

PF59082SEQ List- PF59348PCT.txt
SEQUENCE LISTING

<110> BASF Plant Science GmbH

<120> Plants having enhanced yield-related traits and a method for making the same

<130> PF59348

<160> 320

<170> PatentIn version 3.3

<210> 1

<211> 1872

<212> DNA

<213> Arabidopsis thaliana

<400> 1

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35 40 45
Thr Thr Pro Thr Pro Ala Met Glu Ile Pro Ala Gln Ala Gly Phe Asn
50 55 60
Gln Glu Thr Leu Gln Gln Arg Leu Gln Ala Leu Ile Glu Gly Thr His
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Glu Gly Trp Thr Tyr Ala Ile Phe Trp Gln Pro Ser Tyr Asp Phe Ser
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Gly Ala Ser Val Leu Gly Trp Gly Asp Gly Tyr Tyr Lys Gly Glu Glu
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Asp Lys Ala Asn Pro Arg Arg Arg Ser Ser Ser Pro Pro Phe Ser Thr
115 120 125
Pro Ala Asp Gln Glu Tyr Arg Lys Lys Val Leu Arg Glu Leu Asn Ser
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Leu Ile Ser Gly Gly Val Ala Pro Ser Asp Asp Ala Val Asp Glu Glu
145 150 155 160
Val Thr Asp Thr Glu Trp Phe Phe Leu Val Ser Met Thr Gln Ser Phe
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Ala Cys Gly Ala Gly Leu Ala Gly Lys Ala Phe Ala Thr Gly Asn Ala
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PF59082SEQ List- PF59348PCT.txt

Val Trp Val Ser Gly Ser Asp Gln Leu Ser Gly Ser Gly Cys Glu Arg
195 200 205

Ala Lys Gln Gly Gly Val Phe Gly Met His Thr Ile Ala Cys Ile Pro
210 215 220

Ser Ala Asn Gly Val Val Glu Val Gly Ser Thr Glu Pro Ile Arg Gln
225 230 235 240

Ser Ser Asp Leu Ile Asn Lys Val Arg Ile Leu Phe Asn Phe Asp Gly
245 250 255

Gly Ala Gly Asp Leu Ser Gly Leu Asn Trp Asn Leu Asp Pro Asp Gln
260 265 270

Gly Glu Asn Asp Pro Ser Met Trp Ile Asn Asp Pro Ile Gly Thr Pro
275 280 285

Gly Ser Asn Glu Pro Gly Asn Gly Ala Pro Ser Ser Ser Ser Gln Leu
290 295 300

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

Glu Asn Pro Asn Leu Asp Pro Thr Pro Ser Pro Val His Ser Gln Thr
325 330 335

Gln Asn Pro Lys Phe Asn Asn Thr Phe Ser Arg Glu Leu Asn Phe Ser
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Thr Ser Ser Ser Thr Leu Val Lys Pro Arg Ser Gly Glu Ile Leu Asn
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Phe Gly Asp Glu Gly Lys Arg Ser Ser Gly Asn Pro Asp Pro Ser Ser
370 375 380

Tyr Ser Gly Gln Thr Gln Phe Glu Asn Lys Arg Lys Arg Ser Met Val
385 390 395 400

Leu Asn Glu Asp Lys Val Leu Ser Phe Gly Asp Lys Thr Ala Gly Glu
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Ser Asp His Ser Asp Leu Glu Ala Ser Val Val Lys Glu Val Ala Val
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Glu Lys Arg Pro Lys Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu
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Glu Pro Leu Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu
450 455 460

Asn Gln Arg Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys
465 470 475 480

Met Asp Lys Ala Ser Leu Leu Gly Asp Ala Ile Ala Tyr Ile Asn Glu
485 490 495

Leu Lys Ser Lys Val Val Lys Thr Glu Ser Glu Lys Leu Gln Ile Lys
500 505 510

Asn Gln Leu Glu Glu Val Lys Leu Glu Leu Ala Gly Arg Lys Ala Ser
515 520 525

Ala Ser Gly Gly Asp Met Ser Ser Ser Cys Ser Ser Ile Lys Pro Val
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Gly Met Glu Ile Glu Val Lys Ile Ile Gly Trp Asp Ala Met Ile Arg
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Val Glu Ser Ser Lys Arg Asn His Pro Ala Ala Arg Leu Met Ser Ala
565 570 575

Leu Met Asp Leu Glu Leu Glu Val Asn His Ala Ser Met Ser Val Val
580 585 590

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595 600 605

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<211> 7

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<223> Motif 3

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<223> Motif 4

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<223> Motif 7

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<213> Oryza sativa

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Ser Leu Phe Asn Gln Glu Thr Leu Gln Gln Arg Leu Gln Thr Leu Ile
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Glu Gly Ala Glu Glu Ser Trp Thr Tyr Ala Ile Phe Trp Gln Ser Ser
85 90 95

Tyr Asp Tyr Ser Ser Ser Thr Ser Leu Leu Gly Trp Gly Asp Gly Tyr
100 105 110

Tyr Lys Gly Glu Glu Asp Lys Gly Lys Gly Lys Ala Pro Lys Glu Met
115 120 125

Ser Ser Ala Glu Gln Asp His Arg Lys Lys Val Leu Arg Glu Leu Asn
130 135 140

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

Val Ser Asp Thr Glu Trp Phe Phe Leu Val Ser Met Thr Gln Ser Phe
165 170 175

Leu Ser Gly Ser Gly Leu Pro Gly Gln Ala Phe Leu Asn Ser Ser Pro
180 185 190

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

PF59082SEQ List- PF59348PCT.txt

Ala Arg Gln Gly Gln Val Phe Gly Val Gln Thr Leu Val Cys Ile Pro
210 215 220

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225 230 235 240

Asn Ser Asp Leu Met Lys Lys Val Arg Asp Leu Phe Asn Phe Asn Asn
245 250 255

Pro Asp Ala Gly Phe Trp Pro Leu Asn Gln Gly Glu Asn Asp Pro Ser
260 265 270

Ser Leu Trp Leu Asn Pro Ser Ser Ile Glu Ile Lys Asp Thr Ser
275 280 285

Asn Ala Val Ala Leu Val Ser Ala Asn Ala Ser Leu Ser Lys Thr Met
290 295 300

Pro Phe Glu Thr Pro Gly Ser Ser Thr Leu Thr Glu Thr Pro Ser Ala
305 310 315 320

Ala Ala Ala Ala His Val Pro Asn Pro Lys Asn Gln Gly Phe Phe Pro
325 330 335

Arg Glu Leu Asn Phe Ser Asn Ser Leu Lys Pro Glu Ser Gly Glu Ile
340 345 350

Leu Ser Phe Gly Glu Ser Lys Lys Ser Ser Tyr Asn Gly Ser Tyr Phe
355 360 365

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

Ser Arg Ser Ser Ile Asp Asp Gly Met Leu Ser Phe Thr Ser Gly Val
385 390 395 400

Ile Ile Pro Ala Ser Asn Ile Lys Ser Gly Ala Val Ala Gly Gly Gly
405 410 415

Ala ser Gly Gly Asp Ser Glu Asn Ser Asp Leu Glu Ala Ser Val Val
420 425 430

Lys Glu Ala Asp Ser Arg Val Val Glu Pro Glu Lys Arg Pro Arg Lys
435 440 445

Arg Gly Arg Lys Pro Gly Asn Gly Arg Glu Glu Pro Leu Asn His Val
450 455 460

Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg Phe Tyr Ala
465 470 475 480

PF59082SEQ List- PF59348PCT.txt

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

Leu Gly Asp Ala Ile Ser Tyr Ile Asn Glu Leu Lys Ser Lys Leu Ser
500 505 510

Glu Leu Glu Ser Glu Lys Gly Glu Leu Glu Lys Gln Leu Glu Leu Val
515 520 525

Lys Lys Glu Leu Glu Leu Ala Thr Lys Ser Pro Ser Pro Pro Pro Gly
530 535 540

Pro Pro Pro Ser Asn Lys Glu Ala Lys Glu Thr Thr Ser Lys Leu Ile
545 550 555 560

Asp Leu Glu Leu Glu Val Lys Ile Ile Gly Trp Asp Ala Met Ile Arg
565 570 575

Ile Gln Cys Ser Lys Lys Asn His Pro Ala Ala Arg Leu Met Ala Ala
580 585 590

Leu Lys Glu Leu Asp Leu Asp Val Asn His Ala Ser Val Ser Val Val
595 600 605

Asn Asp Leu Met Ile Gln Gln Ala Thr Val Asn Met Gly Asn Arg Phe
610 615 620

Tyr Thr Gln Glu Gln Leu Arg Ser Ala Arg Ser Ser Lys Ile Gly Asn
625 630 635 640

Ala Leu

<210> 15
<211> 2100
<212> DNA
<213> Catharanthus roseus

<400> 15
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gcttcaccaa taattacttc agatgataat agttcgaatg tggaggcttt tatgacctca 120
tcagatccga tttctttgtg gccgccgtca atgtctgtga atcatcacca tccaccaact 180
cctacttctt ccgccgtaac aactgcggtg gactccgcta aatctatgcc tgcccaacct 240
gcttttttca atcaagaaaa tctccaacag cgccttcaaa ctctaattga tgggtgctagg 300
gagagttgga cttatgccat attttggcag tcgtctgttg tcgaattcgc cggtccttcg 360
gtcttggggtt ggggcatgag atattataag ggagaagaag ataaagggaa gaggaagaat 420
tcgtcttccg cgagttcttt tgcagaacag gaacacagaa agaaagtcct tagagagctc 480
aattctttga ttgctgggcc acaaggcacc gccgatgatg cagttgatga agaggtgacc 540

PF59082SEQ List- PF59348PCT.txt

gataccgaat ggttttttctt aatttcaatg actcagtcac ttgtttccgg gagcgggtctt 600
ccagggcagg ccttatacaa ttcaaaccgg gtatgggtta ccggagcagg gaggctggcg 660
gtttcacact gcgaccgggc caggcaggct caaagttttg ggcttcagac cttagtttgt 720
attccctccg caaacggcgt tgtggagctg ggttcaacgg aattgatttt tcagagctcc 780
gatctcatga ataaggttag gatactgttc aattttaata atatagattt gggttcagagc 840
tctggacctt ggcctgagaa cgatccttct tctctgtggc ttactgatcc atcgccctca 900
ggggtagggg ttaaggaggg ggtgaatact aataataata ctagtgttca agggaattca 960
attccttctg gtaataagca gcaacttgtg tttggaaata atgataatca tccaaccacg 1020
agtactttga ctgatcatcc cggggctggg gctgtaaata gttataataa ttcattctcag 1080
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ctcaagtcct caaacaagca gtcagtgggt aacttgataa tggatattga tgtgaaaatc 1860
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gtaatgggag cactaaagga tcttgatctt gaattactcc atgctagtgt ctcagtggta 1980
aatgatttga tgatccagca aaatacagtg agaatgggga gccgatttta tactcaggag 2040
cagcttagaa tagcattgac atccagaata gccggaaact cgatgaggct cttggtatga 2100

<210> 16
<211> 699
<212> PRT
<213> Catharanthus roseus

<400> 16

Met Thr Asp Tyr Arg Leu Gln Pro Lys Met Asn Leu Trp Gly Thr Thr
1 5 10 15

Thr Asn Thr Ala Ala Ser Pro Ile Ile Thr Ser Asp Asp Asn Ser Ser
20 25 30

Met Met Glu Ala Phe Met Thr Ser Ser Asp Pro Ile Ser Leu Trp Pro
Seite 15

35

40

45

Pro Ser Met Ser Val Asn His His His Pro Pro Thr Pro Thr Ser Ser
 50 55 60
 Ala Val Thr Thr Ala Val Asp Ser Ala Lys Ser Met Pro Ala Gln Pro
 65 70 75 80
 Ala Phe Phe Asn Gln Glu Asn Leu Gln Gln Arg Leu Gln Thr Leu Ile
 85 90 95
 Asp Gly Ala Arg Glu Ser Trp Thr Tyr Ala Ile Phe Trp Gln Ser Ser
 100 105 110
 Val Val Glu Phe Ala Gly Pro Ser Val Leu Gly Trp Gly Asp Gly Tyr
 115 120 125
 Tyr Lys Gly Glu Glu Asp Lys Gly Lys Arg Lys Asn Ser Ser Ser Ala
 130 135 140
 Ser Ser Phe Ala Glu Gln Glu His Arg Lys Lys Val Leu Arg Glu Leu
 145 150 155 160
 Asn Ser Leu Ile Ala Gly Pro Gln Gly Thr Ala Asp Asp Ala Val Asp
 165 170 175
 Glu Glu Val Thr Asp Thr Glu Trp Phe Phe Leu Ile Ser Met Thr Gln
 180 185 190
 Ser Phe Val Ser Gly Ser Gly Leu Pro Gly Gln Ala Leu Tyr Asn Ser
 195 200 205
 Asn Pro Val Trp Val Thr Gly Ala Gly Arg Leu Ala Val Ser His Cys
 210 215 220
 Asp Arg Ala Arg Gln Ala Gln Ser Phe Gly Leu Gln Thr Leu Val Cys
 225 230 235 240
 Ile Pro Ser Ala Asn Gly Val Val Glu Leu Gly Ser Thr Glu Leu Ile
 245 250 255
 Phe Gln Ser Ser Asp Leu Met Asn Lys Val Arg Ile Leu Phe Asn Phe
 260 265 270
 Asn Asn Ile Asp Leu Gly Ser Ser Ser Gly Pro Trp Pro Glu Asn Asp
 275 280 285
 Pro Ser Ser Leu Trp Leu Thr Asp Pro Ser Pro Ser Gly Val Gly Val
 290 295 300
 Lys Glu Gly Val Asn Thr Asn Asn Asn Thr Ser Val Gln Gly Asn Ser
 305 310 315 320

PF59082SEQ List- PF59348PCT.txt

Ile Pro Ser Gly Asn₃₂₅ Lys Gln Gln Leu Val₃₃₀ Phe Gly Asn Asn Asp₃₃₅ Asn

His Pro Thr Thr₃₄₀ Ser Thr Leu Thr Asp₃₄₅ His Pro Gly Ala Gly₃₅₀ Ala Val

Asn Ser Tyr₃₅₅ Asn Asn Ser Ser Gln₃₆₀ Asn Ala Gln Gln Pro₃₆₅ Gln Gly Ser

Phe Phe₃₇₀ Thr Arg Glu Leu Asn₃₇₅ Phe Ser Glu Tyr Gly₃₈₀ Phe Glu Arg Ser

Ser Val₃₈₅ Lys Asn Gly Asn₃₉₀ Cys Lys Pro Glu Ser₃₉₅ Gly Glu Ile Leu Asn₄₀₀

Phe Gly Gly Glu Ser₄₀₅ Val Thr Lys Lys Asn₄₁₀ Ser Val Ser Gly₄₁₅ Asn Gly

Asn Leu Phe Ser₄₂₀ Val Gln Ser Gln Phe₄₂₅ Gly Ala Gly Glu₄₃₀ Glu Asn Lys

Asn Lys Lys₄₃₅ Arg Pro Ser Pro Val₄₄₀ Ser Arg Gly Ser Asn₄₄₅ Asp Glu Gly

Met Leu₄₅₀ Ser Phe Thr Ser Gly₄₅₅ Val Val Leu Pro Ser₄₆₀ Thr Gly Val Val

Lys₄₆₅ Ser Ser Gly Gly₄₇₀ Gly Gly Gly Asp₄₇₅ Ser Asp His Ser Asp₄₈₀ Leu

Glu Ala Ser Val₄₈₅ Val Lys Glu Ala Glu Ser₄₉₀ Ser Arg Val Val Asp₄₉₅ Pro

Glu Lys Arg Pro₅₀₀ Arg Lys Arg Gly Arg₅₀₅ Lys Pro Ala Asn Gly₅₁₀ Arg Glu

Glu Pro Leu₅₁₅ Asn His Val Glu Ala₅₂₀ Glu Arg Gln Arg Arg₅₂₅ Glu Lys Leu

Asn Gln₅₃₀ Arg Phe Tyr Ala Leu₅₃₅ Arg Ala Val Val Pro₅₄₀ Asn Val Ser Lys

Met₅₄₅ Asp Lys Ala Ser Leu₅₅₀ Leu Gly Asp Ala Ile₅₅₅ Ser Tyr Ile Asn Glu₅₆₀

Leu Lys Ala Lys Leu₅₆₅ Gln Thr Thr Glu Thr₅₇₀ Asp Lys Asp Glu Leu₅₇₅ Lys

Asn Gln Leu Asp₅₈₀ Ser Leu Lys Lys Glu₅₈₅ Leu Ala Ser Lys Glu₅₉₀ Ser Arg

PF59082SEQ List- PF59348PCT.txt

Leu Leu Ser Ser Pro Asp Gln Asp Leu Lys Ser Ser Asn Lys Gln Ser
595 600 605

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

Ala Met Ile Arg Val Gln Ser Ser Lys Asn Asn His Pro Ala Ala Arg
625 630 635 640

Val Met Gly Ala Leu Lys Asp Leu Asp Leu Glu Leu Leu His Ala Ser
645 650 655

Val Ser Val Val Asn Asp Leu Met Ile Gln Gln Asn Thr Val Arg Met
660 665 670

Gly Ser Arg Phe Tyr Thr Gln Glu Gln Leu Arg Ile Ala Leu Thr Ser
675 680 685

Arg Ile Ala Gly Asn Ser Met Arg Leu Leu Val
690 695

<210> 17
<211> 2079
<212> DNA
<213> Solanum tuberosum

<400> 17
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gtgtctatga tggaagcttt tatgtcttct gatcttttctt tttgggctac tactaattct 120
actactacta attctgcttc tgctgctgtg gttggcgctca attcaaattct tcttcatact 180
aataataata atccgtctgt ttttcctcta tcttcttcta catctgtatc cgcggtgctgcg 240
gctgttgatg ctaccaaattc tatgccgttt ttcaaccaag aaacccttca gcagcgtctt 300
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gttgttgatt tctcgagtcc gtctgtgttg gggtggggag atgggttatta caaaggcgaa 420
gaagataaag ccaaaaggaa attagcgggt tcttctcctg cttatattgc tgagcaggag 480
caccggaaga aggttctccg ggagctgaat tcgttgattt caggggcacc agctgggacc 540
gatgatgctg ttgatgaaga agttaccgac accgaatggt tctttcttat ctccatgacc 600
caatcgtttg ttaatggaag tgggcttcct ggtcaggcgt tgtatagttc cagccctatt 660
tgggtcgccg gaactgagaa attggcagct tccactgcg aacgggtag acaagcacia 720
gggttcgggc ttcagactat tgtctgtatt cttcagcta acggcgtggt tgaattgggc 780
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ttcagtaatg atttggggtc tggttcatgg gctgtgcagc cggagagcga cccgtcggcg 900
ctttggctca ctgaaccatc gtcctcaggt atggaagtta gagagtcttt aaatacagta 960
caaacaaatt cagttccatc aagtaatagt aataagcaaa ttgcttatgc aaatgagaat 1020

PF59082SEQ List- PF59348PCT.txt

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gatggaagta gcaataggaa tgggaatgca tcgctctctt gcaaacctga atcaggagaa 1200
atcttgaatt ttggtgatag tactaaaaaa agtgcttcca gtgcaaattgt gaacttgttt 1260
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ccaaggaagc gagggagaaa gccagcgaat ggacgagagg agcctttgaa tcacgtcgag 1560
gcagagaggc aaaggaggga gaaattgaac caaagattct acgcgcttag agctgttgta 1620
ccaaatgtgt ctaagatgga caaggcatca cttcttggag atgcaatttc atatataaac 1680
gagttgaaat caaagcttca aaatacagag tcagataaag aagacttgaa gagccaaata 1740
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attggaggca agattgtaga cgtggatata gacgttaaga taatcggatg ggatgcaatg 1860
attggtatac aatgtaataa aaagaatcat ccagctgcaa ggttaatggc agccctcatg 1920
gaattagacc tagacgtgca ccatgccagt gtttcagttg tcaacgattt gatgatccaa 1980
caagccacag tgaaaatggg tagcagacat tacactgaag agcagcttag ggtagcattg 2040
aaatcgaaaa ttgctgaaac ccccttagaa agtagatag 2079

<210> 18
<211> 692
<212> PRT
<213> Solanum tuberosum

<400> 18

Met Thr Glu Tyr Ser Leu Pro Thr Met Asn Leu Trp Asn Asn Ser Thr
1 5 10 15

Ser Asp Asp Asn Val Ser Met Met Glu Ala Phe Met Ser Ser Asp Leu
20 25 30

Ser Phe Trp Ala Thr Thr Asn Ser Thr Thr Thr Asn Ser Ala Ser Ala
35 40 45

Ala Val Val Gly Val Asn Ser Asn Leu Leu His Thr Asn Asn Asn Asn
50 55 60

Pro Ser Val Phe Pro Leu Ser Ser Ser Thr Ser Val Ser Ala Ala Ala
65 70 75 80

Ala Val Asp Ala Thr Lys Ser Met Pro Phe Phe Asn Gln Glu Thr Leu
85 90 95

Gln Gln Arg Leu Gln Ala Leu Ile Asp Gly Ala Arg Glu Thr Trp Thr
Seite 19

PF59082SEQ List- PF59348PCT.txt

100

105

110

Tyr Ala Ile Phe Trp Gln Ser Ser Val Val Asp Phe Ser Ser Pro Ser
115 120 125

Val Leu Gly Trp Gly Asp Gly Tyr Tyr Lys Gly Glu Glu Asp Lys Ala
130 135 140

Lys Arg Lys Leu Ala Val Ser Ser Pro Ala Tyr Ile Ala Glu Gln Glu
145 150 155 160

His Arg Lys Lys Val Leu Arg Glu Leu Asn Ser Leu Ile Ser Gly Ala
165 170 175

Pro Ala Gly Thr Asp Asp Ala Val Asp Glu Glu Val Thr Asp Thr Glu
180 185 190

Trp Phe Phe Leu Ile Ser Met Thr Gln Ser Phe Val Asn Gly Ser Gly
195 200 205

Leu Pro Gly Gln Ala Leu Tyr Ser Ser Ser Pro Ile Trp Val Ala Gly
210 215 220

Thr Glu Lys Leu Ala Ala Ser His Cys Glu Arg Val Arg Gln Ala Gln
225 230 235 240

Gly Phe Gly Leu Gln Thr Ile Val Cys Ile Pro Ser Ala Asn Gly Val
245 250 255

Val Glu Leu Gly Ser Thr Glu Leu Ile Val Glu Ser Ser Asp Leu Met
260 265 270

Asn Lys Val Arg Val Leu Phe Asn Phe Ser Asn Asp Leu Gly Ser Gly
275 280 285

Ser Trp Ala Val Gln Pro Glu Ser Asp Pro Ser Ala Leu Trp Leu Thr
290 295 300

Glu Pro Ser Ser Ser Gly Met Glu Val Arg Glu Ser Leu Asn Thr Val
305 310 315 320

Gln Thr Asn Ser Val Pro Ser Ser Asn Ser Asn Lys Gln Ile Ala Tyr
325 330 335

Ala Asn Glu Asn Asn His Gln Ser Gly Asn Gly Gln Ser Cys Tyr Asn
340 345 350

Leu Gln Gln Gln Gln Asn Asn Pro Pro Gln Gln Gln Thr Gln Gly Phe
355 360 365

Phe Thr Arg Glu Leu Asn Phe Ser Glu Phe Gly Phe Asp Gly Ser Ser

370

375

380

Asn Arg Asn Gly Asn Ala Ser Leu Ser Cys Lys Pro Glu Ser Gly Glu
385 390 395 400

Ile Leu Asn Phe Gly Asp Ser Thr Lys Lys Ser Ala Ser Ser Ala Asn
405 410 415

Val Asn Leu Phe Thr Gly Gln Ser Gln Phe Gly Ala Val Glu Glu Asn
420 425 430

Asn Asn Asn Lys Asn Lys Lys Arg Ser Ala Thr Ser Arg Gly Ser Asn
435 440 445

Glu Glu Gly Met Leu Ser Phe Val Ser Gly Thr Val Leu Pro Ser Ser
450 455 460

Gly Met Lys Ser Gly Gly Gly Gly Glu Asp Ser Glu His Ser Asp
465 470 475 480

Leu Glu Ala Ser Val Val Lys Glu Ala Asp Ser Ser Arg Val Val Glu
485 490 495

Pro Glu Lys Arg Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg
500 505 510

Glu Glu Pro Leu Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys
515 520 525

Leu Asn Gln Arg Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser
530 535 540

Lys Met Asp Lys Ala Ser Leu Leu Gly Asp Ala Ile Ser Tyr Ile Asn
545 550 555 560

Glu Leu Lys Ser Lys Leu Gln Asn Thr Glu Ser Asp Lys Glu Asp Leu
565 570 575

Lys Ser Gln Ile Glu Asp Leu Lys Lys Glu Ser Arg Arg Pro Gly Pro
580 585 590

Pro Pro Pro Asn Gln Asp Leu Lys Ile Gly Gly Lys Ile Val Asp Val
595 600 605

Asp Ile Asp Val Lys Ile Ile Gly Trp Asp Ala Met Ile Gly Ile Gln
610 615 620

Cys Asn Lys Lys Asn His Pro Ala Ala Arg Leu Met Ala Ala Leu Met
625 630 635 640

Glu Leu Asp Leu Asp Val His His Ala Ser Val Ser Val Val Asn Asp

645

650

655

Leu Met Ile Gln Gln Ala Thr Val Lys Met Gly Ser Arg His Tyr Thr
660 665 670

Glu Glu Gln Leu Arg Val Ala Leu Lys Ser Lys Ile Ala Glu Thr Pro
675 680 685

Leu Glu Ser Arg
690

<210> 19
<211> 1941
<212> DNA
<213> Pisum sativum

<400> 19
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tccgtcatgg aagctttcat gagcaccacc gccgaccttt cttctatctg gcttccacca 120
ccaaattccg ctgcatcaac caccacacca ggacccgata caaccaaacc tccaccacaa 180
caacagccac ttttcaacca agaaactctc caacaccgtc ttcaagcttt aatcgaagac 240
gcaaaagaga attggactta cgccatcttc tggcaaacct cttacgacta ctctacaagc 300
agacagctcc ttggttgggg agacggttat taaaaggcg aagatgacaa agaaaaagct 360
aaaaaagtta tcttgctga acaacaagct catcgcaata aagtcctccg tgaacttaac 420
gccttaattt ccggctcatc tagctcagat gatgtcgttg acgaagatgt caccgacact 480
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gaaagaaccc gtgcagcaca tgttcacggg cttcagactt tggatatatat accagcaccg 660
tcttcaaacg gtgtcgttga gctcgcact actgagataa ttccacatag cgctggtata 720
atggagaagg ttcgtttttt gtttgatttc aataatccag aagcacggtc ttggccggtg 780
aattccgccg acaacgatcc ttcttccatg tggttggata tccccggctc cgggtggaatt 840
gaaattagag actccatcaa cactgttagt gccgtcagtg taacggcttc agcaaagtca 900
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tccaccaccg ttaatatctc aactgctcag cgccaaatcc agaatcaaaa ccagaaccag 1020
agcttctttc caagagaact gaatttttca ggttctttca aaccggaatc cggcgagatt 1080
ctgaactttg gggagagtaa aaagagttct tacagctctg ccaatggtaa tttcttttcc 1140
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agtagtatcg aggacggaat tctttcattc agttctggca aactgttaca tggttcaact 1260
ataaaatccg gtggcggaga ttccgatcat tcagatctgg aagtttctgt ggtgaagaaa 1320
actgtgagca gcagagttat cgaaccagag aagcggcctc ggaagcgagg tagaaaacca 1380
gccaacggaa gagaagaacc cttgaaccac gtggaagcag agaggcagcg acgggagaaa 1440

PF59082SEQ List- PF59348PCT.txt

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cttgaatcgt caaaagatga gttggagaaa gaactagata caacccgaaa ggaactagaa 1620
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gatcttgatg tgaatcatgc tagtgtttct gttgttaatg acttaatgat tcaacaggct 1860
tctattaaca tgggaagtag attttacaca caagaacagc ttttatctgt tctttcttcc 1920
aaaattggtg atacacaatg a 1941

<210> 20
<211> 646
<212> PRT
<213> Pisum sativum

<400> 20

Met Thr Asp Tyr Arg Ser Leu Pro Thr Met Asn Asn Ser Ile Trp Thr
1 5 10 15

Asp Asp Asn Ser Ser Val Met Glu Ala Phe Met Ser Thr Thr Ala Asp
20 25 30

Leu Ser Ser Ile Trp Leu Pro Pro Pro Asn Ser Ala Ala Ser Thr Thr
35 40 45

Thr Pro Gly Pro Asp Thr Thr Lys Pro Pro Pro Gln Gln Gln Pro Leu
50 55 60

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

Ala Lys Glu Asn Trp Thr Tyr Ala Ile Phe Trp Gln Thr Ser Tyr Asp
85 90 95

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

Gly Glu Asp Asp Lys Glu Lys Ala Lys Lys Val Ile Leu Pro Glu Gln
115 120 125

Gln Ala His Arg Asn Lys Val Leu Arg Glu Leu Asn Ala Leu Ile Ser
130 135 140

Gly Ser Ser Ser Ser Asp Asp Val Val Asp Glu Asp Val Thr Asp Thr
145 150 155 160

Glu Trp Phe Phe Leu Thr Ser Met Thr His Ser Phe Val Asn Gly Ser
165 170 175

PF59082SEQ List- PF59348PCT.txt

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

Asp Arg Leu Ser Met Ser Thr Cys Glu Arg Thr Arg Ala Ala His Val
195 200 205

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

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

Met Glu Lys Val Arg Phe Leu Phe Asp Phe Asn Asn Pro Glu Ala Arg
245 250 255

Ser Trp Pro Leu Asn Ser Ala Asp Asn Asp Pro Ser Ser Met Trp Leu
260 265 270

Asp Ile Pro Gly Ser Gly Gly Ile Glu Ile Arg Asp Ser Ile Asn Thr
275 280 285

Val Ser Ala Val Ser Val Thr Ala Ser Ala Asn Ala Thr Ile Pro Lys
290 295 300

Lys Ser Pro Phe Glu Ile His Gly Ala Ser Thr Thr Leu Pro Glu Ser
305 310 315 320

Ser Thr Thr Val Asn Ile Ser Thr Ala Gln Arg Gln Ile Gln Asn Gln
325 330 335

Asn Gln Asn Gln Ser Phe Phe Pro Arg Glu Leu Asn Phe Ser Gly Ser
340 345 350

Phe Lys Pro Glu Ser Gly Glu Ile Leu Asn Phe Gly Glu Ser Lys Lys
355 360 365

Ser Ser Tyr Ser Ser Ala Asn Gly Asn Phe Phe Ser Gly Pro Ser Pro
370 375 380

Phe Ala Ala Asn Glu Glu Asn Arg Lys Arg Arg Ser Pro Val Ser Arg
385 390 395 400

Ser Ser Ile Glu Asp Gly Ile Leu Ser Phe Ser Ser Gly Lys Leu Leu
405 410 415

His Gly Ser Thr Ile Lys Ser Gly Gly Gly Asp Ser Asp His Ser Asp
420 425 430

Leu Glu Val Ser Val Val Lys Lys Thr Val Ser Ser Arg Val Ile Glu
435 440 445

PF59082SEQ List- PF59348PCT.txt

Pro Glu Lys Arg Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg
450 455 460

Glu Glu Pro Leu Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys
465 470 475 480

Leu Asn Gln Arg Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser
485 490 495

Lys Met Asp Lys Ala Ser Leu Leu Gly Asp Ala Ile Ser Tyr Ile Asn
500 505 510

Glu Leu Lys Leu Lys Leu Gln Gly Leu Glu Ser Ser Lys Asp Glu Leu
515 520 525

Glu Lys Glu Leu Asp Thr Thr Arg Lys Glu Leu Glu Ile Ala Thr Lys
530 535 540

Lys Pro Val Arg Leu Asn Glu Glu Glu Lys Glu Lys Pro Glu Asn Asn
545 550 555 560

Ser Lys Leu Ile Asp Leu Asp Ile Asp Val Lys Ile Met Gly Trp Asp
565 570 575

Ala Met Ile Arg Ile Gln Cys Ser Lys Lys Asn His Pro Ala Ala Lys
580 585 590

Leu Met Ala Ala Leu Lys Glu Leu Asp Leu Asp Val Asn His Ala Ser
595 600 605

Val Ser Val Val Asn Asp Leu Met Ile Gln Gln Ala Ser Ile Asn Met
610 615 620

Gly Ser Arg Phe Tyr Thr Gln Glu Gln Leu Leu Ser Val Leu Ser Ser
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Lys Ile Gly Asp Thr Gln
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<210> 21

<211> 1761

<212> DNA

<213> Brassica oleracea

<400> 21

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gcattggatc ctaatcatcg catcccaacc aatgatcttc acatctatct ccaccttat 240

ggacacacct gaatcttgat ccaaacactt ttgatcttta accaaacttt tcacattccc 300

atccccacc tctttgctca tcccatcaat ctgcttctgc aactcctctt tatcagcttc 360

PF59082SEQ List- PF59348PCT.txt

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<210> 22
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 <212> PRT
 <213> Brassica oleracea

<400> 22

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 35 40 45

Pro Leu Thr Pro Pro Pro Pro His Val Thr Glu Asp Thr Leu Gln Gln
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Arg Leu Gln Ala Leu Ile Glu Gly Ala Arg Glu Ser Trp Thr Tyr Ala
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Val Phe Trp Gln Leu Ser His Asp Phe Ala Gly Glu Asp Ile Ser Asn
85 90 95

Thr Ala Ala Leu Leu Thr Trp Gly Asp Gly Tyr Tyr Lys Gly Glu Glu
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Glu Arg Lys Ser Arg Lys Arg Lys Pro Asn Pro Val Ser Ala Ala Glu
115 120 125

Gln Glu His Arg Lys Arg Val Ile Arg Glu Leu Asn Ser Leu Ile Ser
130 135 140

Gly Gly Gly Gly Thr Val Ser Ser Ser Gly Gly Ser Ser Asp Glu Ala
145 150 155 160

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

Thr Gln Ser Phe Val Asn Gly Ser Gly Leu Pro Gly Arg Ala Phe Ser
180 185 190

Ser Ser Arg Thr Ile Trp Leu Ser Gly Ser Asn Ala Leu Ala Gly Ser
195 200 205

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

Val Cys Ile Pro Thr Gln Asn Gly Val Val Glu Leu Gly Ser Leu Glu
225 230 235 240

Ile Ile His Gln Ser Ser Asp Leu Val Glu Lys Val Asn Ser Phe Phe
245 250 255

Ser Phe Asn Gly Gly Gly Gly Gly Gly Glu Ser Gly Ser Trp Glu Phe
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Asn Leu Asn Pro Asp Gln Gly Glu Asn Asp Ser Ala Thr Trp Ile Asn
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Glu Pro Ile Val Thr Gly Ile Glu Pro Val Leu Gly Ala Pro Ala Thr
290 295 300

Ser Asn Ser Asp Ser Gln Thr Ala Ser Lys Leu Cys Asn Gly Ser Ser
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Val Glu His Pro Lys₃₂₅ Gln Gln Gln Asn Pro₃₃₀ Gln Ile Ser Ser₃₃₅ Ser Gly

Phe Val Glu Gly₃₄₀ Asp Ser Asn Lys Lys₃₄₅ Lys Arg Cys Leu Val₃₅₀ Ser Asp

Lys Glu Glu₃₅₅ Glu Met Leu Ser Phe₃₆₀ Thr Ser Val Leu Pro₃₆₅ Leu Pro Thr

Lys Ser₃₇₀ Asn Asp Ser Asn Arg₃₇₅ Ser Asp Leu Glu Ala₃₈₀ Ser Val Val Lys

Glu₃₈₅ Ala Glu Ser Gly Arg₃₉₀ Ile Val Ala Glu Thr₃₉₅ Glu Lys Lys Pro Arg₄₀₀

Lys Arg Gly Arg Lys₄₀₅ Pro Ala Asn Gly Arg₄₁₀ Glu Glu Pro Leu Asn₄₁₅ His

Val Glu Ala Glu₄₂₀ Arg Gln Arg Arg Glu₄₂₅ Lys Leu Asn Gln Arg₄₃₀ Phe Tyr

Ser Leu Arg₄₃₅ Ala Val Val Pro Asn₄₄₀ Val Ser Lys Met Asp₄₄₅ Lys Ala Ser

Leu Leu₄₅₀ Gly Asp Ala Ile Ser₄₅₅ Tyr Ile Asn Glu Leu₄₆₀ Lys Ala Lys Leu

Gln Lys Ala Glu Ala Asp₄₇₀ Lys Glu Glu Leu Gln₄₇₅ Lys Gln Ile Asp Gly₄₈₀

Met Ser Lys Glu Val₄₈₅ Gly Asp Gly Asn Val₄₉₀ Lys Ser Leu Val Lys₄₉₅ Asp

Gln Lys Cys Leu₅₀₀ Asp Gln Asp Ser Gly₅₀₅ Val Ser Ile Glu Val₅₁₀ Glu Ile

Asp Val Lys₅₁₅ Ile Ile Gly Trp Asp₅₂₀ Ala Met Ile Arg Ile₅₂₅ Gln Cys Ala

Lys Lys₅₃₀ Asn His Pro Gly Ala₅₃₅ Lys Phe Met Glu Ala₅₄₀ Leu Lys Glu Leu

Glu₅₄₅ Leu Glu Val Asn His₅₅₀ Ala Ser Leu Ser Val₅₅₅ Val Asn Glu Phe Met₅₆₀

Ile Gln Gln Ala Thr₅₆₅ Val Lys Met Gly Asn₅₇₀ Gln Phe Phe Thr Gln₅₇₅ Asp

Gln Leu Lys Ala₅₈₀ Ala Leu Met Glu Arg₅₈₅ Val

PF59082SEQ List- PF59348PCT.txt

<210> 23
 <211> 2100
 <212> DNA
 <213> Oryza sativa

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PF59082SEQ List- PF59348PCT.txt

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 gtcaaggacc tcatgatcca gcaggtggcc gtcaagatgg ccagccgcgt ctactcgcag 2040
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<210> 24
 <211> 699
 <212> PRT
 <213> Oryza sativa
 <400> 24

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Pro Pro Pro Pro Pro Pro Pro His His His His Gln Gln Gln Gln Gln
 35 40 45

Gln Val Leu Pro Pro Pro Ala Ala Ala Pro Ala Ala Ala Ala Phe Asn
 50 55 60

Gln Asp Thr Leu Gln Gln Arg Leu Gln Ser Ile Ile Glu Gly Ser Arg
 65 70 75 80

Glu Thr Trp Thr Tyr Ala Ile Phe Trp Gln Ser Ser Ile Asp Val Ser
 85 90 95

Thr Gly Ala Ser Leu Leu Gly Trp Gly Asp Gly Tyr Tyr Lys Gly Cys
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Asp Asp Asp Lys Arg Lys Gln Arg Ser Ser Thr Pro Ala Ala Ala Ala
 115 120 125

Glu Gln Glu His Arg Lys Arg Val Leu Arg Glu Leu Asn Ser Leu Ile
 130 135 140

Ala Gly Ala Gly Ala Ala Pro Asp Glu Ala Val Glu Glu Glu Val Thr
 145 150 155 160

Asp Thr Glu Trp Phe Phe Leu Val Ser Met Thr Gln Ser Phe Pro Asn
 165 170 175

Gly Leu Gly Leu Pro Gly Gln Ala Leu Phe Ala Ala Gln Pro Thr Trp
 180 185 190

Ile Ala Thr Gly Leu Ser Ser Ala Pro Cys Asp Arg Ala Arg Gln Ala
 195 200 205

Tyr Thr Phe Gly Leu Arg Thr Met Val Cys Leu Pro Leu Ala Thr Gly

210

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

Ile Pro Arg Ile Arg Ala Leu Phe Asn Leu Ser Ala Ala Ala Ala Ser
 245 250 255

Ser Trp Pro Pro His Pro Asp Ala Ala Ser Ala Asp Pro Ser Val Leu
 260 265 270

Trp Leu Ala Asp Ala Pro Pro Met Asp Met Lys Asp Ser Ile Ser Ala
 275 280 285

Ala Asp Ile Ser Val Ser Lys Pro Pro Pro Pro Pro His Gln Ile
 290 295 300

Gln His Phe Glu Asn Gly Ser Thr Ser Thr Leu Thr Glu Asn Pro Ser
 305 310 315 320

Pro Ser Val His Ala Pro Thr Pro Ser Gln Pro Ala Ala Pro Pro Gln
 325 330 335

Arg Gln Gln Gln Gln Gln Ser Ser Gln Ala Gln Gln Gly Pro Phe
 340 345 350

Arg Arg Glu Leu Asn Phe Ser Asp Phe Ala Ser Asn Gly Gly Ala Ala
 355 360 365

Ala Pro Pro Phe Phe Lys Pro Glu Thr Gly Glu Ile Leu Asn Phe Gly
 370 375 380

Asn Asp Ser Ser Ser Gly Arg Arg Asn Pro Ser Pro Ala Pro Pro Ala
 385 390 395 400

Ala Thr Ala Ser Leu Thr Thr Ala Pro Gly Ser Leu Phe Ser Gln His
 405 410 415

Thr Pro Thr Leu Thr Ala Ala Ala Asn Asp Ala Lys Ser Asn Asn Gln
 420 425 430

Lys Arg Ser Met Glu Ala Thr Ser Arg Ala Ser Asn Thr Asn Asn His
 435 440 445

Pro Ala Ala Thr Ala Asn Glu Gly Met Leu Ser Phe Ser Ser Ala Pro
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Thr Thr Arg Pro Ser Thr Gly Thr Gly Ala Pro Ala Lys Ser Glu Ser
 465 470 475 480

Asp His Ser Asp Leu Glu Ala Ser Val Arg Glu Val Glu Ser Ser Arg
 485 490 495

PF59082SEQ List- PF59348PCT.txt

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Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu Asn His Val Glu Ala
515 520 525

Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg Phe Tyr Ala Leu Arg
530 535 540

Ala Val Val Pro Asn Val Ser Lys Met Asp Lys Ala Ser Leu Leu Gly
545 550 555 560

Asp Ala Ile Ser Tyr Ile Asn Glu Leu Arg Gly Lys Leu Thr Ala Leu
565 570 575

Glu Thr Asp Lys Glu Thr Leu Gln Ser Gln Met Glu Ser Leu Lys Lys
580 585 590

Glu Arg Asp Ala Arg Pro Pro Ala Pro Ser Gly Gly Gly Gly Asp Gly
595 600 605

Gly Ala Arg Cys His Ala Val Glu Ile Glu Ala Lys Ile Leu Gly Leu
610 615 620

Glu Ala Met Ile Arg Val Gln Cys His Lys Arg Asn His Pro Ala Ala
625 630 635 640

Arg Leu Met Thr Ala Leu Arg Glu Leu Asp Leu Asp Val Tyr His Ala
645 650 655

Ser Val Ser Val Val Lys Asp Leu Met Ile Gln Gln Val Ala Val Lys
660 665 670

Met Ala Ser Arg Val Tyr Ser Gln Asp Gln Leu Asn Ala Ala Leu Tyr
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Thr Arg Ile Ala Glu Pro Gly Thr Ala Ala Arg
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<211> 2163
<212> DNA
<213> Rheum australe

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PF59082SEQ List- PF59348PCT.txt

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 <212> PRT

<213> Rheum australe

<400> 26

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Phe Met Ser Leu Asp Ser Ser Ser Ala Ala Ala Trp Pro Pro Ala Pro
 20 25 30

Ser Ser His Gln Tyr Asn His Gln Tyr Asn Leu Gln His Gln Gln Gln
 35 40 45

Leu Gln His Gln Pro Gln Gln Gln Gln Gln Gln Gln Met Ala Asn
 50 55 60

Ser Ala Gly Gly Gly Trp Gln Gln Ala Met Ala Gly Gly Ala Gln Met
 65 70 75 80

Asn Pro Ala Gln Met Met Asn Gln Asp Ser Leu Gln Gln Arg Leu Gln
 85 90 95

Ala Leu Ile Asp Asp Ala Arg Glu Ser Trp Thr Tyr Ala Ile Phe Trp
 100 105 110

Gln Cys Asn Val Glu Pro Thr Gly Gln Ser Leu Leu Gly Trp Gly Asp
 115 120 125

Gly Tyr Tyr Lys Gly Asp Asp Ser Ala Asn Lys Asn Ala Ser Ser Ala
 130 135 140

Ala Pro Ala Ala Gly Ser Arg Pro Pro Lys Asn Pro Ala Glu Gln Glu
 145 150 155 160

His Arg Arg Arg Val Leu Arg Glu Leu Asn Ser Leu Ile Ser Gly Ser
 165 170 175

Ser Ser Pro Gln Asn Asp Ala Val Asp Asp Asp Val Thr Asp Thr Glu
 180 185 190

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

Leu Pro Gly Gln Ala Ile Leu Gly Ser Asn Pro Ile Trp Ala Tyr Gly
 210 215 220

Ser Asp Arg Leu Ala Gly Ser Pro Trp Asp Arg Ala Arg Gln Gly Ala
 225 230 235 240

Ala Phe Gly Leu Gln Thr Ile Val Cys Ile Pro Ser Gly Thr Gly Val
 245 250 255

Leu Glu Leu Gly Ser Thr Glu Leu Val Phe Asn Ser Ser Val Leu Met
 Seite 34

260

265

270

Asn Lys Val Arg Val Leu Phe Asn Phe Gly Ser Gly Asp Ala Ser Leu
 275 280 285
 Leu Thr Ala Ala Ala Ser Ser Ser Ala Pro Ala Ala Ala Pro Pro Pro
 290 295 300
 Pro Ile Ser Thr Ala Thr Thr Asp Glu Ala Glu Asn Asp Pro Ala Ala
 305 310 315 320
 Leu Trp Ile Ser Asp Pro Ser Ser Ser Ala Ala Glu Val Lys Glu Ala
 325 330 335
 Leu Asn Pro Arg Ile Thr Val Arg Glu Ser Ser Ile Pro Ile Gly Ser
 340 345 350
 Asn Ser Ile Pro Val His Gln Pro Ala Lys Pro Pro Gln Leu Asp Val
 355 360 365
 Gln Ser Ser Ile Gly Leu Thr Glu Asn Ser Ile Gly Ile His Ser Gln
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 Lys Ser His Asn Gln Pro Leu Gln His Gln Gly Phe Phe Thr Lys Glu
 385 390 395 400
 Leu Asn Phe Ser Glu Phe Ala Met Lys Pro Glu Ser Gly Glu Ile Leu
 405 410 415
 Asn Phe Gly Glu Ser Lys Arg Asn Ser Leu Gly Asn Gly Asn Gly Leu
 420 425 430
 Asn Ser Gln Phe Leu Val Glu Glu Ser Asn Lys Asn Ile Ile Ser Lys
 435 440 445
 Lys Arg Ser Pro Thr Ser Arg Gly Ser Ala Glu Glu Gly Met Leu Ser
 450 455 460
 Phe Thr Ser Ser Val Val Leu Pro Ser Ser Met Ala Val Lys Ser Ser
 465 470 475 480
 Ala Thr Gly Ala Gly Asp Ser Asp His Ser Asp Leu Glu Ala Ser Val
 485 490 495
 Val Lys Glu Ala Asp Ser Ser Arg Val Val Asp Pro Glu Lys Arg Pro
 500 505 510
 Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu Asn
 515 520 525
 His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg Phe
 530 535 540

PF59082SEQ List- PF59348PCT.txt

Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys Ala
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Ser Leu Leu Gly Asp Ala Ile Ser Phe Ile Asn Glu Leu Lys Ser Lys
565 570 575

Leu Gln Asn Val Glu Ser Glu Lys Glu Thr Leu Leu Ser Gln Val Glu
580 585 590

Cys Leu Lys Thr Glu Val Leu Ala Ser Arg Asp His Gln Ser Arg Ser
595 600 605

Ser Asn Gly Gly Gly Gly Val Gln Asn His His His Pro Ser Leu Glu
610 615 620

Gln Asp Met Asn Met Leu Asn Gly Ser Cys Lys Gln Ser Asp Leu Asp
625 630 635 640

Val Asp Val Lys Ile Ile Gly Arg Asp Ala Met Val Arg Val Asn Cys
645 650 655

Ser Lys Ser Asn His Pro Ala Ala Arg Leu Met Val Ala Leu Lys Glu
660 665 670

Leu Asp Leu Glu Val Thr His Ala Ser Val Ser Val Val Asn Asp Leu
675 680 685

Met Ile Gln Gln Ala Thr Val Arg Met Gly Ser Arg Tyr Tyr Ser Pro
690 695 700

Asp His Leu Arg Met Val Leu Glu Ala Lys Val Ser Asp Ile Arg Gly
705 710 715 720

<210> 27
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<212> DNA
<213> Zea mays

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gacgaggccg tcgaggagga ggtcacgat accgagtggg tcttcctcgt ctccatgacg 480
cagtcgtttc tcaacggttc gggcctcccc gggcaggcgc tcttcgccgg gcagcccaca 540

PF59082SEQ List- PF59348PCT.txt

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gccggagccg	accacgcgga	gacggacccg	tccatgctat	ggctcgccga	cgcgccggtc	840
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ccgcatccgc	cgcatatcca	ttttgagaac	gggagcacga	gcacgctcac	ggagaacccc	960
agcccctccg	tgcacgcgcc	gccacccccg	ccggcgccgg	ctgctccaca	gcagcggcag	1020
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ttcgcgtcca	ctccttcctt	ggcggcgacc	ccgccgttct	tcaagcccga	gtccggcgag	1140
atcctcagct	tcggcgccga	cagcaacgcc	cggaggaacc	cgtcgccggt	acctcccgcc	1200
gccaccgcca	gcctcaccac	cgctcccggg	agcctcttct	cgcagcacac	ggcgaccatg	1260
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gaccactcgg	acctggacgc	gtctgtgcgc	gaggtggaga	gcagccgcgt	ggtggcgccg	1500
ccaccggagg	cggagaagcg	gccgcgaaag	cgcgggcgga	agcccgcgaa	cgggcgcgag	1560
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gacgccatct	cctacatcaa	cgagctccgg	ggcaagctga	cgtcgctgga	gaccgacaag	1740
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tcggcgcggc	tgatgacagc	gctccgcgag	ctcgacctgg	acgtgtacca	cgccagcgtg	1980
tccgtcgtca	aggacctcat	gatccagcag	gtcgccgtca	agatggccag	ccgcgtgtac	2040
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ggcaggtaa						2109

<210> 28
 <211> 702
 <212> PRT
 <213> Zea mays

<400> 28

Gly	Thr	Arg	Asp	Asp	Asn	Ala	Ser	Met	Met	Glu	Ala	Phe	Met	Ala	Ser
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Ala	Asp	Leu	Pro	Thr	Phe	Pro	Trp	Gly	Ala	Pro	Ala	Gly	Gly	Gly	Asn
			20					25					30		

PF59082SEQ List- PF59348PCT.txt

Ser Ser Ala Ala Ala Ala Ser Pro Pro Pro Gln Met Pro Ala Ala Met
35 40 45

Ala Pro Gly Phe Asn Gln Asp Thr Leu Gln Gln Arg Leu Gln Ala Met
50 55 60

Ile Glu Gly Ser Arg Glu Thr Trp Thr Tyr Ala Ile Phe Trp Gln Ser
65 70 75 80

Ser Leu Asp Ser Ala Thr Gly Ala Ser Leu Leu Gly Trp Gly Asp Gly
85 90 95

Tyr Tyr Lys Gly Cys Asp Glu Asp Lys Arg Lys Gln Lys Pro Leu Thr
100 105 110

Pro Ser Ala Gln Ala Glu Gln Glu His Arg Lys Arg Val Leu Arg Glu
115 120 125

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

Glu Glu Glu Val Thr Asp Thr Glu Trp Phe Phe Leu Val Ser Met Thr
145 150 155 160

Gln Ser Phe Leu Asn Gly Ser Gly Leu Pro Gly Gln Ala Leu Phe Ala
165 170 175

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

Arg Ala Arg Gln Ala Tyr Asn Phe Gly Leu Arg Thr Met Val Cys Phe
195 200 205

Pro Val Gly Thr Gly Val Leu Glu Leu Gly Ser Thr Asp Val Val Phe
210 215 220

Lys Thr Ala Glu Ser Met Ala Lys Ile Arg Ser Leu Phe Gly Gly Gly
225 230 235 240

Ala Gly Gly Gly Ser Trp Pro Pro Val Gln Pro Gln Ala Pro Ser Ser
245 250 255

Gln Gln Pro Ala Ala Gly Ala Asp His Ala Glu Thr Asp Pro Ser Met
260 265 270

Leu Trp Leu Ala Asp Ala Pro Val Met Asp Ile Lys Asp Ser Leu Ser
275 280 285

His Pro Ser Ala Glu Ile Ser Val Ser Lys Pro Pro Pro His Pro Pro
290 295 300

PF59082SEQ List- PF59348PCT.txt

Gln Ile His Phe Glu Asn Gly Ser Thr Ser Thr Leu Thr Glu Asn Pro
305 310 315 320

Ser Pro Ser Val His Ala Pro Pro Pro Pro Pro Ala Pro Ala Ala Pro
325 330 335

Gln Gln Arg Gln His Gln His Gln Asn Gln Ala His Gln Gly Pro Phe
340 345 350

Arg Arg Glu Leu Asn Phe Ser Asp Phe Ala Ser Thr Pro Ser Leu Ala
355 360 365

Ala Thr Pro Pro Phe Phe Lys Pro Glu Ser Gly Glu Ile Leu Ser Phe
370 375 380

Gly Ala Asp Ser Asn Ala Arg Arg Asn Pro Ser Pro Val Pro Pro Ala
385 390 395 400

Ala Thr Ala Ser Leu Thr Thr Ala Pro Gly Ser Leu Phe Ser Gln His
405 410 415

Thr Ala Thr Met Thr Ala Ala Ala Ala Asn Asp Ala Lys Asn Asn Asn
420 425 430

Lys Arg Ser Met Glu Ala Thr Ser Arg Ala Ser Asn Thr Asn His His
435 440 445

Pro Ala Ala Thr Ala Asn Glu Gly Met Leu Ser Phe Ser Ser Ala Pro
450 455 460

Thr Thr Arg Pro Ser Thr Gly Thr Gly Ala Pro Ala Lys Ser Glu Ser
465 470 475 480

Asp His Ser Asp Leu Asp Ala Ser Val Arg Glu Val Glu Ser Ser Arg
485 490 495

Val Val Ala Pro Pro Pro Glu Ala Glu Lys Arg Pro Arg Lys Arg Gly
500 505 510

Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu Asn His Val Glu Ala
515 520 525

Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg Phe Tyr Ala Leu Arg
530 535 540

