

P12567WO_SEQ_ST25
SEQUENCE LISTING

<110> Schmülling, Thomas
Niemann, Michael
Werner, Tomas

<120> Disruption of ROCK1 gene leads to plants with improved traits

<130> P12567WO

<160> 120

<170> PatentIn version 3.5

<210> 1
<211> 325
<212> PRT
<213> Arabidopsis thaliana

<400> 1

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

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

Leu Ile Ser Lys Arg Cys Ile Arg Lys Asp Val Ile Val Thr Ser Ser
35 40 45

Val Leu Thr Cys Glu Ile Val Lys Val Ile Cys Ala Leu Ile Leu Met
50 55 60

Ala Arg Asn Gly Ser Leu Lys Gly Leu Ala Lys Glu Trp Thr Leu Met
65 70 75 80

Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala Leu Gln
85 90 95

Asn Ser Leu Leu Gln Ile Ser Tyr Arg Ser Leu Asp Ser Leu Thr Phe
100 105 110

Ser Ile Leu Asn Gln Thr Lys Ile Phe Phe Thr Ala Phe Phe Thr Phe
115 120 125

Ile Ile Leu Arg Gln Lys Gln Ser Ile Leu Gln Ile Gly Ala Leu Cys
130 135 140

Leu Leu Ile Met Ala Ala Val Leu Leu Ser Val Gly Glu Gly Ser Asn
145 150 155 160

Lys Asp Ser Ser Gly Ile Asn Ala Asp Gln Lys Leu Phe Tyr Gly Ile
165 170 175

Ile Pro Val Leu Ala Ala Ser Val Leu Ser Gly Leu Ala Ser Ser Leu
180 185 190

P12567WO_SEQ_ST25

Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser Ser Tyr Leu Met Thr
195 200 205

Val Glu Met Ser Ile Val Gly Ser Leu Cys Leu Leu Val Ser Thr Leu
210 215 220

Lys Ser Pro Asp Gly Glu Ala Ile Lys Lys Tyr Gly Phe Phe His Gly
225 230 235 240

Trp Thr Ala Leu Thr Leu Val Pro Val Ile Ser Asn Ala Leu Gly Gly
245 250 255

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

Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu Gln Phe Ala
275 280 285

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

Val Met Ser Ser Ile Ser Met Tyr Gln Lys Tyr Pro Tyr Ile Asp Lys
305 310 315 320

Lys Lys Lys Lys Val
325

<210> 2

<211> 260

<212> PRT

<213> Arabidopsis thaliana

<400> 2

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

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

Leu Ile Ser Lys Arg Cys Ile Arg Lys Asp Val Ile Val Thr Ser Ser
35 40 45

Val Leu Thr Cys Glu Ile Val Lys Val Ile Cys Ala Leu Ile Leu Met
50 55 60

Ala Arg Asn Gly Ser Leu Lys Gly Leu Ala Lys Glu Trp Thr Leu Met
65 70 75 80

Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala Leu Gln
85 90 95

Asn Ser Leu Leu Gln Ile Ser Tyr Arg Ser Leu Asp Ser Leu Thr Phe
100 105 110

P12567WO_SEQ_ST25

Ser Ile Leu Asn Gln Thr Lys Ile Phe Phe Thr Ala Phe Phe Thr Phe
115 120 125

Ile Ile Leu Arg Gln Lys Gln Ser Ile Leu Gln Ile Gly Ala Leu Cys
130 135 140

Leu Leu Ile Met Ala Ala Val Leu Leu Ser Val Gly Glu Gly Ser Asn
145 150 155 160

Lys Asp Ser Ser Gly Ile Asn Ala Asp Gln Lys Leu Phe Tyr Gly Ile
165 170 175

Ile Pro Val Leu Ala Ala Ser Val Leu Ser Gly Leu Ala Ser Ser Leu
180 185 190

Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser Ser Tyr Leu Met Thr
195 200 205

Val Glu Met Ser Ile Val Gly Ser Leu Cys Leu Leu Val Ser Thr Leu
210 215 220

Lys Ser Pro Asp Gly Glu Ala Ile Lys Lys Tyr Gly Phe Phe His Gly
225 230 235 240

Trp Thr Ala Leu Thr Leu Val Ile Asn Tyr Leu Phe Phe Leu Ser Thr
245 250 255

Lys Gln Phe Phe
260

<210> 3
<211> 9
<212> PRT
<213> artificial

<220>
<223> amino acid motif conserved in ROCK1 protein

<400> 3

Gly Gly Ile Leu Val Gly Leu Val Thr
1 5

<210> 4
<211> 2434
<212> DNA
<213> Arabidopsis thaliana

<400> 4
gttcttcaaa gcacaaacca attctcgacc aaaagatcag aacaaagcga aggcggattt 60
tctggattct cgacggccgg agattcatgg cgacggctaa cggagcaaag agtccgtcga 120
gtatgggccc taaggttttg ttttattcca tattgctcac acttcagtac ggagcccagc 180
ctctgatctc caaacgctgc atcaggtacg gtctcttgca acaacctatg cctcttaaatt 240

P12567WO_SEQ_ST25

ctctgatgtt agtgatagcc ttgttcatat tcgctgattt cgtgcgcttt tatcgggaat	300
tgcgagattt gggttgaatt agtcttatgt agcgagtaga gatggagttc gattttctggg	360
catctgtttt gttggctttc tgcgaattgt gggttgagaat agtgttgtaa acttacaatt	420
tcgaagttaa atgcgacgat tgtgatgtat tctcgttggt cctgtggaaa aagacatggt	480
cactgttaaa ctaagccatt ttctaaagtg ttagagagat gaatttgaat ctactagttt	540
gctacattga tgccttgaat atagcttttc atcatagtgt tttagttggt catcttggtt	600
ttgtagggtg ccgtgtaacc ttctgcgtta tctagtactc gatatcgagt cactttgcct	660
aattttgcgg caaaatgccg tggatattta gaactagtag acttgtgttc actagtccat	720
ttgtttgttt cttcttaaac agttaataga ttgtctctat catggtttgg tcactttacc	780
gcattattgt ttttgcagaa aggatgttat tgtaacttca tctgttttga cgtgcgagat	840
tgtaaggtg ctggatcttt ttttttccct tctactttcg aaaattttgc atttatgaaa	900
tactgtttca tgcttctgct gtatgttctt ttttataggt catatgtgct ctgattctca	960
tggaagaaa tggtagtttg aagggttag caaaagagtg gacgttgatg ggatccttga	1020
cagcatcagg acttcctgca gccatatatg cactgcagaa cagtttgctg cagatctcat	1080
acaggagtct tgattccttg acattttcaa ttctgaatca gacgaaaatc tttttcacag	1140
cattctttac tttcataata ctaaggtaac ctttattttt cttgttctta tggcttgggt	1200
tttgatagga tgcttgaaat tttgagtttg ttggatttgt attttcctca gcgagtgcct	1260
acatcacatt tttgaattag agattttag tgtgattgcc tgaataactt tatttgggct	1320
gcttctctgc tccaacgtga tacctaccat gtcttaatag tgtgattgcc tgaatatcta	1380
ttgcttgaaa agtgtttaac acatcatctc gaatgacatc ttgtaggcag aagcaatcaa	1440
ttctacaaat aggagccttg tgtctattga tcatggcagc agtccttcta agtgttgggtg	1500
aaggctctaa caaagattca agcggcatta atgcggatca aaagctgttt tatggaatta	1560
tcccggctct ggagcctct gtcctgtcgg gtttagcctc ttctctgtgt caatgggctt	1620
ctcaggatcat ccagagttta catatcatat tccaataaaa aatctgtact tcaattcatt	1680
cgtagcctaa actgtcttac cgtttacagg tcaagaagca ttcatacatc ttaatgacgg	1740
ttgaaatgtc tatcgttgga agcctctgtt tattagtaag tactcttaaa tctccagatg	1800
gtgaagcgat taaaaaatat ggcttctttc atgggtggac tgctttaaca ctggtaataa	1860
actatctctt ttttttatcc aaaaaaat tcttttgata gcaaaacagt gaattctgat	1920
tgtttgatg cactgtgact gttgttatag gtcccagtaa taagcaatgc tcttggtggg	1980
attcttggtg gcctagttaa atcacatgcc ggtggtgtaa gaaaggtaaa aaaaaaaaaa	2040
accctcccag actgatatta cacaatcaaa agctgaaata tgtaatgtcg ttatatcact	2100
ttgcagggat ttgtgattgt gtcggcatta cttgtgacgg cgctacttca atttgcgttt	2160
gaaggaaaac cgccatcatc gtattgccta gttgctcttc ctcttgatgat gagtagtata	2220
tcaatgtacc agaaatacc atacattgac aagaagaaga agaagggtga agaaaaaggt	2280

P12567WO_SEQ_ST25

tccattcaga gaatagctgc tagttacaac aatgagatat cttaatgcca ttattattaa	2340
ctaagtagat gatagtgtga ttcttgagc attcaaaaga ctttgtagta tatttacatt	2400
caaagatgga atgagtccaa ttgagtttaa gtaa	2434

<210> 5
 <211> 978
 <212> DNA
 <213> Arabidopsis thaliana

<400> 5	
atggcgacgg ctaacggagc aaagagtccg tcgagtatgg gccctaaggt tttgttttat	60
tccatattgc tcacacttca gtacggagcc cagcctctga tctccaaacg ctgcatcaga	120
aaggatgtta ttgtaacttc atctgttttg acgtgcgaga ttgttaaggt catatgtgct	180
ctgattctca tggcaagaaa tggtagtttg aagggattag caaaagagtg gacgttgatg	240
ggatccttga cagcatcagg acttcctgca gccatatatg cactgcagaa cagtttgctg	300
cagatctcat acaggagtct tgattccttg acattttcaa ttctgaatca gacgaaaatc	360
tttttcacag cattctttac tttcataata ctaaggcaga agcaatcaat tctacaaata	420
ggagccttgt gtctattgat catggcagca gtccttctaa gtgttggtga aggctctaac	480
aaagattcaa gcggcattaa tgcggatcaa aagctgtttt atggaattat cccggtcttg	540
gcagcctctg tcctgtcggg tttagcctct tctctgtgtc aatgggcttc tcagggtcaag	600
aagcattcat cataacttaac gacggttgaa atgtctatcg ttggaagcct ctgtttatta	660
gtaagtactc ttaaactctcc agatggtgaa gcgattaaaa aatatggctt ctttcatggt	720
tggactgctt taacactggt cccagtaata agcaatgctc ttggtgggat tcttggtggc	780
ctagttacat cacatgccgg tgggtgaaga aagggatttg tgattgtgtc ggcattactt	840
gtgacggcgc tacttcaatt tgcgtttgaa ggaaaaccgc catcatcgta ttgcctagtt	900
gctcttcctc ttgtgatgag tagtatctca atgtaccaga aatacccata cattgacaag	960
aagaagaaga aggtgtaa	978

<210> 6
 <211> 783
 <212> DNA
 <213> Arabidopsis thaliana

<400> 6	
atggcgacgg ctaacggagc aaagagtccg tcgagtatgg gccctaaggt tttgttttat	60
tccatattgc tcacacttca gtacggagcc cagcctctga tctccaaacg ctgcatcaga	120
aaggatgtta ttgtaacttc atctgttttg acgtgcgaga ttgttaaggt catatgtgct	180
ctgattctca tggcaagaaa tggtagtttg aagggattag caaaagagtg gacgttgatg	240
ggatccttga cagcatcagg acttcctgca gccatatatg cactgcagaa cagtttgctg	300
cagatctcat acaggagtct tgattccttg acattttcaa ttctgaatca gacgaaaatc	360
tttttcacag cattctttac tttcataata ctaaggcaga agcaatcaat tctacaaata	420
ggagccttgt gtctattgat catggcagca gtccttctaa gtgttggtga aggctctaac	480

P12567WO_SEQ_ST25

aaagattcaa gcggcattaa tgcggatcaa aagctgtttt atggaattat cccggtcttg	540
gcagcctctg tcctgtcggg tttagcctct tctctgtgtc aatgggcttc tcagggtcaag	600
aagcattcat cataacttaat gacggttgaa atgtctatcg ttggaagcct ctgtttatta	660
gtaagtactc ttaaactctc agatggtgaa gcgattaataa aatatggctt ctttcatggt	720
tggactgctt taacactggt aataaactat ctcttttttt tatccacaaa acaattcttt	780
tga	783

