatcctca ctcttcaacc ccaacaaggt gctcatctca ttatacataa gctcagggac	1560
taa	1563

<210> 52
 <211> 520
 <212> PRT
 <213> *Spinacia oleracea*

<400> 52

Met	Ile	Glu	Ile	Gly	Tyr	Ile	Val	Lys	Trp	Val	Ile	Cys	Leu	Val	Ile
1			5					10					15		

Val	Arg	Trp	Val	Trp	Lys	Ile	Val	Asn	Trp	Val	Trp	Phe	Thr	Pro	Lys
			20					25				30			

Arg Leu Glu Lys Phe Leu Arg Lys Gln Gly Leu Asp Gly Asn Ser Tyr
35 40 45

Arg Phe Leu Leu Gly Asp Leu Lys Asp Met Ser Lys Met Arg Lys Glu
50 55 60

Ala Arg Gln Lys Pro Ile Pro Phe Thr His Asp Phe Phe His Arg Ile
65 70 75 80

Leu Pro Phe His Asn His His Phe Asn Lys Tyr Gly Glu Ser Phe Phe
85 90 95

Ser Trp Met Gly Pro Ile Pro Val Val Asn Val Ala Glu Gln Glu Gln
100 105 110

Val Lys Gly Val Phe Thr Arg Ile Lys Glu Phe Gln Lys Ala Lys Leu
115 120 125

Asn Pro Leu Val Ala Leu Leu Val Pro Gly Leu Val Ser Ala Glu Gly
130 135 140

Asp Lys Trp Val Lys His Arg Lys Leu Ile Asn Pro Ala Phe His Met
145 150 155 160

Glu Lys Leu Lys Leu Met His Pro Ala Phe Gly Ala Ser Val Leu Asp
165 170 175

Met Val Asn Lys Trp Glu Lys Ile Val Ser Lys Thr Gly Ser Ser Glu
180 185 190

Val Asp Val Trp Pro Phe Val Ser Ser Leu Thr Ala Asp Ala Ile Ser
195 200 205

Arg Ala Ala Phe Gly Ser Ser Tyr Asp Glu Gly Arg Lys Ile Phe Glu
210 215 220

Leu Val Leu Glu Gln Thr Glu Ile Thr Leu Arg Leu Leu Gln Ser Val
225 230 235 240

Tyr Ile Pro Gly Trp Met Tyr Val Pro Thr Lys Thr Asn Arg Arg Met
245 250 255

Lys Thr Val Asn Ser Glu Ile Gln Asn Leu Leu Thr Gly Ile Ile Val
260 265 270

Lys Arg Lys Lys Ala Met Glu Ala Gly Glu Ala Ala Lys Asp Asp Leu
275 280 285

Leu Gly Ile Leu Leu Glu Ser Asn Tyr Lys Asp Thr Glu Asn Val Leu
290 295 300

Ser Asn Lys Lys Lys Leu Ser Met Thr Phe Gln Glu Leu Ile Asp Glu
305 310 315 320

Cys Lys Leu Phe Tyr Leu Ala Gly Gln Glu Ser Thr Ser Val Leu Leu
325 330 335

Ala Trp Thr Met Ile Leu Leu Gly Lys His Thr Glu Trp Gln Ala Arg
340 345 350

Ala Arg Glu Glu Val Val Ala Thr Phe Gly Lys Asn Glu Pro Asp Phe
355 360 365

Glu Gly Leu Asn His Leu Lys Ile Val Thr Met Ile Leu Asn Glu Val
370 375 380

Leu Arg Leu Tyr Pro Pro Val Cys Thr Ile Thr Arg Lys Asn Phe Asn
385 390 395 400

His Asp Val Gln Leu Gly Asn Leu Thr Val Pro Arg Gly Ala Met Val
405 410 415

Thr Met Ser Ala Tyr Arg Ile Gln Arg Asp Pro Lys Ile Trp Gly Asp
420 425 430

Asp Ala Lys Glu Phe Asn Pro Gln Arg Phe Ser Glu Gly Val Ala Lys
435 440 445

Ala Thr Lys Gly Asn Ile Ala Phe Phe Pro Phe Gly Trp Gly Pro Arg
450 455 460

Ile Cys Ile Gly Gln Asn Phe Ala Leu Ile Glu Ala Lys Met Ala Val
 465 470 475 480

Ser Met Val Leu Gln Arg Phe Ser Phe Glu Leu Ser Pro Ser Tyr Thr
 485 490 495

His Ala Pro Thr Thr Ile Leu Thr Leu Gln Pro Gln Gln Gly Ala His
 500 505 510

Leu Ile Ile His Lys Leu Arg Asp
 515 520

<210> 53
 <211> 1596
 <212> DNA
 <213> Spinacia oleracea

<400> 53
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 ctaaaacaac aaggctcttgt tggtaattcc tacaaatfff tgattggaga tatgaaagaa 180
 agctcaaaat tgcgtaacga agcttttaca aaaccattc ctttcactca tgattattac 240
 aaccgtattc agcctttcat ccatcagatt ctcaacaatt ctggtgcagg caaaaatatc 300
 tacacatggg tgggaccagt gccaacaata ctaattacac aacctgagtt aataaaggat 360
 gctttcaata ggatgaacaa ttttcagaaa ccaagattaa atccatatac tcaaatgctt 420
 tcaactggac ttccgaacta tgagggtcag aaatgggcta aacacaggaa gctttctaac 480
 cctgcttttc aacttgataa gctcaagctt atgatccata cttttgaaac ctgtgtttacg 540
 gatacactga ataagtggga gaagctagtt tgtaaaacag gttcttcaga ggttgatata 600
 tggccatatt tgacaacttt aacgggagat ggtattgcta gagctgcatt tggaagtagc 660
 tttgaagatg gaagaagaat attcgagctt ctacactgc agaaggatat tgttattagt 720
 cttctcaaat attcttatat tccaggattt aaatatatgc caataaaggg taaccggaag 780
 atgaaagaag cggacaatga aataaaacct ctgttgacga atataattaa tagaaggagg 840
 aaagcgatgg aggccggaga agctcccaa gacgacttgt tagggatgct acttgaatcc 900
 aatgcaaacg aggctcgaca agttaatgaa aatgaaagtg gtagtagcaa gcgaaaatct 960

gatctaacga tgagcttccc tgagatgac gatgcttgca agcagttctt cttggctggt	1020
caagagacca cctcagtggc cctaacatgg acaatgcttt tgttagccaa gcaccaagat	1080
tggcaaacac gagctcgaca agaagtactt gctacatttg gaatgaatac cccagacttt	1140
gatggcatac ataatcgtct taagatttg acaatgatac tctacgaggt gttaaggttg	1200
tatccgccag tccctgcaac atcgcgagg gttcatgac gtgaaacaaa gctaggagat	1260
ttggtaatac cacaaggggt aggagtttca tttccatac ttcatgcaca cttgaaccct	1320
gaaatttggg gtgatgatgc caaagaattc aagcctgata gatttgcaga agggattgca	1380
aaagcaacaa aagggaataa ctcttacttc ccctttggtt ggggacctag gatttgcatt	1440
ggccaaaact tcgcactagt tgaggcgaaa atggcattgt gtatgatttt gcagcgtttc	1500
tctttcgatc tctcgcttc atacatccat gctccgacta gtctcatatc ctttaacct	1560
cagcatggtg cccacattat ttacatcga ttttaa	1596

<210> 54
 <211> 531
 <212> PRT
 <213> Spinacia oleracea

<400> 54

Met	Ile	Ser	Lys	Ser	Ala	Ser	Gly	Val	Ala	Ile	Ala	Ser	Leu	Gly	Cys
1			5				10						15		

Ile	Ile	Ile	Leu	Tyr	Trp	Met	Trp	Lys	Leu	Leu	Lys	Gly	Leu	Trp	Leu
			20				25					30			

Thr	Pro	Lys	Lys	Leu	Glu	Lys	Cys	Leu	Lys	Gln	Gln	Gly	Leu	Val	Gly
		35				40						45			

Asn	Ser	Tyr	Lys	Phe	Leu	Ile	Gly	Asp	Met	Lys	Glu	Ser	Ser	Lys	Leu
50					55					60					

Arg	Asn	Glu	Ala	Leu	Gln	Lys	Pro	Ile	Pro	Phe	Thr	His	Asp	Tyr	Tyr
65				70				75						80	

Asn	Arg	Ile	Gln	Pro	Phe	Ile	His	Gln	Ile	Leu	Asn	Asn	Ser	Gly	Ala
			85					90						95	

Gly Lys Asn Ile Tyr Thr Trp Leu Gly Pro Val Pro Thr Ile Leu Ile
100 105 110

Thr Gln Pro Glu Leu Ile Lys Asp Ala Phe Asn Arg Met Asn Asn Phe
115 120 125

Gln Lys Pro Arg Leu Asn Pro Tyr Thr Gln Met Leu Ser Thr Gly Leu
130 135 140

Pro Asn Tyr Glu Gly Gln Lys Trp Ala Lys His Arg Lys Leu Leu Asn
145 150 155 160

Pro Ala Phe Gln Leu Asp Lys Leu Lys Leu Met Ile His Thr Phe Glu
165 170 175

Thr Cys Val Thr Asp Thr Leu Asn Lys Trp Glu Lys Leu Val Cys Lys
180 185 190

Thr Gly Ser Ser Glu Val Asp Ile Trp Pro Tyr Leu Thr Thr Leu Thr
195 200 205

Gly Asp Gly Ile Ala Arg Ala Ala Phe Gly Ser Ser Phe Glu Asp Gly
210 215 220

Arg Arg Ile Phe Glu Leu Leu Thr Leu Gln Lys Asp Ile Val Ile Ser
225 230 235 240

Leu Leu Lys Tyr Ser Tyr Ile Pro Gly Phe Lys Tyr Met Pro Ile Lys
245 250 255

Gly Asn Arg Lys Met Lys Glu Ala Asp Asn Glu Ile Lys Pro Leu Leu
260 265 270

Thr Asn Ile Ile Asn Arg Arg Arg Lys Ala Met Glu Ala Gly Glu Ala
275 280 285

Pro Lys Asp Asp Leu Leu Gly Met Leu Leu Glu Ser Asn Ala Asn Glu
290 295 300

Ala Arg Gln Val Asn Glu Asn Glu Ser Gly Ser Ser Lys Arg Lys Ser
305 310 315 320

Asp Leu Thr Met Ser Phe Pro Glu Met Ile Asp Ala Cys Lys Gln Phe
325 330 335

Phe Leu Ala Gly Gln Glu Thr Thr Ser Val Ala Leu Thr Trp Thr Met
340 345 350

Leu Leu Leu Ala Lys His Gln Asp Trp Gln Thr Arg Ala Arg Gln Glu
355 360 365

Val Leu Ala Thr Phe Gly Met Asn Thr Pro Asp Phe Asp Gly Ile His
370 375 380

Asn Arg Leu Lys Ile Val Thr Met Ile Leu Tyr Glu Val Leu Arg Leu
385 390 395 400

Tyr Pro Pro Val Pro Ala Thr Ser Arg Arg Val His Asp Arg Glu Thr
405 410 415

Lys Leu Gly Asp Leu Val Ile Pro Gln Gly Val Gly Val Ser Phe Ser
420 425 430

Ile Leu His Ala His Leu Asn Pro Glu Ile Trp Gly Asp Asp Ala Lys
435 440 445

Glu Phe Lys Pro Asp Arg Phe Ala Glu Gly Ile Ala Lys Ala Thr Lys
450 455 460

Gly Asn Asn Ser Tyr Phe Pro Phe Gly Trp Gly Pro Arg Ile Cys Ile
465 470 475 480

Gly Gln Asn Phe Ala Leu Val Glu Ala Lys Met Ala Leu Cys Met Ile
485 490 495

Leu Gln Arg Phe Ser Phe Asp Leu Ser Pro Ser Tyr Ile His Ala Pro
500 505 510

Thr Ser Leu Ile Ser Leu Gln Pro Gln His Gly Ala His Ile Ile Leu
515 520 525

His Arg Phe
530

<210> 55
<211> 1092
<212> DNA
<213> *Spinacia oleracea*

<400> 55
atgacgggaa aaggaagaac gatggaggtg atcatgatgc catttcacca ccaaggtcac 60
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atcacccctg ccaccaccct ctccaccgcc caaaatatga ccaattccaa aaacaacaac 180
aacaataacg attacgattt cctgacggtc gaaagcatct acgacgatac cgatgattct 240
cagctcaaat tcatgggtcg tatgggaaag ttcaagtccg aagcctcact ccaacttggc 300
cgtctaataca ctactaagag catcgacaat aataaatgta tgctcgttta tgatgcgtat 360
ctgccttggg cactggatgt gggcaaggac cataacatac aggctgcggc tttcttcgtc 420
caggcttgtg cgtatatggc atcctttttac cctatgtttt tagaggaatt tgggtcggat 480
gatcaacatc ctgttggtgc ggctgctaag gctgaatctg ttcctagttt gtcggttgag 540
ctgccgtcgc gggaggaaat ggaacgatac gcgccgaaat gtgcacaatc cccgagttct 600
gatgataaac ccaatactgt taagaaatcg cttcaccctg tctaccggat ggtggtttca 660
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catcagctgg atgtcttagc acatgaagca gtaggggtgtt tcataacca ttgcggttgg 780
aactcgataa ttgaggcgac caactttggg gttccgatgt tggggatgcc acagttcatg 840
gaccagtttt tggatgctca ttttatggag aaggtttggg gtgttggaat tagggctaag 900
gctgatgaga aaaactttgt tacttgtgac gaaatcaagt gcggtgtcaa tgaaattatg 960
tacggagata aggcaaatat gatcaaggag aatgcagcaa agtggaaga cttggctaag 1020
gaggcagttg gtgaaggagg cagttcagat aagaatatcg acgagatcat taactggctt 1080
gcgtcctcct aa 1092

<210> 56
<211> 363
<212> PRT
<213> *Spinacia oleracea*

<400> 56

Met Thr Gly Lys Gly Arg Thr Met Glu Val Ile Met Met Pro Phe His
1 5 10 15

His Gln Gly His Leu Thr Pro Met Leu Gln Phe Ala Lys Arg Phe Ala
20 25 30

Trp Lys Gly Ala Gly Ser Ile Arg Ile Thr Leu Ala Thr Thr Leu Ser
35 40 45

Thr Ala Gln Asn Met Thr Asn Ser Lys Asn Asn Asn Asn Asn Asp
50 55 60

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

Gln Leu Lys Phe Met Gly Arg Met Gly Lys Phe Lys Ser Glu Ala Ser
85 90 95

Leu Gln Leu Gly Arg Leu Ile Thr Thr Lys Ser Ile Asp Asn Asn Lys
100 105 110

Cys Met Leu Val Tyr Asp Ala Tyr Leu Pro Trp Ala Leu Asp Val Gly
115 120 125

Lys Asp His Asn Ile Gln Ala Ala Ala Phe Phe Val Gln Ala Cys Ala
130 135 140

Tyr Met Ala Ser Phe Tyr Pro Met Phe Leu Glu Glu Phe Gly Ser Asp
145 150 155 160

Asp Gln His Pro Val Val Ala Ala Ala Lys Ala Glu Ser Val Pro Ser
165 170 175

Leu Ser Val Glu Leu Pro Ser Arg Glu Glu Met Glu Arg Tyr Ala Pro
180 185 190

Lys Cys Ala Gln Ser Pro Ser Ser Asp Asp Lys Pro Asn Thr Val Lys
195 200 205

Lys Ser Leu His Pro Val Tyr Arg Met Val Val Ser Ser Ile Thr Thr
210 215 220

Leu His Leu Ala Asp Phe Val Leu Ile Asn Ser Phe Asp His Leu Glu
225 230 235 240

His Gln Leu Asp Val Leu Ala His Glu Ala Val Gly Cys Phe Ile Thr
245 250 255

His Cys Gly Trp Asn Ser Ile Ile Glu Ala Thr Asn Phe Gly Val Pro
260 265 270

Met Leu Gly Met Pro Gln Phe Met Asp Gln Phe Leu Asp Ala His Phe
275 280 285

Met Glu Lys Val Trp Gly Val Gly Ile Arg Ala Lys Ala Asp Glu Lys
290 295 300

Asn Phe Val Thr Cys Asp Glu Ile Lys Cys Gly Val Asn Glu Ile Met
305 310 315 320

Tyr Gly Asp Lys Ala Asn Met Ile Lys Glu Asn Ala Ala Lys Trp Lys
325 330 335

Asp Leu Ala Lys Glu Ala Val Gly Glu Gly Gly Ser Ser Asp Lys Asn
340 345 350

Ile Asp Glu Ile Ile Asn Trp Leu Ala Ser Ser
355 360

<210> 57
<211> 1374
<212> DNA
<213> Spinacia oleracea

<400> 57
atgggtaaaa cagtagcagc ttcagagcag ttacacatag taatgatccc atggtttgct 60
tatggacaca ttcttccta ttttgagctt tcaaacaac ttgctgaaaa aggccataaa 120
atcaccttgg tagttcaaaa caaagtcaaa cttgatttag aaccaaagat ccgtcatcct 180
tccttaatca gcttacatgc attcactgtc ccacacattg aacccttacc tccggggact 240

gagacatgtt cagacgtccc cattgaactt cagcaccacc ttgctgttgc catggacagg	300
gccccggcctg aggtggagtc catcatatca gccattgacg atccgaagcc ggatctgttg	360
ttctacgata acgcttactg ggtgcctgag atagccacaa agctggggat gaagtctgtg	420
ttttaccaga ttgcatgtgc ttttaagtatc acccgcatta agcaaacccc gagtgcgagt	480
gcgagtgcga gtgcgagtg ccaagctcttc actttaccca agtgggtgct gacgcctaag	540
gtgttaggcg acgcaagagc caattatgga gaagggatca cctattacca gagagtgaag	600
aaggctctaa gttcctgtga tgctatcgcc ttacgcacat gccgggagat tgaaggggaa	660
tcctctgata tcctggctgc acaatataac aagccagtct tcttaacagg tccggtccta	720
cccgaggttg aattcctccc ccctttggac aattcctggg ctgagtggct agccaagttt	780
gggcctaagt ccgtggtttt atgttgcttc ggaagccagt acgtccctga caaggctcaa	840
ctacaggaga tggcccttgc ccttgaggat actggtcttc ctttcttgat gtccgttaag	900
ccaccacag agtgccccac catagaggag gcgttgccag aagggttctc agagagagtc	960
aaggaacgcg ggggtggttca tgggtgatgg gtgcaacagc tacaaatact agctcaccca	1020
tcagtgggtt gctttatttg tcattgtggg tacgggtcaa tgtgggaggg gttgttgagt	1080
gataaccagc tagtcttatt accacagctt cctgaccagt taatgatggc tcaaagtgtg	1140
gcagaaaagc tcaaggtggg tgtgatggtg gacagagaag aagatgatgg gtgggtttcc	1200
aggaagaact tgtgccaagc agtcaagtct gtcattggatc ctcatccga gtttgcagct	1260
ttactcaaga acaaccatgc taacttcaga gacaagttgc taaccaacgg ttttatggct	1320
aattaccttg aagtttttga ccaggatttg aaacgctttc ttactgcaaa ttaa	1374

<210> 58
 <211> 457
 <212> PRT
 <213> Spinacia oleracea

<400> 58

Met	Gly	Lys	Thr	Val	Ala	Ala	Ser	Glu	Gln	Leu	His	Ile	Val	Met	Ile
1				5					10					15	

Pro	Trp	Phe	Ala	Tyr	Gly	His	Ile	Leu	Pro	Tyr	Phe	Glu	Leu	Ser	Asn
			20					25					30		

Lys Leu Ala Glu Lys Gly His Lys Ile Thr Leu Val Val Pro Asn Lys
35 40 45

Val Lys Leu Asp Leu Glu Pro Lys Ile Arg His Pro Ser Leu Ile Ser
50 55 60

Leu His Ala Phe Thr Val Pro His Ile Glu Pro Leu Pro Pro Gly Thr
65 70 75 80

Glu Thr Cys Ser Asp Val Pro Ile Glu Leu Gln His His Leu Ala Val
85 90 95

Ala Met Asp Arg Ala Arg Pro Glu Val Glu Ser Ile Ile Ser Ala Ile
100 105 110

Asp Asp Pro Lys Pro Asp Leu Leu Phe Tyr Asp Asn Ala Tyr Trp Val
115 120 125

Pro Glu Ile Ala Thr Lys Leu Gly Met Lys Ser Val Phe Tyr Gln Ile
130 135 140

Ala Cys Ala Leu Ser Ile Thr Arg Ile Lys Gln Thr Pro Ser Ala Ser
145 150 155 160

Ala Ser Ala Ser Ala Ser Ala Lys Leu Phe Thr Leu Pro Lys Trp Val
165 170 175

Leu Thr Pro Lys Val Leu Gly Asp Ala Arg Ala Asn Tyr Gly Glu Gly
180 185 190

Ile Thr Tyr Tyr Gln Arg Val Lys Lys Ala Leu Ser Ser Cys Asp Ala
195 200 205

Ile Ala Leu Arg Thr Cys Arg Glu Ile Glu Gly Glu Ser Ser Asp Ile
210 215 220

Leu Ala Ala Gln Tyr Asn Lys Pro Val Phe Leu Thr Gly Pro Val Leu
225 230 235 240

Pro Glu Val Glu Phe Leu Pro Pro Leu Asp Asn Ser Trp Ala Glu Trp
245 250 255

Leu Ala Lys Phe Gly Pro Lys Ser Val Val Leu Cys Cys Phe Gly Ser
260 265 270

Gln Tyr Val Pro Asp Lys Ala Gln Leu Gln Glu Met Ala Leu Ala Leu
275 280 285

Glu Asp Thr Gly Leu Pro Phe Leu Met Ser Val Lys Pro Pro Thr Glu
290 295 300

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

Lys Glu Arg Gly Val Val His Gly Gly Trp Val Gln Gln Leu Gln Ile
325 330 335

Leu Ala His Pro Ser Val Gly Cys Phe Ile Cys His Cys Gly Tyr Gly
340 345 350

Ser Met Trp Glu Gly Leu Leu Ser Asp Asn Gln Leu Val Leu Leu Pro
355 360 365

Gln Leu Pro Asp Gln Leu Met Met Ala Gln Met Leu Ala Glu Lys Leu
370 375 380

Lys Val Gly Val Met Val Asp Arg Glu Glu Asp Asp Gly Trp Val Ser
385 390 395 400

Arg Lys Asn Leu Cys Gln Ala Val Lys Ser Val Met Asp Pro His Ser
405 410 415

Glu Phe Ala Ala Leu Leu Lys Asn Asn His Ala Asn Phe Arg Asp Lys
420 425 430

Leu Leu Thr Asn Gly Phe Met Ala Asn Tyr Leu Glu Val Phe Asp Gln
435 440 445

Asp Leu Lys Arg Phe Leu Thr Ala Asn
450 455

<210> 59
<211> 1347
<212> DNA
<213> *Spinacia oleracea*

<400> 59
atgggtggag agaaagagtt gcggatagtg atgttcccat ggcttgcctt tggacatttt 60
atcccataacc ttcacctttc aaacaaactt gctgaaaaag gccacaaaat caccttgttg 120
cttcccaaca aagctaggct tcagttggag tcaacttaacc ttcatacctt tctcataact 180
ttccattcaa ttactgtccc acccctcgaa actctccctt atggcactga aacaactgcg 240
gatatctccc tcgaccaaca tggatgaactc tcgatttcca tggaccgcac tcggcccagag 300
gtggagtctt tcctatcaac ccataagccc gacctcgtcc tctacgacat ggcccatttg 360
gtacccgaga ttgctgctaa ggtcgggatt aagtcagttt catacaacgt tgtatgtgct 420
attgctgtat ctcatgttag acctagcctc cctcttccaa aaggaacggc agcacatgta 480
cccctgccat tgtcgtctgt ccctaagtgg agtcttaatc agcacggtt atcaacacca 540
tattttgggg aagggataac gttacttgaa cggctctgtaa tctccctctc gtctgcggat 600
gcaatagcca tccgcacgtg cagggagatt gaaggggtat attgtgaccg tgttgctgcc 660
acattcaaca agcctgtcct tgtcaccagc cacgccttgc ctgatcttga actcgaactc 720
tctccgttgg agactcgctg ggccgagtgg ctagctaggt tcgagccagg gtcagtgatc 780
ttttgctgcc ttggtagtca gcatgtctta gacgcacccc aactgcaaga gttggccctg 840
gggttggaag tgacaggact acccttcttg atggctgtaa aacccctgt ggggtgtacc 900
tccttgagg aggtgcttcc agaagggtt aatgatcggg ttagcgggcg aggggtggtt 960
cacggtgggt gggcgcagca gcagcagata atggcgcacc catcgttagg gtgctttgtg 1020
accctttgtg ggtcttcgtc gatgtgggag gggttagtga gtgaaagtca gttggtatta 1080
ctcccaaac tggcagacca aactctgtat gccaaagttta tggcagatga gctcaagggtg 1140
gggtggaagg tggagagaga agagaacggg tggatgacga agcgaagtct atgtgaagct 1200
atcaagagtg tgatggatga agatagtgat ataagtcag tagttaggaa aaatcatgct 1260
aaatatagaa gtatgttgat tagccctggc tttattagt gctacattga caacttcac 1320
aaggatttac aagcccttgt tccttag 1347

<210> 60

<211> 448
<212> PRT
<213> Spinacia oleracea

<400> 60

Met Gly Gly Glu Lys Glu Leu Arg Ile Val Met Phe Pro Trp Leu Ala
1 5 10 15

Phe Gly His Phe Ile Pro Tyr Leu His Leu Ser Asn Lys Leu Ala Glu
20 25 30

Lys Gly His Lys Ile Thr Leu Leu Leu Pro Asn Lys Ala Arg Leu Gln
35 40 45

Leu Glu Ser Leu Asn Leu His Pro Ser Leu Ile Thr Phe His Ser Ile
50 55 60

Thr Val Pro Pro Leu Glu Thr Leu Pro Tyr Gly Thr Glu Thr Thr Ala
65 70 75 80

Asp Ile Ser Leu Asp Gln His Gly Glu Leu Ser Ile Ser Met Asp Arg
85 90 95

Thr Arg Pro Glu Val Glu Ser Phe Leu Ser Thr His Lys Pro Asp Leu
100 105 110

Val Leu Tyr Asp Met Ala His Trp Val Pro Glu Ile Ala Ala Lys Val
115 120 125

Gly Ile Lys Ser Val Ser Tyr Asn Val Val Cys Ala Ile Ala Val Ser
130 135 140

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

Pro Leu Pro Leu Ser Ser Val Pro Lys Trp Ser Leu Asn Gln His Gly
165 170 175

Ser Ser Thr Pro Tyr Phe Gly Glu Gly Ile Thr Leu Leu Glu Arg Ser
180 185 190

Val Ile Ser Leu Ser Ser Ala Asp Ala Ile Ala Ile Arg Thr Cys Arg
195 200 205

Glu Ile Glu Gly Val Tyr Cys Asp Arg Val Ala Ala Thr Phe Asn Lys
210 215 220

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

Ser Pro Leu Glu Thr Arg Trp Ala Glu Trp Leu Ala Arg Phe Glu Pro
245 250 255

Gly Ser Val Ile Phe Cys Cys Leu Gly Ser Gln His Val Leu Asp Ala
260 265 270

Pro Gln Leu Gln Glu Leu Ala Leu Gly Leu Glu Met Thr Gly Leu Pro
275 280 285

Phe Leu Met Ala Val Lys Pro Pro Val Gly Cys Thr Ser Leu Glu Glu
290 295 300

Val Leu Pro Glu Gly Phe Asn Asp Arg Val Ser Gly Arg Gly Val Val
305 310 315 320

His Gly Gly Trp Val Gln Gln Gln Gln Ile Met Ala His Pro Ser Leu
325 330 335

Gly Cys Phe Val Thr Leu Cys Gly Ser Ser Ser Met Trp Glu Gly Leu
340 345 350

Val Ser Glu Ser Gln Leu Val Leu Leu Pro Gln Leu Ala Asp Gln Thr
355 360 365

Leu Tyr Ala Lys Leu Met Ala Asp Glu Leu Lys Val Gly Val Lys Val
370 375 380

Glu Arg Glu Glu Asn Gly Trp Met Thr Lys Arg Ser Leu Cys Glu Ala
385 390 395 400

Ile Lys Ser Val Met Asp Glu Asp Ser Asp Ile Ser His Val Val Arg
405 410 415

Lys Asn His Ala Lys Tyr Arg Ser Met Leu Ile Ser Pro Gly Phe Ile
420 425 430

Ser Gly Tyr Ile Asp Asn Phe Ile Lys Asp Leu Gln Ala Leu Val Pro
435 440 445

<210> 61
<211> 1476
<212> DNA
<213> Spinacia oleracea

<400> 61
atggagcttt caaacctac cacaaccct accttaaag caacccaacc cttacgaggc 60
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ctcttctcat cacggggagt acatgtgact atcctcacca cccaccacac ctccctccgc 180
ttcaaacaat ccatacatga ttggggcttc aaaatcgacc tccacatcgt cgacttcccg 240
ttcaggggaag tcggcttacc ggaaggagtg gaaaattaca gtgatgccac ccctgagcaa 300
gcaagccagc ttttccaggc ctttatgatg cttcagaagc ctatggagga tgccattcgg 360
gctgctaagc ccgacttcat cgtttccgat aggtattatc attggtctac tgatcttgca 420
cgtgagcttg ctattccacg gctcatcttt catgtcagat gttattttgc attgtgtgct 480
gctgagggtg ttgccaagtt tgcccctcat gagaagggtg aatctgacac tgacctcttt 540
ttccttcctg acctccctga taccatccac atgaccggtt tgcagcttcc cgaatggatt 600
cagacccgaa acatgttcac tgttctcaat gagagaatgg acgaggccga tagggagtgc 660
tacggtgtta ttgtaaacag ctgctacgag ttggagagag cttatgctga cttctaccgc 720
agcaacttgg gtcgacgtgc ttggtgtatc ggtccctatc cggtacactg cgacaagggt 780
ggtaaaaaga aaggagatga cagcaaaaaa cattcatggt ttgaatggct tgataaaatg 840
ggagaaggag aagttatata cgtgagtttt ggcactctgt cgtgtttcag ccctgctcaa 900
atctcagagc tggctactgc actcgaaatg tctggtcacc cgtttatctg ggtagtaagg 960
aatggtgaga aattgttacc tgatggattt gaagaaagaa ttacagagca ggacaaaggg 1020
gtgttaataa aagactgggc gccacaagtg aaaatacttg agcaccagc tgtaggcgga 1080
tttctgactc attgtggatg gaactcaact gtagaaagtt tagcagcagg tgtgccaatg 1140

gtcacatggc cgcttggtgc cgagcaattc ttcaatgaaa agttgattag tggagttttg 1200
aaggtggggg tcgaggtcgg gtctgagaag tggagtaggg gtatagtacc gaatactgat 1260
atgattgaga aggataaaat agaaagggcg attaaagagc tgatgagtaa agaacccgag 1320
gccgaggaaa ggaggcagaa ggttaaggag ttgagtaagg ctccaagaaa tgcggttgaa 1380
gaaggtgggtt cgtctcgtaa caatttaagt gatttgattg aaaaattaca acgttttaaag 1440
gcgaatgaaa tatcagtgtc cacaaactca gaataa 1476