Ala Val Val Pro Asn Val Ser Lys Met Asp Lys Ala Ser Leu Leu Gly
545 550 555 560

Asp Ala Ile Ser Tyr Ile Asn Glu Leu Arg Gly Lys Leu Thr Ser Leu
565 570 575

PF59082SEQ List- PF59348PCT.txt

Glu Thr Asp Lys Glu Thr Leu Gln Thr Gln Val Glu Ala Leu Lys Lys
580 585 590

Glu Arg Asp Ala Arg Pro Pro Ser His Ser Ala Gly Leu Gly Gly His
595 600 605

Asp Gly Gly Pro Arg Cys His Ala Val Glu Ile Asp Ala Lys Ile Leu
610 615 620

Gly Leu Glu Ala Met Ile Arg Val Gln Cys His Lys Arg Asn His Pro
625 630 635 640

Ser Ala Arg Leu Met Thr Ala Leu Arg Glu Leu Asp Leu Asp Val Tyr
645 650 655

His Ala Ser Val Ser Val Val Lys Asp Leu Met Ile Gln Gln Val Ala
660 665 670

Val Lys Met Ala Ser Arg Val Tyr Thr Gln Asp Gln Leu Ser Ala Ala
675 680 685

Leu Tyr Ser Arg Leu Ala Glu Pro Gly Ser Ala Met Gly Arg
690 695 700

<210> 29
<211> 1731
<212> DNA
<213> Physcomitrella patens

<400> 29
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cacttgaacg agtcggtggt gctgcggagg ctgcactcgc tggtcgaaga gaggaccgtg 180
gattggacgt atgcaatctt ttggcagctg tcagccttac gtgaagggga gatgatgctc 240
ggttgggggtg atgggtactt caggagtgtc aaggagaatg aaatcaacga cgcgaggaac 300
atgaaggggtg gttctcaaga ggaggatcaa cagatgaggc gaaaggtggt gcgagagctg 360
caggctctag tcaatggctc tgaagatgat gttagcgact atgtcacgga tacggaatgg 420
ttttaccttg tttcgatgtc tcattcttat gcagccggag tggggactcc tggacgagca 480
ttagcatctg acagacctgt gtggctaatt ggagcgaaca aagctcctga taataactgc 540
agtcgtgttc aattggctaa ggtacacagt tcaatgatcc ttcagacaat cttttgtatt 600
ccgtcgaaat ctggtgtcgt tgagcttgga tcgacagatc tggcaaaaag ctgggaagtt 660
gttcagaatg tcaagatggt ttttgatgaa ccaatgatgt gggcagccca tgaaatccaa 720
gcggtggcgc attccttgcc tttgagtagc gacgcgacta gtatgcgacc gtcaagccca 780
agtcttatgt caatagcaac aataagtgtc tcaatttcaa atgcaagtca gattggcaga 840
tggtcaaadc caagtcaaga tcatgaagca cttttgttg gaaggaagaa tccaccctcg 900
tcaagacccc cgatgagggt ctacaaacca cgggtggaag aattgagctc ggacactcca 960

PF59082SEQ List- PF59348PCT.txt

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ttcgtccgt ccgaggtaga ttgtcatgaa tcagaagccg acgtttccgt caaagaaaat 1140
gttggtggaat caagtacaaa tctcgagcct aaaccacgca aaagagggcg caagccggca 1200
aacgataggg aagagccact aatcatgtg caagctgaac ggcagcgcg agaaaaactc 1260
aatcagaaat tttatgctct acggtctgta gtgccaaacg tgtccaagat ggataaggca 1320
tccttattag aagatgccat tacctacatt aatgagcttc aagaaaagct acaaaaagca 1380
gaggctgaat tgaaggtttt ccaaaggcaa gtgcttgcat caactggcga atctaaaaaa 1440
cctaattccat ctcgcagga ttcgaccgaa agttctgatg aagaacgttt cagacttcaa 1500
gagagtggc agagatcggc acctcttggt cacacttctg aaaataaacc tgtaattagt 1560
gtttttgttc ttggagaaga agctatgatt cgagtttatt gcacaagaca ctctaacttt 1620
atagttcata tgatgtcggc attggaaaag ctacgcttag aggttataca ttcaaact 1680
tcattccatga aggatatgct tcttcacgtc gtgattgtca aggtgcgctg a 1731

<210> 30
<211> 576
<212> PRT
<213> *Physcomitrella patens*
<400> 30

Met Ser Gln Leu Leu Asn Ala Trp Glu Val Ala Asp Ser Ala Met Ile
1 5 10 15

Glu Ala Phe Met Gly Thr Gly Tyr Asn Cys Val Glu Gly Phe Glu Val
20 25 30

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

Arg Arg Leu His Ser Leu Val Glu Glu Ser Thr Val Asp Trp Thr Tyr
50 55 60

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

Gly Trp Gly Asp Gly Tyr Phe Arg Ser Ala Lys Glu Asn Glu Ile Asn
85 90 95

Asp Ala Arg Asn Met Lys Gly Gly Ser Gln Glu Glu Asp Gln Gln Met
100 105 110

Arg Arg Lys Val Leu Arg Glu Leu Gln Ala Leu Val Asn Gly Ser Glu
115 120 125

Asp Asp Val Ser Asp Tyr Val Thr Asp Thr Glu Trp Phe Tyr Leu Val
130 135 140

PF59082SEQ List- PF59348PCT.txt

Ser Met Ser His Ser Tyr Ala Ala Gly Val Gly Thr Pro Gly Arg Ala
 145 150 155 160
 Leu Ala Ser Asp Arg Pro Val Trp Leu Ile Gly Ala Asn Lys Ala Pro
 165 170 175
 Asp Asn Asn Cys Ser Arg Val Gln Leu Ala Lys Val His Ser Ser Met
 180 185 190
 Ile Leu Gln Thr Ile Leu Cys Ile Pro Ser Lys Ser Gly Val Val Glu
 195 200 205
 Leu Gly Ser Thr Asp Leu Ala Lys Ser Trp Glu Val Val Gln Asn Val
 210 215 220
 Lys Met Val Phe Asp Glu Pro Met Met Trp Ala Ala His Glu Ile Gln
 225 230 235 240
 Ala Val Ala His Ser Leu Pro Leu Ser Ser Asp Ala Thr Ser Met Arg
 245 250 255
 Pro Ser Ser Pro Ser Leu Met Ser Ile Ala Thr Ile Ser Ala Ser Ile
 260 265 270
 Ser Asn Ala Ser Gln Ile Gly Arg Cys Ser Asn Pro Ser Gln Asp His
 275 280 285
 Glu Ala His Phe Val Gly Arg Lys Asn Pro Pro Ser Ser Arg Pro Pro
 290 295 300
 Met Arg Phe Tyr Lys Pro Arg Val Glu Glu Leu Ser Ser Asp Thr Pro
 305 310 315 320
 Glu Thr Asn Leu Val Asp Asn Lys Tyr Ile Val Gly Lys Ser Val Ser
 325 330 335
 Phe His His Leu Ser Lys Ile Gly Gln Arg Gly Met Pro Gly Pro Pro
 340 345 350
 Thr Thr Ala Asn Arg Leu Pro Cys Phe Ala Pro Ser Glu Val Asp Cys
 355 360 365
 His Glu Ser Glu Ala Asp Val Ser Val Lys Glu Asn Val Val Glu Ser
 370 375 380
 Ser Thr Asn Leu Glu Pro Lys Pro Arg Lys Arg Gly Arg Lys Pro Ala
 385 390 395 400
 Asn Asp Arg Glu Glu Pro Leu Asn His Val Gln Ala Glu Arg Gln Arg
 405 410 415

PF59082SEQ List- PF59348PCT.txt

Arg Glu Lys Leu Asn Gln Lys Phe Tyr Ala Leu Arg Ser Val Val Pro
420 425 430

Asn Val Ser Lys Met Asp Lys Ala Ser Leu Leu Glu Asp Ala Ile Thr
435 440 445

Tyr Ile Asn Glu Leu Gln Glu Lys Leu Gln Lys Ala Glu Ala Glu Leu
450 455 460

Lys Val Phe Gln Arg Gln Val Leu Ala Ser Thr Gly Glu Ser Lys Lys
465 470 475 480

Pro Asn Pro Ser Arg Arg Asp Ser Thr Glu Ser Ser Asp Glu Glu Arg
485 490 495

Phe Arg Leu Gln Glu Ser Gly Gln Arg Ser Ala Pro Leu Val His Thr
500 505 510

Ser Glu Asn Lys Pro Val Ile Ser Val Phe Val Leu Gly Glu Glu Ala
515 520 525

Met Ile Arg Val Tyr Cys Thr Arg His Ser Asn Phe Ile Val His Met
530 535 540

Met Ser Ala Leu Glu Lys Leu Arg Leu Glu Val Ile His Ser Asn Thr
545 550 555 560

Ser Ser Met Lys Asp Met Leu Leu His Val Val Ile Val Lys Val Arg
565 570 575

<210> 31

<211> 981

<212> DNA

<213> Lycopersicon esculentum

<400> 31

agtggaaatg gtcagagttg ttacaatcag caacaacaga agaatcctcc tcagcaacaa	60
acacaaggat tcttcacgag ggagttgaat ttttcggaat tcggtttcga tggaagtagt	120
aataggaatg gaaattcatc ggtttcttgc aagcctgaat caggagaaat cttgaatttt	180
ggtgatagta ctaaaaaaag tgcttccagt gccaatgtga acttgtttac aggtcagtcc	240
caattttggg gcctggggga ggagaataat aacaagaacc aagaaaagat cagctacttc	300
aggggaagca atgaagaagg aatgctttca tttgtttcag gtacagtttg cttcttcggg	360
catgaagtca ggtggaggcg gaggcaagac tctgaacatt cagatctcga ggcttcagtg	420
gtgaaagaag ctgatagtag tagagtggta gagcctgaaa agaggccaag gaagcgaggt	480
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agggagaaat tgaaccaaag attcttctct cttagagctg ttgtaccaa tgtgtctaag	600
atggacaagg catcactcct tggagatgct atttcctata taaacgagtt gaaatcgaag	660

PF59082SEQ List- PF59348PCT.txt

cttcaaaata cagagtcaga taaagaagac ttgaagagcc aaatagaaga tttaaagaaa	720
gaatcaaggc gccccggtcc tcctccacca ccaaatacaag atctcaagat gtctagccac	780
actggaggca agattgtaga cgtggatata gacgttaaga tcatcggatg ggatgcaatg	840
attcgtatac aatgtaataa aaagaatcat ccagcgaagg ctaatggcag cgctcatgga	900
attagaccta gacgtgcatc atgccagtgt ttcagttgtc aacgatttga tgatccaaca	960
agccacagtg aaaatgggta g	981

<210> 32
 <211> 326
 <212> PRT
 <213> Lycopersicon esculentum
 <400> 32

Ser Gly Asn Gly Gln Ser Cys Tyr Asn Gln Gln Gln Gln Lys Asn Pro
 1 5 10 15

Pro Gln Gln Gln Thr Gln Gly Phe Phe Thr Arg Glu Leu Asn Phe Ser
 20 25 30

Glu Phe Gly Phe Asp Gly Ser Ser Asn Arg Asn Gly Asn Ser Ser Val
 35 40 45

Ser Cys Lys Pro Glu Ser Gly Glu Ile Leu Asn Phe Gly Asp Ser Thr
 50 55 60

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

Gln Phe Trp Gly Leu Gly Glu Glu Asn Asn Asn Lys Asn Gln Glu Lys
 85 90 95

Ile Ser Tyr Phe Arg Gly Ser Asn Glu Glu Gly Met Leu Ser Phe Val
 100 105 110

Ser Gly Thr Val Cys Phe Phe Gly His Glu Val Arg Trp Arg Arg Arg
 115 120 125

Gln Asp Ser Glu His Ser Asp Leu Glu Ala Ser Val Val Lys Glu Ala
 130 135 140

Asp Ser Ser Arg Val Val Glu Pro Glu Lys Arg Pro Arg Lys Arg Gly
 145 150 155 160

Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu Asn His Val Glu Ala
 165 170 175

Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg Phe Phe Ser Leu Arg
 180 185 190

Ala Val Val Pro Asn Val Ser Lys Met Asp Lys Ala Ser Leu Leu Gly

195

200

205

Asp Ala Ile Ser Tyr Ile Asn Glu Leu Lys Ser Lys Leu Gln Asn Thr
210 215 220

Glu Ser Asp Lys Glu Asp Leu Lys Ser Gln Ile Glu Asp Leu Lys Lys
225 230 235 240

Glu Ser Arg Arg Pro Gly Pro Pro Pro Pro Asn Gln Asp Leu Lys
245 250 255

Met Ser Ser His Thr Gly Gly Lys Ile Val Asp Val Asp Ile Asp Val
260 265 270

Lys Ile Ile Gly Trp Asp Ala Met Ile Arg Ile Gln Cys Asn Lys Lys
275 280 285

Asn His Pro Ala Lys Ala Asn Gly Ser Ala His Gly Ile Arg Pro Arg
290 295 300

Arg Ala Ser Cys Gln Cys Phe Ser Cys Gln Arg Phe Asp Asp Pro Thr
305 310 315 320

Ser His Ser Glu Asn Gly
325

<210> 33
<211> 1476
<212> DNA
<213> Populus trichocarpa

<400> 33
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accccaccga ctctccaaca aaggcttcaa ttcatagtcc aaaaccaacc agattggtgg 120
tcttatgcca tattttggca aacatcaaac gatgacagcg gccgaatctt cctaggctgg 180
ggtgatggcc attttcaagg ctctaaagat acttctccca aaccaaacac cttcagcaat 240
agccgcatga cgatatcaaa ctccgagagg aaaaggggtca tgatgaaggg aatccaatcc 300
ctgatcgggtg aatgtcacga tcttgatatg tctctgatgg atggtaacga tgctaccgac 360
tctgagtgggt tctatgtcat gtcccttact cgatctttct cacctggaga tggcatcctt 420
ggcaaagctt atacaactgg ttctttgatt tggttaactg gtggccatga acttcaattc 480
tacaactgtg aaagagtcaa agaagcacia atgcatggca ttgagaccct ggtttgcata 540
cctacatcgt gtgggggttct tgaattagga tcctcttctg tgatcagaga aaattgggggt 600
cttgttcaac aagccaagtc tctttttggg tcagatctta gcgcttattt ggtgccccaa 660
ggccctaata actccagtga agaaccgacc cagtttcttg acaggagcat ttcttttgcg 720
gatatgggca taatagctgg acttcaagaa gattgtgcag ttgatcgtga acagaagaac 780
gctcgtgaaa cagaagaagc aaataaacgt aacgctaata aaccaggcct gtcttatttg 840

PF59082SEQ List- PF59348PCT.txt

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 ccaaagaaaa gagggagaaa gcctggcctg ggcagagacg cccactgaa ccatgtagag 960
 gctgagaggc agcggagaga gaagttgaac caccggtttt acgcgctgcg tgcggtggtc 1020
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 gaattgaagg cgaaggttga tgaattagag tcacaactag aaaggggaatc caagaaagtg 1140
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 gcctgcaggc cgaatagtgc tgggtggcgct gggcttgacac ttgaagttga gatcaagttt 1260
 gtgggtaatg atgcaatgat tagagtccaa tcggagaatg tgaactatcc agcttccagg 1320
 ttaatgtgtg cgctccgtga actggagttt caggttcacc atgctagtat gtcctgtgtt 1380
 aacgagctta tgctccaaga tgtggtagtt agggttcctg atggactgag aaccgaagag 1440
 gccttgaaat ctgctcttct tggaagacta gaataa 1476

<210> 34
 <211> 491
 <212> PRT
 <213> Populus trichocarpa
 <400> 34

Met Glu Glu Leu Ile Ile Ser Pro Ser Ser Ser Ser Pro Val Ser
 1 5 10 15

Leu Ser Gln Glu Thr Pro Pro Thr Leu Gln Gln Arg Leu Gln Phe Ile
 20 25 30

Val Gln Asn Gln Pro Asp Trp Trp Ser Tyr Ala Ile Phe Trp Gln Thr
 35 40 45

Ser Asn Asp Asp Ser Gly Arg Ile Phe Leu Gly Trp Gly Asp Gly His
 50 55 60

Phe Gln Gly Ser Lys Asp Thr Ser Pro Lys Pro Asn Thr Phe Ser Asn
 65 70 75 80

Ser Arg Met Thr Ile Ser Asn Ser Glu Arg Lys Arg Val Met Met Lys
 85 90 95

Gly Ile Gln Ser Leu Ile Gly Glu Cys His Asp Leu Asp Met Ser Leu
 100 105 110

Met Asp Gly Asn Asp Ala Thr Asp Ser Glu Trp Phe Tyr Val Met Ser
 115 120 125

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

Thr Thr Gly Ser Leu Ile Trp Leu Thr Gly Gly His Glu Leu Gln Phe
 145 150 155 160

PF59082SEQ List- PF59348PCT.txt

Tyr Asn Cys Glu Arg Val Lys Glu Ala Gln Met His Gly Ile Glu Thr
 165 170 175
 Leu Val Cys Ile Pro Thr Ser Cys Gly Val Leu Glu Leu Gly Ser Ser
 180 185 190
 Ser Val Ile Arg Glu Asn Trp Gly Leu Val Gln Gln Ala Lys Ser Leu
 195 200 205
 Phe Gly Ser Asp Leu Ser Ala Tyr Leu Val Pro Lys Gly Pro Asn Asn
 210 215 220
 Ser Ser Glu Glu Pro Thr Gln Phe Leu Asp Arg Ser Ile Ser Phe Ala
 225 230 235 240
 Asp Met Gly Ile Ile Ala Gly Leu Gln Glu Asp Cys Ala Val Asp Arg
 245 250 255
 Glu Gln Lys Asn Ala Arg Glu Thr Glu Glu Ala Asn Lys Arg Asn Ala
 260 265 270
 Asn Lys Pro Gly Leu Ser Tyr Leu Asn Ser Glu His Ser Asp Ser Asp
 275 280 285
 Phe Pro Leu Leu Ala Met His Met Glu Lys Arg Ile Pro Lys Lys Arg
 290 295 300
 Gly Arg Lys Pro Gly Leu Gly Arg Asp Ala Pro Leu Asn His Val Glu
 305 310 315 320
 Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn His Arg Phe Tyr Ala Leu
 325 330 335
 Arg Ala Val Val Pro Asn Val Ser Arg Met Asp Lys Ala Ser Leu Leu
 340 345 350
 Ser Asp Ala Val Ser Tyr Ile Asn Glu Leu Lys Ala Lys Val Asp Glu
 355 360 365
 Leu Glu Ser Gln Leu Glu Arg Glu Ser Lys Lys Val Lys Leu Glu Val
 370 375 380
 Ala Asp Asn Leu Asp Asn Gln Ser Thr Thr Thr Ser Val Asp Gln Ser
 385 390 395 400
 Ala Cys Arg Pro Asn Ser Ala Gly Gly Ala Gly Leu Ala Leu Glu Val
 405 410 415
 Glu Ile Lys Phe Val Gly Asn Asp Ala Met Ile Arg Val Gln Ser Glu
 420 425 430

PF59082SEQ List- PF59348PCT.txt

Asn Val Asn Tyr Pro Ala Ser Arg Leu Met Cys Ala Leu Arg Glu Leu
435 440 445

Glu Phe Gln Val His His Ala Ser Met Ser Cys Val Asn Glu Leu Met
450 455 460

Leu Gln Asp Val Val Val Arg Val Pro Asp Gly Leu Arg Thr Glu Glu
465 470 475 480

Ala Leu Lys Ser Ala Leu Leu Gly Arg Leu Glu
485 490

<210> 35
<211> 878
<212> DNA
<213> Triticum aestivum

<400> 35
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agaaaggatt gcagagtttc acttgagtc agggccgggg cctgaattct caccagcaga 120
agtttgcaa tggatactg atagttagta atgaagctac acacggcaac aatagaaccg 180
cggacagctc cactacaaca cagtttcagc ttcagaaagc acctcagctc cagaaactac 240
cacttcttca gaaaccacca cagctagtga agccgctgca gatggtcaac cagcaacagc 300
tgcagccaca ggcgcctagg caaatagatt ttagtgcagg gaccagttcc aagtctggtg 360
tcctggttac aagagcagct gttcttgatg gagatagttc agaggtgaat ggcttggtga 420
aagaggaagg gacaacacct gtcataagg accgacggcc aaggaagagg ggaagaaagc 480
ctgcgaatgg gagagaggag ccgctgaatc atgttgaggc tgagcgtcaa aggagggaga 540
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aggcttcctt gctgggcat gcaatagcat acatcactga ccttcagaag aagctcaaag 660
atatggagac ggagagagaa cgatttcttg agtctggtat ggtggatcca agggagcgag 720
cccctagacc agaggttgac atccaggtgg tgcaagacga ggttctggtt cgagttatgt 780
ctccattgga gaaccatccg gtaaagaagg tctttgaagc gtttgaagag gcggacgtcc 840
gggtagggga gtcgaaactc acaggcaaca atggaacg 878

<210> 36
<211> 292
<212> PRT
<213> Triticum aestivum

<400> 36

Glu Arg Pro Trp Glu Gln Arg Thr Ala Gly Gly Gly Ser Ser Leu Leu
1 5 10 15

Pro Asn Val Gln Lys Gly Leu Gln Ser Phe Thr Trp Ser Gln Ala Arg
20 25 30

Gly Leu Asn Ser His Gln Gln Lys Phe Gly Asn Gly Ile Leu Ile Val
Seite 48

35

40

45

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

<210> 37

<211> 2054

PF59082SEQ List- PF59348PCT.txt

<212> DNA
<213> Populus sp.

<400> 37
tgaaaaaaaa aaacacatct gctttctggg atgactgatt accgactacc gccgacaatg 60
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tcttctcttt gggcaccgcc tccgcaatct tccgcctcca cttccacgcc atcagcagca 180
gcacagccat ctgagaaaac tatgttgaac caagaaacac tccagcaacg cttcagaca 240
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ggaaaaacta gaacgagaaa ttcggcatca tcagctgttg aacaggagca tcgtaaaacg 420
gtgctccgta agctgaattc gttgattgct ggacctaat ctgttactga tgatgctatc 480
gatgaagagg ttactgatac tgagtgggtt tttcttgta gcatgactca gtctttcgtt 540
aatggaagtg ggttacctg tcaagctctt ttcaatggga gtccgggttg gggtgctggg 600
tcggagaggt tgggggcttc gccgtgtgaa agagccaggc agggtcagggt ttttgggtta 660
cagactttag tttgtatacc gtctgccagt ggtgttggtg aattgggttc tactgaattg 720
atttttcaaa gctcggatct gatgaataag gttaggggtt tgttcgattt taatagtttg 780
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cgaagtcttt tctactgaga gttgaatttt ggggagtgca gcacatatga tgggagtagt 1080
gttagaaatg gaaattccca tttgacgaag ccagaatctg gagagatatt gaattttggg 1140
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gagaataata agaagaagag atcagttggg aatgaagaag ggatgctttc atttacttct 1260
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ccagaaaaga ggccacgaaa acgagggaga aaacctgcca atggaagaga agagcctttg 1440
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cgagctgttg ttcctaattg atcaaagatg gacaaagctt cacttcttgg ggatgccata 1560
tcatatatcg acgagcttag aacgaagctg caatctgccg agtctagcaa ggaggagtgtg 1620
gagaagcaag tggaatcaat gaagaggggag ttagtaagca aggattcaag tcctccacct 1680
aaagaggagc tcaagatgtc aaataacgaa ggagttaaac tgatagacat ggatatcgat 1740
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gctgctaggc taatgtcggc tttgagagac ctggaccttg atgttcagta tgccaatgtg 1860
tctgtgatga atgatttgat gatccagcaa gccacggtga agatggggag tcggttttac 1920
acgcaagaag agcttagggg agccatatca acaaatgttg gtggcgtcca ttaggcattg 1980

PF59082SEQ List- PF59348PCT.txt

aacagaacaa caaatgcaat tagcagttgg gatagatcct ggtaaagatt acaggttccg 2040
actttatttta ttaa 2054

<210> 38
<211> 647
<212> PRT
<213> Populus sp.

<400> 38

Met Thr Asp Tyr Arg Leu Pro Pro Thr Met Asn Leu Trp Thr Asp Asp
1 5 10 15

Asn Ala Ser Val Met Glu Ala Phe Met Asn Ser Ser Asp Leu Ser Ser
20 25 30

Leu Trp Ala Pro Pro Pro Gln Ser Ser Ala Ser Thr Ser Thr Pro Ser
35 40 45

Ala Ala Ala Gln Pro Ser Glu Lys Thr Met Leu Asn Gln Glu Thr Leu
50 55 60

Gln Gln Arg Leu Gln Thr Leu Ile Glu Gly Ala Cys Glu Gly Trp Ala
65 70 75 80

Tyr Ala Ile Phe Trp Gln Ser Ser Tyr Asp Tyr Ser Gly Ala Ser Val
85 90 95

Leu Gly Trp Gly Asp Gly Tyr Tyr Lys Gly Glu Glu Asp Lys Gly Lys
100 105 110

Thr Arg Thr Arg Asn Ser Ala Ser Ser Ala Val Glu Gln Glu His Arg
115 120 125

Lys Thr Val Leu Arg Lys Leu Asn Ser Leu Ile Ala Gly Pro Asn Ser
130 135 140

Val Thr Asp Asp Ala Ile Asp Glu Glu Val Thr Asp Thr Glu Trp Phe
145 150 155 160

Phe Leu Val Ser Met Thr Gln Ser Phe Val Asn Gly Ser Gly Leu Pro
165 170 175

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

Arg Leu Gly Ala Ser Pro Cys Glu Arg Ala Arg Gln Gly Gln Val Phe
195 200 205

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

PF59082SEQ List- PF59348PCT.txt

Leu Gly Ser Thr Glu Leu Ile Phe Gln Ser Ser Asp Leu Met Asn Lys
225 230 235 240

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

Ile Gly Thr Thr Asn Thr Asp Gln Gly Glu Asn Asp Pro Ser Ser Phe
260 265 270

Trp Leu Thr Asp Pro Glu Thr Lys Asp Gly Asn Gly Gly Ile Pro Trp
275 280 285

Asn Leu Asn Gly Ser Asp Gln Asn Lys Asn Asn His His Ser Ser Asn
290 295 300

Gln Ser Ser Ser Ser Leu Thr Asp His Leu Gly Gly Ile His His Ala
305 310 315 320

Gln Asn His Gln Gln Gln Pro Ile His Ala Arg Ser Leu Phe Thr Arg
325 330 335

Glu Leu Asn Phe Gly Glu Cys Ser Thr Tyr Asp Gly Ser Ser Val Arg
340 345 350

Asn Gly Asn Ser His Leu Thr Lys Pro Glu Ser Gly Glu Ile Leu Asn
355 360 365

Phe Gly Glu Ser Lys Arg Thr Ala Ser Ser Ala Asn Gly Asn Phe Tyr
370 375 380

Ser Gly Leu Val Thr Glu Glu Asn Asn Lys Lys Lys Arg Ser Val Gly
385 390 395 400

Asn Glu Glu Gly Met Leu Ser Phe Thr Ser Gly Val Ile Leu Pro Ser
405 410 415

Ser Cys Ile Leu Lys Ser Ser Gly Gly Thr Gly Gly Asp Ser Asp His
420 425 430

Ser Asp Leu Glu Ala Ser Val Val Lys Glu Ala Asp Ser Ser Arg Val
435 440 445

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

Gly Arg Glu Glu Pro Leu Asn His Val Glu Ala Glu Arg Gln Arg Arg
465 470 475 480

Glu Lys Leu Asn Gln Arg Phe Tyr Ala Leu Arg Ala Val Val Pro Asn
485 490 495

Val Ser Lys Met Asp Lys Ala Ser Leu Leu Gly Asp Ala Ile Ser Tyr
Seite 52

500

505

510

Ile Asp Glu Leu Arg Thr Lys Leu Gln Ser Ala Glu Ser Ser Lys Glu
515 520 525

Glu Leu Glu Lys Gln Val Glu Ser Met Lys Arg Glu Leu Val Ser Lys
530 535 540

Asp Ser Ser Pro Pro Lys Glu Glu Leu Lys Met Ser Asn Asn Glu
545 550 555 560

Gly Val Lys Leu Ile Asp Met Asp Ile Asp Val Lys Ile Ser Gly Trp
565 570 575

Asp Ala Met Ile Arg Ile Gln Cys Cys Lys Lys Asn His Pro Ala Ala
580 585 590

Arg Leu Met Ser Ala Leu Arg Asp Leu Asp Leu Asp Val Gln Tyr Ala
595 600 605

Asn Val Ser Val Met Asn Asp Leu Met Ile Gln Gln Ala Thr Val Lys
610 615 620

Met Gly Ser Arg Phe Tyr Thr Gln Glu Glu Leu Arg Val Ala Ile Ser
625 630 635 640

Thr Asn Val Gly Gly Val His
645

<210> 39
<211> 1827
<212> DNA
<213> Vitis vinifera

<400> 39
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gcggctgttt tgggaactcg agcatttgat tacttgatga ccagctccgt tgtgagtga 120
aatctgttaa tggcagtggg gagtgatgaa aatttgcaga caaagctttc ggatctcgta 180
gaccgaccaa atgcatccaa tttcagttgg aattatgcaa ttttctggca aatttcacag 240
tccaagtctg gggattgggt gcttggatgg ggagatgggt cttgtaggga gcccaggga 300
ggggaggaat ccgaagtac ccgaatttta aatattcggc tcgaggatgc aaccagcag 360
aggatgagga aaagggtgct tcagaagctg catacattgt ttggaggctc ggatgaggac 420
agttatgctt ttggattgga ccgagtcact gatactgaaa tgttttttct cgcttccatg 480
tacttctcat ttaccagagg agaaggtggc ccagggaat cttttggatc tgggaagcat 540
ttgtggctgt ctgatgcatt gaaatctcca tcagattatt gtgttcgatc attccttgcc 600
aaatctgctg gaattcagac cattgtgtta atcccaactg atgttggggt tgtagagctg 660
ggttctgtga ggtcattacc tgaaagctta gagatgttgc agactataag atcatcattc 720

PF59082SEQ List- PF59348PCT.txt

tcgatgtatt tgccattcat caggggcaag ccagccttac cagtgttgaa cgagaagaaa	780
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atttttgggc aggatttgaa ctccaggtcat tcccatttta gggagaaact tgctgttcga	900
aaggcagaag agaggccatg ggacagctac caaaacggga acaggcttcc ttttacgaac	960
actagaaatg gttttcatgg ttcgggctgg ccacacatgc aggggtgtgaa accagcaagt	1020
acggcagaaa tgtacagtcc tcaggtccca atcaataatc tacatgagat ggttaatggg	1080
gtagagaggg agtttcggct tagccagttc cagcctccca agcaggtgca gatgcaaatt	1140
gattttgcag gggctgcttc aaggtctacc atgttggttc ggccaattag tgtggagtct	1200
gagcattcag atgtcgaggc ttcattgcaag gatgagcggc caggcccagc tgatgaaagg	1260
aggccccgga aaaggggcag aaagcctgca aatggaagag aagaaccct caatcatgtg	1320
gaagcagaga ggcagaggcg tgagaaactg aaccagcggc tttatgcatt gcgagctggt	1380
gtgccaaca tctccaagat ggacaaagcc tccttgctgg gagatgcaat tacttacatc	1440
accgagctcc agaagaaact caaggacatg gaatcagagc gggagaaatt tgggagcact	1500
tcaagagatg cattatcttt ggaaactaac accgaggcag aaactcatat acaggcgtct	1560
gatgtcgata tccaagcagc caatgatgaa gttattgtga gagtaagctg cccactggat	1620
accaccctg tatcaagagt catccaaaca ttcaaggagg cacagatcac agtgatcgag	1680
tcgaaacttg ctacagacaa tgatactgtg ttacatactt ttgtaatcaa gtcccaggga	1740
tccgagcagc tgatgaagga aaagctcaca gctgcatttt cgcgcgaaac caattcttta	1800
cagcctttgt catcatcagt tgggtaa	1827

<210> 40
 <211> 608
 <212> PRT
 <213> Vitis vinifera

<400> 40

Met	Lys	Thr	Glu	Met	Gly	Met	Gly	Gly	Gly	Ala	Trp	Thr	Glu	Glu	Asp
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Lys	Ala	Met	Val	Ala	Ala	Val	Leu	Gly	Thr	Arg	Ala	Phe	Asp	Tyr	Leu
			20					25					30		

Met	Thr	Ser	Ser	Val	Val	Ser	Glu	Asn	Leu	Leu	Met	Ala	Val	Gly	Ser
		35					40					45			

Asp	Glu	Asn	Leu	Gln	Thr	Lys	Leu	Ser	Asp	Leu	Val	Asp	Arg	Pro	Asn
	50					55					60				

Ala	Ser	Asn	Phe	Ser	Trp	Asn	Tyr	Ala	Ile	Phe	Trp	Gln	Ile	Ser	Gln
65					70					75					80

Ser	Lys	Ser	Gly	Asp	Trp	Val	Leu	Gly	Trp	Gly	Asp	Gly	Ser	Cys	Arg
				85					90					95	

PF59082SEQ List- PF59348PCT.txt

Glu Pro Arg Glu Gly Glu Glu Ser Glu Val Thr Arg Ile Leu Asn Ile
 100 105 110
 Arg Leu Glu Asp Ala Thr Gln Gln Arg Met Arg Lys Arg Val Leu Gln
 115 120 125
 Lys Leu His Thr Leu Phe Gly Gly Ser Asp Glu Asp Ser Tyr Ala Phe
 130 135 140
 Gly Leu Asp Arg Val Thr Asp Thr Glu Met Phe Phe Leu Ala Ser Met
 145 150 155 160
 Tyr Phe Ser Phe Thr Arg Gly Glu Gly Gly Pro Gly Lys Ser Phe Gly
 165 170 175
 Ser Gly Lys His Leu Trp Leu Ser Asp Ala Leu Lys Ser Pro Ser Asp
 180 185 190
 Tyr Cys Val Arg Ser Phe Leu Ala Lys Ser Ala Gly Ile Gln Thr Ile
 195 200 205
 Val Leu Ile Pro Thr Asp Val Gly Val Val Glu Leu Gly Ser Val Arg
 210 215 220
 Ser Leu Pro Glu Ser Leu Glu Met Leu Gln Thr Ile Arg Ser Ser Phe
 225 230 235 240
 Ser Met Tyr Leu Pro Phe Ile Arg Gly Lys Pro Ala Leu Pro Val Leu
 245 250 255
 Asn Glu Lys Lys Asn Glu Ser Ala Pro Phe Ser Asn Leu Gly Thr Gly
 260 265 270
 Glu Arg Val Glu Gly Ile Pro Lys Ile Phe Gly Gln Asp Leu Asn Ser
 275 280 285
 Gly His Ser His Phe Arg Glu Lys Leu Ala Val Arg Lys Ala Glu Glu
 290 295 300
 Arg Pro Trp Asp Ser Tyr Gln Asn Gly Asn Arg Leu Pro Phe Thr Asn
 305 310 315 320
 Thr Arg Asn Gly Phe His Gly Ser Gly Trp Pro His Met Gln Gly Val
 325 330 335
 Lys Pro Ala Ser Thr Ala Glu Met Tyr Ser Pro Gln Val Pro Ile Asn
 340 345 350
 Asn Leu His Glu Met Val Asn Gly Val Arg Glu Glu Phe Arg Leu Ser
 355 360 365

Gln Phe Gln Pro Pro Lys Gln Val Gln Met Gln Ile Asp Phe Ala Gly
370 375 380

Ala Ala Ser Arg Ser Thr Met Leu Ala Arg Pro Ile Ser Val Glu Ser
385 390 395 400

Glu His Ser Asp Val Glu Ala Ser Cys Lys Asp Glu Arg Pro Gly Pro
405 410 415

Ala Asp Glu Arg Arg Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly
420 425 430

Arg Glu Glu Pro Leu Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu
435 440 445

Lys Leu Asn Gln Arg Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Ile
450 455 460

Ser Lys Met Asp Lys Ala Ser Leu Leu Gly Asp Ala Ile Thr Tyr Ile
465 470 475 480

Thr Glu Leu Gln Lys Lys Leu Lys Asp Met Glu Ser Glu Arg Glu Lys
485 490 495

Phe Gly Ser Thr Ser Arg Asp Ala Leu Ser Leu Glu Thr Asn Thr Glu
500 505 510

Ala Glu Thr His Ile Gln Ala Ser Asp Val Asp Ile Gln Ala Ala Asn
515 520 525

Asp Glu Val Ile Val Arg Val Ser Cys Pro Leu Asp Thr His Pro Val
530 535 540

Ser Arg Val Ile Gln Thr Phe Lys Glu Ala Gln Ile Thr Val Ile Glu
545 550 555 560

Ser Lys Leu Ala Thr Asp Asn Asp Thr Val Leu His Thr Phe Val Ile
565 570 575

Lys Ser Gln Gly Ser Glu Gln Leu Met Lys Glu Lys Leu Thr Ala Ala
580 585 590

Phe Ser Arg Glu Ser Asn Ser Leu Gln Pro Leu Ser Ser Ser Val Gly
595 600 605

<210> 41
<211> 663
<212> PRT
<213> Oryza sativa

<400> 41

Met Glu Ala Phe Met Ala Ser Ala Asp Leu Pro Ala Phe Pro Trp Gly
1 5 10 15

PF59082SEQ List- PF59348PCT.txt

Ala Ala Ser Thr Pro Pro Pro Pro Pro Pro Pro Pro His His His His
20 25 30

Gln Gln Gln Gln Gln Gln Val Leu Pro Pro Pro Ala Ala Ala Pro Ala
35 40 45

Ala Ala Ala Phe Asn Gln Asp Thr Leu Gln Gln Arg Leu Gln Ser Ile
50 55 60

Ile Glu Gly Ser Arg Glu Thr Trp Thr Tyr Ala Ile Phe Trp Gln Ser
65 70 75 80

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

Tyr Tyr Lys Gly Cys Asp Asp Asp Lys Arg Lys Gln Arg Ser Ser Thr
100 105 110

Pro Ala Ala Ala Ala Glu Gln Glu His Arg Lys Arg Val Leu Arg Glu
115 120 125

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

Glu Glu Glu Ala Leu Phe Ala Ala Gln Pro Thr Trp Ile Ala Thr Gly
145 150 155 160

Leu Ser Ser Ala Pro Cys Asp Arg Ala Arg Gln Ala Tyr Thr Phe Gly
165 170 175

Leu Arg Thr Met Val Cys Leu Pro Leu Ala Thr Gly Val Leu Glu Leu
180 185 190

Gly Ser Thr Asp Val Ile Phe Gln Thr Gly Asp Ser Ile Pro Arg Ile
195 200 205

Arg Ala Leu Phe Asn Leu Ser Ala Ala Ala Ala Ser Ser Trp Pro Pro
210 215 220

His Pro Asp Ala Ala Ser Ala Asp Pro Ser Val Leu Trp Leu Ala Asp
225 230 235 240

Ala Pro Pro Met Asp Met Lys Asp Ser Ile Ser Ala Ala Asp Ile Ser
245 250 255

Val Ser Lys Pro Pro Pro Pro Pro Pro His Gln Ile Gln His Phe Glu
260 265 270

Asn Gly Ser Thr Ser Thr Leu Thr Glu Asn Pro Ser Pro Ser Val His
275 280 285

PF59082SEQ List- PF59348PCT.txt

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

Gln Gln Gln Ser Ser Gln Ala Gln Gln Gly Pro Phe Arg Arg Glu Leu
305 310 315 320

Asn Phe Ser Asp Phe Ala Ser Asn Gly Gly Ala Ala Ala Pro Pro Phe
325 330 335

Phe Lys Pro Glu Thr Gly Glu Ile Leu Asn Phe Gly Asn Asp Ser Ser
340 345 350

Thr Gly Arg Arg Asn Pro Ser Pro Ala Pro Pro Ala Ala Thr Ala Ser
355 360 365

Leu Thr Thr Ala Pro Gly Ser Leu Phe Ser Gln His Thr Pro Thr Leu
370 375 380

Thr Ala Ala Ala Asn Asp Ala Lys Ser Asn Asn Gln Lys Arg Ser Met
385 390 395 400

Glu Ala Thr Ser Arg Ala Ser Asn Thr Asn Asn His Pro Ala Ala Thr
405 410 415

Ala Asn Glu Gly Met Leu Ser Phe Ser Ser Ala Pro Thr Thr Arg Pro
420 425 430

Ser Thr Gly Thr Gly Ala Pro Ala Lys Ser Glu Ser Asp His Ser Asp
435 440 445

Leu Glu Ala Ser Val Arg Glu Val Glu Ser Ser Arg Val Val Ala Pro
450 455 460

Pro Pro Glu Ala Glu Lys Arg Pro Arg Lys Arg Gly Arg Lys Pro Ala
465 470 475 480

Asn Gly Arg Glu Glu Pro Leu Asn His Val Glu Ala Glu Arg Gln Arg
485 490 495

Arg Glu Lys Leu Asn Gln Arg Phe Tyr Ala Leu Arg Ala Val Val Pro
500 505 510

Asn Val Ser Lys Met Asp Lys Ala Ser Leu Leu Gly Asp Ala Ile Ser
515 520 525

Tyr Ile Asn Glu Leu Arg Gly Lys Leu Thr Ala Leu Glu Thr Asp Lys
530 535 540

Glu Thr Leu Gln Ser Gln Met Glu Ser Leu Lys Lys Glu Arg Asp Ala
545 550 555 560

PF59082SEQ List- PF59348PCT.txt

Arg Pro Pro Ala Pro Ser Gly Gly Gly Gly Asp Gly Gly Ala Arg Cys
565 570 575

His Ala Val Glu Ile Glu Ala Lys Ile Leu Gly Leu Glu Ala Met Ile
580 585 590

Arg Val Gln Cys His Lys Arg Asn His Pro Ala Ala Arg Leu Met Thr
595 600 605

Ala Leu Arg Glu Leu Asp Leu Asp Val Tyr His Ala Ser Val Ser Val
610 615 620

Val Lys Asp Leu Met Ile Gln Gln Val Ala Val Lys Met Ala Ser Arg
625 630 635 640

Val Tyr Ser Gln Asp Gln Leu Asn Ala Ala Leu Tyr Thr Arg Ile Ala
645 650 655

Glu Pro Gly Thr Ala Ala Arg
660

<210> 42
<211> 70
<212> PRT
<213> Artificial sequence

<220>
<223> peptide sequence corresponding to Motif 7 in NP_001065478
<400> 42

Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu
1 5 10 15

Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
20 25 30

Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys
35 40 45

Ala Ser Leu Leu Gly Asp Ala Ile Ser Tyr Ile Asn Glu Leu Arg Gly
50 55 60

Lys Leu Thr Ala Leu Glu
65 70

<210> 43
<211> 70
<212> PRT
<213> Artificial sequence

<220>
<223> peptide sequence corresponding to Motif 7 in EAY79619
<400> 43

Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu
Seite 59

1 5 10 15

Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
20 25 30

Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys
35 40 45

Ala Ser Leu Leu Gly Asp Ala Ile Ser Tyr Ile Asn Glu Leu Arg Gly
50 55 60

Lys Leu Thr Ala Leu Glu
65 70

<210> 44
<211> 70
<212> PRT
<213> Artificial sequence

<220>
<223> peptide sequence corresponding to Motif 7 in AAD15818
<400> 44

Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu
1 5 10 15

Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
20 25 30

Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys
35 40 45

Ala Ser Leu Leu Gly Asp Ala Ile Ser Tyr Ile Asn Glu Leu Arg Gly
50 55 60

Lys Leu Thr Ser Leu Glu
65 70

<210> 45
<211> 70
<212> PRT
<213> Artificial sequence

<220>
<223> peptide sequence corresponding to Motif 7 in AAB00686
<400> 45

Pro Arg Lys Arg Gly Arg Lys Pro Gly Asn Gly Arg Glu Glu Pro Leu
1 5 10 15

Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
20 25 30

Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys
35 40 45

PF59082SEQ List- PF59348PCT.txt

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

Lys Leu Ser Glu Leu Glu
65 70

<210> 46
<211> 70
<212> PRT
<213> Artificial sequence

<220>
<223> peptide sequence corresponding to Motif 7 in ABD59338

<400> 46

Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu
1 5 10 15

Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
20 25 30

Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys
35 40 45

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

Lys Leu Gln Gly Leu Glu
65 70

<210> 47
<211> 70
<212> PRT
<213> Artificial sequence

<220>
<223> peptide sequence corresponding to Motif 7 in Pt29.195#1

<400> 47

Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu
1 5 10 15

Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
20 25 30

Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys
35 40 45

Ala Ser Leu Leu Gly Asp Ala Ile Ser Tyr Ile Asp Glu Leu Arg Thr
50 55 60

Lys Leu Gln Ser Ala Glu
65 70

PF59082SEQ List- PF59348PCT.txt

<210> 48
 <211> 70
 <212> PRT
 <213> Artificial sequence

<220>
 <223> peptide sequence corresponding to Motif 7 in CAF74710

<400> 48

Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu
 1 5 10 15

Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
 20 25 30

Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys
 35 40 45

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

Lys Leu Gln Asn Thr Glu
 65 70

<210> 49
 <211> 70
 <212> PRT
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<220>
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Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
 20 25 30

Phe Phe Ser Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys
 35 40 45

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

Lys Leu Gln Asn Thr Glu
 65 70

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<400> 50

Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu
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Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
20 25 30

Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys
35 40 45

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

Lys Leu Gln Thr Thr Glu
65 70

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<211> 70

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<223> peptide sequence corresponding to Motif 7 in AAY90122

<400> 51

Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu
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Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
20 25 30

Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys
35 40 45

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

Lys Leu Gln Asn Val Glu
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<223> peptide sequence corresponding to Motif 7 in AAL55713

<400> 52

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Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
20 25 30

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

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

Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Arg Met Asp Lys
35 40 45

Ala Ser Leu Leu Ser Asp Ala Val Ser Tyr Ile Asn Glu Leu Lys Ala
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Lys Val Asp Glu Leu Glu
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20 25 30

Phe Tyr Ala Leu Arg Ser Val Val Pro Asn Val Ser Lys Met Asp Lys
35 40 45

Ala Ser Leu Leu Glu Asp Ala Ile Thr Tyr Ile Asn Glu Leu Gln Glu
50 55 60

Lys Leu Gln Lys Ala Glu
65 70

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<213> Nicotiana tabacum

<400> 58

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20 25 30

Asp Ile Val Val Cys Asp Gly Ala Pro Asp Val Thr Gly Leu His Asp
35 40 45

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

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

Arg Gly Lys Asp Thr Ser Leu Leu Tyr Cys Gln Leu Lys Leu Phe Phe
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Thr Glu Val Thr Phe Ala Lys Pro Lys Ser Ser Arg Asn Ser Ser Ile
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Glu Ala Phe Ala Val Cys Glu Asn Tyr Ser Pro Pro Glu Gly Phe Asn
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Glu Lys Asp Leu His Arg Leu Leu Glu Lys Ile Gly Ser Pro Ser Gly
130 135 140

Thr Glu Asp Leu Asp Cys Ser Ser Ala Trp Leu Glu Gly Pro Asn Lys
145 150 155 160

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

Asp Arg Ser Tyr Pro Leu Pro Lys Ala Ala Asp Gly Thr Tyr Gln Cys
180 185 190

Leu Asp Pro Val Gln Pro Pro Ile Ala Pro Pro Tyr Lys Arg Ala Leu
195 200 205

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Ser Leu Ser Ser
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<213> Nicotiana tabacum

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20 25 30

Asp Glu Glu Phe Asn Ile Phe Glu Gly Val Lys Arg Val Val Asp Leu
35 40 45

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

Leu Pro Ala Lys Leu Ser Pro Asp Thr Lys Asp Asp Asp Leu Pro Leu
65 70 75 80

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Gln Val Gln Gly₁₀₀ Asp Ile Thr Asn Ala₁₀₅ Lys Thr Ala Glu Val₁₁₀ Val Ile

Arg His Phe₁₁₅ Asp Gly Cys Lys Ala₁₂₀ Asp Ile Val Val Cys₁₂₅ Asp Gly Ala

Pro Asp₁₃₀ Val Thr Gly Leu His₁₃₅ Asp Met Asp Glu Phe₁₄₀ Val Gln Ser Gln

Leu Ile Leu Ala Gly₁₄₅ Leu Thr Ile Val Thr His₁₅₅ Ile Leu Lys Gly₁₆₀ Gly

Gly Lys Phe Ile Ala₁₆₅ Lys Ile Phe Arg Gly₁₇₀ Lys Asp Thr Ser Leu₁₇₅ Leu

Tyr Cys Gln Leu₁₈₀ Lys Leu Phe Phe Thr₁₈₅ Glu Val Thr Phe Ala₁₉₀ Lys Pro

Lys Ser Ser₁₉₅ Arg Asn Ser Ser Ile₂₀₀ Glu Ala Phe Ala Val₂₀₅ Cys Glu Asn

Tyr Ser₂₁₀ Pro Pro Glu Gly₂₁₅ Phe Asn Glu Lys Asp Leu₂₂₀ His Arg Leu Leu

Glu Lys Ile Gly Ser₂₂₅ Pro₂₃₀ Ser Gly Thr Glu Asp₂₃₅ Leu Asp Cys Ser Ser₂₄₀

Ala Trp Leu Glu Gly₂₄₅ Pro Asn Lys Val Tyr₂₅₀ Ile Pro Phe Leu Ala₂₅₅ Cys

Gly Asp Leu Ser₂₆₀ Gly Tyr Asp Ser Asp₂₆₅ Arg Ser Tyr Pro Leu₂₇₀ Pro Lys

Ala Ala Asp₂₇₅ Gly Thr Tyr Gln Cys₂₈₀ Leu Asp Pro Val Gln₂₈₅ Pro Pro Ile

Ala Pro₂₉₀ Pro Tyr Lys Arg Ala₂₉₅ Leu Glu Met Lys Lys₃₀₀ Ala Ser Asn Gln

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<211> 1128
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 <213> Arabidopsis thaliana

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

Leu Pro Ala Lys Ser Ser Ala Glu Ser Lys Asp Gly Asp Leu Pro Leu
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Ile Val Ala Ile Asp Leu Gln Pro Met Ala Pro Ile Glu Gly Val Ile
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Gln Val Gln Gly Asp Ile Thr Asn Ala Arg Thr Ala Glu Val Val Ile
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100

105

110

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130 135 140

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Gly Lys Phe Ile Ala Lys Ile Phe Arg Gly Lys Asp Thr Ser Leu Leu
165 170 175

Tyr Cys Gln Leu Lys Leu Phe Phe Pro Thr Val Thr Phe Ala Lys Pro
180 185 190

Lys Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Ala Val Cys Glu Asn
195 200 205

Tyr Ser Pro Pro Glu Gly Phe Asn Pro Arg Asp Leu His Arg Leu Leu
210 215 220

Glu Lys Val Gly Ser Pro Ser Gly Gly Ser Asp Leu Asp Cys Ser Ser
225 230 235 240

Gly Trp Leu Glu Gly Pro Asn Lys Val Tyr Ile Pro Phe Leu Ala Cys
245 250 255

Gly Asp Leu Thr Gly Tyr Asp Ser Asp Arg Ser Tyr Pro Leu Pro Arg
260 265 270

Glu Ala Asp Gly Ser Ser Tyr Gln Ser Leu Asp Pro Ile Gln Pro Pro
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<210> 63

<211> 951

<212> DNA

<213> Lycopersicon esculentum

<400> 63

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ggatatgatt cagatcgctt atatccgctt cctaaatctg cagatggaac ctatcaatgt 840
ttagatcctg tacaacctcc gattgcacca ccgtataaac gagctcttga aatgaaaaaa 900
gcttcaagtc aaggaattca taatctagac aaactttctc ttgaccctg a 951

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<210> 64
<211> 316
<212> PRT
<213> Lycopersicon esculentum
<400> 64

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

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

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

Leu Pro Ala Lys Leu Ser Pro Gly Thr Lys Asp Asp Asp Leu Pro Leu
65 70 75 80

Ile Val Ala Ile Asp Leu Gln Pro Met Ala Pro Ile Glu Gly Val Ile
85 90 95

Gln Val Gln Gly Asp Ile Thr Asn Ala Lys Thr Val Glu Val Val Ile
100 105 110

Arg His Phe Asp Gly Cys Lys Ala Asp Leu Val Val Cys Asp Gly Ala
115 120 125

Pro Asp Val Thr Gly Leu His Asp Met Asp Glu Phe Val Gln Ser Gln
130 135 140

PF59082SEQ List- PF59348PCT.txt

Leu Ile Leu Ala Gly Leu Thr Ile Val Thr His Ile Leu Lys Glu Gly
145 150 155 160

Gly Lys Phe Ile Ala Lys Ile Phe Arg Gly Lys Asp Thr Ser Leu Leu
165 170 175

Tyr Cys Gln Leu Lys Leu Phe Phe Thr Glu Val Thr Phe Ala Lys Pro
180 185 190

Lys Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Ala Val Cys Glu Asn
195 200 205

Tyr Ser Pro Pro Glu Gly Phe Asn Glu Lys Asp Leu Tyr Arg Leu Leu
210 215 220

Glu Gln Val Gly Ser Pro Ser Gly Ala Glu Asp Leu Asp Cys Ser Ser
225 230 235 240

Gly Trp Leu Glu Gly Arg Asn Lys Val Tyr Ile Pro Phe Leu Ala Cys
245 250 255

Gly Asp Leu Ser Gly Tyr Asp Ser Asp Arg Ser Tyr Pro Leu Pro Lys
260 265 270

Ser Ala Asp Gly Thr Tyr Gln Cys Leu Asp Pro Val Gln Pro Pro Ile
275 280 285

Ala Pro Pro Tyr Lys Arg Ala Leu Glu Met Lys Lys Ala Ser Ser Gln
290 295 300

Gly Ile His Asn Leu Asp Lys Leu Ser Leu Asp Pro
305 310 315

<210> 65
<211> 951
<212> DNA
<213> Medicago truncatula

<400> 65
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ggggtgaaac gtgttgtaga tttatgtgct gccccaggca gttggagtca ggttttgagt 180
cgaaaactgt accttcagc caagcttgca cctgatgcaa aggatgaaaa tcttcctctt 240
attgtagcta ttgatttgca gccaatggct ccgattgaag gtgttatcca ggtgcagggt 300
gatataacta atgctcggac cgctgaagtg gtcattagac atttcgatgg ttgcaaggcc 360
aaccttgttg tgtgtgatgg tgctcctgat gttaccggac ttcattgacat ggatgaattt 420
gttcaatccc aactcact tgcagggttg acaattgtta ctcatgtact gaaggaagga 480
gggaagttca ttgcgaagat atttagagga aaggacacaa gccttctata ctgtcagcta 540
aaattatattt tccctgtggt gactttcgca aagccaaaaa gtagccgtaa ttccagcata 600

PF59082SEQ List- PF59348PCT.txt

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gggtggttg aaggccctaa taaggtgtat atcccatttc tagcttgcg ggacctcact 780
ggatatgatt ctgataggtc atatccactg cctaaagttg ctgggggaac atatcagagc 840
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gcatcacctc aaggattccg agaacttgaa aatctctccc tggattcctg a 951

<210> 66
<211> 316
<212> PRT
<213> Medicago truncatula

<220>
<221> UNSURE
<222> (236)..(236)
<223> Xaa can be any naturally occurring amino acid

<400> 66

Met Gly Lys Ala Ser Arg Asp Lys Arg Asp Ile Tyr Tyr Arg Lys Ala
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Lys Glu Glu Gly Trp Arg Ala Arg Ser Ala Phe Lys Leu Leu Gln Ile
20 25 30

Asp Glu Glu Phe Asn Ile Phe Glu Gly Val Lys Arg Val Val Asp Leu
35 40 45

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

Leu Pro Ala Lys Leu Ala Pro Asp Ala Lys Asp Glu Asn Leu Pro Leu
65 70 75 80

Ile Val Ala Ile Asp Leu Gln Pro Met Ala Pro Ile Glu Gly Val Ile
85 90 95

Gln Val Gln Gly Asp Ile Thr Asn Ala Arg Thr Ala Glu Val Val Ile
100 105 110

Arg His Phe Asp Gly Cys Lys Ala Asn Leu Val Val Cys Asp Gly Ala
115 120 125

Pro Asp Val Thr Gly Leu His Asp Met Asp Glu Phe Val Gln Ser Gln
130 135 140

Leu Ile Leu Ala Gly Leu Thr Ile Val Thr His Val Leu Lys Glu Gly
145 150 155 160

Gly Lys Phe Ile Ala Lys Ile Phe Arg Gly Lys Asp Thr Ser Leu Leu
165 170 175

PF59082SEQ List- PF59348PCT.txt

Tyr Cys Gln Leu Lys Leu Phe Phe Pro Val Val Thr Phe Ala Lys Pro
180 185 190

Lys Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Ala Val Cys Glu Asn
195 200 205