<210> 7
 <211> 1227
 <212> DNA
 <213> Arabidopsis thaliana

<400> 7 gttcttcaaa gcacaaacca attctcgacc aaaagatcag aacaaagcga aggcggattt	60
tctggattct cgacggccgg agattcatgg cgacggctaa cggagcaaag agtccgtcga	120
gtatgggccc taaggttttg ttttattcca tattgtcac acttcagtac ggagcccagc	180
ctctgatctc caaacgtgc atcagaaagg atgttattgt aacttcattt gttttgacgt	240
gcgagattgt taaggtcata tgtgctctga ttctcatggc aagaaatggt agtttgaagg	300
gattagcaaa agagtggacg ttgatgggat cttgacagc atcaggactt cctgcagcca	360
tatatgcact gcagaacagt ttgctgcaga tctcatagc gagtcttgat tccttgacat	420
tttcaattct gaatcagacg aaaatctttt tcacagcatt ctttactttc ataatactaa	480
ggcagaagca atcaattcta caaataggag ctttgtgtct attgatcatg gcagcagtc	540
ttctaagtgt tgggtgaaggc tctaacaaag attcaagcgg cattaatgag gatcaaaagc	600
tgttttatgg aattatcccg gtcttggcag cctctgtcct gtcgggttta gcctcttctc	660
tgtgtcaatg ggcttctcag gtcaagaagc attcatcata cttaatgacg gttgaaatgt	720
ctatcgttgg aagcctctgt ttattagtaa gtactcttaa atctccagat ggtgaagcga	780
ttaaaaaata tggcttcttt catggttgga ctgctttaac actgggtcca gtaataagca	840
atgctcttgg tgggattctt gttggcctag ttacatcaca tgccggtggt gtaagaaagg	900
gatttgtgat tgtgtcggca ttacttgtga cggcgctact tcaatttgag tttgaaggaa	960
aaccgccatc atcgtattgc ctagttgtct ttctcttgt gatgagtagt atctcaatgt	1020
accagaaata ccatacatt gacaagaaga agaagaagg gtaagaaaaa gggtccattc	1080
agagaatagc tgctagttac aacaatgaga tatcttaatg ccattattat taactaagta	1140
gatgatagtg tgattcttgg agcattcaaa agactttgta gtatatttac attcaaagat	1200
ggaatgagtc caattgagtt taagtaa	1227

<210> 8
 <211> 1324
 <212> DNA
 <213> Arabidopsis thaliana

<400> 8

P12567WO_SEQ_ST25

```

gttcttcaaa gcacaaacca attctcgacc aaaagatcag aacaaagcga aggcggattt      60
tctggattct cgacggccgg agattcatgg cgacggctaa cggagcaaag agtccgctca      120
gtatggggccc taagggttttg ttttattcca tattgctcac acttcagtac ggagcccagc      180
ctctgatctc caaacgctgc atcagaaagg atgttattgt aacttcattc gttttgacgt      240
gcgagattgt taaggtcata tgtgctctga ttctcatggc aagaaatggg agtttgaagg      300
gattagcaaa agagtggacg ttgatgggat ccttgacagc atcaggactt cctgcagcca      360
tatatgcact gcagaacagt ttgctgcaga tctcatacag gagtcttgat tccttgacat      420
tttcaattct gaatcagacg aaaatctttt tcacagcatt ctttactttc ataatactaa      480
ggcagaagca atcaattcta caaataggag ccttgtgtct attgatcatg gcagcagtcc      540
ttctaagtgt tgggtgaaggc tctaacaaag attcaagcgg cattaatgcg gatcaaaagc      600
tgttttatgg aattatcccc gtcttggcag cctctgtcct gtcgggttta gcctcttctc      660
tgtgtcaatg ggcttctcag gtcaagaagc attcatcata cttaatgacg gttgaaatgt      720
ctatcgttgg aagcctctgt ttattagtaa gtactcttaa atctccagat ggtgaagcga      780
ttaaaaaata tggcttcttt catggttgga ctgctttaac actggtaata aactatctct      840
tttttttatc cacaaaacaa ttcttttgat agcaaaacag tgaattctga ttgtttgtat      900
gcactgtgac tgttggtata ggtcccagta ataagcaatg ctcttggtgg gattcttggt      960
ggcctagtta catcacatgc cggtggtgta agaaagggat ttgtgattgt gtcggcatta     1020
cttgtgacgg cgctacttca atttgcgttt gaaggaaaac cgccatcatc gtattgccta     1080
gttgctcttc ctcttgatgat gagtagtata tcaatgtacc agaaataccc atacattgac     1140
aagaagaaga agaaggtgta agaaaaaggt tccattcaga gaatagctgc tagttacaac     1200
aatgagatat cttaatgcca ttattattaa ctaagtagat gatagtgtga ttcttgagac     1260
attcaaaaga ctttgtagta tatttacatt caaagatgga atgagtccaa ttgagtttaa     1320
gtaa                                     1324

```

<210> 9
 <211> 326
 <212> PRT
 <213> Brassica napus

<400> 9

Met Ala Thr Ala Asn Gly Ala Lys Gly Pro Ser Arg Met Gly Pro Lys
 1 5 10 15

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

Leu Ile Ser Lys Arg Cys Ile Gly Lys Glu Val Ile Val Thr Ser Ser
 35 40 45

Val Leu Thr Cys Glu Val Val Lys Val Ile Cys Ala Leu Ile Leu Met
 50 55 60

P12567WO_SEQ_ST25

Ala Arg Asp Gly Ser Leu Lys Lys Leu Ala Lys Glu Trp Thr Leu Met
65 70 75 80

Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala Leu Gln
85 90 95

Asn Ser Leu Leu Gln Ile Ser Tyr Arg Ser Leu Asp Ser Leu Thr Phe
100 105 110

Ser Ile Leu Asn Gln Thr Lys Ile Phe Phe Thr Ala Phe Phe Thr Phe
115 120 125

Ile Ile Leu Arg Gln Lys Gln Ser Val Gln Gln Ile Gly Ala Leu Cys
130 135 140

Leu Leu Ile Met Ala Ala Val Leu Leu Ser Val Gly Glu Gly Ser Asn
145 150 155 160

Lys Ser Ser Ser Gly Gly Val Asn Pro Glu His Val Leu Phe Tyr Gly
165 170 175

Ile Ile Pro Val Leu Leu Ala Ser Val Leu Ser Gly Leu Ala Ser Ser
180 185 190

Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser Ser Tyr Leu Met
195 200 205

Thr Leu Glu Met Ser Ile Val Gly Ser Leu Cys Leu Leu Val Ser Thr
210 215 220

Leu Lys Ser Pro Asp Gly Glu Ala Ile Lys Arg His Gly Phe Phe His
225 230 235 240

Gly Trp Thr Ala Leu Thr Met Val Pro Val Ile Ser Asn Ala Leu Gly
245 250 255

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

Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu Gln Phe
275 280 285

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

Leu Val Ile Ser Ser Ile Ser Leu Tyr Gln Lys Tyr Pro Tyr Met Asp
305 310 315 320

Lys Lys Lys Lys Lys Val
325

P12567WO_SEQ_ST25

<210> 10
 <211> 326
 <212> PRT
 <213> Brassica napus

<400> 10

Met Ala Thr Pro Asn Gly Val Lys Ser Gln Ser Arg Met Gly Pro Lys
 1 5 10 15

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

Leu Ile Ser Lys Arg Cys Ile Gly Arg Glu Val Ile Val Thr Ser Ser
 35 40 45

Val Leu Thr Cys Glu Ile Val Lys Val Ile Cys Ala Leu Ile Leu Met
 50 55 60

Ala Arg Asp Gly Ser Leu Lys Gly Leu Ser Lys Glu Trp Thr Leu Met
 65 70 75 80

Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala Leu Gln
 85 90 95

Asn Ser Leu Leu Gln Ile Ser Tyr Arg Ser Leu Asp Ser Leu Thr Phe
 100 105 110

Ser Ile Leu Asn Gln Thr Lys Ile Phe Phe Thr Ala Phe Phe Thr Phe
 115 120 125

Ile Ile Leu Arg Gln Lys Gln Ser Val Gln Gln Met Gly Ala Leu Cys
 130 135 140

Leu Leu Ile Met Ala Ala Val Leu Leu Ser Val Gly Glu Gly Ser Asn
 145 150 155 160

Lys Ser Ser Ser Asp Gly Val Asn Pro Glu Gln Val Leu Phe Tyr Gly
 165 170 175

Ile Ile Pro Val Leu Val Ala Ser Val Leu Ser Gly Leu Ala Ser Ser
 180 185 190

Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser Ser Tyr Leu Met
 195 200 205

Thr Val Glu Met Ser Ile Val Gly Ser Leu Cys Leu Leu Val Ser Thr
 210 215 220

Leu Lys Ser Pro Asp Gly Glu Ala Ile Lys Arg His Gly Phe Phe His
 225 230 235 240

Gly Trp Thr Ala Leu Thr Met Val Pro Val Ile Ser Asn Ala Leu Gly
 245 250 255

P12567WO_SEQ_ST25

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

Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu Gln Phe
275 280 285

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

Leu Val Ile Ser Ser Ile Ser Leu Tyr Gln Lys Tyr Pro Tyr Leu Asp
305 310 315 320

Lys Lys Lys Lys Lys Val
325

<210> 11
<211> 326
<212> PRT
<213> Brassica napus

<400> 11

Met Ala Ala Ser Asn Gly Ala Lys Ser Ala Ser Lys Met Gly Pro Lys
1 5 10 15

Val Leu Phe Tyr Ser Leu Leu Leu Thr Leu Gln Tyr Gly Ala Gln Pro
20 25 30

Leu Ile Ser Lys Arg Cys Ile Gly Lys Glu Val Ile Val Thr Ser Ser
35 40 45

Val Leu Thr Cys Glu Ile Val Lys Val Val Cys Ala Leu Ile Leu Met
50 55 60

Ala Arg Asp Gly Ser Leu Lys Gly Leu Ala Lys Glu Trp Thr Leu Met
65 70 75 80

Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala Leu Gln
85 90 95

Asn Ser Leu Leu Gln Ile Ser Tyr Arg Ser Leu Asp Ser Leu Thr Phe
100 105 110

Ser Ile Leu Asn Gln Thr Lys Ile Phe Phe Thr Ala Phe Phe Thr Phe
115 120 125

Ile Ile Leu Arg Gln Lys Gln Ser Val Gln Gln Ile Gly Ala Leu Cys
130 135 140

Leu Leu Ile Met Ala Ala Val Leu Leu Ser Val Gly Glu Gly Ser Asn
145 150 155 160

P12567WO_SEQ_ST25

Lys Thr Ser Ser Ser Gly Ile Asn Pro Glu Gln Val Leu Phe Ser Gly
165 170 175

Ile Ile Pro Val Leu Val Ala Ser Val Leu Ser Gly Leu Ala Ser Ser
180 185 190

Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser Ser Tyr Leu Met
195 200 205

Thr Val Glu Met Ser Ile Val Gly Ser Leu Cys Met Leu Ala Ser Thr
210 215 220

Leu Lys Ser Pro Asp Gly Glu Ala Ile Lys Arg His Gly Phe Phe His
225 230 235 240

Gly Trp Thr Ala Leu Thr Leu Val Pro Val Ile Ser Asn Ala Leu Gly
245 250 255

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

Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu Gln Phe
275 280 285

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

Leu Val Ile Ser Ser Ile Ser Leu Tyr Gln Lys Tyr Pro Tyr Leu Asp
305 310 315 320

Lys Lys Lys Lys Lys Val
325

<210> 12
<211> 323
<212> PRT
<213> Brassica napus

<400> 12

Met Ala Ala Ser Asn Gly Ala Lys Ser Pro Ser Lys Met Val Leu Phe
1 5 10 15

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

Lys Arg Cys Ile Gly Lys Glu Val Ile Val Thr Ser Ser Val Leu Thr
35 40 45

Cys Glu Ile Val Lys Val Ile Cys Ala Leu Val Leu Met Ala Arg Asp
50 55 60

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

P12567WO_SEQ_ST25

Thr Ala Ser Gly Leu₈₅ Pro Ala Ala Ile Tyr₉₀ Ala Leu Gln Asn Ser₉₅ Leu
 Leu Gln Ile Ser₁₀₀ Tyr Arg Ser Leu Asp₁₀₅ Ser Leu Thr Phe Ser₁₁₀ Ile Leu
 Asn Gln Thr₁₁₅ Lys Ile Phe Phe Thr₁₂₀ Ala Phe Phe Thr Phe₁₂₅ Ile Ile Leu
 Arg Gln Lys Gln Ser Val Gln₁₃₅ Gln Ile Gly Ala Leu₁₄₀ Cys Leu Leu Ile
 Met Ala Ala Val Leu₁₅₀ Ser Val Gly Glu Gly₁₅₅ Ser Asn Lys Thr Ser₁₆₀
 Ser Ser Gly Ile Asn₁₆₅ Pro Glu Gln Val Leu₁₇₀ Phe Ser Gly Ile Ile₁₇₅ Pro
 Val Leu Val Ala₁₈₀ Ser Val Leu Ser Gly₁₈₅ Leu Ala Ser Ser Leu₁₉₀ Cys Gln
 Trp Ala Ser₁₉₅ Gln Val Lys Lys His₂₀₀ Ser Ser Tyr Leu Met₂₀₅ Thr Val Glu
 Met Ser₂₁₀ Ile Val Gly Ser Leu₂₁₅ Cys Met Leu Ala Ser₂₂₀ Thr Leu Lys Ser
 Pro Asp Gly Glu Ala Ile₂₃₀ Lys Arg His Gly Phe₂₃₅ Phe His Gly Trp Thr₂₄₀
 Ala Leu Thr Met Val₂₄₅ Pro Val Ile Ser Asn₂₅₀ Ala Leu Gly Gly Ile₂₅₅ Leu
 Val Gly Leu Val₂₆₀ Thr Ser His Ala Gly₂₆₅ Gly Val Arg Lys Gly₂₇₀ Phe Val
 Ile Val Ser₂₇₅ Ala Leu Leu Val Thr₂₈₀ Ala Leu Leu Gln Phe₂₈₅ Ala Phe Glu
 Gly Lys₂₉₀ Pro Pro Ser Ser Tyr₂₉₅ Cys Leu Val Ala Leu₃₀₀ Pro Leu Val Ile
 Ser Ser₃₀₅ Ile Ser Leu Tyr₃₁₀ Gln Lys Tyr Pro Tyr₃₁₅ Leu Asp Lys Lys Lys₃₂₀
 Lys Lys Val