<210> 62
<211> 491
<212> PRT
<213> Spinacia oleracea

<400> 62

Met Glu Leu Ser Asn Pro Thr Thr Thr Pro Thr Leu Asn Ala Thr Gln
1 5 10 15

Pro Leu Arg Gly Tyr Phe Ile Pro Leu Ile Thr Val Pro Ser His Ile
20 25 30

Ser Asn Leu Val Asp Ile Ala Lys Leu Phe Ser Ser Arg Gly Val His
35 40 45

Val Thr Ile Leu Thr Thr His His Thr Ser Leu Arg Phe Lys Gln Ser
50 55 60

Ile His Asp Trp Gly Phe Lys Ile Asp Leu His Ile Val Asp Phe Pro
65 70 75 80

Phe Arg Glu Val Gly Leu Pro Glu Gly Val Glu Asn Tyr Ser Asp Ala
85 90 95

Thr Pro Glu Gln Ala Ser Gln Leu Phe Gln Ala Phe Met Met Leu Gln
100 105 110

Lys Pro Met Glu Asp Ala Ile Arg Ala Ala Lys Pro Asp Phe Ile Val
115 120 125

Ser Asp Arg Tyr Tyr His Trp Ser Thr Asp Leu Ala Arg Glu Leu Ala
130 135 140

Ile Pro Arg Leu Ile Phe His Val Arg Cys Tyr Phe Ala Leu Cys Ala
145 150 155 160

Ala Glu Val Val Ala Lys Phe Ala Pro His Glu Lys Val Glu Ser Asp
165 170 175

Thr Asp Leu Phe Phe Leu Pro Asp Leu Pro Asp Thr Ile His Met Thr
180 185 190

Arg Leu Gln Leu Pro Glu Trp Ile Gln Thr Arg Asn Met Phe Thr Val
195 200 205

Leu Asn Glu Arg Met Asp Glu Ala Asp Arg Glu Cys Tyr Gly Val Ile
210 215 220

Val Asn Ser Cys Tyr Glu Leu Glu Arg Ala Tyr Ala Asp Phe Tyr Arg
225 230 235 240

Ser Asn Leu Gly Arg Arg Ala Trp Cys Ile Gly Pro Tyr Pro Val His
245 250 255

Cys Asp Lys Val Gly Lys Lys Lys Gly Asp Asp Ser Lys Lys His Ser
260 265 270

Cys Phe Glu Trp Leu Asp Lys Met Gly Glu Gly Glu Val Ile Tyr Val
275 280 285

Ser Phe Gly Thr Leu Ser Cys Phe Ser Pro Ala Gln Ile Ser Glu Leu
290 295 300

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

Asn Gly Glu Lys Leu Leu Pro Asp Gly Phe Glu Glu Arg Ile Thr Glu
325 330 335

Gln Asp Lys Gly Val Leu Ile Lys Asp Trp Ala Pro Gln Val Lys Ile
340 345 350

Leu Glu His Pro Ala Val Gly Gly Phe Leu Thr His Cys Gly Trp Asn
 355 360 365

Ser Thr Val Glu Ser Leu Ala Ala Gly Val Pro Met Val Thr Trp Pro
 370 375 380

Leu Gly Ala Glu Gln Phe Phe Asn Glu Lys Leu Ile Ser Gly Val Leu
 385 390 395 400

Lys Val Gly Val Glu Val Gly Ser Glu Lys Trp Ser Arg Gly Ile Val
 405 410 415

Pro Asn Thr Asp Met Ile Glu Lys Asp Lys Ile Glu Arg Ala Ile Lys
 420 425 430

Glu Leu Met Ser Lys Glu Pro Glu Ala Glu Glu Arg Arg Gln Lys Val
 435 440 445

Lys Glu Leu Ser Lys Ala Pro Arg Asn Ala Val Glu Glu Gly Gly Ser
 450 455 460

Ser Arg Asn Asn Leu Ser Asp Leu Ile Glu Lys Leu Gln Arg Leu Lys
 465 470 475 480

Ala Asn Glu Ile Ser Val Ser Thr Asn Ser Glu
 485 490

<210> 63
 <211> 1539
 <212> DNA
 <213> *Spinacia oleracea*

<400> 63
 atgggggaag tcaaccatga agaagtagaa attgaaataa tatcaataga aaccataaaa 60
 ccatcatcac tacttccacc aaaaactcct caaaaaacca tcacactttc tcacctgat 120
 caagctgccc ctttgtacta ctatccttta cttttatact acactaacac tactactact 180
 accccaacat cacaaattcg agttgacata acaagtaccc taaaaacttc acttagcaaa 240
 acacttgaca aattccaccc tattgcaggt cgatgtgtgg acgactctac aatttgttgc 300
 aaccaccaag gaataccatt cattgaaacc aaagttgact ccaatatctt ggatgtcatg 360

aactcgcctg agaaaatgaa gttgcttattc aagttttctcc ctcatgcaga gtttcaagat	420
gtgactcgac cagtctcgga tttaaaccat ttggcggtttc aagtcaatgt tttccggtgt	480
ggtaggggtga tcattggctc ctatgtgctc cacaagctcc ttgatggaat ctctcttgga	540
actttcttta aaaattggtc aaccattgct aatgatgagc gagttaagga cgacgaccta	600
gtacaacctg actttgaagc cactattaag gcgttccttc cgcgtacagc aactccaatg	660
cttcctcgta atcaacaact tccaaaggcg gctgaaaaac caaataataa tccagtcaaa	720
gttcttgtga caaagagctt cgtatttgac attgtttctt taaagaagat gatgttcatg	780
gctaagagtg aattggttcc taaaccacc aaatttgaga ccgtgacagg gtttatttgg	840
gaacaaacct tatcaacatt gcgtaattct ggagttgaag ttgaacatac atcgcttata	900
atacctgtaa acatccgccc aaggatgagt ccgccactcc caagaggatc catgggtaac	960
ttgctcaaga atgcaaaggc acaggccaac accagcagca gcaatgggct tcaagacctt	1020
gttaaagaaa tccattcatc tttgtctcaa acaaccaga aaattaatac tcctcctcct	1080
cctcctcctc ctctcctac tactactgct acaacaatcc attcatcttt gtctcaaaca	1140
accagaaaa ttaatactcc tcctcctact actacaaca tccattcatc tttgtctcaa	1200
acaaccaga aaattaatac tactactact acagcagagg ttattttgac taaacggaaa	1260
gttgacaatc cagttacaca gaatcgagaa ggaaactacc tcttcaccag ttggtgcaag	1320
attgggttgg atgaggctga cttcgggttc ggaaagcccg tttgggtaat tcccaacgat	1380
gggagacccc ctaaggtcag gaatatgatt ttccttactg attataggca tcccgaacaa	1440
ggcgttgaag gaattgcagc atggattacg ttggaagaga aacaaatgca atgtttaaag	1500
tcaaaccag aattccttgc ttttgctact cctaattag	1539

<210> 64
 <211> 512
 <212> PRT
 <213> Spinacia oleracea

<400> 64

Met	Gly	Glu	Val	Asn	His	Glu	Glu	Val	Glu	Ile	Glu	Ile	Ile	Ser	Ile
1				5					10					15	

Glu	Thr	Ile	Lys	Pro	Ser	Ser	Leu	Leu	Pro	Pro	Lys	Thr	Pro	Pro	Lys
			20					25					30		

Thr Ile Thr Leu Ser His Leu Asp Gln Ala Ala Pro Leu Tyr Tyr Tyr
35 40 45

Pro Leu Leu Leu Tyr Tyr Thr Asn Thr Thr Thr Thr Thr Pro Thr Ser
50 55 60

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

Thr Leu Asp Lys Phe His Pro Ile Ala Gly Arg Cys Val Asp Asp Ser
85 90 95

Thr Ile Cys Cys Asn His Gln Gly Ile Pro Phe Ile Glu Thr Lys Val
100 105 110

Asp Ser Asn Ile Leu Asp Val Met Asn Ser Pro Glu Lys Met Lys Leu
115 120 125

Leu Ile Lys Phe Leu Pro His Ala Glu Phe Gln Asp Val Thr Arg Pro
130 135 140

Val Ser Asp Leu Asn His Leu Ala Phe Gln Val Asn Val Phe Arg Cys
145 150 155 160

Gly Gly Val Ile Ile Gly Ser Tyr Val Leu His Lys Leu Leu Asp Gly
165 170 175

Ile Ser Leu Gly Thr Phe Phe Lys Asn Trp Ser Thr Ile Ala Asn Asp
180 185 190

Glu Arg Val Lys Asp Asp Asp Leu Val Gln Pro Asp Phe Glu Ala Thr
195 200 205

Ile Lys Ala Phe Pro Pro Arg Thr Ala Thr Pro Met Leu Pro Arg Asn
210 215 220

Gln Gln Leu Pro Lys Ala Ala Glu Lys Pro Asn Asn Asn Pro Val Lys
225 230 235 240

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

Met Met Phe Met Ala Lys Ser Glu Leu Val Pro Lys Pro Thr Lys Phe
260 265 270

Glu Thr Val Thr Gly Phe Ile Trp Glu Gln Thr Leu Ser Thr Leu Arg
275 280 285

Asn Ser Gly Val Glu Val Glu His Thr Ser Leu Ile Ile Pro Val Asn
290 295 300

Ile Arg Pro Arg Met Ser Pro Pro Leu Pro Arg Gly Ser Met Gly Asn
305 310 315 320

Leu Leu Lys Asn Ala Lys Ala Gln Ala Asn Thr Ser Ser Ser Asn Gly
325 330 335

Leu Gln Asp Leu Val Lys Glu Ile His Ser Ser Leu Ser Gln Thr Thr
340 345 350

Gln Lys Ile Asn Thr Pro Pro Pro Pro Pro Pro Pro Pro Thr Thr
355 360 365

Thr Ala Thr Thr Ile His Ser Ser Leu Ser Gln Thr Thr Gln Lys Ile
370 375 380

Asn Thr Pro Pro Pro Thr Thr Thr Thr Ile His Ser Ser Leu Ser Gln
385 390 395 400

Thr Thr Gln Lys Ile Asn Thr Thr Thr Thr Thr Ala Glu Val Ile Leu
405 410 415

Thr Lys Arg Lys Val Asp Asn Pro Val Thr Gln Asn Arg Glu Gly Asn
420 425 430

Tyr Leu Phe Thr Ser Trp Cys Lys Ile Gly Leu Asp Glu Ala Asp Phe
435 440 445

Gly Phe Gly Lys Pro Val Trp Val Ile Pro Asn Asp Gly Arg Pro Pro
450 455 460

Lys Val Arg Asn Met Ile Phe Leu Thr Asp Tyr Arg His Pro Glu Thr
 465 470 475 480

Gly Val Glu Gly Ile Ala Ala Trp Ile Thr Leu Glu Glu Lys Gln Met
 485 490 495

Gln Cys Leu Lys Ser Asn Pro Glu Phe Leu Ala Phe Ala Thr Pro Asn
 500 505 510

<210> 65
 <211> 2091
 <212> DNA
 <213> Spinacia oleracea

<400> 65
 atggcaactt ctcacattcg caatgtccaa ttaaccagag ccattgttaa ccgtctccac 60
 atcttcctcc attccgtagc catcttctcg ctcttctact accgtttcac ttccttcttc 120
 aactccgaca tctccatact tgcttactcc ttactcacca ccgccgaact cttcttaacc 180
 tttctatggg cttttactca ggctttccgg tggcgtcccg taatgaggga agtctccggg 240
 tacgaatcca tcaaaccga acaactaccg ggtttgatg tcttcattgt cactgctgac 300
 ccgacaaagg agccagttct ggaggtgatg aactccgtga tatcatccat ggctttggat 360
 tatccggttg atagactggc ggtttacttg tcggatgacg gtggttctcc gttgtcgaag 420
 gaggcgatta agaaggctta tgagtttgct aagctttgga ttcctttttg taataagtat 480
 aatgttaaga caaggtgtcc tcaggctttc ttctcgcctc ttgctgatgg ggaaaggctt 540
 gattggaatt ctgagtttat ggctgatcaa ttggaactcc agaccaaata tgaagctttt 600
 agaaactatg tggagaaaga aagtggagat aacaccaaata gtactgcagt tcatgatcga 660
 cctccttgcg ttgagattat acatgacaac aaacagaacg gagaaagtga tgtgaagatg 720
 ccccttctgg tttatgtagc cagggaagag agacctgggc gtcctcatcg tttcaaagct 780
 ggagccctta atgctcttct tcgagtatcc agtttaatga gcaatgcacc ttacttattg 840
 gtgttggaatt gtgatatgta ctgccatgat ccaacttctg ctcgtcaatc tatgtgcttc 900
 catcttgaca caaacatggc ttcctctctt gcatatgtgc aataccctca aattttctat 960
 aatgttagca aaaatgacat ctatgatggc caagccagat cagctcatat gacgaaatgg 1020

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aaaggcatgg atggactcag agggcccggc ttgaatggaa ctgggtatta tttgaagcga      1080
aaagcattat ttggaaagcc taataacgaa gatgaatacc tcaacagtca accagaaaag      1140
gcctttggct cctccacaaa attaattgct gcactaagag agaactccaa gcaaaatctt      1200
gccataaagg aattgacaga agatgagttg taccaagagg ctagaaattt ggctacttgc      1260
acatatgaag caaacacact atggggcagt gaggtaggat attcgtatga gtgcttgttg      1320
gagagtacat tctactggata tatgttacat tgcagaggat ggaaatctgt gtatctttac      1380
ccaaaaagac catgcttctt gggatgcaca acgattgata tgaaggatgc tacggttcaa      1440
ctaataaaat ggacctcctc attacttggg attgccctgt cgaagtctag ccctctaact      1500
ttggccatgt ccagtatgtc aatcctgcaa agcatgtgtt acgcgtacat cacatttaca      1560
ggcctttttg cagctccatt ggttatatat ggtgttgtcc ttccaataag cctattgaag      1620
ggctttccta ttttccctaa ggtatcggat ccatggattt tgccatttgt gttgatattt      1680
gtatcctccc atcttcaaca tctatatgag gtcctggaaa gtgacaaatc agcaacacaa      1740
tggtggaatg aggtgagaat ttggatgatg aaatcagtga cagcctgttt gtttgggttg      1800
acggaagcga taatgaagaa gattggagta caaactgcaa cattcagatt aacaaataag      1860
gtagttgaga aggaaaagat ggataaatac gagaaggaga ggtttgattt ctcaggagca      1920
gctatgctta tggttcctct taatattttg gtggtactaa atatggtgtc attcattggt      1980
ggactcatga gggtcataat caacaacagt tatgatcaaa tgtttgcaca acttttcctc      2040
tccttttttg tcctacttct tagctaccct gttgttaagg gatggttata a              2091

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<210> 66
<211> 696
<212> PRT
<213> Spinacia oleracea

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<400> 66
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Met Ala Thr Ser His Ile Arg Asn Val Gln Leu Thr Arg Ala Ile Val
1           5           10          15