Tyr Ser Pro Pro Glu Gly Phe Asn Pro Lys Asp Leu His Arg Leu Leu
210 215 220

Glu Lys Val Gly Ser Pro Ser Gly Val Asp Asp Xaa Asp Cys Val Ser
225 230 235 240

Gly Trp Leu Glu Gly Pro Asn Lys Val Tyr Ile Pro Phe Leu Ala Cys
245 250 255

Gly Asp Leu Thr Gly Tyr Asp Ser Asp Arg Ser Tyr Pro Leu Pro Lys
260 265 270

Val Ala Gly Gly Thr Tyr Gln Ser Leu Asp Pro Val Gln Pro Pro Ile
275 280 285

Ala Pro Pro Tyr Lys Arg Ala Leu Glu Leu Lys Lys Ala Ser Pro Gln
290 295 300

Gly Phe Arg Glu Leu Glu Asn Leu Ser Leu Asp Ser
305 310 315

<210> 67
<211> 1018
<212> DNA
<213> Oryza sativa

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ggagtgaagc gtgttggtta tctgtgcgct gctcccgaa gctggagtca ggttttgagt 180
cggaacctgt atgttccagc aaaacaatct cctgattgca aagaagggtga ccttcctctt 240
attgttgcca ttgatttgca accaatggct ccatagaag gcgttataca agttcaaggg 300
gacatcacta atgctcgaac agcagaagtg gttattaggc attttgatgg atgcaaagca 360
gatttggttg tctgcgatgg tgctcctgat gttaccggcc ttcattgatg ggacgagttt 420
gttcagtccc agcttatact ggcggcattg acaattgtga ctcacgtact taaagttggt 480
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gaggcgtttg cagtttgatg gaattattcg cctcccgaa gatttaagga aaaagattta 660
tatcacctgc tagagaaagt ggggactcct tctggggctg atgatttaga ctgcagaagt 720
ggatggttag agggaacaaa caaggtctac atcccatttc tggcttgctg tgacctcagt 780

PF59082SEQ List- PF59348PCT.txt

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 ttggatccag tccagcctcc aattgctcca cttacaaaa ccgcactgga gatgaaaaag 900
 gtcgccagcc atggcattgg agcagatatc agcaaattat ccctcgactc ctgaactaca 960
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<210> 68
 <211> 317
 <212> PRT
 <213> Oryza sativa

<400> 68

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 1 5 10 15

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

Asp Gln Glu Phe Asn Ile Phe His Gly Val Lys Arg Val Val Asp Leu
 35 40 45

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

Val Pro Ala Lys Gln Ser Pro Asp Cys Lys Glu Gly Asp Leu Pro Leu
 65 70 75 80

Ile Val Ala Ile Asp Leu Gln Pro Met Ala Pro Ile Glu Gly Val Ile
 85 90 95

Gln Val Gln Gly Asp Ile Thr Asn Ala Arg Thr Ala Glu Val Val Ile
 100 105 110

Arg His Phe Asp Gly Cys Lys Ala Asp Leu Val Val Cys Asp Gly Ala
 115 120 125

Pro Asp Val Thr Gly Leu His Asp Met Asp Glu Phe Val Gln Ser Gln
 130 135 140

Leu Ile Leu Ala Ala Leu Thr Ile Val Thr His Val Leu Lys Val Gly
 145 150 155 160

Gly Lys Phe Val Ala Lys Ile Phe Arg Gly Lys Asp Thr Ser Leu Leu
 165 170 175

Tyr Cys Gln Leu Lys Leu Phe Phe Ser Gln Val Thr Phe Ala Lys Pro
 180 185 190

Lys Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Ala Val Cys Glu Asn
 195 200 205

PF59082SEQ List- PF59348PCT.txt

Tyr Ser Pro Pro Glu Gly Phe Lys Glu Lys Asp Leu Tyr His Leu Leu
210 215 220

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

Gly Trp Leu Glu Gly Pro Asn Lys Val Tyr Ile Pro Phe Leu Ala Cys
245 250 255

Gly Asp Leu Ser Gly Tyr Asp Ser Asp Arg Ser Tyr Pro Leu Thr Ser
260 265 270

Thr Glu Gly Gly Ser Tyr Gln Ser Leu Asp Pro Val Gln Pro Pro Ile
275 280 285

Ala Pro Pro Tyr Lys Thr Ala Leu Glu Met Lys Lys Val Ala Ser His
290 295 300

Gly Ile Gly Ala Asp Ile Ser Lys Leu Ser Leu Asp Ser
305 310 315

<210> 69
<211> 894
<212> DNA
<213> Ostreococcus lucimarinus

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gacgtgcgac acgtcgtgga tctgtgctgc gcgcccgggt cgtggtcgca ggttttgagt 180
cgaaagtgtg acctaccgc gttggcgcca ggggtcgagg aggaagagct gccgaagatt 240
gtcgccatcg acttgcaacc gatggcgccg atcgagggcg tgacgacgat acagggcgat 300
atcacgtcga tggacaaagt gcgcgaggtc ctgtcgcatt tcgatgggaa acacgcggat 360
ttgatcgtcg gcgatggagc gcccgcgtc acgggtttgc acgatttgga tgagtttatg 420
caggcgcagc tcatactgc cggttgacg gtggcgacgc acatattgaa accaggcgga 480
acgttcatac cgaagatatt tcgggggaaa gacatcagtt tgctctactc acaactgaaa 540
attttcttcc ccgaagtcac gtgcgccaag ccgaaaagta gccggaattc tagcatagaa 600
gcattcatag tgtgtcaggg ttactcccct ccagagggat tcgaaccaca tcaattgact 660
cgtattttag aagcgcgtgc gacgtctcac gccgctggag acgagggcgc ggccgtggga 720
accaagtcct ggccgaacaa tgtgctcgtg ccgtttttgg cgtgcggcga tttgtcggga 780
tacgacgccg atcagagcta tgcgttgat gacaccaaag tcagactaaa accggtgcaa 840
ccgccgacaa caccggcgta tatgaacgca atcaagctct taaagagaaa gtga 894

<210> 70
<211> 297
<212> PRT

<213> *Ostreococcus lucimarinus*

<400> 70

Met Gly Lys Ser Ser Lys Asp Lys Arg Asp Ile Tyr Tyr Arg Lys Ala
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 20 25 30

Asp Glu Ser Phe Asp Ile Phe Arg Asp Val Arg His Val Val Asp Leu
 35 40 45

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

Leu Pro Ala Leu Ala Arg Gly Val Glu Glu Glu Glu Leu Pro Lys Ile
 65 70 75 80

Val Ala Ile Asp Leu Gln Pro Met Ala Pro Ile Glu Gly Val Thr Thr
 85 90 95

Ile Gln Gly Asp Ile Thr Ser Met Asp Lys Val Arg Glu Val Leu Ser
 100 105 110

His Phe Asp Gly Lys His Ala Asp Leu Ile Val Gly Asp Gly Ala Pro
 115 120 125

Asp Val Thr Gly Leu His Asp Leu Asp Glu Phe Met Gln Ala Gln Leu
 130 135 140

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

Thr Phe Ile Ala Lys Ile Phe Arg Gly Lys Asp Ile Ser Leu Leu Tyr
 165 170 175

Ser Gln Leu Lys Ile Phe Phe Pro Glu Val Thr Cys Ala Lys Pro Lys
 180 185 190

Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Ile Val Cys Gln Gly Tyr
 195 200 205

Ser Pro Pro Glu Gly Phe Glu Pro His Gln Leu Thr Arg Ile Leu Glu
 210 215 220

Ala Arg Ala Thr Ser His Ala Ala Gly Asp Glu Gly Ala Ala Val Gly
 225 230 235 240

Thr Lys Ser Trp Pro Asn Asn Val Leu Val Pro Phe Leu Ala Cys Gly
 245 250 255

Asp Leu Ser Gly Tyr Asp Ala Asp Gln Ser Tyr Ala Leu Asp Asp Thr
 Seite 79

260

265

270

Lys Val Arg Leu Lys Pro Val Gln Pro Pro Thr Thr Pro Ala Tyr Met
275 280 285

Asn Ala Ile Lys Leu Leu Lys Arg Lys
290 295

<210> 71
<211> 951
<212> DNA
<213> Populus tremuloides

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ggagtgaagc gtgtggtgga tttatgtgct gcacctggta gctggagtca ggttttgagc 180
cgtaaaactat atttaccagc aaaactttca cctgattcaa gggataatga tcttcctctt 240
attgtggcca ttgatttgca acctatggct ctcatagaag gtgttatcca agtccagggg 300
gatattacca atgcccgaac tgctgaagtg gtcattagac attttgatgg cagcaagggt 360
gacttggttg tgtgtgatgg tgcccctgat gttaccggac tccatgacat ggatgaattt 420
gttcagtctc aactcactat agcgggttta acaattgtca cacatgtact caaagaaggt 480

ggaaaattta ttgcgaagat atttcgtgga aaagatacaa gtcttctgta ttgccagctc 540
aaattatttt ttcctgtggt gacttttgcc aaaccaaaaa gtagccgcaa ttccagcata 600
gaggcatttg cagtttgtga gaattactct cctcctgagg gatttgatcc gaaagacttg 660
cgtcgccttt tggaaaaggt ggggaagcccc tctggtgcag atgacctaga ttgcagtagc 720
gggtggttag aaggggcaag taagggtgat attccatttc tagcttgagg tgaccttagt 780
gggtatgact ctgaccgatc atatccacta ccaaagatg ccgatggcac atatcagagc 840
ttggatcctg tacaaccccc aattgcccct cttataaaa gagcccttga aatgaagaaa 900
gcttctagtc atggtgtaaa agagcttgaa aagctctctt tggattcttg a 951

<210> 72
<211> 316
<212> PRT
<213> Populus tremuloides

<400> 72

Met Gly Arg Ala Ser Arg Asp Lys Arg Asp Ile Tyr Tyr Arg Lys Ala
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Lys Glu Glu Gly Trp Arg Ala Arg Ser Ala Phe Lys Leu Ile Gln Ile
20 25 30

Asp Glu Glu Phe Asn Ile Phe Glu Gly Val Lys Arg Val Val Asp Leu
35 40 45

PF59082SEQ List- PF59348PCT.txt

Cys Ala Ala Pro Gly Ser Trp Ser Gln Val Leu Ser Arg Lys Leu Tyr
 50 55 60
 Leu Pro Ala Lys Leu Ser Pro Asp Ser Arg Asp Asn Asp Leu Pro Leu
 65 70 75 80
 Ile Val Ala Ile Asp Leu Gln Pro Met Ala Leu Ile Glu Gly Val Ile
 85 90 95
 Gln Val Gln Gly Asp Ile Thr Asn Ala Arg Thr Ala Glu Val Val Ile
 100 105 110
 Arg His Phe Asp Gly Ser Lys Ala Asp Leu Val Val Cys Asp Gly Ala
 115 120 125
 Pro Asp Val Thr Gly Leu His Asp Met Asp Glu Phe Val Gln Ser Gln
 130 135 140
 Leu Ile Leu Ala Gly Leu Thr Ile Val Thr His Val Leu Lys Glu Gly
 145 150 155 160
 Gly Lys Phe Ile Ala Lys Ile Phe Arg Gly Lys Asp Thr Ser Leu Leu
 165 170 175
 Tyr Cys Gln Leu Lys Leu Phe Phe Pro Val Val Thr Phe Ala Lys Pro
 180 185 190
 Lys Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Ala Val Cys Glu Asn
 195 200 205
 Tyr Ser Pro Pro Glu Gly Phe Asp Pro Lys Asp Leu Arg Arg Leu Leu
 210 215 220
 Glu Lys Val Gly Ser Pro Ser Gly Ala Asp Asp Leu Asp Cys Ser Ser
 225 230 235 240
 Gly Trp Leu Glu Gly Ala Ser Lys Val Tyr Ile Pro Phe Leu Ala Cys
 245 250 255
 Gly Asp Leu Ser Gly Tyr Asp Ser Asp Arg Ser Tyr Pro Leu Pro Lys
 260 265 270
 Asp Ala Asp Gly Thr Tyr Gln Ser Leu Asp Pro Val Gln Pro Pro Ile
 275 280 285
 Ala Pro Pro Tyr Lys Arg Ala Leu Glu Met Lys Lys Ala Ser Ser His
 290 295 300
 Gly Val Lys Glu Leu Glu Lys Leu Ser Leu Asp Ser
 305 310 315

PF59082SEQ List- PF59348PCT.txt

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 <211> 954
 <212> DNA
 <213> Saccharum officinarum

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 gttcagtccc agcttatact cgcggcattg actatcgtga ctcatgtact caaagttggt 480
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<210> 74
 <211> 317
 <212> PRT
 <213> Saccharum officinarum

<400> 74
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 Lys Glu Glu Gly Trp Arg Ala Arg Ser Ala Phe Lys Leu Leu Gln Ile
 20 25 30
 Asp Gln Glu Phe Asn Ile Phe His Gly Val Lys Arg Val Val Asp Leu
 35 40 45
 Cys Ala Ala Pro Gly Ser Trp Ser Gln Val Leu Ser Arg Asn Leu Tyr
 50 55 60
 Val Pro Ala Lys Gln Ser Pro Asp Cys Lys Glu Gly Asp Leu Pro Leu
 65 70 75 80
 Ile Val Ala Ile Asp Leu Gln Pro Met Ala Pro Ile Glu Gly Val Ile
 85 90 95

PF59082SEQ List- PF59348PCT.txt

Gln Val Gln Gly Asp Ile Thr Asn Ala Arg Thr Ala Glu Val Val Ile
100 105 110

Arg His Phe Asp Gly Cys Lys Ala Asp Leu Val Val Cys Asp Gly Ala
115 120 125

Pro Asp Val Thr Gly Leu His Asp Met Asp Glu Phe Val Gln Ser Gln
130 135 140

Leu Ile Leu Ala Ala Leu Thr Ile Val Thr His Val Leu Lys Val Gly
145 150 155 160

Gly Lys Phe Val Ala Lys Ile Phe Arg Gly Lys Asp Thr Ser Leu Leu
165 170 175

Tyr Cys Gln Leu Lys Leu Phe Phe Ser Gln Val Thr Phe Ala Lys Pro
180 185 190

Lys Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Ala Val Cys Glu Asn
195 200 205

Tyr Ser Pro Pro Glu Gly Phe Lys Glu Glu Asp Leu Tyr His Leu Leu
210 215 220

Glu Lys Val Gly Thr Pro Ser Gly Gly Asp Asp Leu Asp Cys Arg Ser
225 230 235 240

Gly Trp Leu Glu Gly Pro Asn Lys Val Tyr Ile Pro Phe Leu Ala Cys
245 250 255

Gly Asp Leu Ser Gly Tyr Asp Ser Asp Arg Ser Tyr Arg Leu Pro Ser
260 265 270

Thr Glu Gly Gly Ser Tyr Arg Ser Leu Asp Pro Val Gln Pro Pro Ile
275 280 285

Ala Pro Pro Tyr Lys Thr Ala Leu Gln Met Lys Lys Val Ser Ser His
290 295 300

Ser Ala Ser Ala Asp Ala Met Lys Pro Ser Thr Asp Ser
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<210> 75
<211> 945
<212> DNA
<213> Triticum aestivum

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<223> n is a, c, g, or t

<220>
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 <222> (673)..(673)
 <223> n is a, c, g, or t

<220>
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 <222> (775)..(775)
 <223> n is a, c, g, or t

<220>
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 <222> (829)..(829)
 <223> n is a, c, g, or t

<220>
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 <222> (837)..(837)
 <223> n is a, c, g, or t

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 gacatcacca atgctcgaac agcgggaagtg gttatcaggc actttgatgg atgcaaagcg 360
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 aagctgttct tctcacaagt tacatttgca aagccaaaaa gcagccgcaa ctcaagtatc 600
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 tatcacctgt tgnagaaagt gggaactcct tctggggctg atgatttaga ttgcagaagc 720
 ggatgggttg aggggaccaa acaggtctac atcccgtttc tggcttgttg cgacntcagg 780
 ggttacgatc ggaccgttca taccctcctc cgagcacaga ggcggcaant accagancta 840
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<210> 76
 <211> 314
 <212> PRT
 <213> Triticum aestivum

<220>
 <221> UNSURE
 <222> (213)..(213)
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<220>
 <221> UNSURE

<222> (225)..(225)

<223> Xaa can be any naturally occurring amino acid

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<222> (259)..(259)

<223> Xaa can be any naturally occurring amino acid

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<222> (277)..(277)

<223> Xaa can be any naturally occurring amino acid

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<222> (279)..(279)

<223> Xaa can be any naturally occurring amino acid

<400> 76

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 20 25 30

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 35 40 45

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

Leu Pro Ala Lys Leu Ser Ser Asp Gly Lys Asp Gly Gly Leu Pro Leu
 65 70 75 80

Ile Val Ala Ile Asp Leu Gln Pro Met Ala Pro Ile Glu Gly Val Ile
 85 90 95

Gln Val Gln Gly Asp Ile Thr Asn Ala Arg Thr Ala Glu Val Val Ile
 100 105 110

Arg His Phe Asp Gly Cys Lys Ala Asp Leu Val Val Cys Asp Gly Ala
 115 120 125

Pro Asp Val Thr Gly Leu His Asp Met Asp Glu Phe Val Gln Ser Gln
 130 135 140

Leu Ile Leu Ala Ala Leu Thr Ile Val Thr His Val Leu Lys Val Gly
 145 150 155 160

Gly Lys Phe Val Ala Lys Ile Phe Arg Gly Lys Asp Thr Ser Leu Leu
 165 170 175

Tyr Cys Gln Leu Lys Leu Phe Phe Ser Gln Val Thr Phe Ala Lys Pro
 180 185 190

Lys Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Ala Val Cys Glu Asn
 Seite 85

195

200

205

Tyr Ser Pro Pro Xaa Gly Leu Gln Glu Lys Asp Leu Tyr His Leu Leu
210 215 220

Xaa Lys Val Gly Thr Pro Ser Gly Ala Asp Asp Leu Asp Cys Arg Ser
225 230 235 240

Gly Trp Leu Glu Gly Thr Lys Gln Val Tyr Ile Pro Phe Leu Ala Cys
245 250 255

Gly Asp Xaa Arg Gly Tyr Asp Arg Thr Val His Thr Pro Leu Arg Ala
260 265 270

Gln Arg Arg Gln Xaa Pro Xaa Leu Asp Pro Val Ser Pro Pro Leu Pro
275 280 285

Gly Arg Lys Asn Cys Val Glu Ile Arg Lys Gly Leu Thr Arg Val Trp
290 295 300

Arg Asn Thr Ala Ile Ile Phe Asp Leu Lys
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<210> 77
<211> 1246
<212> DNA
<213> Apis mellifera

<400> 77
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gagagcaagg agtgctttta aattgcttca aatagataac gaatgtcata ttttagatgg 180
agtaaacaaa gctgtggatt tgtgcgctgc acccgggagc tggagtcaag ttttatcacg 240
aagattaaat gagaattata aaaaagcttt ggaaacagga aatgcaatac ctccaaaaat 300
agttgcagtt gatttacaag ctatggcacc attggaagga gtgattcaaa ttcaaggaga 360
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tttagtagtt tgcgatggag cacctgatgt gacaggttta catgatatgg atatttatat 480
ccaatctcag ttattattag cagctctgaa tattactact catatattaa agcaaggagg 540
cacatttggt gcaaaaatat ttagagctaa agatgtgact ttgctctatg ctcaactaaa 600
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PF59082SEQ List- PF59348PCT.txt

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<210> 78
<211> 370
<212> PRT
<213> Apis mellifera

<400> 78

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20 25 30

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

Cys Ala Ala Pro Gly Ser Trp Ser Gln Val Leu Ser Arg Arg Leu Asn
50 55 60

Glu Asn Tyr Lys Lys Ala Leu Glu Thr Gly Asn Ala Ile Pro Pro Lys
65 70 75 80

Ile Val Ala Val Asp Leu Gln Ala Met Ala Pro Leu Glu Gly Val Ile
85 90 95

Gln Ile Gln Gly Asp Ile Thr Asn Ile Asp Thr Ala Lys Gln Ile Ile
100 105 110

Ser His Phe Asp Asn Glu Gln Ala Asp Leu Val Val Cys Asp Gly Ala
115 120 125

Pro Asp Val Thr Gly Leu His Asp Met Asp Ile Tyr Ile Gln Ser Gln
130 135 140

Leu Leu Leu Ala Ala Leu Asn Ile Thr Thr His Ile Leu Lys Gln Gly
145 150 155 160

Gly Thr Phe Val Ala Lys Ile Phe Arg Ala Lys Asp Val Thr Leu Leu
165 170 175

Tyr Ala Gln Leu Lys Ile Phe Phe Pro Tyr Val Tyr Cys Thr Lys Pro
180 185 190

Ser Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Val Val Cys Lys Asp
195 200 205

PF59082SEQ List- PF59348PCT.txt

Tyr Ser Pro Pro Glu Gly Tyr Lys Pro His Met Met Asn Pro Leu Leu
 210 215 220

Thr His Lys Pro Cys Asp Phe Asn Asp Leu Thr Gly Ile Asn Arg Val
 225 230 235 240

Ile Val Pro Phe Val Val Cys Gly Asp Leu Ser Gln Pro Asp Ser Asp
 245 250 255

Thr Cys Tyr Pro Leu Asp Phe Glu Gly Lys Thr Tyr Thr Tyr His Glu
 260 265 270

Pro Val Gln Thr Pro Ile Ser Pro Pro Tyr Lys Glu Ala Leu Ser Leu
 275 280 285

Met Glu Asp Arg Asp Thr Asp Phe Arg Arg Phe Asp Val Asn Val Val
 290 295 300

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

Lys Gln Lys His Lys Glu Ile Asn Glu Thr Lys Arg Ile Glu Leu Gln
 325 330 335

Asp Asn Lys Lys Asp Asp Ser Glu Glu Asp Ile Leu Gly Leu Asp Lys
 340 345 350

Leu Met Pro Thr Glu Leu Phe Asp Glu Ser Glu Asn Lys Asn Asn Asp
 355 360 365

Asn Met
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<210> 79
 <211> 1093
 <212> DNA
 <213> Caenorhabditis elegans

<400> 79
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PF59082SEQ List- PF59348PCT.txt

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<210> 80
<211> 337
<212> PRT
<213> Caenorhabditis elegans
<400> 80

Met Gly Lys Thr Ser Arg Asp Lys Arg Asp Ile Tyr Tyr Arg Leu Ala
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20 25 30

Asp Asp Glu Phe Gln Ile Leu Lys Gly Val Arg Arg Ala Val Asp Leu
35 40 45

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

Glu Glu Asp Gln Glu Ala Lys Ile Val Ala Ile Asp Leu Gln Pro Met
65 70 75 80

Ala Pro Ile Pro Gly Val Ile Gln Leu Gln Gly Asp Ile Thr Ser Val
85 90 95

Asp Thr Ala Asn Gln Val Ile Lys His Phe Ser Gly Glu Lys Ser Asp
100 105 110

Ile Val Ile Cys Asp Gly Ala Pro Asp Val Thr Gly Ile His Ser Leu
115 120 125

Asp Glu Phe Met Gln Ala Glu Leu Ile Leu Ala Ala Phe Asn Ile Thr
130 135 140

Ser His Val Leu Lys Glu Gly Gly Asn Phe Leu Ala Lys Ile Phe Arg
145 150 155 160

PF59082SEQ List- PF59348PCT.txt

Ser Arg Asn Ser Ser Leu Leu Tyr Ala Gln Met Lys Lys Tyr Phe Lys
165 170 175

Lys Val Tyr Leu Ala Lys Pro Arg Ser Ser Arg Gln Ser Ser Cys Glu
180 185 190

Ala Phe Val Leu Cys Leu Asp Tyr Ser Pro Pro Glu Gly Phe Val Pro
195 200 205

Thr Met Gly Lys Thr Ser Leu Asp Ala Thr Asp Ala Ser Ala Ile Ser
210 215 220

Pro Asp Ile Ile Asp Gly Phe Val Thr Cys Gly Asp Leu Ser Gly Trp
225 230 235 240

Asp Ser Glu Lys Ser Tyr Pro Leu Asp Ile Asp Ala Cys Phe Pro Lys
245 250 255

Gly Glu Ile Asp Glu Glu Gln Lys Lys Arg Tyr Glu Phe Lys Asp Val
260 265 270

Val Gln Pro Pro Thr Asp Pro Ala Tyr Lys Ala Ala Leu Asp Lys Lys
275 280 285

Lys Ser Gly Val Phe Ala Lys Met Ser Ala Asp Leu Asn Arg Gln Leu
290 295 300

Lys Ala Glu Leu Ser Arg Gly Lys Asp Gln Lys Lys Thr Pro Ala Glu
305 310 315 320

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

Leu

<210> 81
<211> 1433
<212> DNA
<213> Danio rerio

<400> 81
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tgtttagagg tgttagtcgt gctgtggatc tgtgtgcagc acctggcagc tggagtcaag 240
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tttctacagc agaggaaatt attcgacatt ttgaaggaga gtctgcagac ttggttgtgt 420
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PF59082SEQ List- PF59348PCT.txt

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tgtgtcagaa ttactctcca cctgagggtt acgttcccaa catgtccaac cttttactgg 720
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acaggattgt ttcagtaagt cgccgaaaca acctgatgac ttttaacctc agctttacat 1380
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<210> 82
 <211> 323
 <212> PRT
 <213> Danio rerio

<400> 82

Met Gly Arg Ser Ser Lys Asp Lys Arg Asp Ile Tyr Tyr Arg Leu Ala
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Lys Glu Glu Gly Trp Arg Ala Arg Ser Ala Phe Lys Leu Leu Gln Leu
 20 25 30

Asp Glu Glu Phe Lys Leu Phe Arg Gly Val Ser Arg Ala Val Asp Leu
 35 40 45

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

Gly Lys Asp Lys Ser Glu Glu Val Lys Ile Val Ala Val Asp Leu Gln
 65 70 75 80

Ala Met Ala Pro Leu Pro Gly Val Thr Gln Ile Gln Gly Asp Ile Thr
 85 90 95

Lys Ile Ser Thr Ala Glu Glu Ile Ile Arg His Phe Glu Gly Glu Ser
 100 105 110

PF59082SEQ List- PF59348PCT.txt

Ala Asp Leu Val Val Cys Asp Gly Ala Pro Asp Val Thr Gly Leu His
115 120 125

Asp Val Asp Glu Tyr Ile Gln Ala Gln Leu Leu Leu Ala Ala Leu Asn
130 135 140

Ile Thr Thr His Val Leu Lys Pro Gly Gly Asn Phe Val Ala Lys Ile
145 150 155 160

Phe Arg Gly Lys Asp Val Thr Leu Leu Tyr Ser Gln Leu Lys Ile Phe
165 170 175

Phe Ser Phe Val Thr Cys Ala Lys Pro Pro Ser Ser Arg Asn Ser Ser
180 185 190

Ile Glu Ala Phe Val Val Cys Gln Asn Tyr Ser Pro Pro Glu Gly Tyr
195 200 205

Val Pro Asn Met Ser Asn Pro Leu Leu Asp His Ser Tyr Asp Val Asp
210 215 220

Phe Asn Gln Leu Glu Gly Pro Asn Arg Ile Ile Val Pro Phe Leu Ala
225 230 235 240

Cys Gly Asp Leu Ser Gly Phe Asp Ser Asp Arg Thr Tyr Pro Leu Gln
245 250 255

Leu Asp Ser Ser Lys Glu Tyr Gln Tyr Leu Pro Pro Thr Gln Pro Pro
260 265 270

Ile Arg Pro Pro Tyr Gln Gln Ala Cys Gln Leu Arg Lys Ser Asn Leu
275 280 285

Leu Ala Lys Glu Asp Ser Pro Ser Gly Ala Leu Asp Glu Ala Leu Thr
290 295 300

Ala Leu Asp Leu Asn Thr Lys Pro Asp Thr Ser Thr Thr Thr Pro Gly
305 310 315 320

Ala ser Glu

<210> 83
<211> 1984
<212> DNA
<213> Homo sapiens

<400> 83
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PF59082SEQ List- PF59348PCT.txt

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<210> 84
 <211> 327
 <212> PRT
 <213> Homo sapiens

<400> 84

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

PF59082SEQ List- PF59348PCT.txt

Gln Glu Ala Cys Thr Leu Lys Arg Lys Gly Gln Leu Ala Lys Glu Ile
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Arg Pro Gln Asp Cys Pro Ile Ser Arg Val Asp Thr Phe Pro Gln Pro
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Asn Glu Met Ser Cys Ser Pro
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<211> 2466
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<213> Arabidopsis thaliana

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PF59082SEQ List- PF59348PCT.txt

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 <211> 821
 <212> PRT
 <213> Arabidopsis thaliana
 <400> 86

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 35 40 45

Leu Cys Ala Ala Pro Gly Gly Trp Met Gln Val Ala Val Glu Lys Val
 50 55 60

Pro Val Gly Ser Leu Val Leu Gly Ile Asp Leu Val Pro Ile Leu Pro
 65 70 75 80

Val Arg Gly Cys Val Thr Met Thr Gln Asp Ile Thr Arg Thr Glu Cys
 85 90 95

PF59082SEQ List- PF59348PCT.txt

Lys Ser Lys Ile Lys Gln Val Met Glu Gln His Gly Val Ser Ala Phe
 100 105 110
 Asn Leu Val Leu His Asp Gly Ser Pro Asn Val Gly Gly Ala Trp Ala
 115 120 125
 Gln Glu Ala Met Ser Gln Asn Ala Leu Val Ile Asp Ser Val Arg Leu
 130 135 140
 Ala Thr Glu Phe Leu Ala Arg Asn Gly Asn Leu Val Thr Lys Val Phe
 145 150 155 160
 Arg Ser Arg Asp Tyr Asn Ser Val Leu Tyr Cys Leu Gly Arg Leu Phe
 165 170 175
 Glu Lys Val Glu Val Phe Lys Pro Pro Ala Ser Arg Ser Ala Ser Ala
 180 185 190
 Glu Thr Tyr Leu Val Gly Leu Lys Tyr Leu Ala Pro Ala Lys Ile Asp
 195 200 205
 Pro Arg Leu Leu Asp Tyr Arg His Leu Phe Lys Glu Ser Ala Glu Pro
 210 215 220
 Thr Arg Lys Val Val Asp Val Leu Gly Gly Ser Lys Gln Lys Arg Asn
 225 230 235 240
 Arg Asp Gly Tyr Glu Asp Gly Glu Ser Ile Leu Arg Arg Val Ala Ser
 245 250 255
 Ala Ala Asp Phe Ile Trp Ser Glu Asn Pro Leu Asp Val Leu Gly Thr
 260 265 270
 Thr Thr Ser Ile Ser Phe Asp Asp Gln Ala Ser Leu Pro Leu Lys Glu
 275 280 285
 His Asp Leu Thr Thr Glu Glu Ile Lys Ile Leu Cys Asp Asp Leu Pro
 290 295 300
 Val Leu Gly Lys Asn Asp Phe Lys His Ile Leu Lys Trp Arg Met Gln
 305 310 315 320
 Ile Arg Lys Ala Leu Thr Pro Glu Lys Lys Glu Val Ala Lys Pro Glu
 325 330 335
 Pro Asp Val Gly Lys Glu Asp Glu Glu Asn Glu Asp Asp Lys Leu Leu
 340 345 350
 Asn Glu Leu Glu Glu Leu Thr Asn Thr Val Asp Arg Lys Lys Lys Gln
 355 360 365

Ala Lys Lys Ile Leu Ala Lys Arg Arg Ala Lys Asp Lys Ala Arg Lys
370 375 380

Ala Thr Gly Pro Gln Met Asp Val Leu Glu Asp Gly Phe Val Asp Asn
385 390 395 400

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

Val Asp Asn Asp Glu Asp Asp Asn Gly Asn Ala Val Asp Ser Glu Asn
420 425 430

Glu Asp His Gly Glu Gly Ala Ser Asp Asp Ser Lys Asp Ser Asp Arg
435 440 445

Asp Ser Asp Glu Glu Arg Gln Lys Tyr Thr Glu Gln Met Glu Glu Ile
450 455 460

Phe Glu Gln Ala Tyr Glu Arg Tyr Met Val Lys Lys Glu Gly Ser Ala
465 470 475 480

Lys Gln Arg Lys Arg Ala Arg Gln Ala His Ala Glu Lys Leu Glu Glu
485 490 495

Gly Asp Gly Asp Glu Glu Met Lys Ile Asp Tyr Asp Ser Asp Met Asn
500 505 510

Glu Glu Lys Asp Glu Ala Asn Pro Leu Val Val Pro Leu Asp Asp Gly
515 520 525

Val Val Gln Thr Lys Glu Glu Ile Ser Asn Gln Trp Phe Ser Gln Asn
530 535 540

Ile Phe Ala Glu Ala Val Glu Glu Gly Asp Leu Gly Lys Asp Asp Ser
545 550 555 560

Glu Asp Glu Ile Ala Asn Lys Lys Lys Ser Lys Asn Leu Ser Lys Pro
565 570 575

Asp Lys Ser Lys Gln Lys Ala Ser Lys Ala Ser Val Leu Ser Asp Gln
580 585 590

Ser Leu Pro Asn Ser Ser Lys Lys Glu Asp Glu Phe Glu Val Val Pro
595 600 605

Ala Pro Ala Thr Asp Ser Asp Ser Asp Ser Ser Glu Asp Asp Val
610 615 620

His Thr Lys Ala Glu Ile Leu Ala Cys Ala Lys Lys Met Leu Arg Lys
625 630 635 640

PF59082SEQ List- PF59348PCT.txt

Lys Gln Arg Glu Gln Met Leu Asp Asp Ala Tyr Asn Lys His Met Phe
645 650 655

Val Asp Glu Gly Leu Pro Lys Trp Phe Val Asp Asp Glu Lys Gln His
660 665 670

Arg Gln Pro Met Lys Pro Val Thr Lys Asp Glu Val Asn Ala Met Lys
675 680 685

Ala Gln Phe Lys Glu Ile Asn Ala Arg Pro Ala Lys Lys Val Ala Glu
690 695 700

Ala Lys Ala Arg Lys Lys Arg Ala Ala Gln Lys Arg Leu Glu Lys Val
705 710 715 720

Arg Lys Lys Ala Asn Thr Ile Ser Asp Thr Ala Asp Ile Ser Asp Arg
725 730 735

Ser Lys Asp Lys Met Ile Asp Lys Leu Tyr Lys Lys Ala Ala Glu Pro
740 745 750

Arg Lys Pro Arg Lys Glu Leu Val Val Ser Lys Lys Gly Val Gly Val
755 760 765

Lys Val Gly Lys Gly Gln Lys Arg Val Asp Arg Arg Met Lys Ser Asp
770 775 780

Asp Arg Lys Arg Gly Gly Gly Lys Pro Gly Arg Asn Gly Gln Lys Gly
785 790 795 800

Thr Gly Lys Ala Gly Gln Lys Gly Lys Arg Pro Ala Gly Lys Pro Arg
805 810 815

Gly Arg Lys Pro Gly
820

<210> 87
<211> 675
<212> DNA
<213> Arabidopsis thaliana

<400> 87
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gctcgctcag ctttcaagct tctacagatt caaaaacagt acaagctcat caaaccaggc 120
tcctctgttc ttgacctagg ttgcgcgcct ggtgcttggc ttcaggttgc ttgccaaagc 180
ttaggcccac ttagaagtgg tggaattgtc gttggtatgg atataaagaa ggtgaagggtt 240
cctccacagt gtgattctcg agtgcaaacc attgctgctg atgtttttaa ctttcccaga 300
caaaagattc gggagttatc acctcagcaa ttgggatttt cagtcattct ttcagatatg 360
tgtcactcag tatctggaat aaccactaga gatgcagctc tgtctgctga attgggaatg 420
cgagcacttg atttggctgt tggtaagct gccatctctc agtcacctaa tgatgatgat 480

PF59082SEQ List- PF59348PCT.txt

ggaggcccaa acgaaagtcg tcctggtgta cttaggcatg gtggccatct tgtgatcaag 540
 cttctagaaa gcgaggatgc tcaagatttt gctcgaattt gcaagcctat cttcaacaag 600
 gcatcttggt tgaggccaaa agctacaaga ccatcatctc gagaaattta cttgatttgc 660
 cagggatttc gataa 675

<210> 88
 <211> 224
 <212> PRT
 <213> Arabidopsis thaliana

<400> 88

Met Ser Gly Ala Gly Val Pro Asp Phe Phe Tyr Arg Glu Ala Gln Arg
 1 5 10 15

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

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

Ala Pro Gly Ala Trp Leu Gln Val Ala Cys Gln Ser Leu Gly Pro Leu
 50 55 60

Arg Ser Gly Gly Ile Val Val Gly Met Asp Ile Lys Lys Val Lys Val
 65 70 75 80

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

Asn Phe Pro Arg Gln Lys Ile Arg Glu Leu Ser Pro Gln Gln Leu Gly
 100 105 110

Phe Ser Val Ile Leu Ser Asp Met Cys His Ser Val Ser Gly Ile Thr
 115 120 125

Thr Arg Asp Ala Ala Leu Ser Ala Glu Leu Gly Met Arg Ala Leu Asp
 130 135 140

Leu Ala Val Gly Gln Ala Ala Ile Ser Gln Ser Pro Asn Asp Asp Asp
 145 150 155 160

Gly Gly Pro Asn Glu Ser Arg Pro Gly Val Leu Arg His Gly Gly His
 165 170 175

Leu Val Ile Lys Leu Leu Glu Ser Glu Asp Ala Gln Asp Phe Ala Arg
 180 185 190

Ile Cys Lys Pro Ile Phe Asn Lys Ala Ser Trp Leu Arg Pro Lys Ala
 195 200 205

PF59082SEQ List- PF59348PCT.txt

Thr Arg Pro Ser Ser Arg Glu Ile Tyr Leu Ile Cys Gln Gly Phe Arg
210 215 220

<210> 89
<211> 1212
<212> DNA
<213> Oryza sativa

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<400> 89
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gtcgcccgct ccgcgttcaa gctgatccag atacagaagc agcacaagct catcgccccc      120
ggcgccgccc tcctcgacct cggtgcgcc cccggcgcggt ggctccaggt ggcgtgccag      180
aacctgggtc cgctcgagaa gggcgggggtg atcgtcggcg tcgatgtcaa gaaggtgaag      240
gttccatctg cgactgtga ctcgaggggtc aggaccgttt gcgccgatgt gatggctctg      300
atgaagcagc aagctcgggc aatgtcgcca caggaacgag gattctctgt aatattgtca      360
gacatgtgcc cagtagtttc tggaattaca accaaagatg cggctatatc ttgcgagctg      420
ggcatgcgtg ctctttcatt ggcagttggg aagatgaaag caaaagattc agattgcatt      480
gcaatttttag agaagtttca gagctccact gagccagatc ctgatgaaga tggcattctc      540
cgtcgtggag gcagccttgt aattaagttt cttgagaatg aggatatacc aggttttggc      600
aaattttgca aagagaagtt caagaaagtg tccttattga gaccaaggc gacaagatct      660
agttcgaggg agattttcat ggtctgtgaa ggccgcggct tctcggtcgc gccacgctgg      720
catccacttt ctcatggccc ggcgacgtac gggacgggct ccacgtgtca cgccgccgcc      780
cacagcttgg tcgaattgag aactgttggg cttcaaagag aggctcccaa gtgcagtgac      840
ctgaaagctc aagctcaacc tgcggcggtc gtgcggattc cgcggggcgc gtcccttccc      900
gccacccgca acgccgctgg actccactcc actctcctcg tcgcttcggt gctgcacatc      960
accacccacc gcggtggcac tcacttctat attagcttaa gcgtgggggtg ggagacgccg     1020
aggagggagg agtgccgcat cccggtggtg ccgccgcagt gcccggcgcc gccgaggaag     1080
aggccggtgg cgctgccgga gctgggggaag gagcggcggg agccgcccaa gggcgggtac     1140
ttccagccgc cggacctcga gtcgctcttc gtgctcgcgc cgccgcggag gcaggcgtcc     1200
agctgcgcgt ag                                                    1212
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<210> 90
<211> 403
<212> PRT
<213> Oryza sativa

<400> 90

Met Ser Gly Ala Gly Gly Thr Ala Asp Phe Phe Tyr Arg Glu Ala Gln
1 5 10 15

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

PF59082SEQ List- PF59348PCT.txt

Lys Gln His Lys Leu Ile Ala Pro Gly Ala Ala Val Leu Asp Leu Gly
35 40 45

Cys Ala Pro Gly Ala Trp Leu Gln Val Ala Cys Gln Asn Leu Gly Pro
50 55 60

Leu Glu Lys Gly Gly Val Ile Val Gly Val Asp Val Lys Lys Val Lys
65 70 75 80

Val Pro Ser Ala His Cys Asp Ser Arg Val Arg Thr Val Cys Ala Asp
85 90 95

Val Met Ala Leu Met Lys Gln Gln Ala Arg Ala Met Ser Pro Gln Glu
100 105 110

Arg Gly Phe Ser Val Ile Leu Ser Asp Met Cys Pro Val Val Ser Gly
115 120 125

Ile Thr Thr Lys Asp Ala Ala Ile Ser Cys Glu Leu Gly Met Arg Ala
130 135 140

Leu Ser Leu Ala Val Gly Lys Met Lys Ala Lys Asp Ser Asp Cys Ile
145 150 155 160

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

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

Asn Glu Asp Ile Pro Gly Phe Gly Lys Phe Cys Lys Glu Lys Phe Lys
195 200 205

Lys Val Ser Leu Leu Arg Pro Lys Ala Thr Arg Ser Ser Ser Arg Glu
210 215 220

Ile Phe Met Val Cys Glu Gly Arg Gly Phe Ser Val Ala Pro Arg Trp
225 230 235 240

His Pro Leu Ser His Gly Pro Ala Thr Tyr Gly Thr Gly Ser Thr Cys
245 250 255

His Ala Ala Ala His Ser Leu Val Glu Leu Arg Thr Val Gly Leu Gln
260 265 270

Arg Glu Ala Pro Lys Cys Ser Asp Leu Lys Ala Gln Ala Gln Pro Ala
275 280 285

Ala Phe Val Arg Ile Pro Arg Gly Ala Ser Leu Pro Ala Thr Arg Asn
290 295 300

Ala Ala Gly Leu His Ser Thr Leu Leu Val Ala Ser Leu Leu His Ile

305 310 315 320

Thr Thr His Arg Gly Gly Thr His Phe Tyr Ile Ser Leu Ser Val Gly
325 330 335

Trp Glu Thr Pro Arg Arg Glu Glu Cys Arg Ile Pro Val Val Pro Pro
340 345 350

Gln Cys Pro Ala Pro Pro Arg Lys Arg Pro Val Ala Leu Pro Glu Leu
355 360 365

Gly Lys Glu Arg Arg Glu Pro Pro Lys Gly Gly Tyr Phe Gln Pro Pro
370 375 380

Asp Leu Glu Ser Leu Phe Val Leu Ala Pro Pro Arg Arg Gln Ala Ser
385 390 395 400

Ser Cys Ala

<210> 91
<211> 1187
<212> DNA
<213> Oryza sativa

<400> 91
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ccggaattga taattgtgtt ctgactaaat taaatgacca gaagtcgcta tcttccaatg 120
tatccgaaac ctggattaaa caatcctgtt ctgttctcta gcccctcctg catggccgga 180
ttgttttttt gacatgtttt cttgactgag gcctgtttgt tctaaacttt ttcttcaaac 240
ttttaacttt ttcacacat cagaactttt ctacacacat aaacttttaa cttttctgtc 300
acatcgttcc aatttcaatc aaacttttaa ttttggcttg aactaaacac accctgagtc 360
ttttattgct cctccatacg gggtggctgg ttgagaatag gtattttcag agagaaaatc 420
tggatattgg gaggaggaac ttggcatgaa tggccactat atttagagca attctacggt 480
ctttgaggag gtacatgag gtacaaaat tttagtgtaa attttagtat cttcttaagg 540
accgtaaaat tgctcctata ttaagggat gtttatatct atccatatcc ataatttgat 600
tttgataaga aaaaatgtga gcacaccaag catgtccatg accttgact cttggctcac 660
tcgtcaactg tgaagaacct aaaaatgct caatatagct acaggtgcct gaaaaaataa 720
ctttaaagtt ttgaacatcg atttactaa acaacaatta ttatctccct ctgaaatggt 780
gctacctaag atgatagttt agaactctag aatcattgtc ggcggagaaa gtaaattatt 840
ttccccaat ttccagctat gaaaaaacc tcaccaaaca ccatcaaaca agagttcacc 900
aaaccgcca tgcggccatg ctgtcacgca acgcaccgca ttgcctgatg gccgctcgat 960
gcatgcatgc ttccccgtgc acatatccga cagacgcgcc gtgtcagcga gtcctcgac 1020
cgacctgtgt agcccatgca agcatccacc cccgccacgt acaccctc ctctcccta 1080

PF59082SEQ List- PF59348PCT.txt

cggtgtcaccg ctctctccac ctatatatgc ccacctggcc cctctcctcc catctccact 1140
tcacccgatc gcttcttctt cttcttcggt gcattcatct tgctagc 1187

<210> 92
<211> 951
<212> DNA
<213> Hordeum vulgare

<400> 92
atgggcaagg cctccaaaga caagcgggac atatactatc ggaaggccaa ggaggagggg 60
tgaggaggctc gcagcgcctt caagctaata cagatcgacc aggagttcaa catcttccac 120
ggagtgaagc gcgccgttga cctgtgcgct gcccttggga gctggagcca ggttttgagc 180
cgcaatttgt acctgccggc aaagctatca tctgacggca aagatggcgg ctttcctctc 240
atcgtcgcaa tcgatctgca gccgatggct cctatagaag gtgtcataca agtgcagggc 300
gacatcacca atgctcgaac agcgggaagt gttatcaggc acttcgatgg atgcaaagcg 360
gacttggttg tctgtgatgg tgcccctgat gttactgggc ttcattgatg ggatgagttt 420
gttcagtccc agcttatatt ggcggcactg acaattgtga ctcattgtact caaagttggt 480
ggaaaatttg ttgcgaagat tttccggggg aaagatacaa gtctcctgta ttgccagtta 540
aagttgttct tctcacaagt tacatttgca aagccaaaaa gcagccgtaa ctcaagtatc 600
gaggcatttg cagtttgcca gaactactca cctccagagg gcttcaaaga gaaagacttg 660
tatcacctgc tggagaaaagt gggaactcct tctggggctg atgatttaga ttgccgaagc 720
ggatgggttg agggacaaaa caaggtctac attccgtttc tggcttgagg tgacctcagc 780
ggttatgatt cggaccgttc ataccctc cagagcacag aaggtggcac ctaccagagc 840
ctagatccag tccagcctcc catcgcgccg ccatacaaaa ctgcgttgga gatgaagaag 900
gcgtctagcc acggcgccgg cgcagatact agcaaatcat atgtcgaccc c 951

<210> 93
<211> 317
<212> PRT
<213> Hordeum vulgare

<400> 93
Met Gly Lys Ala Ser Lys Asp Lys Arg Asp Ile Tyr Tyr Arg Lys Ala
1 5 10 15
Lys Glu Glu Gly Trp Arg Ala Arg Ser Ala Phe Lys Leu Met Gln Ile
20 25 30
Asp Gln Glu Phe Asn Ile Phe His Gly Val Lys Arg Ala Val Asp Leu
35 40 45
Cys Ala Ala Pro Gly Ser Trp Ser Gln Val Leu Ser Arg Asn Leu Tyr
50 55 60

PF59082SEQ List- PF59348PCT.txt

Leu Pro Ala Lys Leu Ser Ser Asp Gly Lys Asp Gly Gly Leu Pro Leu
65 70 75 80

Ile Val Ala Ile Asp Leu Gln Pro Met Ala Pro Ile Glu Gly Val Ile
85 90 95

Gln Val Gln Gly Asp Ile Thr Asn Ala Arg Thr Ala Glu Val Val Ile
100 105 110

Arg His Phe Asp Gly Cys Lys Ala Asp Leu Val Val Cys Asp Gly Ala
115 120 125

Pro Asp Val Thr Gly Leu His Asp Met Asp Glu Phe Val Gln Ser Gln
130 135 140

Leu Ile Leu Ala Ala Leu Thr Ile Val Thr His Val Leu Lys Val Gly
145 150 155 160

Gly Lys Phe Val Ala Lys Ile Phe Arg Gly Lys Asp Thr Ser Leu Leu
165 170 175

Tyr Cys Gln Leu Lys Leu Phe Phe Ser Gln Val Thr Phe Ala Lys Pro
180 185 190

Lys Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Ala Val Cys Glu Asn
195 200 205

Tyr Ser Pro Pro Glu Gly Phe Lys Glu Lys Asp Leu Tyr His Leu Leu
210 215 220

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

Gly Trp Leu Glu Gly Pro Asn Lys Val Tyr Ile Pro Phe Leu Ala Cys
245 250 255

Gly Asp Leu Ser Gly Tyr Asp Ser Asp Arg Ser Tyr Pro Leu Pro Ser
260 265 270

Thr Glu Gly Gly Thr Tyr Gln Ser Leu Asp Pro Val Gln Pro Pro Ile
275 280 285

Ala Pro Pro Tyr Lys Thr Ala Leu Glu Met Lys Lys Ala Ser Ser His
290 295 300

Gly Ala Gly Ala Asp Thr Ser Lys Ser Tyr Val Asp Pro
305 310 315

<210> 94
<211> 1414
<212> DNA
<213> Sorghum bicolor

PF59082SEQ List- PF59348PCT.txt

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<400> 94
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tcgctcgctc gtcccccccc gtcttcgcc cccgcctccg cccccgccgc ctttggtctg    120
caccagcgcc acctcgccct cctccgacta ctgctcgct cgtccccgcc cgtcttcgcc    180
ctccgcctcc gccgccgccg cccttggttc gcctcatcgt cgtcgccatg ggcaaggcct    240
ccaaggacaa gagagacatc tactaccgga aggccaaaga ggagggatgg agagctcgca    300
gcgcccttaa gtcctccaa atagaccagg agttcaacat cttccatgga gtgaagcgcg    360
tggttgatct gtgtgctgct cccggaagct ggagccaggt tttgagccgg aacttgatatg    420
taccagcaaa acagtctcct gattgcaagg aagggtgacct tcctctcatc gttgcaattg    480
acttgcaacc aatggccccg atagaagggt ttatacaagt gcaggggtgac atcaccaatg    540
ctcggacagc ggaagtgggtt attaggcatt ttgatggatg caaagcagac ttggttggtt    600
gcgatggagc tccgatgtt actggccttc atgatatgga cgaatttggt cagtcccagc    660
ttatacttgc ggcatgact atcgtgactc atgtactcaa agttggtgga aaatttgctg    720
caaagatatt tcggggtaaa gatacaagtc tcctgtactg ccagctaaaa ctgttcttct    780
cacaagttac atttgcgaag ccaaaaagta gccggaactc aagcattgag gcatttgcag    840
tttgtgagaa ctattcacct ccagaagggt tcaaggagga agatctatac cacctgctag    900
agaaagtagg gactccttca ggagttgacg atttagattg cagaagcgga tggctcgagg    960

gaccaaaciaa ggtgtatatc ccgttccttg cctgtgggga tctcagtggc tacgactccg   1020
accgctcata cccgctccca atcacagacg gtggctccta ccggagcttg gaccccgctc   1080
agcctcccat cgccccgcct tacaaaaccg cccttcagat gaagaaggcc tccagccaca   1140
gcgccagcag ggacgccatg aaaccatcca cagactcttg agctgcaacc tgggccagcc   1200
tgaacccccca ggcatgatg tttgtccac actggtagca tcgctgggtc ctggacctgg   1260
ctctctcctg agcctcgtct attaaaaagg aaaaagaaaa tttgggaaca ttttgtgtcg   1320
aggtgggaca ttttgtggta gttttgagct gtggctccgc agcatgtacc tgatcactac   1380
tgattacgca gagatcctgc ttgtgtcctt gtgc                                1414

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```

<210> 95
<211> 317
<212> PRT
<213> Sorghum bicolour

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<400> 95
Met Gly Lys Ala Ser Lys Asp Lys Arg Asp Ile Tyr Tyr Arg Lys Ala
1          5          10          15

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

Asp Gln Glu Phe Asn Ile Phe His Gly Val Lys Arg Val Val Asp Leu
          35          40          45

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PF59082SEQ List- PF59348PCT.txt

Cys Ala Ala Pro Gly Ser Trp Ser Gln Val Leu Ser Arg Asn Leu Tyr
 50 55 60
 Val Pro Ala Lys Gln Ser Pro Asp Cys Lys Glu Gly Asp Leu Pro Leu
 65 70 75 80
 Ile Val Ala Ile Asp Leu Gln Pro Met Ala Pro Ile Glu Gly Val Ile
 85 90 95
 Gln Val Gln Gly Asp Ile Thr Asn Ala Arg Thr Ala Glu Val Val Ile
 100 105 110
 Arg His Phe Asp Gly Cys Lys Ala Asp Leu Val Val Cys Asp Gly Ala
 115 120 125
 Pro Asp Val Thr Gly Leu His Asp Met Asp Glu Phe Val Gln Ser Gln
 130 135 140
 Leu Ile Leu Ala Ala Leu Thr Ile Val Thr His Val Leu Lys Val Gly
 145 150 155 160
 Gly Lys Phe Val Ala Lys Ile Phe Arg Gly Lys Asp Thr Ser Leu Leu
 165 170 175
 Tyr Cys Gln Leu Lys Leu Phe Phe Ser Gln Val Thr Phe Ala Lys Pro
 180 185 190
 Lys Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Ala Val Cys Glu Asn
 195 200 205
 Tyr Ser Pro Pro Glu Gly Phe Lys Glu Glu Asp Leu Tyr His Leu Leu
 210 215 220
 Glu Lys Val Gly Thr Pro Ser Gly Val Asp Asp Leu Asp Cys Arg Ser
 225 230 235 240
 Gly Trp Leu Glu Gly Pro Asn Lys Val Tyr Ile Pro Phe Leu Ala Cys
 245 250 255
 Gly Asp Leu Ser Gly Tyr Asp Ser Asp Arg Ser Tyr Pro Leu Pro Ile
 260 265 270
 Thr Asp Gly Gly Ser Tyr Arg Ser Leu Asp Pro Val Gln Pro Pro Ile
 275 280 285
 Ala Pro Pro Tyr Lys Thr Ala Leu Gln Met Lys Lys Ala Ser Ser His
 290 295 300
 Ser Ala Ser Arg Asp Ala Met Lys Pro Ser Thr Asp Ser
 305 310 315

PF59082SEQ List- PF59348PCT.txt

<210> 96
<211> 1008
<212> DNA
<213> Brassica napus

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<400> 96
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tggcgtgcaa gaagtcgctt taagcttctt cagattgatg aggagttcaa catttttcaa      120
ggagtgaaga gggttgtaga tttatgtgct gcacctggta gctggagtca ggttctgagt      180
cgtcaactgt atcttcctgc aaagtattca gctgagtcaa aagaagaaga tcttcctctt      240
attgtggcca tagatttgca gcctatggct ccaatcgaag gtgtaatcca agttcaaggg      300
gacataacta atgctcggac tgccgaagtg gtcattagac attttgacgg ttgcaaggct      360
gacctgggtg tgtgtgatgg tgctccagat gttaccgggt tgcatgacat ggatgaattt      420
gtccagtccc aactcact agcgggctta acgattgtaa cccatattct taaagaaggt      480
ggaaaattca ttgcaaagat attccgtgga aaagatacaa gtctcttgta ctgtcagctg      540
aagttgtttt tccaactgt gacttttgcg aaacctaaaa gcagccgcaa ttctagtata      600
gaagcttttg ctgtctgcga aaattactcc ccaccagaag gatttaacct gagagatctg      660
catcttctct tggagaaagt cggaagccct tcaggtggaa gcgatctcga ttgcagtagt      720
ggttggctcg agggacccaa caaagtttat attccattct tggcatgtgg tgacttaagc      780
ggttatgact cggaccggtc ttaccactc caaaagagg cagatggatc gtcataccga      840
agcctggacc cgattcagcc tccgatcgca ccgccttata aacgagctat tgagctcaag      900
aaagcttcag cacaagcct caactcttaa agctaggctc gataacaata ataatgctaa      960
acaaagacac agaaagaagt ttttcattcg attcttagaa ggctgtag      1008
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<210> 97
<211> 309
<212> PRT
<213> Brassica napus