<210> 13
 <211> 326
 <212> PRT

<213> Brassica oleracea

<400> 13

Met Ala Ala Ser Asn Gly Ala Lys Ser Pro Ser Lys Met Gly Pro Lys
 1 5 10 15
 Val Leu Phe Tyr Ser Leu Leu Leu Thr Leu Gln Tyr Gly Ala Gln Pro
 20 25 30
 Leu Ile Ser Lys Arg Cys Ile Gly Lys Glu Val Ile Val Thr Ser Ser
 35 40 45
 Val Leu Thr Cys Glu Ile Val Lys Val Val Cys Ala Leu Ile Leu Met
 50 55 60
 Ala Arg Asp Gly Ser Leu Lys Gly Leu Ala Lys Glu Trp Thr Leu Met
 65 70 75 80
 Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala Leu Gln
 85 90 95
 Asn Ser Leu Leu Gln Ile Ser Tyr Arg Ser Leu Asp Ser Leu Thr Phe
 100 105 110
 Ser Ile Leu Asn Gln Thr Lys Ile Phe Phe Thr Ala Phe Phe Thr Phe
 115 120 125
 Ile Ile Leu Arg Gln Lys Gln Ser Val Gln Gln Ile Gly Ala Leu Cys
 130 135 140
 Leu Leu Ile Met Ala Ala Val Leu Leu Ser Val Gly Glu Gly Ser Asn
 145 150 155 160
 Lys Thr Ser Ser Ser Gly Ile Asn Pro Glu Gln Val Leu Phe Ser Gly
 165 170 175
 Ile Ile Pro Val Leu Val Ala Ser Val Leu Ser Gly Leu Ala Ser Ser
 180 185 190
 Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser Ser Tyr Leu Met
 195 200 205
 Thr Val Glu Met Ser Ile Val Gly Ser Leu Cys Met Leu Ala Ser Thr
 210 215 220
 Leu Lys Ser Pro Asp Gly Glu Ala Ile Lys Arg His Gly Phe Phe His
 225 230 235 240
 Gly Trp Thr Ala Leu Thr Leu Val Pro Val Ile Ser Asn Ala Leu Gly
 245 250 255
 Gly Ile Leu Val Gly Leu Val Thr Ser His Ala Gly Gly Val Arg Lys

260

265

270

Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu Gln Phe
 275 280 285

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

Leu Val Ile Ser Ser Ile Ser Leu Tyr Gln Lys Tyr Pro Tyr Leu Asp
 305 310 315 320

Lys Lys Lys Lys Lys Val
 325

<210> 14

<211> 326

<212> PRT

<213> Brassica oleracea

<400> 14

Met Ala Thr Ala Asn Gly Ala Lys Gly Pro Ser Arg Met Gly Pro Lys
 1 5 10 15

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

Leu Ile Ser Lys Arg Cys Ile Gly Lys Glu Val Ile Val Thr Ser Ser
 35 40 45

Val Leu Thr Cys Glu Val Val Lys Val Ile Cys Ala Leu Ile Leu Met
 50 55 60

Ala Arg Asp Gly Ser Leu Lys Lys Leu Ala Lys Glu Trp Thr Leu Met
 65 70 75 80

Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala Leu Gln
 85 90 95

Asn Ser Leu Leu Gln Ile Ser Tyr Arg Ser Leu Asp Ser Leu Thr Phe
 100 105 110

Ser Ile Leu Asn Gln Thr Lys Ile Phe Phe Thr Ala Phe Phe Thr Phe
 115 120 125

Ile Ile Leu Arg Gln Lys Gln Ser Val Gln Gln Ile Gly Ala Leu Cys
 130 135 140

Leu Leu Ile Met Ala Ala Val Leu Leu Ser Val Gly Glu Gly Ser Asn
 145 150 155 160

Lys Ser Ser Ser Gly Gly Val Asn Pro Glu His Val Leu Phe Tyr Gly
 165 170 175

P12567WO_SEQ_ST25

Ile Ile Pro Val₁₈₀ Leu Leu Ala Ser Val₁₈₅ Leu Ser Gly Leu Ala Ser Ser
 Leu Cys Gln₁₉₅ Trp Ala Ser Gln Val₂₀₀ Lys Lys His Ser Ser₂₀₅ Tyr Leu Met
 Thr Leu₂₁₀ Glu Met Ser Ile Val₂₁₅ Gly Ser Leu Cys Leu₂₂₀ Leu Val Ser Thr
 Leu₂₂₅ Lys Ser Pro Asp Gly₂₃₀ Glu Ala Ile Lys Arg₂₃₅ His Gly Phe Phe His₂₄₀
 Gly Trp Thr Ala Leu₂₄₅ Thr Met Val Pro Val₂₅₀ Ile Ser Asn Ala Leu₂₅₅ Gly
 Gly Ile Leu Val₂₆₀ Gly Leu Val Thr Ser₂₆₅ His Ala Gly Gly Val₂₇₀ Arg Lys
 Gly Phe Val₂₇₅ Ile Val Ser Ala Leu₂₈₀ Leu Val Thr Ala Leu₂₈₅ Leu Gln Phe
 Ala Phe₂₉₀ Glu Gly Lys Pro Pro₂₉₅ Ser Ser Tyr Cys Leu₃₀₀ Val Ala Leu Pro
 Leu₃₀₅ Val Ile Ser Ser Ile₃₁₀ Ser Leu Tyr Gln Lys₃₁₅ Tyr Pro Tyr Met Asp₃₂₀
 Lys Lys Lys Lys Lys₃₂₅ Val

<210> 15
 <211> 325
 <212> PRT
 <213> Brassica rapa
 <400> 15

Met Ala Thr Pro Asn₅ Gly Val Lys Ser Gln₁₀ Ser Arg Met Gly₁₅ Pro Thr
 Val Leu Phe Tyr₂₀ Ser Ile Leu Leu Thr₂₅ Leu Gln Tyr Gly₃₀ Ala Gln Pro
 Leu Ile Ser₃₅ Lys Arg Cys Ile Gly₄₀ Lys Glu Val Ile Val₄₅ Thr Ser Ser
 Val Leu₅₀ Thr Cys Glu Ile Val₅₅ Lys Val Ile Cys Ala₆₀ Leu Ile Leu Met
 Ala Arg Asp Gly Ser Leu₇₀ Lys Gly Leu Ser Lys₇₅ Glu Trp Thr Leu Met₈₀
 Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala Leu Gln

Asn Ser Leu Leu Gln Ile Ser Tyr Arg Ser Leu Asp Ser Leu Thr Phe
 100 105 110

Ser Ile Leu Asn Gln Thr Lys Ile Phe Phe Thr Ala Phe Phe Thr Phe
 115 120 125

Ile Ile Leu Arg Gln Lys Gln Ser Val Gln Gln Met Gly Ala Leu Cys
 130 135 140

Leu Leu Ile Met Ala Ala Val Leu Leu Ser Val Gly Glu Gly Ser Asn
 145 150 155 160

Lys Ser Ser Ser Gly Gly Val Asn Pro Glu Gln Val Leu Phe Tyr Gly
 165 170 175

Ile Ile Pro Val Leu Val Ala Ser Val Leu Ser Gly Leu Ala Ser Ser
 180 185 190

Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser Ser Tyr Leu Met
 195 200 205

Thr Val Glu Met Ser Ile Val Gly Ser Leu Cys Leu Leu Val Ser Thr
 210 215 220

Leu Lys Ser Pro Asp Gly Glu Ala Ile Lys Arg His Gly Phe Phe His
 225 230 235 240

Gly Trp Thr Ala Leu Thr Met Val Pro Val Ile Ser Asn Ala Leu Gly
 245 250 255

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

Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu Gln Phe
 275 280 285

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

Leu Val Ile Ser Ser Ile Ser Gln Tyr Gln Lys Tyr Pro Tyr Met Asp
 305 310 315 320

Lys Lys Lys Lys Val
 325

<210> 16
 <211> 322
 <212> PRT
 <213> Brassica rapa

<400> 16

P12567WO_SEQ_ST25

Met Ala Ala Ser Asn Gly Ala Lys Ser Pro Ser Lys Lys Val Leu Phe
1 5 10 15

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

Lys Arg Cys Ile Gly Lys Glu Val Ile Val Thr Ser Ser Val Leu Thr
35 40 45

Cys Glu Ile Val Lys Val Val Cys Ala Leu Ile Leu Met Ala Arg Asp
50 55 60

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

Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala Leu Gln Asn Ser Leu
85 90 95

Leu Gln Ile Ser Tyr Arg Ser Leu Asp Ser Leu Thr Phe Ser Ile Leu
100 105 110

Asn Gln Thr Lys Ile Phe Phe Thr Ala Phe Phe Thr Phe Ile Ile Leu
115 120 125

Arg Gln Lys Gln Ser Val Gln Gln Ile Gly Ala Leu Cys Leu Leu Ile
130 135 140

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

Ser Ser Gly Ile Asn Pro Glu Gln Val Leu Phe Ser Gly Ile Ile Pro
165 170 175

Val Leu Val Ala Ser Val Leu Ser Gly Leu Ala Ser Ser Leu Cys Gln
180 185 190

Trp Ala Ser Gln Val Lys Lys His Ser Ser Tyr Leu Met Thr Val Glu
195 200 205

Met Ser Ile Val Gly Ser Leu Cys Met Leu Ala Ser Thr Leu Lys Ser
210 215 220

Pro Asp Gly Glu Ala Ile Lys Arg His Gly Phe Phe His Gly Trp Thr
225 230 235 240

Ala Leu Thr Met Val Pro Val Ile Ser Asn Ala Leu Gly Gly Ile Leu
245 250 255

Val Gly Leu Val Thr Ser His Ala Gly Gly Val Arg Lys Gly Phe Val
260 265 270

P12567WO_SEQ_ST25

Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu Gln Phe Ala Phe Glu
275 280 285

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

Ser Ser Ile Ser Leu Tyr Gln Lys Tyr Pro Tyr Leu Asp Lys Lys Lys
305 310 315 320

Lys Lys

<210> 17

<211> 332

<212> PRT

<213> Fragaria vesca

<400> 17

Met Ala Thr Ala Thr Ala Ala Ala Ala Lys Pro Lys Arg Pro Pro Pro
1 5 10 15

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

Ala Leu Gln Tyr Gly Ala Gln Pro Leu Ile Ser Lys Arg Phe Ile Arg
35 40 45

Arg Glu Val Ile Val Thr Ser Ser Val Leu Thr Cys Glu Val Ala Lys
50 55 60

Val Ile Cys Ala Leu Val Phe Met Ala Arg Asp Gly Ser Leu Lys Lys
65 70 75 80

Val Tyr Lys Glu Trp Thr Leu Leu Gly Ala Leu Thr Ala Ser Gly Leu
85 90 95

Pro Ala Ala Ile Tyr Ala Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr
100 105 110

Lys Asn Leu Asp Ser Leu Thr Phe Ser Met Leu Asn Gln Thr Lys Ile
115 120 125

Ile Phe Thr Ala Met Cys Thr Tyr Leu Ile Leu Arg Gln Lys Gln Ser
130 135 140

Ile Gln Gln Val Gly Ala Leu Phe Leu Leu Ile Ile Ala Ala Val Leu
145 150 155 160

Leu Ser Phe Gly Glu Gly Ser Ser Lys Arg Ser Ser Gly Gly Asn Ser
165 170 175

Asp Gln Ile Trp Phe Asn Gly Ile Ile Pro Val Leu Val Ala Ser Val
180 185 190

P12567WO_SEQ_ST25

Leu Ser Gly Leu Ala Ser Ser Leu Cys Gln Trp Ala Ser Gln Val Lys
195 200 205

Lys His Ser Ser Tyr Leu Met Thr Val Glu Met Ser Ile Val Gly Ser
210 215 220

Leu Cys Met Leu Ala Ser Thr Ala Lys Ser Pro Asp Gly Glu Ala Ile
225 230 235 240

Arg Lys His Gly Leu Phe Tyr Gly Trp Thr Ile Leu Thr Trp Ile Pro
245 250 255

Val Met Ser Asn Ala Leu Gly Gly Ile Leu Val Gly Leu Val Thr Thr
260 265 270

His Ala Gly Gly Val Arg Lys Gly Phe Val Ile Val Ser Ala Leu Leu
275 280 285

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

Tyr Cys Leu Ala Ser Leu Pro Leu Val Val Ser Ser Ile Ser Ile Tyr
305 310 315 320

Gln Lys Tyr Pro Tyr Arg Val Lys Lys Lys Glu Ser
325 330

<210> 18
<211> 327
<212> PRT
<213> Prunus persica
<400> 18

Met Ala Ala Thr Lys His Lys Ala Pro Val Arg Ser Ser Glu Lys Met
1 5 10 15

Asn Ser Arg Val Trp Leu Phe Ser Leu Leu Leu Thr Leu Gln Tyr Gly
20 25 30

Ala Gln Pro Leu Ile Ser Lys Arg Cys Thr Arg Arg Glu Val Ile Val
35 40 45

Thr Ser Ser Val Leu Thr Cys Glu Ile Ala Lys Val Val Cys Ala Leu
50 55 60

Ile Phe Met Ala Arg Asp Gly Ser Leu Lys Lys Val Tyr Lys Glu Trp
65 70 75 80

Thr Leu Val Gly Ala Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr
85 90 95