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Asn Arg Leu His Ile Phe Leu His Ser Val Ala Ile Phe Ser Leu Phe
          20          25          30

```

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Tyr Tyr Arg Phe Thr Ser Phe Phe Asn Ser Asp Ile Ser Ile Leu Ala
          35          40          45

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Tyr Ser Leu Leu Thr Thr Ala Glu Leu Phe Leu Thr Phe Leu Trp Ala
50 55 60

Phe Thr Gln Ala Phe Arg Trp Arg Pro Val Met Arg Glu Val Ser Gly
65 70 75 80

Tyr Glu Ser Ile Lys Pro Glu Gln Leu Pro Gly Leu Asp Val Phe Ile
85 90 95

Val Thr Ala Asp Pro Thr Lys Glu Pro Val Leu Glu Val Met Asn Ser
100 105 110

Val Ile Ser Ser Met Ala Leu Asp Tyr Pro Val Asp Arg Leu Ala Val
115 120 125

Tyr Leu Ser Asp Asp Gly Gly Ser Pro Leu Ser Lys Glu Ala Ile Lys
130 135 140

Lys Ala Tyr Glu Phe Ala Lys Leu Trp Ile Pro Phe Cys Asn Lys Tyr
145 150 155 160

Asn Val Lys Thr Arg Cys Pro Gln Ala Phe Phe Ser Pro Leu Ala Asp
165 170 175

Gly Glu Arg Leu Asp Trp Asn Ser Glu Phe Met Ala Asp Gln Leu Glu
180 185 190

Leu Gln Thr Lys Tyr Glu Ala Phe Arg Asn Tyr Val Glu Lys Glu Ser
195 200 205

Gly Asp Asn Thr Lys Cys Thr Ala Val His Asp Arg Pro Pro Cys Val
210 215 220

Glu Ile Ile His Asp Asn Lys Gln Asn Gly Glu Ser Asp Val Lys Met
225 230 235 240

Pro Leu Leu Val Tyr Val Ala Arg Glu Lys Arg Pro Gly Arg Pro His
245 250 255

Arg Phe Lys Ala Gly Ala Leu Asn Ala Leu Leu Arg Val Ser Ser Leu
260 265 270

Met Ser Asn Ala Pro Tyr Leu Leu Val Leu Asp Cys Asp Met Tyr Cys
275 280 285

His Asp Pro Thr Ser Ala Arg Gln Ser Met Cys Phe His Leu Asp Thr
290 295 300

Asn Met Ala Ser Ser Leu Ala Tyr Val Gln Tyr Pro Gln Ile Phe Tyr
305 310 315 320

Asn Val Ser Lys Asn Asp Ile Tyr Asp Gly Gln Ala Arg Ser Ala His
325 330 335

Met Thr Lys Trp Lys Gly Met Asp Gly Leu Arg Gly Pro Val Leu Asn
340 345 350

Gly Thr Gly Tyr Tyr Leu Lys Arg Lys Ala Leu Phe Gly Lys Pro Asn
355 360 365

Asn Glu Asp Glu Tyr Leu Asn Ser Gln Pro Glu Lys Ala Phe Gly Ser
370 375 380

Ser Thr Lys Leu Ile Ala Ala Leu Arg Glu Asn Ser Lys Gln Asn Leu
385 390 395 400

Ala Ile Lys Glu Leu Thr Glu Asp Glu Leu Tyr Gln Glu Ala Arg Asn
405 410 415

Leu Ala Thr Cys Thr Tyr Glu Ala Asn Thr Leu Trp Gly Ser Glu Val
420 425 430

Gly Tyr Ser Tyr Glu Cys Leu Leu Glu Ser Thr Phe Thr Gly Tyr Met
435 440 445

Leu His Cys Arg Gly Trp Lys Ser Val Tyr Leu Tyr Pro Lys Arg Pro
450 455 460

Cys Phe Leu Gly Cys Thr Thr Ile Asp Met Lys Asp Ala Thr Val Gln
465 470 475 480

Leu Ile Lys Trp Thr Ser Ser Leu Leu Gly Ile Ala Leu Ser Lys Ser
485 490 495

Ser Pro Leu Thr Leu Ala Met Ser Ser Met Ser Ile Leu Gln Ser Met
500 505 510

Cys Tyr Ala Tyr Ile Thr Phe Thr Gly Leu Phe Ala Ala Pro Leu Val
515 520 525

Ile Tyr Gly Val Val Leu Pro Ile Ser Leu Leu Lys Gly Phe Pro Ile
530 535 540

Phe Pro Lys Val Ser Asp Pro Trp Ile Leu Pro Phe Val Leu Ile Phe
545 550 555 560

Val Ser Ser His Leu Gln His Leu Tyr Glu Val Leu Glu Ser Asp Lys
565 570 575

Ser Ala Thr Gln Trp Trp Asn Glu Val Arg Ile Trp Met Met Lys Ser
580 585 590

Val Thr Ala Cys Leu Phe Gly Leu Thr Glu Ala Ile Met Lys Lys Ile
595 600 605

Gly Val Gln Thr Ala Thr Phe Arg Leu Thr Asn Lys Val Val Glu Lys
610 615 620

Glu Lys Met Asp Lys Tyr Glu Lys Glu Arg Phe Asp Phe Ser Gly Ala
625 630 635 640

Ala Met Leu Met Val Pro Leu Asn Ile Leu Val Val Leu Asn Met Val
645 650 655

Ser Phe Ile Gly Gly Leu Met Arg Val Ile Ile Asn Asn Ser Tyr Asp
660 665 670

Gln Met Phe Ala Gln Leu Phe Leu Ser Phe Phe Val Leu Leu Leu Ser
675 680 685

Tyr Pro Val Val Lys Gly Trp Leu
690 695

<210> 67
<211> 1081
<212> PRT
<213> Arabodopsis thaliana

<400> 67

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

Leu Val Arg Ile Arg His Glu Ser Asp Gly Gly Thr Lys Pro Leu Lys
20 25 30

Asn Met Asn Gly Gln Ile Cys Gln Ile Cys Gly Asp Asp Val Gly Leu
35 40 45

Ala Glu Thr Gly Asp Val Phe Val Ala Cys Asn Glu Cys Ala Phe Pro
50 55 60

Val Cys Arg Pro Cys Tyr Glu Tyr Glu Arg Lys Asp Gly Thr Gln Cys
65 70 75 80

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

Val Glu Gly Asp Glu Asp Glu Asp Asp Val Asp Asp Ile Glu Asn Glu
100 105 110

Phe Asn Tyr Ala Gln Gly Ala Asn Lys Ala Arg His Gln Arg His Gly
115 120 125

Glu Glu Phe Ser Ser Ser Ser Arg His Glu Ser Gln Pro Ile Pro Leu
130 135 140

Leu Thr His Gly His Thr Val Ser Gly Glu Ile Arg Thr Pro Asp Thr
145 150 155 160

Gln Ser Val Arg Thr Thr Ser Gly Pro Leu Gly Pro Ser Asp Arg Asn
165 170 175

Ala Ile Ser Ser Pro Tyr Ile Asp Pro Arg Gln Pro Val Pro Val Arg
180 185 190

Ile Val Asp Pro Ser Lys Asp Leu Asn Ser Tyr Gly Leu Gly Asn Val
195 200 205

Asp Trp Lys Glu Arg Val Glu Gly Trp Lys Leu Lys Gln Glu Lys Asn
210 215 220

Met Leu Gln Met Thr Gly Lys Tyr His Glu Gly Lys Gly Gly Glu Ile
225 230 235 240

Glu Gly Thr Gly Ser Asn Gly Glu Glu Leu Gln Met Ala Asp Asp Thr
245 250 255

Arg Leu Pro Met Ser Arg Val Val Pro Ile Pro Ser Ser Arg Leu Thr
260 265 270

Pro Tyr Arg Val Val Ile Ile Leu Arg Leu Ile Ile Leu Cys Phe Phe
275 280 285

Leu Gln Tyr Arg Thr Thr His Pro Val Lys Asn Ala Tyr Pro Leu Trp
290 295 300

Leu Thr Ser Val Ile Cys Glu Ile Trp Phe Ala Phe Ser Trp Leu Leu
305 310 315 320

Asp Gln Phe Pro Lys Trp Tyr Pro Ile Asn Arg Glu Thr Tyr Leu Asp
325 330 335

Arg Leu Ala Ile Arg Tyr Asp Arg Asp Gly Glu Pro Ser Gln Leu Val
340 345 350

Pro Val Asp Val Phe Val Ser Thr Val Asp Pro Leu Lys Glu Pro Pro
355 360 365

Leu Val Thr Ala Asn Thr Val Leu Ser Ile Leu Ser Val Asp Tyr Pro
370 375 380

Val Asp Lys Val Ala Cys Tyr Val Ser Asp Asp Gly Ser Ala Met Leu

385		390		395		400									
Thr	Phe	Glu	Ser	Leu	Ser	Glu	Thr	Ala	Glu	Phe	Ala	Lys	Lys	Trp	Val
				405					410					415	
Pro	Phe	Cys	Lys	Lys	Phe	Asn	Ile	Glu	Pro	Arg	Ala	Pro	Glu	Phe	Tyr
			420					425					430		
Phe	Ala	Gln	Lys	Ile	Asp	Tyr	Leu	Lys	Asp	Lys	Ile	Gln	Pro	Ser	Phe
		435					440					445			
Val	Lys	Glu	Arg	Arg	Ala	Met	Lys	Arg	Glu	Tyr	Glu	Glu	Phe	Lys	Val
	450					455					460				
Arg	Ile	Asn	Ala	Leu	Val	Ala	Lys	Ala	Gln	Lys	Ile	Pro	Glu	Glu	Gly
465					470					475					480
Trp	Thr	Met	Gln	Asp	Gly	Thr	Pro	Trp	Pro	Gly	Asn	Asn	Thr	Arg	Asp
				485					490					495	
His	Pro	Gly	Met	Ile	Gln	Val	Phe	Leu	Gly	His	Ser	Gly	Gly	Leu	Asp
			500					505					510		
Thr	Asp	Gly	Asn	Glu	Leu	Pro	Arg	Leu	Ile	Tyr	Val	Ser	Arg	Glu	Lys
		515					520					525			
Arg	Pro	Gly	Phe	Gln	His	His	Lys	Lys	Ala	Gly	Ala	Met	Asn	Ala	Leu
	530					535					540				
Ile	Arg	Val	Ser	Ala	Val	Leu	Thr	Asn	Gly	Ala	Tyr	Leu	Leu	Asn	Val
545					550				555						560
Asp	Cys	Asp	His	Tyr	Phe	Asn	Asn	Ser	Lys	Ala	Ile	Lys	Glu	Ala	Met
				565					570					575	
Cys	Phe	Met	Met	Asp	Pro	Ala	Ile	Gly	Lys	Lys	Cys	Cys	Tyr	Val	Gln
			580					585					590		
Phe	Pro	Gln	Arg	Phe	Asp	Gly	Ile	Asp	Leu	His	Asp	Arg	Tyr	Ala	Asn
		595					600					605			

Arg Asn Ile Val Phe Phe Asp Ile Asn Met Lys Gly Leu Asp Gly Ile
610 615 620

Gln Gly Pro Val Tyr Val Gly Thr Gly Cys Cys Phe Asn Arg Gln Ala
625 630 635 640

Leu Tyr Gly Tyr Asp Pro Val Leu Thr Glu Glu Asp Leu Glu Pro Asn
645 650 655

Ile Ile Val Lys Ser Cys Cys Gly Ser Arg Lys Lys Gly Lys Ser Ser
660 665 670

Lys Lys Tyr Asn Tyr Glu Lys Arg Arg Gly Ile Asn Arg Ser Asp Ser
675 680 685

Asn Ala Pro Leu Phe Asn Met Glu Asp Ile Asp Glu Gly Phe Glu Gly
690 695 700

Tyr Asp Asp Glu Arg Ser Ile Leu Met Ser Gln Arg Ser Val Glu Lys
705 710 715 720

Arg Phe Gly Gln Ser Pro Val Phe Ile Ala Ala Thr Phe Met Glu Gln
725 730 735

Gly Gly Ile Pro Pro Thr Thr Asn Pro Ala Thr Leu Leu Lys Glu Ala
740 745 750

Ile His Val Ile Ser Cys Gly Tyr Glu Asp Lys Thr Glu Trp Gly Lys
755 760 765

Glu Ile Gly Trp Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu Thr Gly
770 775 780

Phe Lys Met His Ala Arg Gly Trp Ile Ser Ile Tyr Cys Asn Pro Pro
785 790 795 800

Arg Pro Ala Phe Lys Gly Ser Ala Pro Ile Asn Leu Ser Asp Arg Leu
805 810 815

Asn Gln Val Leu Arg Trp Ala Leu Gly Ser Ile Glu Ile Leu Leu Ser

820

825

830

Arg His Cys Pro Ile Trp Tyr Gly Tyr His Gly Arg Leu Arg Leu Leu
 835 840 845

Glu Arg Ile Ala Tyr Ile Asn Thr Ile Val Tyr Pro Ile Thr Ser Ile
 850 855 860

Pro Leu Ile Ala Tyr Cys Ile Leu Pro Ala Phe Cys Leu Ile Thr Asp
 865 870 875 880

Arg Phe Ile Ile Pro Glu Ile Ser Asn Tyr Ala Ser Ile Trp Phe Ile
 885 890 895

Leu Leu Phe Ile Ser Ile Ala Val Thr Gly Ile Leu Glu Leu Arg Trp
 900 905 910

Ser Gly Val Ser Ile Glu Asp Trp Trp Arg Asn Glu Gln Phe Trp Val
 915 920 925

Ile Gly Gly Thr Ser Ala His Leu Phe Ala Val Phe Gln Gly Leu Leu
 930 935 940

Lys Val Leu Ala Gly Ile Asp Thr Asn Phe Thr Val Thr Ser Lys Ala
 945 950 955 960

Thr Asp Glu Asp Gly Asp Phe Ala Glu Leu Tyr Ile Phe Lys Trp Thr
 965 970 975

Ala Leu Leu Ile Pro Pro Thr Thr Val Leu Leu Val Asn Leu Ile Gly
 980 985 990

Ile Val Ala Gly Val Ser Tyr Ala Val Asn Ser Gly Tyr Gln Ser Trp
 995 1000 1005

Gly Pro Leu Phe Gly Lys Leu Phe Phe Ala Leu Trp Val Ile Ala
 1010 1015 1020

His Leu Tyr Pro Phe Leu Lys Gly Leu Leu Gly Arg Gln Asn Arg
 1025 1030 1035

Thr Pro Thr Ile Val Ile Val Trp Ser Val Leu Leu Ala Ser Ile
1040 1045 1050

Phe Ser Leu Leu Trp Val Arg Ile Asn Pro Phe Val Asp Ala Asn
1055 1060 1065

Pro Asn Ala Asn Asn Phe Asn Gly Lys Gly Gly Val Phe
1070 1075 1080

<210> 68
<211> 1065
<212> PRT
<213> Arabodopsis thaliana

<400> 68

Met Glu Ser Glu Gly Glu Thr Ala Gly Lys Pro Met Lys Asn Ile Val
1 5 10 15

Pro Gln Thr Cys Gln Ile Cys Ser Asp Asn Val Gly Lys Thr Val Asp
20 25 30

Gly Asp Arg Phe Val Ala Cys Asp Ile Cys Ser Phe Pro Val Cys Arg
35 40 45

Pro Cys Tyr Glu Tyr Glu Arg Lys Asp Gly Asn Gln Ser Cys Pro Gln
50 55 60

Cys Lys Thr Arg Tyr Lys Arg Leu Lys Gly Ser Pro Ala Ile Pro Gly
65 70 75 80

Asp Lys Asp Glu Asp Gly Leu Ala Asp Glu Gly Thr Val Glu Phe Asn
85 90 95

Tyr Pro Gln Lys Glu Lys Ile Ser Glu Arg Met Leu Gly Trp His Leu
100 105 110

Thr Arg Gly Lys Gly Glu Glu Met Gly Glu Pro Gln Tyr Asp Lys Glu
115 120 125

Val Ser His Asn His Leu Pro Arg Leu Thr Ser Arg Gln Asp Thr Ser
130 135 140

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

Ile Ala Gly Gly Lys Arg Leu Pro Tyr Ser Ser Asp Val Asn Gln Ser
165 170 175

Pro Asn Arg Arg Ile Val Asp Pro Val Gly Leu Gly Asn Val Ala Trp
180 185 190

Lys Glu Arg Val Asp Gly Trp Lys Met Lys Gln Glu Lys Asn Thr Gly
195 200 205

Pro Val Ser Thr Gln Ala Ala Ser Glu Arg Gly Gly Val Asp Ile Asp
210 215 220

Ala Ser Thr Asp Ile Leu Ala Asp Glu Ala Leu Leu Asn Asp Glu Ala
225 230 235 240

Arg Gln Pro Leu Ser Arg Lys Val Ser Ile Pro Ser Ser Arg Ile Asn
245 250 255

Pro Tyr Arg Met Val Ile Met Leu Arg Leu Val Ile Leu Cys Leu Phe
260 265 270

Leu His Tyr Arg Ile Thr Asn Pro Val Pro Asn Ala Phe Ala Leu Trp
275 280 285

Leu Val Ser Val Ile Cys Glu Ile Trp Phe Ala Leu Ser Trp Ile Leu
290 295 300

Asp Gln Phe Pro Lys Trp Phe Pro Val Asn Arg Glu Thr Tyr Leu Asp
305 310 315 320

Arg Leu Ala Leu Arg Tyr Asp Arg Glu Gly Glu Pro Ser Gln Leu Ala
325 330 335

Ala Val Asp Ile Phe Val Ser Thr Val Asp Pro Leu Lys Glu Pro Pro
340 345 350

Leu Val Thr Ala Asn Thr Val Leu Ser Ile Leu Ala Val Asp Tyr Pro
355 360 365

Val Asp Lys Val Ser Cys Tyr Val Phe Asp Asp Gly Ala Ala Met Leu
370 375 380

Ser Phe Glu Ser Leu Ala Glu Thr Ser Glu Phe Ala Arg Lys Trp Val
385 390 395 400

Pro Phe Cys Lys Lys Tyr Ser Ile Glu Pro Arg Ala Pro Glu Trp Tyr
405 410 415

Phe Ala Ala Lys Ile Asp Tyr Leu Lys Asp Lys Val Gln Thr Ser Phe
420 425 430

Val Lys Asp Arg Arg Ala Met Lys Arg Glu Tyr Glu Glu Phe Lys Ile
435 440 445

Arg Ile Asn Ala Leu Val Ser Lys Ala Leu Lys Cys Pro Glu Glu Gly
450 455 460

Trp Val Met Gln Asp Gly Thr Pro Trp Pro Gly Asn Asn Thr Gly Asp
465 470 475 480

His Pro Gly Met Ile Gln Val Phe Leu Gly Gln Asn Gly Gly Leu Asp
485 490 495

Ala Glu Gly Asn Glu Leu Pro Arg Leu Val Tyr Val Ser Arg Glu Lys
500 505 510

Arg Pro Gly Phe Gln His His Lys Lys Ala Gly Ala Met Asn Ala Leu
515 520 525

Val Arg Val Ser Ala Val Leu Thr Asn Gly Pro Phe Ile Leu Asn Leu
530 535 540

Asp Cys Asp His Tyr Ile Asn Asn Ser Lys Ala Leu Arg Glu Ala Met
545 550 555 560

Cys Phe Leu Met Asp Pro Asn Leu Gly Lys Gln Val Cys Tyr Val Gln
565 570 575

Phe Pro Gln Arg Phe Asp Gly Ile Asp Lys Asn Asp Arg Tyr Ala Asn
580 585 590

Arg Asn Thr Val Phe Phe Asp Ile Asn Leu Arg Gly Leu Asp Gly Ile
595 600 605

Gln Gly Pro Val Tyr Val Gly Thr Gly Cys Val Phe Asn Arg Thr Ala
610 615 620

Leu Tyr Gly Tyr Glu Pro Pro Ile Lys Val Lys His Lys Lys Pro Ser
625 630 635 640

Leu Leu Ser Lys Leu Cys Gly Gly Ser Arg Lys Lys Asn Ser Lys Ala
645 650 655

Lys Lys Glu Ser Asp Lys Lys Lys Ser Gly Arg His Thr Asp Ser Thr
660 665 670

Val Pro Val Phe Asn Leu Asp Asp Ile Glu Glu Gly Val Glu Gly Ala
675 680 685

Gly Phe Asp Asp Glu Lys Ala Leu Leu Met Ser Gln Met Ser Leu Glu
690 695 700

Lys Arg Phe Gly Gln Ser Ala Val Phe Val Ala Ser Thr Leu Met Glu
705 710 715 720

Asn Gly Gly Val Pro Pro Ser Ala Thr Pro Glu Asn Leu Leu Lys Glu
725 730 735

Ala Ile His Val Ile Ser Cys Gly Tyr Glu Asp Lys Ser Asp Trp Gly
740 745 750

Met Glu Ile Gly Trp Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu Thr
755 760 765

Gly Phe Lys Met His Ala Arg Gly Trp Arg Ser Ile Tyr Cys Met Pro
770 775 780

Lys Leu Pro Ala Phe Lys Gly Ser Ala Pro Ile Asn Leu Ser Asp Arg
785 790 795 800

Leu Asn Gln Val Leu Arg Trp Ala Leu Gly Ser Val Glu Ile Leu Phe
805 810 815

Ser Arg His Cys Pro Ile Trp Tyr Gly Tyr Asn Gly Arg Leu Lys Phe
820 825 830

Leu Glu Arg Phe Ala Tyr Val Asn Thr Thr Ile Tyr Pro Ile Thr Ser
835 840 845

Ile Pro Leu Leu Met Tyr Cys Thr Leu Leu Ala Val Cys Leu Phe Thr
850 855 860

Asn Gln Phe Ile Ile Pro Gln Ile Ser Asn Ile Ala Ser Ile Trp Phe
865 870 875 880

Leu Ser Leu Phe Leu Ser Ile Phe Ala Thr Gly Ile Leu Glu Met Arg
885 890 895

Trp Ser Gly Val Gly Ile Asp Glu Trp Trp Arg Asn Glu Gln Phe Trp
900 905 910

Val Ile Gly Gly Val Ser Ala His Leu Phe Ala Val Phe Gln Gly Ile
915 920 925

Leu Lys Val Leu Ala Gly Ile Asp Thr Asn Phe Thr Val Thr Ser Lys
930 935 940

Ala Ser Asp Glu Asp Gly Asp Phe Ala Glu Leu Tyr Leu Phe Lys Trp
945 950 955 960

Thr Thr Leu Leu Ile Pro Pro Thr Thr Leu Leu Ile Val Asn Leu Val
965 970 975

Gly Val Val Ala Gly Val Ser Tyr Ala Ile Asn Ser Gly Tyr Gln Ser
980 985 990

Trp Gly Pro Leu Phe Gly Lys Leu Phe Phe Ala Phe Trp Val Ile Val
995 1000 1005

His Leu Tyr Pro Phe Leu Lys Gly Leu Met Gly Arg Gln Asn Arg
1010 1015 1020

Thr Pro Thr Ile Val Val Val Trp Ser Val Leu Leu Ala Ser Ile
1025 1030 1035

Phe Ser Leu Leu Trp Val Arg Ile Asp Pro Phe Thr Ser Arg Val
1040 1045 1050

Thr Gly Pro Asp Ile Leu Glu Cys Gly Ile Asn Cys
1055 1060 1065

<210> 69
<211> 760
<212> PRT
<213> Arabodopsis thaliana

<400> 69

Met Glu Thr His Arg Lys Asn Ser Val Val Gly Asn Ile Leu His Thr
1 5 10 15

Cys His Pro Cys Arg Arg Thr Ile Pro Tyr Arg Ile Tyr Ala Ile Phe
20 25 30

His Thr Cys Gly Ile Ile Ala Leu Met Tyr His His Val His Ser Leu
35 40 45

Val Thr Ala Asn Asn Thr Leu Ile Thr Cys Leu Leu Leu Ser Asp
50 55 60

Ile Val Leu Ala Phe Met Trp Ala Thr Thr Thr Ser Leu Arg Leu Asn
65 70 75 80

Pro Val His Arg Thr Glu Cys Pro Glu Lys Tyr Ala Ala Lys Pro Glu
85 90 95

Asp Phe Pro Lys Leu Asp Val Phe Ile Cys Thr Ala Asp Pro Tyr Lys
100 105 110

Glu Pro Pro Met Met Val Val Asn Thr Ala Leu Ser Val Met Ala Tyr

115

120

125

Glu Tyr Pro Ser Asp Lys Ile Ser Val Tyr Val Ser Asp Asp Gly Gly
 130 135 140

Ser Ser Leu Thr Phe Phe Ala Leu Ile Glu Ala Ala Lys Phe Ser Lys
 145 150 155 160

Gln Trp Leu Pro Phe Cys Lys Lys Asn Asn Val Gln Asp Arg Ser Pro
 165 170 175

Glu Val Tyr Phe Ser Ser Glu Ser His Ser Arg Ser Asp Glu Ala Glu
 180 185 190

Asn Leu Lys Met Met Tyr Glu Asp Met Lys Ser Arg Val Glu His Val
 195 200 205

Val Glu Ser Gly Lys Val Glu Thr Ala Phe Ile Thr Cys Asp Gln Phe
 210 215 220

Arg Gly Val Phe Asp Leu Trp Thr Asp Lys Phe Ser Arg His Asp His
 225 230 235 240

Pro Thr Ile Ile Gln Val Leu Gln Asn Ser Glu Thr Asp Met Asp Asn
 245 250 255

Thr Arg Lys Tyr Ile Met Pro Asn Leu Ile Tyr Val Ser Arg Glu Lys
 260 265 270

Ser Lys Val Ser Pro His His Phe Lys Ala Gly Ala Leu Asn Thr Leu
 275 280 285

Leu Arg Val Ser Gly Val Met Thr Asn Ser Pro Ile Ile Leu Thr Leu
 290 295 300

Asp Cys Asp Met Tyr Ser Asn Asp Pro Ala Thr Leu Val Arg Ala Leu
 305 310 315 320

Cys Tyr Leu Thr Asp Pro Glu Ile Lys Ser Gly Leu Gly Tyr Val Gln
 325 330 335

Phe Pro Gln Lys Phe Leu Gly Ile Ser Lys Asn Asp Ile Tyr Ala Cys
340 345 350

Glu Asn Lys Arg Leu Phe Ile Ile Asn Met Val Gly Phe Asp Gly Leu
355 360 365

Met Gly Pro Thr His Val Gly Thr Gly Cys Phe Phe Asn Arg Arg Ala
370 375 380

Phe Tyr Gly Pro Pro Tyr Met Leu Ile Leu Pro Glu Ile Asn Glu Leu
385 390 395 400

Lys Pro Tyr Arg Ile Ala Asp Lys Ser Ile Lys Ala Gln Asp Val Leu
405 410 415

Ser Leu Ala His Asn Val Ala Gly Cys Ile Tyr Glu Tyr Asn Thr Asn
420 425 430

Trp Gly Ser Lys Ile Gly Phe Arg Tyr Gly Ser Leu Val Glu Asp Tyr
435 440 445

Tyr Thr Gly Phe Met Leu His Cys Glu Gly Trp Arg Ser Val Phe Cys
450 455 460

Asn Pro Lys Lys Ala Ala Phe Tyr Gly Asp Ser Pro Lys Cys Leu Val
465 470 475 480

Asp Leu Val Gly Gln Gln Ile Arg Trp Ala Val Gly Leu Phe Glu Met
485 490 495

Ser Phe Ser Lys Tyr Ser Pro Ile Thr Tyr Gly Ile Lys Ser Leu Asp
500 505 510

Leu Leu Met Gly Leu Gly Tyr Cys Asn Ser Pro Phe Lys Pro Phe Trp
515 520 525

Ser Ile Pro Leu Thr Val Tyr Gly Leu Leu Pro Gln Leu Ala Leu Ile
530 535 540

Ser Gly Val Ser Val Phe Pro Lys Ala Ser Asp Pro Trp Phe Trp Leu

545		550		555		560									
Tyr	Ile	Ile	Leu	Phe	Phe	Gly	Ala	Tyr	Ala	Gln	Asp	Leu	Ser	Asp	Phe
			565						570					575	
Leu	Leu	Glu	Gly	Gly	Thr	Tyr	Arg	Lys	Trp	Trp	Asn	Asp	Gln	Arg	Met
		580						585					590		
Leu	Met	Ile	Lys	Gly	Leu	Ser	Ser	Phe	Phe	Phe	Gly	Phe	Ile	Glu	Phe
		595					600					605			
Ile	Leu	Lys	Thr	Leu	Asn	Leu	Ser	Thr	Pro	Lys	Phe	Asn	Val	Thr	Ser
	610					615					620				
Lys	Ala	Asn	Asp	Asp	Asp	Glu	Gln	Arg	Lys	Arg	Tyr	Glu	Gln	Glu	Ile
625					630					635					640
Phe	Asp	Phe	Gly	Thr	Ser	Ser	Ser	Met	Phe	Leu	Pro	Leu	Thr	Thr	Val
			645						650					655	
Ala	Ile	Val	Asn	Leu	Leu	Ala	Phe	Val	Trp	Gly	Leu	Tyr	Gly	Ile	Leu
		660						665					670		
Phe	Cys	Gly	Gly	Glu	Leu	Tyr	Leu	Glu	Leu	Met	Leu	Val	Ser	Phe	Ala
		675					680					685			
Val	Val	Asn	Cys	Leu	Pro	Ile	Tyr	Gly	Ala	Met	Val	Leu	Arg	Lys	Asp
	690					695					700				
Asp	Gly	Lys	Leu	Ser	Lys	Arg	Thr	Cys	Phe	Leu	Ala	Gly	Asn	Leu	His
705					710					715					720
Val	Gly	Ser	Tyr	Cys	Val	Lys	Leu	Leu	Arg	Pro	Gln	Val	Thr	Ser	Pro
				725					730					735	
Leu	Arg	Leu	Ile	His	Asn	Asn	Asn	Thr	Ser	Gly	Trp	Phe	Lys	Arg	Lys
		740						745					750		
Lys	His	Asn	Met	Asn	Glu	Ser	Val								
		755					760								

<210> 70
<211> 1086
<212> PRT
<213> Spinacia oleracea

<400> 70

Met Glu Ala Thr Gly Gly Met Val Ala Gly Ser Tyr Lys Arg Asn Glu
1 5 10 15

Leu Val Arg Ile Arg His Asp Ser Thr Asp Ser Gly Ser Lys Ser Leu
20 25 30

Lys Asn Leu Asp Gly Gln Ile Cys Gln Ile Cys Gly Asp Thr Val Gly
35 40 45

Val Thr Ser Asn Gly Gly Val Phe Val Ala Cys Asn Glu Cys Ala Phe
50 55 60

Pro Val Cys Arg Pro Cys Tyr Glu Tyr Glu Arg Lys Asp Gly Asn Gln
65 70 75 80

Cys Cys Pro Gln Cys Lys Thr Arg Tyr Lys Arg Gln Lys Gly Ser Leu
85 90 95

Arg Val Glu Gly Asp Asp Glu Glu Glu Asp Val Asp Asp Leu Asp Asn
100 105 110

Glu Phe Asn Tyr Glu Arg Gly Thr Ser Lys Ala Arg His Gln Trp Gln
115 120 125

Gly Glu Asp Val Asp Leu Ser Ser Ser Ser Arg His Gly Ser Gln Pro
130 135 140

Ile Pro Leu Leu Thr Asn Gly Gln Val Val Ser Gly Glu Ile Pro Ser
145 150 155 160

Ala Thr Pro Asp Asn Gln Ser Val Arg Ser Thr Ser Gly Pro Ile Gly
165 170 175

Pro Glu Lys Arg Gly Asn His Ser Leu Pro Tyr Ile Asp Pro Cys Leu
180 185 190

Pro Val Pro Val Arg Ile Val Asp Pro Ser Lys Asp Leu Asn Ser Tyr
195 200 205

Gly Leu Gly Ser Val Asp Trp Lys Glu Arg Val Glu Ser Trp Lys Leu
210 215 220

Lys Gln Glu Lys Asn Met Thr His Thr Gly Asn Arg Tyr Ser Glu Gly
225 230 235 240

Lys Gly Gly Asp Val Glu Gly Ser Gly Ser Asn Gly Glu Glu Leu Gln
245 250 255

Leu Ala Asp Asp Val Arg Gln Pro Met Ser Arg Ile Val Pro Ile Pro
260 265 270

Ser Ser His Leu Thr Pro Tyr Arg Ala Val Ile Ile Phe Arg Leu Ile
275 280 285

Ile Leu Val Phe Phe Leu Gln Phe Arg Ile Thr His Pro Val Glu Asp
290 295 300

Ala Tyr Pro Leu Trp Leu Thr Ser Val Ile Cys Glu Ile Trp Phe Ala
305 310 315 320

Met Ser Trp Ile Leu Asp Gln Phe Pro Lys Trp Tyr Pro Ile Asn Arg
325 330 335

Glu Thr Tyr Leu Asp Arg Leu Ala Phe Arg His Asp Arg Glu Gly Glu
340 345 350

Pro Ser Gln Leu Ala Pro Ile Asp Val Phe Val Ser Thr Val Asp Pro
355 360 365

Leu Lys Glu Pro Pro Ile Ile Thr Ala Asn Thr Val Leu Ser Ile Leu
370 375 380

Ala Val Asp Tyr Pro Val Asp Lys Val Ser Cys Tyr Val Ser Asp Asp