<400> 97

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

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

Asp Glu Glu Phe Asn Ile Phe Gln Gly Val Lys Arg Val Val Asp Leu
      35          40          45

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

Leu Pro Ala Lys Tyr Ser Ala Glu Ser Lys Glu Glu Asp Leu Pro Leu
65          70          75          80
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PF59082SEQ List- PF59348PCT.txt

Ile Val Ala Ile Asp₈₅ Leu Gln Pro Met Ala₉₀ Pro Ile Glu Gly Val₉₅ Ile

Gln Val Gln Gly₁₀₀ Asp Ile Thr Asn Ala₁₀₅ Arg Thr Ala Glu Val₁₁₀ Val Ile

Arg His Phe₁₁₅ Asp Gly Cys Lys Ala₁₂₀ Asp Leu Val Val Cys₁₂₅ Asp Gly Ala

Pro Asp₁₃₀ Val Thr Gly Leu His₁₃₅ Asp Met Asp Glu Phe₁₄₀ Val Gln Ser Gln

Leu₁₄₅ Ile Leu Ala Gly Leu₁₅₀ Thr Ile Val Thr His₁₅₅ Ile Leu Lys Glu Gly₁₆₀

Gly Lys Phe Ile Ala₁₆₅ Lys Ile Phe Arg Gly₁₇₀ Lys Asp Thr Ser Leu₁₇₅ Leu

Tyr Cys Gln Leu₁₈₀ Lys Leu Phe Phe Pro₁₈₅ Thr Val Thr Phe Ala₁₉₀ Lys Pro

Lys Ser Ser₁₉₅ Arg Asn Ser Ser Ile₂₀₀ Glu Ala Phe Ala Val₂₀₅ Cys Glu Asn

Tyr Ser₂₁₀ Pro Pro Glu Gly Phe₂₁₅ Asn Pro Arg Asp Leu₂₂₀ His Leu Leu Leu

Glu₂₂₅ Lys Val Gly Ser Pro₂₃₀ Ser Gly Gly Ser Asp₂₃₅ Leu Asp Cys Ser Ser₂₄₀

Gly Trp Leu Glu Gly₂₄₅ Pro Asn Lys Val Tyr₂₅₀ Ile Pro Phe Leu Ala₂₅₅ Cys

Gly Asp Leu Ser₂₆₀ Gly Tyr Asp Ser Asp₂₆₅ Arg Ser Tyr Pro Leu₂₇₀ Pro Lys

Glu Ala Asp₂₇₅ Gly Ser Ser Tyr Arg₂₈₀ Ser Leu Asp Pro Ile₂₈₅ Gln Pro Pro

Ile Ala₂₉₀ Pro Pro Tyr Lys Arg₂₉₅ Ala Ile Glu Leu Lys₃₀₀ Lys Ala Ser Ala

Gln Ser Leu Asn Ser
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<211> 1446
<212> DNA
<213> Glycine max

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PF59082SEQ List- PF59348PCT.txt

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<210> 99
 <211> 316
 <212> PRT
 <213> Glycine max

<400> 99

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			20					25					30		

Asp	Glu	Glu	Phe	Asn	Leu	Phe	Asp	Gly	Val	Lys	Arg	Val	Val	Asp	Leu
		35					40					45			

Cys	Ala	Ala	Pro	Gly	Ser	Trp	Ser	Gln	Val	Leu	Ser	Arg	Lys	Leu	Tyr
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Leu Pro Ala Lys Leu Ala Pro Asp Ala Lys Asp Glu Asn Leu Pro Leu
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Ile Val Ala Ile Asp Leu Gln Pro Met Ala Pro Ile Glu Gly Val Ile
85 90 95

Gln Val Gln Gly Asp Ile Thr Asn Ala Arg Thr Ala Glu Val Val Ile
100 105 110

Arg His Phe Asp Gly Cys Lys Ala Asp Leu Val Val Cys Asp Gly Ala
115 120 125

Pro Asp Val Thr Gly Leu His Asp Met Asp Glu Phe Val Gln Ser Gln
130 135 140

Leu Leu Leu Ala Gly Leu Thr Ile Val Thr His Val Leu Lys Glu Gly
145 150 155 160

Gly Lys Phe Ile Ala Lys Ile Phe Arg Gly Lys Asp Thr Ser Leu Leu
165 170 175

Tyr Cys Gln Leu Lys Leu Phe Phe Pro Val Val Thr Phe Ala Lys Pro
180 185 190

Lys Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Ala Val Cys Glu Asn
195 200 205

Tyr Ser Pro Pro Glu Gly Phe Asn Pro Lys Asp Leu His Arg Leu Leu
210 215 220

Glu Lys Val Gly Ser Pro Ser Gly Val Asp Asp Thr Asp Cys Cys Ser
225 230 235 240

Gly Trp Leu Glu Gly Pro Asn Lys Val Tyr Ile Pro Phe Leu Ala Cys
245 250 255

Gly Asp Leu Ser Gly Tyr Asp Ser Asp Arg Ser Tyr Pro Leu Pro Lys
260 265 270

Val Ala Gly Gly Thr Tyr Gln Ser Leu Asp Pro Val Gln Pro Pro Ile
275 280 285

Ala Pro Pro Tyr Lys Arg Ala Leu Glu Leu Lys Lys Ala Ser Ser Gln
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Gly Phe Arg Glu Leu Glu Asn Leu Ser Leu Asp Ser
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<210> 100

PF59082SEQ List- PF59348PCT.txt

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<213> Zea mays

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a 1201

<210> 101
<211> 318
<212> PRT
<213> Zea mays

<400> 101
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Asp Gln Glu Phe Asn Ile Phe His Gly Val Lys His Val Val Asp Leu
35 40 45
Cys Ala Ala Pro Gly Ser Trp Ser Gln Val Leu Ser Arg Asn Leu Tyr
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PF59082SEQ List- PF59348PCT.txt

Val Pro Ala Lys Gln Ser Ser Asp Cys Lys Glu Gly Asp Leu Pro Leu
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 85 90 95
 Gln Val Gln Gly Asp Ile Thr Asn Ala Arg Thr Ala Asp Val Val Ile
 100 105 110
 Arg His Phe Asp Gly Cys Lys Ala Asp Leu Val Val Cys Asp Gly Ala
 115 120 125
 Pro Asp Val Thr Gly Leu His Asp Met Asp Glu Phe Val Gln Ser Gln
 130 135 140
 Leu Ile Leu Ala Ala Leu Ala Ile Val Thr His Val Leu Lys Val Gly
 145 150 155 160
 Gly Lys Phe Val Ala Lys Ile Phe Arg Gly Lys Asp Thr Ser Leu Leu
 165 170 175
 Tyr Cys Gln Leu Lys Leu Phe Phe Ser Gln Val Thr Phe Ala Lys Pro
 180 185 190
 Lys Ser Ser Arg Asn Ser Ser Ile Glu Ala Phe Ala Val Cys Glu Asn
 195 200 205
 Tyr Ser Pro Pro Glu Gly Phe Lys Glu Glu Asp Leu Tyr His Leu Leu
 210 215 220
 Glu Lys Val Gly Thr Pro Ser Gly Ala Gly Asp Leu Asp Cys Arg Ser
 225 230 235 240
 Gly Trp Leu Glu Gly Pro Asn Lys Val Tyr Ile Pro Phe Leu Ala Cys
 245 250 255
 Gly Asp Leu Ser Gly Tyr Asp Ser Asp Arg Ser Tyr Pro Leu Pro Ser
 260 265 270
 Ser Thr Asp Gly Gly Ser Tyr Arg Ser Leu Asp Pro Val Gln Pro Pro
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 Ile Ala Pro Pro Tyr Lys Thr Ala Leu Gln Met Lys Lys Ala Ser Ser
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 His Gly Ala Gly Ala Asp Ala Ile Lys Pro Ser Ala Asp Ser
 305 310 315

<210> 102
 <211> 732
 <212> DNA

<213> Tagetes erecta

<400> 102

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tggagtcagg tttaagtcg taagctgtat ctcccagcta aacagtcatc tgaccttccg      180

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<212> PRT

<213> Tagetes erecta

<400> 103

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20          25          30

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

Leu Tyr Leu Pro Ala Lys Gln Ser Ser Asp Leu Pro Leu Ile Val Ala
50          55          60

Ile Asp Leu Gln Pro Met Ala Pro Ile Glu Gly Val Ile Gln Val Gln
65          70          75          80

Gly Asp Ile Thr Asn Ala Arg Thr Ala Glu Val Val Ile Arg His Phe
85          90          95

Asp Gly Cys Lys Ala Asp Leu Val Val Cys Asp Gly Ala Pro Asp Val
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Thr Gly Leu His Asp Met Asp Glu Phe Val Gln Ser Gln Leu Ile Leu
115        120        125

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PF59082SEQ List- PF59348PCT.txt

Ala Gly Leu Thr Ile Val Thr His Ile Leu Lys Lys Gly Gly Lys Phe
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145 150 155 160

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

Arg Asn Ser Ser Ile Glu Ala Phe Ala Val Cys Glu Asn Tyr Thr Pro
180 185 190

Pro Glu Gly Phe Asn Glu Lys Asp Leu His Arg Leu Leu Glu Lys Val
195 200 205

Gly Thr Pro Ser Gly Ala Asp Asn Leu Asp Cys Ser Ser Gly Trp Leu
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Glu Gly Pro Asn Lys Val Tyr Ile Pro Phe Leu Ala Cys Gly Asp Leu
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<210> 104
<211> 1770
<212> DNA
<213> Arabidopsis thaliana

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tcttgggcgt ttaatttgaa tccagatcaa ggagagaatg atccagggtt gtggattagt 840
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PF59082SEQ List- PF59348PCT.txt

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<210> 105
<211> 589
<212> PRT
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<400> 105

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Met Glu Ala Phe Ile Gly Gly Gly Ser Asp His Ser Ser Leu Phe Pro
35 40 45

Pro Leu Pro Pro Pro Pro Leu Pro Gln Val Asn Glu Asp Asn Leu Gln
50 55 60

Gln Arg Leu Gln Ala Leu Ile Glu Gly Ala Asn Glu Asn Trp Thr Tyr
65 70 75 80

Ala Val Phe Trp Gln Ser Ser His Gly Phe Ala Gly Glu Asp Asn Asn
85 90 95

Asn Asn Asn Thr Val Leu Leu Gly Trp Gly Asp Gly Tyr Tyr Lys Gly
100 105 110

Glu Glu Glu Lys Ser Arg Lys Lys Lys Ser Asn Pro Ala Ser Ala Ala
115 120 125

PF59082SEQ List- PF59348PCT.txt

Glu Gln Glu His Arg Lys Arg Val Ile Arg Glu Leu Asn Ser Leu Ile
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 165 170 175
 Gly Thr Gly Leu Pro Gly Gln Ala Phe Ser Asn Ser Asp Thr Ile Trp
 180 185 190
 Leu Ser Gly Ser Asn Ala Leu Ala Gly Ser Ser Cys Glu Arg Ala Arg
 195 200 205
 Gln Gly Gln Ile Tyr Gly Leu Gln Thr Met Val Cys Val Ala Thr Glu
 210 215 220
 Asn Gly Val Val Glu Leu Gly Ser Ser Glu Ile Ile His Gln Ser Ser
 225 230 235 240
 Asp Leu Val Asp Lys Val Asp Thr Phe Phe Asn Phe Asn Asn Gly Gly
 245 250 255
 Gly Glu Phe Gly Ser Trp Ala Phe Asn Leu Asn Pro Asp Gln Gly Glu
 260 265 270
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 275 280 285
 Leu Val Ala Ala Pro Val Met Asn Asn Gly Gly Asn Asp Ser Thr Ser
 290 295 300
 Asn Ser Asp Ser Gln Pro Ile Ser Lys Leu Cys Asn Gly Ser Ser Val
 305 310 315 320
 Glu Asn Pro Asn Pro Lys Val Leu Lys Ser Cys Glu Met Val Asn Phe
 325 330 335
 Lys Asn Gly Ile Glu Asn Gly Gln Glu Glu Asp Ser Ser Asn Lys Lys
 340 345 350
 Arg Ser Pro Val Ser Asn Asn Glu Glu Gly Met Leu Ser Phe Thr Ser
 355 360 365
 Val Leu Pro Cys Asp Ser Asn His Ser Asp Leu Glu Ala Ser Val Ala
 370 375 380
 Lys Glu Ala Glu Ser Asn Arg Val Val Val Glu Pro Glu Lys Lys Pro
 385 390 395 400

PF59082SEQ List- PF59348PCT.txt

Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu Asn
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420 425 430

Tyr Ser Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys Ala
435 440 445

Ser Leu Leu Gly Asp Ala Ile Ser Tyr Ile Ser Glu Leu Lys Ser Lys
450 455 460

Leu Gln Lys Ala Glu Ser Asp Lys Glu Glu Leu Gln Lys Gln Ile Asp
465 470 475 480

Val Met Asn Lys Glu Ala Gly Asn Ala Lys Ser Ser Val Lys Asp Arg
485 490 495

Lys Cys Leu Asn Gln Glu Ser Ser Val Leu Ile Glu Met Glu Val Asp
500 505 510

Val Lys Ile Ile Gly Trp Asp Ala Met Ile Arg Ile Gln Cys Ser Lys
515 520 525

Arg Asn His Pro Gly Ala Lys Phe Met Glu Ala Leu Lys Glu Leu Asp
530 535 540

Leu Glu Val Asn His Ala Ser Leu Ser Val Val Asn Asp Leu Met Ile
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Gln Gln Ala Thr Val Lys Met Gly Asn Gln Phe Phe Thr Gln Asp Gln
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PF59082SEQ List- PF59348PCT.txt

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 <211> 53
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 <213> Artificial sequence

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<210> 108
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<210> 109
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 <212> DNA
 <213> Arabidopsis thaliana

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tcatccaccg gagataacac agtgatcctc ggctggggag atgggtacta caaaggagag	300
gaagataaag agaagaagaa gaacaacacc aacacggcgg agcaagagca tcggaaaaga	360

PF59082SEQ List- PF59348PCT.txt

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PF59082SEQ List- PF59348PCT.txt

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Tyr Lys Gly Glu Glu Asp Lys Glu Lys Lys Lys Asn Asn Thr Asn Thr
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Thr Asp Thr Glu Trp Phe Phe Leu Val Ser Met Thr Gln Ser Phe Val
145 150 155 160

Asn Gly Val Gly Leu Pro Gly Glu Ser Phe Leu Asn Ser Arg Val Ile
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Trp Leu Ser Gly Ser Gly Ala Leu Thr Gly Ser Gly Cys Glu Arg Ala
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Gly Gln Gly Gln Ile Tyr Gly Leu Lys Thr Met Val Cys Ile Ala Thr
195 200 205

Gln Asn Gly Val Val Glu Leu Gly Ser Ser Glu Val Ile Ser Gln Ser
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Ser Asp Leu Met His Lys Val Asn Asn Leu Phe Asn Phe Asn Asn Gly
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Gly Gly Asn Asn Gly Val Glu Ala Ser Ser Trp Gly Phe Asn Leu Asn
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Pro Asp Gln Gly Glu Asn Asp Pro Ala Leu Trp Ile Ser Glu Pro Thr
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Asn Thr Gly Ile Glu Ser Pro Ala Arg Val Asn Asn Gly Asn Asn Ser
275 280 285

Asn Ser Asn Ser Lys Ser Asp Ser His Gln Ile Ser Lys Leu Glu Lys
290 295 300

Asn Asp Ile Ser Ser Val Glu Asn Gln Asn Arg Gln Ser Ser Cys Leu
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Val Glu Lys Asp Leu Thr Phe Gln Gly Gly Leu Leu Lys Ser Asn Glu

325

330

335

Thr Leu Ser Phe Cys Gly Asn Glu Ser Ser Lys Lys Arg Thr Ser Val
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 370 375 380

Val Val Lys Glu Ala Ile Val Val Glu Pro Pro Glu Lys Lys Pro Arg
 385 390 395 400

Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu Asn His
 405 410 415

Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg Phe Tyr
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Ser Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys Ala Ser
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Leu Leu Gly Asp Ala Ile Ser Tyr Ile Asn Glu Leu Lys Ser Lys Leu
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Gln Gln Ala Glu Ser Asp Lys Glu Glu Ile Gln Lys Lys Leu Asp Gly
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Glu Arg Lys Ser Ser Asn Gln Asp Ser Thr Ala Ser Ser Ile Glu Met
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Glu Ile Asp Val Lys Ile Ile Gly Trp Asp Val Met Ile Arg Val Gln
 515 520 525

Cys Gly Lys Lys Asp His Pro Gly Ala Arg Phe Met Glu Ala Leu Lys
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Glu Leu Asp Leu Glu Val Asn His Ala Ser Leu Ser Val Val Asn Asp
 545 550 555 560

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PF59082SEQ List- PF59348PCT.txt

<212> DNA

<213> Brassica napus

<400> 111

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<210> 112

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<212> PRT

<213> Brassica napus

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Glu Gly Thr Asn Glu Gly Trp Thr Tyr Ala Ile Phe Trp Gln Pro Ser
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Tyr Asp Phe Ser Gly Ala Ser Val Leu Gly Trp Gly Asp Gly Tyr Tyr
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Pro Phe Ser Thr Pro Ala Asp Gln Glu Tyr Arg Lys Lys Val Leu Arg
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Ala Cys Ile Pro Ser Ala Asn Gly Val Val Glu Leu Gly Pro Thr Glu
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Gln Ile Arg Gln Ser Ser Asp Leu Met Asn Lys Val Arg Val Leu Phe
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Lys Pro Val Gly Met Glu Ile Glu Val Lys Ile Ile Gly Trp Asp Ala
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Met Ser Ala Leu Met Asp Leu Glu Leu Glu Val Asn His Ala Ser Met
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Ser Val Val Asn Asp Leu Met Ile Gln Gln Ala Thr Val Lys Met Gly
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<212> DNA
<213> Lotus japonicus

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PF59082SEQ List- PF59348PCT.txt

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 <212> PRT
 <213> Lotus japonicus
 <400> 114

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Phe Trp Gln Pro Ser Tyr Asp Tyr Ser Gly Thr Ser Leu Leu Gly Trp
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Lys Ala Lys Ala Lys Ala Thr Ser Ser Ala Glu Gln Glu His Arg Arg
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Lys Val Leu Arg Asp Leu Asn Ser Leu Ile Ser Gly Ser Ser Ala Pro
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Ala Ser Asp Asp Ala Val Asp Glu Glu Val Thr Asp Thr Glu Trp Phe
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PF59082SEQ List- PF59348PCT.txt

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 Val Lys Val Leu Phe Asn Phe Ser Asn Ser Asn Leu Asp Leu Gly Ser
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 Ser Trp Thr Leu Gly Ser Thr Thr Thr Ala Glu Asn Asp Pro Ser Ala
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 260 265 270
 Val Ala Pro Thr Thr Ala Ser Val Ser Ile Pro Ser His His Asn Asn
 275 280 285
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 385 390 395 400
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PF59082SEQ List- PF59348PCT.txt

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Glu Lys Arg Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu
450 455 460

Glu Pro Leu Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu
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Asn Gln Arg Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys
485 490 495

Met Asp Lys Ala Ser Leu Leu Gly Asp Ala Ile Ser Tyr Ile Thr Glu
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Lys Ile Ile Gly Trp Asp Ala Met Ile Arg Val Gln Cys Ser Lys Lys
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Glu Val Asn His Ala Ser Val Ser Val Val Asn Asp Thr Met Ile Gln
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<212> DNA

<213> Lycopersicon esculentum

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Seite 129

PF59082SEQ List- PF59348PCT.txt

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PF59082SEQ List- PF59348PCT.txt

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 <212> PRT
 <213> Lycopersicon esculentum

<400> 116

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Asp Ala Ser Lys Ser Met Pro Phe Phe Asn Gln Glu Thr Leu Gln Gln
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Arg Leu Gln Ala Leu Ile Asp Gly Ala Arg Glu Thr Trp Thr Tyr Ala
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Ile Phe Trp Gln Ser Ser Val Val Asp Phe Ser Ser Pro Ser Val Leu
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Gly Trp Gly Asp Gly Tyr Tyr Lys Gly Glu Glu Asp Lys Ala Lys Arg
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Lys Leu Ser Val Ser Ser Pro Ala Tyr Ile Ala Glu Gln Glu His Arg
145      150      155      160

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

Phe Leu Ile Ser Met Thr Gln Ser Phe Val Asn Gly Ser Gly Leu Pro
      195      200      205

Gly Gln Ala Leu Tyr Ser Ser Ser Pro Ile Trp Val Ala Gly Thr Glu
      210      215      220

Lys Leu Ala Ala Ser His Cys Glu Arg Val Arg Gln Ala Gln Gly Phe
225      230      235      240
    
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Gly Leu Gln Thr Ile Val Cys Ile Pro Ser Ala Asn Gly Val Val Glu
245 250 255

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

Val Arg Val Leu Phe Asn Phe Ser Asn Asp Leu Gly Ser Gly Ser Trp
275 280 285

Ala Val Gln Pro Glu Ser Asp Pro Ser Ala Leu Trp Leu Thr Asp Pro
290 295 300

Ser Ser Ser Gly Met Glu Val Arg Glu Ser Leu Asn Thr Val Gln Thr
305 310 315 320

Asn Ser Val Pro Ser Ser Asn Ser Asn Lys Gln Ile Ala Tyr Gly Asn
325 330 335

Glu Asn Asn His Pro Ser Gly Asn Gly Gln Ser Cys Tyr Asn Gln Gln
340 345 350

Gln Gln Lys Asn Pro Pro Gln Gln Gln Thr Gln Gly Leu Phe Thr Arg
355 360 365

Glu Leu Asn Phe Ser Glu Phe Gly Phe Asp Gly Ser Ser Asn Arg Asn
370 375 380

Gly Asn Ser Ser Val Ser Cys Lys Pro Glu Ser Gly Glu Ile Leu Asn
385 390 395 400

Phe Gly Asp Ser Thr Lys Lys Ser Ala Ser Ser Ala Asn Val Asn Leu
405 410 415

Phe Thr Gly Gln Ser Gln Phe Gly Ala Gly Glu Glu Asn Asn Asn Lys
420 425 430

Asn Lys Lys Arg Ser Ala Thr Ser Arg Gly Ser Asn Glu Glu Gly Met
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Leu Ser Phe Val Ser Gly Thr Val Val Pro Ser Ser Gly Met Lys Ser
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Gly Gly Gly Gly Gly Glu Asp Ser Glu His Ser Asp Leu Glu Ala Ser
465 470 475 480

Val Val Lys Glu Ala Asp Ser Ser Arg Val Val Glu Pro Glu Lys Arg
485 490 495

Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu
500 505 510

PF59082SEQ List- PF59348PCT.txt

Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
515 520 525

Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys
530 535 540

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

Lys Leu Gln Asn Thr Glu Ser Asp Lys Glu Asp Leu Lys Ser Gln Ile
565 570 575

Glu Asp Leu Lys Lys Glu Ser Arg Arg Pro Gly Pro Pro Pro Pro Pro
580 585 590

Asn Gln Asp Leu Lys Met Ser Ser His Thr Gly Gly Lys Ile Val Asp
595 600 605

Val Asp Ile Asp Val Lys Ile Ile Gly Trp Asp Ala Met Ile Arg Ile
610 615 620

Gln Cys Asn Lys Lys Asn His Pro Ala Ala Arg Leu Met Ala Ala Leu
625 630 635 640

Met Glu Leu Asp Leu Asp Val His His Ala Ser Val Ser Val Val Asn
645 650 655

Asp Leu Met Ile Gln Gln Ala Thr Val Lys Met Gly Ser Arg Asn Tyr
660 665 670

Thr Glu Glu Gln Leu Arg Val Ala Leu Thr Ser Lys Ile Ala Glu Thr
675 680 685

His

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<211> 1992
<212> DNA
<213> Vitis vinifera

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acgtctactc ctgcgcctga cccgtcaagg aatctcgccc aatctcagcc ttccatggcc 180
gtcttcaacc aggagaccct ccagcagcga cttcaagccc taattgaagg cgcccagagag 240
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tcgtctgttt ccgagcagga gcaccggaag aaagtgtctc gggagctgaa ttcgctcatt 420
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PF59082SEQ List- PF59348PCT.txt

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aacggcgctg	tcgaactggg	ctccaccgaa	ttgatttacc	agagctcaga	tctgatgaac	720
aaggttagag	ttttgttcaa	tttcaataac	cttgaagttg	gttcatggcc	gatcggagcc	780
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aatcagcaga	attccaagtc	aattcaattt	gagaacccta	gctcaagtag	tttaactgaa	960
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 <212> PRT
 <213> Vitis vinifera

<220>
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 <400> 118

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 Seite 134

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

PF59082SEQ List- PF59348PCT.txt

Asn Ala Thr Ala Thr Gly Ala Ser Asn Pro Ile Gly Asn Gln Gln Asn
 290 295 300
 Ser Lys Ser Ile Gln Phe Glu Asn Pro Ser Ser Ser Ser Leu Thr Glu
 305 310 315 320
 Asn Pro Ser Ile Met His Asn Pro Gln Gln Gln Gln Ile His Thr
 325 330 335
 Gln Gly Phe Phe Thr Arg Glu Leu Asn Phe Ser Glu Phe Gly Phe Asp
 340 345 350
 Gly Asn Asn Gly Arg Asn Gly Asn Leu His Ser Leu Lys Pro Glu Ser
 355 360 365
 Gly Glu Ile Leu Asn Phe Gly Asp Ser Lys Arg Ser Ser Cys Ser Ala
 370 375 380
 Asn Gly Asn Met Phe Ser Gly His Ser Gln Val Val Ala Glu Glu Asn
 385 390 395 400
 Lys Lys Arg Arg Ser Pro Thr Ser Arg Gly Ser Ala Glu Glu Gly Met
 405 410 415
 Leu Ser Phe Thr Ser Gly Val Ile Leu Pro Ser Ser Cys Val Val Lys
 420 425 430
 Ser Ser Gly Gly Gly Gly Asp Ser Asp His Ser Asp Leu Glu Ala Ser
 435 440 445
 Val Val Arg Glu Ala Asp Ser Ser Arg Val Val Glu Pro Glu Lys Arg
 450 455 460
 Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu
 465 470 475 480
 Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg
 485 490 495
 Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys
 500 505 510
 Ala Ser Leu Leu Gly Asp Ala Ile Ser Tyr Ile Asn Glu Leu Arg Thr
 515 520 525
 Lys Leu Gln Ser Ala Glu Ser Asp Lys Glu Asp Leu Gln Lys Glu Val
 530 535 540
 Asn Ser Met Lys Lys Glu Leu Ala Ser Lys Asp Xaa Gln Tyr Ser Gly
 545 550 555 560

PF59082SEQ List- PF59348PCT.txt

Ser Ser Arg Pro Pro Pro Asp Gln Asp Leu Lys Met Ser Asn His His
565 570 575

Gly Ser Lys Leu Val Glu Met Asp Ile Asp Val Lys Ile Ile Gly Trp
580 585 590

Asp Ala Met Ile Arg Ile Gln Cys Ser Lys Lys Asn His Pro Ala Ala
595 600 605

Lys Leu Met Gly Ala Leu Lys Glu Leu Asp Leu Asp Val Asn His Ala
610 615 620

Ser Val Ser Val Val Asn Asp Leu Met Ile Gln Gln Ala Thr Val Lys
625 630 635 640

Met Gly Ser Arg Phe Tyr Thr Gln Asp Gln Leu Arg Leu Ala Leu Ser
645 650 655

Ser Lys Phe Ala Asp Ser Arg
660

<210> 119
<211> 2145
<212> DNA
<213> Zea mays

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PF59082SEQ List- PF59348PCT.txt

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<210> 120
 <211> 704

 <212> PRT
 <213> Zea mays

 <400> 120

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 Ala Ser Ala Asp Leu Pro Thr Phe Pro Trp Gly Ala Pro Ala Gly Gly
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 Gly Asn Ser Ser Ala Ala Ala Ala Ser Pro Pro Pro Gln Met Pro Ala
 35 40 45

 Ala Met Ala Pro Gly Phe Asn Gln Asp Thr Leu Gln Gln Arg Leu Gln
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 Ala Met Ile Glu Gly Ser Arg Glu Thr Trp Thr Tyr Ala Ile Phe Trp
 65 70 75 80

Gln Ser Ser Leu Asp₈₅ Ser Ala Thr Gly₉₀ Ala Ser Leu Leu Gly₉₅ Trp Gly

Asp Gly Tyr Tyr₁₀₀ Lys Gly Cys Asp Glu₁₀₅ Asp Lys Arg Lys Gln₁₁₀ Lys Pro

Leu Thr Pro₁₁₅ Ser Ala Gln Ala Glu₁₂₀ Gln Glu His Arg Lys₁₂₅ Arg Val Leu

Arg Glu₁₃₀ Leu Asn Ser Leu Ile₁₃₅ Ser Gly Ala Ala₁₄₀ Ala Ala Pro Asp Glu

Ala Val Glu Glu Glu Val₁₅₀ Thr Asp Thr Glu₁₅₅ Trp Phe Phe Leu Val Ser₁₆₀

Met Thr Gln Ser Phe₁₆₅ Leu Asn Gly Ser Gly₁₇₀ Leu Pro Gly Gln Ala₁₇₅ Leu

Phe Ala Gly Gln₁₈₀ Pro Thr Trp Ile Ala₁₈₅ Ser Gly Leu Ser Ser₁₉₀ Ala Pro

Cys Glu Arg₁₉₅ Ala Arg Gln Ala Tyr₂₀₀ Asn Phe Gly Leu Arg₂₀₅ Thr Met Val

Cys Phe₂₁₀ Pro Val Gly Thr Gly₂₁₅ Val Leu Glu Leu Gly₂₂₀ Ser Thr Asp Val

Val Phe Lys Thr Ala Glu₂₃₀ Ser Met Ala Lys Ile₂₃₅ Arg Ser Leu Phe Gly₂₄₀

Gly Gly Ala Gly Gly₂₄₅ Gly Ser Trp Pro Pro₂₅₀ Val Gln Pro Gln Ala₂₅₅ Pro

Ser Ser Gln Gln₂₆₀ Pro Ala Ala Gly Ala₂₆₅ Asp His Ala Glu Thr₂₇₀ Asp Pro

Ser Met Leu₂₇₅ Trp Leu Ala Asp Ala₂₈₀ Pro Val Met Asp Ile₂₈₅ Lys Asp Ser

Leu Ser His Pro Ser Ala Glu₂₉₅ Ile Ser Val Ser Lys₃₀₀ Pro Pro Pro His

Pro Pro Gln Ile His Phe₃₁₀ Glu Asn Gly Ser Thr₃₁₅ Ser Thr Leu Thr Glu₃₂₀

Asn Pro Ser Pro Ser₃₂₅ Val His Ala Pro Pro₃₃₀ Pro Pro Pro Ala₃₃₅ Pro Ala

Ala Pro Gln Gln Arg Gln His Gln₃₄₅ His Gln Asn Gln Ala His₃₅₀ Gln Gly

Pro Phe Arg Arg Glu Leu Asn Phe Ser Asp Phe Ala Ser Thr Pro Ser

355

360

365

Leu Ala Ala Thr Pro Pro Phe Phe Lys Pro Glu Ser Gly Glu Ile Leu
 370 375 380
 Ser Phe Gly Ala Asp Ser Asn Ala Arg Arg Asn Pro Ser Pro Val Pro
 385 390 395 400
 Pro Ala Ala Thr Ala Ser Leu Thr Thr Ala Pro Gly Ser Leu Phe Ser
 405 410 415
 Gln His Thr Ala Thr Met Thr Ala Ala Ala Ala Asn Asp Ala Lys Asn
 420 425 430
 Asn Asn Lys Arg Ser Met Glu Ala Thr Ser Arg Ala Ser Asn Thr Asn
 435 440 445
 His His Pro Ala Ala Thr Ala Asn Glu Gly Met Leu Ser Phe Ser Ser
 450 455 460
 Ala Pro Thr Thr Arg Pro Ser Thr Gly Thr Gly Ala Pro Ala Lys Ser
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 Glu Ser Asp His Ser Asp Leu Asp Ala Ser Val Arg Glu Val Glu Ser
 485 490 495
 Ser Arg Val Val Ala Pro Pro Pro Glu Ala Glu Lys Arg Pro Arg Lys
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 Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu Asn His Val
 515 520 525
 Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg Phe Tyr Ala
 530 535 540
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 545 550 555 560
 Leu Gly Asp Ala Ile Ser Tyr Ile Asn Glu Leu Arg Gly Lys Leu Thr
 565 570 575
 Ser Leu Glu Thr Asp Lys Glu Thr Leu Gln Thr Gln Val Glu Ala Leu
 580 585 590
 Lys Lys Glu Arg Asp Ala Arg Pro Pro Ser His Ser Ala Gly Leu Gly
 595 600 605
 Gly His Asp Gly Gly Pro Arg Cys His Ala Val Glu Ile Asp Ala Lys
 610 615 620
 Ile Leu Gly Leu Glu Ala Met Ile Arg Val Gln Cys His Lys Arg Asn
 625 630 635 640

PF59082SEQ List- PF59348PCT.txt

His Pro Ser Ala Arg Leu Met Thr Ala Leu Arg Glu Leu Asp Leu Asp
645 650 655

Val Tyr His Ala Ser Val Ser Val Val Lys Asp Leu Met Ile Gln Gln
660 665 670

Val Ala Val Lys Met Ala Ser Arg Val Tyr Thr Gln Asp Gln Leu Ser
675 680 685

Ala Ala Leu Tyr Ser Arg Leu Ala Glu Pro Gly Ser Ala Met Gly Arg
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<212> DNA
<213> Brassica napus

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gctgatttga acttctcgag ctcaaggctg aacaaaacg gtaactttaa acaagggtcg 960
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gctaacggga gagaagagcc gttgaaccat gtggaagcag agaggcagcg aagggagaag 1200
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PF59082SEQ List- PF59348PCT.txt

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<210> 122
 <211> 560
 <212> PRT
 <213> Brassica napus
 <400> 122

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Ala Ser Ala Ser Met Glu Ala Phe Ile Gly Thr Asn His Trp Ser Gln
 35 40 45

Gln Pro Ser Leu Pro Pro Pro Pro Ser Leu Ser Gln Phe Asn Glu Asp
 50 55 60

Thr Leu Gln Gln Arg Leu Gln Thr Leu Ile Glu Ser Ala Gly Glu Arg
 65 70 75 80

Trp Thr Tyr Ala Ile Phe Trp Gln Ile Ser His Asp Phe Asp Ser Pro
 85 90 95

Ala Gly Glu Ser Thr Val Ile Leu Gly Trp Gly Asp Gly Tyr Tyr Arg
 100 105 110

Gly Glu Glu Asp Lys Glu Lys Lys Lys Lys Gln Ser Ser Ser Asn
 115 120 125

Pro Ala Glu Gln Glu His Arg Lys Arg Val Ile Arg Glu Leu Asn Ser
 130 135 140

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

Val Thr Asp Thr Glu Trp Phe Phe Leu Val Ser Met Thr Gln Ser Phe
 165 170 175

Val Asn Gly Val Gly Leu Pro Gly Glu Ser Phe Leu Asn Ser Arg Val
 180 185 190

PF59082SEQ List- PF59348PCT.txt

Ile Trp Leu Ser Gly Ser Gly Ala Leu Thr Gly Ser Gly Cys Glu Arg
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Ala Arg Gln Gly Glu Val Tyr Gly Leu Gln Thr Ile Val Cys Ile Ala
210 215 220

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

Ser Ser Asp Leu Met Asp Lys Val Asn Gly Leu Phe Asn Gly Asn Gly
245 250 255

Asn Gly Glu Ala Ser Ser Trp Gly Phe Asn Leu Asn Pro Asp Gln Gly
260 265 270

Glu Asn Asp Pro Ala Leu Trp Leu Ser Glu Pro Asn Ile Thr Gly Ile
275 280 285

Glu Pro Val Gln Glu Thr Pro Ala Ile Glu Asn Ala Ala Asp Leu Asn
290 295 300

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

Ser Ser Asn Lys Lys Arg Ser Pro Val Gly Lys Asp Glu Glu Met Leu
325 330 335

Ser Phe Ser Thr Val Val Arg Ser Ala Ala Lys Ser Val Asp Ser Asp
340 345 350

His Ser Asp Ile Glu Ala Ser Val Val Lys Glu Ala Ile Ile Val Glu
355 360 365

Pro Glu Lys Lys Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg
370 375 380

Glu Glu Pro Leu Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys
385 390 395 400

Leu Asn Gln Arg Phe Tyr Ser Leu Arg Ala Val Val Pro Asn Val Ser
405 410 415

Lys Met Asp Lys Ala Ser Leu Leu Gly Asp Ala Ile Ser Tyr Ile Asn
420 425 430

Glu Leu Lys Thr Lys Leu Gln Gln Ala Glu Thr Asp Lys Glu Glu Val
435 440 445

Gln Lys Gln Leu Asp Arg Met Ser Lys Glu Gly Gly Gly Ser Arg Arg
450 455 460

PF59082SEQ List- PF59348PCT.txt

Ala Lys Glu Arg Lys Ser Asn Leu Asp Ser Ala Ser Ser Val Glu Met
465 470 475 480

Glu Ile Asp Val Lys Ile Ile Gly Trp Asp Val Met Ile Arg Val Gln
485 490 495

Cys Gly Lys Lys Asn His Pro Gly Ala Arg Phe Met Glu Ala Leu Lys
500 505 510

Glu Leu Asp Leu Glu Val Asn His Ala Ser Leu Ser Met Val Asn Asp
515 520 525

Leu Met Ile Gln Gln Ala Thr Val Lys Met Gly Ser Gln Phe Phe Asn
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His Asp Gln Leu Lys Ala Ala Leu Met Leu Lys Val Gly Glu Asp Ser
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<211> 1899
<212> DNA
<213> Glycine max

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gaaaccaccc gagcaccgcc gcctcagtcc cactccctcc tcaaccagga gaccctccag 180
cagcgctcc agacacttat cgaaggcgcc cgagagagct ggacctacgc aatcttcttg 240
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aaggggtgagg aggacaaagt caaagccaaa ggcaaaaccc ccaaaacgac gtcgtccgcg 360
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ctcgcctcca cggaggtgat tttccagaac cctgatctga tgaacaaggt gcgcgatttg 720
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ctgagctttg gagagagcaa gaagagctct tacaacggga gtttctttcc cgggtgttgtt 1080
gcaattgagg agaacaacaa gaagaggtct cccgtttctc ggagcagcat tgacgatggg 1140

PF59082SEQ List- PF59348PCT.txt

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 <211> 632
 <212> PRT
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<400> 124

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 20 25 30

Ala Ser Thr Thr Thr Pro Gly Leu Glu Thr Thr Arg Ala Pro Pro Pro
 35 40 45

Gln Ser His Ser Leu Leu Asn Gln Glu Thr Leu Gln Gln Arg Leu Gln
 50 55 60

Thr Leu Ile Glu Gly Ala Arg Glu Ser Trp Thr Tyr Ala Ile Phe Trp
 65 70 75 80

Gln Ser Ser Tyr Asp Tyr Ser Ser Gly Thr Ser Leu Leu Gly Trp Gly
 85 90 95

Asp Gly Tyr Tyr Lys Gly Glu Glu Asp Lys Val Lys Ala Lys Gly Lys
 100 105 110

Thr Pro Lys Thr Thr Ser Ser Ala Glu Gln Asp His Arg Lys Lys Val
 115 120 125

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

PF59082SEQ List- PF59348PCT.txt

Asp Val Asp Glu Glu Val Thr Asp Thr Glu Trp Phe Phe Leu Val Ser
 145 150 155 160
 Met Thr Gln Ser Phe Val Asn Gly Ser Gly Leu Pro Gly Gln Ala Phe
 165 170 175
 Phe Asn Ser Ser Pro Val Trp Val Ala Gly Pro Asp Arg Leu Ser Glu
 180 185 190
 Ser Val Cys Glu Arg Ala His Gln Gly Gln Met Phe Gly Leu Gln Thr
 195 200 205
 Leu Val Cys Ile Pro Ser Ala Asn Gly Val Val Glu Leu Ala Ser Thr
 210 215 220
 Glu Val Ile Phe Gln Asn Pro Asp Leu Met Asn Lys Val Arg Asp Leu
 225 230 235 240
 Phe Asn Phe Asn Asn Asn Pro Glu Thr Gly Ser Trp Ala Leu Asn Cys
 245 250 255
 Val Ala Thr Thr Asp Gln Gly Glu Asn Asp Pro Ser Ser Leu Trp Leu
 260 265 270
 Asn Pro Glu Ile Arg Asp Ser Ser Thr Val Ala Pro Pro Asn Ser Thr
 275 280 285
 Val Asn Lys Thr Leu Gln Phe Glu Thr Pro Gly Ser Ser Thr Leu Thr
 290 295 300
 Asp Thr Pro Ser Ala Ala Ala Val His Val Pro Lys Ser Asn Gly Gln
 305 310 315 320
 Gly Phe Phe Ser Arg Glu Leu Asn Phe Ser Asn Ser Leu Lys Pro Glu
 325 330 335
 Ser Gly Glu Ile Leu Ser Phe Gly Glu Ser Lys Lys Ser Ser Tyr Asn
 340 345 350
 Gly Ser Phe Phe Pro Gly Val Val Ala Ile Glu Glu Asn Asn Lys Lys
 355 360 365
 Arg Ser Pro Val Ser Arg Ser Ser Ile Asp Asp Gly Met Leu Ser Phe
 370 375 380
 Thr Ser Leu Pro Ala Ala Asn Ile Lys Ser Gly Ser Gly Gly Ala Gly
 385 390 395 400
 Ala Gly Gly Gly Asp Ser Asp His Ser Asp Leu Glu Ala Ser Met Val
 405 410 415

PF59082SEQ List- PF59348PCT.txt

Lys Gln Ala Asp Ser Arg Val Met Glu Pro Glu Lys Arg Pro Arg Lys
420 425 430

Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu Asn His Val
435 440 445

Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg Phe Tyr Ala
450 455 460

Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys Ala Ser Leu
465 470 475 480

Leu Gly Asp Ala Ile Ser Tyr Ile Asn Glu Leu Lys Leu Lys Leu Asn
485 490 495

Gly Leu Asp Ser Glu Lys Gly Glu Leu Glu Lys Gln Leu Asp Ser Ala
500 505 510

Lys Lys Glu Leu Glu Leu Ala Thr Lys Asn Pro Pro Pro Pro Pro Pro
515 520 525

Pro Pro Pro Gly Leu Pro Pro Ser Asn Asn Glu Glu Ala Lys Lys Thr
530 535 540

Thr Thr Lys Leu Ala Asp Leu Glu Ile Glu Val Lys Ile Ile Gly Trp
545 550 555 560

Asp Ala Met Ile Arg Ile Gln Cys Ser Lys Lys Asn His Pro Ala Ala
565 570 575

Arg Leu Met Ala Ala Leu Lys Asp Leu Asp Leu Glu Val His His Ala
580 585 590

Ser Val Ser Val Val Asn Asp Leu Met Ile Gln Gln Ala Thr Val Asn
595 600 605

Met Gly Asn Lys Phe Tyr Thr Gln Glu Gln Leu Leu Ser Ala Leu Ser
610 615 620

Ser Lys Val Gly Asp Glu Leu Arg
625 630

<210> 125
<211> 1457
<212> DNA
<213> Glycine max

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atgagctcct ccgacctctc ctccctctgg cttgccacgc cgcagtccgc cacctccacc 120
acaactccag gcacggcaaa agcccctcct cctcctcctc ctccctccgcc gccgccggcg 180

PF59082SEQ List- PF59348PCT.txt

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 ggacactccc ttctcggctg gggagacggg tactacaagg gcgaggagga caaagacaaa 360
 gtcaaaacca aagcccccaa aacgaggtcg tccgcagagc aggaccatcg taagaaggtc 420
 ctccgcgaac ttaattcctt aatttccggc ctttccgctt cagctgacga cattgacgaa 480
 gaagtcaccg acaccgagtg gttcttcctg gtgtcgatga ctcagtcctt cgtcaacggg 540
 agcgggctgc cgggccaggc tttttttaac tcgagcccg tctgggtcgc cgggcccgaa 600
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 cttgtctgta taccgtccgc aaacggcgtc gtcgagctcg cctccgcgga ggtcattttt 720
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 aacaacaacc ctgaaacgtg ttcctgggcg ttgaattgctg ttgccaccac cgatcaaggc 840
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 <211> 654
 <212> PRT
 <213> Glycine max

<400> 126

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 20 25 30

Thr Pro Gln Ser Ala Thr Ser Thr Thr Thr Pro Gly Thr Ala Lys Ala
 35 40 45

Pro Pro Pro Pro Pro Pro Pro Pro Pro Pro Pro Ala Gln Ser Gln Ser
 50 55 60

Leu Leu Asn Gln Glu Thr Leu Gln Gln Arg Leu Gln Thr Leu Ile Glu

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

PF59082SEQ List- PF59348PCT.txt

Pro Glu Ser Gly Glu Ile Leu Ser Phe Gly Glu Ser Lys Lys Ser Ser
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 Tyr Asn Gly Ala Phe Phe Pro Gly Val Val Ala Val Glu Glu Asn Asn
 370 375 380
 Asn Asn Asn Lys Asn Lys Lys Lys Arg Ser Pro Val Val Ser Arg Ser
 385 390 395 400
 Ser Ile Asp Asp Gly Met Leu Ser Phe Thr Ser Leu Pro Ala Ala Asn
 405 410 415
 Ile Lys Ser Val Asn Gly Ala Cys Val Gly Ala Gly Asp Ser Asp His
 420 425 430
 Ser Asp Leu Glu Ala Ser Val Ala Lys Gln Val Val Glu Pro Glu Lys
 435 440 445
 Arg Pro Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro
 450 455 460
 Leu Asn His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln
 465 470 475 480
 Arg Phe Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp
 485 490 495
 Lys Ala Ser Leu Leu Gly Asp Ala Ile Leu Tyr Ile Asn Glu Leu Lys
 500 505 510
 Ser Lys Leu Asn Val Leu Asp Ser Glu Lys Thr Glu Leu Glu Lys Gln
 515 520 525
 Leu Asp Ser Thr Lys Lys Glu Leu Glu Leu Ala Thr Lys Asn Pro Pro
 530 535 540
 Pro Pro Pro Pro Pro Pro Pro Pro Gly Pro Pro Pro Ser Asn Ser
 545 550 555 560
 Val Glu Pro Lys Lys Thr Thr Ser Lys Leu Ala Asp Leu Glu Leu Glu
 565 570 575
 Val Lys Ile Ile Gly Trp Asp Ala Met Val Arg Ile Gln Cys Ser Lys
 580 585 590
 Lys Asn His Pro Ala Ala Arg Leu Met Ala Ala Leu Lys Asp Leu Asp
 595 600 605
 Leu Glu Val His His Ala Ser Val Ser Val Val Asn Asp Leu Met Ile
 610 615 620

PF59082SEQ List- PF59348PCT.txt

Gln Gln Ala Thr Val Asn Met Gly Asn Lys Phe Tyr Thr Gln Glu Gln
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Leu Leu Ser Ala Leu Ser Ser Lys Val Gly Asp Glu Leu Arg
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<211> 2025
<212> DNA
<213> Hordeum vulgare

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<400> 127
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gagcggcagc ggcgggagaa gctgaaccag cggttctacg cgctccgcgc cgtggtgccc 1560
aacgtgtcca agatggacaa ggcctcactg ctgggcgacg ccatctccta catcaacgag 1620

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PF59082SEQ List- PF59348PCT.txt

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atccgcgtgc agtgccacaa gcgcaaccac ccggcggcga agctgatgac ggcgctgcgg 1860
gagctggacc tggacgtgta ccacgccagc gtctcggtgg tgaaggacat catgatccag 1920
caggtggcgg tgaagatggc caccgggtc tactcccagg aacagctcaa cgcggcgctc 1980
tacggccgcc tcgccgagcc gggcgccgcg atgcaaattcc ggtaa 2025

<210> 128
<211> 674
<212> PRT
<213> Hordeum vulgare

<400> 128

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Gly Ala Ala Ala Thr Pro Pro Pro Pro Ala Ala Val Pro Ala Phe Asn
20 25 30

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

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

Ala Ser Leu Leu Gly Trp Gly Asp Gly Tyr Tyr Lys Gly Cys Asp Asp
65 70 75 80

Ala Asp Lys Arg Arg Gln Gln Pro Thr Pro Ala Ser Ala Ala Glu Gln
85 90 95

Glu His Arg Lys Arg Val Leu Arg Glu Leu Asn Ser Leu Ile Ala Gly
100 105 110

Gly Gly Ala Ala Ala Pro Asp Glu Ala Val Glu Glu Glu Gly Thr Asp
115 120 125

Thr Glu Trp Val Phe Leu Val Ser Met Thr Gln Ser Phe Pro Asn Gly
130 135 140

Met Gly Leu Pro Gly Gln Ala Leu Phe Ala Gly Gln Pro Ile Trp Ile
145 150 155 160

Ala Thr Gly Leu Ala Ser Ala Pro Cys Glu Arg Ala Lys Gln Ala Tyr
165 170 175

Thr Phe Gly Leu Arg Thr Met Val Cys Ile Pro Leu Gly Thr Gly Val
180 185 190

PF59082SEQ List- PF59348PCT.txt

Leu Glu Leu Gly Ala Thr Glu Val Ile Phe Gln Thr Thr Asp Ser Leu
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 Gly Arg Ile Arg Ser Leu Phe Ser Leu Asn Gly Gly Gly Gly Gly Ser
 210 215 220
 Gly Ser Trp Pro Pro Val Ala Pro Pro Pro Gln Glu Ala Glu Thr Asp
 225 230 235 240
 Pro Ser Val Leu Trp Leu Ala Asp Ala Pro Ala Gly Asp Met Lys Glu
 245 250 255
 Ser Pro Pro Ser Val Glu Ile Ser Val Ser Lys Pro Pro Pro Ser Gln
 260 265 270
 Pro Pro Gln Ile His His Phe Glu Asn Gly Ser Thr Ser Thr Leu Thr
 275 280 285
 Glu Asn Pro Ser Leu Ser Val His Ala Gln Gln Pro Leu Pro Gln Gln
 290 295 300
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 305 310 315 320
 Gln His Asn Gln Gly Pro Phe Arg Arg Glu Leu Asn Phe Ser Asp Phe
 325 330 335
 Ala Ser Asn Pro Ser Val Thr Val Thr Pro Pro Phe Phe Lys Pro Glu
 340 345 350
 Ser Gly Glu Ile Leu Asn Phe Gly Ala Asp Ser Thr Ser Arg Arg Asn
 355 360 365
 Pro Ser Pro Ala Pro Pro Ala Ala Thr Ala Ser Leu Thr Thr Ala Pro
 370 375 380
 Gly Ser Leu Phe Ser Gln His Thr Ala Thr Val Thr Ala Pro Ser Asn
 385 390 395 400
 Asp Ala Lys Asn Asn Pro Lys Arg Ser Met Glu Ala Thr Ser Arg Ala
 405 410 415
 Ser Asn Thr Asn His His Gln Thr Ala Thr Ala Asn Glu Gly Met Leu
 420 425 430
 Ser Phe Ser Ser Ala Pro Thr Thr Arg Pro Ser Thr Gly Thr Gly Ala
 435 440 445
 Pro Ala Lys Ser Glu Ser Asp His Ser Asp Leu Glu Ala Ser Val Arg
 450 455 460

PF59082SEQ List- PF59348PCT.txt

Glu Val Glu Ser Ser Arg Val Val Pro Pro Pro Glu Glu Lys Arg Pro
 465 470 475 480

Arg Lys Arg Gly Arg Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu Asn
 485 490 495

His Val Glu Ala Glu Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg Phe
 500 505 510

Tyr Ala Leu Arg Ala Val Val Pro Asn Val Ser Lys Met Asp Lys Ala
 515 520 525

Ser Leu Leu Gly Asp Ala Ile Ser Tyr Ile Asn Glu Leu Arg Gly Lys
 530 535 540

Met Thr Ala Leu Glu Ser Asp Lys Glu Thr Leu His Ser Gln Ile Glu
 545 550 555 560

Ala Leu Lys Lys Glu Arg Asp Ala Arg Pro Ala Ala Pro Ser Ser Ser
 565 570 575

Gly Met His Asp Asn Gly Ala Arg Cys His Ala Val Glu Ile Glu Ala
 580 585 590

Lys Ile Leu Gly Leu Glu Ala Met Ile Arg Val Gln Cys His Lys Arg
 595 600 605

Asn His Pro Ala Ala Lys Leu Met Thr Ala Leu Arg Glu Leu Asp Leu
 610 615 620

Asp Val Tyr His Ala Ser Val Ser Val Val Lys Asp Ile Met Ile Gln
 625 630 635 640

Gln Val Ala Val Lys Met Ala Thr Arg Val Tyr Ser Gln Glu Gln Leu
 645 650 655

Asn Ala Ala Leu Tyr Gly Arg Leu Ala Glu Pro Gly Ala Ala Met Gln
 660 665 670

Ile Arg

<210> 129
 <211> 2112
 <212> DNA
 <213> Zea mays

<400> 129
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 ccgccggcga tggcgatggc gccgggggttc aaccaggaca cgctgcagca gcggctgcag 180
 Seite 154

PF59082SEQ List- PF59348PCT.txt

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gacgacaagc gcaggcaccg cccgccgctc acgcccgcg cgaggccga gcaggagcac	360
cgcaagcgcg tgctccgca gctcaactcc ctcatctccg gcggcgccctc cgccgcgccc	420
gcgcccgcgc ccgacgaggc cgtcgaggag gaggtcaccg acaccgagtg gttcttcctc	480
gtctccatga cgcagtcctt cctcaacggc tcgggcctcc ccggccaggc gctcttcgcg	540
ggccaccaca cctggatcgc cgccggccctc tcctccgcgc cgtgcgaccg cgcgcgccag	600
gcctacaact tcggcctccg caccatggtc tgcttccccg tcggcacggg cgtgctcgag	660
ctcgggtcca ccgacgtcgt gttccagacc gccgagacca tggccaagat ccgctcgctc	720
ttcggggggcg ggccggggggg tggctcgtgg ccgcccgtgc agccccaggc ggcgcgcgag	780
cagcagcacg ccgccgaagc cgaccaggcg gcggagacgg acccatccgt gctgtggctc	840
gccgacgcgc cggtcgtgga catcaaggat tcctactcgc acccgtcggc ggccgagatc	900
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agcctcacca ccgctcccgg cagcctattc tcgcagtcgc agcacacggc gaccgccgcg	1260
gcgaacgacg cgaagaacaa caacaacaac aacaagcggt cgatggaagc cacctccctg	1320
gcgagcaaca ccaaccacca cccggcgggc gcggcgaacg agggcatgct gtccttctcg	1380
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cactcggacc tggacgcgtc cgtgcgcgag gtggagagca gccgcgtcgt ggcgccgccg	1500
ccggaggcgg agaagcgcc gcggaagcgc gggcggaagc ccgcgaacgg gcgcgaggag	1560
ccgctgaacc acgtggaggc ggagcggcag cggcgggaga agctgaacca gcgcttctac	1620
gcgctgcgcg ccgtggtgcc caacgtgtcc aagatggaca aggcgtcgct gtcggcgac	1680
gccatctcct acatcaacga gtcgcgcggc aagctgacgt cgctggagtc ggacagggag	1740
acgctgcagg cccaggtcga ggcgtcaag aaggagcgcg acgcgcggcc gcacccgcac	1800
cccgtgccg ggctcggcg gcacgacgcc ggcgggccgc gctgccacgc ggtagagatc	1860
gacgccaaga tcctggggct ggaggccatg atccgcgtgc agtgccacaa gcgcaaccac	1920
ccgtcggcg gcgtgatgac ggcgtccgc gagctcgacc tggacgtgta ccacgccagc	1980
gtctccgtcg tcaaggacct catgatccag caggctgccg tcaagatggc cagccgcag	2040
tactcgcagg accagctcag cgccgcgctc tacagccgcc ttgcggagcc cgggtctgtc	2100
atgggcaggt aa	2112