P12567WO_SEQ_ST25

Ala Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Lys Asn Leu Asp Ser
100 105 110

Leu Thr Phe Ser Met Leu Asn Gln Thr Lys Ile Ile Phe Thr Ala Leu
115 120 125

Phe Thr Tyr Leu Ile Leu Arg Gln Lys Gln Ser Ile Gln Gln Ile Gly
130 135 140

Ala Leu Phe Leu Leu Ile Leu Ala Ala Ile Leu Leu Ser Phe Gly Glu
145 150 155 160

Gly Ser Lys Lys Gly Ser Ser Ala Ser Asn Ser Asp Gln Ile Leu Phe
165 170 175

Asn Gly Ile Ile Pro Val Met Val Ala Ser Val Leu Ser Gly Leu Ala
180 185 190

Ser Thr Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser Ser Tyr
195 200 205

Leu Met Thr Val Glu Met Ser Ile Val Gly Ser Leu Cys Leu Leu Ala
210 215 220

Ser Thr Phe Lys Ser Pro Asp Gly Glu Ala Ile Ala Lys His Gly Leu
225 230 235 240

Phe Tyr Gly Trp Thr Leu Met Thr Trp Ile Pro Val Met Ser Asn Ala
245 250 255

Leu Gly Gly Ile Leu Val Gly Leu Val Thr Ser Tyr Ala Gly Gly Val
260 265 270

Lys Lys Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu
275 280 285

Gln Phe Ile Phe Glu Gly Lys Pro Pro Ser Leu Tyr Cys Leu Val Ala
290 295 300

Leu Pro Leu Val Val Ser Ser Ile Ser Ile Tyr Gln Lys Tyr Pro Tyr
305 310 315 320

Arg Val Lys Arg Lys Glu Leu
325

<210> 19
<211> 328
<212> PRT
<213> Malus domestica

<220>
<221> misc_feature
<222> (247)..(247)

<223> Xaa can be any naturally occurring amino acid

<400> 19

Met Ala Ala Gly Lys Gln Lys Ala Pro Ala Pro Pro Ser Ala Glu Lys
1 5 10 15

Ile Asn Ser Arg Val Trp Phe Tyr Ser Leu Leu Leu Thr Leu Gln Tyr
20 25 30

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

Val Thr Ser Ser Val Leu Thr Cys Glu Ile Ala Lys Ile Ile Cys Ala
50 55 60

Leu Ile Phe Met Ala Arg Asp Gly Ser Leu Lys Lys Val Tyr Arg Glu
65 70 75 80

Trp Thr Leu Val Gly Ala Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile
85 90 95

Tyr Ala Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Lys Asn Leu Asp
100 105 110

Ser Leu Thr Phe Ser Met Leu Asn Gln Thr Lys Ile Ile Phe Thr Ala
115 120 125

Leu Phe Thr Tyr Leu Ile Leu Arg Gln Lys Gln Ser Ile Gln Gln Ile
130 135 140

Gly Ala Leu Val Leu Leu Ile Met Ala Ala Val Leu Leu Ser Phe Gly
145 150 155 160

Glu Gly Ser Lys Lys Gly Thr Ser Ser Gly Ser Ser Asp Gln Ile Leu
165 170 175

Phe Arg Gly Ile Ile Pro Val Leu Val Ala Ser Val Leu Ser Gly Leu
180 185 190

Ala Ser Ser Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser Ser
195 200 205

Tyr Leu Met Thr Val Glu Met Ser Val Val Gly Ser Leu Cys Leu Leu
210 215 220

Ala Ser Thr Ser Lys Ser Pro Asp Gly Glu Ala Ile Arg Ile His Gly
225 230 235 240

Phe Phe Tyr Gly Trp Thr Xaa Met Thr Trp Ile Pro Val Met Ser Asn
245 250 255

Ala Leu Gly Gly Ile Leu Val Gly Leu Val Thr Ser Tyr Ala Gly Gly

260

265

270

Val Lys Lys Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Met
 275 280 285

Leu Gln Phe Ile Phe Glu Gly Lys Pro Pro Ser Leu Tyr Cys Leu Leu
 290 295 300

Ala Leu Pro Leu Val Ala Ser Ser Ile Ser Ile Tyr Gln Lys Tyr Pro
 305 310 315 320

Tyr Arg Val Lys Lys Lys Glu Ala
 325

<210> 20

<211> 326

<212> PRT

<213> Brachypodium distachyon

<400> 20

Met Gly Ser Val Ser Lys Pro Ser Pro Thr Ala Ala Ala Pro Ser Arg
 1 5 10 15

Arg Arg Val Ala Leu Tyr Leu Ala Leu Leu Thr Leu Gln Tyr Gly Ala
 20 25 30

Gln Pro Leu Ile Ser Lys Arg Phe Val Arg Arg Glu Val Ile Val Thr
 35 40 45

Ser Leu Val Leu Ala Ile Glu Val Leu Lys Val Met Cys Ala Val Ile
 50 55 60

Leu Leu Val Ala Glu Gly Ser Leu Lys Lys Gln Phe Ser Asn Trp Asn
 65 70 75 80

Leu Ala Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala
 85 90 95

Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Lys Asn Leu Asp Ser Leu
 100 105 110

Thr Phe Ser Ile Leu Asn Gln Thr Lys Leu Leu Phe Thr Ala Phe Phe
 115 120 125

Thr Tyr Leu Ile Leu Gly Gln Arg Gln Ser Pro Lys Gln Ile Phe Ala
 130 135 140

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

Thr Thr Lys Gly Leu Asn Gly Gly Ser Ser Glu Tyr Val Leu Leu Tyr
 165 170 175

P12567WO_SEQ_ST25

Gly Ile Ile Pro Val Thr Val Ala Ser Val Leu Ser Gly Leu Ala Ser
180 185 190

Ser Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Ala Ser Tyr Leu
195 200 205

Met Thr Ile Glu Met Ser Phe Ile Gly Ser Met Cys Leu Leu Ala Ser
210 215 220

Thr Phe Gln Ser Pro Asp Gly Glu Ala Met Lys Lys Tyr Gly Phe Phe
225 230 235 240

His Glu Trp Thr Ser Leu Thr Leu Ile Pro Val Leu Met Asn Ala Val
245 250 255

Gly Gly Ile Leu Val Gly Leu Val Thr Thr Tyr Ala Gly Gly Val Arg
260 265 270

Lys Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu Gln
275 280 285

Phe Ile Phe Asp Gly Lys Pro Pro Ser Val Tyr Cys Leu Met Ala Leu
290 295 300

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

Asp Arg Lys Lys Lys Asp
325

<210> 21
<211> 327
<212> PRT
<213> sorghum bicolor
<400> 21

Met Gly Ser Ser Ser Thr Pro Ala Ala Ala Ala Ala Ala Ala Pro Ser
1 5 10 15

Arg Arg Lys Val Ala Leu Tyr Leu Ala Leu Leu Thr Leu Gln Tyr Gly
20 25 30

Ala Gln Pro Leu Ile Ser Lys Arg Phe Val Arg Gln Asp Thr Ile Val
35 40 45

Thr Ser Leu Val Leu Ala Thr Glu Ala Ala Lys Val Ile Cys Ala Ile
50 55 60

Ile Leu Leu Ile Ala Glu Gly Ser Leu Arg Lys Gln Phe Ser Asn Trp
65 70 75 80

Thr Leu Thr Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr
Seite 23

Ala Leu Gln Asn Ser Leu Leu Gln Val Ser Tyr Lys Asn Leu Asp Ser
100 105 110

Leu Thr Phe Ser Ile Leu Asn Gln Thr Lys Leu Leu Trp Thr Ala Phe
115 120 125

Phe Thr Phe Leu Ile Leu Gly Gln Lys Gln Ser Ser Arg Gln Ile Leu
130 135 140

Ala Leu Ala Leu Leu Ile Gly Ala Ala Val Leu Leu Ser Val Gly Glu
145 150 155 160

Ser Thr Ser Lys Gly Ser Lys Ser Gly Gly Ser Asp Tyr Ile Leu Leu
165 170 175

Tyr Gly Ile Ile Pro Val Thr Val Ala Ser Met Leu Ser Gly Leu Ala
180 185 190

Ser Ser Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Thr Ser Tyr
195 200 205

Met Met Thr Ile Glu Met Ser Phe Ile Gly Ser Met Cys Leu Leu Ala
210 215 220

Ser Thr Tyr Arg Ser Pro Asp Gly Glu Ala Ile Arg Lys Tyr Gly Phe
225 230 235 240

Phe His Glu Trp Thr Phe Trp Thr Val Val Pro Val Leu Met Asn Ala
245 250 255

Val Gly Gly Ile Leu Val Gly Leu Val Thr Thr Tyr Ala Gly Gly Val
260 265 270

Arg Lys Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu
275 280 285

Gln Phe Val Phe Asp Gly Lys Pro Pro Ser Leu Tyr Cys Leu Met Ala
290 295 300

Leu Pro Leu Val Ala Thr Ser Ile Phe Ile Tyr Gln Lys Tyr Pro Tyr
305 310 315 320

Val Asp Arg Lys Lys Lys Asp
325

<210> 22

<211> 326

<212> PRT

<213> Hordeum vulgare

<400> 22

P12567WO_SEQ_ST25

Met Gly Ser Ala Ser Lys Pro Ser Pro Ser Ala Ala Ala Pro Ser Arg
1 5 10 15

Arg Lys Val Ala Leu Cys Leu Thr Leu Leu Thr Leu Gln Tyr Gly Ala
20 25 30

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

Ser Leu Val Leu Ala Ile Glu Leu Leu Lys Val Ile Cys Ala Val Ile
50 55 60

Leu Leu Val Ala Glu Gly Ser Leu Lys Ala Gln Phe Ser Asn Trp Ser
65 70 75 80

Leu Val Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala
85 90 95

Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Lys Asn Leu Asp Ser Leu
100 105 110

Thr Phe Ser Ile Leu Asn Gln Thr Lys Leu Leu Phe Thr Ala Phe Phe
115 120 125

Thr Tyr Leu Ile Leu Gly Gln Lys Gln Ser Pro Lys Gln Ile Leu Ala
130 135 140

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

Ser Arg Lys Gly Val Ser Gly Gly Ser Ser Asp Tyr Val Leu Leu Tyr
165 170 175

Gly Ile Ile Pro Val Thr Val Ala Ser Val Leu Ser Gly Leu Ala Ser
180 185 190

Ser Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Thr Ser Tyr Met
195 200 205

Met Thr Ile Glu Met Ser Phe Ile Gly Ser Met Cys Leu Leu Ala Ser
210 215 220

Thr Phe Gln Ser Pro Asp Gly Glu Ala Leu Arg Ile Tyr Gly Phe Phe
225 230 235 240

His Glu Trp Thr Leu Trp Thr Val Ile Pro Val Leu Met Asn Ala Val
245 250 255

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

P12567WO_SEQ_ST25

Lys Gly Phe Val Ile Val Leu Ala Leu Leu Val Thr Ala Leu Leu Gln
275 280 285

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

Pro Leu Val Met Thr Ser Ile Phe Ile Tyr Gln Lys Tyr Pro Tyr Val
305 310 315 320

Asp Arg Lys Lys Lys Asp
325

<210> 23

<211> 325

<212> PRT

<213> *Setaria italica*

<400> 23

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

Lys Val Ala Leu Tyr Leu Thr Leu Leu Thr Leu Gln Tyr Gly Ala Gln
20 25 30

Pro Leu Ile Ser Lys Arg Phe Val Arg Gln Asp Thr Ile Val Thr Ser
35 40 45

Leu Val Leu Ala Thr Glu Gly Ala Lys Val Ile Cys Ala Ile Ile Leu
50 55 60

Leu Ile Ala Glu Gly Gly Leu Lys Lys Gln Phe Ser Asn Trp Ser Leu
65 70 75 80

Thr Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala Leu
85 90 95

Gln Asn Ser Leu Leu Gln Ile Ser Tyr Lys Asn Leu Asp Ser Leu Thr
100 105 110

Phe Ser Ile Leu Asn Gln Thr Lys Leu Leu Trp Thr Ala Phe Phe Thr
115 120 125

Tyr Leu Ile Leu Gly Gln Lys Gln Ser Ser Lys Gln Ile Leu Ala Leu
130 135 140

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

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

Ile Ile Pro Val Thr Val Ala Ser Met Leu Ser Gly Leu Ala Ser Ser
180 185 190

P12567WO_SEQ_ST25

Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Thr Ser Tyr Met Met
195 200 205
Thr Ile Glu Met Ser Phe Ile Gly Ser Leu Cys Leu Leu Ala Ser Thr
210 215 220
Tyr Arg Ser Pro Asp Gly Glu Ala Ile Arg Lys Tyr Gly Phe Phe His
225 230 235 240
Glu Trp Thr Leu Trp Thr Thr Val Pro Val Leu Met Asn Ala Val Gly
245 250 255
Gly Ile Leu Val Gly Leu Val Thr Thr Tyr Ala Gly Gly Val Arg Lys
260 265 270
Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu Gln Phe
275 280 285
Ile Phe Asp Gly Lys Pro Pro Ser His Tyr Cys Leu Met Ala Leu Pro
290 295 300
Leu Val Met Thr Ser Ile Phe Ile Tyr Gln Lys Tyr Pro Tyr Ala Asp
305 310 315 320
Arg Lys Lys Lys Asp
325