385 390 395 400

Gly Ser Ala Met Leu Thr Phe Glu Gly Leu Ser Glu Thr Ala Glu Phe
405 410 415

Ala Arg Lys Trp Val Pro Phe Cys Lys Lys Phe Ser Ile Glu Pro Arg
420 425 430

Ala Pro Glu Phe Tyr Phe Gln Gln Lys Ile Asp Tyr Leu Lys Asp Lys
435 440 445

Ile Gln Pro Ser Phe Val Lys Glu Arg Arg Ala Met Lys Arg Glu Tyr
450 455 460

Glu Glu Phe Lys Val Arg Ile Asn Ala Leu Val Ala Lys Ala Gln Lys
465 470 475 480

Val Pro Glu Glu Gly Trp Thr Met Gln Asp Gly Thr Ala Trp Pro Gly
485 490 495

Asn Asn Pro Arg Asp His Pro Gly Met Ile Gln Val Phe Leu Gly His
500 505 510

Ser Gly Gly Leu Asp Met Asp Gly Asn Glu Leu Pro Arg Leu Val Tyr
515 520 525

Val Ser Arg Glu Lys Arg Pro Gly Phe Gln His His Lys Lys Ala Gly
530 535 540

Ala Met Asn Ala Leu Ile Arg Val Ser Ala Val Leu Thr Asn Gly Ala
545 550 555 560

Tyr Ile Leu Asn Val Asp Cys Asp His Tyr Phe Asn Asn Ser Lys Cys
565 570 575

Leu Lys Glu Ala Met Cys Phe Met Met Asp Pro Ala Leu Gly Lys Lys
580 585 590

Val Cys Tyr Val Gln Phe Pro Gln Arg Phe Asp Gly Ile Asp Leu His
595 600 605

Asp Arg Tyr Ala Asn Arg Asn Ile Val Phe Phe Asp Ile Asn Met Lys
610 615 620

Gly Gln Asp Gly Ile Gln Gly Pro Val Tyr Val Gly Thr Gly Cys Cys
625 630 635 640

Phe Asn Arg Gln Ala Leu Tyr Gly Tyr Asp Pro Val Leu Thr Glu Glu
645 650 655

Asp Phe Glu Pro Asn Phe Ile Ile Lys Asn Cys Phe Gly Ser Arg Lys
660 665 670

Lys Gly Lys Ser Gly Asn Lys Lys Tyr Met Asp Lys Lys Arg Gly Pro
675 680 685

Lys Arg Ser Glu Ser Ser Ile Pro Ile Phe Asn Met Glu Asp Ile Glu
690 695 700

Glu Gly Val Glu Gly Tyr Glu Asp Glu Lys Ser Leu Leu Met Ser Gln
705 710 715 720

Lys Arg Leu Glu Lys Arg Phe Gly Gln Ser Pro Val Phe Ile Ala Ala
725 730 735

Thr Phe Met Glu Met Gly Gly Ile Pro Pro Thr Thr Asn Pro Ala Thr
740 745 750

Leu Leu Lys Glu Ala Ile His Val Ile Ser Cys Gly Tyr Glu Asp Lys
755 760 765

Ser Glu Trp Gly Lys Glu Ile Gly Trp Ile Tyr Gly Ser Val Thr Glu
770 775 780

Asp Ile Leu Thr Gly Phe Lys Met His Ala Arg Gly Trp Met Ser Ile
785 790 795 800

Tyr Cys Met Pro Pro Arg Pro Ala Phe Lys Gly Ser Ala Pro Leu Asn
805 810 815

Leu Ser Asp Arg Leu Asn Gln Val Leu Arg Trp Ala Leu Gly Ser Ile
820 825 830

Glu Ile Met Leu Ser Arg His Cys Pro Ile Trp Tyr Gly Tyr Lys Gly
835 840 845

Arg Leu Arg Phe Leu Glu Arg Leu Ala Tyr Ile Asn Thr Val Val Tyr
850 855 860

Pro Leu Thr Ser Ile Pro Leu Ile Ala Tyr Cys Ile Leu Pro Ala Ile
865 870 875 880

Cys Leu Leu Thr Asn Lys Phe Ile Ile Pro Thr Leu Ser Asn Phe Ala
885 890 895

Ser Ile Leu Phe Ile Met Leu Phe Met Ser Ile Ala Ala Thr Gly Ile
900 905 910

Leu Glu Leu Arg Trp Ser Gly Val Ser Ile Glu Asp Trp Trp Arg Asn
915 920 925

Glu Gln Phe Trp Val Ile Gly Gly Thr Ser Ala His Leu Phe Ala Val
930 935 940

Phe Gln Gly Leu Leu Lys Val Leu Ala Gly Ile Asp Thr Asn Phe Thr
945 950 955 960

Val Thr Ser Lys Ala Ala Asp Glu Asp Gly Asp Phe Ala Glu Leu Tyr
965 970 975

Ile Phe Lys Trp Thr Ala Leu Leu Ile Pro Pro Thr Thr Val Leu Ile
980 985 990

Val Asn Leu Val Gly Val Val Ala Gly Val Ser Tyr Ala Ile Asn Ser
995 1000 1005

Gly Tyr Gln Ser Trp Gly Pro Leu Phe Gly Lys Leu Phe Phe Ser
1010 1015 1020

Phe Trp Val Ile Ala His Leu Tyr Pro Phe Leu Lys Gly Leu Leu
1025 1030 1035

Gly Arg Gln Asn Arg Thr Pro Thr Ile Val Ile Val Trp Ser Val
1040 1045 1050

Leu Leu Ala Ser Ile Phe Ser Leu Leu Trp Val Arg Ile Asn Pro
1055 1060 1065

Phe Thr Thr Asp Ala Glu Lys Ala Ala Ala Gly Asn Gln Cys Gly
1070 1075 1080

Ile Asn Cys
1085

<210> 71
<211> 1060
<212> PRT
<213> Spinacia oleracea

<400> 71

Met Met Glu Asp Ser Gln Ser Gly Val Lys Pro Thr Lys Gln Ala Asn
1 5 10 15

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

Gly Glu Pro Phe Val Ala Cys Asp Val Cys Ser Phe Pro Val Cys Arg
35 40 45

Ala Cys Tyr Glu Tyr Glu Arg Lys Asp Gly Thr Gln Ser Cys Pro Gln
50 55 60

Cys Lys Thr Arg Tyr Lys Arg Gln Lys Gly Ser Pro Ala Ile His Gly
65 70 75 80

Glu Lys Val Glu Asp Ser Asp Val Glu Asp Val Val Ser Asp Val Asn
85 90 95

Glu Pro Leu Gly Ser Ser Ile Leu Lys Glu Lys Pro Gln Glu Arg Met
100 105 110

Leu Gly Trp His Met Asn His Gly Gln Ser Gly Glu Leu Gly Pro Pro
115 120 125

Thr Tyr Asp Lys Glu Ala Pro Ile Ser His Ile Pro Arg Leu Ala Thr

130

135

140

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

Ser Met Pro Ser Pro Gly Ala Ser Thr Gly Ala Asn Ile Arg Val Ser
 165 170 175

Arg Glu Phe Ala Ser Pro Gly Phe Gly Asn Val Ala Trp Lys Glu Arg
 180 185 190

Ile Asp Gly Trp Lys Met Lys Gln Glu Lys Ser Thr Gly Pro Pro Ser
 195 200 205

Val Ser His Ala Pro Ser Glu Gly Arg Phe Ala Asn Asp Ile Asp Ala
 210 215 220

Ser Thr Glu Ile Ala Met Asp Asp Pro Leu Leu Asn Asp Glu Thr Arg
 225 230 235 240

Gln Pro Leu Ser Arg Lys Val Pro Ile Pro Ser Ser Arg Ile Asn Pro
 245 250 255

Tyr Arg Met Val Ile Val Leu Arg Leu Ala Val Leu Gly Ile Phe Leu
 260 265 270

His Tyr Arg Val Thr Asn Pro Val Pro Asn Ala Tyr Ala Leu Trp Leu
 275 280 285

Ile Ser Val Ile Cys Glu Ile Trp Phe Ala Phe Ser Trp Ile Leu Asp
 290 295 300

Gln Phe Pro Lys Trp Leu Pro Ile Asn Arg Glu Thr Tyr Leu Asp Arg
 305 310 315 320

Leu Ala Leu Arg Tyr Asp Arg Glu Gly Glu Pro Ser Gln Leu Ala Ala
 325 330 335

Val Asp Ile Phe Val Ser Thr Val Asp Pro Leu Lys Glu Pro Pro Leu
 340 345 350

Val Thr Ala Asn Thr Val Leu Ser Ile Leu Ala Val Asp Tyr Pro Val
355 360 365

Asp Lys Val Ser Cys Tyr Val Ser Asp Asp Gly Ala Ala Met Leu Thr
370 375 380

Phe Glu Ala Leu Ser Glu Thr Ser Glu Phe Ala Arg Lys Trp Val Pro
385 390 395 400

Phe Thr Lys Lys Tyr Asn Ile Glu Pro Arg Ala Pro Glu Trp Tyr Phe
405 410 415

Ser Gln Lys Ile Asp Tyr Leu Lys Asp Lys Val Gln Thr Thr Phe Val
420 425 430

Lys Asp Arg Arg Ala Met Lys Arg Glu Tyr Glu Glu Phe Lys Ile Arg
435 440 445

Ile Asn Gly Leu Val Ala Lys Ala Thr Lys Val Pro Glu Glu Gly Trp
450 455 460

Val Met Gln Asp Gly Thr Pro Trp Pro Gly Asn Asn Thr Arg Asp His
465 470 475 480

Pro Gly Met Ile Gln Val Phe Leu Gly Gln Ser Gly Gly Leu Asp Thr
485 490 495

Asp Gly Asn Glu Leu Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg
500 505 510

Pro Gly Phe Thr His His Lys Lys Ala Gly Ala Met Asn Ser Leu Val
515 520 525

Arg Val Ser Ala Val Leu Thr Asn Gly Pro Phe Met Leu Asn Leu Asp
530 535 540

Cys Asp His Tyr Ile Asn Asn Ser Lys Ala Leu Arg Glu Ala Met Cys
545 550 555 560

Phe Met Met Asp Pro Asn Leu Gly Lys Tyr Cys Cys Tyr Val Gln Phe

565

570

575

Pro Gln Arg Phe Asp Gly Ile Asp Arg Asn Asp Arg Tyr Ala Asn Arg
 580 585 590

Asn Thr Val Phe Phe Asp Ile Asn Leu Arg Gly Leu Asp Gly Ile Gln
 595 600 605

Gly Pro Val Tyr Val Gly Thr Gly Cys Val Phe Asn Arg Thr Ala Leu
 610 615 620

Tyr Gly Tyr Glu Pro Pro Ile Lys Pro Lys Pro Lys Lys Lys Gly Ile
 625 630 635 640

Leu Ser Ser Cys Phe Gly Gly Ser Arg Lys Lys Ser Ser Lys Lys Asp
 645 650 655

Ser Lys Lys Lys Ser Lys His Ala Asp Pro Thr Val Pro Ile Phe Asn
 660 665 670

Leu Glu Asp Ile Glu Glu Gly Val Glu Gly Thr Gly Phe Asp Asp Glu
 675 680 685

Lys Ser Leu Leu Met Ser Gln Ile Ser Leu Glu Lys Arg Phe Gly Lys
 690 695 700

Ser Glu Val Phe Val Ala Ser Thr Leu Met Glu Asn Gly Gly Val Pro
 705 710 715 720

Gln Ser Ala Thr Pro Asp Thr Leu Leu Lys Glu Ala Ile His Val Ile
 725 730 735

Ser Cys Gly Tyr Glu Asp Lys Thr Asp Trp Gly Ala Glu Ile Gly Trp
 740 745 750

Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu Thr Gly Phe Lys Met His
 755 760 765

Ala Arg Gly Trp Arg Ser Ile Tyr Cys Met Pro Lys Leu Ala Ala Phe
 770 775 780

Lys Gly Ser Ala Pro Ile Asn Leu Ser Asp Arg Leu Asn Gln Val Leu
785 790 795 800

Arg Trp Ala Leu Gly Ser Val Glu Ile Leu Phe Ser Arg His Cys Pro
805 810 815

Leu Trp Tyr Gly Tyr Gly Gly Arg Leu Lys Trp Leu Glu Arg Phe Ala
820 825 830

Tyr Ile Asn Thr Thr Ile Tyr Pro Leu Thr Ser Ile Pro Leu Leu Ala
835 840 845

Tyr Cys Thr Leu Pro Ala Val Cys Leu Leu Thr Gly Lys Phe Ile Ile
850 855 860

Pro Gln Ile Ser Asn Leu Ala Ser Val Trp Phe Leu Ser Leu Phe Leu
865 870 875 880

Ser Ile Phe Ala Thr Gly Ile Leu Glu Met Arg Trp Ser Gly Val Gly
885 890 895

Ile Asp Glu Trp Trp Arg Asn Glu Gln Phe Trp Val Ile Gly Gly Ile
900 905 910

Ser Ala His Leu Phe Ala Val Phe Gln Gly Leu Leu Lys Val Leu Ala
915 920 925

Gly Ile Asp Thr Asn Phe Thr Val Thr Ser Lys Ala Ser Asp Glu Asp
930 935 940

Gly Asp Phe Thr Glu Leu Tyr Leu Phe Lys Trp Thr Thr Leu Leu Ile
945 950 955 960

Pro Pro Thr Thr Ile Leu Ile Val Asn Leu Val Ala Val Val Ala Gly
965 970 975

Ile Ser Tyr Ala Ile Asn Ser Gly Tyr Gln Ser Trp Gly Pro Leu Phe
980 985 990

Gly Lys Leu Phe Phe Ala Phe Trp Val Ile Val His Leu Tyr Pro Phe

995

1000

1005

Leu Lys Gly Leu Met Gly Arg Gln Asn Arg Thr Pro Thr Ile Val
 1010 1015 1020

Val Val Trp Ser Ile Leu Leu Ala Ser Ile Phe Ser Leu Leu Trp
 1025 1030 1035

Val Arg Val Asp Pro Phe Thr Thr Arg Val Thr Gly Pro Asp Val
 1040 1045 1050

His Ile Cys Gly Ile Asn Cys
 1055 1060

<210> 72
 <211> 1431
 <212> DNA
 <213> Spinacia oleracea

<400> 72
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 gcaggtaaaa atatctacac atggttggga ccagtgccaa caatactaata tacacagcct 180
 gagttaataa aggatgcttt caataggatg aacaatttcc aaaaaccaag attgaatcca 240
 tataactcaaa tactttcaac tggacttccg aactatgagg gccagaaatg ggctaaacac 300
 aggaagcttc tcaaccctgc ttttcaactt gataagctca agcttatgat ccctgctttt 360
 gaaacctgcg ttactgatac actaaataag tgggagaagc tagtttctaa aacaggttct 420
 tcagaggttg atgtgtggcc acatttcaca actctaacgg gagatgggtat tgctagagct 480
 gcatttggaa gtagctttga ggatggaaga aggatattcg accttcttaa agagcaaaag 540
 gatcttggtta ttagtcttct caaatattct tatattccag gattcaaata ttgcccaca 600
 aaaghtaaca agatgatgaa agaaacggaa aacgaaatca aacctttatt gacgaatttg 660
 attcacaataa ggaagaaggc aatggaggct ggagaagctc ccaaagacga cttgttggga 720
 atgctacttg aatccaatgc aaacgaggct cgacaagtta acgaaaatga aagtgggaagt 780
 aggaagcgac aatccgatat aacaatgagc ttccatgaga tgattgacgc gtgcaagttg 840
 ttcttcttgg ctggccaaga gactacttct gtggcgctaa catgggcaat gattttgttg 900

gcgaagcacc aagattacca aacacgagca cgagaagaag tacttgctac atttgaacg	960
aaaactcctg actttgatgg tgtacataat cgccttaaga ttgtgacaac tatagtccac	1020
gaggtgctaa gattgtatcc gccaatccct gcaacatcac gaagggcaca tgaacgcgaa	1080
acaaaactag gagatttgggt aataccacaa ggggtaggag tttcattttc catactacat	1140
gctcacttga accctgaaat ttgggggtgat gatgccaaag aattcaagcc tgaaagattt	1200
tcagaaggga ttgcaaaggc aaccaaagga aataactctt acttcccctt tggttgggga	1260
cctaggattt gcattgggtca agccttcgca ctaatccagg ttaaaatggc attgtctatg	1320
attttacaac gtttctcttt cgagctttca ccgtcctaca tccatgctcc aactagtcta	1380
ttagcccttc aaccccagca tgggtgctcat gttatcttac atcgacttta a	1431

<210> 73
 <211> 476
 <212> PRT
 <213> Spinacia oleracea

<400> 73

Met	Lys	Glu	Ser	Ser	Thr	Leu	Arg	Ala	Gln	Ala	Leu	Asn	Lys	Pro	Ile
1				5					10					15	

Pro	Phe	Thr	His	Asp	Tyr	Tyr	Gln	Arg	Ile	Gln	Pro	Phe	Thr	His	Gln
			20					25					30		

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

Leu	Gly	Pro	Val	Pro	Thr	Ile	Leu	Ile	Thr	Gln	Pro	Glu	Leu	Ile	Lys
	50					55				60					

Asp	Ala	Phe	Asn	Arg	Met	Asn	Asn	Phe	Gln	Lys	Pro	Arg	Leu	Asn	Pro
65					70					75				80	

Tyr	Thr	Gln	Ile	Leu	Ser	Thr	Gly	Leu	Pro	Asn	Tyr	Glu	Gly	Gln	Lys
			85					90						95	

Trp	Ala	Lys	His	Arg	Lys	Leu	Leu	Asn	Pro	Ala	Phe	Gln	Leu	Asp	Lys
			100					105					110		

Leu Lys Leu Met Ile Pro Ala Phe Glu Thr Cys Val Thr Asp Thr Leu
115 120 125

Asn Lys Trp Glu Lys Leu Val Ser Lys Thr Gly Ser Ser Glu Val Asp
130 135 140

Val Trp Pro His Phe Thr Thr Leu Thr Gly Asp Gly Ile Ala Arg Ala
145 150 155 160

Ala Phe Gly Ser Ser Phe Glu Asp Gly Arg Arg Ile Phe Asp Leu Leu
165 170 175

Lys Glu Gln Lys Asp Leu Val Ile Ser Leu Leu Lys Tyr Ser Tyr Ile
180 185 190

Pro Gly Phe Lys Tyr Leu Pro Thr Lys Gly Asn Lys Met Met Lys Glu
195 200 205

Thr Glu Asn Glu Ile Lys Pro Leu Leu Thr Asn Leu Ile His Lys Arg
210 215 220

Lys Lys Ala Met Glu Ala Gly Glu Ala Pro Lys Asp Asp Leu Leu Gly
225 230 235 240

Met Leu Leu Glu Ser Asn Ala Asn Glu Ala Arg Gln Val Asn Glu Asn
245 250 255

Glu Ser Gly Ser Arg Lys Arg Gln Ser Asp Ile Thr Met Ser Phe His
260 265 270

Glu Met Ile Asp Ala Cys Lys Leu Phe Phe Leu Ala Gly Gln Glu Thr
275 280 285

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

Asp Tyr Gln Thr Arg Ala Arg Glu Glu Val Leu Ala Thr Phe Gly Thr
305 310 315 320

Lys Thr Pro Asp Phe Asp Gly Val His Asn Arg Leu Lys Ile Val Thr

325

330

335

Thr Ile Val His Glu Val Leu Arg Leu Tyr Pro Pro Ile Pro Ala Thr
 340 345 350

Ser Arg Arg Ala His Glu Arg Glu Thr Lys Leu Gly Asp Leu Val Ile
 355 360 365

Pro Gln Gly Val Gly Val Ser Phe Ser Ile Leu His Ala His Leu Asn
 370 375 380

Pro Glu Ile Trp Gly Asp Asp Ala Lys Glu Phe Lys Pro Glu Arg Phe
 385 390 395 400

Ser Glu Gly Ile Ala Lys Ala Thr Lys Gly Asn Asn Ser Tyr Phe Pro
 405 410 415

Phe Gly Trp Gly Pro Arg Ile Cys Ile Gly Gln Ala Phe Ala Leu Ile
 420 425 430

Gln Val Lys Met Ala Leu Ser Met Ile Leu Gln Arg Phe Ser Phe Glu
 435 440 445

Leu Ser Pro Ser Tyr Ile His Ala Pro Thr Ser Leu Leu Ala Leu Gln
 450 455 460

Pro Gln His Gly Ala His Val Ile Leu His Arg Leu
 465 470 475

<210> 74

<211> 1443

<212> DNA

<213> Spinacia oleracea

<400> 74

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gcatggaaca gcgagcagct tccaatctat gagccgggtc tagatgatgt ggttaaggaa 180

tgccgtggaa ggaacctttt cttcagcact gatgtagaaa agcatgttgc tgaggctgat 240

attgtttttg tctctgtgaa taccctacc aaaaccacag gtcttgagc aggcaaagct 300

gctgatttga cctactggga gagtgctgcc cgtatgattg ctgatgtttc aaagtctgac	360
aaaatcgttg ttgagaaatc aactgtgcca gtgaaaactg ctgaggcaat cgaaaagatt	420
ctgacgcaca acagcaaggg aatcaactac cagatccttt caaatccgga gttccttgct	480
gaagg tactg ctattcagga cctttttcac cctgacaggg ttctcatcgg tggccgggaa	540
accccgagcag gcctcaaggc agtccaagca ttgaaggatg tgtatgctca atgggttcct	600
gatgaacgga tcttaaccac caatctttgg tctgctgagc tctcaaagct tgctgccaac	660
gccttcttag cacagaggat ttcattctgtc aatgcaatgt cagctctttg tgaggctact	720
ggagcagatg ttaccaagt cgcattatgct gttggtaagg acagtaggat tgggcaaaag	780
tttttgaacg ctagtgttgg ttttggaggg tcttgcttcc agaaagacat tctgaacttg	840
gtttacattt gtgagtgcaa cggctctcct gaggtggccg agtattggaa acaggtaatc	900
aaggtgaatg attatcagaa gaatcgtttt gtgaataggg ttgtggcctc catgttcaac	960
actgtatcga acaagaagat tgctgttctt ggatttgcatt tcaaaaagga tacaggggat	1020
actagggaga caccgcat agatgtgtgc aagggtttgt tgggagacaa ggcaaggttg	1080
agcatctacg atccacaagt cactgaggat cagattcagc gagatctcac catgaacaag	1140
tttgactggg accaccaat tcacctccag cccacaagtc ccacaactgt taagcaagtg	1200
agtgttgttt gggacgctta tgaggccacc aaagatgctc atgctgtgtg tattctgact	1260
gagtgggatg aatttaagaa acttgattac aaaaggattt ttgacaacat gcagaagcca	1320
gcttttgtgt ttgatggaag gaacattgtg aatgcagatg agctgaggca gattgggttc	1380
attgtgtact caattggtaa acctttggat tcatggctca aggacatgcc tgctgtggct	1440
taa	1443

<210> 75
 <211> 480
 <212> PRT
 <213> Spinacia oleracea

<400> 75

Met	Val	Lys	Ile	Cys	Cys	Ile	Gly	Ala	Gly	Tyr	Val	Gly	Gly	Pro	Thr
1				5					10					15	

Met Ala Val Ile Ala Leu Lys Cys Pro Lys Ile Glu Val Val Val Val

20

25

30

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

Ile Tyr Glu Pro Gly Leu Asp Asp Val Val Lys Glu Cys Arg Gly Arg
 50 55 60

Asn Leu Phe Phe Ser Thr Asp Val Glu Lys His Val Ala Glu Ala Asp
 65 70 75 80

Ile Val Phe Val Ser Val Asn Thr Pro Thr Lys Thr Thr Gly Leu Gly
 85 90 95

Ala Gly Lys Ala Ala Asp Leu Thr Tyr Trp Glu Ser Ala Ala Arg Met
 100 105 110

Ile Ala Asp Val Ser Lys Ser Asp Lys Ile Val Val Glu Lys Ser Thr
 115 120 125

Val Pro Val Lys Thr Ala Glu Ala Ile Glu Lys Ile Leu Thr His Asn
 130 135 140

Ser Lys Gly Ile Asn Tyr Gln Ile Leu Ser Asn Pro Glu Phe Leu Ala
 145 150 155 160

Glu Gly Thr Ala Ile Gln Asp Leu Phe His Pro Asp Arg Val Leu Ile
 165 170 175

Gly Gly Arg Glu Thr Pro Ala Gly Leu Lys Ala Val Gln Ala Leu Lys
 180 185 190

Asp Val Tyr Ala Gln Trp Val Pro Asp Glu Arg Ile Leu Thr Thr Asn
 195 200 205

Leu Trp Ser Ala Glu Leu Ser Lys Leu Ala Ala Asn Ala Phe Leu Ala
 210 215 220

Gln Arg Ile Ser Ser Val Asn Ala Met Ser Ala Leu Cys Glu Ala Thr
 225 230 235 240

Gly Ala Asp Val Thr Gln Val Ala Tyr Ala Val Gly Lys Asp Ser Arg
245 250 255

Ile Gly Gln Lys Phe Leu Asn Ala Ser Val Gly Phe Gly Gly Ser Cys
260 265 270

Phe Gln Lys Asp Ile Leu Asn Leu Val Tyr Ile Cys Glu Cys Asn Gly
275 280 285

Leu Pro Glu Val Ala Glu Tyr Trp Lys Gln Val Ile Lys Val Asn Asp
290 295 300

Tyr Gln Lys Asn Arg Phe Val Asn Arg Val Val Ala Ser Met Phe Asn
305 310 315 320

Thr Val Ser Asn Lys Lys Ile Ala Val Leu Gly Phe Ala Phe Lys Lys
325 330 335

Asp Thr Gly Asp Thr Arg Glu Thr Pro Ala Ile Asp Val Cys Lys Gly
340 345 350

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

Glu Asp Gln Ile Gln Arg Asp Leu Thr Met Asn Lys Phe Asp Trp Asp
370 375 380

His Pro Ile His Leu Gln Pro Thr Ser Pro Thr Thr Val Lys Gln Val
385 390 395 400

Ser Val Val Trp Asp Ala Tyr Glu Ala Thr Lys Asp Ala His Ala Val
405 410 415

Cys Ile Leu Thr Glu Trp Asp Glu Phe Lys Lys Leu Asp Tyr Lys Arg
420 425 430

Ile Phe Asp Asn Met Gln Lys Pro Ala Phe Val Phe Asp Gly Arg Asn
435 440 445

Ile Val Asn Ala Asp Glu Leu Arg Gln Ile Gly Phe Ile Val Tyr Ser

450

455

460

Ile Gly Lys Pro Leu Asp Ser Trp Leu Lys Asp Met Pro Ala Val Ala
 465 470 475 480

<210> 76

<211> 1482

<212> DNA

<213> *Glycyrrhiza uralensis*

<400> 76

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agcaagtttg tgaggaattt gaatgggtgg tattatgatg taaaactaag aaggaaagaa      120
caccactac cccaggtga catgggatgg cctcttatcg gcgatctatt gtccttcac      180
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cgaagtggta tctacaagac tcacttggtt gggaatccaa gcatcattgt ttgygagcct      300
cagatgtgta ggcgagttct cactgatgat gtgaacttta agcttggtta tccaaaatct      360
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tttcgacgcc tcattacttc cccaatcgtg ggtcacaagg cgctagcaat gtacctagag      480
cgtcttgagg aaattgtgat caattcgttg gaagaattgt ccagcatgaa gcaccccggt      540
gagctcttga aagagatgaa gaaggtttcc tttaaagcca ttgtccacgt yttcatgggc      600
tcttccaatc aggacatcat taaaaaatt ggaagtctgt ttactgattt gtacaatggc      660
atgttctcta tccccattaa cgtacctggg ttacattcc acaaagcact cgaggcacgt      720
aagaagctag ccaaaatagt tcaaccggtt gtggatgaaa ggcggttgat gatagaaaat      780
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ccccatatct tgaaaaaggc taaggaagag caggaagaaa taacgaggac aagattttcc     1020
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gatgaaactt tacgatgtgc caatattgcc tttgcaactt ttcgagaggc aactgctgat     1140
gtgaacatca atggttatat cataccaaag ggatggagag tgctaatttg ggcaagagcc     1200
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gattacaatg ccaaagcagg aaccttcctt ccttttggag caggaagtag actttgtcct 1320
 ggagccgact tggcgaaact tgaaatttcc atatttcttc attatttcct ccttaattac 1380
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<210> 77
 <211> 493
 <212> PRT
 <213> Glycyrrhiza uralensis

<220>
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 <222> (98)..(98)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (478)..(478)
 <223> Xaa can be any naturally occurring amino acid

<400> 77

Met Glu Val His Trp Val Cys Met Ser Ala Ala Thr Leu Leu Val Cys
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Tyr Ile Phe Gly Ser Lys Phe Val Arg Asn Leu Asn Gly Trp Tyr Tyr
 20 25 30

Asp Val Lys Leu Arg Arg Lys Glu His Pro Leu Pro Pro Gly Asp Met
 35 40 45

Gly Trp Pro Leu Ile Gly Asp Leu Leu Ser Phe Ile Lys Asp Phe Ser
 50 55 60

Ser Gly His Pro Asp Ser Phe Ile Asn Asn Leu Val Leu Lys Tyr Gly
 65 70 75 80

Arg Ser Gly Ile Tyr Lys Thr His Leu Phe Gly Asn Pro Ser Ile Ile
 85 90 95

Val Xaa Glu Pro Gln Met Cys Arg Arg Val Leu Thr Asp Asp Val Asn
 100 105 110

Phe Lys Leu Gly Tyr Pro Lys Ser Ile Lys Glu Leu Ala Arg Cys Arg
115 120 125

Pro Met Ile Asp Val Ser Asn Ala Glu His Arg Leu Phe Arg Arg Leu
130 135 140

Ile Thr Ser Pro Ile Val Gly His Lys Ala Leu Ala Met Tyr Leu Glu
145 150 155 160

Arg Leu Glu Glu Ile Val Ile Asn Ser Leu Glu Glu Leu Ser Ser Met
165 170 175

Lys His Pro Val Glu Leu Leu Lys Glu Met Lys Lys Val Ser Phe Lys
180 185 190

Ala Ile Val His Val Phe Met Gly Ser Ser Asn Gln Asp Ile Ile Lys
195 200 205

Lys Ile Gly Ser Ser Phe Thr Asp Leu Tyr Asn Gly Met Phe Ser Ile
210 215 220

Pro Ile Asn Val Pro Gly Phe Thr Phe His Lys Ala Leu Glu Ala Arg
225 230 235 240

Lys Lys Leu Ala Lys Ile Val Gln Pro Val Val Asp Glu Arg Arg Leu
245 250 255

Met Ile Glu Asn Gly Pro Gln Glu Gly Ser Gln Arg Lys Asp Leu Ile
260 265 270

Asp Ile Leu Leu Glu Val Lys Asp Glu Asn Gly Arg Lys Leu Glu Asp
275 280 285

Glu Asp Ile Ser Asp Leu Leu Ile Gly Leu Leu Phe Ala Gly His Glu
290 295 300