PF59082SEQ List- PF59348PCT.txt

<211> 703
<212> PRT
<213> Zea mays

<400> 130

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

Ala Ser Ala Asp Leu Pro Ala Tyr Pro Trp Gly Ala Pro Ala Gly Gly
 20      25      30

Gly Asn Pro Pro Pro Pro Gln Met Pro Pro Ala Met Ala Met Ala Pro
 35      40      45

Gly Phe Asn Gln Asp Thr Leu Gln Gln Arg Leu Gln Ala Met Ile Glu
 50      55      60

Gly Ser Arg Glu Thr Trp Thr Tyr Ala Ile Phe Trp Gln Ser Ser Leu
 65      70      75      80

Asp Ala Ala Thr Gly Ala Ser Leu Leu Gly Trp Gly Asp Gly Tyr Tyr
 85      90      95

Lys Gly Cys Asp Asp Asp Lys Arg Arg His Arg Pro Pro Leu Thr Pro
100      105      110

Ala Ala Gln Ala Glu Gln Glu His Arg Lys Arg Val Leu Arg Glu Leu
115      120      125

Asn Ser Leu Ile Ser Gly Gly Ala Ser Ala Ala Pro Ala Pro Ala Pro
130      135      140

Asp Glu Ala Val Glu Glu Glu Val Thr Asp Thr Glu Trp Phe Phe Leu
145      150      155      160

Val Ser Met Thr Gln Ser Phe Leu Asn Gly Ser Gly Leu Pro Gly Gln
165      170      175

Ala Leu Phe Ala Gly His His Thr Trp Ile Ala Ala Gly Leu Ser Ser
180      185      190

Ala Pro Cys Asp Arg Ala Arg Gln Ala Tyr Asn Phe Gly Leu Arg Thr
195      200      205

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

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

Phe Gly Gly Gly Pro Gly Gly Gly Ser Trp Pro Pro Val Gln Pro Gln
245      250      255

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PF59082SEQ List- PF59348PCT.txt

Ala Ala Pro Gln Gln Gln His Ala Ala Glu Ala Asp Gln Ala Ala Glu
260 265 270

Thr Asp Pro Ser Val Leu Trp Leu Ala Asp Ala Pro Val Val Asp Ile
275 280 285

Lys Asp Ser Tyr Ser His Pro Ser Ala Ala Glu Ile Ser Val Ser Lys
290 295 300

Pro Pro Pro Pro Pro Pro Pro Pro Gln Ile His Phe Glu Asn Gly Ser
305 310 315 320

Thr Ser Thr Leu Thr Glu Asn Pro Ser Pro Ser Val His Ala Pro Pro
325 330 335

Ala Pro Pro Ala Pro Pro Gln Arg Gln Gln Gln Asn Gln Gly Pro Phe
340 345 350

Arg Arg Glu Leu Asn Phe Ser Asp Phe Ala Ser Asn Pro Ser Leu Ala
355 360 365

Ala Ala Pro Pro Phe Phe Lys Pro Glu Ser Gly Glu Ile Leu Ser Phe
370 375 380

Gly Val Asp Ser Asn Ala Gln Arg Asn Pro Ser Pro Ala Pro Pro Ala
385 390 395 400

Ser Leu Thr Thr Ala Pro Gly Ser Leu Phe Ser Gln Ser Gln His Thr
405 410 415

Ala Thr Ala Ala Ala Asn Asp Ala Lys Asn Asn Asn Asn Asn Asn Lys
420 425 430

Arg Ser Met Glu Ala Thr Ser Leu Ala Ser Asn Thr Asn His His Pro
435 440 445

Ala Ala Ala Ala Asn Glu Gly Met Leu Ser Phe Ser Ser Ala Pro Thr
450 455 460

Ala Arg Pro Ser Ala Gly Thr Gly Ala Pro Ala Lys Ser Glu Ser Asp
465 470 475 480

His Ser Asp Leu Asp Ala Ser Val Arg Glu Val Glu Ser Ser Arg Val
485 490 495

Val Ala Pro Pro Pro Glu Ala Glu Lys Arg Pro Arg Lys Arg Gly Arg
500 505 510

Lys Pro Ala Asn Gly Arg Glu Glu Pro Leu Asn His Val Glu Ala Glu
515 520 525

PF59082SEQ List- PF59348PCT.txt

Arg Gln Arg Arg Glu Lys Leu Asn Gln Arg Phe Tyr Ala Leu Arg Ala
530 535 540

Val Val Pro Asn Val Ser Lys Met Asp Lys Ala Ser Leu Leu Gly Asp
545 550 555 560

Ala Ile Ser Tyr Ile Asn Glu Leu Arg Gly Lys Leu Thr Ser Leu Glu
565 570 575

Ser Asp Arg Glu Thr Leu Gln Ala Gln Val Glu Ala Leu Lys Lys Glu
580 585 590

Arg Asp Ala Arg Pro His Pro His Pro Ala Ala Gly Leu Gly Gly His
595 600 605

Asp Ala Gly Gly Pro Arg Cys His Ala Val Glu Ile Asp Ala Lys Ile
610 615 620

Leu Gly Leu Glu Ala Met Ile Arg Val Gln Cys His Lys Arg Asn His
625 630 635 640

Pro Ser Ala Arg Leu Met Thr Ala Leu Arg Glu Leu Asp Leu Asp Val
645 650 655

Tyr His Ala Ser Val Ser Val Val Lys Asp Leu Met Ile Gln Gln Val
660 665 670

Ala Val Lys Met Ala Ser Arg Met Tyr Ser Gln Asp Gln Leu Ser Ala
675 680 685

Ala Leu Tyr Ser Arg Leu Ala Glu Pro Gly Ser Val Met Gly Arg
690 695 700

<210> 131
<211> 1074
<212> DNA
<213> Arabidopsis thaliana

<400> 131
atgacagaac tcaacttcca ctcctccca ataatctccg atcgcttcac gacgacgacg 60
acaacatcac cgtcgtttctc gtcacattct tcttcttctt cttctcttct ctctttcacc 120
aaacgaagac gaaaacacca accttttagta tcatccatac gcatggaaca gtcacgggtca 180
cggaatcgga aagacaaagt cgtcgtcatt ttaggagcaa ccggcgccgg aaaatcaaga 240
ctttccgtcg atctcgctac tcgtttccct tcagagatca taaactccga taaaatccaa 300
gtctacgaag gattagagat cacaacgaat cagattacgt tacaagaccg tcgcggcggtt 360
cctcaccatc tcctcggcgt catcaacccc gaacacggcg aactaaccgc cggagagttt 420
cgctccgccc cttcaaacgt cgtcaaagtg ataacttctc gtcaaaaggt tccgattatc 480
gccggtggat ctaactcttt cgtccacgca ctcttagctc aacgattcga ccaaagttc 540

PF59082SEQ List- PF59348PCT.txt

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gatccttttt catccgggtc gtgtttaatc agctccgatt tgcgttacga gtgttgtttc 600
atctgggtcg atgtatcgga gactgttctc tacgagtatc ttctcagaag agtcgacgaa 660
atgatggatt caggtatggt cgaagagctg tctagattct acgacccggt taaatccggt 720
ttagaaaccc ggtttgggat taggaaagct ataggtgtac cggagtttga cggttacttc 780
aaagagtatc caccggagaa gaagatgata aagtgggacg ctttaagaaa agcggcgtac 840
gataaggcgg ttgatgatat caaaaggaac acgtggacgt tagcgaagag acaagtgaag 900
aagattgaga tgctaaaaga cgctggttg gaaatagaaa gagttgatgc aacggcgtcg 960
tttaaagcag tgatgatgaa gagttcgtcg gagaagaagt ggagagagaa ttgggaagag 1020
caagtgttg agccaagcgt aaagattgtg aagcggcatt tggtgcaaaa ttag 1074

```

<210> 132
 <211> 357
 <212> PRT
 <213> Arabidopsis thaliana

<400> 132

Met Thr Glu Leu Asn Phe His Leu Leu Pro Ile Ile Ser Asp Arg Phe
1 5 10 15

Thr Thr Thr Thr Thr Thr Ser Pro Ser Phe Ser Ser His Ser Ser Ser
20 25 30

Ser Ser Ser Leu Leu Ser Phe Thr Lys Arg Arg Arg Lys His Gln Pro
35 40 45

Leu Val Ser Ser Ile Arg Met Glu Gln Ser Arg Ser Arg Asn Arg Lys
50 55 60

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

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

Asp Lys Ile Gln Val Tyr Glu Gly Leu Glu Ile Thr Thr Asn Gln Ile
100 105 110

Thr Leu Gln Asp Arg Arg Gly Val Pro His His Leu Leu Gly Val Ile
115 120 125

Asn Pro Glu His Gly Glu Leu Thr Ala Gly Glu Phe Arg Ser Ala Ala
130 135 140

Ser Asn Val Val Lys Val Ile Thr Ser Arg Gln Lys Val Pro Ile Ile
145 150 155 160

Ala Gly Gly Ser Asn Ser Phe Val His Ala Leu Leu Ala Gln Arg Phe
165 170 175

PF59082SEQ List- PF59348PCT.txt

Asp Pro Lys Phe Asp Pro Phe Ser Ser Gly Ser Cys Leu Ile Ser Ser
180 185 190

Asp Leu Arg Tyr Glu Cys Cys Phe Ile Trp Val Asp Val Ser Glu Thr
195 200 205

Val Leu Tyr Glu Tyr Leu Leu Arg Arg Val Asp Glu Met Met Asp Ser
210 215 220

Gly Met Phe Glu Glu Leu Ser Arg Phe Tyr Asp Pro Val Lys Ser Gly
225 230 235 240

Leu Glu Thr Arg Phe Gly Ile Arg Lys Ala Ile Gly Val Pro Glu Phe
245 250 255

Asp Gly Tyr Phe Lys Glu Tyr Pro Pro Glu Lys Lys Met Ile Lys Trp
260 265 270

Asp Ala Leu Arg Lys Ala Ala Tyr Asp Lys Ala Val Asp Asp Ile Lys
275 280 285

Arg Asn Thr Trp Thr Leu Ala Lys Arg Gln Val Lys Lys Ile Glu Met
290 295 300

Leu Lys Asp Ala Gly Trp Glu Ile Glu Arg Val Asp Ala Thr Ala Ser
305 310 315 320

Phe Lys Ala Val Met Met Lys Ser Ser Ser Glu Lys Lys Trp Arg Glu
325 330 335

Asn Trp Glu Glu Gln Val Leu Glu Pro Ser Val Lys Ile Val Lys Arg
340 345 350

His Leu Val Gln Asn
355

<210> 133
<211> 654
<212> DNA
<213> Oryza sativa

<400> 133
cttctacatc ggcttaggtg tagcaacacg actttattat tattattatt attattatta 60
ttattttaca aaaatataaa atagatcagt ccctcaccac aagtagagca agttggtgag 120
ttattgtaaa gttctacaaa gctaatttaa aagttattgc attaacttat ttcattattac 180
aaacaagagt gtcaatggaa caatgaaaac catatgacat actataattt tgttttttatt 240
attgaaatta tataattcaa agagaataaa tccacatagc cgtaaagttc tacatgtggt 300
gcattaccaa aatatatata gcttacaaaa catgacaagc ttagtttgaa aaattgcaat 360
ccttatcaca ttgacacata aagtgagtga tgagtcataa tattatTTTT cttgctaccc 420

PF59082SEQ List- PF59348PCT.txt

atcatgtata tatgatagcc acaaagttac tttgatgatg atatcaaaga acatttttag	480
gtgcacctaa cagaatatcc aaataatatg actcacttag atcataatag agcatcaagt	540
aaaactaaca ctctaaagca accgatggga aagcatctat aaatagacaa gcacaatgaa	600
aatcctcatc atccttcacc acaattcaaa tattatagtt gaagcatagt agta	654

<210> 134
 <211> 55
 <212> DNA
 <213> Artificial sequence

<220>
 <223> primer: prm03095

<400> 134 ggggacaagt ttgtacaaaa aagcaggctt cacaatgaca gaactcaact tccac	55
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<210> 135
 <211> 49
 <212> DNA
 <213> Artificial sequence

<220>
 <223> primer: prm03096

<400> 135 ggggaccact ttgtacaaga aagctgggta actaattttg caccaaattg	49
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<210> 136
 <211> 957
 <212> DNA
 <213> Arabidopsis thaliana

<400> 136 atgaagtgtg atgacaaaat gggtgtgatc atgggtgccca ccggttcttg caagtcatca	60
ctctctgttg atctcgcttt acatttttaa gccgagatca tcaactctga caaaatgcag	120
ttctacgatg gcttgaagat caccacgaat caatcgacca ttgaagatcg acgtggagtg	180
ccacatcacc ttctcggtga actaaacccg gaggtcggag aagtcacagc ggcagaattt	240
cgcgttatgg cggctgaagc catctccgag attactcaac gtaaaaagct cccaatcctt	300
gccggtggat ccaactcata cattcatgct ctcttgcaa aatcttatga ccctgaaaac	360
tatccgtttt ctgatcaciaa gggctcaatc tgctccgagt tgaaatatga ttgttgtttc	420
atgtggatag atgtggatca gtctgtgtta ttcgagtatc tttctttacg tttggatctt	480
atgatgaagt caggatgtt cgaggagatc gctgagttcc accgctctaa gaaggccccg	540
aaagagccat tggggatag gaaggctata ggagtgaag agtttgatga ctacctcaaa	600
atgtacaagt gggacaatga catggataaa tgggacccta tgagaaagga ggcttatgag	660
aaggcgggtga gagccatcaa agaaaacaca tttcagctca caaaggatca aatcacgaag	720
atcaacaagc tgagaaatgc cgggtgggac ataaagaagg tggatgctac agcatcgttt	780
cgagaggcaa ttagggcagc caaggaaggc gaaggtgtag ccgagatgca gagaaagata	840

tggaacaagg aagtgttgga accgtgtgtg aagattgtca ggagccactt ggaccaaccg 900
 atcaactatt attattatta cttttattta ctaaaaagat ttttaagtct taactag 957

<210> 137
 <211> 318
 <212> PRT
 <213> Arabidopsis thaliana

<400> 137

Met Lys Cys Asn Asp Lys Met Val Val Ile Met Gly Ala Thr Gly Ser
 1 5 10 15

Gly Lys Ser Ser Leu Ser Val Asp Leu Ala Leu His Phe Lys Ala Glu
 20 25 30

Ile Ile Asn Ser Asp Lys Met Gln Phe Tyr Asp Gly Leu Lys Ile Thr
 35 40 45

Thr Asn Gln Ser Thr Ile Glu Asp Arg Arg Gly Val Pro His His Leu
 50 55 60

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

Arg Val Met Ala Ala Glu Ala Ile Ser Glu Ile Thr Gln Arg Lys Lys
 85 90 95

Leu Pro Ile Leu Ala Gly Gly Ser Asn Ser Tyr Ile His Ala Leu Leu
 100 105 110

Ala Lys Ser Tyr Asp Pro Glu Asn Tyr Pro Phe Ser Asp His Lys Gly
 115 120 125

Ser Ile Cys Ser Glu Leu Lys Tyr Asp Cys Cys Phe Ile Trp Ile Asp
 130 135 140

Val Asp Gln Ser Val Leu Phe Glu Tyr Leu Ser Leu Arg Leu Asp Leu
 145 150 155 160

Met Met Lys Ser Gly Met Phe Glu Glu Ile Ala Glu Phe His Arg Ser
 165 170 175

Lys Lys Ala Pro Lys Glu Pro Leu Gly Ile Trp Lys Ala Ile Gly Val
 180 185 190

Gln Glu Phe Asp Asp Tyr Leu Lys Met Tyr Lys Trp Asp Asn Asp Met
 195 200 205

Asp Lys Trp Asp Pro Met Arg Lys Glu Ala Tyr Glu Lys Ala Val Arg
 210 215 220

Ala Ile Lys Glu Asn Thr Phe Gln Leu Thr Lys Asp Gln Ile Thr Lys
 Seite 162

225 230 235 240

Ile Asn Lys Leu Arg Asn Ala Gly Trp Asp Ile Lys Lys Val Asp Ala
245 250 255

Thr Ala Ser Phe Arg Glu Ala Ile Arg Ala Ala Lys Glu Gly Glu Gly
260 265 270

Val Ala Glu Met Gln Arg Lys Ile Trp Asn Lys Glu Val Leu Glu Pro
275 280 285

Cys Val Lys Ile Val Arg Ser His Leu Asp Gln Pro Ile Asn Tyr Tyr
290 295 300

Tyr Tyr Tyr Phe Tyr Leu Leu Lys Arg Phe Leu Ser Leu Asn
305 310 315

<210> 138
<211> 1029
<212> DNA
<213> Arabidopsis thaliana

<400> 138
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gtcactacca aattcgggtc accacgatta gtcactacgt gcatggggcca tgcagggcgt 120
aaaaatatca aggataaggt ggttctcatc acaggtacaa caggcacagg caagtcacgc 180
ctctcagtcg atcttgccac ccgttttttt cccgccgaga tcataaactc ggacaaaatg 240
caaatctaca agggattcga gattgtcaca aatctaattc cactgcatga gcaaggagga 300
gtcccgacac atcttctagg tcagttccac ccacaagacg gtgaactcac ccctgcagag 360
ttccgttctt tggcgacact gtccatctct aaactaattt ctagcaagaa actcccgatt 420
gtagttggtg gatccaactc cttcaatcac gctctactcg ccgagcgttt tgacccggat 480
attgatccat tctctcccgg atcgagtctt tcaacgatct gctctgacct aagggtacaaa 540
tgttgcatct tatgggttga tgtttttagag ccggttctgt tccaacactt gtgcaatcgt 600
gtcgacacaaa tgatcgagtc gggattggtc gagcagcttg ccgaattgta cgaccctggt 660
gtagattcgg gtcgacgact aggggttcgg aagacgatag gagtagagga gttcgaccga 720
tacttttagag tataccctaa ggagatggac aagggaattt gggacttagc gagaaaggcg 780
gcgtacgagg agacagtga ggggatgaaa gagaggacat gtcggttggt gaagaagcag 840
aaagagaaga tcatgaagct gataagaggt ggttgggaga ttaagaggct tgacgctacg 900
gcggcaatta tggctgagct gaatcaaagt acggcaaagg gagaaggaaa gaatgggaga 960
gagatttggg aaaaacacat tgtggatgaa agtgctcaga ttgtcaagaa gtttttgttg 1020
gaagtttag 1029

<210> 139
<211> 342

<212> PRT

<213> Arabidopsis thaliana

<400> 139

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

PF59082SEQ List- PF59348PCT.txt

Ala Arg Lys Ala Ala Tyr Glu Glu Thr Val Lys Gly Met Lys Glu Arg
260 265 270

Thr Cys Arg Leu Val Lys Lys Gln Lys Glu Lys Ile Met Lys Leu Ile
275 280 285

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

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

Glu Ile Trp Glu Lys His Ile Val Asp Glu Ser Val Glu Ile Val Lys
325 330 335

Lys Phe Leu Leu Glu Val
340

<210> 140
<211> 1137
<212> DNA
<213> Humulus lupulus

<400> 140
agccggaaga agaccagggg gggcacgcat ggactacgca tccgttgcca tggctgccgc 60
gccaccaca acaaccacta ccaacgtatc actccgtcgc cagcgacacc ggaaagagaa 120
gcttctcgtt ctaatgggcg ccaccggtac cggaagtc cgtctctcca tcgacctcgc 180
ggcgcacttc cctctcgaag tcataaactc ggataaaatg cagggtttata aaggactgga 240
tatacagacg aacaagatat cgggtaccgga ccggggcggtc gtgccacacc atctcctcgg 300
tgaggttgac ccggctcgag gtgagttgac tcctgccgat ttcaggtctt tggctggaaa 360
agccgtgtct gaaatcactg ggaggagaaa gcttcccgtc ctggtgggtg ggtccaactc 420
gttcatacat gcgctgttgg tggaccggtt tgactcgtcg ggcccgggcg tgttcgagga 480
aggggtccac tcggtggtgt cttctgagtt gagatacgac tgttgctttc tctgggttga 540
cgtgtcggta aaggtattga ccgattactt ggcaagcga gtcgacgaca tggtggagct 600
ggggatgttc gatgagttgg ccgagttcta tagccgggag gacgaggacc acgacgaaga 660
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cgaaaagttc agacctggcg acgtggaggg ggaggacccc gggagggatc ggggtgcggag 780
gggcgcattc gaagaggcgg tgaggcgat caaggagaac acgtgtcatc tagcgaagag 840
acaaataggg aagatcttac gattaaaagg cgctgggtgg gacctacggc ggctggacgc 900
aacagagtcg ttccgggagg cgatgacgtc agactccggc gagaagtgc cggagatttg 960
ggagaagcag gtattggaac caagcgtgaa gattgtgagt cgcttcttgg acgagtaggt 1020
tttgccagca atttccagct ctttttttct tttttttttt tgagtttggt aaaaaaaaaa 1080
tttggtagtt agttttccca cggaaaaatt ttcaacttgt cacaattaca aattaat 1137

PF59082SEQ List- PF59348PCT.txt

<210> 141
 <211> 329
 <212> PRT
 <213> Humulus lupulus

<400> 141

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Met Asp Tyr Ala Ser Val Ala Met Ala Ala Ala Pro Thr Thr Thr Thr
1      5      10      15

Thr Thr Asn Val Ser Leu Arg Arg Gln Arg His Arg Lys Glu Lys Leu
20      25      30

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

Asp Leu Ala Ala His Phe Pro Leu Glu Val Ile Asn Ser Asp Lys Met
50      55      60

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

Asp Arg Gly Gly Val Pro His His Leu Leu Gly Glu Val Asp Pro Ala
85      90      95

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

Val Ser Glu Ile Thr Gly Arg Arg Lys Leu Pro Val Leu Val Gly Gly
115     120     125

Ser Asn Ser Phe Ile His Ala Leu Leu Val Asp Arg Phe Asp Ser Ser
130     135     140

Gly Pro Gly Val Phe Glu Glu Gly Ser His Ser Val Val Ser Ser Glu
145     150     155     160

Leu Arg Tyr Asp Cys Cys Phe Leu Trp Val Asp Val Ser Val Lys Val
165     170     175

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

Met Phe Asp Glu Leu Ala Glu Phe Tyr Ser Pro Glu Asp Glu Asp His
195     200     205

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

Pro Glu Phe Asp Arg Tyr Phe Glu Lys Phe Arg Pro Gly Asp Val Glu
225     230     235     240

Gly Glu Asp Pro Gly Arg Asp Arg Val Arg Arg Gly Ala Phe Glu Glu
245     250     255
    
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PF59082SEQ List- PF59348PCT.txt

Ala Val Arg Ala Ile Lys Glu Asn Thr Cys His Leu Ala Lys Arg Gln
260 265 270

Ile Gly Lys Ile Leu Arg Leu Lys Gly Ala Gly Trp Asp Leu Arg Arg
275 280 285

Leu Asp Ala Thr Glu Ser Phe Arg Ala Ala Met Thr Ser Asp Ser Gly
290 295 300

Glu Lys Cys Thr Glu Ile Trp Glu Lys Gln Val Leu Glu Pro Ser Val
305 310 315 320

Lys Ile Val Ser Arg Phe Leu Asp Glu
325

<210> 142
<211> 1335
<212> DNA
<213> Lotus japonicus

<400> 142
ctctctttct tcttcttct atgagacttt cctctctctc acctcaccac caccaccacc 60
accactacac cacacactac cattaccatt accaccaccc ctcttcactc gccatggacg 120
gccaccgccg catagacaag gtgggtgtca tcatgggctc caccggctcc ggcaaattccc 180
gcctctccat cgacctcgcc accctctttc ccttctcaga gatcatcaac tccgataaaa 240
tgcaagtcta caaaggactc gacaccacca ccaacaagat cccacctcac caacgcaaca 300
acgtccccc cccacctctc ggcgacgtcg acccttctct cgggtgatttc accccctccg 360
acttccgccg ccgcgccggt gacctcatct ccgacatcac ccgccgcaga aagctcccca 420
tcttcgtcgg cggctccaac tccttcgtcc acgccctcct tgtcgaccga ttcgaccccg 480
agtccaacgt cttccgcgac gattcaccct cgccggtttc ctccgagttg agataccggt 540
gctgcttctt ctggatggac attgcgttcc ccgtgctgtc ggagtatttg ctgaagcgag 600
tcgacgacat gcttgactcg ggaatggtgg acgagttggc tcagttcttc gactcggaca 660
cagcgaacca gaccgggttg agaaaagcca tcggtgtacc cgagttcgac cggtttttca 720
aggatccggt gcgggagggg gcagcgtagc aggaagcggt gagggcgatt aaggagaaca 780
cgtgtcagct agcgaagagg cagattggga agatcatgcg gttaaaaaga gcagggtggg 840
acttacggag gatcgacgcc acggaagcgt tccgggtggc gcttgtggca gacggcggcg 900
gagagagatt ttccgatgaa tggaagaggc aagtgttgga accaagcgtg aagattgtga 960
agcggttctt gatggagtag gtttgggttt tccagctaaa tccagctatt ccacttcctc 1020
tttaaatatt tctttttttt ttcttcttct ctttttttgc gttttatttc ccccaaata 1080
agacaaaaaa tgaaagtggg aaattggggg gaaaatgtac aaaaatggga gtggaaattg 1140
ttaatttgaa tccactagtt tggttgagtg agtgatttca gagagggaat gagcatggat 1200

PF59082SEQ List- PF59348PCT.txt

cattaaattt ttggtcttgg agttactagc aactagcaac tagcaactag caacaaggct 1260
 tgggtcatgt gagattccac aatttttctc aaggcaatag aaatggatat ttagtataaa 1320
 aaaaaaaaaa aaaaa 1335

<210> 143
 <211> 319
 <212> PRT
 <213> Lotus japonicus

<400> 143

Met Arg Leu Ser Ser Leu Ser Pro His Pro His His His His His Tyr
 1 5 10 15

Thr Thr His Tyr His Tyr His Tyr His His Pro Ser Ser Leu Ala Met
 20 25 30

Asp Gly His Arg Arg Ile Asp Lys Val Val Val Ile Met Gly Ala Thr
 35 40 45

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

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

Asp Thr Thr Thr Asn Lys Ile Pro Pro His Gln Arg Asn Asn Val Pro
 85 90 95

His His Leu Leu Gly Asp Val Asp Pro Ser Leu Gly Asp Phe Thr Pro
 100 105 110

Ser Asp Phe Arg Arg Arg Ala Gly Asp Leu Ile Ser Asp Ile Thr Arg
 115 120 125

Arg Arg Lys Leu Pro Ile Phe Val Gly Gly Ser Asn Ser Phe Val His
 130 135 140

Ala Leu Leu Val Asp Arg Phe Asp Pro Glu Ser Asn Val Phe Arg Asp
 145 150 155 160

Asp Ser Pro Ser Pro Val Ser Ser Glu Leu Arg Tyr Arg Cys Cys Phe
 165 170 175

Leu Trp Met Asp Ile Ala Phe Pro Val Leu Ser Glu Tyr Leu Leu Lys
 180 185 190

Arg Val Asp Asp Met Leu Asp Ser Gly Met Val Asp Glu Leu Ala Gln
 195 200 205

Phe Phe Asp Ser Asp Thr Ala Asn Gln Thr Gly Leu Arg Lys Ala Ile
 210 215 220

PF59082SEQ List- PF59348PCT.txt

Gly Val Pro Glu Phe Asp Arg Phe Phe Lys Asp Pro Val Arg Glu Gly
225 230 235 240

Ala Ala Tyr Glu Glu Ala Val Arg Ala Ile Lys Glu Asn Thr Cys Gln
245 250 255

Leu Ala Lys Arg Gln Ile Gly Lys Ile Met Arg Leu Lys Arg Ala Gly
260 265 270

Trp Asp Leu Arg Arg Ile Asp Ala Thr Glu Ala Phe Arg Val Ala Leu
275 280 285

Val Ala Asp Gly Gly Gly Glu Arg Phe Ser Asp Glu Trp Lys Arg Gln
290 295 300

Val Leu Glu Pro Ser Val Lys Ile Val Lys Arg Phe Leu Met Glu
305 310 315

<210> 144
<211> 1120
<212> DNA
<213> Medicago truncatula

<400> 144
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cataaaccga ttcaatttca ccactattca cacacccttt ttactccttc ctcttcctcc 120
gccaccacac ccaggcggcg gcccactgc cctcgcatgg aaatctcccc ctacgcccac 180
cgctcggaag acaaagtcct cattatagtc ggtgcaaccg gctccggaag atcacgtctc 240
tccgttgaac tcgccaccct cttcccttac tcagaaataa ttaattccga caaaatccaa 300
gtgtacagag gactcgatat caccaccaac aagatcccat ttcataacg caacaacggt 360
ccacatcatc ttctcggcga cattgatcct tctcacgggt agttctcacc ttcagatttc 420
cgccgccacg ccggagatat catctccgat attacttccc ggagaaaact tcccattatc 480
gttggtgggt ccaactcatt cattcacgct cttctttagt aacgattcga ccctgagtca 540

aacgttttcg acgagtcac atcattgtca acatcgatat cctcggattt aaggtacaaa 600
tggtgttttc ttggatgga ttttctgtt cctgtgttgt cggaatattt gctgaaacga 660
gtcgatgata tgtttgactc gggaatggtg aacgagttag ctgagtttta tgaaccggat 720
gcagataacc aaaccggttt aagaaaagca atcgggtgtac ccgagttcga ccggtttttt 780
aaacaatatc caccacaggt tggaccagat gaatctgaac gtcataatcc aatgcgggaa 840
ggtgcatata ttgaagcagt gaaggcgatt aaagataaca cgtgtcagtt agctaagaga 900
cagataggga agatcttacg gttaaaaaga gctgggtggg acctacaacg gattgatgcc 960
acggaggcgt ttagggcggt gctgacgtca gagtctaacg gcggtggaga agaatttacc 1020
ggtgtatgga aaaaacaagt attggaacca agcgtgaaga ttgtgaagcg tttcttgatg 1080
gagtaggtct tccagctaaa tccagcttag ctaatccaac 1120

PF59082SEQ List- PF59348PCT.txt

<210> 145
 <211> 361
 <212> PRT
 <213> Medicago truncatula

<400> 145

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Met Pro Thr Thr Thr Thr Thr Pro Ser Phe Leu Ser Pro Pro His Ser
1      5      10      15

Gln Arg His Tyr His Lys Pro Ile Gln Phe His His Tyr Ser His Thr
20      25      30

Leu Phe Thr Pro Ser Ser Ser Ser Ala Thr His Thr Arg Arg Arg Pro
35      40      45

His Cys Pro Arg Met Glu Ile Ser Pro Ser Arg His Arg Arg Lys Asp
50      55      60

Lys Val Leu Ile Ile Val Gly Ala Thr Gly Ser Gly Lys Ser Arg Leu
65      70      75      80

Ser Val Glu Leu Ala Thr Leu Phe Pro Tyr Ser Glu Ile Ile Asn Ser
85      90      95

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

Pro Phe His Gln Arg Asn Asn Val Pro His His Leu Leu Gly Asp Ile
115     120     125

Asp Pro Ser His Gly Glu Phe Ser Pro Ser Asp Phe Arg Arg His Ala
130     135     140

Gly Asp Ile Ile Ser Asp Ile Thr Ser Arg Arg Lys Leu Pro Ile Ile
145     150     155     160

Val Gly Gly Ser Asn Ser Phe Ile His Ala Leu Leu Val Glu Arg Phe
165     170     175

Asp Pro Glu Ser Asn Val Phe Asp Glu Ser Ser Ser Leu Ser Thr Ser
180     185     190

Ile Ser Ser Asp Leu Arg Tyr Lys Cys Cys Phe Leu Trp Met Asp Ile
195     200     205

Ser Phe Pro Val Leu Ser Glu Tyr Leu Leu Lys Arg Val Asp Asp Met
210     215     220

Phe Asp Ser Gly Met Val Asn Glu Leu Ala Glu Phe Tyr Glu Pro Asp
225     230     235     240
    
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PF59082SEQ List- PF59348PCT.txt

Ala Asp Asn Gln Thr Gly Leu Arg Lys Ala Ile Gly Val Pro Glu Phe
245 250 255

Asp Arg Phe Phe Lys Gln Tyr Pro Pro Gln Val Gly Pro Asp Glu Ser
260 265 270

Glu Arg His Asn Pro Met Arg Glu Gly Ala Tyr Ile Glu Ala Val Lys
275 280 285

Ala Ile Lys Asp Asn Thr Cys Gln Leu Ala Lys Arg Gln Ile Gly Lys
290 295 300

Ile Leu Arg Leu Lys Arg Ala Gly Trp Asp Leu Gln Arg Ile Asp Ala
305 310 315 320

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

Glu Glu Phe Thr Gly Val Trp Lys Lys Gln Val Leu Glu Pro Ser Val
340 345 350

Lys Ile Val Lys Arg Phe Leu Met Glu
355 360

<210> 146
<211> 1105
<212> DNA
<213> Morus alba

<400> 146
gcccgggag gtccggccac tacctctggc ccacgagaca ggtgggagcg gatggagttt 60
tcctcctccg ccgcccgccg ccaccgccac catcccaagg acaagctcct cgtcatcatg 120
ggcgccaccg gcaccggcaa atcccgactc tccgtcgagc tcgccacca cttcaacggc 180
gagatcatca actccgacaa aatgcaagtc tacaaggagc tcgacacaac gaccaacaag 240
attccccctg acgaccgcct cgggtgtccc caccaccttc tcggcgaggt cgactcggaa 300
gctcacggcg agttgactcg ctccgagttc cgctccttgg ccggaaaggc cgtgtcggaa 360
atcaccgcca ggaggaaact cccagtcctc gccggcggtc ccaactcctt cattcacgcc 420
ctgctcgtgg accggttcga cccggaatac gacgttttcg acgagcggtc cgaccaaccg 480
gcggattcgt cgaaggttct cctccgctac aactgttgct tcctttgggt ggatgtttcg 540
ttgagggttt tggaagatta ttattgaag cgagtcgatg acatgctcaa ctcggggatg 600
ttcgacgagt tggccgagtt ctacgacctg gaggaggatc acggaccggc gaactggacc 660
ggattgagga aggctatagg cgtgcccag tttgaccggt atttcgagag gtgcagaccg 720
ggggagaaaag gagagtggga tcgggtgctg agggaaagcat acgaggaggc ggtgagggaa 780
ataaaggaga acacgtgtca gctggcgaag agacagattg gaaagattct gagattaaag 840
aagttggggt gggacctac gaggttgac gcgacggagg cgtttagggc ggtgatgacg 900

PF59082SEQ List- PF59348PCT.txt

tcagattccg gtaagagggtg ttcggaaatt tgggagaggc aggtattgga accaagcgtg 960
aagattgtga agcgcttctt ggacgagtag taggttttgc cagcactttc cagctaattt 1020
ttatttttat tatttttttg ttgtttttt aaaaaattt tggtagttag ttttccaact 1080
tcaacttcag ctcaaaaaaa aaaaa 1105

<210> 147
<211> 312
<212> PRT
<213> Morus alba

<400> 147

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

Asp Lys Leu Leu Val Ile Met Gly Ala Thr Gly Thr Gly Lys Ser Arg
20 25 30

Leu Ser Val Glu Leu Ala Thr His Phe Asn Gly Glu Ile Ile Asn Ser
35 40 45

Asp Lys Met Gln Val Tyr Lys Gly Leu Asp Thr Thr Thr Asn Lys Ile
50 55 60

Pro Leu Asp Asp Arg Leu Gly Val Pro His His Leu Leu Gly Glu Val
65 70 75 80

Asp Ser Glu Ala His Gly Glu Leu Thr Arg Ser Glu Phe Arg Ser Leu
85 90 95

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

Leu Ala Gly Gly Ser Asn Ser Phe Ile His Ala Leu Leu Val Asp Arg
115 120 125

Phe Asp Pro Glu Tyr Asp Val Phe Asp Glu Arg Ser Asp Gln Pro Ala
130 135 140

Asp Ser Ser Lys Val Leu Leu Arg Tyr Asn Cys Cys Phe Leu Trp Val
145 150 155 160

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

Asp Met Leu Asn Ser Gly Met Phe Asp Glu Leu Ala Glu Phe Tyr Asp
180 185 190

Pro Glu Glu Asp His Gly Pro Ala Asn Trp Thr Gly Leu Arg Lys Ala
195 200 205

Ile Gly Val Pro Glu Phe Asp Arg Tyr Phe Glu Arg Cys Arg Pro Gly
Seite 172

210

Glu Lys Gly Glu Trp Asp Arg Val Arg Arg Glu Ala Tyr Glu Glu Ala
225 230 235 240

Val Arg Glu Ile Lys Glu Asn Thr Cys Gln Leu Ala Lys Arg Gln Ile
245 250 255

Gly Lys Ile Leu Arg Leu Lys Lys Leu Gly Trp Asp Leu Arg Arg Leu
260 265 270

Asp Ala Thr Glu Ala Phe Arg Ala Val Met Thr Ser Asp Ser Gly Lys
275 280 285

Arg Cys Ser Glu Ile Trp Glu Arg Gln Val Leu Glu Pro Ser Val Lys
290 295 300

Ile Val Lys Arg Phe Leu Asp Glu
305 310

<210> 148
<211> 1083
<212> DNA
<213> Oryza sativa

<400> 148
atgaccagcg ttgccaccag gattgccacg ctcgtgcggg ccgcggcggc ggcgagccgg 60
ccattgcggc tccaccgccg gcccggcggc gaggatacga ggatggtggt gatcgtcggc 120
gccacgggca ccgggaagac caagctgtcc atcgacgccg ccaaggtgat cggcggcgag 180
gttgtcaacg ccgacaagat tcagctctat gacggcctcg acgtgaccac caacaagggtg 240
agcctcgccg accgccgtgg cgtgccgcac cacctcctcg gagccatccg ccccgaggcc 300
ggcgagctcc cgccgtcgtc cttccgggtc ctcgccgccg ccacggccgc gtcgatcgcg 360
gcgaggcggc tcgtgccggt catcgccggt gggtcgaact ccctcatcca cgccctcctc 420
gccgaccact tcgacgcctc cgctggcgat cccttctccc ccgccgccgc cttccgccac 480
taccgcccgg cgctccggtt cccgtgctgc ctgctctggg tccacgtcga tgaggcgctc 540
ctcgacgagt acctcgaccg ccgcgtggac gacatggtgg acgctggcat ggtcgaggag 600
ctccgggagt acttcgccac gacaaccgcc gcggagcgcg ccgcgcactc cgggctgggc 660
aaggccatcg gcgtccccga gctcggcgac tacttcgccg ggcgcaagac cttctccgag 720
gcgatcgacg acatcaaagc caacaccgcg gtcctcgccg ccgcgcaggt gtccaagatc 780
cgccgcatgt ccgacgcctg gggctggccc atccaccgcc tcgacgcctc cgacacagtc 840
cgcgccaggc tcacgcgggc gggctccgcc gccgagtccg cctcctggga gcgcgacgtg 900
cgcgggcccag gcctcgccac catccgcagc ttctcgcggc atcagtcacc gccaccgcgc 960
agcgagggca ccaacgacta cctgtacgcc atggagacgg aaccagagcc gccgccgccg 1020
ccgacgttgc cgccgcggct gctccggttg ccgcggatgc agtactgcga catggtgggg 1080

tga

<210> 149
 <211> 360
 <212> PRT
 <213> Oryza sativa

<400> 149

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

Ala Ala Ser Arg Pro Leu Arg Leu His Arg Arg Pro Gly Gly Glu Asp
 20 25 30

Thr Arg Met Val Val Ile Val Gly Ala Thr Gly Thr Gly Lys Thr Lys
 35 40 45

Leu Ser Ile Asp Ala Ala Lys Val Ile Gly Gly Glu Val Val Asn Ala
 50 55 60

Asp Lys Ile Gln Leu Tyr Asp Gly Leu Asp Val Thr Thr Asn Lys Val
 65 70 75 80

Ser Leu Ala Asp Arg Arg Gly Val Pro His His Leu Leu Gly Ala Ile
 85 90 95

Arg Pro Glu Ala Gly Glu Leu Pro Pro Ser Ser Phe Arg Ser Leu Ala
 100 105 110

Ala Ala Thr Ala Ala Ser Ile Ala Ala Arg Arg Leu Val Pro Val Ile
 115 120 125

Ala Gly Gly Ser Asn Ser Leu Ile His Ala Leu Leu Ala Asp His Phe
 130 135 140

Asp Ala Ser Ala Gly Asp Pro Phe Ser Pro Ala Ala Ala Phe Arg His
 145 150 155 160

Tyr Arg Pro Ala Leu Arg Phe Pro Cys Cys Leu Leu Trp Val His Val
 165 170 175

Asp Glu Ala Leu Leu Asp Glu Tyr Leu Asp Arg Arg Val Asp Asp Met
 180 185 190

Val Asp Ala Gly Met Val Glu Glu Leu Arg Glu Tyr Phe Ala Thr Thr
 195 200 205

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

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

PF59082SEQ List- PF59348PCT.txt

Ala Ile Asp Asp Ile Lys Ala Asn Thr Arg Val Leu Ala Ala Ala Gln
245 250 255

Val Ser Lys Ile Arg Arg Met Ser Asp Ala Trp Gly Trp Pro Ile His
260 265 270

Arg Leu Asp Ala Ser Asp Thr Val Arg Ala Arg Leu Thr Arg Ala Gly
275 280 285

Ser Ala Ala Glu Ser Ala Ser Trp Glu Arg Asp Val Arg Gly Pro Gly
290 295 300

Leu Ala Thr Ile Arg Ser Phe Leu Ala Asp Gln Ser Pro Pro Pro Arg
305 310 315 320

Ser Glu Gly Thr Asn Asp Tyr Leu Tyr Ala Met Glu Thr Glu Pro Glu
325 330 335

Pro Pro Pro Pro Pro Thr Leu Pro Pro Arg Leu Leu Arg Leu Pro Arg
340 345 350

Met Gln Tyr Cys Asp Met Val Gly
355 360

<210> 150
<211> 1053
<212> DNA
<213> Petunia x hybrida

<400> 150
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aatcatctcc atttccttat gtttagatca ttatcataca atcacaagca cctcaaattc 120
cttacaaacc cgaccacacg ggtactccga agaaacatgt cgtcatccac tgtagtaaca 180
ataccgggcc ccacacaaaa aaacaaaaac aaaatcatag taataatggg tgcaacaggt 240
tcaggaaaat caaaactctc aatagacctc gtcacacgtc actatccttt ttccgaaatc 300
attaactccg acaaaatcca aattaccaa ggttttaaaca taaccacaaa caaatcact 360
gtacccgacc gacgtggcgt agttcatcat ttactcggcg agattgacct cgactttaac 420
ttttctcctt ctatttccg gtcaattgct ggtcaacgca ttaactccat tattaatcgc 480
cataaactcc cattcctcgt tgggtgggtcc aactcatata tctacgcttt attaacaac 540
cggttcgacc cggattttta ccctgattca aaccgggttc attttatatc caacgagtta 600
cgctacaact gttgttttat ttgggtcgat gtattaaacc cggttttgaa tgagtatttg 660
gataaacggg tcgatgagat gatgaactcg ggtatgtatg aagaactgga acagtttttt 720
aaagaaaaca ggttttcgga tccgggtttg gaaccgggtc gggccaccgg gttgaggaaa 780
gcgatagggg taccggaaat ggagaggat tttagaaga gctgtacgta tgaggaagca 840
gtgagggaaa taaaagaaaa cacgtggcgg ttagcgaaga agcagatgtg gaagatccaa 900

PF59082SEQ List- PF59348PCT.txt

cggttgagag aagcagggtg ggacctacaa agagtagatg ccacggaggc atttgtggag 960
gcgatgagta ataagaagga aaaggggaatt atttgggaaa aacaagtagt ggaaccaagt 1020
gtcaagattg tgaaccgttt tttgttgac tga 1053

<210> 151
<211> 350
<212> PRT
<213> Petunia x hybrida

<400> 151

Met Leu Ile Val Val His Ile Ile Ser Ile Thr Arg Ile Ile Phe Ile
1 5 10 15

Thr Leu Thr His Asn His Leu His Phe Leu Met Phe Arg Ser Leu Ser
20 25 30

Tyr Asn His Lys His Leu Lys Phe Leu Thr Asn Pro Thr Thr Arg Val
35 40 45

Leu Arg Arg Asn Met Ser Ser Ser Thr Val Val Thr Ile Pro Gly Pro
50 55 60

Thr Gln Lys Asn Lys Asn Lys Ile Ile Val Ile Met Gly Ala Thr Gly
65 70 75 80

Ser Gly Lys Ser Lys Leu Ser Ile Asp Leu Val Thr Arg His Tyr Pro
85 90 95

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

Asn Ile Thr Thr Asn Lys Ile Thr Val Pro Asp Arg Arg Gly Val Val
115 120 125

His His Leu Leu Gly Glu Ile Asp Pro Asp Phe Asn Phe Ser Pro Ser
130 135 140

His Phe Arg Ser Ile Ala Gly Gln Arg Ile Asn Ser Ile Ile Asn Arg
145 150 155 160

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

Leu Leu Thr Asn Arg Phe Asp Pro Asp Phe Asn Pro Asp Ser Asn Pro
180 185 190

Val His Phe Ile Ser Asn Glu Leu Arg Tyr Asn Cys Cys Phe Ile Trp
195 200 205

Val Asp Val Leu Asn Pro Val Leu Asn Glu Tyr Leu Asp Lys Arg Val
210 215 220

PF59082SEQ List- PF59348PCT.txt

Asp Glu Met Met Asn Ser Gly Met Tyr Glu Glu Leu Glu Gln Phe Phe
225 230 235 240

Lys Glu Asn Arg Phe Ser Asp Pro Gly Leu Glu Pro Gly Arg Ala Thr
245 250 255

Gly Leu Arg Lys Ala Ile Gly Val Pro Glu Met Glu Arg Tyr Phe Lys
260 265 270

Lys Ser Cys Thr Tyr Glu Glu Ala Val Arg Glu Ile Lys Glu Asn Thr
275 280 285

Trp Arg Leu Ala Lys Lys Gln Met Trp Lys Ile Gln Arg Leu Arg Glu
290 295 300

Ala Gly Trp Asp Leu Gln Arg Val Asp Ala Thr Glu Ala Phe Val Glu
305 310 315 320

Ala Met Ser Asn Lys Lys Glu Lys Gly Ile Ile Trp Glu Lys Gln Val
325 330 335

Val Glu Pro Ser Val Lys Ile Val Asn Arg Phe Leu Leu Asp
340 345 350

<210> 152
<211> 1199
<212> DNA
<213> Populus tremuloides

<400> 152
cttactctgt tttttttttt ttcgttgcct atgaaaattc ctttcccaa gagtaccaat 60
cagcctcttt acactgccct taaaacccaa ccacttcacc ccattaacat ttctataccc 120
ttcaataagc cagcccacc accaatagca gtccgtatgg acacggactc ctctaccacc 180
acctccaccg ccgtctaccg ccataaaaaa gacaagattc tcgtaataat gggagcgact 240
gggtgtggca aaacaagggt atctattgat ctagctacac gcttccaatc cgaaatcatc 300
aactccgaca aaatgcaagt ctacgaagggt cttgacatca ccaccaacaa aatcaccatt 360
caagaccgtc taggtgttcc tcaccattta ctcggtgagt tcgaccgga tgatggtgag 420
ttgactccct ccgagtatcg gttagctggg ggattggcta tctcaggtat tgtttcaagg 480
caaaatcttc ctattgtggg tgggtgggtcc aactcactta ttcacgcttt ggttggtgac 540
cggtttaatc ccgagttaaa cgtttttgat ggggtgtaacc cagtttcaac ccagttaaga 600
tataactgtt gttttttgtg ggtggatgtg tcattacctg ttttgtgcga ttacttgtgt 660
aagcgagtcg acgaaatgct cgactccggg atgctcgatg agctgtcaga gtattatggc 720
tcagttgatg cagcgagtca aatcgggttg aggaaagcga ttgggggtgcc tgagtttgat 780
cggtatattca aaaagtaccc acctgggtct ggggtgtggca gaggtattgg tgtggaatgg 840
gatcgggtac ggaggggagt atacgaggtc tgtgtgaggg agataaagga gaacacgtgt 900

PF59082SEQ List- PF59348PCT.txt

cagcttgcca aaaggcagat cggcaagatc ttgagattaa aaggggcagg gtgggaccta 960
 aaaagagttg atgcgactga gagcttttagg gaggtgatga cggtgacgtc agatgatcat 1020
 atcaagaaaa gaaagaagaa gaggtggatg gaggtctggg ggagagatgt gatggagcca 1080
 agcatgaaaa ttgtgaaacg cttcttgag gagtagtagg agtaggtttt acagtcagtc 1140
 agccagtcaa tccatcaatc aatcaatcca gcttttttcc cgctaccgtt ctgggttttc 1199

<210> 153
 <211> 362
 <212> PRT
 <213> Populus tremuloides

<400> 153

Met Lys Ile Pro Phe Pro Lys Ser Thr Asn Gln Pro Leu Tyr Thr Ala
 1 5 10 15

Leu Lys Thr Gln Pro Leu His Pro Ile Asn Ile Ser Ile Pro Phe Asn
 20 25 30

Lys Pro Arg Pro Pro Pro Ile Ala Val Arg Met Asp Thr Asp Ser Ser
 35 40 45

Thr Thr Thr Ser Thr Ala Val Tyr Arg His Lys Lys Asp Lys Ile Leu
 50 55 60

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

Leu Ala Thr Arg Phe Gln Ser Glu Ile Ile Asn Ser Asp Lys Met Gln
 85 90 95

Val Tyr Glu Gly Leu Asp Ile Thr Thr Asn Lys Ile Thr Ile Gln Asp
 100 105 110

Arg Leu Gly Val Pro His His Leu Leu Gly Glu Phe Asp Pro Asp Asp
 115 120 125

Gly Glu Leu Thr Pro Ser Glu Tyr Arg Leu Ala Gly Gly Leu Ala Ile
 130 135 140

Ser Gly Ile Val Ser Arg Gln Asn Leu Pro Ile Val Val Gly Gly Ser
 145 150 155 160

Asn Ser Leu Ile His Ala Leu Val Val Asp Arg Phe Asn Pro Glu Leu
 165 170 175

Asn Val Phe Asp Gly Cys Asn Pro Val Ser Thr Gln Leu Arg Tyr Asn
 180 185 190

Cys Cys Phe Leu Trp Val Asp Val Ser Leu Pro Val Leu Cys Asp Tyr
 195 200 205

PF59082SEQ List- PF59348PCT.txt

Leu Cys Lys Arg Val Asp Glu Met Leu Asp Ser Gly Met Leu Asp Glu
 210 215 220

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

Arg Lys Ala Ile Gly Val Pro Glu Phe Asp Arg Tyr Phe Lys Lys Tyr
 245 250 255

Pro Pro Gly Ser Gly Cys Gly Arg Gly Ile Gly Val Glu Trp Asp Arg
 260 265 270

Val Arg Arg Gly Val Tyr Glu Val Cys Val Arg Glu Ile Lys Glu Asn
 275 280 285

Thr Cys Gln Leu Ala Lys Arg Gln Ile Gly Lys Ile Leu Arg Leu Lys
 290 295 300

Gly Ala Gly Trp Asp Leu Lys Arg Val Asp Ala Thr Glu Ser Phe Arg
 305 310 315 320

Glu Val Met Thr Val Thr Ser Asp Asp His Ile Lys Lys Arg Lys Lys
 325 330 335

Lys Arg Trp Met Glu Val Trp Gly Arg Asp Val Met Glu Pro Ser Met
 340 345 350

Lys Ile Val Lys Arg Phe Leu Glu Glu Glu
 355 360

<210> 154
 <211> 1094
 <212> DNA
 <213> Populus tremuloides

<400> 154
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 aaacaagtac agcctcgtgg gaatttcctaa ggggggctaa acatgaaacc tttctttcgt 120
 cgaaaagata aggttggtgtt cggttggtgga ccgactggca caggcaaadc aaggctggct 180
 attgacctgg caaccggtt cccagccgag gttgtcaatt gtgacaaaat gcaagtttat 240
 aaaggcctcg atatagtcac aaacaaggta actgaagagg agtgtcgcgg tgtgcctcat 300
 catttacttg gcatagcaga ccctaatagca aatttcactt ccgatgactt caggcaccat 360
 gcatcacttg ttgtcgaatc aatcgtcaca cgtgatcggc taccgatcat cgccggtgga 420
 tcaaattcct acatcgaggc tttagcaaata gatgatcctg aatttcgatt aaggatatgaa 480
 tgttggtttt tttgggtgga cgtgtcactc ccaatacttt attcattcgt atcagagcgg 540
 gtcgatcgaa tgggtggaagc aggccttgatt gatgaggtga gagatatgtt tgatcctaata 600
 aaatttgatg attattcaca aggaatcaaaa cgggcaattg ggggttcctga attggatcat 660

PF59082SEQ List- PF59348PCT.txt

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tttttacgaa atgaggcgat tgtggatgct aaaactcgta gaaagcttct tgatgaggcc 720
attgataaaa ttaaagaaaa tacttgatg ctagcctctc gacaattaca aaaaatccat 780
cggcttcata gcatatggaa ttggaacgtg caccgaatcg atgccacccc agttttccta 840
acgagtggaa aggaggttga caatctttgg gacaaacttg tggcaggacc aagcaccatg 900
attgtgaacc agtttctttg tgacaaaaat tatgcatctc ccattatacc atcagaatca 960
atcaagatgg agccaatctc tgtcccggcc ctggctgttg gcgccactcg atagaggcct 1020
gtcagggtcat caaaatcacc atcaatcaca ctagtgctat tatgccaatg ggcgcttttg 1080
ccacgtggca gggt 1094

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<210> 155
<211> 327
<212> PRT
<213> Populus tremuloides
<400> 155

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

```

```

Gly Asn Phe Gln Gly Gly Leu Asn Met Lys Pro Phe Phe Arg Arg Lys
20      25      30

```

```

Asp Lys Val Val Phe Val Val Gly Pro Thr Gly Thr Gly Lys Ser Arg
35      40      45

```

```

Leu Ala Ile Asp Leu Ala Thr Arg Phe Pro Ala Glu Val Val Asn Cys
50      55      60

```

```

Asp Lys Met Gln Val Tyr Lys Gly Leu Asp Ile Val Thr Asn Lys Val
65      70      75      80

```

```

Thr Glu Glu Glu Cys Arg Gly Val Pro His His Leu Leu Gly Ile Ala
85      90      95

```

```

Asp Pro Asn Ala Asn Phe Thr Ser Asp Asp Phe Arg His His Ala Ser
100     105     110

```

```

Leu Val Val Glu Ser Ile Val Thr Arg Asp Arg Leu Pro Ile Ile Ala
115     120     125