<210> 24
<211> 327
<212> PRT
<213> Zea mays

<400> 24

Met Gly Ser Ser Ser Ala Pro Ala Ala Ala Ala Ala Ala Pro Ser
1 5 10 15
Arg Arg Lys Val Ala Leu Tyr Leu Ala Leu Leu Thr Leu Gln Tyr Gly
20 25 30
Ala Gln Pro Leu Ile Ser Lys Arg Phe Val Arg Glu Asp Thr Ile Val
35 40 45
Thr Ser Leu Val Leu Ala Thr Glu Ala Ala Lys Val Ile Cys Ala Ile
50 55 60
Ile Leu Leu Ile Ala Glu Gly Ser Leu Lys Lys Gln Phe Ser Asn Trp
65 70 75 80
Thr Leu Thr Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr
85 90 95

P12567WO_SEQ_ST25

Ala Leu Gln Asn Ser Leu Leu Gln Val Ser Tyr Lys His Leu Asp Ser
100 105 110

Leu Thr Phe Ser Ile Leu Asn Gln Thr Lys Leu Leu Trp Thr Ala Phe
115 120 125

Phe Thr Phe Leu Ile Leu Gly Gln Lys Gln Ser Ser Arg Gln Ile Leu
130 135 140

Ala Leu Ala Leu Leu Ile Gly Ala Ala Val Leu Leu Ser Val Gly Glu
145 150 155 160

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

Tyr Gly Ile Ile Pro Val Thr Val Ala Ser Val Leu Ser Gly Leu Ala
180 185 190

Ser Ser Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Thr Ser Tyr
195 200 205

Met Met Thr Ile Glu Met Ser Phe Ile Gly Ser Met Cys Leu Leu Ala
210 215 220

Ser Thr Tyr Arg Ser Pro Asp Gly Glu Ala Ile Arg Lys Tyr Gly Phe
225 230 235 240

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

Val Gly Gly Ile Leu Val Gly Leu Val Thr Thr Tyr Ala Gly Gly Val
260 265 270

Arg Lys Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu
275 280 285

Gln Phe Ile Phe Asp Gly Lys Leu Pro Ser Leu Tyr Cys Leu Ile Ala
290 295 300

Leu Pro Leu Val Ala Ser Ser Ile Phe Ile Tyr Gln Lys His Pro Tyr
305 310 315 320

Val Asp Arg Lys Lys Lys Asp
325

<210> 25
<211> 327
<212> PRT
<213> Zea mays

<400> 25

Met Gly Ala Ser Ser Thr Pro Ala Ala Ala Ala Ala Ala Pro Ser
1 5 10 15

P12567WO_SEQ_ST25

Arg Arg Lys Val Thr Leu Tyr Leu Val Leu Leu Thr Leu Gln Tyr Gly
 20 25 30
 Ala Gln Pro Leu Ile Ser Lys Arg Phe Val Arg Gln Asp Thr Ile Val
 35 40 45
 Thr Ser Leu Val Leu Ala Thr Glu Ala Ala Lys Val Ile Cys Ala Ile
 50 55 60
 Ile Leu Leu Ile Ala Asp Gly Ser Leu Lys Lys Gln Phe Ser Asn Trp
 65 70 75 80
 Thr Leu Ile Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr
 85 90 95
 Ala Leu Gln Asn Ser Leu Leu Gln Val Ser Phe Lys Asn Leu Asp Ser
 100 105 110
 Leu Thr Phe Ser Ile Leu Asn Gln Thr Lys Leu Leu Trp Thr Ser Phe
 115 120 125
 Phe Thr Phe Leu Ile Leu Gly Gln Lys Gln Ser Ser Lys Gln Ile Leu
 130 135 140
 Ala Leu Ala Leu Leu Ile Ser Ala Ala Val Leu Leu Ser Val Gly Glu
 145 150 155 160
 Ser Thr Ser Lys Gly Ser Asn Gly Gly Gly Ser Asp Tyr Ile Leu Leu
 165 170 175
 Tyr Gly Ile Ile Pro Val Thr Val Ala Ser Met Leu Ser Gly Leu Ala
 180 185 190
 Ser Ser Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Thr Ser Tyr
 195 200 205
 Met Met Thr Ile Glu Met Ser Phe Ile Gly Ser Val Cys Leu Leu Ala
 210 215 220
 Ser Thr Tyr Arg Ser Pro Asp Gly Glu Ala Ile Arg Lys Tyr Gly Val
 225 230 235 240
 Phe His Glu Trp Thr Phe Trp Thr Met Val Pro Val Leu Met Asn Ala
 245 250 255
 Val Gly Gly Ile Leu Val Gly Leu Val Thr Thr Tyr Ala Gly Gly Ile
 260 265 270
 Arg Lys Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu
 275 280 285

P12567WO_SEQ_ST25

Gln Phe Val Tyr Asp Gly Lys Pro Pro Ser Leu Tyr Cys Leu Met Ala
290 295 300

Leu Pro Leu Val Ala Thr Ser Ile Phe Ile Tyr Gln Lys Tyr Pro Tyr
305 310 315 320

Val Asp Lys Lys Lys Lys Val
325

<210> 26
<211> 327
<212> PRT
<213> Triticum aestivum

<400> 26

Met Gly Ser Ala Ser Lys Pro Ser Pro Thr Ala Ala Ala Pro Ser Arg
1 5 10 15

Arg Lys Val Ala Leu Cys Leu Thr Leu Leu Thr Leu Gln Tyr Gly Ala
20 25 30

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

Ser Leu Val Leu Ala Ile Glu Leu Leu Lys Val Ile Cys Ala Val Ile
50 55 60

Leu Leu Val Ala Glu Gly Ser Leu Lys Glu Gln Phe Ser Asn Trp Ser
65 70 75 80

Leu Val Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala
85 90 95

Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Lys Asn Leu Asp Ser Leu
100 105 110

Thr Phe Ser Ile Leu Asn Gln Thr Lys Leu Leu Phe Thr Ala Phe Phe
115 120 125

Thr Tyr Leu Ile Leu Gly Gln Lys Gln Ser Pro Lys Gln Ile Leu Ala
130 135 140

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

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

Gly Ile Ile Pro Val Thr Val Ala Ser Val Leu Ser Gly Leu Ala Ser
180 185 190

Ser Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Thr Ser Tyr Met
Seite 30

195

200

205

Met Thr Ile Glu Met Ser Phe Ile Gly Ser Met Cys Leu Leu Ala Ser
 210 215 220

Thr Phe Gln Ser Pro Asp Gly Glu Ala Leu Arg Ile Tyr Gly Phe Phe
 225 230 235 240

His Glu Trp Thr Leu Trp Thr Val Ile Pro Val Leu Met Asn Ala Val
 245 250 255

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

Lys Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu Gln
 275 280 285

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

Pro Leu Val Met Thr Ser Ile Phe Ile Tyr Gln Lys Tyr Pro Tyr Val
 305 310 315 320

Asp Ser Lys Lys Lys Asp Arg
 325

<210> 27
 <211> 326
 <212> PRT
 <213> Oryza sativa

<400> 27

Met Gly Ser Ser Ala Thr Pro Ser Thr Ala Ala Ser Ala Pro Gly Arg
 1 5 10 15

Arg Lys Val Ala Leu Tyr Leu Ala Leu Leu Thr Leu Gln Tyr Gly Ala
 20 25 30

Gln Pro Leu Ile Ser Lys Arg Phe Val Arg Gln Glu Val Ile Val Thr
 35 40 45

Thr Leu Val Leu Ser Ile Glu Val Ala Lys Val Ile Cys Ala Val Ile
 50 55 60

Leu Leu Val Ala Glu Gly Ser Leu Lys Lys Gln Phe Asn Asn Trp Ser
 65 70 75 80

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

Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Lys Asn Leu Asp Ser Leu
 100 105 110

P12567WO_SEQ_ST25

Thr Phe Ser Ile Leu Asn Gln Thr Lys Leu Leu Phe Thr Ala Phe Phe
115 120 125

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

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

Ser Ser Lys Gly Ser Gly Gly Gly Asn Ser Asp Tyr Ile Leu Leu Tyr
165 170 175

Gly Ile Ile Pro Val Thr Val Ala Ser Val Leu Ser Gly Leu Ala Ser
180 185 190

Ser Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Thr Ser Tyr Met
195 200 205

Met Thr Ile Glu Met Ser Phe Ile Gly Ser Met Cys Leu Leu Ala Ser
210 215 220

Thr Ser Gln Ser Pro Asp Gly Glu Ala Ile Arg Lys His Gly Phe Phe
225 230 235 240

His Glu Trp Thr Leu Leu Thr Val Val Pro Val Leu Met Asn Ala Val
245 250 255

Gly Gly Ile Leu Val Gly Leu Val Thr Thr Tyr Ala Gly Gly Val Arg
260 265 270

Lys Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu Gln
275 280 285

Phe Ile Phe Asp Gly Lys Pro Pro Ser Leu Tyr Cys Leu Ile Ala Leu
290 295 300

Pro Leu Val Met Thr Ser Ile Phe Ile Tyr Gln Lys Tyr Pro Tyr Val
305 310 315 320

Asp Arg Lys Lys Lys Asp
325

<210> 28
<211> 327
<212> PRT
<213> Glycine max

<400> 28

Met Ala Pro Pro Ala Pro Pro Lys Ser Ser Gln Gly Gln Val Met Asn
1 5 10 15

Asn Ala Arg Ile His Phe Phe Ser Ile Leu Leu Ala Leu Gln Tyr Gly
Seite 32

Ala Gln Pro Leu Ile Ser Lys Arg Phe Ile Arg Arg Glu Val Ile Val
 35 40 45
 Thr Ser Ser Val Leu Thr Cys Glu Leu Ala Lys Val Ile Cys Ala Val
 50 55 60
 Phe Phe Met Ala Lys Asp Gly Ser Leu Arg Lys Leu Tyr Lys Glu Trp
 65 70 75 80
 Thr Leu Val Gly Ala Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr
 85 90 95
 Ala Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Lys Asn Leu Asp Ser
 100 105 110
 Leu Thr Phe Ser Met Leu Asn Gln Thr Lys Ile Phe Phe Thr Ala Leu
 115 120 125
 Phe Ala Tyr Phe Ile Leu Arg Gln Lys Gln Ser Ile Glu Gln Ile Gly
 130 135 140
 Ala Leu Phe Leu Leu Ile Val Ala Ala Val Leu Leu Ser Val Gly Glu
 145 150 155 160
 Gly Ser Thr Lys Gly Ser Ala Ile Gly Asn Ala Asp Gln Ile Leu Phe
 165 170 175
 Tyr Gly Ile Ile Pro Val Leu Val Ala Ser Val Leu Ser Gly Leu Ala
 180 185 190
 Ser Ser Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser Ser Tyr
 195 200 205
 Leu Met Thr Ile Glu Met Ser Ile Val Gly Ser Leu Cys Leu Leu Ala
 210 215 220
 Ser Thr Leu Lys Ser Pro Asp Gly Glu Ala Met Arg Gln His Gly Phe
 225 230 235 240
 Phe Tyr Gly Trp Thr Pro Leu Thr Leu Ile Pro Val Ile Phe Asn Ala
 245 250 255
 Leu Gly Gly Ile Leu Val Gly Leu Val Thr Ser His Ala Gly Gly Val
 260 265 270
 Arg Lys Gly Phe Val Ile Val Ser Ala Leu Leu Ile Thr Ala Leu Leu
 275 280 285
 Gln Phe Ile Phe Asp Gly Lys Thr Pro Ser Leu Tyr Cys Leu Leu Ala
 290 295 300

P12567WO_SEQ_ST25

Leu Pro Leu Val Val Thr Ser Ile Ser Ile Tyr Gln Lys Tyr Pro Tyr
305 310 315 320

Gln Val Lys Lys Lys Glu Ser
325

<210> 29
<211> 329
<212> PRT
<213> Phaseolus vulgaris
<400> 29

Met Ala Pro Pro Pro Pro Pro Lys Ser Arg Gly Ala Thr Gln Gly Ile
1 5 10 15

Asn Asn Ala Ala Arg Ile Gln Phe Phe Ser Ile Leu Leu Ala Leu Gln
20 25 30

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

Ile Val Thr Ser Ser Val Leu Val Cys Glu Leu Ala Lys Val Leu Cys
50 55 60

Ala Val Phe Ile Met Ala Lys Asp Gly Thr Leu Arg Lys Val Tyr Lys
65 70 75 80

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

Ile Tyr Ala Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Lys Asn Leu
100 105 110

Asp Ser Leu Thr Phe Ser Met Leu Asn Gln Thr Lys Ile Phe Phe Thr
115 120 125

Ala Phe Phe Thr Tyr Phe Ile Leu Arg Gln Lys Gln Ser Ile Glu Gln
130 135 140

Ile Gly Ala Leu Phe Leu Leu Ile Val Ala Ala Val Leu Leu Ser Val
145 150 155 160

Gly Glu Gly Ser Ser Lys Gly Ser Ser Ser Val Asn Ala Asp Gln Ile
165 170 175

Leu Phe Tyr Gly Ile Ile Pro Val Leu Val Ala Ser Val Leu Ser Gly
180 185 190

Leu Ala Ser Ser Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser
195 200 205