Ser Thr Ala Thr Ser Leu Met Trp Ser Ile Thr Tyr Leu Thr Gln His
305 310 315 320

Pro His Ile Leu Lys Lys Ala Lys Glu Glu Gln Glu Glu Ile Thr Arg
325 330 335

Thr Arg Phe Ser Ser Gln Lys Gln Leu Ser Leu Lys Glu Ile Lys Gln
340 345 350

Met Val Tyr Leu Ser Gln Val Ile Asp Glu Thr Leu Arg Cys Ala Asn
355 360 365

Ile Ala Phe Ala Thr Phe Arg Glu Ala Thr Ala Asp Val Asn Ile Asn
370 375 380

Gly Tyr Ile Ile Pro Lys Gly Trp Arg Val Leu Ile Trp Ala Arg Ala
385 390 395 400

Ile His Met Asp Ser Glu Tyr Tyr Pro Asn Pro Glu Glu Phe Asn Pro
405 410 415

Ser Arg Trp Asp Asp Tyr Asn Ala Lys Ala Gly Thr Phe Leu Pro Phe
420 425 430

Gly Ala Gly Ser Arg Leu Cys Pro Gly Ala Asp Leu Ala Lys Leu Glu
435 440 445

Ile Ser Ile Phe Leu His Tyr Phe Leu Leu Asn Tyr Arg Leu Glu Arg
450 455 460

Ile Asn Pro Glu Cys His Val Thr Ser Leu Pro Val Ser Xaa Pro Thr
465 470 475 480

Asp Asn Cys Leu Ala Lys Val Ile Lys Val Ser Cys Ala
485 490

<210> 78
<211> 1617
<212> DNA
<213> Glycyrrhiza uralensis

<220>
<221> misc_feature
<222> (1009)..(1009)
<223> n is a, c, g, or t

<400> 78

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aggcatctca gagctcaagg tcttcatggt gacccttaca agctctcact tgacaactcc	180
aagcaaacct atatgctcaa gttgcaacaa gaagcacaat caaaatccat tggctctctcc	240
aaagatgatg ctgcaccacg aatcttctcc cttgcccac c aaactgtaca caaatatgga	300
aagaactcct ttgcatggga agggacagca ccaaagggtga tcatcacaga cccagagcaa	360
attaaggaag tctttaacaa gattcaggac ttccccaac caaaattaaa tcccatcgcc	420
aagtatatta gcatcgggtc aatacagtat gagggtgaca aatgggccaa acatcgaaag	480
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agctgccatg aaatgattag caaatggaag gggttattgt catcagatgg aacatgtgag	600
gttgatgttt ggcccttcct tcaaaatctc acttgatgat taatttctag gacggcattc	660
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cgagaaaaag cattgaagag tggcaaaagc accgatgacg acttattagg catacttttg	900
caatcaaadc acattgaaaa taaaggagat gaaaacagta agagtgtctgg aatgaccacc	960
caagaagtaa tggaggaatg caaacttttt tacctggcag ggcaagagnt tgaaaataaa	1020
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1617

<210> 79
<211> 538
<212> PRT
<213> Glycyrrhiza uralensis

<220>
<221> misc_feature
<222> (337)..(337)
<223> Xaa can be any naturally occurring amino acid

<400> 79

Met Asp Ala Ser Ser Thr Pro Gly Ala Ile Trp Val Val Leu Thr Val
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Ile Leu Ala Ala Ile Pro Ile Trp Ala Cys His Met Val Asn Thr Leu
20 25 30

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

His Gly Asp Pro Tyr Lys Leu Ser Leu Asp Asn Ser Lys Gln Thr Tyr
50 55 60

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

Lys Asp Asp Ala Ala Pro Arg Ile Phe Ser Leu Ala His Gln Thr Val
85 90 95

His Lys Tyr Gly Lys Asn Ser Phe Ala Trp Glu Gly Thr Ala Pro Lys
100 105 110

Val Ile Ile Thr Asp Pro Glu Gln Ile Lys Glu Val Phe Asn Lys Ile
115 120 125

Gln Asp Phe Pro Lys Pro Lys Leu Asn Pro Ile Ala Lys Tyr Ile Ser
130 135 140

Ile Gly Leu Ile Gln Tyr Glu Gly Asp Lys Trp Ala Lys His Arg Lys
145 150 155 160

Ile Ile Asn Pro Ala Phe His Leu Glu Lys Leu Lys Gly Met Leu Pro
165 170 175

Ala Phe Ser His Ser Cys His Glu Met Ile Ser Lys Trp Lys Gly Leu
180 185 190

Leu Ser Ser Asp Gly Thr Cys Glu Val Asp Val Trp Pro Phe Leu Gln
195 200 205

Asn Leu Thr Cys Asp Val Ile Ser Arg Thr Ala Phe Gly Ser Ser Tyr
210 215 220

Ala Glu Gly Ala Lys Ile Phe Glu Leu Leu Lys Arg Gln Gly Tyr Ala
225 230 235 240

Leu Met Thr Ala Arg Tyr Ala Arg Ile Pro Leu Trp Trp Leu Leu Pro
245 250 255

Ser Thr Thr Lys Arg Arg Met Lys Glu Ile Glu Arg Gly Ile Arg Asp
260 265 270

Ser Leu Glu Gly Ile Ile Arg Lys Arg Glu Lys Ala Leu Lys Ser Gly
275 280 285

Lys Ser Thr Asp Asp Asp Leu Leu Gly Ile Leu Leu Gln Ser Asn His
290 295 300

Ile Glu Asn Lys Gly Asp Glu Asn Ser Lys Ser Ala Gly Met Thr Thr
305 310 315 320

Gln Glu Val Met Glu Glu Cys Lys Leu Phe Tyr Leu Ala Gly Gln Glu
325 330 335

Xaa Glu Asn Lys Gly Asp Glu Asn Ser Lys Ser Ala Gly Met Thr Thr
340 345 350

Gln Glu Val Met Glu Glu Cys Lys Leu Phe Tyr Leu Ala Gly Gln Glu
355 360 365

Thr Thr Ala Ala Leu Leu Ala Trp Thr Met Val Leu Leu Gly Lys His
370 375 380

Pro Glu Trp Gln Ala Arg Ala Arg Gln Glu Val Leu Gln Val Thr Met
385 390 395 400

Ile Leu Tyr Glu Val Leu Arg Leu Tyr Pro Pro Gly Ile Tyr Leu Thr
405 410 415

Arg Ala Leu Arg Lys Asp Leu Lys Leu Gly Asn Leu Leu Leu Pro Ala
420 425 430

Gly Val Gln Val Ser Val Pro Ile Leu Leu Ile His His Asp Glu Gly
435 440 445

Ile Trp Gly Asn Asp Ala Lys Glu Phe Asn Pro Glu Arg Phe Ala Glu
450 455 460

Gly Ile Ala Lys Ala Thr Lys Gly Gln Val Cys Tyr Phe Pro Phe Gly
465 470 475 480

Trp Gly Pro Arg Ile Cys Val Gly Gln Asn Phe Ala Leu Leu Glu Ala
485 490 495

Lys Ile Val Leu Ser Leu Leu Leu Gln Asn Phe Ser Phe Glu Leu Ser
500 505 510

Pro Thr Tyr Ala His Val Pro Thr Thr Val Leu Thr Leu Gln Pro Lys
515 520 525

His Gly Ala Pro Ile Ile Leu His Lys Leu
530 535

<210> 80
<211> 2088
<212> DNA
<213> Glycyrrhiza uralensis

<400> 80
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cccttccatg ctccsactct accgtggact ctgatgaccg taggtgaggc tattatggca	180
gtgctgtggt tcttcaacca ggccttccgg tggcggccgg tgagccgctc ggtgatgacg	240
gagaagctgc ccagcgacgc gaagctgccg gggcttgaca tattcgtgtg cacgcttgac	300
cccgagaagg agcccaccgt ggaggtgatg aacactctgg tctctgccct tgccatggac	360
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gggatcaagt caaggtgtcc caaggttttc ttctctccca gtgctgagga tgaacacctt	540
cttcgcaccg acgagttcag gtcagagcga gacctcatca aggctaaata cgagaaaatg	600
cagaaaaata ttgagaaatt tggttcggat gccaaaaatt gtcgtatggt gactgacaga	660
cctcctcgga tcgagatatt gattgaccaa ccagacatgc cacgtgttgt ttacgtgtct	720
cgggaaagaa ggccatcact ccctcacaag ttcaaaggag gagccctcaa tacattgctc	780
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ggtcctggtc tttctggcag cggttaattac ttgaatagaa gtgcattact atttggaagt	1080
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gatgaaattt tacgagaagc tcaagtatta gcctcttggt cctatgagac aaacacagaa	1260
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gggtgtgccc caactgacat caaggaagga atgctccaat tggatgaagt gttgtctgaa	1440
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atcctttatg gcattgtccc ccaagtttgc ttcttaaaag gaatacccgt gtttccaaag	1620
gtcacagacc cttggtttgc agtgtttgca aactgtata tatccacca gattcaacat	1680
ttgatagagg tcctttctgg tgatggctct gtggcaatgt ggtgggatga acagkgaatc	1740

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 gtgttgctca tagtgaacgt tgtttccttc attggtggca tatggagact attcaatgca 1980
 aaggatattg aagatatggtt tggtcagctt ttcctagtta gttatgtaat ggcccttagt 2040
 tatcccattht ttgaagggat aataacatg aaaagcaaga gtggatag 2088

<210> 81
 <211> 695
 <212> PRT
 <213> Glycyrrhiza uralensis

<220>
 <221> misc_feature
 <222> (302)..(302)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (375)..(375)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (442)..(442)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (579)..(579)
 <223> Xaa can be any naturally occurring amino acid

<400> 81

Met Ala Ser Phe Thr Leu His Thr Glu Thr Val Gln Ser Trp Leu Leu
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Leu Ser Arg Leu His Ile Leu Leu His Leu Ala Val Val Leu Leu Leu
 20 25 30

Leu Tyr Tyr Arg Ile Thr Arg Phe Pro Phe His Ala Pro Thr Leu Pro
 35 40 45

Trp Thr Leu Met Thr Val Gly Glu Ala Ile Met Ala Val Leu Trp Phe

50

55

60

Phe Asn Gln Ala Phe Arg Trp Arg Pro Val Ser Arg Ser Val Met Thr
 65 70 75 80

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

Cys Thr Leu Asp Pro Glu Lys Glu Pro Thr Val Glu Val Met Asn Thr
 100 105 110

Leu Val Ser Ala Leu Ala Met Asp Tyr Pro Pro Asp Lys Leu Ser Val
 115 120 125

Tyr Leu Ser Asp Asp Gly Ala Ala Pro Val Thr Leu Tyr Gly Val Arg
 130 135 140

Glu Ala Ser Glu Phe Ala Arg Val Trp Val Pro Phe Cys Lys Lys Tyr
 145 150 155 160

Gly Ile Lys Ser Arg Cys Pro Lys Val Phe Phe Ser Pro Ser Ala Glu
 165 170 175

Asp Glu His Leu Leu Arg Thr Asp Glu Phe Arg Ser Glu Arg Asp Leu
 180 185 190

Ile Lys Ala Lys Tyr Glu Lys Met Gln Lys Asn Ile Glu Lys Phe Gly
 195 200 205

Ser Asp Ala Lys Asn Cys Arg Met Val Thr Asp Arg Pro Pro Arg Ile
 210 215 220

Glu Ile Leu Ile Asp Gln Pro Asp Met Pro Arg Val Val Tyr Val Ser
 225 230 235 240

Arg Glu Arg Arg Pro Ser Leu Pro His Lys Phe Lys Gly Gly Ala Leu
 245 250 255

Asn Thr Leu Leu Arg Val Ser Gly Leu Ile Ser Asn Gly Pro Tyr Val
 260 265 270

Leu Val Val Asp Cys Asp Met Tyr Cys Asn Asp Pro Ser Ser Ala Lys
275 280 285

Gln Ala Met Cys Phe Phe Leu Asp Pro Glu Thr Ser Lys Xaa Ile Ala
290 295 300

Phe Val Gln Phe Pro Gln Met Phe His Asn Leu Gly Lys Lys Asp Ile
305 310 315 320

Tyr Asp Asn Gln Ser Arg Thr Ala Phe Lys Thr Met Trp Gln Gly Met
325 330 335

Asp Gly Leu Arg Gly Pro Gly Leu Ser Gly Ser Gly Asn Tyr Leu Asn
340 345 350

Arg Ser Ala Leu Leu Phe Gly Ser Pro Asn Gln Lys Asp Asp Tyr Leu
355 360 365

Asp Asp Ala Gln Asn Tyr Xaa Gly Lys Ser Thr Met Tyr Ile Glu Ser
370 375 380

Leu Lys Ala Ile Arg Gly Gln Lys Thr Met Lys Lys Asn Ile Ser Arg
385 390 395 400

Asp Glu Ile Leu Arg Glu Ala Gln Val Leu Ala Ser Cys Ser Tyr Glu
405 410 415

Thr Asn Thr Glu Trp Gly Ala Glu Val Gly Phe Ser Tyr Gly Ile Leu
420 425 430

Leu Glu Ser Ser Ile Thr Gly Tyr Leu Xaa His Cys Arg Gly Trp Lys
435 440 445

Ser Ala Tyr Leu Tyr Pro Lys Thr Pro Cys Phe Leu Gly Cys Ala Pro
450 455 460

Thr Asp Ile Lys Glu Gly Met Leu Gln Leu Val Lys Trp Leu Ser Glu
465 470 475 480

Tyr Cys Leu Leu Gly Phe Ser Lys Tyr Ser Pro Phe Thr Tyr Gly Phe

485

490

495

Ser Arg Met Pro Ile Met Pro Thr Leu Val Tyr Cys Phe Leu Thr Thr
 500 505 510

Thr Thr Leu Tyr Ser Ile Val Phe Ile Leu Tyr Gly Ile Val Pro Gln
 515 520 525

Val Cys Phe Leu Lys Gly Ile Pro Val Phe Pro Lys Val Thr Asp Pro
 530 535 540

Trp Phe Ala Val Phe Ala Thr Leu Tyr Ile Ser Thr Gln Ile Gln His
 545 550 555 560

Leu Ile Glu Val Leu Ser Gly Asp Gly Ser Val Ala Met Trp Trp Asp
 565 570 575

Glu Gln Xaa Ile Trp Ile Leu Lys Ser Val Thr Ser Val Phe Ala Ile
 580 585 590

Ile Glu Ala Ala Lys Lys Gly Leu Gly Leu Asn Lys Lys Lys Phe Met
 595 600 605

Leu Ser Asn Lys Ala Ile Asp Lys Glu Lys Leu Lys Lys Tyr Glu Gln
 610 615 620

Gly Arg Phe Asp Phe Gln Gly Ala Ala Leu Phe Met Ser Pro Met Val
 625 630 635 640

Val Leu Leu Ile Val Asn Val Val Ser Phe Ile Gly Gly Ile Trp Arg
 645 650 655

Leu Phe Asn Ala Lys Asp Ile Glu Asp Met Phe Gly Gln Leu Phe Leu
 660 665 670

Val Ser Tyr Val Met Ala Leu Ser Tyr Pro Ile Phe Glu Gly Ile Ile
 675 680 685

Thr Met Lys Ser Lys Ser Gly
 690 695

<210> 82
<211> 1445
<212> DNA
<213> *Glycyrrhiza uralensis*

<400> 82
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accatagtca ccaccacct caacgttccc tacatttcca gaaccatcgg aaaagccaac 180
atcaacatca gaaccatcaa gttcccttcc accgaagact ctggccttcc cgaaggctgc 240
gagaataaccg agtcagcact cgcccctgac aagttcatca agttcatgaa ggccaccctg 300
ctcctgaggg acccacttga acacgtgtta caggaagagc aaccacactc ttggtcgccg 360
acatgttctt cccttggggc accgactccg ccgcaaaatt cggcatccct aggatcgtgt 420
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cactgacgaa gatgcagctg ccgcagttgc ctcagcacga caaggtcttc acccagttgt 600
tggaagagtc aaacgaatcg gagttgaaga gcttcggtgt gattgtaaac agcttctacg 660
aacttgaacc ggtttacgcg gatcattaca ggaacgagct tgggagaaga gcttggcatt 720
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ctgcaattga tgagaacgag tgcttgaagt ggcttcaatc aaaggaaccc aattcggttg 840
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acatagtga aattgggggtg ggtgttgggg ttcaaactg gattgggatg ggaggaggag 1260
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cagaggaaat gagaaacaga gccaaggaac tgagccagat ggcaaagcgt gctgtggagg 1380
aaggaggatc gtctcacaac gattttaact ctttaattga ggatttgagg tcgcgtgccc 1440

attaa

1445

<210> 83
<211> 481
<212> PRT
<213> Glycyrrhiza uralensis

<400> 83

Met Thr Met Gly Asn Glu Asn Arg Glu Leu His Ile Ile Phe Phe Pro
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Phe Leu Ala Asn Gly His Ile Ile Pro Cys Val Asp Leu Ala Arg Val
20 25 30

Phe Ala Ala Arg Gly Ile Arg Ala Thr Ile Val Thr Thr His Leu Asn
35 40 45

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

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

Glu Asn Thr Glu Ser Ala Leu Ala Pro Asp Lys Phe Ile Lys Phe Met
85 90 95

Lys Ala Thr Leu Leu Leu Arg Asp Pro Leu Glu His Val Leu Gln Glu
100 105 110

Glu Gln Pro His Cys Leu Val Ala Asp Met Phe Phe Pro Trp Ala Thr
115 120 125

Asp Ser Ala Ala Lys Phe Gly Ile Pro Arg Ile Val Phe His Gly Leu
130 135 140

Gly Tyr Phe Pro Leu Cys Val Leu Ala Cys Thr Arg Gln Tyr Lys Pro
145 150 155 160

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

Pro Gly Glu Ile Thr Leu Thr Lys Met Gln Leu Pro Gln Leu Pro Gln
180 185 190

His Asp Lys Val Phe Thr Gln Leu Leu Glu Glu Ser Asn Glu Ser Glu
195 200 205

Leu Lys Ser Phe Gly Val Ile Val Asn Ser Phe Tyr Glu Leu Glu Pro
210 215 220

Val Tyr Ala Asp His Tyr Arg Asn Glu Leu Gly Arg Arg Ala Trp His
225 230 235 240

Leu Gly Pro Val Ser Leu Cys Ser Arg Asp Thr Glu Glu Lys Ser Arg
245 250 255

Arg Gly Arg Glu Ala Ala Ile Asp Glu Asn Glu Cys Leu Lys Trp Leu
260 265 270

Gln Ser Lys Glu Pro Asn Ser Val Val Tyr Val Cys Phe Gly Ser Met
275 280 285

Met Val Phe Ser Asp Ala Gln Leu Lys Glu Ile Ala Met Gly Leu Glu
290 295 300

Ala Ser Gly Lys Pro Phe Ile Trp Val Val Lys Lys Gly Gly Ala Lys
305 310 315 320

Ser Glu Gly Glu Lys Leu Glu Trp Leu Pro Glu Gly Phe Glu Glu Arg
325 330 335

Met Gly Glu Ser Asn Lys Gly Leu Ile Ile Arg Gly Trp Ala Pro Gln
340 345 350

Val Met Ile Leu Asp His Gly Ala Val Gly Gly Phe Val Thr His Cys
355 360 365

Gly Trp Asn Ser Thr Leu Glu Gly Val Cys Ala Gly Val Pro Met Val
370 375 380

Thr Trp Pro Met Tyr Gly Glu Gln Phe Tyr Asn Ala Lys Phe Leu Thr

385 390 395 400

Asp Ile Val Lys Ile Gly Val Gly Val Gly Val Gln Thr Trp Ile Gly
405 410 415

Met Gly Gly Gly Glu Pro Val Lys Lys Glu Val Ile Glu Gln Ala Val
420 425 430

Arg Arg Ile Met Val Gly Gln Glu Ala Glu Glu Met Arg Asn Arg Ala
435 440 445

Lys Glu Leu Ser Gln Met Ala Lys Arg Ala Val Glu Glu Gly Gly Ser
450 455 460

Ser His Asn Asp Phe Asn Ser Leu Ile Glu Asp Leu Arg Ser Arg Ala
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His

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<211> 1521
<212> DNA
<213> Glycyrrhiza uralensis

<400> 84
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 <211> 506
 <212> PRT
 <213> Glycyrrhiza uralensis

<400> 85

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Leu	Lys	Ala	Val	Phe	Leu	Pro	Phe	Ile	Ser	Lys	Ser	His	Leu	Ile	Arg
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Glu	Val	Asp	Lys	Ala	Arg	Ile	Phe	Ala	Met	His	Gly	Val	Asp	Val	Thr
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Ile	Ile	Thr	Thr	Pro	Ala	Asn	Ala	Ala	Thr	Phe	Gln	Thr	Ser	Ile	Asp
	50					55					60				

Arg Asp Ser Ser Arg Gly Arg Ser Ile Arg Thr His Ile Val Pro Phe
65 70 75 80

Pro Gln Val Pro Gly Leu Pro Gln Gly Leu Glu Arg Leu Asp Ala Asp
85 90 95

Thr Pro Gln His Leu Leu Ser Lys Ile Tyr His Gly Leu Ser Ile Leu
100 105 110

Gln Glu Gln Phe Gln Gln Leu Phe Arg Glu Met Arg Pro Asp Phe Ile
115 120 125

Val Thr Asp Met Tyr Tyr Pro Trp Ser Val Asp Ala Ala Ala Glu Leu
130 135 140

Gly Ile Pro Arg Leu Val Cys Asn Gly Gly Ser Tyr Phe Ala Gln Ser
145 150 155 160

Ala Val Asn Ser Val Glu Leu Phe Ser Pro Gln Ala Lys Val Asp Ser
165 170 175

Asn Thr Glu Thr Phe Leu Leu Pro Gly Leu Pro His Glu Val Glu Met
180 185 190

Thr Arg Leu Gln Leu Pro Asp Trp Leu Arg Gly Ala Pro Asn Glu Tyr
195 200 205

Thr Tyr Leu Met Lys Met Ile Lys Asp Ser Glu Arg Lys Ser Tyr Gly
210 215 220

Ser Leu Phe Asn Ser Phe Tyr Glu Leu Glu Gly Thr Tyr Glu Glu His
225 230 235 240

Tyr Lys Lys Ala Met Gly Thr Lys Ser Trp Ser Val Gly Pro Val Ser
245 250 255

Leu Trp Val Asn Gln Asp Ala Ser Asp Lys Ala Cys Arg Gly Asp Val
260 265 270

Lys Glu Gly Lys Gly Asp Gly Val Val Leu Thr Trp Leu Asp Ser Lys

275

280

285

Thr Glu Asp Ser Val Leu Tyr Val Ser Phe Gly Ser Met Asn Lys Phe
 290 295 300

Pro Lys Thr Gln Leu Val Glu Ile Ala His Ala Leu Glu Asp Ser Gly
 305 310 315 320

His Asp Phe Ile Trp Val Val Gly Lys Ile Glu Glu Gly Glu Gly Gly
 325 330 335

Ala Asp Phe Leu Arg Glu Phe Glu Lys Lys Val Lys Glu Lys Asn Arg
 340 345 350

Gly Tyr Leu Ile Trp Gly Trp Ala Pro Gln Leu Leu Ile Leu Glu His
 355 360 365

Pro Ala Val Gly Ala Val Val Thr His Cys Gly Trp Asn Thr Val Met
 370 375 380

Glu Ser Val Asn Ala Ser Leu Pro Leu Ala Thr Trp Pro Leu Phe Ala
 385 390 395 400

Glu Gln Phe Phe Asn Glu Lys Leu Val Val Asp Val Val Lys Ile Gly
 405 410 415

Val Pro Val Gly Val Lys Glu Trp Arg Asn Trp Asn Glu Phe Gly Asp
 420 425 430

Glu Val Val Lys Arg Glu Asp Ile Gly Lys Ala Ile Ala Phe Leu Met
 435 440 445

Gly Gly Gly Asp Glu Ser Leu Glu Met Arg Lys Arg Val Lys Val Leu
 450 455 460

Ser Gly Ala Thr Lys Lys Ala Ile Gln Val Gly Gly Ser Ser His Thr
 465 470 475 480

Lys Leu Lys Glu Leu Ile Glu Glu Leu Lys Ser Ile Lys Leu Gln Lys
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Val Asn Asn Lys Leu Met Glu Ala Val Ala
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<210> 86
<211> 1563
<212> DNA
<213> Arabodopsis thaliana

<400> 86
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taa 1563

<210> 87
<211> 520
<212> PRT
<213> Arabodopsis thaliana

<400> 87

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Ala Ala Gln Lys Arg Arg Glu Ala Asp Lys Asn Ala Ala Glu Thr Glu
35 40 45

Trp Ile Gln Leu Gln Tyr Leu Trp Thr Lys Thr Arg Ser Val Val Leu
50 55 60

Leu Pro Val Phe Lys Gly Leu Val Val Met Cys Leu Val Leu Ser Ile
65 70 75 80

Ile Val Phe Phe Glu Ser Phe Tyr Met Asn Phe Val Ile Leu Phe Val
85 90 95

Lys Leu Phe Lys Arg Lys Pro His Lys Val Tyr Lys Trp Glu Ala Met
100 105 110

Gln Glu Asp Val Glu Val Gly Pro Asp Asn Tyr Pro Met Val Leu Ile
115 120 125

Gln Ile Pro Met Tyr Asn Glu Lys Glu Glu Gly Val Asp Val Glu Ile
130 135 140

Ala Lys Trp Gln Ser Gln Gly Ile Asn Ile Arg Cys Glu Arg Arg Asp
145 150 155 160

Asn Arg Asn Gly Tyr Lys Ala Gly Ala Met Lys Glu Ala Leu Thr Gln
165 170 175

Ser Tyr Val Lys Gln Cys Asp Phe Val Ala Val Phe Asp Ala Asp Phe
180 185 190

Gln Pro Glu Pro Asp Tyr Leu Ile Arg Ala Val Pro Phe Leu Val His
195 200 205

Asn Pro Asp Val Ala Leu Val Gln Ala Arg Trp Ile Phe Val Asn Ala
210 215 220

Asn Lys Cys Leu Met Thr Arg Met Gln Glu Met Ser Leu Asn Tyr His
225 230 235 240

Phe Lys Val Glu Gln Glu Ser Gly Ser Thr Arg His Ala Phe Phe Gly
245 250 255

Phe Asn Gly Thr Ala Gly Val Trp Arg Ile Ser Ala Met Glu Ala Ala
260 265 270

Gly Gly Trp Lys Ser Arg Thr Thr Val Glu Asp Met Asp Leu Ala Val
275 280 285

Arg Val Gly Leu His Gly Trp Lys Phe Val Tyr Leu Asn Asp Leu Thr
290 295 300

Val Arg Asn Glu Leu Pro Ser Lys Phe Lys Ala Tyr Arg Phe Gln Gln
305 310 315 320

His Arg Trp Ser Cys Gly Pro Ala Asn Leu Phe Arg Lys Met Thr Met
325 330 335

Glu Ile Ile Phe Asn Lys Arg Val Ser Ile Trp Lys Lys Phe Tyr Val
340 345 350

Ile Tyr Ser Phe Phe Phe Val Arg Lys Val Ala Val His Phe Leu Thr

355

360

365

Phe Phe Phe Tyr Cys Ile Ile Val Pro Thr Ser Val Phe Phe Pro Glu
 370 375 380

Ile His Ile Pro Ser Trp Ser Thr Ile Tyr Val Pro Ser Leu Ile Ser
 385 390 395 400

Ile Phe His Thr Leu Ala Thr Pro Arg Ser Phe Tyr Leu Val Ile Phe
 405 410 415

Trp Val Leu Phe Glu Asn Val Met Ala Met His Arg Thr Lys Gly Thr
 420 425 430

Cys Ile Gly Leu Leu Glu Gly Gly Arg Val Asn Glu Trp Val Val Thr
 435 440 445

Glu Lys Leu Gly Asp Ala Leu Lys Ser Lys Leu Leu Ser Arg Val Val
 450 455 460

Gln Arg Lys Ser Cys Tyr Gln Arg Val Asn Ser Lys Glu Val Met Val
 465 470 475 480

Gly Val Tyr Ile Leu Gly Cys Ala Leu Tyr Gly Leu Ile Tyr Gly His
 485 490 495

Thr Trp Leu His Phe Tyr Leu Phe Leu Gln Ala Thr Ala Phe Phe Val
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Ser Gly Phe Gly Phe Val Gly Thr
 515 520

<210> 88

<211> 2274

<212> DNA

<213> Arabodopsis thaliana

<400> 88

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 <211> 757
 <212> PRT
 <213> Arabodopsis thaliana

<400> 89

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Tyr	Thr	Asn	Tyr	Phe	Leu	Arg	Ala	Val	Tyr	Leu	Thr	Val	Leu	Gly	Leu
		20						25					30		

Phe	Phe	Ser	Leu	Leu	Leu	His	Arg	Ile	Arg	His	Thr	Ser	Glu	Tyr	Asp
		35					40					45			

Asn	Val	Trp	Leu	Val	Ala	Phe	Phe	Cys	Glu	Ser	Cys	Phe	Phe	Leu	Val
	50					55					60				

Cys	Leu	Leu	Ile	Thr	Cys	Leu	Lys	Trp	Ser	Pro	Ala	Asp	Thr	Lys	Pro
65					70					75					80

Phe	Pro	Asp	Arg	Leu	Asp	Glu	Arg	Val	His	Asp	Leu	Pro	Ser	Val	Asp
			85						90					95	

Met	Phe	Val	Pro	Thr	Ala	Asp	Pro	Val	Arg	Glu	Pro	Pro	Ile	Met	Val