```

```

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

```

```

Phe Arg Leu Arg Tyr Glu Cys Cys Phe Leu Trp Val Asp Val Ser Leu
145     150     155     160

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```

Pro Ile Leu Tyr Ser Phe Val Ser Glu Arg Val Asp Arg Met Val Glu
165     170     175

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PF59082SEQ List- PF59348PCT.txt

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

Asp Asp Tyr Ser Gln Gly Ile Lys Arg Ala Ile Gly Val Pro Glu Leu
195 200 205

Asp His Phe Leu Arg Asn Glu Ala Ile Val Asp Ala Lys Thr Arg Arg
210 215 220

Lys Leu Leu Asp Glu Ala Ile Asp Lys Ile Lys Glu Asn Thr Cys Met
225 230 235 240

Leu Ala Ser Arg Gln Leu Gln Lys Ile His Arg Leu His Ser Ile Trp
245 250 255

Asn Trp Asn Val His Arg Ile Asp Ala Thr Pro Val Phe Leu Thr Ser
260 265 270

Gly Lys Glu Val Asp Asn Leu Trp Asp Lys Leu Val Ala Gly Pro Ser
275 280 285

Thr Met Ile Val Asn Gln Phe Leu Cys Asp Lys Asn Tyr Ala Ser Pro
290 295 300

Ile Ile Pro Ser Glu Ser Ile Lys Met Glu Pro Ile Ser Val Pro Ala
305 310 315 320

Leu Ala Val Gly Ala Thr Arg
325

<210> 156
<211> 1094
<212> DNA
<213> Populus tremuloides

<400> 156
gtcaacgaca acgtcccagc acattcaaca atgaccatga ggctttcttt gtctgcctac 60
aaacaagtac agcctcgtgt gaatttccaa ggggggctca acatgaaacc tttctttcgt 120
cgaaaagata aggttggtgt cgttcttgga ccgactggca ctggcaaadc aaggctggct 180
attgacctag caaccactt cccagccgag gttgtcaatt gtgacaaaat gcaagtttat 240
aagggcctag atatagtcac aaacaagggt acggaagagg agtgtcgagg cgtgccccat 300
catttacttg gcatagcaga ccctaatacga gatttcactt ccgatgactt caggcaccac 360
gcatcacttg ttgtcgaatc aatcgtcaca cgtgatcggc tgccgatcat tgccggcgga 420
tccaattcgt acgtggaggc tttagcaaata gatgatcctg agtttcgatt aaggtatgaa 480
tggtgctttc tttgggtgga tgtgtcacta cctctactcc actcattcgt atcagatcgg 540
gttgatcgaa tggtgaagagc aggttgatt gatgaggtga gagatgtgtt tgatccaaca 600
aaatttgatg attattcaca aggaatcaag cgggcaattg gggttcctga attagatcaa 660
tttctacgaa acgagacgat tgtggatgct aaaacacgta gaaagcttct tgatgaggcc 720

PF59082SEQ List- PF59348PCT.txt

attgaaaaaa tcaaagaaaa tacttgtatg ctagctcgtc gacaattaca aaaaatccgt 780
cgacttcata gcatatggaa ttggaaaatg caccggatcg atgccacacc agttttccta 840
gcaagtggaa aggaggctga caatcttttg gaccaaattg tggcaggacc aagcaccatg 900
attgtgaacc aatttctttg tgaagaaaat catgtatccc ccattgtacc atcagagtcg 960
atcaatatgg tgccaatttc tgtcccggt atggccgccg tggctagtcg atagaggtaa 1020
aggattcttg gttaatacca aaattcatct acaaatcatt accatcatca taatcaccag 1080
ctgtgattat aaat 1094

<210> 157
<211> 327
<212> PRT
<213> Populus tremuloides
<400> 157

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

Val Asn Phe Gln Gly Gly Leu Asn Met Lys Pro Phe Phe Arg Arg Lys
20 25 30

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

Leu Ala Ile Asp Leu Ala Thr His Phe Pro Ala Glu Val Val Asn Cys
50 55 60

Asp Lys Met Gln Val Tyr Lys Gly Leu Asp Ile Val Thr Asn Lys Val
65 70 75 80

Thr Glu Glu Glu Cys Arg Gly Val Pro His His Leu Leu Gly Ile Ala
85 90 95

Asp Pro Asn Ala Asp Phe Thr Ser Asp Asp Phe Arg His His Ala Ser
100 105 110

Leu Val Val Glu Ser Ile Val Thr Arg Asp Arg Leu Pro Ile Ile Ala
115 120 125

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

Phe Arg Leu Arg Tyr Glu Cys Cys Phe Leu Trp Val Asp Val Ser Leu
145 150 155 160

Pro Leu Leu His Ser Phe Val Ser Asp Arg Val Asp Arg Met Val Arg
165 170 175

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

PF59082SEQ List- PF59348PCT.txt

Asp Asp Tyr Ser Gln Gly Ile Lys Arg Ala Ile Gly Val Pro Glu Leu
195 200 205

Asp Gln Phe Leu Arg Asn Glu Thr Ile Val Asp Ala Lys Thr Arg Arg
210 215 220

Lys Leu Leu Asp Glu Ala Ile Glu Lys Ile Lys Glu Asn Thr Cys Met
225 230 235 240

Leu Ala Arg Arg Gln Leu Gln Lys Ile Arg Arg Leu His Ser Ile Trp
245 250 255

Asn Trp Lys Met His Arg Ile Asp Ala Thr Pro Val Phe Leu Ala Ser
260 265 270

Gly Lys Glu Ala Asp Asn Leu Trp Asp Gln Ile Val Ala Gly Pro Ser
275 280 285

Thr Met Ile Val Asn Gln Phe Leu Cys Glu Glu Asn His Val Ser Pro
290 295 300

Ile Val Pro Ser Glu Ser Ile Asn Met Val Pro Ile Ser Val Pro Ala
305 310 315 320

Met Ala Ala Val Ala Ser Arg
325

<210> 158
<211> 1046
<212> DNA
<213> Populus tremuloides

<400> 158
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atggacatgc taagtccag aagccggcaa aaggagaagg ttgtgatagt aatggggcct 120
actggaactg gcaagtctcg gctctctatc gaacttgcaa cccagttccc tgcagaaatc 180
ataaactccg acaaaatgca ggtttacaaa ggacttgaca tcgtcactaa caaagttgct 240
gaggaagaga aatctggtgt ccctcaccat ttgttaggaa tagcaaatcc tactgtggac 300
tttacagcaa caaattactg tcacacggct tccttggcgg tcgaatcaat ttcgactcga 360
ggattgctcc cgatcattgt tggaggttcc aattcataca ttgaggcctt gatggatgat 420
gaggatttta ggttacggtt gaactatgat tgttgcttcc tttgggtaga tgtatcaatg 480
cctgtgctac ataaatttgt ttcgaggcga gtcgagcaga tggttagtgt ggggatgatc 540
gatgaggtca gaaacatttt cgatccctac gctgattatt ctacggggat caggaggtca 600
attggagttc ctgaattcga caagtacttt agagctgaag catttttgga tgaagaaaac 660
cgtgccagac tacttcatga agcaatatgt gatgtcaaaa agaatacatg taagttagct 720

PF59082SEQ List- PF59348PCT.txt

tgccgtcaat gggaaaagat taatcggctt aggaagatca aggggtggga catccataga	780
cttgatgcca ctgaagtatt ccaaaagtcg ggaaaggaag cagatcatgc ctgggaaatg	840
cttgtggcca gaccagcac tgccattgtg ggacaactcc tctgtggtgt tcctgctgat	900
aagggtccccg ccatagctag cgtagcaaaa aacatgggct atattcgaca atgccttgtg	960
gcatagccgt tcaatatggc taattaacga ctttagaaag tggatcata tacaatatta	1020
tctaagtaga gggctatcaa ggcagg	1046

<210> 159
 <211> 311
 <212> PRT
 <213> Populus tremuloides

<400> 159

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

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

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

Val	Thr	Asn	Lys	Val	Ala	Glu	Glu	Glu	Lys	Ser	Gly	Val	Pro	His	His
65					70					75					80

Leu	Leu	Gly	Ile	Ala	Asn	Pro	Thr	Val	Asp	Phe	Thr	Ala	Thr	Asn	Tyr
				85					90					95	

Cys	His	Thr	Ala	Ser	Leu	Ala	Val	Glu	Ser	Ile	Ser	Thr	Arg	Gly	Leu
			100					105					110		

Leu	Pro	Ile	Ile	Val	Gly	Gly	Ser	Asn	Ser	Tyr	Ile	Glu	Ala	Leu	Met
		115					120					125			

Asp	Asp	Glu	Asp	Phe	Arg	Leu	Arg	Leu	Asn	Tyr	Asp	Cys	Cys	Phe	Leu
	130					135					140				

Trp	Val	Asp	Val	Ser	Met	Pro	Val	Leu	His	Lys	Phe	Val	Ser	Arg	Arg
145					150					155					160

Val	Glu	Gln	Met	Val	Ser	Val	Gly	Met	Ile	Asp	Glu	Val	Arg	Asn	Ile
				165					170					175	

Phe	Asp	Pro	Tyr	Ala	Asp	Tyr	Ser	Thr	Gly	Ile	Arg	Arg	Ser	Ile	Gly
			180					185					190		

Val	Pro	Glu	Phe	Asp	Lys	Tyr	Phe	Arg	Ala	Glu	Ala	Phe	Leu	Asp	Glu
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

195

200

205

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

Asn Thr Cys Lys Leu Ala Cys Arg Gln Trp Glu Lys Ile Asn Arg Leu
225 230 235 240

Arg Lys Ile Lys Gly Trp Asp Ile His Arg Leu Asp Ala Thr Glu Val
245 250 255

Phe Gln Lys Ser Gly Lys Glu Ala Asp His Ala Trp Glu Met Leu Val
260 265 270

Ala Arg Pro Ser Thr Ala Ile Val Gly Gln Leu Leu Cys Gly Val Pro
275 280 285

Ala Asp Lys Val Pro Ala Ile Ala Ser Val Ala Lys Asn Met Gly Tyr
290 295 300

Ile Arg Gln Cys Leu Val Ala
305 310

<210> 160
<211> 1112
<212> DNA
<213> Populus tremuloides

<400> 160
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gcctcaagta tgagaactat gccaatggct gcctctctcc ccttaagaat ggagcgggaa 120
atcaggcacc gcaacaacct ccaacagatc actagttcac tttattccat tgacgacaag 180
aagaagcaaa aagctttgtt cgtaatggga acaactgcca ctggaaaatc aaaactctcc 240
attgatttag ccactcattt tcaaggtgaa atcatcaatt cagacaaaat tcaggtttac 300
aagggccttg acatgttgac caacaaaatt tcggaaattg aacgccgagg tgtgcctcac 360
catttgctag gatttggtga acctggagaa gagtttacca cacaagattt ttgcaatcat 420
gtacacaagg ccatgaaaca tattacaggg gatggaagca tccccattat cgccggcggc 480
tcgaatagat acatcgaagc actcgtcgag gatccgcttt tcaacttcaa ggatagttat 540
gatacttggt ttctatgggt ggatgttgcc ttgccaatct tatttgatcg cgcagcaaaa 600
agggttgatg agatgcttga tgctggtctt gttgaagagg ttcgaggatg gtttattcca 660
gggatagatc acaatagcgg gatttggcgg gctattggga ttgcagagat ggaaccatat 720
tttcaagctg aaatggaaat ggctgatgag gtcaccatga aaatattgct tgaaactggt 780

attaaagaaa tgaaagaaaa taccaagaag ctaatcaata aacaactaac gaaaatcaaa 840
tatttggcta acaagaaagg atggaaattc catcggattg atgctacttg tgtgtatgag 900
agaagtgcaa aagttgatga agatgtttgg gacaagaagg ttttgagacc tagcttgag 960

PF59082SEQ List- PF59348PCT.txt

atagttacta attttctccg ggaagacgag aaagcagaag aagtggcaga cagttttcta 1020
gttacaagct agcagctgca tctaataat tgagatatat cgattagttc aattttctat 1080
cgcatcttta cttctcagca cacatcaaaa ta 1112

<210> 161
<211> 333
<212> PRT
<213> Populus tremuloides

<400> 161

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

Met Pro Met Ala Ala Ser Leu Pro Leu Arg Met Glu Arg Glu Ile Arg
20 25 30

His Arg Asn Asn Leu Gln Gln Ile Thr Ser Ser Leu Tyr Ser Ile Asp
35 40 45

Asp Lys Lys Lys Gln Lys Ala Leu Phe Val Met Gly Thr Thr Ala Thr
50 55 60

Gly Lys Ser Lys Leu Ser Ile Asp Leu Ala Thr His Phe Gln Gly Glu
65 70 75 80

Ile Ile Asn Ser Asp Lys Ile Gln Val Tyr Lys Gly Leu Asp Met Leu
85 90 95

Thr Asn Lys Ile Ser Glu Ile Glu Arg Arg Gly Val Pro His His Leu
100 105 110

Leu Gly Phe Val Glu Pro Gly Glu Glu Phe Thr Thr Gln Asp Phe Cys
115 120 125

Asn His Val His Lys Ala Met Lys His Ile Thr Gly Asp Gly Ser Ile
130 135 140

Pro Ile Ile Ala Gly Gly Ser Asn Arg Tyr Ile Glu Ala Leu Val Glu
145 150 155 160

Asp Pro Leu Phe Asn Phe Lys Asp Ser Tyr Asp Thr Cys Phe Leu Trp
165 170 175

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

Asp Glu Met Leu Asp Ala Gly Leu Val Glu Glu Val Arg Gly Met Phe
195 200 205

Ile Pro Gly Ile Asp His Asn Ser Gly Ile Trp Arg Ala Ile Gly Ile
Seite 186

210

215

220

Ala Glu Met Glu Pro Tyr Phe Gln Ala Glu Met Glu Met Ala Asp Glu
225 230 235 240

Val Thr Met Lys Ile Leu Leu Glu Thr Gly Ile Lys Glu Met Lys Glu
245 250 255

Asn Thr Lys Lys Leu Ile Asn Lys Gln Leu Thr Lys Ile Lys Tyr Leu
260 265 270

Ala Asn Lys Lys Gly Trp Lys Phe His Arg Ile Asp Ala Thr Cys Val
275 280 285

Tyr Glu Arg Ser Ala Lys Val Asp Glu Asp Val Trp Asp Lys Lys Val
290 295 300

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

Lys Ala Glu Glu Val Ala Asp Ser Phe Leu Val Thr Ser
325 330

<210> 162
<211> 1325
<212> DNA
<213> Populus tremuloides

<400> 162
ggcagtacaa agcaaaaagc tttgttcgta atgggaacaa ctgccactgg aaaatcaaaa 60
ctctccatcg atttagccac tcattttcaa ggtgagatca tcaactcgga caaaattcag 120
gtttacaagg gccttgacat attgaccaac aaagtttcgg aagatgaaag ccgagggtgtg 180
cctcaccact tgctaggatt tgtggaacct ggggaagagt ttaccacaca agatttttgc 240
aaccatgtac atatggccat gagacatatt atagggaatg gaaacatccc cattattgcc 300
ggcgggtcaa atagatacat cgaagcactc gtcgaggatc cactgttcaa ggataattac 360
gatacttggt ttctatgggt ggatgttgcc ttgccaatTT tatttgttcg cgcagcaaaG 420
agggttgata agatgctcga tgctggtctt gtcgacgagg tccgaggcat gtttattcca 480
gggatagatc acaatagcgg gatttggcgg gctattggga ttccagagct ggaaccatat 540
tttcaagctg aaatggaaat ggccgatgag gtgaccagaa aaatgttact tgacactggt 600
atcaaggaaa tgaaagaaaa taccaagaag ctaatcaata aacaactgag gaaaatcaaa 660
tatttggcga atgagaaagg atggaaatta catcggaattg atgctacttt tgtgtacgag 720
agaagtggaa acgtagatga agatgtttgg gacgacaagg ttttgagacc tagcctggag 780
atgctcacta actttctcca ggaagatggg aaagcagaag aatttggtgga tgctagtggT 840
ttgcctggta gctttgaatg gagagagaaa ggagttgtca ctgatgtcaa gattcagggT 900
gcttgtggat catgctgggc ttttagcacc actggatctg ttgaaggagc aaattttatt 960

PF59082SEQ List- PF59348PCT.txt

gcaacaagga agcttctcaa ccttagtgaa caacagcttg ttgattgtga cagtgtgaca 1020
gacaagactt cctgtggtga tggttgcggt ggaggggttca tgaccaatgc ctacaggtgt 1080
ttgatcgagg caggggcgtt acaagaggag actggattga atgcaatatt aatgcaaact 1140
tgtattagag gggctctctg cccagttatt cgcggcaaga aatggctcaa ccgtggtgtt 1200
ctacttgttg ggaatggtgc aagaggttac tccattctta attaggtctg gctacaagcc 1260
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ttgca 1325

<210> 163
<211> 404
<212> PRT
<213> Populus tremuloides
<400> 163

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

PF59082SEQ List- PF59348PCT.txt

Glu Met Lys Glu Asn Thr Lys Lys Leu Ile Asn Lys Gln Leu Arg Lys
195 200 205

Ile Lys Tyr Leu Ala Asn Glu Lys Gly Trp Lys Leu His Arg Ile Asp
210 215 220

Ala Thr Phe Val Tyr Glu Arg Ser Gly Asn Val Asp Glu Asp Val Trp
225 230 235 240

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

Gln Glu Asp Gly Lys Ala Glu Glu Phe Val Asp Ala Ser Gly Leu Pro
260 265 270

Gly Ser Phe Glu Trp Arg Glu Lys Gly Val Val Thr Asp Val Lys Ile
275 280 285

Gln Gly Ala Cys Gly Ser Cys Trp Ala Phe Ser Thr Thr Gly Ser Val
290 295 300

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

Gln Gln Leu Val Asp Cys Asp Ser Val Thr Asp Lys Thr Ser Cys Gly
325 330 335

Asp Gly Cys Gly Gly Gly Phe Met Thr Asn Ala Tyr Arg Cys Leu Ile
340 345 350

Glu Ala Gly Ala Leu Gln Glu Glu Thr Gly Leu Asn Ala Ile Leu Met
355 360 365

Gln Thr Cys Ile Arg Gly Val Ser Cys Pro Val Ile Arg Gly Lys Lys
370 375 380

Trp Leu Asn Arg Gly Val Leu Leu Val Gly Asn Gly Ala Arg Gly Tyr
385 390 395 400

Ser Ile Leu Asn

<210> 164
<211> 1233
<212> DNA
<213> Vitis vinifera

<400> 164
atgccatctc tgtcgkaatg tgaygtatct gtgcaggact gcacaaacca cccacacaaa 60
acgaccgtca cttctattcc tatgaaactc cccgtcccca ccggttatca tccatattgc 120
agcaaagttc aaacgctccc actcataccg gcgataaagc ccaccttccg aagatccggg 180

PF59082SEQ List- PF59348PCT.txt

tgggctcgca tggattccac ggyccgccgt aatcgcmcca agcacaaggt cgctcgttatc	240
atgggagcca ccggcaccgg aaaatccaaa ctctccatcg acctcgccac acgcttcccc	300
gccgagatca tcaactctga caaaatacaa atctacagtg gccttgacat caccactaac	360
aagatccaaa tgcacgagcg acaaggtgta cccaccacc tgctcggaga tttcgactcc	420
tcccacgctg agataacccc ttcccagttc cgctcgggtg ctgccgctgc tatctcagac	480
atctcttctc gccgcaaact gccagtcctc gctgggtgggt ccaattcctt tattcacgca	540
ctcctcgtcg accgggtttga ctccgagtct gacccttcta atgggttcgga ctcggtctcc	600
accgaattac gttaccgctg ttgtttccta tgggttgacg tttcatttgc tgttctctcc	660
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aagttctacg acccggatga agacgagtct agacccaaaa ctgggttgag aaaagcgata	780
ggagtccccg agttcgacag gcatttccga aagtaccctc ccgctgacca aggaataatc	840
gctggaaatc ccaagaagaa gaaggatgat ccagaaatgg aaagttttga agaggcagtg	900
aaggccatca aggacaacac gtgtcatcta gcgaagaagc agatagagaa gatcctacgg	960
atgaggggag ccgggtggga cctcaagaga ctggacgcca cagaggcggt cagggtgctg	1020
ctgtcgtcag attccggcaa gaagtcgtca gaaatatggg agaagcaggt agtggaaccg	1080
agcgtgaagt ttgtgaggcg cttcttagag gagtaggttg ttcagctttt tctaccgctc	1140
ctgttttcct atgatccaaa attagttacc taaattactt tcatttcccc ctttttttgg	1200
atttactctt tccctctcta tttgaaaaaa aaa	1233

<210> 165
 <211> 371
 <212> PRT
 <213> Vitis vinifera

<220>
 <221> misc_feature
 <222> (6)..(6)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (68)..(68)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (73)..(73)
 <223> Xaa can be any naturally occurring amino acid

<400> 165

Met	Pro	Ser	Leu	Ser	Xaa	Cys	Asp	Val	Ser	Val	Gln	Asp	Cys	Thr	Asn
1				5					10					15	

His	Pro	Thr	Lys	Thr	Thr	Val	Thr	Ser	Ile	Pro	Met	Lys	Leu	Pro	Val
			20					25					30		

Pro	Thr	Gly	Tyr	His	Pro	Tyr	Cys	Ser	Lys	Val	Gln	Thr	Leu	Pro	Leu
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

35

40

45

Ile Pro Ala Ile Lys Pro Thr Phe Arg Arg Ser Gly Trp Ala Arg Met
 50 55 60
 Asp Ser Thr Xaa Arg Arg Asn Arg Xaa Lys His Lys Val Val Val Ile
 65 70 75 80
 Met Gly Ala Thr Gly Thr Gly Lys Ser Lys Leu Ser Ile Asp Leu Ala
 85 90 95
 Thr Arg Phe Pro Ala Glu Ile Ile Asn Ser Asp Lys Ile Gln Ile Tyr
 100 105 110
 Ser Gly Leu Asp Ile Thr Thr Asn Lys Ile Gln Met His Glu Arg Gln
 115 120 125
 Gly Val Pro His His Leu Leu Gly Asp Phe Asp Ser Ser His Ala Glu
 130 135 140
 Ile Thr Pro Ser Gln Phe Arg Ser Val Ala Ala Ala Ile Ser Asp
 145 150 155 160
 Ile Ser Ser Arg Arg Lys Leu Pro Val Leu Ala Gly Gly Ser Asn Ser
 165 170 175
 Phe Ile His Ala Leu Leu Val Asp Arg Phe Asp Ser Glu Ser Asp Pro
 180 185 190
 Phe Asn Gly Ser Asp Ser Val Ser Thr Glu Leu Arg Tyr Arg Cys Cys
 195 200 205
 Phe Leu Trp Val Asp Val Ser Phe Ala Val Leu Ser Asp Tyr Leu Ser
 210 215 220
 Lys Arg Val Asp Glu Met Leu Gly Ser Gly Met Leu Glu Glu Leu Ala
 225 230 235 240
 Lys Phe Tyr Asp Pro Asp Glu Asp Glu Ser Arg Pro Lys Thr Gly Leu
 245 250 255
 Arg Lys Ala Ile Gly Val Pro Glu Phe Asp Arg His Phe Arg Lys Tyr
 260 265 270
 Pro Pro Val Asp Gln Gly Ile Ile Ala Gly Asn Pro Lys Lys Lys Lys
 275 280 285
 Asp Asp Pro Glu Met Glu Ser Phe Glu Glu Ala Val Lys Ala Ile Lys
 290 295 300
 Asp Asn Thr Cys His Leu Ala Lys Lys Gln Ile Glu Lys Ile Leu Arg
 305 310 315 320

PF59082SEQ List- PF59348PCT.txt

Met Arg Gly Ala Gly Trp Asp Leu Lys Arg Leu Asp Ala Thr Glu Ala
325 330 335

Phe Arg Val Leu Leu Ser Ser Asp Ser Gly Lys Lys Ser Ser Glu Ile
340 345 350

Trp Glu Lys Gln Val Val Glu Pro Ser Val Lys Phe Val Arg Arg Phe
355 360 365

Leu Glu Glu
370

<210> 166
<211> 1167
<212> DNA
<213> Zea mays

<400> 166
atgaccaccc tcctcgccaa taggatcact acgctcgtgc gcgcccctcc tcctcccatg 60
gccgccgccg ccgtcgcgagg agcgcgagg ccattgcacc ggaccttggc gcacccgccca 120
ccgcccggagg aggacgagca tcagcagcag cgcgcggtgcc gcagcagggg atcctcgtcc 180
tcctgctcgg cttcctcgtc atcgacgccc gcccgggccc gggggcacggg gatggtggtg 240
atcgctcggc ccacgggcac cggaagacc aagctgtcca tcgacgccgc ggaggcggtc 300
ggcggggagg tggatgaacgc ggataagatc cagctctacg ccgggctgga cgtgaccacg 360
aacaagggtg ccccgcgga ccgcccggc gtgccgcacc acctcctcgg cgccatccgc 420
cccgaggccg gcgagctccc gccctccacg ttccgctccc tcgccgccgc cacggccgcc 480
tcgatcgccg cgcgcgccg cctgccggtc gtcgcgggcg gctccaactc cctcatccac 540
gcgctcctcg ccgaccgcct cgacgccggc gccgccgacc ctttctccgc tccaccgcag 600
ccggcgccgc cgcggtgggg ccgcccggcc gcgctccgat ccccggtgctg tctcctctgg 660
gtccacgtcg acgccgcgt cctcgcgagg tacctggacc ggcgcggtga cgacatggtg 720
cgcgggcgga tggatggagg gctgcgggag tacttcgccg cgaccaccgc cgccgagcgc 780
gccgcgcacg ccgcggggct gggcagggcc atcggcgtgc ccgagctggg cgcctgcttc 840
gcggggcgcg ccagcttccg cgccgcgatc gacgacatca aggccaacac gcgggacctg 900
gcggccgcgc aggtgcgcaa gatccgacgc atggccgatg cctggggctg gcccatccag 960
cggctcgacg cgtcgccac agtccgcgc cgctccgcg gcgcggggccc cgacgcggag 1020
tcggcggtgct gggagcgga cgtgcgcgc cccgggctcg ccgccatccg gagcttcctt 1080
ctagagctgg acggcggcag cgtcgtcgac ggcgctgtgg tggaggaggt ggagccgcgg 1140
gtgcgatgct gcgacgtggt ggggtga 1167

<210> 167
<211> 388
<212> PRT
<213> Zea mays

<400> 167

Met Thr Thr Leu Leu Ala Asn Arg Ile Thr Thr Leu Val Arg Ala Pro
 1 5 10 15
 Pro Pro Pro Met Ala Ala Ala Ala Val Ala Gly Ala Arg Arg Pro Leu
 20 25 30
 His Arg Thr Leu Ala His Pro Pro Pro Glu Glu Asp Glu His Gln
 35 40 45
 Gln Gln Arg Ala Cys Arg Ser Arg Gly Ser Ser Ser Ser Cys Ser Ala
 50 55 60
 Ser Ser Ser Ser Thr Pro Ala Arg Pro Arg Gly Thr Gly Met Val Val
 65 70 75 80
 Ile Val Gly Ala Thr Gly Thr Gly Lys Thr Lys Leu Ser Ile Asp Ala
 85 90 95
 Ala Glu Ala Val Gly Gly Glu Val Val Asn Ala Asp Lys Ile Gln Leu
 100 105 110
 Tyr Ala Gly Leu Asp Val Thr Thr Asn Lys Val Ala Pro Ala Asp Arg
 115 120 125
 Arg Gly Val Pro His His Leu Leu Gly Ala Ile Arg Pro Glu Ala Gly
 130 135 140
 Glu Leu Pro Pro Ser Thr Phe Arg Ser Leu Ala Ala Ala Thr Ala Ala
 145 150 155 160
 Ser Ile Ala Ala Arg Gly Arg Leu Pro Val Val Ala Gly Gly Ser Asn
 165 170 175
 Ser Leu Ile His Ala Leu Leu Ala Asp Arg Leu Asp Ala Gly Ala Ala
 180 185 190
 Asp Pro Phe Ser Ala Pro Pro Gln Pro Ala Pro Pro Arg Trp Gly Arg
 195 200 205
 Arg Pro Ala Leu Arg Ser Pro Cys Cys Leu Leu Trp Val His Val Asp
 210 215 220
 Ala Ala Leu Leu Ala Glu Tyr Leu Asp Arg Arg Val Asp Asp Met Val
 225 230 235 240
 Arg Gly Gly Met Val Glu Glu Leu Arg Glu Tyr Phe Ala Ala Thr Thr
 245 250 255
 Ala Ala Glu Arg Ala Ala His Ala Ala Gly Leu Gly Arg Ala Ile Gly
 260 265 270

PF59082SEQ List- PF59348PCT.txt

Val Pro Glu Leu Gly Ala Cys Phe Ala Gly Arg Ala Ser Phe Arg Ala
275 280 285

Ala Ile Asp Asp Ile Lys Ala Asn Thr Arg Asp Leu Ala Ala Ala Gln
290 295 300

Val Arg Lys Ile Arg Arg Met Ala Asp Ala Trp Gly Trp Pro Ile Gln
305 310 315 320

Arg Leu Asp Ala Ser Ala Thr Val Arg Ala Arg Leu Arg Gly Ala Gly
325 330 335

Pro Asp Ala Glu Ser Ala Cys Trp Glu Arg Asp Val Arg Ala Pro Gly
340 345 350

Leu Ala Ala Ile Arg Ser Phe Leu Leu Glu Leu Asp Gly Gly Ser Val
355 360 365

Val Asp Gly Ala Val Val Glu Glu Val Glu Pro Arg Val Arg Cys Cys
370 375 380

Asp Val Val Gly
385

<210> 168
<211> 753
<212> DNA
<213> Oryza sativa

<400> 168
atgaaggtgc agtgcgacgt gtgcgcggcc gaggccgcct cggctcttctg ctgcgccgac 60
gaggccgcgc tgtgcgacgc gtgcgaccgc cgcgtccaca gcgcgaacaa gctcgccggg 120
aagcaccgcc gattctccct cctccaaccg ttggcgtcgt cgtcgtccgc ccagaagcca 180
ccgctctgcg acatctgtca ggagaagagg gggttcttgt tctgcaagga ggacagggcg 240
atcctgtgcc gggagtgcga cgtcacggtg cacaccacga gcgagctgac gaggcggcac 300
ggccggttcc tcctcaccgg cgtgcgcctc tcgtcggcgc cgatggactc cccgcgccg 360

tcggaggaag aggaggagga agcaggggag gactacagct gcagccccag cagcgtcgcc 420
ggcaccgccg cggggagcgc gagcgacggg agcagcatct ccgagtacct caccaagacg 480
ctgcccgggtt ggcacgtcga ggacttcctc gtcgacgagg ccaccgccgc ctctctctcc 540
tcagacgggc tatttcaggg tgggctgctg gctcagatcg gtggggtgcc ggacgggttac 600
gcggcgtggg ccggccggga gcagctgcac agtggcgtcg ctgtcgccgc cgacgagcgg 660
gccagccgcg agcgggtgggt gccgcagatg aacgcggagt ggggcgccgg cagcaagcga 720
cccagggcgt cgcctccctg cttgtactgg tga 753

PF59082SEQ List- PF59348PCT.txt

<210> 169
 <211> 250
 <212> PRT
 <213> Oryza sativa

<400> 169

Met Lys Val Gln Cys Asp Val Cys Ala Ala Glu Ala Ala Ser Val Phe
 1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Asp Ala Cys Asp Arg Arg Val
 20 25 30

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

Gln Pro Leu Ala Ser Ser Ser Ser Ala Gln Lys Pro Pro Leu Cys Asp
 50 55 60

Ile Cys Gln Glu Lys Arg Gly Phe Leu Phe Cys Lys Glu Asp Arg Ala
 65 70 75 80

Ile Leu Cys Arg Glu Cys Asp Val Thr Val His Thr Thr Ser Glu Leu
 85 90 95

Thr Arg Arg His Gly Arg Phe Leu Leu Thr Gly Val Arg Leu Ser Ser
 100 105 110

Ala Pro Met Asp Ser Pro Ala Pro Ser Glu Glu Glu Glu Glu Glu Ala
 115 120 125

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

Gly Ser Ala Ser Asp Gly Ser Ser Ile Ser Glu Tyr Leu Thr Lys Thr
 145 150 155 160

Leu Pro Gly Trp His Val Glu Asp Phe Leu Val Asp Glu Ala Thr Ala
 165 170 175

Ala Ser Ser Ser Ser Asp Gly Leu Phe Gln Gly Gly Leu Leu Ala Gln
 180 185 190

Ile Gly Gly Val Pro Asp Gly Tyr Ala Ala Trp Ala Gly Arg Glu Gln
 195 200 205

Leu His Ser Gly Val Ala Val Ala Ala Asp Glu Arg Ala Ser Arg Glu
 210 215 220

Arg Trp Val Pro Gln Met Asn Ala Glu Trp Gly Ala Gly Ser Lys Arg
 225 230 235 240

Pro Arg Ala Ser Pro Pro Cys Leu Tyr Trp

<210> 170
<211> 1074
<212> DNA
<213> Oryza sativa

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<400> 170
atgaaggtgc tgtgctccgc gtgcgaggcg gcggaggcgc ggggtgctctg ctgcgccgac    60
gacgccgccc tctgcgcgcg ctgcgacctc cacgtccacg ccgccaaccg cctcgccggc    120
aagcaccacc gcctccccct cctctcctcc tcctcttctt cctcctctcc ctcccccccg    180
acctgcgaca tctgccagga cgcccacgcc tactttcttct gcgtcgagga ccgcgccctc    240
ctctgccgcg cctgcgacgt cgccgtccac accgccaacg ccctcgctctc cgcccaccgc    300
cgcttctctc tcaccggcgt ccacgtcggc cttgacgccg ccgccgacga cgacgacaaa    360
caccccccac accccttgct gtcgtcgctg ccgcgcaaca cggcaccgcc cccgcagccg    420
ccgccgaagc gcagcccctc gccgatctac agcgatgacg acgtcatcga ctgggccacc    480
ggtggccacg acatcggcat caccggcaac ctgcccgaact ggtcgctcgt cgacgagcag    540
ttcaacaccc ctgcgctgcc gccggtggtg accaagaccc cgccgaagcg ggcctcccgt    600
ggccccgtca cggccggcac cgccgcgcg gtgttcggca acctcgccgg cggatcgccg    660
gactggccgc tcaacgagtt cttcggcttc gccgacttca gctccggctt cggcttcgcc    720
gagaacggca cgtccaaggc ggacagcggc aagatcggga gcatggacgg ctcgccgaac    780
ggcggcaggt cgtcgtcgtc gtcctcctcc tcctccgccg ccgccgccgg cggcggcggc    840
ggcggccagg acttcttcgg ccaggtgccg gaagttcact gggccgtgcc ggagctcccc    900
tcgccgcca cggcgtcagg gctccactgg caacgggacc cgcgctacgg tggcggcgcc    960
accgacgcca gcgcggtggt cgtgccggac atctcctcgc cggagaaccc cttccgttgc   1020
ttcgccgccg ccgccgccgg tgaccatacc atgaaacgcc ggaggagatg ctaa           1074
```

<210> 171
<211> 357
<212> PRT
<213> Oryza sativa

```
<400> 171
Met Lys Val Leu Cys Ser Ala Cys Glu Ala Ala Glu Ala Arg Val Leu
1          5          10          15

Cys Cys Ala Asp Asp Ala Ala Leu Cys Ala Arg Cys Asp Leu His Val
          20          25          30

His Ala Ala Asn Arg Leu Ala Gly Lys His His Arg Leu Pro Leu Leu
          35          40          45

Ser Ser Ser Ser Ser Ser Ser Ser Pro Ser Pro Pro Thr Cys Asp Ile
50          55          60
```


Cys Gln Asp Ala His Ala Tyr Phe Phe Cys Val Glu Asp Arg Ala Leu
 65 70 75 80
 Leu Cys Arg Ala Cys Asp Val Ala Val His Thr Ala Asn Ala Leu Val
 85 90 95
 Ser Ala His Arg Arg Phe Leu Leu Thr Gly Val His Val Gly Leu Asp
 100 105 110
 Ala Ala Ala Asp Asp Asp Asp Lys His Pro Pro His Pro Leu Ser Ser
 115 120 125
 Ser Leu Pro Arg Asn Thr Ala Pro Pro Pro Gln Pro Pro Pro Lys Arg
 130 135 140
 Ser Pro Ser Pro Ile Tyr Ser Asp Asp Asp Val Ile Asp Trp Ala Thr
 145 150 155 160
 Gly Gly His Asp Ile Gly Ile Thr Gly Asn Leu Pro Asp Trp Ser Leu
 165 170 175
 Val Asp Glu Gln Phe Asn Thr Pro Ala Leu Pro Pro Val Val Thr Lys
 180 185 190
 Thr Pro Pro Lys Arg Ala Ser Arg Gly Pro Val Thr Ala Gly Thr Ala
 195 200 205
 Ala Ala Val Phe Gly Asn Leu Ala Gly Gly Ser Pro Asp Trp Pro Leu
 210 215 220
 Asn Glu Phe Phe Gly Phe Ala Asp Phe Ser Ser Gly Phe Gly Phe Ala
 225 230 235 240
 Glu Asn Gly Thr Ser Lys Ala Asp Ser Gly Lys Ile Gly Ser Met Asp
 245 250 255
 Gly Ser Pro Asn Gly Gly Arg Ser Ser Ser Ser Ser Ser Ser Ser
 260 265 270
 Ala Ala Ala Ala Gly Gly Gly Gly Gly Gly Gln Asp Phe Phe Gly Gln
 275 280 285
 Val Pro Glu Val His Trp Ala Val Pro Glu Leu Pro Ser Pro Pro Thr
 290 295 300
 Ala Ser Gly Leu His Trp Gln Arg Asp Pro Arg Tyr Gly Gly Gly Ala
 305 310 315 320
 Thr Asp Ala Ser Ala Val Phe Val Pro Asp Ile Ser Ser Pro Glu Asn
 325 330 335
 Pro Phe Arg Cys Phe Ala Ala Ala Ala Ala Gly Asp His Thr Met Lys

340

345

350

Arg Arg Arg Arg Cys
355

<210> 172
<211> 816
<212> DNA
<213> Oryza sativa

<400> 172
atgaagatcc agtgcgacgc gtgcgagagc gcggcggcgg cgggtggtgtg ctgcgcggac 60
gaggcggcgc tgtgcgcggc gtgcgacgtg gaggtgcacg cggcgaacaa gctggccggg 120
aagcaccagc ggctgccgct ggaggcgctc tcggcgaggc tcccgcgctg cgacgtgtgc 180
caggagaagg cggcgttcat cttctgcgtg gaggaccgcg cgctcttctg ccgcgactgc 240
gacgagccca tccacgtccc cggcacgctc tccggcaacc accagcgcta cctcgccacc 300
ggcatccgcg tcggcttcgc ctccgcctcg ccctgcgacg gcggcagcga cgcccatgac 360
tccgaccacc acgccccgcc catggggtcc tccgagcatc atcaccatca tcagcagccg 420
gccccgaccg tcgccgtcga cacgccctcg ccgcagttcc tgccgcaggg ctgggcccgtc 480
gacgagctcc tccagttctc cgactacgag accggcgaca agctgcagaa ggagtcgtcg 540
ccgccgctcg ggttccagga gctggagtgg ttcgccgaca tcgacctgtt ccacaaccag 600
gcgcccaagg gcggcgccgc cgccggccgg acgacggcgg aggtccccga gctcttcgct 660
tcgcaggcgg ccaacgacgt ggcgtactac aggccgccga ccaggaccgc cgccgccgcc 720
ttcaccgcgg ccaccggctt ccgccagagc aagaaggccc gcgtcgagct ccccgacgac 780
gaggaggatt acctcatcgt ccctgatctt ggttga 816

<210> 173
<211> 271
<212> PRT
<213> Oryza sativa

<400> 173
Met Lys Ile Gln Cys Asp Ala Cys Glu Ser Ala Ala Ala Val Val
1 5 10 15
Cys Cys Ala Asp Glu Ala Ala Leu Cys Ala Ala Cys Asp Val Glu Val
20 25 30
His Ala Ala Asn Lys Leu Ala Gly Lys His Gln Arg Leu Pro Leu Glu
35 40 45
Ala Leu Ser Ala Arg Leu Pro Arg Cys Asp Val Cys Gln Glu Lys Ala
50 55 60
Ala Phe Ile Phe Cys Val Glu Asp Arg Ala Leu Phe Cys Arg Asp Cys
65 70 75 80

PF59082SEQ List- PF59348PCT.txt

Asp Glu Pro Ile His Val Pro Gly Thr Leu Ser Gly Asn His Gln Arg
85 90 95

Tyr Leu Ala Thr Gly Ile Arg Val Gly Phe Ala Ser Ala Ser Pro Cys
100 105 110

Asp Gly Gly Ser Asp Ala His Asp Ser Asp His His Ala Pro Pro Met
115 120 125

Gly Ser Ser Glu His His His His Gln Gln Pro Ala Pro Thr Val
130 135 140

Ala Val Asp Thr Pro Ser Pro Gln Phe Leu Pro Gln Gly Trp Ala Val
145 150 155 160

Asp Glu Leu Leu Gln Phe Ser Asp Tyr Glu Thr Gly Asp Lys Leu Gln
165 170 175

Lys Glu Ser Ser Pro Pro Leu Gly Phe Gln Glu Leu Glu Trp Phe Ala
180 185 190

Asp Ile Asp Leu Phe His Asn Gln Ala Pro Lys Gly Gly Ala Ala Ala
195 200 205

Gly Arg Thr Thr Ala Glu Val Pro Glu Leu Phe Ala Ser Gln Ala Ala
210 215 220

Asn Asp Val Ala Tyr Tyr Arg Pro Pro Thr Arg Thr Ala Ala Ala Ala
225 230 235 240

Phe Thr Ala Ala Thr Gly Phe Arg Gln Ser Lys Lys Ala Arg Val Glu
245 250 255

Leu Pro Asp Asp Glu Glu Asp Tyr Leu Ile Val Pro Asp Leu Gly
260 265 270

<210> 174
<211> 810
<212> DNA
<213> Oryza sativa

<400> 174
atgaaggtgc agtgcgacgt gtgcgcggcc gaggcggcgt cgggtgttctg ctgcgccgac 60
gaggccgcgc tgtgcgacgc gtgcgaccac cgggtgcacc gggccaacaa gctcgccggg 120
aagcaccgcc ggttctcgct gctcaacccc tcggcgctccg gccgctcgcc gacatcgacg 180
acggcgccgc tctgcgacat ctgccaggag aagagggggtt tcctgttctg caaggaggac 240
cgggcgatcc tgtgccgcga gtgcgacgtg ccggtgcaca cggcgagcga gctcaccatg 300
cgccacagcc ggtacctcct caccggcggtg cggctctcct cggagcctgc cgcgtccccg 360
gcgccgccgt cggaggagga gaacagcagc agcttctgct gcagcgccga cgacgccgtg 420
ccggccccgg cggcgccgc cagagccac ggcgggagca gcggcagcag cagcatctcc 480

PF59082SEQ List- PF59348PCT.txt

gagtacctca ccacgctgcc cgggtggcac gtcgaggact tcctcgtcga cgacgccact 540
gccgaggccg ccgccgccgc cgccgccacc tcttcggca tctccgcgaa cgggccgtgt 600
cagggggtaa cacggatcgg agggctgcaa gaatccgccg gctaccctgc gtggatggcg 660
cagcagcagc tgtgtgcga cggcctcgtc gccggcgacg cgtcgccggc tagccgggag 720
cggtgggtgc cgcagatgta cgcggatcag cttgccgccg gcagcaagag atccaggacg 780
tccactgctt cttcctactc ctactggtga 810

<210> 175
<211> 269
<212> PRT
<213> Oryza sativa

<400> 175

Met Lys Val Gln Cys Asp Val Cys Ala Ala Glu Ala Ala Ser Val Phe
1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Asp Ala Cys Asp His Arg Val
20 25 30

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

Asn Pro Ser Ala Ser Gly Arg Ser Pro Thr Ser Thr Thr Ala Pro Leu
50 55 60

Cys Asp Ile Cys Gln Glu Lys Arg Gly Phe Leu Phe Cys Lys Glu Asp
65 70 75 80

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

Glu Leu Thr Met Arg His Ser Arg Tyr Leu Leu Thr Gly Val Arg Leu
100 105 110

Ser Ser Glu Pro Ala Ala Ser Pro Ala Pro Pro Ser Glu Glu Glu Asn
115 120 125

Ser Ser Ser Phe Cys Cys Ser Ala Asp Asp Ala Val Pro Ala Pro Ala
130 135 140

Ala Pro Ala Thr Ser His Gly Gly Ser Ser Gly Ser Ser Ser Ile Ser
145 150 155 160

Glu Tyr Leu Thr Thr Leu Pro Gly Trp His Val Glu Asp Phe Leu Val
165 170 175

Asp Asp Ala Thr Ala Glu Ala Ala Ala Ala Ala Ala Thr Ser Ser
180 185 190

PF59082SEQ List- PF59348PCT.txt

Gly Ile Ser Ala Asn Gly Pro Cys Gln Gly Val Thr Arg Ile Gly Gly
195 200 205

Leu Gln Glu Ser Ala Gly Tyr Pro Ala Trp Met Ala Gln Gln Gln Leu
210 215 220

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

Arg Trp Val Pro Gln Met Tyr Ala Asp Gln Leu Ala Ala Gly Ser Lys
245 250 255

Arg Ser Arg Thr Ser Thr Ala Ser Ser Tyr Ser Tyr Trp
260 265

<210> 176
<211> 774
<212> DNA
<213> Oryza sativa

<400> 176
atgaggatcc agtgcgacgc gtgcgaggcc gcggcgggcca cgggtggtgtg ctgcgcggac 60
gaggcggcgc tgtgcgcgcg ctgcgacgtc gagatccacg ccgccaacaa gctcgccagc 120
aagcaccagc gcctcccgtc cgacgccgcg ctccccgccg cctccccgcg ctgcgacgtc 180
tgccaggaga aggcggcggtt catcttctgc gtggaggaca gggcgctctt ctgccgggac 240
tgcgacgagc ccatccacgt cccggggacg ctctccggca accaccagcg ctacctacc 300
accggcatcc gcgtcggggtt cagctccgtc tgtagcgcca acgccgacca cctccccgccg 360
ccagcgccca aggggaactc caagccgccg gcaagcggca tcgctgctgc tgctgctccc 420
aagccggccg tgtccgcggc ggcgcaggag gtgccgtcgt caccgttctt gccgccgtcg 480
ggctggggccg tcgaggatct cctgcagctc tccgactacg agtccagcga caagaagggc 540
tctcctattg ggttcaagga tctggagtgg ctcgatgaca tcgacctgtt ccatgtccag 600
tcgccggcca agggaggcag cacggcggcg gaggtgcctg agctcttcgc ctgccgcgag 660
ccagcgagca acatggggct ctacaaggcg agcgggtgcac gccaaagcaa gaagccacgg 720
gtggagatac ccgatgacga cgaggacttc ttcacgttc ctgatcttgg atga 774

<210> 177
<211> 257
<212> PRT
<213> Oryza sativa

<400> 177
Met Arg Ile Gln Cys Asp Ala Cys Glu Ala Ala Ala Ala Thr Val Val
1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Ala Arg Cys Asp Val Glu Ile
20 25 30

His Ala Ala Asn Lys Leu Ala Ser Lys His Gln Arg Leu Pro Leu Asp
Seite 201

35

40

45

Ala Ala Leu Pro Ala Ala Leu Pro Arg Cys Asp Val Cys Gln Glu Lys
 50 55 60

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

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

Arg Tyr Leu Thr Thr Gly Ile Arg Val Gly Phe Ser Ser Val Cys Ser
 100 105 110

Ala Asn Ala Asp His Leu Pro Pro Pro Ala Pro Lys Gly Asn Ser Lys
 115 120 125

Pro Pro Ala Ser Gly Ile Ala Ala Ala Ala Ala Pro Lys Pro Ala Val
 130 135 140

Ser Ala Ala Ala Gln Glu Val Pro Ser Ser Pro Phe Leu Pro Pro Ser
 145 150 155 160

Gly Trp Ala Val Glu Asp Leu Leu Gln Leu Ser Asp Tyr Glu Ser Ser
 165 170 175

Asp Lys Lys Gly Ser Pro Ile Gly Phe Lys Asp Leu Glu Trp Leu Asp
 180 185 190

Asp Ile Asp Leu Phe His Val Gln Ser Pro Ala Lys Gly Gly Ser Thr
 195 200 205

Ala Ala Glu Val Pro Glu Leu Phe Ala Ser Pro Gln Pro Ala Ser Asn
 210 215 220

Met Gly Leu Tyr Lys Ala Ser Gly Ala Arg Gln Ser Lys Lys Pro Arg
 225 230 235 240

Val Glu Ile Pro Asp Asp Asp Glu Asp Phe Phe Ile Val Pro Asp Leu
 245 250 255

Gly

<210> 178
 <211> 1137
 <212> DNA
 <213> Oryza sativa

<400> 178
 atgtcgcctc ctctccacc atattaccac cacctcctcc tcctccgctc ctcgcccacc 60
 accactggag gaggagctcg ggttcttgcc gcggcggagc tcgcacgcat gaagctactg 120
 Seite 202

PF59082SEQ List- PF59348PCT.txt

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tgcagcgcgt gcgaggcggc ggaggccagc gtcctctgct ggcgccgacga ggccgcccctg 180
tgcgcgcgcgt gcgaccgcga catccacgcc gccaacccgc tcgccgggaa gcacctccgc 240
ctccctctcc tctccccgc ctcctcctcc tcctcctccg ccgccgccct cgcgccgccg 300
ccgccgtcgc cgccaagtg cgacatatgc caggagagcc acgcgtactt cttctgcctc 360
gaggaccgcg cgctgctgtg ccggagctgc gacgtggcgg tgcacacggc caacgccttc 420
gtctccgcgc accgccgttt cctcctcacc ggcgtgcagg tcgggcagga gcaggacgag 480
cactcccctg acccgctga gccgtctcct cctccgccgc cgccgccgcc tgcattcaag 540
agcgaccacc cggcgccgct ctacggcgag ggcggaggag ggttcagctg ggacgccgcc 600
gactcgccgg ccgcggggcg cctccccgac tggtcggccg tcgtcgacca gttcggtcc 660
ccgccgccgc cgcgccacac ggacaccgcg accgtgacga ccccgccgcc gaccaagagg 720
agcccacgcg cgccggcggt cggcggccag ggcggcatga tggattggcc cctcggcgag 780

ttcttcggcg gcttcaccga cttaccggc ggctttggct tcggcttcgg cgacagtggc 840
acctcaagg ctgacagcgg gaagctggga gggagcacgg acggctcgcc gtactaccgg 900
tcgtcatcgg aagatgaccg gaacgccgac gagctcttcg ggcaggtacc agagatccag 960
tggtcggtgc cggagctccc ctcgccgccg acggcctccg gcctccactg gcaacgccat 1020
ccagccgcca ctacggcgg cggcggcggc ggacccgaca ccaccgcctt cgtccccgac 1080
atctgctccc ccgacagctg cttcccgcc accacctcca aacgccggag gcaataa 1137

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<210> 179
 <211> 378
 <212> PRT
 <213> Oryza sativa

<400> 179

Met Ser Pro Pro Pro Pro Pro Tyr Tyr His His Leu Leu Leu Leu Arg
 1 5 10 15

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

Glu Leu Ala Arg Met Lys Leu Leu Cys Ser Ala Cys Glu Ala Ala Glu
 35 40 45

Ala Ser Val Leu Cys Cys Ala Asp Glu Ala Ala Leu Cys Ala Arg Cys
 50 55 60

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

Leu Pro Leu Leu Ser Pro Ala Ser Ser Ser Ser Ser Ser Ala Ala Ala
 85 90 95

Leu Ala Pro Pro Pro Pro Ser Pro Pro Lys Cys Asp Ile Cys Gln Glu

100

105

110

Ser His Ala Tyr Phe Phe Cys Leu Glu Asp Arg Ala Leu Leu Cys Arg
115 120 125

Ser Cys Asp Val Ala Val His Thr Ala Asn Ala Phe Val Ser Ala His
130 135 140

Arg Arg Phe Leu Leu Thr Gly Val Gln Val Gly Gln Glu Gln Asp Glu
145 150 155 160

His Ser Pro Asp Pro Glu Pro Ser Pro Pro Pro Pro Pro Pro
165 170 175

Pro Ala Ser Lys Ser Asp His Pro Ala Pro Leu Tyr Gly Glu Gly Gly
180 185 190

Gly Gly Phe Ser Trp Asp Ala Ala Asp Ser Pro Ala Ala Gly Gly Leu
195 200 205

Pro Asp Trp Ser Ala Val Val Asp Gln Phe Gly Ser Pro Pro Pro Pro
210 215 220

Arg His Thr Asp Thr Ala Thr Val Thr Thr Pro Pro Pro Thr Lys Arg
225 230 235 240

Ser Pro Arg Ala Pro Ala Phe Gly Gly Gln Gly Gly Met Met Asp Trp
245 250 255

Pro Leu Gly Glu Phe Phe Gly Gly Phe Thr Asp Phe Thr Gly Gly Phe
260 265 270

Gly Phe Gly Phe Gly Asp Ser Gly Thr Ser Lys Ala Asp Ser Gly Lys
275 280 285

Leu Gly Gly Ser Thr Asp Gly Ser Pro Tyr Tyr Arg Ser Ser Ser Glu
290 295 300

Asp Asp Arg Asn Ala Asp Glu Leu Phe Gly Gln Val Pro Glu Ile Gln
305 310 315 320

Trp Ser Val Pro Glu Leu Pro Ser Pro Thr Ala Ser Gly Leu His
325 330 335

Trp Gln Arg His Pro Ala Ala Thr His Gly Gly Gly Gly Gly Gly Pro
340 345 350

Asp Thr Thr Ala Phe Val Pro Asp Ile Cys Ser Pro Asp Ser Cys Phe
355 360 365

Pro Ala Thr Thr Ser Lys Arg Arg Arg Gln
370 375

PF59082SEQ List- PF59348PCT.txt

<210> 180
<211> 1083
<212> DNA
<213> Oryza sativa

<400> 180
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gaggcagcgc tctgcacggc gtgcgacgag gaggtgcacg ccgccaacaa gctcgccggg 120
aagcaccagc ggggtgccgt gctctccgac gacggcgggc ccgcgcccgc cgccgccgcc 180
ccggccgtgc ccaagtgcga catctgccag gaggtttctg gatacttctt ctgcctggag 240
gaccgtgcac ttctttgcag agattgtgat gtttctatac acacagtaaa ctcctttggt 300
tcagtacacc aaagattcct actaacaggt gttcaagttg gccttgatcc tgctgatcca 360
gttcacactg ttgctgacaa gcatgttaag agtgctgggtg gttcagtgga ttcagcaact 420
aaacatttgc aaaggaatcc tacagactta tctggtgaaa acagtgcatac tttgcccagc 480
caaaatgtaa tcaatggtaa ttattctagg cagagttctg ttacaatggc caagacagga 540
cagggtcaatt ggactatgag caacaacaca attagatcaa tagaccctcc acccaagtat 600
tcatcagagg aaagtccagc acttctgcta gctagccaca ctagcaccat ggcagcgtac 660
tccagtcaaa tcagtaagga tagtgatcgg atctacaact taccattcac aggtggtaat 720
gggtcagata gtctacatga ttggcatgtt gatgagttct ttagtaactc agaatttggc 780
tttgctgagc atggttcttc taagggtgac aacgctaagc cagggagtgc tgggtggatct 840
ccgcagtgcc gtctggctga aggcctgttt gtcgaaggac ttctaggtca agtgccctgac 900
aatccatgga cagtgcctga ggtcccctcg ccaccgacag cctctggtct ctattggcaa 960
aataatttgc tttgcccttc gtacgacagc accatgttcg tccctgagat ttcctccttg 1020
gagaactctc agaacaactt cactgtatct gctggtttga agcgccgaag gaggcagttt 1080
tga 1083

<210> 181
<211> 360
<212> PRT
<213> Oryza sativa

<400> 181

Met Lys Ile Gln Cys Asn Ala Cys Gly Ala Ala Glu Ala Arg Val Leu
1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Thr Ala Cys Asp Glu Glu Val
20 25 30