P12567WO_SEQ_ST25

Ser Tyr Leu Met Thr Ile Glu Met Ser Ile Val Gly Ser Leu Cys Leu
210 215 220

Leu Ala Ser Thr Phe Lys Ser Pro Asp Gly Glu Ala Met Arg Gln His
225 230 235 240

Gly Phe Phe Tyr Gly Trp Thr Pro Leu Thr Leu Ile Pro Val Met Phe
245 250 255

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

Gly Val Arg Lys Gly Phe Val Ile Val Ser Ala Leu Leu Ile Thr Ala
275 280 285

Leu Leu Gln Phe Ile Phe Asp Gly Lys Pro Pro Ser Leu Tyr Cys Leu
290 295 300

Val Ala Leu Pro Leu Val Val Thr Ser Ile Ser Ile Tyr Gln Lys Tyr
305 310 315 320

Pro Asn Gln Val Lys Lys Lys Glu Ser
325

<210> 30

<211> 324

<212> PRT

<213> Cicer arietinum

<400> 30

Met Ala Pro Pro Lys Ser Lys Ala Pro Thr Gln Ala Thr Asn Thr Arg
1 5 10 15

Ile Phe Phe Phe Ser Ile Leu Leu Ala Leu Gln Tyr Gly Ala Gln Pro
20 25 30

Leu Ile Ser Lys Arg Cys Ile Ser Arg Glu Val Ile Val Thr Ser Ser
35 40 45

Val Leu Ala Cys Glu Ala Ala Lys Val Ile Phe Ala Val Tyr Phe Met
50 55 60

Ala Lys Glu Gly Ser Leu Gly Arg Thr Phe Lys Glu Trp Thr Leu Val
65 70 75 80

Gly Ala Leu Thr Ala Ser Gly Leu Pro Ala Ala Ile Tyr Ala Leu Gln
85 90 95

Asn Ser Leu Leu Gln Ile Ser Tyr Lys Asn Leu Asp Ser Leu Thr Phe
100 105 110

Ser Met Leu Asn Gln Thr Lys Ile Ile Phe Thr Ala Leu Phe Thr Tyr
115 120 125

P12567WO_SEQ_ST25

Phe Met Leu Arg Gln Lys Gln Ser Ile Gln Gln Ile Gly Ala Leu Phe
 130 135 140
 Leu Leu Ile Ala Ala Ala Val Leu Leu Ser Val Gly Glu Gly Ser Asn
 145 150 155 160
 Lys Gly Ser Thr Ser Gly Asn Ala Asp Gln Ile Leu Phe Tyr Gly Ile
 165 170 175
 Val Pro Val Leu Ile Ala Ser Leu Leu Ser Gly Leu Ala Ser Ser Leu
 180 185 190
 Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser Ser Tyr Leu Met Thr
 195 200 205
 Val Glu Met Ser Ile Val Gly Ser Leu Cys Leu Leu Ala Ser Thr Phe
 210 215 220
 Lys Ser Pro Asp Gly Glu Ala Met Arg Gln His Gly Phe Phe His Ala
 225 230 235 240
 Trp Thr Pro Leu Thr Trp Ile Pro Val Ile Phe Asn Ala Leu Gly Gly
 245 250 255
 Ile Leu Val Gly Leu Val Thr Ser Tyr Ala Gly Gly Val Arg Lys Gly
 260 265 270
 Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Leu Leu Gln Phe Ile
 275 280 285
 Phe Glu Gly Lys Pro Pro Ser Leu Tyr Cys Leu Val Ala Leu Pro Leu
 290 295 300
 Val Val Gly Ser Ile Ser Ile Tyr Gln Lys Tyr Pro Tyr Gln Ile Lys
 305 310 315 320
 Lys Lys Glu Ser

<210> 31
 <211> 327
 <212> PRT
 <213> Vitis vinifera

<400> 31

Met Ala Thr Lys Lys Arg Gly Val Pro Thr Ala Ile Pro Glu Lys Ala
 1 5 10 15
 Ser Pro Arg Val Trp Leu Tyr Leu Val Leu Leu Thr Leu Gln Tyr Gly
 20 25 30

P12567WO_SEQ_ST25

Ala Gln Pro₃₅ Leu Ile Ser Lys Arg₄₀ Phe Ile Arg Arg Glu₄₅ Val Ile Val
 Thr Ser₅₀ Ser Val Leu Thr Cys₅₅ Glu Val Ala Lys Val₆₀ Ile Cys Ala Leu
 Phe₆₅ Leu Ile Ala Arg Gly₇₀ Gly Gly Leu Lys Lys₇₅ Leu Tyr Asn Glu Trp₈₀
 Thr Leu Val Gly₈₅ Ser Leu Thr Ala Ser Gly₉₀ Leu Pro Ala Ala Ile₉₅ Tyr
 Ala Leu Gln Asn₁₀₀ Ser Leu Leu Gln Ile₁₀₅ Ser Tyr Lys Asn Leu₁₁₀ Asp Ser
 Leu Thr Phe₁₁₅ Ser Met Leu Asn Gln₁₂₀ Thr Lys Leu Phe Phe₁₂₅ Thr Ala Leu
 Phe Thr₁₃₀ Tyr Ile Ile Leu Arg₁₃₅ Gln Lys Gln Ser Thr₁₄₀ Gln Gln Ile Gly
 Ala₁₄₅ Leu Phe Leu Leu Ile₁₅₀ Ile Ala Ala Val Leu₁₅₅ Leu Ser Ile Gly Glu₁₆₀
 Gly Ser Ser Lys Gly₁₆₅ Ser Ser Gly Ser Asn₁₇₀ Pro Asp Gln Ile Leu₁₇₅ Phe
 His Gly Ile Val₁₈₀ Pro Val Leu Val Ala₁₈₅ Ser Val Leu Ser Gly₁₉₀ Leu Ala
 Ser Ala Leu₁₉₅ Cys Gln Trp Ala Ser₂₀₀ Gln Val Lys Lys His₂₀₅ Thr Ser Tyr
 Met Met₂₁₀ Thr Ile Glu Met Ser₂₁₅ Val Val Gly Ser Leu₂₂₀ Cys Leu Leu Ala
 Ser Thr Tyr Lys Ser Pro₂₃₀ Asp Gly Lys Ala Ile₂₃₅ Arg Gln His Gly Phe₂₄₀
 Phe Tyr Gly Trp Thr₂₄₅ Pro Leu Thr Leu Ile₂₅₀ Pro Val Ile Phe Asn₂₅₅ Ala
 Val Gly Gly Ile₂₆₀ Leu Val Gly Leu Val₂₆₅ Thr Ser Tyr Ala Gly₂₇₀ Gly Val
 Arg Lys Gly₂₇₅ Phe Val Ile Val Ser₂₈₀ Ala Leu Leu Val Thr₂₈₅ Ala Leu Leu
 Gln Phe₂₉₀ Ile Phe Asp Gly Lys₂₉₅ Pro Pro Ser Phe Tyr₃₀₀ Cys Ile Leu Ala
 Leu Pro Leu Val Ile Thr Ser Ile Ser Ile Tyr Gln Lys Tyr Pro Tyr

305

310

320

Arg Val Lys Lys Lys Glu Ser
325

<210> 32

<211> 330

<212> PRT

<213> Solanum lycopersicum

<400> 32

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

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

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

Val Ile Val Thr Ser Ser Val Leu Thr Cys Glu Ala Val Lys Val Ile
50 55 60

Cys Ala Leu Val Leu Met Ala Lys Glu Gly Thr Leu Lys Lys Ile Tyr
65 70 75 80

Arg Glu Trp Thr Leu Phe Gly Ser Leu Thr Ala Ser Gly Leu Pro Ala
85 90 95

Ala Ile Tyr Ala Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Lys Asn
100 105 110

Leu Asp Ser Leu Thr Phe Ser Ile Leu Asn Gln Thr Lys Leu Phe Phe
115 120 125

Thr Ala Leu Phe Thr Tyr Ile Ile Leu Arg Gln Lys Gln Ser Ile Gln
130 135 140

Gln Ile Gly Ala Leu Phe Leu Leu Ile Met Ala Ala Val Leu Leu Ser
145 150 155 160

Val Gly Glu Gly Ser Ser Lys Ala Ser Ser Ser Ser Asn Pro Asp Glu
165 170 175

Ile Leu Phe Tyr Gly Ile Val Pro Val Leu Val Ala Ser Val Leu Ser
180 185 190

Gly Leu Ala Ser Ala Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His
195 200 205

Ser Ser Tyr Leu Met Thr Val Glu Met Ser Ile Ile Gly Ser Leu Cys
210 215 220

P12567WO_SEQ_ST25

Leu Ile Ser Ser Thr Ser Lys Ser Pro Asp Gly Glu Ala Ile Arg Gln
225 230 235 240

His Gly Phe Phe Tyr Gly Trp Thr Ala Leu Thr Leu Ile Pro Val Ile
245 250 255

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

Gly Gly Val Arg Lys Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr
275 280 285

Ala Leu Leu Gln Phe Ile Phe Asp Gly Lys Leu Pro Ser Pro Tyr Cys
290 295 300

Leu Val Ala Leu Pro Leu Val Met Ile Ser Ile Ser Thr Tyr Gln Lys
305 310 315 320

Tyr Pro Tyr Arg Val Lys Lys Lys Gln Met
325 330

<210> 33
<211> 312
<212> PRT
<213> Theobroma cacao

<400> 33

Met Ser Pro Arg Val Trp Leu Tyr Ser Ile Leu Leu Thr Phe Gln Tyr
1 5 10 15

Gly Ala Gln Pro Leu Ile Ser Lys Arg Phe Thr Arg Arg Glu Val Ile
20 25 30

Val Thr Ser Ser Val Leu Thr Cys Glu Ile Ala Lys Val Ile Cys Ala
35 40 45

Leu Ile Leu Met Ala Lys Asp Gly Thr Leu Lys Lys Met Ala Lys Glu
50 55 60

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

Tyr Ala Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Arg Asn Leu Asp
85 90 95

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

Leu Phe Thr Tyr Ile Ile Leu Arg Gln Lys Gln Ser Ile Gln Gln Ile
115 120 125

Gly Ala Leu Phe Leu Leu Ile Met Ala Ala Val Leu Leu Ser Ile Gly
Seite 39

130

135

140

Glu Gly Ser Ser Lys Gly Ser Asn Ser Arg Asp Pro Asp Gln Ile Leu
 145 150 155 160

Phe Tyr Gly Ile Val Pro Val Leu Val Ala Ser Val Leu Ser Gly Leu
 165 170 175

Ala Ser Ala Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His Ser Ser
 180 185 190

Tyr Leu Met Thr Val Glu Met Ser Ile Val Gly Ser Leu Cys Leu Leu
 195 200 205

Ala Ser Thr Ser Lys Ser Pro Asp Gly Glu Ala Ile Arg Arg His Gly
 210 215 220

Phe Phe Tyr Gly Trp Thr Pro Leu Thr Leu Ile Pro Val Val Ala Asn
 225 230 235 240

Ala Leu Gly Gly Ile Leu Val Gly Leu Val Thr Ser Leu Ala Gly Gly
 245 250 255

Val Arg Lys Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr Ala Met
 260 265 270

Leu Gln Phe Leu Phe Glu Gly Lys Pro Pro Ser Val Tyr Cys Leu Val
 275 280 285

Ala Leu Pro Leu Val Ile Ser Ser Ile Ser Ile Tyr Gln Lys Tyr Pro
 290 295 300

Tyr Arg Val Lys Lys Lys Glu Ala
 305 310

<210> 34

<211> 331

<212> PRT

<213> Citrus sinensis

<400> 34

Met Ala Thr Val Lys Thr Lys Val Lys Thr Gly Pro Thr Gln Thr Ser
 1 5 10 15

Met Gln Lys Thr Ser Ala Arg Val Phe Leu Tyr Ser Leu Leu Leu Thr
 20 25 30

Leu Gln Tyr Gly Val Gln Pro Leu Ile Ser Lys Arg Cys Ile Arg Arg
 35 40 45

Glu Val Ile Val Thr Thr Ser Val Leu Thr Cys Glu Leu Ala Lys Val
 50 55 60

P12567WO_SEQ_ST25

Ile Phe Ala Leu Ile Phe Met Ala Lys Glu Gly Thr Leu Lys Lys Leu
65 70 75 80

Ser Ser Gln Trp Thr Leu Val Gly Ser Leu Thr Ala Ser Gly Leu Pro
85 90 95

Ala Thr Ile Tyr Ala Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Arg
100 105 110