			100					105					110		

Val	Asp	Thr	Val	Leu	Ser	Leu	Leu	Ala	Val	Asn	Tyr	Pro	Ala	Asn	Lys
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115

120

125

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

Lys Lys Tyr Asn Thr Arg Val Arg Ala Pro Ser Arg Tyr Phe Leu Lys
 165 170 175

Pro Ile Ser Val Ala Thr Glu Asp Tyr Glu Phe Asn Arg Asp Trp Glu
 180 185 190

Lys Thr Lys Arg Glu Tyr Glu Lys Leu Arg Arg Lys Val Glu Asp Ala
 195 200 205

Thr Gly Asp Ser His Met Leu Asp Val Glu Asp Asp Phe Glu Ala Phe
 210 215 220

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

Glu Asn Lys Gly Gly Val Gly Asp Glu Lys Glu Ile Pro His Ile Ile
 245 250 255

Tyr Ile Ser Arg Glu Lys Arg Pro Asn Tyr Val His Asn Gln Lys Cys
 260 265 270

Gly Ala Met Asn Phe Leu Ala Arg Val Ser Gly Leu Met Thr Asn Ala
 275 280 285

Pro Tyr Ile Leu Asn Val Asp Cys Asp Met Tyr Ala Asn Asp Ala Asp
 290 295 300

Val Val Arg Gln Ala Met Cys Ile Leu Leu Gln Glu Ser Leu Asn Met
 305 310 315 320

Lys His Cys Ala Phe Val Gln Phe Arg Gln Glu Phe Tyr Asp Ser Ser
 325 330 335

Thr Glu Leu Ile Val Val Leu Gln Ser His Leu Gly Arg Gly Ile Ala
340 345 350

Gly Ile Gln Gly Pro Ile Tyr Ile Gly Ser Gly Cys Val His Thr Arg
355 360 365

Arg Val Met Tyr Gly Leu Ser Pro Asp Asp Phe Glu Val Asp Gly Ser
370 375 380

Leu Ser Ser Val Ala Thr Arg Glu Phe Leu Val Lys Asp Ser Leu Ala
385 390 395 400

Arg Arg Phe Gly Asn Ser Lys Glu Met Met Lys Ser Val Val Asp Ala
405 410 415

Ile Gln Arg Asn Pro Asn Pro Gln Asn Ile Leu Thr Asn Ser Ile Glu
420 425 430

Ala Ala Arg Glu Val Gly His Cys Gln Tyr Glu Tyr Gln Thr Ser Trp
435 440 445

Gly Asn Thr Ile Gly Trp Leu Tyr Asp Ser Val Ala Glu Asp Leu Asn
450 455 460

Thr Ser Ile Gly Ile His Ser Arg Gly Trp Thr Ser Ser Tyr Ile Ser
465 470 475 480

Pro Asp Thr Pro Ala Phe Leu Gly Ser Met Pro Ala Gly Val Pro Glu
485 490 495

Ala Leu Leu Gln Gln Arg Arg Trp Ala Thr Gly Trp Ile Glu Ile Leu
500 505 510

Phe Asn Lys Gln Ser Pro Leu Arg Gly Leu Phe Ser Lys Lys Ile Arg
515 520 525

Phe Arg Gln Arg Leu Ala Tyr Leu Cys Ile Ile Thr Cys Leu Arg Ser
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Ile Pro Glu Leu Ile Tyr Cys Leu Leu Pro Ala Tyr Cys Leu Leu His

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Val	Ala	Thr	Ser	Ser	Trp	Leu	Phe	Ser	Ile	Phe	Asp	Ile	Thr	Leu	Lys			
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Cys	Phe	Leu	Pro	Gly	Thr	Phe	Ile	Val	Leu	Val	Asn	Ile	Ala	Ala	Leu			
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Ala	Val	Phe	Ser	Val	Gly	Leu	Gln	Arg	Ser	Ser	Tyr	Ser	His	Glu	Gly			
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Gly	Gly	Ser	Gly	Leu	Ala	Glu	Ala	Cys	Gly	Cys	Val	Leu	Val	Met	Met			
705			710						715			720						
Leu	Phe	Leu	Pro	Phe	Leu	Met	Gly	Leu	Phe	Lys	Lys	Gly	Lys	Tyr	Gly			
			725						730			735						
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 <211> 2190
 <212> DNA
 <213> Arabodopsis thaliana

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<210> 91
 <211> 729
 <212> PRT
 <213> Arabodopsis thaliana

<400> 91

Met Val Asn Lys Asp Asp Arg Ile Arg Pro Val His Glu Ala Asp Gly
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Glu Pro Leu Phe Glu Thr Arg Arg Arg Thr Gly Arg Val Ile Ala Tyr
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Arg Phe Phe Ser Ala Ser Val Phe Val Cys Ile Cys Leu Ile Trp Phe
 35 40 45

Tyr Arg Ile Gly Glu Ile Gly Asp Asn Arg Thr Val Leu Asp Arg Leu
 50 55 60

Ile Trp Phe Val Met Phe Ile Val Glu Ile Trp Phe Gly Leu Tyr Trp
 65 70 75 80

Val Val Thr Gln Ser Ser Arg Trp Asn Pro Val Trp Arg Phe Pro Phe
85 90 95

Ser Asp Arg Leu Ser Arg Arg Tyr Gly Ser Asp Leu Pro Arg Leu Asp
100 105 110

Val Phe Val Cys Thr Ala Asp Pro Val Ile Glu Pro Pro Leu Leu Val
115 120 125

Val Asn Thr Val Leu Ser Val Thr Ala Leu Asp Tyr Pro Pro Glu Lys
130 135 140

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

Ala Leu Thr Glu Ala Ala Glu Phe Ala Lys Thr Trp Val Pro Phe Cys
165 170 175

Lys Lys Phe Asn Val Glu Pro Thr Ser Pro Ala Ala Tyr Leu Ser Ser
180 185 190

Lys Ala Asn Cys Leu Asp Ser Ala Ala Glu Glu Val Ala Lys Leu Tyr
195 200 205

Arg Glu Met Ala Ala Arg Ile Glu Thr Ala Ala Arg Leu Gly Arg Ile
210 215 220

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

Ala Asp Ala Thr Arg Arg Asn His Gly Thr Ile Leu Gln Val Leu Val
245 250 255

Asp Gly Arg Glu Gly Asn Thr Ile Ala Ile Pro Thr Leu Val Tyr Leu
260 265 270

Ser Arg Glu Lys Arg Pro Gln His His His Asn Phe Lys Ala Gly Ala
275 280 285

Met Asn Ala Leu Leu Arg Val Ser Ser Lys Ile Thr Cys Gly Lys Ile

290

295

300

Ile Leu Asn Leu Asp Cys Asp Met Tyr Ala Asn Asn Ser Lys Ser Thr
 305 310 315 320

Arg Asp Ala Leu Cys Ile Leu Leu Asp Glu Lys Glu Gly Lys Glu Ile
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Ala Phe Val Gln Phe Pro Gln Cys Phe Asp Asn Val Thr Arg Asn Asp
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Leu Tyr Gly Ser Met Met Arg Val Gly Ile Asp Val Glu Phe Leu Gly
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Leu Asp Gly Asn Gly Gly Pro Leu Tyr Ile Gly Thr Gly Cys Phe His
 370 375 380

Arg Arg Asp Val Ile Cys Gly Arg Lys Tyr Gly Glu Glu Glu Glu Glu
 385 390 395 400

Glu Glu Ser Glu Arg Ile His Glu Asn Leu Glu Pro Glu Met Ile Lys
 405 410 415

Ala Leu Ala Ser Cys Thr Tyr Glu Glu Asn Thr Gln Trp Gly Lys Glu
 420 425 430

Met Gly Val Lys Tyr Gly Cys Pro Val Glu Asp Val Ile Thr Gly Leu
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Thr Ile Gln Cys Arg Gly Trp Lys Ser Ala Tyr Leu Asn Pro Glu Lys
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Gln Ala Phe Leu Gly Val Ala Pro Thr Asn Leu His Gln Met Leu Val
 465 470 475 480

Gln Gln Arg Arg Trp Ser Glu Gly Asp Phe Gln Ile Met Leu Ser Lys
 485 490 495

Tyr Ser Pro Val Trp Tyr Gly Lys Gly Lys Ile Ser Leu Gly Leu Ile
 500 505 510

Leu Gly Tyr Cys Cys Tyr Cys Leu Trp Ala Pro Ser Ser Leu Pro Val
515 520 525

Leu Ile Tyr Ser Val Leu Thr Ser Leu Cys Leu Phe Lys Gly Ile Pro
530 535 540

Leu Phe Pro Lys Val Ser Ser Ser Trp Phe Ile Pro Phe Gly Tyr Val
545 550 555 560

Thr Val Ala Ala Thr Ala Tyr Ser Leu Ala Glu Phe Leu Trp Cys Gly
565 570 575

Gly Thr Phe Arg Gly Trp Trp Asn Glu Gln Arg Met Trp Leu Tyr Arg
580 585 590

Arg Thr Ser Ser Phe Leu Phe Gly Phe Met Asp Thr Ile Lys Lys Leu
595 600 605

Leu Gly Val Ser Glu Ser Ala Phe Val Ile Thr Ala Lys Val Ala Glu
610 615 620

Glu Glu Ala Ala Glu Arg Tyr Lys Glu Glu Val Met Glu Phe Gly Val
625 630 635 640

Glu Ser Pro Met Phe Leu Val Leu Gly Thr Leu Gly Met Leu Asn Leu
645 650 655

Phe Cys Phe Ala Ala Ala Val Ala Arg Leu Val Ser Gly Asp Gly Gly
660 665 670

Asp Leu Lys Thr Met Gly Met Gln Phe Val Ile Thr Gly Val Leu Val
675 680 685

Val Ile Asn Trp Pro Leu Tyr Lys Gly Met Leu Leu Arg Gln Asp Lys
690 695 700

Gly Lys Met Pro Met Ser Val Thr Val Lys Ser Val Val Leu Ala Leu
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Ser Ala Cys Thr Cys Leu Ala Phe Leu

<210> 92
 <211> 2283
 <212> DNA
 <213> *Arabodopsis thaliana*

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taa							2283

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 <212> DNA
 <213> Spinacia oleracea

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2088

<210> 94

<211> 704

<212> PRT

<213> Beta vulgaris

<400> 94

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Tyr Tyr Arg Phe Thr Ser Phe Ser Thr Thr Lys Ser Gly Ile Leu Pro
35 40 45

Trp Thr Leu Leu Thr Thr Ala Glu Val Val Leu Gly Phe Val Trp Ala
50 55 60

Leu Thr Gln Ala Phe Arg Trp Arg Pro Val Leu Arg Asp Val Ala Gly
65 70 75 80

Trp Asp Ser Ile Lys Glu Glu Gln Leu Pro Gly Val Asp Val Phe Ile
85 90 95

Cys Thr Ala Asp Pro Ile Lys Glu Pro Val Leu Glu Val Met Asn Thr
100 105 110

Val Leu Ser Ala Met Ala Leu Asp Tyr Pro Ala Glu Lys Leu Gly Val
115 120 125

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

Glu Ala Ser Lys Phe Ala Lys Val Trp Leu Pro Phe Cys Ser Lys Tyr
145 150 155 160

Gly Ile Lys Thr Arg Cys Pro Gln Ala Phe Phe Ser Ser Phe Cys Asp
165 170 175

Gly Glu Arg Leu Asp Trp Asn Gln Asp Phe Lys Ala Asp Glu Leu Val
180 185 190

Leu Lys Ser Lys Tyr Glu Ala Phe Lys Asn Tyr Val Glu Lys Ala Ser
195 200 205

Glu Asp Glu Ser Lys Cys Thr Met Ala His Asp Arg Ser Pro Cys Val
210 215 220

Glu Ile Ile His Asp Asn Lys Gln Asn Gly Glu Gly Glu Val Lys Met
225 230 235 240

Pro Leu Leu Val Tyr Val Ser Arg Glu Lys Arg Pro Asn Arg Pro His
245 250 255

Arg Phe Lys Ala Gly Ala Leu Asn Ala Leu Leu Arg Val Ser Gly Val
260 265 270

Leu Ser Asn Gly Pro Tyr Leu Leu Val Leu Asp Cys Asp Met Tyr Cys
275 280 285

Asn Asp Pro Thr Ser Ala Arg Gln Ser Met Cys Phe His Leu Asp Pro
290 295 300

Lys Leu Ala Pro Ser Leu Ala Phe Val Gln Tyr Pro Gln Ile Phe Tyr
305 310 315 320

Asn Thr Ser Lys Asn Asp Ile Tyr Asp Gly Gln Ala Arg Ser Ala Tyr
325 330 335

Lys Thr Lys Trp Gln Gly Met Asp Gly Ile Arg Gly Pro Val Leu Thr
340 345 350

Gly Thr Gly Tyr Tyr Leu Lys Arg Lys Ala Leu Tyr Gly Gln Pro His
355 360 365

Asn Glu Asp Glu Phe Leu Ile Asn Gln Pro Glu Lys Ala Phe Gly Ser
370 375 380

Ser Thr Lys Phe Ile Ala Ser Val Ser Ser Asn Ser Lys Gln Asn Met
385 390 395 400

Ala Leu Lys Glu Met Thr Arg Asp Asp Leu Leu Glu Glu Ala Lys Asn
405 410 415

Leu Ala Thr Cys Ala Tyr Glu Ser Asn Thr Glu Trp Gly Asn Lys Ile
420 425 430

Gly Tyr Ser Tyr Glu Cys Leu Leu Glu Ser Thr Phe Thr Gly Tyr Leu
435 440 445

Leu His Cys Lys Gly Trp Ile Ser Val Tyr Leu Tyr Pro Lys Arg Pro
450 455 460

Cys Phe Leu Gly Cys Thr Thr Ile Asp Met Lys Asp Ala Met Val Gln
465 470 475 480

Leu Met Lys Trp Thr Ser Gly Leu Leu Gly Val Gly Ile Ser Lys Phe
485 490 495

Ser Pro Leu Thr Tyr Ala Phe Ser Arg Met Ser Ile Leu Gln Ser Met
500 505 510

Cys Tyr Gly Tyr Phe Thr Phe Ser Ala Leu Phe Gly Val Ser Phe Leu
515 520 525

Ile Tyr Gly Ile Val Leu Pro Val Cys Leu Leu Lys Gly Val Pro Val
530 535 540

Phe Pro Lys Val Ser Asp Pro Trp Ile Gly Val Phe Val Val Val Phe
545 550 555 560

Ala Ser Ser Leu Leu Gln His Leu Tyr Glu Val Leu Ser Ser Asp Asp
565 570 575

Ser Ile Lys Thr Trp Trp Asn Glu Ile Arg Ile Trp Ile Ile Lys Ser
580 585 590

Val Thr Ala Ser Leu Phe Gly Thr Met Asp Ala Ile Met Lys Lys Ile
595 600 605

Gly Ile Gln Lys Ala Ser Phe Arg Leu Thr Asn Lys Val Val Asp Lys
610 615 620

Glu Lys Leu Glu Lys Tyr Glu Lys Gly Lys Phe Asp Phe Gln Gly Ala
625 630 635 640

Ala Val Phe Met Val Pro Leu Ile Ile Leu Val Val Leu Asn Met Val
645 650 655

Ser Phe Val Gly Gly Leu Arg Arg Ala Ile Ile Asn Lys Asn Cys Asp
660 665 670

Glu Met Phe Gly Gln Leu Phe Leu Ser Phe Phe Leu Leu Val Leu Ser
675 680 685

Tyr Pro Val Leu Glu Gly Ile Val Thr Lys Val Arg Lys Gly Arg Asp
690 695 700

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<211> 2656
<212> DNA
<213> Beta vulgaris

<400> 95
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tcagaattcc aaactccaac tataaccacc attgaagtca tctacacaca aacacacaca 180
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 <211> 706
 <212> PRT
 <213> *Chenopodium quinoa*

<400> 96

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Tyr	Tyr	Arg	Phe	Ser	Ser	Phe	Ser	Asn	Pro	His	Ile	Ser	Leu	Phe	Pro
		35					40					45			

Trp	Val	Leu	Leu	Thr	Ile	Ala	Asp	Leu	Val	Phe	Thr	Phe	Ile	Trp	Ala
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Met	Thr	Gln	Ala	Phe	Arg	Trp	Arg	Pro	Val	Leu	His	Asp	Val	Ser	Gly
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Tyr	Glu	Ser	Ile	Asn	Pro	Arg	Asp	Leu	Pro	Lys	Ile	Asp	Ile	Phe	Ile
			85						90					95	

Cys	Thr	Ala	Asp	Pro	Thr	Lys	Glu	Pro	Val	Leu	Glu	Val	Met	Asn	Ser
			100						105					110	

Val	Ile	Ser	Ser	Met	Ala	Leu	Asp	Tyr	Pro	Pro	Glu	Lys	Met	Ala	Val
		115					120					125			

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

Lys Ala Val Glu Phe Ala Lys Val Trp Ile Pro Phe Cys Asn Met Tyr
145 150 155 160

Gly Ile Lys Thr Arg Cys Pro Asp Ala Phe Phe Ser Ala Leu Gly Asn
165 170 175

Asp Glu Arg Leu His Arg Asp Gln Asp Phe Asn Ala His Glu Ser Leu
180 185 190

Leu Lys Ser Lys Tyr Glu Ala Phe Lys Lys Tyr Val Glu Lys Glu Ser
195 200 205

Gly Asp Ile Asn Lys Cys Thr Val Val His Asp Arg Glu Pro Cys Ile
210 215 220

Glu Ile Ile His Asp Ser Lys Gln Asp Gly Glu Ala Glu Val Lys Met
225 230 235 240

Pro Leu Val Val Tyr Val Ala Arg Glu Lys Arg Pro Gly His Pro His
245 250 255

Arg Phe Lys Ala Gly Ala Leu Asn Ala Leu Leu Arg Val Ser Gly Leu
260 265 270

Leu Ser Asn Ala Pro Tyr Leu Leu Val Leu Asp Cys Asp Met Tyr Cys
275 280 285

His Asp Pro Thr Ser Ala Arg Gln Ser Met Cys Phe His Leu Asp Pro
290 295 300

Asn Met Ser Pro Ser Leu Ala Phe Val Gln Tyr Pro Gln Ile Phe Tyr
305 310 315 320

Asn Thr Ser Lys Asn Asp Ile Tyr Asp Gly Gln Ala Arg Ser Ala His
325 330 335

Thr Thr Lys Trp Gln Gly Met Asp Gly Leu Arg Gly Pro Val Leu Asn
340 345 350

Gly Thr Gly Tyr Tyr Leu Lys Lys Lys Ala Ile Tyr Gly Arg Pro His
355 360 365

Asn Glu Asp Glu Tyr Leu Ile Asn Glu Pro Glu Lys Ala Phe Gly Ser
370 375 380

Ser Thr Lys Phe Ile Ala Ser Leu Lys Glu Asn Ser Asn Gln Asp Leu
385 390 395 400

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

Ala Thr Cys Thr Tyr Glu Ala Asn Ser Leu Trp Gly Val Glu Val Gly
420 425 430

Phe Ser Tyr Asp Cys Leu Leu Glu Ser Ser Tyr Thr Gly Tyr Leu Leu
435 440 445

His Cys Lys Gly Trp Arg Ser Val Tyr Leu Tyr Pro Lys Arg Pro Cys
450 455 460

Phe Leu Gly Cys Thr Thr Ile Asp Met Lys Asp Ala Ile Val Gln Leu
465 470 475 480

Ile Lys Trp Thr Ser Gly Leu Leu Gly Val Ala Met Ser Lys Phe Ser
485 490 495

Pro Leu Thr Tyr Ala Met Ser Arg Met Ser Ile Leu Gln Ser Met Cys
500 505 510

Tyr Ala Tyr Ile Thr Cys Ser Gly Leu Leu Ala Val Pro Leu Phe Ile
515 520 525

Tyr Gly Val Val Leu Pro Phe Cys Leu Leu Lys Gly Val Pro Val Phe
530 535 540

Pro Lys Val Ser Asp Pro Trp Met Leu Gly Phe Val Phe Val Phe Val
545 550 555 560

Ser Ser His Val Gln His Leu Phe Glu Val Leu Ala Ser Asp His Ser
565 570 575

Val Gln Gln Trp Trp Asn Glu Val Arg Ile Trp Ile Met Lys Ala Ile
580 585 590

Thr Ala Cys Leu Phe Gly Ser Thr Glu Ala Ile Met Lys Lys Ile Gly
595 600 605

Ile Gln Lys Thr Thr Phe Arg Leu Thr Asn Lys Val Val Glu Lys Glu
610 615 620

Lys Leu Asp Lys Tyr Glu Lys Gly Lys Phe Asp Phe Ser Gly Ala Ala
625 630 635 640

Met Leu Met Val Pro Leu Ile Ile Leu Thr Ile Leu Asn Leu Val Ser
645 650 655

Phe Val Gly Gly Leu Val Arg Val Ile Asn His Asn Asn Tyr Asp Asp
660 665 670

Met Phe Gly Gln Leu Phe Leu Ser Phe Tyr Leu Leu Leu Leu Ser Tyr
675 680 685

Pro Thr Phe Glu Gly Ile Val Thr Lys Val Thr Asp Lys Leu Arg Lys
690 695 700

Lys Glu
705

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<211> 2524
<212> DNA
<213> Chenopodium quinoa

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gaaa	2524

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 <211> 715
 <212> PRT
 <213> Medicago sativa

<400> 98

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Leu	Arg	Arg	Ala	Tyr	Ile	Ile	Phe	His	Phe	Thr	Cys	Val	Leu	Phe	Leu
			20					25					30		

Phe	Tyr	Tyr	Arg	Ile	Ser	Asn	Leu	Phe	Ile	Ser	Tyr	Pro	Trp	Phe	Leu
		35					40					45			

Met	Thr	Ile	Ala	Glu	Ile	Ile	Leu	Ser	Phe	Leu	Trp	Phe	Phe	Asn	Gln
	50					55					60				

Ala	Phe	Arg	Trp	Arg	Leu	Val	Asn	Arg	Ser	Val	Met	Thr	Glu	Lys	Leu
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Pro	Pro	Glu	Glu	Lys	Leu	Pro	Gly	Leu	Asp	Ile	Phe	Val	Cys	Thr	Ile
				85					90					95	

Asp Pro Glu Lys Glu Pro Thr Val Asp Val Met Asn Thr Val Ile Ser
100 105 110

Ala Ile Ala Met Asp Tyr Pro Ser Asn Lys Leu Ser Ile Tyr Leu Ser
115 120 125

Asp Asp Gly Gly Ser Pro Ile Thr Leu Phe Gly Ile Lys Glu Ala Phe
130 135 140

Glu Phe Ala Lys Val Trp Val Pro Phe Cys Lys Lys Tyr Asp Val Lys
145 150 155 160

Ser Arg Cys Pro Lys Phe Phe Phe Thr Ala Leu Gly Glu Asn Glu Arg
165 170 175

Leu His Arg Pro Arg Glu Phe Glu Glu Val Arg Asp Gln Ile Lys Lys
180 185 190

Arg Leu Asn Arg Val Asp Pro Asn Ser Ser Gln Val Glu Asn Ser Lys
195 200 205

Glu His Met Pro Thr Lys Ala Lys Tyr Glu Lys Met Gln Lys Asn Ile
210 215 220

Glu Lys Phe Gly Ser Asn Leu Lys Asn Leu Cys Met Val Thr Asp Arg
225 230 235 240

Pro Ser Arg Ile Glu Ile Ile Asn Asp Gln Lys Glu Met Pro Leu Val
245 250 255

Val Tyr Val Ser Arg Glu Lys Arg Pro Ser Val Pro His Arg Phe Lys
260 265 270

Gly Gly Ala Leu Asn Thr Leu Leu Arg Val Ser Gly Leu Ile Ser Asn
275 280 285

Gly Pro Tyr Val Leu Val Val Asp Cys Asp Met Asn Cys Asn Asp Ala
290 295 300

Ser Ser Ala Lys Gln Ser Met Cys Phe Phe Leu Asp Pro Glu Thr Ser
305 310 315 320

Lys Asp Val Ala Phe Val Gln Phe Pro Gln Met Phe His Asn Leu Ser
325 330 335

Lys Lys Asp Ile Tyr Asp Ser Gln Thr Arg Thr Ala Phe Thr Thr Lys
340 345 350

Trp Lys Gly Met Asp Gly Leu Arg Gly Pro Gly Leu Thr Gly Ser Gly
355 360 365

Asn Tyr Ile Ser Arg Ser Ala Leu Leu Phe Gly Ser Pro Asn Gln Lys
370 375 380

Gly Asp Tyr Leu Leu Asp Ala Leu Tyr Asn Phe Gly Lys Ser Asn Met
385 390 395 400

Tyr Val Glu Ser Leu Lys Ala Leu Arg Gly Gln Gln Thr Lys Lys Gln
405 410 415

Asn Ile Ser Arg Asp Val Ile Leu Gln Glu Ala Cys Glu Val Ala Ser
420 425 430

Cys Ser Tyr Glu Arg Asn Thr Asn Trp Gly Asn Glu Val Gly Phe Ser
435 440 445

Tyr Ala Ile Lys Leu Glu Ser Thr Val Thr Gly Tyr Leu Leu His Cys
450 455 460

Arg Gly Trp Arg Ser Thr Tyr Leu Tyr Pro Lys Arg Pro Cys Phe Leu
465 470 475 480

Gly Cys Ala Pro Thr Asp Met Lys Glu Gly Leu Ile Gln Pro Ile Lys
485 490 495

Trp Ser Ser Glu Leu Leu Leu Leu Ala Ile Ser Lys Tyr Ser Pro Phe
500 505 510

Thr Tyr Gly Leu Ser Arg Leu Pro Thr Ile His Cys Leu Thr Phe Cys
515 520 525

Tyr Leu Val Ser Thr Thr Gln Phe Ala Thr Ala Tyr Ile Leu Tyr Gly
530 535 540

Phe Val Pro Gln Ile Cys Phe Leu Lys Gly Ile Pro Val Tyr Pro Lys
545 550 555 560

Val Thr Asp Pro Trp Phe Ile Val Phe Thr Val Leu Tyr Leu Ser Ser
565 570 575

Gln Ile His His Tyr Ile Glu Val Ile Ser Thr Gly Gly Ser Ser Met
580 585 590

Ile Trp Trp Asn Glu Gln Arg Ser Gly Ile Val Lys Ser Ile Gly Cys
595 600 605

Val Phe Ala Ile Ile Glu Thr Ala Lys Lys Lys Phe Gly Leu Asn Lys
610 615 620

Ala Lys Phe Thr Leu Ser Asp Lys Ala Ile Asp Lys Asp Lys Leu Lys
625 630 635 640

Lys Tyr Glu Gln Gly Lys Phe Asn Phe Asp Gly Ala Ala Leu Leu Met
645 650 655

Ala Pro Val Ile Val Leu Leu Thr Ile Asn Ile Val Cys Phe Phe Gly
660 665 670

Gly Leu Trp Arg Leu Leu Asn Val Arg Asp Phe Asp Glu Met Phe Gly
675 680 685

Gln Leu Phe Leu Ile Ile Tyr Ile Leu Ala Leu Ser His Pro Ile Val
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Glu Gly Ile Ile Ser Met Lys Arg Lys Ser Gly
705 710 715

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<211> 2148

<212> DNA

<213> Medicago sativa

<400> 99

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 <212> PRT
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Arg	Leu	His	Ile	Leu	Phe	His	Ser	Val	Ala	Leu	Leu	Phe	Leu	Tyr	Tyr
			20					25						30	

Tyr	Arg	Ile	Ser	His	Ile	Leu	Leu	Glu	Pro	Ser	Phe	Val	Trp	Ile	Phe
		35					40					45			

Met	Thr	Ile	Ala	Glu	Leu	Ile	Phe	Gly	Glu	Leu	Trp	Leu	Phe	Lys	Gln
	50					55					60				

Ala	Phe	Arg	Trp	Arg	Pro	Val	Ser	Arg	Ala	Val	Met	Pro	Glu	Lys	Leu
65					70				75						80

Pro	Ser	Asp	Gly	Lys	Leu	Pro	Ala	Leu	Asp	Ile	Phe	Val	Cys	Thr	Val
			85						90					95	

Asp	Pro	Glu	Lys	Glu	Pro	Thr	Val	Gln	Val	Met	Asp	Thr	Val	Ile	Ser
			100					105					110		

Ala Ile Ala Met Asp Tyr Pro Ser Asn Lys Leu Ala Val Tyr Leu Ser
115 120 125

Asp Asp Gly Gly Cys Pro Val Thr Leu Tyr Gly Ile Arg Glu Ala Ser
130 135 140

Arg Phe Ala Lys Glu Trp Val Pro Phe Cys Arg Lys Tyr Gly Ile Asn
145 150 155 160

Ser Arg Cys Pro Lys Ala Phe Phe Ser Pro Met Gly Glu Asp Glu Arg
165 170 175

Glu Leu Leu Leu Leu Arg Asn His Glu Phe Leu Ala Glu Gln Glu Gln
180 185 190

Leu Lys Ala Lys Tyr Asn Ile Met Gln Lys Asn Ile Asp Glu Phe Gly
195 200 205

Arg Asp Pro Lys Asn Arg Ser Ile Val Phe Asp Arg Pro Ala Arg Ile
210 215 220

Glu Ile Ile Asn Glu Gln Ser Glu Ile Pro Leu Val Val Tyr Val Ser
225 230 235 240

Arg Glu Arg Arg Pro Asn Val Pro His Thr Tyr Lys Gly Gly Ala Leu
245 250 255

Asn Thr Leu Leu Arg Val Ser Gly Leu Phe Ser Asn Gly Pro Tyr Val
260 265 270

Leu Val Val Asp Cys Asp Met Tyr Cys Asn Asp Pro Ser Ser Ala Lys
275 280 285

Gln Ala Met Cys Phe Phe Leu Asp Pro Glu Thr Ser Lys Asp Ile Ala
290 295 300

Phe Val Gln Phe Pro Gln Met Phe His Asn Leu Ser Met Lys Asp Ile
305 310 315 320

Tyr Asp Ser Gln His Arg His Ala Phe Thr Thr Met Trp Gln Gly Met
325 330 335

Asp Gly Leu Arg Gly Pro Gly Leu Ser Gly Ser Gly Asn Tyr Leu Ser
340 345 350

Arg Ser Ala Leu Ile Phe Pro Ser Pro Tyr Glu Lys Asp Gly Tyr Glu
355 360 365

His Asn Ala Gln Asn Lys Phe Gly Asn Ser Thr Met Tyr Ile Glu Ser