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

Ser Asp Asp Gly Gly Ala Ala Pro Ala Ala Ala Pro Ala Val Pro
50 55 60

PF59082SEQ List- PF59348PCT.txt

Lys Cys Asp Ile Cys Gln Glu Ala Ser Gly Tyr Phe Phe Cys Leu Glu
 65 70 75 80
 Asp Arg Ala Leu Leu Cys Arg Asp Cys Asp Val Ser Ile His Thr Val
 85 90 95
 Asn Ser Phe Val Ser Val His Gln Arg Phe Leu Leu Thr Gly Val Gln
 100 105 110
 Val Gly Leu Asp Pro Ala Asp Pro Val Pro Pro Val Ala Asp Lys His
 115 120 125
 Val Lys Ser Ala Gly Gly Ser Val Asp Ser Ala Thr Lys His Leu Gln
 130 135 140
 Arg Asn Pro Thr Asp Leu Ser Gly Glu Asn Ser Ala Ser Leu Pro Ser
 145 150 155 160
 Gln Asn Val Ile Asn Gly Asn Tyr Ser Arg Gln Ser Ser Val Thr Met
 165 170 175
 Ala Lys Thr Gly Gln Val Asn Trp Thr Met Ser Asn Asn Thr Ile Arg
 180 185 190
 Ser Ile Asp Pro Pro Pro Lys Tyr Ser Ser Glu Glu Ser Pro Ala Leu
 195 200 205
 Leu Leu Ala Ser His Thr Ser Thr Met Ala Ala Tyr Ser Ser Gln Ile
 210 215 220
 Ser Lys Asp Ser Asp Arg Ile Tyr Asn Leu Pro Phe Thr Gly Gly Asn
 225 230 235 240
 Gly Ser Asp Ser Leu His Asp Trp His Val Asp Glu Phe Phe Ser Asn
 245 250 255
 Ser Glu Phe Gly Phe Ala Glu His Gly Ser Ser Lys Gly Asp Asn Ala
 260 265 270
 Lys Pro Gly Ser Ala Gly Gly Ser Pro Gln Cys Arg Leu Ala Glu Gly
 275 280 285
 Leu Phe Val Glu Gly Leu Leu Gly Gln Val Pro Asp Asn Pro Trp Thr
 290 295 300
 Val Pro Glu Val Pro Ser Pro Pro Thr Ala Ser Gly Leu Tyr Trp Gln
 305 310 315 320
 Asn Asn Leu Leu Cys Pro Ser Tyr Asp Ser Thr Met Phe Val Pro Glu
 325 330 335

PF59082SEQ List- PF59348PCT.txt

Ile Ser Ser Leu Glu Asn Ser Gln Asn Asn Phe Thr Val Ser Ala Gly
340 345 350

Leu Lys Arg Arg Arg Arg Gln Phe
355 360

<210> 182
<211> 927
<212> DNA
<213> Oryza sativa

<400> 182
atgcgggtgc agtgcgacgt ctgcgccgcc gagccggccg cgggtgctctg ctgcgccgac 60
gaggccgcgc tctgctccgc ctgcgaccgc cgcgtccacc gcgccaaccg cctcgccagc 120
aagcaccgcc gcctcccgtc cgtccacccg tcctcctcct cctccggcga cgggtggcgcc 180
gccgccgcgc cgctgtgcga cgtgtgcagg gagaagaggg gcctcgtggt ctgcgtcgag 240
gaccgcgcca tcctgtgcgc cgactgcgac gagcccatcc actccgcca cgacctcacc 300
gccaagcaca cccgcttcct cctcgtcggc gccaaagtct ccccgccgc gctcgccgaa 360
cagccgctcc cgtcctccga ctgcagctcc gacgacgac cgcgccgcgc cgccaccgag 420
gaggagtacc actcctccgc cgcattcacc ggcgccgcag tgagcgcgcc tcttgacgcc 480
tccagcaacg gcgccggtgg cggaggagga gtaggagggg gcagcatctc cgactacctc 540
accaccatct gccccggctg gcgcgtcgag gacctcctcc ccgacgacga cgccttcgcc 600
gccgccgccg cgcaggcggg gaaagagaag gacgagcgcg tgccgttcct cgacgccgac 660
ctgttcgacg tggtcgccgg ccggccggag aagaagggcg gcgcgtgggc gccgcacgtg 720
ccgcacctgc cggcgtggtg cctcgacgag gtgccggtcg tcgtcgccgc gtcggcgggc 780
ccagcggcga cacctgtaaa ggcgaagcag ggacacgtgc gggacagcca ctggagcgac 840
agcgacgcgt tcgccgtgcc ggagttctcg ccgccgccgc cgccggccaa gagggcgcg 900
cccagctcgc agttctggtg cttctga 927

<210> 183
<211> 308
<212> PRT
<213> Oryza sativa

<400> 183

Met Arg Val Gln Cys Asp Val Cys Ala Ala Glu Pro Ala Ala Val Leu
1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Ser Ala Cys Asp Arg Arg Val
20 25 30

His Arg Ala Asn Arg Leu Ala Ser Lys His Arg Arg Leu Pro Leu Val
35 40 45

His Pro Ser Ser Ser Ser Ser Gly Asp Gly Gly Ala Ala Ala Ala Pro
50 55 60

PF59082SEQ List- PF59348PCT.txt

Leu Cys Asp Val Cys Arg Glu Lys Arg Gly Leu Val Phe Cys Val Glu
 65 70 75 80
 Asp Arg Ala Ile Leu Cys Ala Asp Cys Asp Glu Pro Ile His Ser Ala
 85 90 95
 Asn Asp Leu Thr Ala Lys His Thr Arg Phe Leu Leu Val Gly Ala Lys
 100 105 110
 Leu Ser Pro Ala Ala Leu Ala Glu Gln Pro Leu Pro Ser Ser Asp Cys
 115 120 125
 Ser Ser Asp Asp Asp Ala Ala Ala Ala Thr Glu Glu Glu Tyr His
 130 135 140
 Ser Ser Ala Ala Ser Thr Gly Ala Ala Val Ser Ala Pro Leu Asp Ala
 145 150 155 160
 Ser Ser Asn Gly Ala Gly Gly Gly Gly Gly Val Gly Gly Ser Ser Ile
 165 170 175
 Ser Asp Tyr Leu Thr Thr Ile Cys Pro Gly Trp Arg Val Glu Asp Leu
 180 185 190
 Leu Pro Asp Asp Asp Ala Phe Ala Ala Ala Ala Gln Ala Gly Lys
 195 200 205
 Glu Lys Asp Glu Arg Val Pro Phe Leu Asp Ala Asp Leu Phe Asp Val
 210 215 220
 Val Ala Gly Arg Pro Glu Lys Lys Gly Gly Ala Trp Ala Pro His Val
 225 230 235 240
 Pro His Leu Pro Ala Trp Cys Leu Asp Glu Val Pro Val Val Val Ala
 245 250 255
 Ala Ser Ala Ala Pro Ala Ala Thr Pro Val Lys Ala Lys Gln Gly His
 260 265 270
 Val Arg Asp Ser His Trp Ser Asp Ser Asp Ala Phe Ala Val Pro Glu
 275 280 285
 Phe Ser Pro Pro Pro Pro Pro Ala Lys Arg Ala Arg Pro Ser Ser Gln
 290 295 300
 Phe Trp Cys Phe
 305

<210> 184
 <211> 636
 <212> DNA

<213> Oryza sativa

<400> 184

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atgcggacga tctgcgacgt gtgcgagagc gcgccggcgg tgctcttctg cgtggccgac      60
gaggccgcgc tctgccggtc ctgcgacgag aaggtgcata tgtgtaacaa gcttgctagg      120
cggcacgtga gagttgggct tgcagaccct aataaagttc aacgctgtga tatatgtgaa      180
aatgcccccg ctttcttcta ttgcgagata gatggtacat cactttgcct tagttgtgat      240
atgactgttc atgttggtgg gaaacgaacc catggaagat acctgctcct aaggcaacgg      300
gttgaatttc caggagataa accagggtcat atggatgatg ttgctatgca acagaaagat      360
cctgaaaacc ggacggatca aaagaaggcc ctcactcag taacaaagga gcaaatggca      420
aaccatcata atgtgtctga tgatccagcc tcagatggca actgcgatga ccagggtaac      480
atcgattcca aaatgattga tcttaatatg agaccctcc gtactcatgg acaaggttca      540
aactcacaga ctcagggcgt ggatgtagc gtcaacaatc atgattctcc aggagtgggtg      600
ccaacatgta atttcgaacg agaagccaac aaataa                                636

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<210> 185

<211> 211

<212> PRT

<213> Oryza sativa

<400> 185

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Met Arg Thr Ile Cys Asp Val Cys Glu Ser Ala Pro Ala Val Leu Phe
1           5           10          15

Cys Val Ala Asp Glu Ala Ala Leu Cys Arg Ser Cys Asp Glu Lys Val
20          25          30

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

Asp Pro Asn Lys Val Gln Arg Cys Asp Ile Cys Glu Asn Ala Pro Ala
50          55          60

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

Met Thr Val His Val Gly Gly Lys Arg Thr His Gly Arg Tyr Leu Leu
85          90          95

Leu Arg Gln Arg Val Glu Phe Pro Gly Asp Lys Pro Gly His Met Asp
100         105         110

Asp Val Ala Met Gln Gln Lys Asp Pro Glu Asn Arg Thr Asp Gln Lys
115         120         125

Lys Ala Pro His Ser Val Thr Lys Glu Gln Met Ala Asn His His Asn
130         135         140

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PF59082SEQ List- PF59348PCT.txt

Val Ser Asp Asp Pro Ala Ser Asp Gly Asn Cys Asp Asp Gln Gly Asn
145 150 155 160

Ile Asp Ser Lys Met Ile Asp Leu Asn Met Arg Pro Val Arg Thr His
165 170 175

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

Asn His Asp Ser Pro Gly Val Val Pro Thr Cys Asn Phe Glu Arg Glu
195 200 205

Ala Asn Lys
210

<210> 186
<211> 633
<212> DNA
<213> Oryza sativa

<400> 186
atgaagatcg ggtgcgacgc gtgcgagcag gcggaggcgg cgggtgctgtg ctgcgccgac 60
gaggccgcgc tctgccgccg ctgcgacgcc gccgtccact ccgccaacag gctcgccggc 120
aagcacaccc gcgtcgcgct cctcctcccc tcctcctcct ccgccgccgc cggcgacgac 180
gaccaccacc ccacctgcga catctgccag gagaagacgg gctacttctt ctgcctcgag 240
gaccgcgccc tgctctgccg gagctgcgac gtcgccgtcc acaccgccac tgcgcacgcc 300
gccgcccacc gccgttctct catcaccggc gtccgcacgt gcggcagcgt cgacgccgcc 360
gccgcggccg acgtcatcgt cagcccaaca agcagcagca tcgcgccggc cggctcggcc 420
agcagcaacc acgccggcgc cgccggcaac aacaatggcc ggtcgccggc gccggtgagg 480
ttctcagggg gagacggcgg cgttgagccg gagcagcagt ggccgtggag tgacgtcttc 540
gccgccgacg acgacgatga cgtcagcgcc gccatggagc agtgctacta tcatggcatc 600
tctgaacctc actcctccag cctcactgga tga 633

<210> 187
<211> 210
<212> PRT
<213> Oryza sativa

<400> 187
Met Lys Ile Gly Cys Asp Ala Cys Glu Gln Ala Glu Ala Ala Val Leu
1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Arg Arg Cys Asp Ala Ala Val
20 25 30

His Ser Ala Asn Arg Leu Ala Gly Lys His Thr Arg Val Ala Leu Leu
35 40 45

Leu Pro Ser Ser Ser Ser Ala Ala Ala Gly Asp Asp Asp His His Pro
50 55 60

Thr Cys Asp Ile Cys Gln Glu Lys Thr Gly Tyr Phe Phe Cys Leu Glu
65 70 75 80

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

Thr Ala His Ala Ala Ala His Arg Arg Phe Leu Ile Thr Gly Val Arg
100 105 110

Ile Gly Gly Ser Val Asp Ala Ala Ala Ala Asp Val Ile Val Ser
115 120 125

Pro Thr Ser Ser Ser Ile Ala Pro Ala Gly Ser Ala Ser Ser Asn His
130 135 140

Ala Gly Ala Ala Gly Asn Asn Asn Gly Arg Ser Pro Ala Pro Val Arg
145 150 155 160

Phe Ser Gly Gly Asp Gly Gly Val Glu Pro Glu Gln Gln Trp Pro Trp
165 170 175

Ser Asp Val Phe Ala Ala Asp Asp Asp Asp Val Ser Ala Ala Met
180 185 190

Glu Gln Cys Tyr Tyr His Gly Ile Ser Glu Pro His Ser Ser Ser Leu
195 200 205

Thr Gly
210

<210> 188
<211> 597
<212> DNA
<213> Saccharum officinarum

<400> 188
atgaagatcc agtgcgacgc ttgcgagggc gcggctgcca cgggtggtgtg ctgcgccgac 60
gaggccgcgc tgtgcgcgcg ctgcgacgtc gagatccacg ccgccaacaa gctcgccagc 120
aagcaccagc gcctcccgtc cgaggcgctc tcggccaagc tcccgcgctg cgacgtctgc 180
caggagaaag cggcgttcat cttctgcgtg gaggaccggg cgctcttctg ccgggactgc 240
gacgagccca tccacgtccc gggcacgctc tccgggaacc accagcgcta cctcgccacc 300
ggcatccgcg tcggcttcgc ctccgcctcc gcctgcagcg acggcgccctg cgacgcccac 360
gactccgacc accacgcccc gcccaaggcc accatcgagc caccgcaggc caccgtctcc 420
gccgcggcgc agcaggtgcc ctgcgccgcg cagttcctgc cgcagggctg ggccgctcgc 480
gagctcctgc agttctccga ctacgagtcc agcgacaagc tgcacaagga gtccccgctc 540

gggttcggag ctggagtggg tcgccgacat cgacctcttc cacgagcagg cgcctaa

597

<210> 189
 <211> 198
 <212> PRT
 <213> Saccharum officinarum

<400> 189

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

Cys Cys Ala Asp Glu Ala Ala Leu Cys Ala Arg Cys Asp Val Glu Ile
 20 25 30

His Ala Ala Asn Lys Leu Ala Ser Lys His Gln Arg Leu Pro Leu Glu
 35 40 45

Ala Leu Ser Ala Lys Leu Pro Arg Cys Asp Val Cys Gln Glu Lys Ala
 50 55 60

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

Asp Glu Pro Ile His Val Pro Gly Thr Leu Ser Gly Asn His Gln Arg
 85 90 95

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

Ser Asp Gly Ala Cys Asp Ala His Asp Ser Asp His His Ala Pro Pro
 115 120 125

Lys Ala Thr Ile Glu Pro Pro Gln Ala Thr Val Ser Ala Ala Ala Gln
 130 135 140

Gln Val Pro Ser Pro Pro Gln Phe Leu Pro Gln Gly Trp Ala Val Asp
 145 150 155 160

Glu Leu Leu Gln Phe Ser Asp Tyr Glu Ser Ser Asp Lys Leu His Lys
 165 170 175

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

Leu Pro Arg Ala Gly Ala
 195

<210> 190
 <211> 534
 <212> DNA
 <213> Arabidopsis thaliana

PF59082SEQ List- PF59348PCT.txt

<400> 190
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 gaagctgctc tctgtcctca atgcgacatc gagattcacg ccgctaacaa actcgctagc 120
 aagcaccaac gtcttcatct taattccctc tccaccaaatt tccctcgttg cgatatctgc 180
 caagagaagg cagctttcat tttctgtgta gaggatagag ctctgctttg cagggactgc 240
 gatgaatcca tccacgtggc taattctcga tctgctaatc accagagggtt cttagccact 300
 gggatcaaag tagctctgac ctcaactata tgtagtaaag aaattgagaa gaatcaacct 360
 gagccttcca acaaccaaca gaaggctaatt cagattcctg ctaaattccac aagccagcag 420
 caacaacaac cttcttctgc tactccactt ccctgggctg ttgacgattt ctttcacttc 480
 tctgatattg aatccaccga caaggtagtg atgagaattg agattcaatg ttag 534

<210> 191
 <211> 177
 <212> PRT
 <213> Arabidopsis thaliana

<400> 191
 Met Lys Ile Gln Cys Asp Val Cys Glu Lys Ala Pro Ala Thr Val Ile
 1 5 10 15
 Cys Cys Ala Asp Glu Ala Ala Leu Cys Pro Gln Cys Asp Ile Glu Ile
 20 25 30
 His Ala Ala Asn Lys Leu Ala Ser Lys His Gln Arg Leu His Leu Asn
 35 40 45
 Ser Leu Ser Thr Lys Phe Pro Arg Cys Asp Ile Cys Gln Glu Lys Ala
 50 55 60
 Ala Phe Ile Phe Cys Val Glu Asp Arg Ala Leu Leu Cys Arg Asp Cys
 65 70 75 80
 Asp Glu Ser Ile His Val Ala Asn Ser Arg Ser Ala Asn His Gln Arg
 85 90 95
 Phe Leu Ala Thr Gly Ile Lys Val Ala Leu Thr Ser Thr Ile Cys Ser
 100 105 110
 Lys Glu Ile Glu Lys Asn Gln Pro Glu Pro Ser Asn Asn Gln Gln Lys
 115 120 125
 Ala Asn Gln Ile Pro Ala Lys Ser Thr Ser Gln Gln Gln Gln Pro
 130 135 140
 Ser Ser Ala Thr Pro Leu Pro Trp Ala Val Asp Asp Phe Phe His Phe
 145 150 155 160
 Ser Asp Ile Glu Ser Thr Asp Lys Val Val Met Arg Ile Glu Ile Gln
 165 170 175

Cys

<210> 192
<211> 747
<212> DNA
<213> Arabidopsis thaliana

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<400> 192
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gaagctgctc tctgtcctca atgcgacatc gagattcacg ccgctaacaa actcgctagc    120
aagcaccaac gtcttcatct taattccctc tccaccaaat tccctcgttg cgatatctgc    180
caagagaagg cagctttcat tttctgtgta gaggatagag ctctgctttg cagggactgc    240
gatgaatcca tccacgtggc taattctcga tctgctaatc accagagggtt cttagccact    300
gggatcaaag tagctctgac ctcaactata tgtagtaaag aaattgagaa gaatcaacct    360
gagccttcca acaaccaaca gaaggctaat cagattcctg ctaaatccac aagccagcag    420
caacaacaac cttcttctgc tactccactt ccctgggctg ttgacgattt ctttcacttc    480
tctgatattg aatccaccga caagaaagga cagcttgatc ttggggcagg ggagttggat    540
tggttttcag acatgggatt cttcggtgat cagattaatg acaaggctct tcctgcagct    600
gaagttcctg agctttctgt ttcgcattta ggtcatgttc attcatacaa acctatgaag    660
tcaaagtgtt cacacaagaa gccgagggtt gagaccagat atgatgatga tgatgaggaa    720
cacttcattg tccctgatct tggctaa                                     747
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<210> 193
<211> 248
<212> PRT
<213> Arabidopsis thaliana

<400> 193

Met Lys Ile Gln Cys Asp Val Cys Glu Lys Ala Pro Ala Thr Val Ile
1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Pro Gln Cys Asp Ile Glu Ile
20 25 30

His Ala Ala Asn Lys Leu Ala Ser Lys His Gln Arg Leu His Leu Asn
35 40 45

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

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

Asp Glu Ser Ile His Val Ala Asn Ser Arg Ser Ala Asn His Gln Arg
85 90 95

PF59082SEQ List- PF59348PCT.txt

Phe Leu Ala Thr Gly Ile Lys Val Ala Leu Thr Ser Thr Ile Cys Ser
100 105 110

Lys Glu Ile Glu Lys Asn Gln Pro Glu Pro Ser Asn Asn Gln Gln Lys
115 120 125

Ala Asn Gln Ile Pro Ala Lys Ser Thr Ser Gln Gln Gln Gln Pro
130 135 140

Ser Ser Ala Thr Pro Leu Pro Trp Ala Val Asp Asp Phe Phe His Phe
145 150 155 160

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

Gly Glu Leu Asp Trp Phe Ser Asp Met Gly Phe Phe Gly Asp Gln Ile
180 185 190

Asn Asp Lys Ala Leu Pro Ala Ala Glu Val Pro Glu Leu Ser Val Ser
195 200 205

His Leu Gly His Val His Ser Tyr Lys Pro Met Lys Ser Asn Val Ser
210 215 220

His Lys Lys Pro Arg Phe Glu Thr Arg Tyr Asp Asp Asp Asp Glu Glu
225 230 235 240

His Phe Ile Val Pro Asp Leu Gly
245

<210> 194
<211> 996
<212> DNA
<213> Arabidopsis thaliana

<400> 194
atgaagatca ggtgcgacgt ctgcgataaa gaagaagcgt cgggtgttttg cacggccgac 60
gaagcatctc tctgcggcgg ctgcgaccac caagtccacc acgctaaca actcgctct 120
aaacatctcc gtttctctct cttttatcct tcttcttcca acacctctc tcctctctgc 180
gacatctgtc aggataaaaa agctctgttg ttctgtcaac aagatagagc tattttatgc 240
aaagattgcg attcatcgat ccacgctgcg aacgaacaca caaagaaaca cgataggttt 300
cttcttacag ggggttaagct ctctgcaaca tcgtctgttt acaaacctac ttcgaaatct 360
tcttcttctt cttcaagcaa ccaagatttc tctgtccctg gatcatcaat ctctaactct 420
cctcctctca agaaacctct ctgagctcct cctcagagca acaagatcca acccttttcg 480
aagatcaacg gcggtgatgc gtcggtgaat cagtggggat ccacaagcac gatttctgag 540
tatttgatgg atacgttacc tggttggcac gttgaggatt tcctcgattc ctctcttcct 600
acttatggtt tctctaagag tgggtgatgat gatggagtgt taccatatat ggaaccagaa 660

PF59082SEQ List- PF59348PCT.txt

gatgacaaca acactaagag aaacaacaac aacaacaaca acaacaacaa caatacagtg 720
tcacttccat ctaagaattt agggatttgg gtccctcaga ttccacaaac tcttccttct 780
tcatacccaa atcaatactt ttctcaagac aacaacatac agtttgggat gtacaacaaa 840
gaaacatcac cagaagtagt gtcttttgct ccaatacaaa acatgaaaca acaaggacag 900
aacaacaaga gatggtatga tgatggtggc ttcactgtcc cacagatcac tcctcctcct 960
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<210> 195
<211> 331
<212> PRT
<213> Arabidopsis thaliana

<400> 195

Met Lys Ile Arg Cys Asp Val Cys Asp Lys Glu Glu Ala Ser Val Phe
1 5 10 15

Cys Thr Ala Asp Glu Ala Ser Leu Cys Gly Gly Cys Asp His Gln Val
20 25 30

His His Ala Asn Lys Leu Ala Ser Lys His Leu Arg Phe Ser Leu Leu
35 40 45

Tyr Pro Ser Ser Ser Asn Thr Ser Ser Pro Leu Cys Asp Ile Cys Gln
50 55 60

Asp Lys Lys Ala Leu Leu Phe Cys Gln Gln Asp Arg Ala Ile Leu Cys
65 70 75 80

Lys Asp Cys Asp Ser Ser Ile His Ala Ala Asn Glu His Thr Lys Lys
85 90 95

His Asp Arg Phe Leu Leu Thr Gly Val Lys Leu Ser Ala Thr Ser Ser
100 105 110

Val Tyr Lys Pro Thr Ser Lys Ser Ser Ser Ser Ser Ser Ser Asn Gln
115 120 125

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

Lys Pro Leu Ser Ala Pro Pro Gln Ser Asn Lys Ile Gln Pro Phe Ser
145 150 155 160

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

Thr Ile Ser Glu Tyr Leu Met Asp Thr Leu Pro Gly Trp His Val Glu
180 185 190

PF59082SEQ List- PF59348PCT.txt

Asp Phe Leu Asp Ser Ser Leu Pro Thr Tyr Gly Phe Ser Lys Ser Gly
195 200 205

Asp Asp Asp Gly Val Leu Pro Tyr Met Glu Pro Glu Asp Asp Asn Asn
210 215 220

Thr Lys Arg Asn Asn Asn Asn Asn Asn Asn Asn Asn Asn Thr Val
225 230 235 240

Ser Leu Pro Ser Lys Asn Leu Gly Ile Trp Val Pro Gln Ile Pro Gln
245 250 255

Thr Leu Pro Ser Ser Tyr Pro Asn Gln Tyr Phe Ser Gln Asp Asn Asn
260 265 270

Ile Gln Phe Gly Met Tyr Asn Lys Glu Thr Ser Pro Glu Val Val Ser
275 280 285

Phe Ala Pro Ile Gln Asn Met Lys Gln Gln Gly Gln Asn Asn Lys Arg
290 295 300

Trp Tyr Asp Asp Gly Gly Phe Thr Val Pro Gln Ile Thr Pro Pro Pro
305 310 315 320

Leu Ser Ser Asn Lys Lys Phe Arg Ser Phe Trp
325 330

<210> 196
<211> 900
<212> DNA
<213> Arabidopsis thaliana

<400> 196
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gaggctgctc tttgttgggc ttgcgatgag aaaattcacg ccgctaataa actcgccgga 120
aaacatcaga gagtccctct ctctgcctct gcctcttcca taccctaatg tgacatttgt 180
caggaagcat ctggattctt cttttgtctg caagatagag ctttgctatg taggaaatgt 240
gatgttgcaa tccacactgt gaatcctcat gtttcagctc accagagatt tcttctcact 300
ggaatcaaag ttggtcttga atctatagac actggtcctt ctactaaatc ctcacctacc 360
aatgatgata aaacatgga gaccaaact tttgttcaat ctataactga gcctcaaaag 420
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ggaactaaag tcaatgatca gacatcgaca aagcttcctc tcgtaagtag cggatcaact 540
actggaagca ttcctcagt gcaaataag gagattttcg ggctaaccga ctttgatcag 600
agctatgaat acatggagaa taatggatca tctaaggcgg atactagtag acgaggagat 660
tcagacagtt cttcgatgat gagatctgca gaagaagatg gagaagataa caataactgc 720
ttgggaggtg agacatcatg ggcggttcca cagattcagt ctccacctac agcgtctggt 780
ctaaactggc ctaagcattt tcaccaccac tctgtgtttg ttccggacat aacttcttca 840

actccttata ccggttcac cccgaatcaa agggttggga aacggcggcg acggttctag 900

<210> 197
 <211> 299
 <212> PRT
 <213> Arabidopsis thaliana

<400> 197

Met Lys Ile Gln Cys Asn Val Cys Glu Ala Ala Glu Ala Thr Val Leu
 1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Trp Ala Cys Asp Glu Lys Ile
 20 25 30

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

Ala Ser Ala Ser Ser Ile Pro Lys Cys Asp Ile Cys Gln Glu Ala Ser
 50 55 60

Gly Phe Phe Phe Cys Leu Gln Asp Arg Ala Leu Leu Cys Arg Lys Cys
 65 70 75 80

Asp Val Ala Ile His Thr Val Asn Pro His Val Ser Ala His Gln Arg
 85 90 95

Phe Leu Leu Thr Gly Ile Lys Val Gly Leu Glu Ser Ile Asp Thr Gly
 100 105 110

Pro Ser Thr Lys Ser Ser Pro Thr Asn Asp Asp Lys Thr Met Glu Thr
 115 120 125

Lys Pro Phe Val Gln Ser Ile Pro Glu Pro Gln Lys Met Ala Phe Asp
 130 135 140

His His His His Gln Gln Gln Gln Glu Gln Gln Glu Gly Val Ile Pro
 145 150 155 160

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

Ser Gly Ser Thr Thr Gly Ser Ile Pro Gln Trp Gln Ile Glu Glu Ile
 180 185 190

Phe Gly Leu Thr Asp Phe Asp Gln Ser Tyr Glu Tyr Met Glu Asn Asn
 195 200 205

Gly Ser Ser Lys Ala Asp Thr Ser Arg Arg Gly Asp Ser Asp Ser Ser
 210 215 220

Ser Met Met Arg Ser Ala Glu Glu Asp Gly Glu Asp Asn Asn Asn Cys
 225 230 235 240

PF59082SEQ List- PF59348PCT.txt

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

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

Phe Val Pro Asp Ile Thr Ser Ser Thr Pro Tyr Thr Gly Ser Ser Pro
275 280 285

Asn Gln Arg Val Gly Lys Arg Arg Arg Arg Phe
290 295

<210> 198

<211> 717

<212> DNA

<213> Arabidopsis thaliana

<400> 198

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gaagctgctc tctgcgctaa atgtgacgtt gaggttcatg ctgctaataa actcgctagc	120
aaacaccaac gcctttttct tgactctctc tcaactaaat tccctccctg cgacatctgc	180
cttgagaagg cagctttcat attctgtgta gaggataggg ctctgctctg cagagattgc	240
gatgaggcga cccatgcgcc aaatactcgc tctgctaatc accagagggt cttagccact	300
ggaatccgag ttgctcttag ttccactagt tgcaatcaag aagtggaaaa gaatcacttt	360
gacccatcta atcagcagag tctctctaaa ccgccaactc agcaaccgc tgctccatct	420
cctttgtggg ctaccgatga attcttcagc tactctgatc ttgactgcag taataaggag	480
aaagagcaac tcgatctcgg ggagctggat tggcttgcag agatgggtct gtttggtgac	540
cagcctgatc aagaggctct accggtagcc gaagttccc agctttcctt ttcacatttg	600
gctcatgctc attcctacaa cagacctatg aagtccaatg tacccaacaa gaagcagagg	660
cttgagtacc ggtatgatga tgaagaagag cacttcctag tccccgacct aggctaa	717

<210> 199

<211> 238

<212> PRT

<213> Arabidopsis thaliana

<400> 199

Met Lys Ile Gln Cys Asp Val Cys Glu Lys Ala Pro Ala Thr Leu Ile
1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Ala Lys Cys Asp Val Glu Val
20 25 30

His Ala Ala Asn Lys Leu Ala Ser Lys His Gln Arg Leu Phe Leu Asp
35 40 45

PF59082SEQ List- PF59348PCT.txt

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

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

Asp Glu Ala Thr His Ala Pro Asn Thr Arg Ser Ala Asn His Gln Arg
85 90 95

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

Gln Glu Val Glu Lys Asn His Phe Asp Pro Ser Asn Gln Gln Ser Leu
115 120 125

Ser Lys Pro Pro Thr Gln Gln Pro Ala Ala Pro Ser Pro Leu Trp Ala
130 135 140

Thr Asp Glu Phe Phe Ser Tyr Ser Asp Leu Asp Cys Ser Asn Lys Glu
145 150 155 160

Lys Glu Gln Leu Asp Leu Gly Glu Leu Asp Trp Leu Ala Glu Met Gly
165 170 175

Leu Phe Gly Asp Gln Pro Asp Gln Glu Ala Leu Pro Val Ala Glu Val
180 185 190

Pro Glu Leu Ser Phe Ser His Leu Ala His Ala His Ser Tyr Asn Arg
195 200 205

Pro Met Lys Ser Asn Val Pro Asn Lys Lys Gln Arg Leu Glu Tyr Arg
210 215 220

Tyr Asp Asp Glu Glu Glu His Phe Leu Val Pro Asp Leu Gly
225 230 235

<210> 200
<211> 489
<212> DNA
<213> Arabidopsis thaliana

<400> 200
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gaagctgtac tatgcaagcc atgtgacatt aagggttcag aagctaataa actttttccaa 120
agacatcacc gagtcgcctt acaaaaagat gcagcctcag ccaccacagc ttctggagct 180
cctctatgtg atatctgcca ggagagaaaa ggggtacttct tctgcttaga ggatagagca 240
atgctgtgca atgattgtga tgaagccatt cacacttgca attctcacca aagattctta 300
ctttctggag tacaagtttc tgatcagtct ttgactgaaa actccgaatg cagcactagt 360
tttagctctg aaacttacca gattcagtca aaagtgtctc tgaatagtca gtactctagt 420

gaggaaactg aagctggaaa ctcaggtgag atagtacaca agaatccttc tgtaatctta 480
agtccttag 489

<210> 201
<211> 162
<212> PRT
<213> Arabidopsis thaliana
<400> 201

Met Lys Ile Gln Cys Glu Val Cys Glu Lys Ala Glu Ala Glu Val Leu
1 5 10 15

Cys Cys Ser Asp Glu Ala Val Leu Cys Lys Pro Cys Asp Ile Lys Val
20 25 30

His Glu Ala Asn Lys Leu Phe Gln Arg His His Arg Val Ala Leu Gln
35 40 45

Lys Asp Ala Ala Ser Ala Thr Thr Ala Ser Gly Ala Pro Leu Cys Asp
50 55 60

Ile Cys Gln Glu Arg Lys Gly Tyr Phe Phe Cys Leu Glu Asp Arg Ala
65 70 75 80

Met Leu Cys Asn Asp Cys Asp Glu Ala Ile His Thr Cys Asn Ser His
85 90 95

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

Glu Asn Ser Glu Cys Ser Thr Ser Phe Ser Ser Glu Thr Tyr Gln Ile
115 120 125

Gln Ser Lys Val Ser Leu Asn Ser Gln Tyr Ser Ser Glu Glu Thr Glu
130 135 140

Ala Gly Asn Ser Gly Glu Ile Val His Lys Asn Pro Ser Val Ile Leu
145 150 155 160

Ser Pro

<210> 202
<211> 729
<212> DNA
<213> Arabidopsis thaliana

<400> 202
atgaagattt ggtgtgctgt ttgtgataaa gaagaagctt cgggtgttttg ttgtgcggat 60

gaagcagctc tttgtaatgg ttgcgatcgc catgttcatt tcgccaataa actagccggg 120

aaacatctcc ggttctctct cacttctcct actttcaaag atgctcctct ttgtgatatt 180

PF59082SEQ List- PF59348PCT.txt

tgcggggaga ggcgtgcatt attatTTTgc caagaagaca gagcaatact atgcagagaa	240
tgtgacattc caatacatca agctaattgag cacactaaga aacacaatag attcctcctt	300
accggcggtta agatctctgc ctccccgtca gcctacccaa gagcctccaa ttccaactct	360
gctgctgcat ttggtcgagc caaaacccga caaaatcag tatcgagcga ggtcccgagc	420
tcggcctcca atgaggtatt tacgagctct tcttcgacga ccacgagcaa ttgctattat	480
gggatagaag aaaactacca tcacgtgagc gattcgggggt cgggatcggg ttgtacaggt	540
agtatatccg agtatttgat ggagacatta ccgggttgga gagtggagga tttgcttgaa	600
cacccttctt gtgtctccta tgaggataac attattacta ataacaataa cagtgagtct	660
tatagggttt atgatggttc ttcacaattc catcatcaag ggTTTTggga tcacaaaccc	720
ttctcttga	729

<210> 203
 <211> 242
 <212> PRT
 <213> Arabidopsis thaliana
 <400> 203

Met Lys Ile Trp Cys Ala Val Cys Asp Lys Glu Glu Ala Ser Val Phe
 1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Asn Gly Cys Asp Arg His Val
 20 25 30

His Phe Ala Asn Lys Leu Ala Gly Lys His Leu Arg Phe Ser Leu Thr
 35 40 45

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

Arg Ala Leu Leu Phe Cys Gln Glu Asp Arg Ala Ile Leu Cys Arg Glu
 65 70 75 80

Cys Asp Ile Pro Ile His Gln Ala Asn Glu His Thr Lys Lys His Asn
 85 90 95

Arg Phe Leu Leu Thr Gly Val Lys Ile Ser Ala Ser Pro Ser Ala Tyr
 100 105 110

Pro Arg Ala Ser Asn Ser Asn Ser Ala Ala Ala Phe Gly Arg Ala Lys
 115 120 125

Thr Arg Pro Lys Ser Val Ser Ser Glu Val Pro Ser Ser Ala Ser Asn
 130 135 140

Glu Val Phe Thr Ser Ser Ser Ser Thr Thr Thr Ser Asn Cys Tyr Tyr
 145 150 155 160

Gly Ile Glu Glu Asn Tyr His His Val Ser Asp Ser Gly Ser Gly Ser

165

170

175

Gly Cys Thr Gly Ser Ile Ser Glu Tyr Leu Met Glu Thr Leu Pro Gly
180 185 190

Trp Arg Val Glu Asp Leu Leu Glu His Pro Ser Cys Val Ser Tyr Glu
195 200 205

Asp Asn Ile Ile Thr Asn Asn Asn Ser Glu Ser Tyr Arg Val Tyr
210 215 220

Asp Gly Ser Ser Gln Phe His His Gln Gly Phe Trp Asp His Lys Pro
225 230 235 240

Phe Ser

<210> 204
<211> 700
<212> DNA
<213> Medicago truncatula

<400> 204
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gaagcagctc tctgcaatca atgtgatcgc aatatccact atgccaacaa ggtctctgct 120
aaacacaaac gcttcactct tcaccacccc acttccaaag acaccctct ctgtgatatc 180
tgcaaggaga ggcgtgcata tctattttgc aaagaagaca gagcaatact ttgcagggaa 240
tgtgacattc ctatccatga aatcaacaaa cttaccaagc aacacaacag gtttcttctc 300
acaggcgtaa agatcgggtgc ttcttcttct tgttcaaadc caacaatttc caatgggtca 360
gaactaagaa cctcaagtcc aagaccaagt tcattttcaa gtgaaaataa tagttgttct 420
caaagttcat tcaaagagaa catgggttgt gacacagttt caaccagtag catttccgaa 480

tacttgattg aaacgattcc tggttactgc atggaggacc tttttgatgc ttcttttgca 540
cctaataacg ttttctgtaa taaggattat tatgaacaga accaagatct tcaagttata 600
aacatgtctg actgggtacc acaatctcaa gttagattcc ctcagcttag tgctaattcg 660
aatgttccca attgattctt tagatggggg tatgaaaatg 700

<210> 205
<211> 224
<212> PRT
<213> Medicago truncatula

<400> 205

Met Lys Ile Gln Cys Asp Ala Cys His Lys Gln Glu Ala Ser Leu Phe
1 5 10 15

Cys Pro Ala Asp Glu Ala Ala Leu Cys Asn Gln Cys Asp Arg Asn Ile
20 25 30

PF59082SEQ List- PF59348PCT.txt

His Tyr Ala Asn Lys Val Ser Ala Lys His Lys Arg Phe Thr Leu His
35 40 45

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

Arg Ala Tyr Leu Phe Cys Lys Glu Asp Arg Ala Ile Leu Cys Arg Glu
65 70 75 80

Cys Asp Ile Pro Ile His Glu Ile Asn Lys Leu Thr Lys Gln His Asn
85 90 95

Arg Phe Leu Leu Thr Gly Val Lys Ile Gly Ala Ser Ser Ser Cys Ser
100 105 110

Asn Pro Thr Ile Ser Asn Gly Ser Glu Leu Arg Thr Ser Ser Pro Arg
115 120 125

Pro Ser Ser Phe Ser Ser Glu Asn Asn Ser Cys Ser Gln Ser Ser Phe
130 135 140

Lys Glu Asn Met Val Cys Asp Thr Val Ser Thr Ser Ser Ile Ser Glu
145 150 155 160

Tyr Leu Ile Glu Thr Ile Pro Gly Tyr Cys Met Glu Asp Leu Phe Asp
165 170 175

Ala Ser Phe Ala Pro Asn Asn Val Phe Cys Asn Lys Asp Tyr Tyr Glu
180 185 190

Gln Asn Gln Asp Leu Gln Val Ile Asn Met Ser Asp Trp Val Pro Gln
195 200 205

Ser Gln Val Arg Phe Pro Gln Leu Ser Ala Asn Ser Asn Val Pro Asn
210 215 220

<210> 206

<211> 702

<212> DNA

<213> Lycopersicon esculentum

<400> 206

atgaagatac agtgtgatgt gtgtgagaaa gctcaagcta ctgtgatttg ctgtgctgat 60

gaggctgctc tgtgtgcaaa atgtgatatt gaagttcatg ctgctaataa attagcaagc 120

aagcaccaaa ggcttcatct tcagtgccta tctaacaagc ttcttccttg tgatatttgc 180

caagataaag cagccttcat cttctgtgtt gaggatagag ctctcttttg caaggactgt 240

gacgaagcaa ttattcagc cagcagcctc gctaagaacc accaagcgtt cttagccact 300

ggaatccgtg tagccttgag ctcaagctgt aataaggaat cagtaaaaaa ccaactgcag 360

ccacaaccac ctgagcagaa ttccaacaa gttggcttga aaatgcctcc acagcagttg 420

PF59082SEQ List- PF59348PCT.txt

tcctgtataa catcaccatc ttggcctgtc gatgatttac taggatttcc agattatgag	480
tcgagtgcaca agaaggatct acttgagctt ggtgaatttg agtggttagg gggcattgat	540
ctcttttggtg aacaaacagc agctgaagtg cccgagctat cagtacctca gtcgagcaat	600
acaaatattt acaggacaac caaatatcaa atgccttaca agaagtccag aattgaaatc	660
ccagatgatg atgagtattt tactgtcccc gatcttggtt ga	702

<210> 207
 <211> 233
 <212> PRT
 <213> Lycopersicon esculentum

<400> 207

Met Lys Ile Gln Cys Asp Val Cys Glu Lys Ala Gln Ala Thr Val Ile
 1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Ala Lys Cys Asp Ile Glu Val
 20 25 30

His Ala Ala Asn Lys Leu Ala Ser Lys His Gln Arg Leu His Leu Gln
 35 40 45

Cys Leu Ser Asn Lys Leu Pro Pro Cys Asp Ile Cys Gln Asp Lys Ala
 50 55 60

Ala Phe Ile Phe Cys Val Glu Asp Arg Ala Leu Phe Cys Lys Asp Cys
 65 70 75 80

Asp Glu Ala Ile His Ser Ala Ser Ser Leu Ala Lys Asn His Gln Arg
 85 90 95

Phe Leu Ala Thr Gly Ile Arg Val Ala Leu Ser Ser Ser Cys Asn Lys
 100 105 110

Glu Ser Val Lys Asn Gln Leu Gln Pro Gln Pro Pro Gln Gln Asn Ser
 115 120 125

Gln Gln Val Gly Leu Lys Met Pro Pro Gln Gln Leu Ser Cys Ile Thr
 130 135 140

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

Ser Ser Asp Lys Lys Asp Leu Leu Glu Leu Gly Glu Phe Glu Trp Leu
 165 170 175

Gly Gly Ile Asp Leu Phe Gly Glu Gln Thr Ala Ala Glu Val Pro Glu
 180 185 190

Leu Ser Val Pro Gln Ser Ser Asn Thr Asn Ile Tyr Arg Thr Thr Lys
 195 200 205

PF59082SEQ List- PF59348PCT.txt

Tyr Gln Met Pro Tyr Lys Lys Ser Arg Ile Glu Ile Pro Asp Asp Asp
210 215 220

Glu Tyr Phe Thr Val Pro Asp Leu Gly
225 230

<210> 208
<211> 702
<212> DNA
<213> Solanum tuberosum

<400> 208
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gaggctgctt tgtgtgcaaa atgtgatatt gaagttcatg ctgctaataa attagcaagt 120
aagcatcaaa ggcttcatct tcagtgcctg tctaacaagc ttcttccttg tgatatttgc 180
caagataaag cagccttcat cttctgtgtt gaggatagag ctctcttttg caaggactgt 240
gacgaagcaa ttcatcagc cagcagcctc gctaagaacc accaagcgtt cttagccact 300
ggaatccgtg tagccttgag ctcaagctgc aataaggaag cagtaaaaaa ccaactggag 360
ccacaaccac ctcagcagaa ttccaacaa gttggcttga aaatgcctcc acagcaattg 420
tccggtatca catcaccatc ttggcctgtt gatgatttac taggatttcc agattatgaa 480
tcgagtgaca agaaggatct acttgagctt ggtgaatttg agtggttagg aggtattgat 540
ctctttggtg aacaaacagc agctgaagta cccgagctat cagtacctca gtcaagcaac 600
acaaatattt accggacaac caaatatcaa atgccttaca agaagcccag aattgaaatc 660
ccagatgatg atgagtattt taccgtccca gatcttggtt ga 702

<210> 209
<211> 233
<212> PRT
<213> Solanum tuberosum

<400> 209
Met Lys Ile Gln Cys Asp Val Cys Glu Lys Ala Gln Ala Thr Val Ile
1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Ala Lys Cys Asp Ile Glu Val
20 25 30

His Ala Ala Asn Lys Leu Ala Ser Lys His Gln Arg Leu His Leu Gln
35 40 45

Cys Leu Ser Asn Lys Leu Pro Pro Cys Asp Ile Cys Gln Asp Lys Ala
50 55 60

Ala Phe Ile Phe Cys Val Glu Asp Arg Ala Leu Phe Cys Lys Asp Cys
65 70 75 80

Asp Glu Ala Ile His Ser Ala Ser Ser Leu Ala Lys Asn His Gln Arg
Seite 226

PF59082SEQ List- PF59348PCT.txt

85

90

95

Phe Leu Ala Thr Gly Ile Arg Val Ala Leu Ser Ser Ser Cys Asn Lys
100 105 110

Glu Ala Val Lys Asn Gln Leu Glu Pro Gln Pro Pro Gln Gln Asn Ser
115 120 125

Gln Gln Val Gly Leu Lys Met Pro Pro Gln Gln Leu Ser Gly Ile Thr
130 135 140

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

Ser Ser Asp Lys Lys Asp Leu Leu Glu Leu Gly Glu Phe Glu Trp Leu
165 170 175

Gly Gly Ile Asp Leu Phe Gly Glu Gln Thr Ala Ala Glu Val Pro Glu
180 185 190

Leu Ser Val Pro Gln Ser Ser Asn Thr Asn Ile Tyr Arg Thr Thr Lys
195 200 205

Tyr Gln Met Pro Tyr Lys Lys Pro Arg Ile Glu Ile Pro Asp Asp Asp
210 215 220

Glu Tyr Phe Thr Val Pro Asp Leu Gly
225 230

<210> 210
<211> 933
<212> DNA
<213> Populus trichocarpa

<400> 210
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gaggcagctc tttgcgacac ctgtgaccac cgtgttcacc atgccaacaa gcttgcttca 120
aagcaccaac gtttttccct tctccatcct tcctcaaaaa acttcccat ctgtgatatc 180
tgccaggaga aacgggcttt cttgttctgt caacaagaca gggcgatttt atgtagagag 240
tgtgatgggtc caatacacac agcaaacgag cataccaga agcacaacag gtttcttctc 300
acaggagtca agctctctgc tacatctgct gtttatatat cttcttcctc tgtcaccaac 360
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ttatctacaa acacagaagt aaacaagggt ggggataatt tggtacaaa tgaagggttt 540
ggttcaacaa caagtagtac tatatcagag tacttgatgg agactcttcc tggctggcat 600
gttgaagact ttcttgattc ctctactact ccctttggtt tctgtaagat tgatgatggg 660
ctattgccgt ttatggatgc tcatgatctt gagagcaaca tgagttcttt ctcatcagaa 720

PF59082SEQ List- PF59348PCT.txt

agtttggggc tttgggtccc tcaagcacca tctactccat acacatctca acagtattat 780
tatccacagt tggtagggca aagtgggttc aaggagataa aagagaccac aaacatgaaa 840
gctaacagaa ggttggcaga tgatgtcttc actgttccac agatcagcct cccggccaat 900
ataagctcta agagatctag gcccttatgg tag 933

<210> 211
<211> 310
<212> PRT
<213> Populus trichocarpa

<400> 211

Met Lys Ile Gln Cys Asp Val Cys Asn Lys Glu Glu Ala Ser Val Phe
1 5 10 15

Cys Thr Ala Asp Glu Ala Ala Leu Cys Asp Thr Cys Asp His Arg Val
20 25 30

His His Ala Asn Lys Leu Ala Ser Lys His Gln Arg Phe Ser Leu Leu
35 40 45

His Pro Ser Ser Lys Asn Phe Pro Ile Cys Asp Ile Cys Gln Glu Lys
50 55 60

Arg Ala Phe Leu Phe Cys Gln Gln Asp Arg Ala Ile Leu Cys Arg Glu
65 70 75 80

Cys Asp Gly Pro Ile His Thr Ala Asn Glu His Thr Gln Lys His Asn
85 90 95

Arg Phe Leu Leu Thr Gly Val Lys Leu Ser Ala Thr Ser Ala Val Tyr
100 105 110

Ile Ser Ser Ser Ser Val Thr Asn Ser Gly Gly Asp Leu Val Pro Asp
115 120 125

Ser Lys Ser Gln Gln Gln Gln Gln Gln Gln Ser Ile Lys Lys Pro
130 135 140

Val Phe Asp Ala Pro Val Asn Ser Asn Pro Pro Thr Val Pro Ser Thr
145 150 155 160

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

Asn Glu Gly Phe Gly Ser Thr Thr Ser Ser Thr Ile Ser Glu Tyr Leu
180 185 190

Met Glu Thr Leu Pro Gly Trp His Val Glu Asp Phe Leu Asp Ser Ser
195 200 205

PF59082SEQ List- PF59348PCT.txt

Thr Thr Pro Phe Gly Phe Cys Lys Ile Asp Asp Gly Leu Leu Pro Phe
210 215 220

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

Ser Leu Gly Leu Trp Val Pro Gln Ala Pro Ser Thr Pro Tyr Thr Ser
245 250 255

Gln Gln Tyr Tyr Tyr Pro Gln Leu Val Gly Gln Ser Gly Phe Lys Glu
260 265 270

Ile Lys Glu Thr Thr Asn Met Lys Ala Asn Arg Arg Leu Ala Asp Asp
275 280 285

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

Arg Ser Arg Pro Leu Trp
305 310

<210> 212
<211> 618
<212> DNA
<213> Vitis vinifera

<400> 212
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gaggcagtac tctgttgggg atgcatgaa aggggtgcaca cagctaacaa gctgtcccag 120
aagcatcaac gtgtccctct tctcaaacac ccaccctcca cttcmtcttc tcagctgcct 180
ccttgtgata tctgccagga gaaaagcggg tattttttct gcctggagga cagggcatta 240
ctctgcaaga actgtgatgt ttcaactcat tcaacaaact cttacgtgtc gtcacaccga 300
cgttttgtca tatcaggaat caaagttgct cttcaatccg taactaacaa ctacagaact 360
ggctgcaaca gcagaaccta ccctctcgat atgccaaact caaatagttc ttcagtcaac 420
ttcccaatgg atagggagaa gaagccagaa atgaccacag aagttgcatc cacatcctca 480
gacatggtag ccatgttctc aggtgaaatc catttggtgcaa ctggacctga atggacatta 540
gatgaaatcc ttgggagcaa tgattttgac tattatgagt tttcggacat ggggcaatcc 600
aggattagca gccaatga 618

<210> 213
<211> 205
<212> PRT
<213> Vitis vinifera

<400> 213

Met Lys Ile Pro Cys Asp Ile Cys Gly Asn Val Glu Ala Glu Val Leu
1 5 10 15

PF59082SEQ List- PF59348PCT.txt

Cys Ser Ala Asp Glu Ala Val Leu Cys Trp Gly Cys Asp Glu Arg Val
20 25 30

His Thr Ala Asn Lys Leu Ser Gln Lys His Gln Arg Val Pro Leu Leu
35 40 45

Lys His Pro Pro Ser Thr Ser Ser Ser Gln Leu Pro Pro Cys Asp Ile
50 55 60

Cys Gln Glu Lys Ser Gly Tyr Phe Phe Cys Leu Glu Asp Arg Ala Leu
65 70 75 80

Leu Cys Lys Asn Cys Asp Val Ser Thr His Ser Thr Asn Ser Tyr Val
85 90 95

Ser Ser His Arg Arg Phe Val Ile Ser Gly Ile Lys Val Ala Leu Gln
100 105 110

Ser Val Thr Asn Asn Tyr Arg Thr Gly Cys Asn Ser Arg Thr Tyr Pro
115 120 125

Leu Asp Met Pro Asn Ser Asn Ser Ser Val Asn Phe Pro Met Asp
130 135 140

Arg Glu Lys Lys Pro Glu Met Thr Thr Glu Val Ala Ser Thr Ser Ser
145 150 155 160

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

Glu Trp Thr Leu Asp Glu Ile Leu Gly Ser Asn Asp Phe Asp Tyr Tyr
180 185 190

Glu Phe Ser Asp Met Gly Gln Ser Arg Ile Ser Ser Gln
195 200 205

<210> 214
<211> 717
<212> DNA
<213> Glycine max

<400> 214
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gaggcagctt tgtgtgccaa atgtgacgtt gaagttcatg ctgcaaacia gcttgcaagc 120
aagcaccaga ggcttctcct tcaatctgta tctaacaagc ttcccagatg tgacatatgt 180
caagataagc cagctttcat attttgtgtt gaggacagag cactcttctg taaagactgt 240
gatgaacctt ttcathtagc cagtagcctt tctgcaaacc accagcgctt ctttgctact 300
ggatatccggg tggctttggg ttctaattgc accaaaggca atgaaaaagg tcacgtggaa 360
ccatctaaac caaaagcaca agaagttcct gcgaaaattc cttctcagca agtgcctagc 420

PF59082SEQ List- PF59348PCT.txt

ttcacatcct cttgggcagt tgatgacttg ttggaattaa cagactttga atcaccagac	480
aaagttcaga agcaatccct tgagtttgga gaacttgaat ggctagcaga tgtaggcctt	540
tttggtgaac agtttcctca tgaagcttta gcggcggctg aagttcctca gcttccaatg	600
actagcagtg ttggctcaca caaagccccc aaatccttgt tgtcttataa aaagcctagg	660
attgaagtcc tagatgaaga tgatgatgag cacttcaccg taccagatct cggataa	717

<210> 215
 <211> 238
 <212> PRT
 <213> Glycine max

<400> 215

Met	Lys	Ile	Gln	Cys	Asp	Val	Cys	Glu	Lys	Ala	Pro	Ala	Thr	Val	Ile
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Cys	Cys	Ala	Asp	Glu	Ala	Ala	Leu	Cys	Ala	Lys	Cys	Asp	Val	Glu	Val
			20					25					30		

His	Ala	Ala	Asn	Lys	Leu	Ala	Ser	Lys	His	Gln	Arg	Leu	Leu	Leu	Gln
		35					40					45			

Ser	Val	Ser	Asn	Lys	Leu	Pro	Arg	Cys	Asp	Ile	Cys	Gln	Asp	Lys	Pro
	50					55					60				

Ala	Phe	Ile	Phe	Cys	Val	Glu	Asp	Arg	Ala	Leu	Phe	Cys	Lys	Asp	Cys
65					70					75					80

Asp	Glu	Pro	Ile	His	Leu	Ala	Ser	Ser	Leu	Ser	Ala	Asn	His	Gln	Arg
				85					90					95	

Phe	Leu	Ala	Thr	Gly	Ile	Arg	Val	Ala	Leu	Gly	Ser	Asn	Cys	Thr	Lys
			100					105					110		

Gly	Asn	Glu	Lys	Gly	His	Val	Glu	Pro	Ser	Lys	Pro	Lys	Ala	Gln	Glu
		115					120					125			

Val	Pro	Ala	Lys	Ile	Pro	Ser	Gln	Gln	Val	Pro	Ser	Phe	Thr	Ser	Ser
	130					135					140				

Trp	Ala	Val	Asp	Asp	Leu	Leu	Glu	Leu	Thr	Asp	Phe	Glu	Ser	Pro	Asp
145					150					155					160

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

Asp	Val	Gly	Leu	Phe	Gly	Glu	Gln	Phe	Pro	His	Glu	Ala	Leu	Ala	Ala
			180					185					190		

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

PF59082SEQ List- PF59348PCT.txt

Ala Pro Lys Ser Leu Leu Ser Tyr Lys Lys Pro Arg Ile Glu Val Leu
210 215 220

Asp Glu Asp Asp Asp Glu His Phe Thr Val Pro Asp Leu Gly
225 230 235

<210> 216
<211> 52
<212> DNA
<213> Artificial sequence

<220>
<223> primer 1

<400> 216
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<210> 217
<211> 49
<212> DNA
<213> Artificial sequence