Asn Leu Asp Ser Leu Thr Phe Ser Met Leu Asn Gln Thr Lys Ile Ile
115 120 125

Phe Thr Ala Leu Phe Thr Tyr Ile Ile Leu Arg Gln Arg Gln Ser Met
130 135 140

Gln Gln Ile Val Ala Val Phe Leu Leu Ile Leu Ala Ala Val Phe Leu
145 150 155 160

Ser Ile Gly Glu Gly Ser Ser Lys Arg Ser Ser Ser Gly Asp Pro Asp
165 170 175

Gln Ile Leu Phe Tyr Gly Ile Val Pro Val Leu Val Ala Ser Val Leu
180 185 190

Ser Gly Leu Ala Ser Ala Leu Cys Gln Trp Ala Ser Gln Val Lys Lys
195 200 205

His Ser Ser Tyr Leu Met Thr Ile Glu Met Ser Ile Val Gly Ser Leu
210 215 220

Cys Leu Leu Ala Ser Ile Ser Lys Ser Pro Asp Gly Glu Ala Ile Arg
225 230 235 240

Gln His Gly Phe Phe Tyr Gly Trp Thr Pro Leu Thr Leu Ile Pro Val
245 250 255

Ile Phe Asn Ser Leu Gly Gly Ile Leu Val Gly Leu Val Thr Ser His
260 265 270

Ala Gly Gly Val Arg Lys Gly Phe Val Ile Val Ser Ala Leu Leu Val
275 280 285

Thr Ala Met Leu Gln Phe Ile Phe Glu Gly Lys Pro Pro Ser Leu Tyr
290 295 300

Cys Leu Ile Ala Leu Pro Leu Val Val Ser Ser Ile Ser Ile Tyr Gln
305 310 315 320

Lys Tyr Pro Tyr Gln Val Lys Lys Lys Glu Val
325 330

P12567WO_SEQ_ST25

<210> 35
 <211> 331
 <212> PRT
 <213> Citrus clementina

<400> 35

Met Ala Thr Val Lys Thr Lys Val Lys Thr Gly Pro Thr Gln Thr Ser
 1 5 10 15

Met Gln Lys Thr Ser Ala Arg Val Phe Leu Tyr Ser Leu Leu Leu Thr
 20 25 30

Leu Gln Tyr Gly Val Gln Pro Leu Ile Ser Lys Arg Cys Ile Arg Arg
 35 40 45

Glu Val Ile Val Thr Thr Ser Val Leu Thr Cys Glu Leu Ala Lys Val
 50 55 60

Ile Phe Ala Leu Ile Phe Met Ala Lys Glu Gly Thr Leu Lys Lys Leu
 65 70 75 80

Ser Ser Gln Trp Thr Leu Val Gly Ser Leu Thr Ala Ser Gly Leu Pro
 85 90 95

Ala Thr Ile Tyr Ala Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Arg
 100 105 110

Asn Leu Asp Ser Leu Thr Phe Ser Met Leu Asn Gln Thr Lys Ile Ile
 115 120 125

Phe Thr Ala Leu Phe Thr Tyr Ile Ile Leu Arg Gln Arg Gln Ser Met
 130 135 140

Gln Gln Ile Val Ala Val Phe Leu Leu Ile Leu Ala Ala Val Phe Leu
 145 150 155 160

Ser Ile Gly Glu Gly Ser Ser Lys Arg Ser Ser Ser Gly Asp Pro Asp
 165 170 175

Gln Ile Leu Phe Tyr Gly Ile Val Pro Val Leu Val Ala Ser Val Leu
 180 185 190

Ser Gly Leu Ala Ser Ala Leu Cys Gln Trp Ala Ser Gln Val Lys Lys
 195 200 205

His Ser Ser Tyr Leu Met Thr Ile Glu Met Ser Ile Val Gly Ser Leu
 210 215 220

Cys Leu Leu Ala Ser Ile Ser Lys Ser Pro Asp Gly Glu Ala Ile Arg
 225 230 235 240

Gln His Gly Phe Phe Tyr Gly Trp Thr Pro Leu Thr Leu Ile Pro Val
 245 250 255

P12567WO_SEQ_ST25

Ile Phe Asn Ser₂₆₀ Leu Gly Gly Ile Leu₂₆₅ Val Gly Leu Val Thr₂₇₀ Ser His

Ala Gly Gly₂₇₅ Val Arg Lys Gly Phe₂₈₀ Val Ile Val Ser Ala₂₈₅ Leu Leu Val

Thr Ala₂₉₀ Met Leu Gln Phe Ile₂₉₅ Phe Glu Gly Lys Pro₃₀₀ Pro Ser Leu Tyr

Cys Leu Ile Ala Leu Pro₃₁₀ Leu Val Val Ser Ser₃₁₅ Ile Ser Ile Tyr Gln₃₂₀

Lys Tyr Pro Tyr Gln₃₂₅ Val Lys Lys Lys Glu₃₃₀ Val

<210> 36
<211> 330
<212> PRT
<213> Picea sitchensis
<400> 36

Met Ala Val Lys₅ Ser Arg Ala Arg Gly Lys₁₀ Gln Asn Ser Glu Asp₁₅ His

Gln Lys His Lys₂₀ Ser Arg Ile Trp Leu₂₅ Tyr Leu Thr Leu₃₀ Thr Leu

Gln Tyr Gly₃₅ Ala Gln Pro Leu Leu₄₀ Ser Lys Arg Phe Ser₄₅ Gly Lys Gly

Val Thr Val Thr Ser Ser Val₅₅ Leu Ile Cys Glu Cys₆₀ Ala Lys Val Leu

Cys Ala Leu Ile Leu Ile₇₀ Val Lys Glu Gly Ser₇₅ Leu Gly Arg Leu Ser₈₀

Glu Glu Trp Thr Phe₈₅ Ile Gly Ser Leu Thr₉₀ Ala Ser Gly Leu Pro₉₅ Ala

Ala Ile Tyr Ala₁₀₀ Leu Gln Asn Ser Leu₁₀₅ Leu Gln Leu Ser Tyr₁₁₀ Arg Asn

Leu Asp Ser₁₁₅ Leu Thr Phe Thr Met₁₂₀ Leu Asn Gln Thr Lys₁₂₅ Leu Phe Phe

Thr Ala₁₃₀ Leu Phe Met Tyr Phe₁₃₅ Ile Leu Gly Gln Lys₁₄₀ Gln Ser Leu Gln

Gln Ile Gly Ala Leu Val₁₅₀ Leu Leu Ile Ile Ala₁₅₅ Ala Phe Leu Leu Ser₁₆₀

P12567WO_SEQ_ST25

Ile Gly Glu Gly Ser₁₆₅ Gly His Gly Ser Arg Gly Val Asp Ser Glu Gln
 170 175
 Ala Phe Leu Leu Gly Ile Ile Pro Val Ile Ala Ala Ser Val Leu Ser
 180 185 190
 Gly Leu Ala Ser Ser Leu Cys Gln Trp Ala Ser Gln Val Lys Lys Arg
 195 200 205
 Ser Ser Tyr Leu Met Thr Ile Glu Met Ser Ala Ile Gly Ser Leu Cys
 210 215 220
 Met Leu Ala Ser Thr Leu Lys Ser Pro Asp Gly Lys Ala Ile Arg Gln
 225 230 235 240
 Gln Gly Phe Phe Ser Gly Trp Thr Ile Leu Thr Leu Ile Pro Ile Phe
 245 250 255
 Thr Asn Ala Val Gly Gly Ile Leu Val Gly Leu Val Thr Thr Gln Ala
 260 265 270
 Gly Gly Val Arg Lys Gly Phe Val Ile Val Ser Ala Leu Ile Val Thr
 275 280 285
 Ala Leu Leu Gln Tyr Val Phe Asp Gly Ile Pro Pro Ser Leu Tyr Val
 290 295 300
 Leu Leu Ser Leu Pro Leu Val Val Thr Ser Ile Ile Ile Tyr Gln Arg
 305 310 315 320
 Tyr Pro Tyr Gln Val Lys Glu Lys Lys Leu
 325 330

<210> 37
 <211> 336
 <212> PRT
 <213> Coffea canephora

<400> 37

Met Thr Ala Val Ala Glu Ala Ala Ala Lys Ser Lys Val Thr Lys Ser
 1 5 10 15
 Ser Ser Gly Asp Gln Ile Ser Asn Pro Asn Gly Lys Val Trp Phe Tyr
 20 25 30
 Ser Leu Leu Leu Thr Leu Gln Tyr Gly Ala Gln Pro Leu Ile Ser Lys
 35 40 45
 Arg Cys Thr Gly Arg Glu Val Thr Val Thr Ser Leu Val Leu Thr Cys
 50 55 60
 Glu Val Val Lys Val Ile Cys Ala Leu Leu Leu Met Ala Lys Asp Gly
 65 70 75 80

P12567WO_SEQ_ST25

Thr Leu Lys Lys Leu₈₅ Phe Lys Glu Trp Thr₉₀ Leu Val Gly Ser Leu₉₅ Thr
Ala Ser Gly Leu₁₀₀ Pro Ala Ala Ile Tyr₁₀₅ Ala Leu Gln Asn Ser₁₁₀ Leu Leu
Gln Ile Ser₁₁₅ Tyr Arg Asn Leu Asp₁₂₀ Ser Leu Thr Phe Ser₁₂₅ Met Leu Asn
Gln Thr₁₃₀ Lys Leu Phe Phe Thr₁₃₅ Ala Phe Phe Met Tyr₁₄₀ Met Ile Leu Arg
Gln₁₄₅ Lys Gln Ser Ile Gln₁₅₀ Gln Ile Gly Ala Leu₁₅₅ Phe Leu Leu Ile Leu₁₆₀
Ala Ala Val Leu₁₆₅ Ser Val Gly Glu Gly₁₇₀ Ser Ser Lys Ala Ser₁₇₅ Ser
Ser Ser Asn Pro₁₈₀ Glu Glu Ile Leu Phe₁₈₅ Arg Gly Ile Ile Pro₁₉₀ Val Leu
Val Ala Ser₁₉₅ Val Leu Ser Gly Leu₂₀₀ Ala Ser Ala Leu Cys₂₀₅ Gln Trp Ala
Ser Gln₂₁₀ Val Lys Lys His Thr₂₁₅ Ser Tyr Leu Met Thr₂₂₀ Val Glu Met Ser
Ile₂₂₅ Ile Gly Ser Leu Cys₂₃₀ Leu Met Ala Ser Phe₂₃₅ Tyr Lys Ser Pro Asp₂₄₀
Gly Glu Thr Ile Arg₂₄₅ Gln His Gly Phe Phe₂₅₀ Tyr Asp Trp Thr Pro₂₅₅ Leu
Thr Leu Ile Pro₂₆₀ Val Ile Phe Asn Ala₂₆₅ Val Gly Gly Ile Leu₂₇₀ Val Gly
Leu Val Thr₂₇₅ Ser Tyr Ala Gly Gly₂₈₀ Val Arg Lys Ala Phe₂₈₅ Val Ile Val
Ser Ala₂₉₀ Leu Leu Val Thr Ala₂₉₅ Leu Leu Gln Phe Val₃₀₀ Phe Asp Gly Lys
Pro₃₀₅ Pro Ser Leu Tyr Cys₃₁₀ Leu Val Ala Leu Pro₃₁₅ Leu Val Ile Thr Ser₃₂₀
Val Ser Val Tyr Gln₃₂₅ Lys Tyr Pro Tyr Arg₃₃₀ Val Lys Ala Lys Glu₃₃₅ Ala