370 375 380

Leu Lys Ala Ile Gln Gly Gln Gln Thr Tyr Lys Thr Ser Ile Ser Arg
385 390 395 400

Asn Val Ile Leu Gln Glu Ala Gln Ala Val Ala Ser Cys Ser Tyr Glu
405 410 415

Ile Asp Thr Asn Trp Gly Asn Glu Val Gly Phe Ser Tyr Val Ile Leu
420 425 430

Leu Glu Ser Thr Val Thr Gly Tyr Leu Leu His Cys Arg Gly Trp Arg
435 440 445

Ser Thr Tyr Leu Tyr Pro Lys Arg Pro Cys Phe Leu Gly Cys Ala Pro
450 455 460

Thr Asp Phe Met Glu Gly Met Leu Gln Leu Val Lys Trp Ser Ser Glu
465 470 475 480

Leu Phe Leu Leu Gly Ile Ser Lys Tyr Ser Pro Phe Thr Tyr Gly Ile
485 490 495

Ser Arg Ile Pro Ile Leu His Asn Phe Thr Phe Cys Tyr Phe Thr Ser
500 505 510

Thr Cys Gln Tyr Ile Val Ala Leu Ile Val Tyr Gly Ile Ile Pro Gln
515 520 525

Val Cys Phe Leu Lys Gly Thr Pro Val Phe Pro Lys Val Thr Glu Pro
530 535 540

Trp Phe Val Val Phe Ala Ile Leu Tyr Val Ser Ser Gln Ser Gln His
545 550 555 560

Leu Ile Glu Val Leu Tyr Gly Gly Gly Ser Leu Gly Thr Trp Trp Asp
565 570 575

Glu Gln Arg Ile Trp Ile Val Lys Ser Ile Val Gly Gly Ile Phe Gly
580 585 590

Ser Ile Leu Ala Ile Lys Lys Arg Phe Gly Leu Asn Lys Ala Lys Phe
595 600 605

Ile Leu Ser Asn Lys Val Val Ala Lys Glu Lys Phe Glu Lys Tyr Glu
610 615 620

Gln Gly Lys Phe Glu Phe Glu Asp Ala Ala Leu Phe Met Ser Pro Leu
625 630 635 640

Val Gly Leu Leu Ile Val Asn Ile Leu Cys Phe Phe Gly Gly Leu Trp
645 650 655

Arg Leu Phe Asn Val Lys Asp Phe Glu Lys Met Ser Gly Gln Leu Phe
660 665 670

Leu Leu Gly Tyr Leu Ala Ala Leu Ser Tyr Pro Ile Phe Glu Gly Ile
675 680 685

Ile Thr Met Lys Ser Lys Val Gln
690 695

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<211> 2336
<212> DNA
<213> Glycine max

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gtggtttatg gagactattt aatgtgaaag attttgaaaa gatgtctggc caactttttc	2040
tacttggcta tctggcggcg ctgagttatc ccatttttga ggggataata accatgaaaa	2100
gcaaggtgca atagtagttt gtcaatgatt aggctaattt aggtatttga actttgttca	2160
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aatgtatgtt cttactccat ttttaatgca atttctttat tttcttgcca attaaa	2336

<210> 102
 <211> 695
 <212> PRT
 <213> Glycyrrhiza uralensis

<400> 102

Met	Ala	Ser	Phe	Thr	Leu	His	Thr	Glu	Thr	Val	Gln	Ser	Trp	Leu	Leu
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		20						25					30		

Leu	Tyr	Tyr	Arg	Ile	Thr	Arg	Phe	Pro	Phe	His	Ala	Pro	Thr	Leu	Pro
		35					40					45			

Trp	Thr	Leu	Met	Thr	Val	Gly	Glu	Ala	Ile	Met	Ala	Val	Leu	Trp	Phe
	50					55					60				

Phe	Asn	Gln	Ala	Phe	Arg	Trp	Arg	Pro	Val	Ser	Arg	Ser	Val	Met	Thr
65					70					75				80	

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

Cys	Thr	Leu	Asp	Pro	Glu	Lys	Glu	Pro	Thr	Val	Glu	Val	Met	Asn	Thr
			100					105					110		

Leu	Val	Ser	Ala	Leu	Ala	Met	Asp	Tyr	Pro	Pro	Asp	Lys	Leu	Ser	Val
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Tyr Leu Ser Asp Asp Gly Ala Ala Pro Val Thr Leu Tyr Gly Val Arg
130 135 140

Glu Ala Ser Glu Phe Ala Arg Val Trp Val Pro Phe Cys Lys Lys Tyr
145 150 155 160

Gly Ile Lys Ser Arg Cys Pro Lys Val Phe Phe Ser Pro Ser Ala Glu
165 170 175

Asp Glu His Leu Leu Arg Thr Asp Glu Phe Arg Ser Glu Arg Asp Leu
180 185 190

Ile Lys Ala Lys Tyr Glu Lys Met Gln Lys Asn Ile Glu Lys Phe Gly
195 200 205

Ser Asp Ala Lys Asn Cys Arg Met Val Thr Asp Arg Pro Pro Arg Ile
210 215 220

Glu Ile Leu Ile Asp Gln Pro Asp Met Pro Arg Val Val Tyr Val Ser
225 230 235 240

Arg Glu Arg Arg Pro Ser Leu Pro His Lys Phe Lys Gly Gly Ala Leu
245 250 255

Asn Thr Leu Leu Arg Val Ser Gly Leu Ile Ser Asn Gly Pro Tyr Val
260 265 270

Leu Val Val Asp Cys Asp Met Tyr Cys Asn Asp Pro Ser Ser Ala Lys
275 280 285

Gln Ala Met Cys Phe Phe Leu Asp Pro Glu Thr Ser Lys Ser Ile Ala
290 295 300

Phe Val Gln Phe Pro Gln Met Phe His Asn Leu Gly Lys Lys Asp Ile
305 310 315 320

Tyr Asp Asn Gln Ser Arg Thr Ala Phe Lys Thr Met Trp Gln Gly Met
325 330 335

Asp Gly Leu Arg Gly Pro Gly Leu Ser Gly Ser Gly Asn Tyr Leu Asn
340 345 350

Arg Ser Ala Leu Leu Phe Gly Ser Pro Asn Gln Lys Asp Asp Tyr Leu
355 360 365

Asp Asp Ala Gln Asn Tyr Leu Gly Lys Ser Thr Met Tyr Ile Glu Ser
370 375 380

Leu Lys Ala Ile Arg Gly Gln Lys Thr Met Lys Lys Asn Ile Ser Arg
385 390 395 400

Asp Glu Ile Leu Arg Glu Ala Gln Val Leu Ala Ser Cys Ser Tyr Glu
405 410 415

Thr Asn Thr Glu Trp Gly Ala Glu Val Gly Phe Ser Tyr Gly Ile Leu
420 425 430

Leu Glu Ser Ser Ile Thr Gly Tyr Leu Phe His Cys Arg Gly Trp Lys
435 440 445

Ser Ala Tyr Leu Tyr Pro Lys Thr Pro Cys Phe Leu Gly Cys Ala Pro
450 455 460

Thr Asp Ile Lys Glu Gly Met Leu Gln Leu Val Lys Trp Leu Ser Glu
465 470 475 480

Tyr Cys Leu Leu Gly Phe Ser Lys Tyr Ser Pro Phe Thr Tyr Gly Phe
485 490 495

Ser Arg Met Pro Ile Met Pro Thr Leu Val Tyr Cys Phe Leu Thr Thr
500 505 510

Thr Thr Leu Tyr Ser Ile Val Phe Ile Leu Tyr Gly Ile Val Pro Gln
515 520 525

Val Cys Phe Leu Lys Gly Ile Pro Val Phe Pro Lys Val Thr Asp Pro
530 535 540

Trp Phe Ala Val Phe Ala Thr Leu Tyr Ile Ser Thr Gln Ile Gln His
545 550 555 560

Leu Ile Glu Val Leu Ser Gly Asp Gly Ser Val Ala Met Trp Trp Asp
565 570 575

Glu Gln Gly Ile Trp Ile Leu Lys Ser Val Thr Ser Val Phe Ala Ile
580 585 590

Ile Glu Ala Ala Lys Lys Gly Leu Gly Leu Asn Lys Lys Lys Phe Met
595 600 605

Leu Ser Asn Lys Ala Ile Asp Lys Glu Lys Leu Lys Lys Tyr Glu Gln
610 615 620

Gly Arg Phe Asp Phe Gln Gly Ala Ala Leu Phe Met Ser Pro Met Val
625 630 635 640

Val Leu Leu Ile Val Asn Val Val Ser Phe Ile Gly Gly Ile Trp Arg
645 650 655

Leu Phe Asn Ala Lys Asp Ile Glu Asp Met Phe Gly Gln Leu Phe Leu
660 665 670

Val Ser Tyr Val Met Ala Leu Ser Tyr Pro Ile Phe Glu Gly Ile Ile
675 680 685

Thr Met Lys Ser Lys Ser Gly
690 695

<210> 103
<211> 2088
<212> DNA
<213> Glycyrrhiza uralensis

<400> 103
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cccttccatg ctccgactct accgtggact ctgatgaccg taggtgaggc tattatggca 180
gtgctgtggt tcttcaacca ggccttccgg tggcggccgg tgagccgctc ggtgatgacg 240
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cctcctcgga tcgagatatt gattgaccaa ccagacatgc cacgtgttgt ttacgtgtct	720
cgggaaagaa ggccatcact ccctcacaag ttcaaaggag gagccctcaa tacattgctc	780
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gtgttgctca tagtgaacgt tgtttccttc attggtggca tatggagact attcaatgca 1980
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tatccccattt ttgaagggat aataaccatg aaaagcaaga gtggatag 2088

<210> 104
<211> 694
<212> PRT
<213> Lotus japonicus

<400> 104

Met Ala Asn Phe Thr Leu His Thr Glu Thr Val Gln Ala Trp Leu Pro
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Leu Ser Arg Leu His Ile Leu Ile His Ser Val Phe Val Ile Leu Leu
20 25 30

Leu Tyr Tyr Arg Thr Thr Arg Leu Ile His Ala Pro Thr Ala Pro Trp
35 40 45

Ile Leu Met Thr Val Ala Glu Ala Leu Leu Ala Val Leu Trp Leu Phe
50 55 60

Asn Gln Ala Phe Arg Trp Arg Pro Val Ser Arg Ser Val Lys Thr Glu
65 70 75 80

Lys Leu Pro Arg Asp Glu Asn Leu Pro Gly Leu Asp Ile Phe Val Cys
85 90 95

Thr Ile Asp Pro Glu Lys Glu Pro Thr Ala Gly Val Met Asp Thr Val
100 105 110

Val Ser Ala Val Ala Met Asp Tyr Pro Pro Asp Lys Leu Ser Val Tyr
115 120 125

Leu Ser Asp Asp Gly Gly Cys Ala Val Thr Glu Tyr Gly Ile Arg Glu
130 135 140

Ala Cys Glu Phe Ala Lys Val Trp Val Pro Phe Cys Arg Lys Tyr Gly
145 150 155 160

Ile Lys Ser Arg Cys Pro Lys Val Phe Phe Ser Pro Met Gly Glu Asp
165 170 175

Glu Glu Ile Leu Arg Thr Asp Glu Phe Arg Ala Glu Gln Glu Lys Ile
180 185 190

Lys Ala Gln Tyr Glu Thr Met Gln Lys Asn Ile Glu Lys Phe Gly Ser
195 200 205

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

Val Ile Asn Glu Gln Ser Glu Ile Pro Arg Val Val Tyr Val Ser Arg
225 230 235 240

Glu Arg Arg Pro Ser Leu Pro His Lys Phe Lys Gly Gly Ala Leu Asn
245 250 255

Thr Leu Val Arg Val Ser Gly Leu Ile Ser Asn Gly Pro Tyr Val Leu
260 265 270

Ala Val Asp Cys Asp Met Tyr Cys Asn Asp Pro Ser Ser Ala Lys Gln
275 280 285

Ala Met Cys Phe Phe Leu Asp Pro Glu Thr Ser Lys Tyr Ile Ala Phe
290 295 300

Val Gln Phe Pro Gln Met Phe His Asn Leu Ser Lys Lys Asp Ile Tyr
305 310 315 320

Asp Asn Gln Ser Arg Thr Ala Phe Lys Ala Met Trp Gln Gly Met Asp
325 330 335

Gly Leu Ser Gly Pro Gly Leu Ser Gly Ser Gly Asn Tyr Leu Ser Arg
340 345 350

Ser Ala Leu Leu Phe Gly Ser Pro Asn Gln Lys Gly Asp Tyr Leu Leu
355 360 365

Asp Ala Gln Asn Tyr Phe Gly Glu Ser Pro Leu Tyr Ile Glu Ser Leu
370 375 380

Lys Ala Ile Arg Gly Gln Gln Thr Thr Lys Lys Asn Ile Ser Arg Asp
385 390 395 400

Glu Ser Leu Leu Glu Ala Lys Val Val Ala Ser Ala Ser Tyr Glu Thr
405 410 415

Asn Thr Glu Trp Gly Ser Glu Val Gly Phe Ser Tyr Gly Ile Leu Leu
420 425 430

Glu Ser Thr Ile Thr Gly Tyr Leu Leu His Cys Arg Gly Trp Lys Ser
435 440 445

Ala Tyr Leu Tyr Pro Lys Thr Pro Cys Phe Leu Gly Cys Ala Pro Thr
450 455 460

Asp Ile Lys Glu Gly Met Leu Gln Leu Val Lys Trp Leu Ser Glu Leu
465 470 475 480

Cys Leu Phe Ala Val Ser Lys Tyr Ser Pro Phe Thr Tyr Gly Phe Ser
485 490 495

Arg Leu Pro Ile Met Pro Thr Phe Thr Tyr Cys Phe Leu Ala Ala Ser
500 505 510

Ser Leu Tyr Ala Ile Val Phe Ile Leu Tyr Gly Ile Val Pro Gln Val
515 520 525

Cys Phe Leu Lys Gly Ile Pro Val Phe Pro Lys Ala Thr Asp Pro Trp
530 535 540

Phe Ala Val Phe Ala Val Leu Tyr Val Ala Thr Gln Ile Gln His Leu
545 550 555 560

Ile Glu Val Leu Ser Gly Asn Gly Ser Val Ser Met Trp Trp Asp Glu
565 570 575

Gln Arg Ile Trp Ile Leu Lys Ser Val Thr Ser Val Phe Ala Met Ile
580 585 590

Glu Gly Ile Lys Lys Trp Leu Gly Leu Asn Lys Lys Lys Phe Asn Leu
595 600 605

Ser Asn Lys Ala Val Asp Lys Glu Lys Val Lys Lys Tyr Glu Gln Gly
610 615 620

Arg Phe Asp Phe Gln Gly Ala Ala Leu Tyr Met Ser Pro Met Val Val
625 630 635 640

Leu Leu Leu Val Asn Ile Val Cys Phe Phe Gly Gly Leu Trp Arg Leu
645 650 655

Phe Lys Glu Lys Asp Phe Ala Asp Met Phe Gly Gln Leu Phe Leu Leu
660 665 670

Ser Tyr Val Met Ala Leu Ser Tyr Pro Ile Leu Glu Gly Ile Val Thr
675 680 685

Met Lys Met Lys Ser Gly
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<210> 105
<211> 2085
<212> DNA
<213> Lotus japonicus

<400> 105
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atccacgcgc cgaccgcgcc gtggatcctg atgaccgttg cggaggctct cctcgccgtg 180
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aaaaacatcg agaaatttgg ttcagacccc aaaaattgtc gtattgtgac tgacagacccc	660
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gaaagaaggc catcacttcc tcacaagttc aaaggaggag ctctcaacac attggtcaga	780
gtgtcaggtc taatcagcaa tggaccttat gtgcttgcaag tggattgtga tatgtattgc	840
aatgatccat cctctgcaa gcaagcaatg tgcttcttcc ttgatccaga aacatctaaa	900
tacattgcat ttgtccaatt ccctcaaag tttcacaacc ttagtaagaa agacatctat	960
gataatcaat ctaggactgc ttttaaggca atgtggcaag gcatggatgg actcagtgg	1020
ccaggtcttt ctggcagtgg taactacttg agtagaagtg cattgctatt tggaagtcca	1080
aaccaaaaag gtgactatct gcttgatgct caaaactact ttggcgagtc tcccttgtac	1140
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gaaagtttac tagaagctaa agtggtggcc tctgcttcct acgagacaaa cacagaatgg	1260
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gattttgcag atatgtttgg tcaacttttc ctactcagct atgtgatggc tctcagttat	2040
cccattcttg aggggatagt aactatgaaa atgaagagtg ggtag	2085

<210> 106
 <211> 350
 <212> DNA

<213> Artificial Sequence

<220>

<223> SOAP5_VIGS_spinach

<400> 106

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ttttactcag gctttccggt ggcgtcccgt aatgagggaa gtctccgggt acgaatccat	180
caaacccgaa caactaccgg gtttggatgt cttcattgtc actgctgacc cgacaaagga	240
gccagttctg gaggtgatga actccgtgat atcatccatg gcgttggatt atccggttga	300
tagactggcg gtttacttgt cggatgacgg tggttctccg ttgtcgaagg	350

<210> 107

<211> 438

<212> DNA

<213> Artificial Sequence

<220>

<223> BvCSL_VIGS_red beet

<400> 107

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catatgaatc aaacactgaa tggggtaaca agattggata ttcgtatgag tgtttgttgg	180
agagtacatt taccggatat ctcttacatt gcaaaggatg gattttccgtg tatctttacc	240
caaaaagacc ctgcttctta ggatgcacga cgattgacat gaaagatgcc atggttcaac	300
taatgaaatg gacctctgga ttactaggag ttggcatatc aaagtttagc cctctaactt	360
atgccttttc gaggatgtct atattacaaa gcatgtgcta cggttacttc acattttcag	420
cccttttcgg agtttcgt	438

<210> 108

<211> 2148

<212> DNA

<213> Artificial Sequence

<220>

<223> MsCSL_asRNA_Medicago sativa

<400> 108

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tctccataaa ccaccaaaga agcaaacaat atttattgtg agtaacacaa tctactggtgc	180
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aaggccataa gtgaatgggc tatatttaga gattgcaagc aacaaaagtt cagatgacca	660
ctttatcggg tgaatcaatc cctctttcat gtcagttgga gcacatccta agaaacatgg	720
tcttttaggg taaagataag ttgatctcca tcctctacaa tggaggagat agccagtaac	780
ggtactctca agttttatag catacgagaa tcccacctca ttacccaat ttgtgtttct	840
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gccaaagttg tatagagcat caagtagata gtcccctttt tggtttggac ttccaaagag	1020
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cataactgaa cgattcacca gcctccaacg gaatgcttgg ttgaaaaacc atagaaatga	1980
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<210> 109
 <211> 1431
 <212> DNA
 <213> Spinacia oleracea

<400> 109	
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ttaggtccca tggatctagt tatgttaact atcgatccta tacaaaaagg tcttgtcttt	180
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gtccacttct acccgtagc aggtcgtttc actacacaaa aacaaccga gcataacacg	360
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gatggtacct cttttattca ttttgtcaat accttgtctg aaatttttaa atctgatgat	660
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aaatttccgt ttcttgatgt ggaggggttt atatgtcgtg cgtataacc tgggccgtta	780
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caagaatgtg gtacccaaaa tgttttatca tctttccaag ctttgactgc ggttgtatgg	900

aggtccatca cccgagttcg gaacttacca aaggatgagc aaaccacgtg ttttatggct	960
atggggttctc gaactaggct caacccgcct ctttcggatg actattttgg gaattttatg	1020
attagtacca aatttgcttg caaggcagag gaattattgg gtaacagttt aggttgggta	1080
gcaatgaatt tacgtaaaat cattatgtcc actgacgaga aatcgatact tgctacgtac	1140
aaagcattgg ctgattcccc aatagtgatt ccgcgtgaaa cgatccccgg tcctcatggg	1200
atgaccagag taataattgg aggatcttca aggttcgata tgtatgggcc tgaatttgga	1260
ttgggtcgag ctttggccgc tcgcatgggt tatgggaata aggatgatgg gaaaataaca	1320
gcaaatcctg ggtgtgaagg aggtggaagt gttgatttgg aaatttgcct taggcctcat	1380
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<210> 110
 <211> 1191
 <212> DNA
 <213> Spinacia oleracea

<400> 110	
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cccgatcac ctaccggaca atacttcaac agcaaagtggt tgtctgtttg tgtccttgcc	120
attctagaaa ttgatgttcc tatagatgac tcgtgtgtaa ttccacaact ccgtgatgtc	180
ttcctacca tgaacccag attttcatct atcatgatat ctgacaataa agatgtaaaa	240
caatggaaaa gagtggaagt gaaccttcaa gatcatgttg tcgtccctag cgtcccagat	300
ggcttatcgg ttgaatcata cgacaagtac tttgatgaat atctgacaaa aataacagtg	360
gatccattac cacaggatag gcctttatgg gaacttcatg ttataaaata cccaacaagc	420
aaagcagcgg gtcatttcat ctggaagctt caccatgcac ttggtgacgg ctacactcta	480
atgggagtac ttctgtccgg cgtgaacaga gcagatgac cttcccttcc gttaactttc	540
ccttcaacac gatcaagctc actagttaca aacaacaaga tgaatattat cagctgggtg	600
ccaagaactt tttcagcaat ctacaacgggt gtttataatt ttggatggag ttttctaaaa	660
agcacttgca aggcatga taagacacct atcagatccg gaaatgaagg tctgggtttc	720
caccaatga agatctcgac aatagaacta tccctagacc aaatcaaatt tatcaaaaca	780
aaactcggcg caacggtaaa tgacattctt gcaggcataa ttttcctcgg ggttcgaaaa	840

tacatgcaag caactgatac agaatctgga aactcagaat caacggcatt ggtgctgttt	900
aacactagga acattggagg ttatatgacc gctgagcaaa tgaagaaagc acaaataaaa	960
atatggggga accaatttgc atttttgcat atagcaatac ctcaattaat caatgacaaa	1020
tgctcgaacc cccttgacta tgtctatgaa gcacgaaaac agatctctag gttcaaaagc	1080
tcaccatcag tctatctaac agctcagtgc ctagagctgc taggaaatgc aaaggacctg	1140
aggcagcagc tgaatttatc cagagtacaa cgaataaagc aagcatatta a	1191

<210> 111
 <211> 1043
 <212> DNA
 <213> Spinacia oleracea

<400> 111	
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gcatctttaa gctattgtta ttacataggc aagctaatta atccaaaagg ttatacaaga	120
ttagtagcaa taatcccaat tattactctc tttttagcac ttcctttaaa tctcacatct	180
tttcatcttg gtggtatgac ttgtttcttt attgcttggc ttgctaattt caaactcttg	240
ctttttgctt ttgataaggg ccactttgc gctaattctt caatctcatt cgccaaattt	300
cttgcacttt cttgcttacc catcaaaatc caacacccac ctcataaaaa gtcattaataa	360
tcacacccat ctatttataa ttacatcatt aaagggatac ttttatgtct aataattaaa	420
atctatgatt atggtgatta cattcatcca aaaatcatat ggctaattctt tttcttccac	480
tcctatttta ccatagagtt agtctttgca ttcctagcaa catcgactaa tattttgtta	540
gggctcgaac tggagccaca gttcaatgaa cccttaatat caacctcatt gcaagacttt	600
tggggtaaga gatggaatat catggtgaca aggatactta ggcctacggt gtaccttccc	660
acactagagt actccactaa ggtcgttgga cgcacgtggg ccacacttcc ggcggtgatg	720
tccacgttct ttgtgtcagc cattatgcac gagctcatct tctactactt ggggcgcaac	780
tggcccacat tcgagggtgac gtggttcttt ctctgcatg gattatgtct ttgtgttgag	840
attgtcgcta agaagttagt tgggtgggaaa tggaggatcc cacggtggat ttccggccct	900
gccacggtgt tgtttgggtt ggggtactggg ttttggctgt tcttgccgcc gttgttgaag	960
gctgggttgg atactagacc gtttcaagag tttgcggccg ttgccaagtt tgtaaggagt	1020
ttgaaggcag ctctcacatt ttg	1043

<210> 112
 <211> 1530
 <212> DNA
 <213> *Spinacia oleracea*

<400> 112
 atggctcctc cttcttcttc ttcaactacg ggttctggta atggttctag ttttgcagtc 60
 aatataatgg cgtcgttcta catttcccca caacaacctt ccaccacaaa ttcacattct 120
 atccctctca ctttctttga cattccttgg cttcaatatc ctccgctcca acctctcttc 180
 ttctttcaac ttccatctac accccaatct tcttcttctt cttcttcttc ttcttcttct 240
 tctttcgacc acaacttgta cttggagttt agctccacca tcctccctag gctcaaacac 300
 tccctcgctt ctgccttgca atattacttt cccttttctg gaaaactcac cactactacc 360
 catactatcc cgaataacct agttttctcg acagactcat cagattctgt tgagttgact 420
 gtttctctgt gtgatgctga ttttaatggg ctatgcagct ttctaccag gtctactcat 480
 ctcttccaac aattgggttc ctccttgcca aatattgaat cctccaacct cactacattc 540
 cctgcacctt tattagctat tcagatcaca ttctttccca cctcttctcc tggtttctct 600
 attggctttg cttctcatcc tgtgctttct gatcagagga ccttcagtaa cttcctttac 660
 tcttgggcct ctttctccaa gtttgataat ctaaacattt cacttgcccc ttccttcctt 720
 gtctctgaca ggtctgtcat tctcgaccct gatagacttg agccccttct gttggagcag 780
 tggttgggat tggagtccaa accaaccatg tcaacaaaga tgaagctacg tcctcctcct 840
 gcttatgtcc gtggctcgtc ccggtccaca ttcgtcatgg gcccatctga tattgctaata 900
 gctacacaat ggttacaaac ccagtgtgag aagctcaaca gatcatatcc tgttctcttg 960
 tcaccctacg tcgtcacttg tgcctttata tggacctgtt ttctgagagc ccgagtccag 1020
 aacagtgtcg ttactaaagc caaagcaaaa ggcacatgt actttggatt tattgctggt 1080
 ggtattaccc gtttacccta tcgggtacct gctaagtatc ttggcaactg tgtcgggttt 1140
 ggacgggcag cagcgagag ggaggagcta ctgaaggaag gtgaggggat gttggcagct 1200
 gctgatgcaa ttgggctaac cattaaaaag ttggataaag atgttttagg aggagctgag 1260
 aaatggatat atgaatggca gacattaatg gaatccgaag atcatattca tgtggttggg 1320
 tcgccaag tgaaccttta tgagacggat ttttggtggg ggaaaccgaa gaagatagag 1380

gaaatttcaa ctgatgttac cagagccatc tctcttacac agagcaggga catgaaaagg	1440
ggaattgaaa ttggcctcac tttaacaaac tccattatgg atgacttctc ctctatcttc	1500
actcaaggcc tccttgtttt tcaaaattag	1530

<210> 113
 <211> 476
 <212> PRT
 <213> Spinacia oleracea

<400> 113

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

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

Leu Leu Ser Ile Gln Val Thr Glu Leu Leu Asp Gly Val Phe Ile Gly
180 185 190

Phe Ser Met Ser His Ser Val Val Asp Gly Thr Ser Phe Ile His Phe
195 200 205

Val Asn Thr Leu Ser Glu Ile Phe Lys Ser Asp Asp Phe Thr Thr Ile
210 215 220

Ser Arg Ala Pro Ile Leu Asn Tyr Arg Pro Cys Asp Ile Pro Ile Leu
225 230 235 240

Lys Phe Pro Phe Leu Asp Val Glu Gly Phe Ile Cys Arg Ala Tyr Asn
245 250 255

Pro Gly Pro Leu Arg Glu Arg Ile Phe His Phe Ser Leu Asn Ser Met
260 265 270

Leu Arg Leu Lys Ala Met Ala Asn Gln Glu Cys Gly Thr Gln Asn Val
275 280 285

Leu Ser Ser Phe Gln Ala Leu Thr Ala Val Val Trp Arg Ser Ile Thr
290 295 300

Arg Val Arg Asn Leu Pro Lys Asp Glu Gln Thr Thr Cys Phe Met Ala
305 310 315 320

Met Gly Ser Arg Thr Arg Leu Asn Pro Pro Leu Ser Asp Asp Tyr Phe
325 330 335

Gly Asn Phe Met Ile Ser Thr Lys Phe Ala Cys Lys Ala Glu Glu Leu
340 345 350

Leu Gly Asn Ser Leu Gly Trp Val Ala Met Asn Leu Arg Lys Ile Ile
355 360 365

Met Ser Thr Asp Glu Lys Ser Ile Leu Ala Thr Tyr Lys Ala Leu Ala
370 375 380

Asp Ser Pro Ile Val Ile Pro Arg Glu Thr Ile Pro Gly Pro His Gly
385 390 395 400

Met Thr Arg Val Ile Ile Gly Gly Ser Ser Arg Phe Asp Met Tyr Gly
405 410 415

Pro Glu Phe Gly Leu Gly Arg Ala Leu Ala Ala Arg Met Gly Tyr Gly
420 425 430

Asn Lys Asp Asp Gly Lys Ile Thr Ala Asn Pro Gly Cys Glu Gly Gly
435 440 445