<210> 38
<211> 330
<212> PRT

<213> Musa acuminata

<400> 38

Met Ala Ser Ala Ala Ala Thr Ala His Arg Lys Gly Pro Pro Arg Gln
 1 5 10 15

Glu Ser Pro Arg Ala Lys Val Trp Leu Tyr Leu Thr Leu Leu Thr Leu
 20 25 30

Gln Tyr Gly Ala Gln Pro Leu Ile Ser Lys Arg Phe Ile Arg Arg Asp
 35 40 45

Val Ile Val Thr Ser Ser Val Leu Thr Cys Glu Met Ala Lys Val Ile
 50 55 60

Cys Ala Leu Phe Leu Leu Ala Lys Glu Gly Ser Phe Lys Arg Leu Trp
 65 70 75 80

Lys Glu Trp Thr Leu Val Gly Ala Leu Thr Ala Ser Gly Leu Pro Ala
 85 90 95

Ala Ile Tyr Ala Leu Gln Asn Ser Leu Leu Gln Ile Ser Tyr Lys Asn
 100 105 110

Leu Asp Ser Leu Thr Phe Ser Ile Leu Asn Gln Thr Lys Leu Phe Phe
 115 120 125

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

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

Val Gly Glu Ser Ser Gly Lys Ala Ser Ala Ser Ser Asn Ser Asp Gln
 165 170 175

Val Leu Leu Tyr Gly Ile Ile Pro Val Met Ile Ala Ser Val Leu Ser
 180 185 190

Gly Leu Ala Ser Ser Leu Cys Gln Trp Ala Ser Gln Val Lys Lys His
 195 200 205

Thr Ser Tyr Ile Met Thr Val Glu Met Ser Phe Val Gly Ser Leu Cys
 210 215 220

Leu Leu Ala Ser Thr Tyr Lys Ser Pro Asp Gly Glu Ala Ile Gln Lys
 225 230 235 240

Tyr Gly Phe Phe His Gly Trp Thr Val Trp Thr Leu Ile Pro Val Val
 245 250 255

Met Asn Ala Val Gly Gly Ile Leu Val Gly Leu Val Thr Ala His Ala
 Seite 46

260

265

270

Gly Gly Val Arg Lys Gly Phe Val Ile Val Ser Ala Leu Leu Val Thr
 275 280 285

Ala Met Leu Gln Phe Leu Phe Asp Gly Lys Pro Pro Ser Val Tyr Cys
 290 295 300

Leu Ala Ala Leu Pro Leu Val Ile Ser Ser Ile Val Ile Tyr Gln Lys
 305 310 315 320

Tyr Pro Tyr Val Gly Arg Lys Lys Glu Asp
 325 330

<210> 39

<211> 334

<212> PRT

<213> Physcomitrella patens

<400> 39

Met Gly Thr Glu Glu Val Glu Lys Val Gln Gln His Ala Gln His Asp
 1 5 10 15

Asp Asp Lys Lys Lys Gln Arg Thr Val Ala Ala Leu Cys Met Ala Leu
 20 25 30

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

Gly Lys Tyr Val Ile Met Thr Ser Ala Val Leu Thr Cys Glu Met Val
 50 55 60

Lys Cys Ala Ala Ala Leu Phe Phe Met Ala Arg Asp Gly Thr Leu Trp
 65 70 75 80

Lys Leu Pro Lys Glu Trp Ser Phe Val Asp Ser Leu Lys Ala Ser Ala
 85 90 95

Ser Pro Ala Ala Ile Tyr Ala Leu Gln Asn Thr Leu Leu Gln Leu Ser
 100 105 110

Tyr Arg Asn Leu Asp Ser Leu Thr Phe Ser Leu Leu Asn Gln Thr Lys
 115 120 125

Leu Val Phe Thr Ala Val Phe Met Phe Leu Leu Leu Gly Ser Arg Gln
 130 135 140

Thr Lys Gln Gln Ile Gly Ala Leu Phe Leu Leu Leu Gly Ala Ala Thr
 145 150 155 160

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

P12567WO_SEQ_ST25

Glu Trp Glu Ser Thr Leu Trp Leu Gly Ile Ile Pro Ile Ile Ser Ala
180 185 190

Ser Val Leu Ser Gly Leu Ala Ser Thr Leu Cys Gln Trp Ala Ala Gln
195 200 205

Val Lys Arg Arg Ser Thr Tyr Leu Met Thr Leu Glu Met Ser Thr Tyr
210 215 220

Gly Ser Leu Val Leu Leu Thr Ser Met Trp Trp Ser Pro Asp Gly Val
225 230 235 240

Ser Ile Gln Lys Leu Gly Phe Phe Tyr Gly Trp Ser Leu Leu Thr Phe
245 250 255

Ile Pro Val Cys Leu Asn Ala Phe Gly Gly Ile Leu Val Gly Leu Val
260 265 270

Thr Gln Tyr Ser Gly Gly Ile Lys Lys Gly Phe Val Ile Val Ser Ala
275 280 285

Leu Leu Val Thr Ala Leu Leu Glu Val Ile Val Glu Gly Lys Pro Pro
290 295 300

Ser Ser Tyr Ala Ile Ala Ala Leu Pro Leu Val Val Ser Ser Thr Ile
305 310 315 320

Ile His Gln Asn Tyr Pro Phe Lys Ala Lys Pro Lys Thr Ala
325 330

<210> 40
<211> 20
<212> DNA
<213> artificial

<220>
<223> primer

<400> 40
tgagaaaacg acgtccaatg

20

<210> 41
<211> 20
<212> DNA
<213> artificial

<220>
<223> primer

<400> 41
taaaccgcagc aggacagagg

20

<210> 42
<211> 22
<212> DNA
<213> artificial

<220>
 <223> primer
 <400> 42
 tggttcacgt agtgggccat cg 22

<210> 43
 <211> 20
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 43
 taaacccgac aggacagagg 20

<210> 44
 <211> 20
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 44
 tgagaaaacg acgtccaatg 20

<210> 45
 <211> 23
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 45
 atattgacca tcatactcat tgc 23

<210> 46
 <211> 20
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 46
 gcaagaggct ttagctccaa 20

<210> 47
 <211> 20
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 47
 ttgcccgtaa gatgttttca 20

<210> 48

<211> 20
 <212> DNA
 <213> artificial

 <220>
 <223> primer

 <400> 48
 gcaagaggct ttagctccaa 20

<210> 49
 <211> 34
 <212> DNA
 <213> artificial

 <220>
 <223> primer

 <400> 49
 gccttttcag aaatggataa atagccttgc ttcc 34

<210> 50
 <211> 20
 <212> DNA
 <213> artificial

 <220>
 <223> primer

 <400> 50
 ccttggtgcc tctcgaactc 20

<210> 51
 <211> 20
 <212> DNA
 <213> artificial

 <220>
 <223> primer

 <400> 51
 cgcaagctat ggagaagagg 20

<210> 52
 <211> 21
 <212> DNA
 <213> artificial

 <220>
 <223> primer

 <400> 52
 cccatttgga cgtgtagaca c 21

<210> 53
 <211> 20
 <212> DNA
 <213> artificial

 <220>
 <223> primer

 <400> 53
 cgcaagctat ggagaagagg 20

<210>	54	
<211>	20	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	54	
	gggcactcaa caatcatcaa	20
<210>	55	
<211>	21	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	55	
	tccactgata aatcccactg c	21
<210>	56	
<211>	20	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	56	
	ataacgctgc ggacatctac	20
<210>	57	
<211>	21	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	57	
	tccactgata aatcccactg c	21
<210>	58	
<211>	20	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	58	
	ccacgattcg acccaaagtt	20
<210>	59	
<211>	20	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	

<400> 59
gctccaacac ttgctcttcc 20

<210> 60
<211> 20
<212> DNA
<213> artificial

<220>
<223> primer

<400> 60
ccacgattcg acccaaagtt 20

<210> 61
<211> 22
<212> DNA
<213> artificial

<220>
<223> primer

<400> 61
tggttcacgt agtgggcat cg 22

<210> 62
<211> 29
<212> DNA
<213> artificial

<220>
<223> primer

<400> 62
ccaacttgct gtatatcatt cgtacagt 29

<210> 63
<211> 23
<212> DNA
<213> artificial

<220>
<223> primer

<400> 63
tggagagatt cgccatgtga cag 23

<210> 64
<211> 29
<212> DNA
<213> artificial

<220>
<223> primer

<400> 64
ccaacttgct gtatatcatt cgtacagt 29

<210> 65
<211> 30
<212> DNA
<213> artificial

<220>
 <223> primer
 <400> 65
 caacacgtgg gttaattaag aattcagtac 30

<210> 66
 <211> 20
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 66
 tgcatgacgg ctctaagaca 20

<210> 67
 <211> 20
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 67
 tcgagctctg gaactccaat 20

<210> 68
 <211> 22
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 68
 tggttcacgt agtgggccat cg 22

<210> 69
 <211> 20
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 69
 tcgagctctg gaactccaat 20

<210> 70
 <211> 21
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 70
 ctaccggatc gggttaagtct c 21

<210> 71

<211>	21	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	71	
	gctacaagat tctcccaagc c	21
<210>	72	
<211>	21	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	72	
	ctaccggatc gggttaagtct c	21
<210>	73	
<211>	22	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	73	
	tggttcacgt agtgggcat cg	22
<210>	74	
<211>	20	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	74	
	gtatgggccc taaggttttg	20
<210>	75	
<211>	20	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	75	
	atacgatgat ggcggttttc	20
<210>	76	
<211>	19	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	76	
	ggctaacgga gcaaagagt	19

<210>	77	
<211>	19	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	77	
	cagcgtttgg agatcagag	19
<210>	78	
<211>	20	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	78	
	gctctgattc tcatggcaag	20
<210>	79	
<211>	23	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	79	
	tgctgtgaaa aagattttcg tct	23
<210>	80	
<211>	20	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	80	
	tacaacgagc ttcgtgttgc	20
<210>	81	
<211>	20	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	81	
	tccacatctg ttggaagggtg	20
<210>	82	
<211>	25	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	

<400> 82
ttccatattg ctcacacttc agtac 25

<210> 83
<211> 20
<212> DNA
<213> artificial

<220>
<223> primer

<400> 83
aaacagatgc ccagaaatcg 20

<210> 84
<211> 26
<212> DNA
<213> artificial

<220>
<223> primer

<400> 84
cataaccttg ttatattaat ttgcca 26

<210> 85
<211> 20
<212> DNA
<213> artificial

<220>
<223> primer

<400> 85
aggccggagt tctgtaaag 20

<210> 86
<211> 27
<212> DNA
<213> artificial

<220>
<223> primer

<400> 86
gagccttaca acgctactct gtctgtc 27

<210> 87
<211> 27
<212> DNA
<213> artificial

<220>
<223> primer

<400> 87
acaccagaca tagtagcaga aatcaag 27

<210> 88
<211> 19
<212> DNA
<213> artificial

<220>
 <223> primer
 <400> 88
 ctactcgcag ctaaaacgc 19

<210> 89
 <211> 18
 <212> DNA
 <213> artificial

<220>
 <223> primer
 <400> 89
 gccgaaagaa tcaggaca 18

<210> 90
 <211> 18
 <212> DNA
 <213> artificial

<220>
 <223> primer
 <400> 90
 gagctctccg atgcaaatt 18

<210> 91
 <211> 18
 <212> DNA
 <213> artificial

<220>
 <223> primer
 <400> 91
 gaaaaaggcc ataggggt 18

<210> 92
 <211> 20
 <212> DNA
 <213> artificial

<220>
 <223> primer
 <400> 92
 cttggaacca atctgctctc 20

<210> 93
 <211> 18
 <212> DNA
 <213> artificial

<220>
 <223> primer
 <400> 93
 atcatcgacg gcaagaac 18

<210> 94

<211> 19
 <212> DNA
 <213> artificial

<220>
 <223> primer

<400> 94
 acgaccctct agcgattct 19

<210> 95
 <211> 18
 <212> DNA
 <213> artificial

<220>
 <223> primer

<400> 95
 cggcagtatt gatgcgta 18

<210> 96
 <211> 19
 <212> DNA
 <213> artificial

<220>
 <223> primer

<400> 96
 ggctaacgga gcaaagagt 19

<210> 97
 <211> 19
 <212> DNA
 <213> artificial

<220>
 <223> primer

<400> 97
 cagcgtttgg agatcagag 19

<210> 98
 <211> 24
 <212> DNA
 <213> artificial

<220>
 <223> primer

<400> 98
 acgtaccaag accagcagac tacc 24

<210> 99
 <211> 22
 <212> DNA
 <213> artificial

<220>
 <223> primer

<400> 99
 tgcagtcctt ggtgagactt cg 22

<210>	100	
<211>	22	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	100	
	tggaactcgaa ttgtggcagg tg	22
<210>	101	
<211>	24	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	101	
	tgccaacttc ttggcatagt ctgg	24
<210>	102	
<211>	24	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	102	
	tctgcagatg gtctcaagag ctac	24
<210>	103	
<211>	23	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	103	
	ctcggctttc tcaatcagtt ccg	23
<210>	104	
<211>	28	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	
<400>	104	
	cggagctcgg caggcttcatt gattgatt	28
<210>	105	
<211>	28	
<212>	DNA	
<213>	artificial	
<220>		
<223>	primer	

<400> 105
cgagctctc aatgggttga tttgcgta 28

<210> 106
<211> 30
<212> DNA
<213> artificial

<220>
<223> primer

<400> 106
cgcggttagc cggccgttga ttttgactat 30

<210> 107
<211> 31
<212> DNA
<213> artificial

<220>
<223> primer

<400> 107
cgcggttagc caccttcttc ttcttcttgt c 31

<210> 108
<211> 28
<212> DNA
<213> artificial

<220>
<223> primer

<400> 108
cataggtacc tgcgacggct aacggagc 28

<210> 109
<211> 34
<212> DNA
<213> artificial

<220>
<223> primer

<400> 109
gtctgaattc ttacaccttc ttcttcttct tgtc 34

<210> 110
<211> 28
<212> DNA
<213> artificial

<220>
<223> primer

<400> 110
aaaaagcagg ctttatggga ttgacctc 28

<210> 111
<211> 34
<212> DNA
<213> artificial

<220>
 <223> primer
 <400> 111
 agaaagctgg gttctaactc gagtttattt tttg 34

<210> 112
 <211> 29
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 112
 ggggacaagt ttgtacaaaa aagcaggct 29

<210> 113
 <211> 29
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 113
 ggggaccact ttgtacaaga aagctgggt 29

<210> 114
 <211> 40
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 114
 aaaaagcagg cttcaccatg gcgacggcta acggagcaaa 40

<210> 115
 <211> 37
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 115
 agaaagctgg gtgttacacc ttcttcttct tcttgtc 37

<210> 116
 <211> 37
 <212> DNA
 <213> artificial
 <220>
 <223> primer
 <400> 116
 agaaagctgg gtgttagtca atgtatgggt atttctg 37

<210> 117

<211> 34
<212> DNA
<213> artificial

<220>
<223> primer

<400> 117
agaaagctgg gtgcaccttc ttcttcttct tgtc

34

<210> 118
<211> 30
<212> DNA
<213> artificial

<220>
<223> primer

<400> 118
attaatatgg tgagcaaggg cgaggagctg

30

<210> 119
<211> 29
<212> DNA
<213> artificial

<220>
<223> primer

<400> 119
attaatcttg tacagctcgt ccatgccga

29

<210> 120
<211> 35
<212> DNA
<213> artificial

<220>
<223> primer

<400> 120
cagaattctt agtcaatgta tgggtatttc tggta

35