Gly Ser Val Asp Leu Glu Ile Cys Leu Arg Pro His Ile Met Ala Ser
450 455 460

Leu Glu Val Asp Gln Glu Phe Met Gly Phe Val Ser
465 470 475

<210> 114
<211> 396
<212> PRT
<213> Spinacia oleracea

<400> 114

Met Thr Pro Asn Leu Gln Ile Val Thr Asn Gly Gly Lys Pro Glu Asn
1 5 10 15

Asp Glu Ala Glu Pro Val Ser Pro Thr Gly Gln Tyr Phe Asn Ser Lys
20 25 30

Val Leu Ser Val Cys Val Leu Ala Ile Leu Glu Ile Asp Val Pro Ile
35 40 45

Asp Asp Ser Cys Val Ile Pro Gln Leu Arg Asp Val Phe Leu Pro Met
50 55 60

Asn Pro Arg Phe Ser Ser Ile Met Ile Ser Asp Asn Lys Asp Val Lys
65 70 75 80

Gln Trp Lys Arg Val Glu Val Asn Leu Gln Asp His Val Val Val Pro

85

90

95

Ser Val Pro Asp Gly Leu Ser Val Glu Ser Tyr Asp Lys Tyr Phe Asp
 100 105 110

Glu Tyr Leu Thr Lys Ile Thr Val Asp Pro Leu Pro Gln Asp Arg Pro
 115 120 125

Leu Trp Glu Leu His Val Ile Lys Tyr Pro Thr Ser Lys Ala Ala Gly
 130 135 140

His Phe Ile Trp Lys Leu His His Ala Leu Gly Asp Gly Tyr Thr Leu
 145 150 155 160

Met Gly Val Leu Leu Ser Gly Val Asn Arg Ala Asp Asp Pro Ser Leu
 165 170 175

Pro Leu Thr Phe Pro Ser Thr Arg Ser Ser Ser Leu Val Thr Asn Asn
 180 185 190

Lys Met Asn Ile Ile Ser Trp Val Pro Arg Thr Phe Ser Ala Ile Tyr
 195 200 205

Asn Gly Val Tyr Asn Phe Gly Trp Ser Phe Leu Lys Ser Thr Cys Lys
 210 215 220

Ala Asp Asp Lys Thr Pro Ile Arg Ser Gly Asn Glu Gly Leu Gly Phe
 225 230 235 240

His Pro Met Lys Ile Ser Thr Ile Glu Leu Ser Leu Asp Gln Ile Lys
 245 250 255

Phe Ile Lys Thr Lys Leu Gly Ala Thr Val Asn Asp Ile Leu Ala Gly
 260 265 270

Ile Ile Phe Leu Gly Val Arg Lys Tyr Met Gln Ala Thr Asp Thr Glu
 275 280 285

Ser Gly Asn Ser Glu Ser Thr Ala Leu Val Leu Phe Asn Thr Arg Asn
 290 295 300

Ile Gly Gly Tyr Met Thr Ala Glu Gln Met Lys Lys Ala Gln Met Lys
305 310 315 320

Ile Trp Gly Asn Gln Phe Ala Phe Leu His Ile Ala Ile Pro Gln Leu
325 330 335

Ile Asn Asp Lys Cys Ser Asn Pro Leu Asp Tyr Val Tyr Glu Ala Arg
340 345 350

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

Gln Cys Leu Glu Leu Leu Gly Asn Ala Lys Asp Leu Arg Gln Gln Leu
370 375 380

Asn Leu Ser Arg Val Gln Arg Ile Lys Gln Ala Tyr
385 390 395

<210> 115
<211> 347
<212> PRT
<213> Spinacia oleracea

<400> 115

Met Leu Glu Leu Ala Glu Asp Glu Val Lys Asn Phe Phe Lys Val Trp
1 5 10 15

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

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

Thr Leu Phe Leu Ala Leu Pro Leu Asn Leu Thr Ser Phe His Leu Gly
50 55 60

Gly Met Thr Cys Phe Phe Ile Ala Trp Leu Ala Asn Phe Lys Leu Leu
65 70 75 80

Leu Phe Ala Phe Asp Lys Gly Pro Leu Cys Ala Asn Ser Ser Ile Ser
85 90 95

Phe Ala Lys Phe Leu Ala Leu Ser Cys Leu Pro Ile Lys Ile Gln His
100 105 110

Pro Pro His Lys Lys Ser Leu Lys Ser His Pro Ser Ile Tyr Asn Tyr
115 120 125

Ile Ile Lys Gly Ile Leu Leu Cys Leu Ile Ile Lys Ile Tyr Asp Tyr
130 135 140

Gly Asp Tyr Ile His Pro Lys Ile Ile Trp Leu Ile Phe Phe Phe His
145 150 155 160

Ser Tyr Phe Thr Ile Glu Leu Val Phe Ala Phe Leu Ala Thr Ser Thr
165 170 175

Asn Ile Leu Leu Gly Leu Glu Leu Glu Pro Gln Phe Asn Glu Pro Leu
180 185 190

Ile Ser Thr Ser Leu Gln Asp Phe Trp Gly Lys Arg Trp Asn Ile Met
195 200 205

Val Thr Arg Ile Leu Arg Pro Thr Val Tyr Leu Pro Thr Leu Glu Tyr
210 215 220

Ser Thr Lys Val Val Gly Arg Thr Trp Ala Thr Leu Pro Ala Val Met
225 230 235 240

Ser Thr Phe Phe Val Ser Ala Ile Met His Glu Leu Ile Phe Tyr Tyr
245 250 255

Leu Gly Arg Asn Trp Pro Thr Phe Glu Val Thr Trp Phe Phe Leu Leu
260 265 270

His Gly Leu Cys Leu Cys Val Glu Ile Val Ala Lys Lys Leu Val Gly
275 280 285

Gly Lys Trp Arg Ile Pro Arg Trp Ile Ser Gly Pro Ala Thr Val Leu
290 295 300

Phe Val Val Gly Thr Gly Phe Trp Leu Phe Leu Pro Pro Leu Leu Lys
305 310 315 320

Ala Gly Leu Asp Thr Arg Pro Phe Gln Glu Phe Ala Ala Val Ala Lys
325 330 335

Phe Val Arg Ser Leu Lys Ala Ala Leu Thr Phe
340 345

<210> 116
<211> 509
<212> PRT
<213> Spinacia oleracea

<400> 116

Met Ala Pro Pro Ser Ser Ser Ser Thr Thr Gly Ser Gly Asn Gly Ser
1 5 10 15

Ser Phe Ala Val Asn Ile Met Ala Ser Phe Tyr Ile Ser Pro Gln Gln
20 25 30

Pro Ser Thr Thr Asn Ser His Ser Ile Pro Leu Thr Phe Phe Asp Ile
35 40 45

Pro Trp Leu Gln Tyr Pro Pro Leu Gln Pro Leu Phe Phe Phe Gln Leu
50 55 60

Pro Ser Thr Pro Gln Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
65 70 75 80

Ser Phe Asp His Asn Leu Tyr Leu Glu Phe Ser Ser Thr Ile Leu Pro
85 90 95

Arg Leu Lys His Ser Leu Ala Ser Ala Leu Gln Tyr Tyr Phe Pro Phe
100 105 110

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

Phe Ser Thr Asp Ser Ser Asp Ser Val Glu Leu Thr Val Ser Leu Cys
130 135 140

Asp Ala Asp Phe Asn Gly Leu Cys Ser Phe Leu Pro Arg Ser Thr His
145 150 155 160

Leu Phe Gln Gln Leu Val Pro Ser Leu Pro Asn Ile Glu Ser Ser Asn
165 170 175

Leu Thr Thr Phe Pro Ala Pro Leu Leu Ala Ile Gln Ile Thr Phe Phe
180 185 190

Pro Thr Ser Ser Pro Gly Phe Ser Ile Gly Phe Ala Ser His Pro Val
195 200 205

Leu Ser Asp Gln Arg Thr Phe Ser Asn Phe Leu Tyr Ser Trp Ala Ser
210 215 220

Phe Ser Lys Phe Asp Asn Leu Asn Ile Ser Leu Ala Pro Ser Phe Pro
225 230 235 240

Val Ser Asp Arg Ser Val Ile Leu Asp Pro Asp Arg Leu Glu Pro Leu
245 250 255

Leu Leu Glu Gln Trp Leu Gly Leu Glu Ser Lys Pro Thr Met Ser Thr
260 265 270

Lys Met Lys Leu Arg Pro Pro Pro Ala Tyr Val Arg Gly Ser Leu Arg
275 280 285

Ser Thr Phe Val Met Gly Pro Ser Asp Ile Ala Asn Ala Thr Gln Trp
290 295 300

Leu Gln Thr Gln Cys Glu Lys Leu Asn Arg Ser Tyr Pro Val Leu Leu
305 310 315 320

Ser Pro Tyr Val Val Thr Cys Ala Phe Ile Trp Thr Cys Phe Leu Arg
325 330 335

Ala Arg Val Gln Asn Ser Ala Val Thr Lys Ala Lys Ala Lys Gly Thr
340 345 350

Met Tyr Phe Gly Phe Ile Ala Gly Gly Ile Thr Arg Leu Pro Tyr Arg

355

360

365

Val Pro Ala Lys Tyr Leu Gly Asn Cys Val Gly Phe Gly Arg Ala Ala
 370 375 380

Ala Gln Arg Glu Glu Leu Leu Lys Glu Gly Glu Gly Met Leu Ala Ala
 385 390 395 400

Ala Asp Ala Ile Gly Leu Thr Ile Lys Lys Leu Asp Lys Asp Val Leu
 405 410 415

Gly Gly Ala Glu Lys Trp Ile Tyr Glu Trp Gln Thr Leu Met Glu Ser
 420 425 430

Glu Asp His Ile His Val Val Gly Ser Pro Lys Val Asn Leu Tyr Glu
 435 440 445

Thr Asp Phe Trp Trp Gly Lys Pro Lys Lys Ile Glu Glu Ile Ser Thr
 450 455 460

Asp Val Thr Arg Ala Ile Ser Leu Thr Gln Ser Arg Asp Met Lys Arg
 465 470 475 480

Gly Ile Glu Ile Gly Leu Thr Leu Pro Asn Ser Ile Met Asp Asp Phe
 485 490 495

Ser Ser Ile Phe Thr Gln Gly Leu Leu Val Phe Gln Asn
 500 505

<210> 117

<211> 1419

<212> DNA

<213> Spinacia oleracea

<400> 117

atggccgcct caaacaaga gcaaagcaag ctacatattg ctatgtttcc ttggtttgca 60

tatggtcata taaaccatt catccagctc tctaacaagc tttcctccca tggcatccaa 120

atctctttct tctcaatacc aggaaacatt gatcgtatca aatcctccct taatctctca 180

cctcccaacc agctcatccc cctcactatt cccccaactg aaggactctc tcccaacttt 240

gacagcagct ctgaagtaac acctcaaact gctcagcttc tcacactagc acttgatcaa 300

atgcagcccc aagtcaaagc tctattccct cacccccagc cacaagttat cctctttgat	360
tttgcataatc actggcttcc cttagtagct tctgaactag gcatcaaagc tgttcatttc	420
aatacattcc cagctgttat caattcatat ctactgtcc cttcaagaat gactgatcca	480
aataaaccac cgacatttga ggacttgaag aaccctcctc aaggctatcc caaaacctca	540
accgcctcag tgaaaacctt cgaagctcaa gattacctat tccttttcaa gagtttcgat	600
ggcggaccgt gccatttcga aaagatattg gcattcacia acagctgtga tgctatactt	660
tacaggacct gcaatgaaat agaaggtcca ttcataagatt acttcaagac ccaaataaat	720
aaaccactgc ttttagctgg cccaagtgtt cctctaccac cctctggtga actggatgaa	780
aaatgggaga tgtggttagg taaatttcct gaaaagtcag tcatatactg cagcttcgga	840
agcgagacat acttgaatga tgctcagatt caggagctta cacttgggtt ggagctcact	900
ggtctgccct ttatcttggg tttgaatttt ggaacaagta acagcaccga tgcccacaat	960
aagctagaag catcattacc agaaggattt agagagagaa tcaaagacag gggcgttctg	1020
catacaggat gggtgcaaca gcaaaacatt ttagcacaca gaagcatagg atgctttctt	1080
actcacgcag gggtcagctc tgtaatagag ggtattgtga atgactgtca attagcattt	1140
ctacctctaa aggctgacca gtttatgata gctaagctat ttagtgggga tctgaaagca	1200
ggggtggagg taaatcgaag agatgaagat gggctctttt ccaaagaaga tattttcgaa	1260
gcaataaaga cgatcatggt ggatactgat aaagaaccaa gtagatccat cagggagaat	1320
catagcaatt ggagaaagtt tttgatgaat aaggagattg aagctagtta tattgcaaat	1380
ttagctcatg aactcaaggc attggttcaa aaagcttag	1419

<210> 118
 <211> 472
 <212> PRT
 <213> Spinacia oleracea

<400> 118

Met	Ala	Ala	Ser	Asn	Lys	Glu	Gln	Ser	Lys	Leu	His	Ile	Ala	Met	Phe
1				5					10					15	

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

Lys Leu Ser Ser His Gly Ile Gln Ile Ser Phe Phe Ser Ile Pro Gly
35 40 45

Asn Ile Asp Arg Ile Lys Ser Ser Leu Asn Leu Ser Pro Pro Asn Gln
50 55 60

Leu Ile Pro Leu Thr Ile Pro Pro Thr Glu Gly Leu Ser Pro Asn Phe
65 70 75 80

Asp Ser Ser Ser Glu Val Thr Pro Gln Thr Ala Gln Leu Leu Thr Leu
85 90 95

Ala Leu Asp Gln Met Gln Pro Gln Val Lys Ala Leu Phe Pro His Pro
100 105 110

Gln Pro Gln Val Ile Leu Phe Asp Phe Ala Tyr His Trp Leu Pro Ser
115 120 125

Val Ala Ser Glu Leu Gly Ile Lys Ala Val His Phe Asn Thr Phe Pro
130 135 140

Ala Val Ile Asn Ser Tyr Leu Thr Val Pro Ser Arg Met Thr Asp Pro
145 150 155 160

Asn Lys Pro Pro Thr Phe Glu Asp Leu Lys Asn Pro Pro Gln Gly Tyr
165 170 175

Pro Lys Thr Ser Thr Ala Ser Val Lys Thr Phe Glu Ala Gln Asp Tyr
180 185 190

Leu Phe Leu Phe Lys Ser Phe Asp Gly Gly Pro Cys His Phe Glu Lys
195 200 205

Ile Leu Ala Phe Thr Asn Ser Cys Asp Ala Ile Leu Tyr Arg Thr Cys
210 215 220

Asn Glu Ile Glu Gly Pro Phe Ile Asp Tyr Phe Lys Thr Gln Ile Asn
225 230 235 240

Lys Pro Leu Leu Leu Ala Gly Pro Ser Val Pro Leu Pro Pro Ser Gly

245

250

255

Glu Leu Asp Glu Lys Trp Glu Met Trp Leu Gly Lys Phe Pro Glu Lys
 260 265 270

Ser Val Ile Tyr Cys Ser Phe Gly Ser Glu Thr Tyr Leu Asn Asp Ala
 275 280 285

Gln Ile Gln Glu Leu Thr Leu Gly Leu Glu Leu Thr Gly Leu Pro Phe
 290 295 300

Ile Leu Val Leu Asn Phe Gly Thr Ser Asn Ser Thr Asp Ala His Asn
 305 310 315 320

Lys Leu Glu Ala Ser Leu Pro Glu Gly Phe Arg Glu Arg Ile Lys Asp
 325 330 335

Arg Gly Val Leu His Thr Gly Trp Val Gln Gln Gln Asn Ile Leu Ala
 340 345 350

His Arg Ser Ile Gly Cys Phe Leu Thr His Ala Gly Phe Ser Ser Val
 355 360 365

Ile Glu Gly Ile Val Asn Asp Cys Gln Leu Ala Phe Leu Pro Leu Lys
 370 375 380

Ala Asp Gln Phe Met Ile Ala Lys Leu Phe Ser Gly Asp Leu Lys Ala
 385 390 395 400

Gly Val Glu Val Asn Arg Arg Asp Glu Asp Gly Ser Phe Ala Lys Glu
 405 410 415

Asp Ile Phe Glu Ala Ile Lys Thr Ile Met Val Asp Thr Asp Lys Glu
 420 425 430

Pro Ser Arg Ser Ile Arg Glu Asn His Ser Asn Trp Arg Lys Phe Leu
 435 440 445

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

Leu Lys Ala Leu Val Gln Lys Ala
465 470

<210> 119
<211> 1386
<212> DNA
<213> *Spinacia oleracea*

<400> 119
atgtgtgacg acaaaaaatc atctgttttg agcatagcat tttatccgtg gtttgctctt 60
ggtcaccta cttcatttct ccgattagcc aacaaacttg cacaaaatgg tcacaatgtg 120
tcctatttta tcccaactaa tacattacct agattacttc ctcaacaacca ttaccctggc 180
caccttactt tcatccccgt caccgtccca cccgttgacg gcctccctct cagagccgag 240
accaccaacg atgtcccctc ctcggctata caccttctta tgactgccat ggatttgacc 300
cgtgacacta tcgaggccca tttggttagt atcaaaccg atgttgtttt ctacgacttt 360
gcttattgga ttcccgatct agcccgaaaa cacgggttca agtcagtact ctacattaca 420
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tttgagaaga gaacaaaagg aagggaatc gtacatgagg gttgggtgca gcaacaactg 1020
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gatggtttgt tcacaaagga ggctgtgcat aaggcgtct ctttggtgat ggaggaagaa 1260
agtgaagtcg caaaagagat gagggttaagt catgataaat ggagagaatt cttattacag 1320

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<210> 120

<211> 461

<212> PRT

<213> Spinacia oleracea

<400> 120

Met Cys Asp Asp Lys Lys Ser Ser Val Leu Ser Ile Ala Phe Tyr Pro
1 5 10 15

Trp Phe Ala Leu Gly His Leu Thr Ser Phe Leu Arg Leu Ala Asn Lys
20 25 30

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

Leu Pro Arg Leu Leu Pro His Asn His Tyr Pro Gly His Leu Thr Phe
50 55 60

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

Thr Thr Asn Asp Val Pro Ser Ser Ala Ile His Leu Leu Met Thr Ala
85 90 95

Met Asp Leu Thr Arg Asp Thr Ile Glu Ala His Leu Val Ser Ile Lys
100 105 110

Pro Asp Val Val Phe Tyr Asp Phe Ala Tyr Trp Ile Pro Asp Leu Ala
115 120 125

Arg Lys His Gly Phe Lys Ser Val Leu Tyr Ile Thr Ser Tyr Ile Ala
130 135 140

Arg Cys Ala Tyr Phe Ala Pro Asp Leu Lys Ser Gly His Gln Ser Thr
145 150 155 160

Gly Ala Glu Ile Ile Ala Pro Pro Pro Gly Phe Pro Ser Gln His Phe

165

170

175

Arg Met Gln Ala His Glu Ala Glu Thr Val Ala Asp Val Gly Lys Glu
 180 185 190

Gln Asp Gly Leu Gln Gly Ile Thr Ile Ser Glu Arg Met Arg Ile Ala
 195 200 205

Phe Gly Lys Cys Asp Ala Ile Gly Val Lys Ser Cys Lys Glu Met Glu
 210 215 220

Lys Val Tyr Ile Asp Tyr Cys Glu Lys Ile Phe Gly Lys Ser Val Leu
 225 230 235 240

Leu Ala Gly Pro Met Val Pro Lys Thr Pro Ser Ser Lys Leu Asp Glu
 245 250 255

Tyr Phe Asp Gly Trp Leu Thr Gly Phe Gly Ala Ala Thr Val Ile Tyr
 260 265 270

Cys Ala Phe Gly Ser Glu Cys Val Leu Glu Ile Asn Gln Phe Gln Gln
 275 280 285

Leu Leu Leu Gly Leu Glu Leu Thr Gly Arg Pro Phe Leu Val Ala Met
 290 295 300

Lys Pro Pro Lys Lys Tyr Glu Thr Ile Glu Ser Ala Leu Pro Glu Gly
 305 310 315 320

Phe Glu Lys Arg Thr Lys Gly Arg Gly Ile Val His Glu Gly Trp Val
 325 330 335

Gln Gln Gln Leu Ile Leu Gln His Pro Ser Val Gly Cys Phe Ile Thr
 340 345 350

His Cys Gly Val Gly Ser Leu Ser Glu Ala Met Val Ser Lys Cys Gln
 355 360 365

Val Val Leu Met Pro Gln Ala Val Asp Gln Phe Ile Asn Ala Arg Met
 370 375 380

Met Ser Leu Glu Leu Lys Ile Gly Val Glu Val Glu Lys Arg Glu Asp
385 390 395 400

Asp Gly Leu Phe Thr Lys Glu Ala Val His Lys Ala Val Ser Leu Val
405 410 415

Met Glu Glu Glu Ser Glu Val Ala Lys Glu Met Arg Val Ser His Asp
420 425 430

Lys Trp Arg Glu Phe Leu Leu Gln Glu Gly Leu Glu Asp Ser Tyr Ile
435 440 445

Ser Ser Phe Ile Gln Ser Leu Arg Gln Leu Thr Ile Gly
450 455 460

<210> 121
<211> 1338
<212> DNA
<213> Spinacia oleracea

<400> 121
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ccggaaaagt tcatatttga tagactgaac aagtacaccc caagccaagt gttcaagact 120
tccatcgtag gagaaaaggt tgcggtttta tgtggcgcgg cgggtaacaa gttcttgtac 180
tcaaacgaga acaagttagt acaagcttgg tggcctagct ctgttgataa gatctttcct 240
tcttctaccc aaacttcctc caaagaagag gctaagaaga tgcggaaact cctccctaac 300
ttcctcaagc ccgaggcttt acataggtac atacccatca tggatagcat tgccatccgg 360
cacatggagt ccgggtggga gggaaaggac aaggtagaag tcttcccttt ggctaagaat 420
tacaccttct ggctggcttg ccgactcttc ttaagcgtcg aggacccggc tcatgtagcc 480
aagttctccg aaccattcaa cgacatagcc gcagggatca tctcgatgcc aatcgacctc 540
cccggaacac cttcaaccg agggatcaag tcgtctaacg tcgtaaggaa agagttgagg 600
gccatcataa agcagaggaa acttgactta gcagatggca aggcttcacc tacacaagat 660
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attgctgata agattctggg acttcttatt ggtggacatg atactgctag tgcttcttgt 780
acttttggtt ttaagtttct tgctgagctt cctcacatat atgaaggtgt ctacaaagag 840

caaatggaga tagcaaattc aaaaaaagca ggagaacttc taaattggga ggacatacaa	900
aaaatgaaat actcatggaa tgtagcttgt gaagttatgc gtttggctcc tccacttcaa	960
ggtggtttca ggggaagccct ttctgatttc atgtataacg gattccaaat cccaagggc	1020
tggaagttat attggagtgc aaattcaaca catatgaacc cggaatgctt cccggagccc	1080
aagacgttcg acccatcgag gttcgacggg acgggaccag caccatacac atacgtcccc	1140
ttcggaggag gaccgagaat gtgcccgggc aaggagtatg caaggctaga gatattagt	1200
ttcatgcaca acgttgtcaa gaggtttaaa tgggaaaaaa tgcttcctga tgagaaggtt	1260
attgtcaatc ccatgcctat cccagaacat ggccttcctg tccgcctttt ccctcatcct	1320
cgaactgtag ctgcttaa	1338

<210> 122
 <211> 1077
 <212> DNA
 <213> Spinacia oleracea

<400> 122	
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ttctacgaca tggcccatg gatacccgat attgctagca agctcgggat caagtcagtg	120
tcatacaaca gtgtatgtgc tatttctatg tcccatgtca gacctagcgt ctttcaaaa	180
gcagcagcaa catcacaagt agctttgtca tcatcgtcat atgtcggtag tgtccctcag	240
tggagtcgca atgatcacia ctcacagtc tattttgggg atgagattac cttacttgaa	300
cgctctatca tctccctctc atctgcagat gcaatagcca tccgcacatg caggagatt	360
gaaggagtat attgtgaccg tgttgctgcc acattcaaca agcctgtcct tgtcactagc	420
cacgccttgc ctgatcttga actccaactc tctccgttgg agactcgatg ggctgactgg	480
ctagctaggt ttgggccaag atcagtgatc ttttgctgcc ttggtagtca gcatgtctta	540
gacgcagccc aactgcagga gttagccttg gggttagaaa tgacaggact acccttcttg	600
atggctgtaa agcctcctgt aggctatgcc tcattgaagg agctgctgcc agaaggttat	660
aatgatcggg ttagtgggag aggggtggtt catggtgggt ggggtgcagca acagcagata	720
ctggcgcacc catcattagg gtgctttgtg acccattgtg ggtcttcgtc catgtgggag	780
gggttagtga gtgaaactca gctggtacta ctcccacagc tgccagacca aactctgaac	840

gcaaagttga tggcagatga gctcaaggtg ggtgtgaagg tggagcgaca acagaacggg 900
 tgggtgtcaa agcaaggtct atgtgaagcc atcaacagag tgatggatga agatagtgat 960
 ataagtcatg tagtgagaaa gaatcatgct aaatacacia gtatgttgat tagccctgac 1020
 tttatcactg gctacattga caacttcatc aaggatttac aagcccttat ttcttag 1077

<210> 123
 <211> 366
 <212> PRT
 <213> Spinacia oleracea

<400> 123

Met Leu Val Tyr Asp Ala Tyr Phe Pro Trp Ala Leu Asp Val Ala Lys
 1 5 10 15

Asp His Asn Ile Leu Ala Ala Ala Tyr Phe Val Ser Ser Cys Ala Tyr
 20 25 30

Val Ala Ser Phe Tyr Pro Met Phe Leu Glu Glu Phe Gly Ser Asp Asp
 35 40 45

Gln His Pro Val Val Ala Ala Glu Ser Val Pro Gly Leu Leu Val Glu
 50 55 60

Leu Pro Ser Arg Glu Glu Met Glu Arg Tyr Ala Pro Lys Cys Ala Gln
 65 70 75 80

Ser Ser Ser Ser Asp Asp Lys Pro Asp Thr Gly Lys Lys Pro Leu His
 85 90 95

Pro Val Tyr Gln Met Val Val Ser Ser Ile Thr Thr Leu His Leu Ala
 100 105 110

Asp Phe Val Leu Phe Asn Ser Phe Asp His Leu Glu His Gln Val Val
 115 120 125

Lys Trp Met Thr Asn Leu Trp Arg Val Lys Thr Val Gly Pro Leu Leu
 130 135 140

Pro Ser Ala Tyr Leu Asp Lys Arg Ile Glu Ser Asp Val Asn Tyr Cys
 145 150 155 160

Val Lys Pro Tyr Lys Pro Asn Asn Glu Ala Cys Met Ser Trp Leu Asn
165 170 175

Ala Lys Gln Val Ala Ser Val Val Tyr Val Ser Phe Gly Ser Val Ala
180 185 190

Lys Leu Ser Val Glu Gln Ile Ser Glu Ile Ala Lys Ala Leu Lys Gln
195 200 205

Ile Pro Ser Ser Phe Leu Trp Ile Val Arg Glu Ala Glu Gln Glu Lys
210 215 220

Leu Pro Asn Asp Phe Ile Thr Glu Thr Ser Glu Lys Gly Leu Val Met
225 230 235 240

Ser Trp Cys Pro Gln Leu Asp Val Leu Ala His Glu Ala Val Gly Cys
245 250 255

Phe Ile Thr His Cys Gly Trp Asn Ser Val Ile Glu Ala Thr Ser Phe
260 265 270

Gly Val Pro Met Leu Gly Met Pro Gln Phe Met Asp His Phe Leu Asp
275 280 285

Ala His Phe Leu Glu Lys Val Trp Gly Val Gly Ile Arg Val Lys Ala
290 295 300

Asp Glu Lys Asn Phe Val Thr Cys Asp Glu Ile Lys Arg Gly Leu Glu
305 310 315 320

Lys Ile Ile Tyr Gly Glu Arg Gly Asn Lys Ile Lys Glu Asn Ala Thr
325 330 335

Lys Trp Lys Glu Leu Ala Lys Glu Ala Val Gly Glu Gly Gly Ser Ser
340 345 350

Asp Asn Ser Thr Gly Glu Ile Ile Lys Trp Leu Ala Ser Ser
355 360 365

<210> 124
<211> 358
<212> PRT
<213> Spinacia oleracea

<400> 124

Met Asp Arg Thr Arg Pro Glu Val Glu Ser Ile Leu Ser Thr Gln Lys
1 5 10 15

Pro Asp Leu Val Phe Tyr Asp Met Ala His Trp Ile Pro Asp Ile Ala
20 25 30

Ser Lys Leu Gly Ile Lys Ser Val Ser Tyr Asn Ser Val Cys Ala Ile
35 40 45

Ser Met Ser His Val Arg Pro Ser Val Leu Pro Lys Ala Ala Ala Thr
50 55 60

Ser Gln Val Ala Leu Ser Ser Ser Tyr Val Gly Ser Val Pro Gln
65 70 75 80

Trp Ser Arg Asn Asp His Asn Ser Ser Val Tyr Phe Gly Asp Glu Ile
85 90 95

Thr Leu Leu Glu Arg Ser Ile Ile Ser Leu Ser Ser Ala Asp Ala Ile
100 105 110

Ala Ile Arg Thr Cys Arg Glu Ile Glu Gly Val Tyr Cys Asp Arg Val
115 120 125

Ala Ala Thr Phe Asn Lys Pro Val Leu Val Thr Ser His Ala Leu Pro
130 135 140

Asp Leu Glu Leu Gln Leu Ser Pro Leu Glu Thr Arg Trp Ala Asp Trp
145 150 155 160

Leu Ala Arg Phe Gly Pro Arg Ser Val Ile Phe Cys Cys Leu Gly Ser
165 170 175

Gln His Val Leu Asp Ala Ala Gln Leu Gln Glu Leu Ala Leu Gly Leu
180 185 190

Glu Met Thr Gly Leu Pro Phe Leu Met Ala Val Lys Pro Pro Val Gly
195 200 205

Tyr Ala Ser Leu Lys Glu Leu Leu Pro Glu Gly Tyr Asn Asp Arg Val
210 215 220

Ser Gly Arg Gly Val Val His Gly Gly Trp Val Gln Gln Gln Gln Ile
225 230 235 240

Leu Ala His Pro Ser Leu Gly Cys Phe Val Thr His Cys Gly Ser Ser
245 250 255

Ser Met Trp Glu Gly Leu Val Ser Glu Thr Gln Leu Val Leu Leu Pro
260 265 270

Gln Leu Pro Asp Gln Thr Leu Asn Ala Lys Leu Met Ala Asp Glu Leu
275 280 285

Lys Val Gly Val Lys Val Glu Arg Gln Gln Asn Gly Trp Val Ser Lys
290 295 300

Gln Gly Leu Cys Glu Ala Ile Asn Arg Val Met Asp Glu Asp Ser Asp
305 310 315 320

Ile Ser His Val Val Arg Lys Asn His Ala Lys Tyr Thr Ser Met Leu
325 330 335

Ile Ser Pro Asp Phe Ile Thr Gly Tyr Ile Asp Asn Phe Ile Lys Asp
340 345 350

Leu Gln Ala Leu Ile Ser
355