<220>
<223> primer 2

<400> 217
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<210> 218
<211> 2194
<212> DNA
<213> Oryza sativa

<400> 218
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aaatataaaa tgagacctta tatatgtagc gctgataact agaactatgc aagaaaaact 120
catccaccta ctttagtggc aatcgggcta aataaaaaag agtcgctaca ctagtttcgt 180
tttccttagt aattaagtgg gaaaatgaaa tcattattgc ttagaatata cgttcacatc 240
tctgtcatga agttaatta ttcgaggtag ccataattgt catcaaactc ttcttgaata 300
aaaaaatctt tctagctgaa ctcaatgggt aaagagagag atttttttta aaaaaataga 360
atgaagatat tctgaacgta ttggcaaaga tttaaacata taattatata attttatagt 420
ttgtgcattc gtcatatcgc acatcattaa ggacatgtct tactccatcc caatttttat 480
ttagtaatta aagacaattg acttattttt attatttatc ttttttcgat tagatgcaag 540
gtacttacgc acacactttg tgctcatgtg catgtgtgag tgcacctcct caatacacgt 600
tcaactagca acacatctct aatatcactc gcctatttta tacatttagg tagcaatatc 660
tgaattcaag cactccacca tcaccagacc acttttaata atatctaaaa taaaaaaat 720
aattttacag aatagcatga aaagtatgaa acgaactatt taggtttttc acatacaaaa 780
aaaaaaagaa ttttgctcgt gcgcgagcgc caatctccca tattgggcac acaggcaaca 840
acagagtggc tgcccacaga acaaccaca aaaaacgatg atctaacgga ggacagcaag 900

PF59082SEQ List- PF59348PCT.txt

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cgaccgcctt ctcgatccat atcttccggt cgagttcttg gtcgatctct tccctcctcc 1140
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tgtgtagtac gggcgttgat gttaggaaag gggatctgta tctgtgatga ttcctgttct 1260
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gtaataaagt acggttggtt ggtcctcgat tctggtagtg atgcttctcg atttgacgaa 1500
gctatccttt gtttattccc tattgaacaa aaataatcca actttgaaga cgggcccggt 1560
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agctgtagtt cagttaatag gtaatacccc tatagtttag tcaggagaag aacttatccg 1860
atttctgatc tccattttta attatatgaa atgaactgta gcataagcag tattcatttg 1920
gattattttt tttattagct ctcaccctt cattattctg agctgaaagt ctggcatgaa 1980
ctgtcctcaa ttttgttttc aaattcacat cgattatcta tgcattatcc tcttgtatct 2040

acctgtagaa gtttcttttt ggttattcct tgactgcttg attacagaaa gaaatttatg 2100
aagctgtaat cgggtagatt atactgcttg ttcttatgat tcatttcctt tgtgcagttc 2160
ttggtgtagc ttgccacttt caccagcaaa gttc 2194
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<210> 219
 <211> 47
 <212> PRT
 <213> Artificial sequence

<220>
 <223> B-box 1 in SEQ ID NO: 2

<400> 219

Met Lys Val Gln Cys Asp Val Cys Ala Ala Glu Ala Ala Ser Val Phe
 1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Asp Ala Cys Asp Arg Arg Val
 20 25 30

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

<210> 220

<211> 48
<212> PRT
<213> Artificial sequence

<220>
<223> B-box 2 in SEQ ID NO: 2

<400> 220

Gln Lys Pro Pro Leu Cys Asp Ile Cys Gln Glu Lys Arg Gly Phe Leu
1 5 10 15

Phe Cys Lys Glu Asp Arg Ala Ile Leu Cys Arg Glu Cys Asp Val Thr
20 25 30

Val His Thr Thr Ser Glu Leu Thr Arg Arg His Gly Arg Phe Leu Leu
35 40 45

<210> 221
<211> 24
<212> PRT
<213> Artificial sequence

<220>
<223> consensus sequence of B-box

<220>
<221> UNSURE
<222> (2)..(3)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> UNSURE
<222> (5)..(20)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> UNSURE
<222> (22)..(23)
<223> Xaa can be any naturally occurring amino acid

<400> 221

Cys Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Cys Xaa Xaa Cys
20

<210> 222
<211> 1245
<212> DNA
<213> Zea mays

<400> 222
cccggtccggt ctagctagga ctagtaagta gcataccatt accatcctcc gcgcggctag 60
ctccgactcg ctttcatcca tacgattgcc cggagctcaa gccctgagct gagccgccag 120
agcgcgcgcg atcatcgctt gagggaaaag cagagtggag tggccgagat gaaggtgcag 180

PF59082SEQ List- PF59348PCT.txt

tgcgacgtgt gcgcgccga ggcggccgag gtgttctgct gcgccgacga ggcggcgctg	240
tgcgacgcgt gcgaccgccg cgtgcaccgc gccacaagc tcgccggcaa gcaccgccgc	300
ttctcgctgc tcagcccgcc gccaccgccg ccgccgccgc tctgcgacat ctgccaggac	360
aagcgggggc tcctgttctg caaggaggac cgcgccatcc tgtgccgca ctgcgacgtg	420
tcggtgcaca cggccagcga cctgaccatg cgccacgccc ggttcctgct cacgggcgctc	480
cgcctctccg ccgagcccg cgcgcgtgc ccggcgccgg aggatgagga ggaggaggac	540
gacgagaaca gcagcggcag cttctgctgc agcgccggcg acgcagccgc acatcctcct	600
cctcttccgt cgtcggcgcc cgccaccagc cacgggagcg acagcagcag catctccgag	660
tacctacca agacgtgcc cgggtggcac gtcgaggact tcctcattga cgacgcgtcc	720
gctggcgacg tcggcgctg ctcggatggc ctctatcagg gacaaaatgg acagatcagt	780
ggggtgctgc aagaagctta cctgccgtgg acggagcggg agcaggtgca aactgacgtc	840
gcagacgagc gggccagctg ggagcgggtg gtgccacaga tgcattgcgga gttcggcggc	900
ggcggcaagc gacctagagc gtcgccttcg cctccctggt cgtactggtg attggtgaaa	960
agttcgccgt cttcagcaag atgatttgta ttgggctaata tagtagagct actgtaggaa	1020
cgaccgaaaa atgagccaaa aaagtaacgg cctccatcga gctcgtttta aattattctc	1080
tgcctaaagc caaactttca gaaaggagaa cggtatatttc ctgttcgatt aattaggctg	1140
atttcgatcg aactcgttcc aaaatcccaa ttgtttgcta cctaaagaca gacttcctga	1200
atatagtga gtaacagggg aatttgccga aggaaaaaaaaa aaaaa	1245

<210> 223
 <211> 260
 <212> PRT
 <213> Zea mays

<400> 223

Met Lys Val Gln Cys Asp Val Cys Ala Ala Glu Ala Ala Glu Val Phe
 1 5 10 15

Cys Cys Ala Asp Glu Ala Ala Leu Cys Asp Ala Cys Asp Arg Arg Val
 20 25 30

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

Ser Pro Ala Pro Pro Pro Pro Pro Pro Leu Cys Asp Ile Cys Gln Asp
 50 55 60

Lys Arg Gly Leu Leu Phe Cys Lys Glu Asp Arg Ala Ile Leu Cys Arg
 65 70 75 80

Asp Cys Asp Val Ser Val His Thr Ala Ser Asp Leu Thr Met Arg His
 85 90 95

Ala Arg Phe Leu Leu Thr Gly Val Arg Leu Ser Ala Glu Pro Ala Ala
 Seite 235

100

105

110

Ala Cys Pro Ala Pro Glu Asp Glu Glu Glu Glu Asp Asp Glu Asn Ser
115 120 125

Ser Gly Ser Phe Cys Cys Ser Ala Gly Asp Ala Ala Ala His Pro Pro
130 135 140

Pro Leu Pro Ser Ser Ala Pro Ala Thr Ser His Gly Ser Asp Ser Ser
145 150 155 160

Ser Ile Ser Glu Tyr Leu Thr Lys Thr Leu Pro Gly Trp His Val Glu
165 170 175

Asp Phe Leu Ile Asp Asp Ala Ser Ala Gly Asp Val Gly Ala Cys Ser
180 185 190

Asp Gly Leu Tyr Gln Gly Gln Asn Gly Gln Ile Ser Gly Val Leu Gln
195 200 205

Glu Ala Tyr Leu Pro Trp Thr Glu Arg Glu Gln Val Gln Thr Asp Val
210 215 220

Ala Asp Glu Arg Ala Ser Trp Glu Arg Trp Val Pro Gln Met His Ala
225 230 235 240

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

Cys Ser Tyr Trp
260

<210> 224
<211> 1065
<212> DNA
<213> Oryza sativa

<400> 224
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cacaccgtcc tccagcttct ccaactcggc ttccgcgttg tcgtcctcga caacctcgac 120
aacgcctccg agctcgccat cctccgcgtc aggggaactcg ccggacacaa cgccaacaac 180
ctcgacttcc gcaaggttga cctccgcgac aagcaagcgt tggaccaaatt cttctcctct 240
caaaggtttg aggctgtcat ccattttgcc gggctgaaag ctggtggcga gagcgtgcag 300
aagcccctgc ttactacga caacaacctc atcggcacca tcaactctcct gcaggatcatg 360
gccgcacatg gctgcaccaa gctggtgttc tcatcatccg caactgtcta cgggtggccc 420
aaggaggtgc cctgcactga agaattccca ctttgtgcaa tgaacccta cggcagaaca 480
aagctggtaa tcgaagacat gtgccgggat ctgcatgcct cagacccaaa ctggaagatc 540
atactgctcc gatacttcaa ccctgttgga gtcacccaa gcggttacat tggtgaggac 600

PF59082SEQ List- PF59348PCT.txt

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ccctgcgcca tcccaaaca cctcatgccc ttcgtccagc aggtcgctgt tggcaggagg    660
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tatatccatg ttgttgatct agcggatggc catatcgccg cgttaaggaa gctctatgaa    780
gattctgata gaataggatg tgaggtgtac aatctgggca ctggaaaggg gacatctgtg    840
ctggaaatgg ttgcagcatt cgagaaagct tctggaaaga aaatcccgct tgtatttgct    900
ggacgaaggc ctggagatgc cgagatcggt tacgctcaaa ctgccaaagc tgagaaggaa    960
ctgaaatgga aggcaaaata cggggtagag gagatgtgca gggacctgtg gaattgggag 1020
agcaagaacc cctacgggta tggatcgccg gacagtagca actga                      1065

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<210> 225
 <211> 354
 <212> PRT
 <213> Oryza sativa

<400> 225

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

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

Val Val Val Leu Asp Asn Leu Asp Asn Ala Ser Glu Leu Ala Ile Leu
 35 40 45

Arg Val Arg Glu Leu Ala Gly His Asn Ala Asn Asn Leu Asp Phe Arg
 50 55 60

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

Gln Arg Phe Glu Ala Val Ile His Phe Ala Gly Leu Lys Ala Val Gly
 85 90 95

Glu Ser Val Gln Lys Pro Leu Leu Tyr Tyr Asp Asn Asn Leu Ile Gly
 100 105 110

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

Val Phe Ser Ser Ser Ala Thr Val Tyr Gly Trp Pro Lys Glu Val Pro
 130 135 140

Cys Thr Glu Glu Ser Pro Leu Cys Ala Met Asn Pro Tyr Gly Arg Thr
 145 150 155 160

Lys Leu Val Ile Glu Asp Met Cys Arg Asp Leu His Ala Ser Asp Pro
 165 170 175

Asn Trp Lys Ile Ile Leu Leu Arg Tyr Phe Asn Pro Val Gly Ala His
180 185 190

Pro Ser Gly Tyr Ile Gly Glu Asp Pro Cys Gly Ile Pro Asn Asn Leu
195 200 205

Met Pro Phe Val Gln Gln Val Ala Val Gly Arg Arg Pro Ala Leu Thr
210 215 220

Val Tyr Gly Thr Asp Tyr Asn Thr Lys Asp Gly Thr Gly Val Arg Asp
225 230 235 240

Tyr Ile His Val Val Asp Leu Ala Asp Gly His Ile Ala Ala Leu Arg
245 250 255

Lys Leu Tyr Glu Asp Ser Asp Arg Ile Gly Cys Glu Val Tyr Asn Leu
260 265 270

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

Lys Ala Ser Gly Lys Lys Ile Pro Leu Val Phe Ala Gly Arg Arg Pro
290 295 300

Gly Asp Ala Glu Ile Val Tyr Ala Gln Thr Ala Lys Ala Glu Lys Glu
305 310 315 320

Leu Lys Trp Lys Ala Lys Tyr Gly Val Glu Glu Met Cys Arg Asp Leu
325 330 335

Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly Tyr Gly Ser Pro Asp Ser
340 345 350

Ser Asn

<210> 226
<211> 1176
<212> DNA
<213> Oryza sativa

<400> 226
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gcactcacgg tcatgtgcat cattgtgttg aaacagtcgc ctggttttac cagtacaagt 120
gtgttctctc gccatgaaat tgggtgtgact catgtgttgg tgactggagg agctggatac 180
attgggtcac atgctactct tcgtctactt agggacaact accgagttac cattgtggat 240
aacctttcta gagggaacat gggagctgtc agagtccttc aacgtttgtt tccagagcct 300
gggaggcttc agtttattta tgctgattta ggcgatgcga aagctgttaa caaaatattt 360
tcagaaaatg cattcgatgc tgttatgcac tttgctgccg ttgcttacgt tggtgagagc 420

PF59082SEQ List- PF59348PCT.txt

acgttggagc cactgaggta ctaccacaac ataacatcaa atacattgac agtgcttgag 480
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gaacctgaca caatgcctat cacagaagca acccctcaga atcctatcaa tccatatggg 600
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gtcatgatct taagatactt caacgtcatt ggatcagacc caggggggcg gttaggggaa 720
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cagaaagcac acccgaatgg gtatggatcg gcctga 1176

<210> 227
<211> 391
<212> PRT
<213> Oryza sativa

<400> 227

Met Asp Phe Gly Asp Ser Arg Arg Lys Pro Asn Val Val Gly Lys Phe
1 5 10 15

Thr Val Ala Val Ala Leu Thr Val Met Cys Ile Ile Val Leu Lys Gln
20 25 30

Ser Pro Gly Phe Thr Ser Thr Ser Val Phe Ser Arg His Glu Ile Gly
35 40 45

Val Thr His Val Leu Val Thr Gly Gly Ala Gly Tyr Ile Gly Ser His
50 55 60

Ala Thr Leu Arg Leu Leu Arg Asp Asn Tyr Arg Val Thr Ile Val Asp
65 70 75 80

Asn Leu Ser Arg Gly Asn Met Gly Ala Val Arg Val Leu Gln Arg Leu
85 90 95

Phe Pro Glu Pro Gly Arg Leu Gln Phe Ile Tyr Ala Asp Leu Gly Asp
100 105 110

Ala Lys Ala Val Asn Lys Ile Phe Ser Glu Asn Ala Phe Asp Ala Val
115 120 125

Met His Phe Ala Ala Val Ala Tyr Val Gly Glu Ser Thr Leu Glu Pro
130 135 140

PF59082SEQ List- PF59348PCT.txt

Leu Arg Tyr Tyr His Asn Ile Thr Ser Asn Thr Leu Thr Val Leu Glu
 145 150 155 160
 Ala Met Ala Ala Tyr Asn Val Lys Thr Leu Ile Tyr Ser Ser Thr Cys
 165 170 175
 Ala Thr Tyr Gly Glu Pro Asp Thr Met Pro Ile Thr Glu Ala Thr Pro
 180 185 190
 Gln Asn Pro Ile Asn Pro Tyr Gly Lys Ala Lys Lys Met Ala Glu Asp
 195 200 205
 Ile Ile Leu Asp Phe Ser Lys Arg Ser Glu Met Ala Val Met Ile Leu
 210 215 220
 Arg Tyr Phe Asn Val Ile Gly Ser Asp Pro Gly Gly Arg Leu Gly Glu
 225 230 235 240
 Ala Pro Arg Pro Glu Leu Arg Glu His Gly Arg Ile Ser Gly Ala Cys
 245 250 255
 Phe Asp Ala Ala Leu Gly Ile Ile Pro Gly Leu Lys Val Arg Gly Thr
 260 265 270
 Asp Tyr Pro Thr Ala Asp Gly Thr Cys Ile Arg Asp Tyr Ile Asp Val
 275 280 285
 Thr Asp Leu Val Asp Ala His Val Lys Ala Leu Asp Lys Ala Gln Pro
 290 295 300
 Gly Lys Val Gly Ile Tyr Asn Val Gly Thr Gly His Gly Arg Ser Val
 305 310 315 320
 Lys Glu Phe Val Glu Ala Cys Lys Ser Ala Thr Gly Ala Ser Ile Lys
 325 330 335
 Val Ser Phe Leu Thr Arg Arg Pro Gly Asp Tyr Ala Glu Val Tyr Ser
 340 345 350
 Asp Pro Ser Lys Ile His Asp Glu Leu Asn Trp Thr Ala Arg Tyr Ile
 355 360 365
 Asp Leu Arg Glu Ser Leu Ser Thr Ala Trp Lys Trp Gln Lys Ala His
 370 375 380
 Pro Asn Gly Tyr Gly Ser Ala
 385 390

<210> 228
 <211> 1065
 <212> DNA

<213> Oryza sativa

<400> 228

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atggttttcgg cttgtttgcg gacgatcctg gtgacgggcg ggcgggcta catcggcagc      60
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aacgcctccg agctcgccat cctccgcgtc aggggaactcg ccggacacaa cgccaacaac      180
ctcgacttcc gcaaggttga cctccgcgac aagcaagcgt tggaccaaatt cttctcctct      240
caaagggttg aggctgtcat ccattttgcc gggctgaaag ctggtggcga gagcgtgcag      300
aagcccctgc tttactacga caacaacctc atcggcacca tcactctcct gcaggtcatg      360
gccgcacatg gctgcaccaa gctggtgttc tcatcatccg caactgtcta cgggtggccc      420
aaggaggtgc cctgcactga agaatcccca ctttgtgcaa tgaacccta cggcagaaca      480
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ccctgcggca tcccaaacaa cctcatgccc ttcgtccagc aggtcgctgt tggcaggagg      660
ccggccctta ccgtctatgg aaccgactac aacaccaagg atggaactgg ggttcgtgac      720
tatatccatg ttgttgatct agcggatggt catatcgccg cgtaaggaa gctctatgaa      780
gattctgata gaataggatg tgagggttac aatctgggca ctggaaaggg gacatctgtg      840
ctggaaatgg ttgcagcatt cgagaaagct tctggaaaga aaatcccgct tgtatttgct      900
ggacgaaggc ctggagatgc cgagatcggt tacgctcaaa ctgccaaagc tgagaaggaa      960
ctgaaatgga aggcaaaata cggggtagag gagatgtgca gggacctgtg gaattgggcg     1020
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<210> 229

<211> 354

<212> PRT

<213> Oryza sativa

<400> 229

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

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

Val Val Val Leu Asp Asn Leu Asp Asn Ala Ser Glu Leu Ala Ile Leu
35 40 45

Arg Val Arg Glu Leu Ala Gly His Asn Ala Asn Asn Leu Asp Phe Arg
50 55 60

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

Gln Arg Phe Glu Ala Val Ile His Phe Ala Gly Leu Lys Ala Val Gly
85 90 95

PF59082SEQ List- PF59348PCT.txt

Glu Ser Val Gln Lys Pro Leu Leu Tyr Tyr Asp Asn Asn Leu Ile Gly
 100 105 110
 Thr Ile Thr Leu Leu Gln Val Met Ala Ala His Gly Cys Thr Lys Leu
 115 120 125
 Val Phe Ser Ser Ser Ala Thr Val Tyr Gly Trp Pro Lys Glu Val Pro
 130 135 140
 Cys Thr Glu Glu Ser Pro Leu Cys Ala Met Asn Pro Tyr Gly Arg Thr
 145 150 155 160
 Lys Leu Val Ile Glu Asp Met Cys Arg Asp Leu His Ala Ser Asp Pro
 165 170 175
 Asn Trp Lys Ile Ile Leu Leu Arg Tyr Phe Asn Pro Val Gly Ala His
 180 185 190
 Pro Ser Gly Tyr Ile Gly Glu Asp Pro Cys Gly Ile Pro Asn Asn Leu
 195 200 205
 Met Pro Phe Val Gln Gln Val Ala Val Gly Arg Arg Pro Ala Leu Thr
 210 215 220
 Val Tyr Gly Thr Asp Tyr Asn Thr Lys Asp Gly Thr Gly Val Arg Asp
 225 230 235 240
 Tyr Ile His Val Val Asp Leu Ala Asp Gly His Ile Ala Ala Leu Arg
 245 250 255
 Lys Leu Tyr Glu Asp Ser Asp Arg Ile Gly Cys Glu Val Tyr Asn Leu
 260 265 270
 Gly Thr Gly Lys Gly Thr Ser Val Leu Glu Met Val Ala Ala Phe Glu
 275 280 285
 Lys Ala Ser Gly Lys Lys Ile Pro Leu Val Phe Ala Gly Arg Arg Pro
 290 295 300
 Gly Asp Ala Glu Ile Val Tyr Ala Gln Thr Ala Lys Ala Glu Lys Glu
 305 310 315 320
 Leu Lys Trp Lys Ala Lys Tyr Gly Val Glu Glu Met Cys Arg Asp Leu
 325 330 335
 Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly Tyr Gly Ser Pro Asp Ser
 340 345 350
 Ser Asn

PF59082SEQ List- PF59348PCT.txt

<210> 230
 <211> 1266
 <212> DNA
 <213> Oryza sativa

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<400> 230
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gtggcgctcc tcaccgccat gtgctgctgc atgctcacac agccgccctg ccataggagg 180
actcccagtg tgttctccat ccatgaaccc ggagtcacgc atgttctagt gacgggaggc 240
gctggatata tcggttcgca cgctgcgctt cggctgctga aagattcctt cagagtcacc 300
atagtggata atctttcaag aggaaatatg ggggcaatca aggttcttca gaacttgttt 360
tcagagcctg ggcggttgca gttcatctat gctgatttag gcgatccaaa agctgttaat 420
agaatatttg cagaaaatgc ttttgatgct gtcatgcact ttgctgctgt cgcttatggt 480
ggtgagagca cacttgagcc tttgaggtac taccataaca tcacctcaaa cactttagtt 540
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ccatatggta aagccaagaa gatggcagag gacatcatct tggatttttc caaatccaag 720
aaggcagaca tggctgtgat gattctaaga tacttcaacg tcattggttc tgaccctgaa 780
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tgctttgatg ctgcaactgg gataattcct ggtttgaagg ttaaagggtac tgactatgaa 900
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aaggctgact acttccctcg tcgacccggt gactatgccg aagtgtacag cgatcccgca 1140
aagatcaaca gcgagctgaa ctggactgct caacataccg atctcctgga gagcctcagg 1200
gttgccctgga catggcagaa gaagcaccgg agcggctacg gacccctca ggccatgggt 1260
ttgtga 1266
    
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<210> 231
 <211> 421
 <212> PRT
 <213> Oryza sativa

<400> 231

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

Trp Tyr Phe Ile Ser Asp Met Asp Phe Ser Asp Pro Lys Arg Lys Pro
 20 25 30

Arg Tyr Leu Ser Lys Ile Leu Met Val Ala Leu Leu Thr Ala Met Cys
 35 40 45

PF59082SEQ List- PF59348PCT.txt

Val Val Met Leu Thr Gln Pro Pro Cys His Arg Arg Thr Pro Ser Val
 50 55 60
 Phe Ser Ile His Glu Pro Gly Val Thr His Val Leu Val Thr Gly Gly
 65 70 75 80
 Ala Gly Tyr Ile Gly Ser His Ala Ala Leu Arg Leu Leu Lys Asp Ser
 85 90 95
 Phe Arg Val Thr Ile Val Asp Asn Leu Ser Arg Gly Asn Met Gly Ala
 100 105 110
 Ile Lys Val Leu Gln Asn Leu Phe Ser Glu Pro Gly Arg Leu Gln Phe
 115 120 125
 Ile Tyr Ala Asp Leu Gly Asp Pro Lys Ala Val Asn Arg Ile Phe Ala
 130 135 140
 Glu Asn Ala Phe Asp Ala Val Met His Phe Ala Ala Val Ala Tyr Val
 145 150 155 160
 Gly Glu Ser Thr Leu Glu Pro Leu Arg Tyr Tyr His Asn Ile Thr Ser
 165 170 175
 Asn Thr Leu Val Val Leu Glu Ala Met Ala Ala His Asn Val Arg Thr
 180 185 190
 Leu Ile Tyr Ser Ser Thr Cys Ala Thr Tyr Gly Glu Pro Glu Lys Met
 195 200 205
 Pro Ile Thr Glu Gly Thr Pro Gln Phe Pro Ile Asn Pro Tyr Gly Lys
 210 215 220
 Ala Lys Lys Met Ala Glu Asp Ile Ile Leu Asp Phe Ser Lys Ser Lys
 225 230 235 240
 Lys Ala Asp Met Ala Val Met Ile Leu Arg Tyr Phe Asn Val Ile Gly
 245 250 255
 Ser Asp Pro Glu Gly Arg Leu Gly Glu Ala Pro Lys Pro Glu Leu Arg
 260 265 270
 Glu His Gly Arg Ile Ser Gly Ala Cys Phe Asp Ala Ala Leu Gly Ile
 275 280 285
 Ile Pro Gly Leu Lys Val Lys Gly Thr Asp Tyr Glu Thr Pro Asp Gly
 290 295 300
 Thr Cys Val Arg Asp Tyr Ile Asp Val Thr Asp Leu Val Asp Ala His
 305 310 315 320

PF59082SEQ List- PF59348PCT.txt

Val Lys Ala Leu Asn Lys Ala Glu Arg Gly Lys Val Gly Ile Tyr Asn
325 330 335

Val Gly Thr Gly Lys Gly Arg Ser Val Lys Glu Phe Val Glu Ala Cys
340 345 350

Lys Lys Ala Thr Gly Val Asp Ile Lys Val Asp Tyr Phe Pro Arg Arg
355 360 365

Pro Gly Asp Tyr Ala Glu Val Tyr Ser Asp Pro Ala Lys Ile Asn Ser
370 375 380

Glu Leu Asn Trp Thr Ala Gln His Thr Asp Leu Leu Glu Ser Leu Arg
385 390 395 400

Val Ala Trp Thr Trp Gln Lys Lys His Arg Ser Gly Tyr Gly Pro Pro
405 410 415

Gln Ala Met Val Leu
420

<210> 232
<211> 1227
<212> DNA
<213> Oryza sativa

<400> 232
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gtcgacaacc tcaacaactc ctccgagctc gccgtccgcc gcgtcgccgc cctcgccggc 180
gaccactccc ggaacctcgc cttccacaag gttgacctcc gtgacaaggg agcactggaa 240
aaggtttttg cttcaacaag attcgatgct gtagttcact ttgctgggct aaaagctgtg 300
ggcgaaagtg tgcagaagcc attgctttat tacgacaaca atgttaatgg aacagtaaat 360
cttctggaag ttatgtctgc ccatggatgt aagaagttgg tgttctcatc atcagctgca 420
gtttatggat caccgaagaa ctaccctgc acagaagagt ttcctctcac tccaaacaat 480
ccatatggca aaacaaagct tgttgttgaa gatatttgcc gtgatattcta ccgtacagat 540
cctgaatgga agattattct acttaggtac ttcaatccag ttgggggtca tcctagcgga 600
taccttgggg aagatccatg tggcattccc aacaatctta tgccttatgt tcagcaagtt 660
gctgttggca ggaggccagc tctgacaata ctaggaaatg attatgcaac cagagatggt 720
accgggggtc gagattacat ccatgtggtt gaccttgctg atggacatat tgcggcattg 780
cagaaactct ttgagagctc cagcataggg tgtgaagcat acaaccttgg aactggtaaa 840
ggtacctctg tgctggagat agtcaaggca tttgagaagg cttctgggaa gaaaattcct 900
ctgattattg gcccaagacg ccctggtgat gcggagattc tattttcatt acctgctaaa 960
gcagagaagg aactcaactg gaaagcgaaa tttggcatcg atgaaatgtg tagggatcaa 1020

PF59082SEQ List- PF59348PCT.txt

tggaactggg ctagcaagaa cccttatgga tacgggtcac ttgactccac caagcagaac 1080
 ggacaccact cgtacggatc aattggctct cccaagcaga atggccactg cacaaatgga 1140
 ttttctgaat ccactaggca taatggtcac aacggatatg gactgggtcga ctctgccaaag 1200
 cataacggca acggccactt ccactga 1227

<210> 233
 <211> 408
 <212> PRT
 <213> Oryza sativa
 <400> 233

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

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

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

Glu Leu Ala Val Arg Arg Val Ala Ala Leu Ala Gly Asp His Ser Arg
 50 55 60

Asn Leu Ala Phe His Lys Val Asp Leu Arg Asp Lys Gly Ala Leu Glu
 65 70 75 80

Lys Val Phe Ala Ser Thr Arg Phe Asp Ala Val Val His Phe Ala Gly
 85 90 95

Leu Lys Ala Val Gly Glu Ser Val Gln Lys Pro Leu Leu Tyr Tyr Asp
 100 105 110

Asn Asn Val Asn Gly Thr Val Asn Leu Leu Glu Val Met Ser Ala His
 115 120 125

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

Pro Lys Asn Ser Pro Cys Thr Glu Glu Phe Pro Leu Thr Pro Asn Asn
 145 150 155 160

Pro Tyr Gly Lys Thr Lys Leu Val Val Glu Asp Ile Cys Arg Asp Ile
 165 170 175

Tyr Arg Thr Asp Pro Glu Trp Lys Ile Ile Leu Leu Arg Tyr Phe Asn
 180 185 190

Pro Val Gly Ala His Pro Ser Gly Tyr Leu Gly Glu Asp Pro Cys Gly
 195 200 205

Ile Pro Asn Asn Leu Met Pro Tyr Val Gln Gln Val Ala Val Gly Arg
210 215 220

Arg Pro Ala Leu Thr Ile Leu Gly Asn Asp Tyr Ala Thr Arg Asp Gly
225 230 235 240

Thr Gly Val Arg Asp Tyr Ile His Val Val Asp Leu Ala Asp Gly His
245 250 255

Ile Ala Ala Leu Gln Lys Leu Phe Glu Ser Ser Ser Ile Gly Cys Glu
260 265 270

Ala Tyr Asn Leu Gly Thr Gly Lys Gly Thr Ser Val Leu Glu Ile Val
275 280 285

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

Pro Arg Arg Pro Gly Asp Ala Glu Ile Leu Phe Ser Leu Pro Ala Lys
305 310 315 320

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

Cys Arg Asp Gln Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly Tyr Gly
340 345 350

Ser Leu Asp Ser Thr Lys Gln Asn Gly His His Ser Tyr Gly Ser Ile
355 360 365

Gly Ser Pro Lys Gln Asn Gly His Cys Thr Asn Gly Phe Ser Glu Ser
370 375 380

Thr Arg His Asn Gly His Asn Gly Tyr Gly Leu Val Asp Ser Ala Lys
385 390 395 400

His Asn Gly Asn Gly His Phe His
405

<210> 234
<211> 1110
<212> DNA
<213> Oryza sativa

<400> 234
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ctggtgacgg gaggggccgg gtacatcggg agccacaccg tgctgcagct gctcgccgcg 120
gggttccgcg tcgtcgtcgc cgacagcctc gggaactcct ccgagctcgc cgtccgccgc 180
gtcgccgcgc tcgccggga caaggcgcg aacctctcct tacacaaggt tgatattcgt 240
gataaggggtg gactggaaaa ggttttttct tcgacaagat ttgatgctgt cgttcatttt 300
gctggtctga aagctgtggg tgaaagtgtg cagaagccat tgctttatta tgaccataat 360
Seite 247

PF59082SEQ List- PF59348PCT.txt

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cctctcactc cacacaatcc atatggcaga accaagctca tagcagagga gatttgccgt    540
gatataacc attcagattc tgaatggagc ataattttac ttaggtactt caatcctggt    600
ggagctcatc ccagtggata ccttggtgaa gacccatgtg gaattcctaa caacctcatg    660
cccttcgtcc agcaagttgc tgtcgggagg agaccgtcac ttacaatatt tggaaatgac    720
tatgcaacaa aagatgggac aggggtacgt gatttatattc atgtagttga tcttgctgag    780
gggcatattg ctgcactacg gaagctgttt gaaagctcaa taggatgtca agcatacaac    840
cttggaacag gaaagggaa atcagtgttg gaaatagtta atgcatttga gaaagtttct    900
ggaaagaaaa tacctttggt tattggtcca cgacgccctg gtgatgctga gattctcttt    960
tcgtcagctg ctaaagcaga gagagaattc aagtgggaagg caaaatatgg catcgaagaa 1020
atgtgcagag accaatggaa ctgggcgagc aagaatcctt tcgggtacgc ctcgcccgcac 1080
tccaccaagc agaatggtca ttcacactga                                1110

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<210> 235
 <211> 369
 <212> PRT
 <213> Oryza sativa

<400> 235

Met Ala Gly Gly Glu Val Val Ala Val Ala Ala Ala Ala Ala Gly Thr
 1 5 10 15

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

Thr Val Leu Gln Leu Leu Ala Ala Gly Phe Arg Val Val Val Ala Asp
 35 40 45

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

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

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

Val Val His Phe Ala Gly Leu Lys Ala Val Gly Glu Ser Val Gln Lys
 100 105 110

Pro Leu Leu Tyr Tyr Asp His Asn Val Ala Gly Thr Ile Ile Leu Leu
 115 120 125

Glu Val Met Ala Ala His Gly Cys Lys Lys Leu Val Phe Ser Ser Ser
 130 135 140

PF59082SEQ List- PF59348PCT.txt

Ala Ala Val Tyr Gly Ser Pro Lys Asn Ser Pro Cys Thr Glu Glu Phe
145 150 155 160

Pro Leu Thr Pro His Asn Pro Tyr Gly Arg Thr Lys Leu Ile Ala Glu
165 170 175

Glu Ile Cys Arg Asp Ile Tyr His Ser Asp Ser Glu Trp Ser Ile Ile
180 185 190

Leu Leu Arg Tyr Phe Asn Pro Val Gly Ala His Pro Ser Gly Tyr Leu
195 200 205

Gly Glu Asp Pro Cys Gly Ile Pro Asn Asn Leu Met Pro Phe Val Gln
210 215 220

Gln Val Ala Val Gly Arg Arg Pro Ser Leu Thr Ile Phe Gly Asn Asp
225 230 235 240

Tyr Ala Thr Lys Asp Gly Thr Gly Val Arg Asp Tyr Ile His Val Val
245 250 255

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

Ser Ile Gly Cys Gln Ala Tyr Asn Leu Gly Thr Gly Lys Gly Thr Ser
275 280 285

Val Leu Glu Ile Val Asn Ala Phe Glu Lys Val Ser Gly Lys Lys Ile
290 295 300

Pro Leu Val Ile Gly Pro Arg Arg Pro Gly Asp Ala Glu Ile Leu Phe
305 310 315 320

Ser Ser Ala Ala Lys Ala Glu Arg Glu Phe Lys Trp Lys Ala Lys Tyr
325 330 335

Gly Ile Glu Glu Met Cys Arg Asp Gln Trp Asn Trp Ala Ser Lys Asn
340 345 350

Pro Phe Gly Tyr Ala Ser Pro Asp Ser Thr Lys Gln Asn Gly His Ser
355 360 365

His

<210> 236
<211> 1497
<212> DNA
<213> Oryza sativa

<400> 236
atgccggcgg acgcggcggc gaaggggatg aagctggaga ggtacgcgag cggcgcgggc
Seite 249

PF59082SEQ List- PF59348PCT.txt

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ccgtcgtctg tgtcgcgctc cttcacgctc tcctccggcg ccggcgcccg cgagggggga 240
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ttcacccacg tgctgcacct cgccgcgcag gccggcgctg gctacgccat ggaggcgccg 660
cagacgtacg tggcgtccaa cgtggccggg ctgctgaccg tcctcgaggt cgccgccaag 720
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aagctcaagc tcgacgtccc caagatcgcc gccaaaggct ccggcgcccg caagccctcc 1440
tcctcgtcgg cctccaagaa gaagaagaag gccgcggcga tgtcggcgtc atcatga 1497

<210> 237
<211> 498
<212> PRT
<213> Oryza sativa

<400> 237

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

Ser Gly Ala Gly Ala Met Leu Leu Leu Arg Arg Ala Ala Ser Gly Lys
20 25 30

Val Val Ser Ala Ser Ser His Leu Leu Phe Arg Ala Thr Val Leu Ala
35 40 45

Thr Met Ala Leu Val Phe Leu Phe Thr Phe His Tyr Pro Ser Leu Leu
50 55 60

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

Ala Ala Ala His Ala Ser His Arg Ser Leu Leu Met Ser Ser Ser Ser
85 90 95

Ala Ser Ala Ser Ala Ala Ser Val Tyr Gly Gly Ala Ala Trp Glu Lys
100 105 110

Glu Val Arg Arg Ser Ala Lys Pro Arg Lys Asp Gly Gly Ile Ala Val
115 120 125

Leu Val Thr Gly Ala Ala Gly Phe Val Gly Thr His Cys Ser Leu Ala
130 135 140

Leu Arg Ala Arg Gly Asp Gly Val Leu Gly Leu Asp Asn Phe Asn Ala
145 150 155 160

Tyr Tyr Asp Pro Glu Leu Lys Arg Ala Arg Gln Arg Leu Leu Ala Gly
165 170 175

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

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

Ala Gln Ala Gly Val Arg Tyr Ala Met Glu Ala Pro Gln Thr Tyr Val
210 215 220

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

His Ala Asp Pro Gln Pro Ala Ile Val Trp Ala Ser Ser Ser Ser Val
245 250 255

Tyr Gly Leu Asn Thr Asp Ala Pro Phe Ser Glu Glu His Arg Thr Asp
260 265 270

Arg Pro Ala Ser Leu Tyr Ala Ala Thr Lys Lys Ala Gly Glu Ala Ile
275 280 285

Ala His Thr Tyr Asn His Ile Tyr Gly Leu Ser Ile Thr Gly Leu Arg
290 295 300

Phe Phe Thr Val Tyr Gly Pro Trp Gly Arg Pro Asp Met Ala Tyr Phe
305 310 315 320

Phe Phe Ala Lys Ser Ile Val Ser Gly Glu Pro Ile Thr Leu Phe Arg
325 330 335

Ala Ala Asp Gly Ala Asp Ala Arg Arg Asp Phe Thr Tyr Ile Asp Asp
340 345 350

Val Val Lys Gly Cys Leu Gly Ala Leu Asp Thr Ser Gly Lys Ser Thr
355 360 365

Gly Ser Ser Lys Ser Gly Lys Lys Ser Gly Pro Ala Pro Leu Arg Val
370 375 380

Tyr Asn Leu Gly Asn Thr Ser Pro Val Pro Val Thr Arg Met Val Ala
385 390 395 400

Ile Leu Glu Lys Leu Leu Gly Lys Lys Ala Asn Lys Arg Ile Val Ala
405 410 415

Met Pro Ser Asn Gly Asp Val Pro Phe Thr His Ala Asn Val Thr His
420 425 430

Ala Ala His Asp Phe Gly Tyr Arg Pro Thr Thr Ser Leu Asp Ala Gly
435 440 445

Leu Arg His Phe Val Asp Trp Phe Ala Asp Tyr Tyr Lys Leu Lys Leu
450 455 460

Asp Val Pro Lys Ile Ala Ala Lys Val Ala Gly Ala Gly Lys Pro Ser
465 470 475 480

Ser Ser Ser Ala Ser Lys Lys Lys Lys Lys Ala Ala Ala Met Ser Ala
485 490 495

Ser Ser

<210> 238
<211> 1122
<212> DNA
<213> Oryza sativa

<400> 238
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aggaaggggtg cgggggagcg cgtgctggtg acggggggag cgggggtacat cgggacgcac 120
acggtgctgc ggctgctgga gaaggggttc gcggtcaccg tcgtcgacaa cttccacaac 180
tccgtcccgg aggcgctcga ccgcgtccgc ctcacgcccg gcgccgccct ctccgcccgc 240
ctcgacttca tcgccgggga tctcaagagc aaggacgaca tggagaaggt gttcgccgcc 300
aagaggtatg acgccgtgat ccacttcgcc gggctgaagg cgggtggggga gagcgtcgcg 360
caccgcgaga tgtactacga gaacaacgtc gccggcacca tgaacctcta ctccgccatg 420
accaagtacg gctgcaagaa gatagtgttc tcgtcgtcgg cgacggtgta cggccagccg 480

PF59082SEQ List- PF59348PCT.txt

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atcctgctca ggtacttcaa ccccatcggc gctcaccgga gcggcgacat cggggaggac 660
cccaggggca tcccaacaa ctttcttcg tacatccagc aggtcgccgt cggccgcccgc 720
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tacatacatg tagtggacct tgccgatggc cacattgccg cactggagaa gctcttcgct 840
actcctgaca ttggttgtgt ggcttacaat ctaggaacag ggtgtggaac aacggtgctc 900
gaggtggtga aggcgttcga ggaggcgtcc ggaaagaaaa ttcctatcaa gatttgcccc 960
agaagacctg gagattgcac tgaggtttac gcttccactg acaaggccaa gaaggagctc 1020
ggatggagtg ctcggtttgg aatagaggac atgtgcaggg accagtggaa ttgggccaag 1080

aagaatccgt acggatacag cgccaatgct gagcagaatt ag 1122

<210> 239
<211> 373
<212> PRT
<213> Oryza sativa

<400> 239

Met Val Ser Gly Gly Gly Val Ala Ala Glu Asn Gly Glu Met Val Gly
1 5 10 15

Asn Gly Glu Gly Arg Lys Gly Ala Gly Ala Ser Val Leu Val Thr Gly
20 25 30

Gly Ala Gly Tyr Ile Gly Thr His Thr Val Leu Arg Leu Leu Glu Lys
35 40 45

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

Ala Leu Asp Arg Val Arg Leu Ile Ala Gly Ala Ala Leu Ser Ala Arg
65 70 75 80

Leu Asp Phe Ile Ala Gly Asp Leu Lys Ser Lys Asp Asp Met Glu Lys
85 90 95

Val Phe Ala Ala Lys Arg Tyr Asp Ala Val Ile His Phe Ala Gly Leu
100 105 110

Lys Ala Val Gly Glu Ser Val Ala His Pro Gln Met Tyr Tyr Glu Asn
115 120 125

Asn Val Ala Gly Thr Met Asn Leu Tyr Ser Ala Met Thr Lys Tyr Gly
130 135 140

Cys Lys Lys Ile Val Phe Ser Ser Ser Ala Thr Val Tyr Gly Gln Pro

145 150 155 160

Glu Lys Thr Pro Cys₁₆₅ Val Glu Asp Ser Lys₁₇₀ Leu Ser Ala Leu Asn₁₇₅ Pro

Tyr Gly Thr Thr₁₈₀ Lys Leu Val Leu Glu₁₈₅ Asn Tyr Phe Arg Gln₁₉₀ Val Gln

Ala Ala Asp₁₉₅ Pro Glu Met Arg Val₂₀₀ Ile Leu Leu Arg Tyr₂₀₅ Phe Asn Pro

Ile Gly₂₁₀ Ala His Arg Ser Gly₂₁₅ Asp Ile Gly Glu Asp₂₂₀ Pro Arg Gly Ile

Pro Asn Asn Leu Leu Pro₂₃₀ Tyr Ile Gln Gln Val₂₃₅ Ala Val Gly Arg Arg₂₄₀

Pro Glu Leu Asn Val₂₄₅ Tyr Gly Val Asp Tyr₂₅₀ Pro Thr Arg Asp Gly₂₅₅ Thr

Ala Ile Arg Asp₂₆₀ Tyr Ile His Val Val₂₆₅ Asp Leu Ala Asp Gly₂₇₀ His Ile

Ala Ala Leu₂₇₅ Glu Lys Leu Phe Ala₂₈₀ Thr Pro Asp Ile Gly₂₈₅ Cys Val Ala

Tyr Asn₂₉₀ Leu Gly Thr Gly Cys₂₉₅ Gly Thr Thr Val Leu₃₀₀ Glu Val Val Lys

Ala Phe Glu Glu Ala Ser₃₁₀ Gly Lys Lys Ile Pro₃₁₅ Ile Lys Ile Cys Pro₃₂₀

Arg Arg Pro Gly Asp₃₂₅ Cys Thr Glu Val Tyr₃₃₀ Ala Ser Thr Asp Lys₃₃₅ Ala

Lys Lys Glu Leu₃₄₀ Gly Trp Ser Ala Arg₃₄₅ Phe Gly Ile Glu Asp₃₅₀ Met Cys

Arg Asp Gln Trp Asn Trp Ala Lys₃₆₀ Lys Asn Pro Tyr Gly₃₆₅ Tyr Ser Ala

Asn Ala Glu Gln Asn₃₇₀

<210> 240
<211> 1056
<212> DNA
<213> Arabidopsis thaliana

<400> 240
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catactgttg ttcaacttct caaagatggt tttaaggttt cgatcatcga taattttgat 120

PF59082SEQ List- PF59348PCT.txt

aactctgtta tcgaagctgt tgatagagtt agggagcttg ttggtcctga tctctccaag	180
aagctcgact tcaatctggg tgatctaaga aacaaagggg acattgagaa actattctcc	240
aagcagagat ttgatgctgt gattcatttt gcgggtctta aagctgtggg tgagagtgtt	300
gaaaaccctc gccgctactt tgacaataac ttggttgga caatcaatct atatgagacc	360
atggcaaagt acaactgcaa aatgatgggtg ttttcatctt ctgccactgt ttatggacaa	420
cctgaaaaga ttccatgcat ggaagacttt gaattaaagg ctatgaatcc ttatggctgt	480
actaagctct ttcttgaaga aatagctaga gatattcaaa aggcagaacc ggaatggaga	540
attattctgc tgaggctactt caatcctgta ggagcacatg agagtggcag tattgggtgag	600
gatccaaaag gcatcccaa taacctcatg cttacatcc aacaagtggc cgttggacgt	660
ttaccggaac tcaatgtcta tggacatgac tatcccaccg aggatggtag tgcggaaga	720
gactacatcc atgtgatgga tttagcagat ggccatatcg ctgcgctcag gaagctatct	780
gctgatccaa agattggttg tactgcttac aatctagga ctggtcaagg aacgtctgtg	840
ttagaaatgg ttgcagcttt tgaaaaagct tccggcaaga aaatcccgat taagctctgt	900
ccgagaaggt caggagatgc aacagcagtt tatgcttcaa cagagaaggc tgagaaagaa	960
cttggctgga aggcaaaata tggagtggat gagatgtgca gagatcagtg gaaatgggca	1020
aacaataatc catgggggta ccagaataag ctttga	1056

<210> 241
 <211> 351
 <212> PRT
 <213> Arabidopsis thaliana
 <400> 241

Met Gly Ser Ser Val Glu Gln Asn Ile Leu Val Thr Gly Gly Ala Gly	1	5	10	15
Phe Ile Gly Thr His Thr Val Val Gln Leu Leu Lys Asp Gly Phe Lys	20	25	30	
Val Ser Ile Ile Asp Asn Phe Asp Asn Ser Val Ile Glu Ala Val Asp	35	40	45	
Arg Val Arg Glu Leu Val Gly Pro Asp Leu Ser Lys Lys Leu Asp Phe	50	55	60	
Asn Leu Gly Asp Leu Arg Asn Lys Gly Asp Ile Glu Lys Leu Phe Ser	65	70	75	80
Lys Gln Arg Phe Asp Ala Val Ile His Phe Ala Gly Leu Lys Ala Val	85	90	95	
Gly Glu Ser Val Glu Asn Pro Arg Arg Tyr Phe Asp Asn Asn Leu Val	100	105	110	
Gly Thr Ile Asn Leu Tyr Glu Thr Met Ala Lys Tyr Asn Cys Lys Met				

115

120

125

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

Pro Cys Met Glu Asp Phe Glu Leu Lys Ala Met Asn Pro Tyr Gly Arg
145 150 155 160

Thr Lys Leu Phe Leu Glu Glu Ile Ala Arg Asp Ile Gln Lys Ala Glu
165 170 175

Pro Glu Trp Arg Ile Ile Leu Leu Arg Tyr Phe Asn Pro Val Gly Ala
180 185 190

His Glu Ser Gly Ser Ile Gly Glu Asp Pro Lys Gly Ile Pro Asn Asn
195 200 205

Leu Met Pro Tyr Ile Gln Gln Val Ala Val Gly Arg Leu Pro Glu Leu
210 215 220

Asn Val Tyr Gly His Asp Tyr Pro Thr Glu Asp Gly Ser Ala Val Arg
225 230 235 240

Asp Tyr Ile His Val Met Asp Leu Ala Asp Gly His Ile Ala Ala Leu
245 250 255

Arg Lys Leu Phe Ala Asp Pro Lys Ile Gly Cys Thr Ala Tyr Asn Leu
260 265 270

Gly Thr Gly Gln Gly Thr Ser Val Leu Glu Met Val Ala Ala Phe Glu
275 280 285

Lys Ala Ser Gly Lys Lys Ile Pro Ile Lys Leu Cys Pro Arg Arg Ser
290 295 300

Gly Asp Ala Thr Ala Val Tyr Ala Ser Thr Glu Lys Ala Glu Lys Glu
305 310 315 320

Leu Gly Trp Lys Ala Lys Tyr Gly Val Asp Glu Met Cys Arg Asp Gln
325 330 335

Trp Lys Trp Ala Asn Asn Asn Pro Trp Gly Tyr Gln Asn Lys Leu
340 345 350

<210> 242
<211> 1056
<212> DNA
<213> Arabidopsis thaliana

<400> 242
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catactgttg ttcagctttt gaatcagggt tttaagggtta cgatcattga taatcttgat 120
Seite 256

PF59082SEQ List- PF59348PCT.txt

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aatcagagat ttgatgctgt gattcacttt gctgggtctta aagctgtggg agaaagtgtt 300
ggaaaccctc gtcgttactt tgataataac ttagttggaa ctatcaatct atatgagacc 360
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cctgaaatag tcccatgtgt ggaagacttt gagttacagg ctatgaatcc ttatgggtcgt 480
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ataattcttc tgaggctactt caatccgggt ggagctcacg agagtggaag aattggagaa 600
gatccaaagg gcataccgaa taatctcatg ctttatatcc aacaagtggc ggttggaaga 660
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ccaagaagag ctggagatgc aacagctgtt tatgcttcaa ctcagaaagc tgagaaggaa 960
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aataagaatc catgggggtt ccagaagaag ccttga 1056

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<210> 243
 <211> 351
 <212> PRT
 <213> Arabidopsis thaliana

<400> 243

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

Phe Ile Gly Thr His Thr Val Val Gln Leu Leu Asn Gln Gly Phe Lys
 20 25 30

Val Thr Ile Ile Asp Asn Leu Asp Asn Ser Val Val Glu Ala Val His
 35 40 45

Arg Val Arg Glu Leu Val Gly Pro Asp Leu Ser Thr Lys Leu Glu Phe
 50 55 60

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

Asn Gln Arg Phe Asp Ala Val Ile His Phe Ala Gly Leu Lys Ala Val
 85 90 95

Gly Glu Ser Val Gly Asn Pro Arg Arg Tyr Phe Asp Asn Asn Leu Val
 100 105 110

PF59082SEQ List- PF59348PCT.txt

Gly Thr Ile Asn Leu Tyr Glu Thr Met Ala Lys Tyr Asn Cys Lys Met
115 120 125

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

Pro Cys Val Glu Asp Phe Glu Leu Gln Ala Met Asn Pro Tyr Gly Arg
145 150 155 160

Thr Lys Leu Phe Leu Glu Glu Ile Ala Arg Asp Ile His Ala Ala Glu
165 170 175

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

His Glu Ser Gly Arg Ile Gly Glu Asp Pro Lys Gly Ile Pro Asn Asn
195 200 205

Leu Met Pro Tyr Ile Gln Gln Val Ala Val Gly Arg Leu Pro Glu Leu
210 215 220

Asn Val Phe Gly His Asp Tyr Pro Thr Met Asp Gly Ser Ala Val Arg
225 230 235 240

Asp Tyr Ile His Val Met Asp Leu Ala Asp Gly His Val Ala Ala Leu
245 250 255

Asn Lys Leu Phe Ser Asp Ser Lys Ile Gly Cys Thr Ala Tyr Asn Leu
260 265 270

Gly Thr Gly Gln Gly Thr Ser Val Leu Glu Met Val Ser Ser Phe Glu
275 280 285

Lys Ala Ser Gly Lys Lys Ile Pro Ile Lys Leu Cys Pro Arg Arg Ala
290 295 300

Gly Asp Ala Thr Ala Val Tyr Ala Ser Thr Gln Lys Ala Glu Lys Glu
305 310 315 320

Leu Gly Trp Lys Ala Lys Tyr Gly Val Asp Glu Met Cys Arg Asp Gln
325 330 335

Trp Asn Trp Ala Asn Lys Asn Pro Trp Gly Phe Gln Lys Lys Pro
340 345 350

<210> 244
<211> 1047

<212> DNA
<213> Arabidopsis thaliana

<400> 244
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60

PF59082SEQ List- PF59348PCT.txt

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caggtggacc ttcgcgataa acccgactt gagaaggttt tctccgaaac aaagtttgat	240
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tgtaaaaagc ttgtattttc ttcgtccgct actgtgtatg gctggccaaa ggaggttcct	420
tgtacagaag agtctcccct gtctggaatg agtccttatg gacggacaaa gctgttcata	480
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ccaaataatc tcatgcctta tgtccagcaa gtcgttggtg ggaggctacc taacctaaaa	660
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gcagaaaccg tctatgcgtc aacagaaaaa gctgaacgcg aactaaactg gaaggcaaat	960
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tacggttctt caccaaactc aacataa	1047

<210> 245
 <211> 348
 <212> PRT
 <213> Arabidopsis thaliana

<400> 245

Met Val Gly Asn Ile Leu Val Thr Gly Gly Ala Gly Tyr Ile Gly Ser
 1 5 10 15

His Thr Val Leu Gln Leu Leu Leu Gly Gly Tyr Asn Thr Val Val Ile
 20 25 30

Asp Asn Leu Asp Asn Ser Ser Leu Val Ser Ile Gln Arg Val Lys Asp
 35 40 45

Leu Ala Gly Asp His Gly Gln Asn Leu Thr Val His Gln Val Asp Leu
 50 55 60

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

Ala Val Met His Phe Ala Gly Leu Lys Ala Val Gly Glu Ser Val Ala
 85 90 95

Lys Pro Leu Leu Tyr Tyr Asn Asn Asn Leu Ile Ala Thr Ile Thr Leu
 100 105 110

PF59082SEQ List- PF59348PCT.txt

Leu Glu Val Met Ala Ala His Gly Cys Lys Lys Leu Val Phe Ser Ser
115 120 125

Ser Ala Thr Val Tyr Gly Trp Pro Lys Glu Val Pro Cys Thr Glu Glu
130 135 140

Ser Pro Leu Ser Gly Met Ser Pro Tyr Gly Arg Thr Lys Leu Phe Ile
145 150 155 160

Glu Asp Ile Cys Arg Asp Val Gln Arg Gly Asp Pro Glu Trp Arg Ile
165 170 175

Ile Met Leu Arg Tyr Phe Asn Pro Val Gly Ala His Pro Ser Gly Arg
180 185 190

Ile Gly Glu Asp Pro Cys Gly Thr Pro Asn Asn Leu Met Pro Tyr Val
195 200 205

Gln Gln Val Val Val Gly Arg Leu Pro Asn Leu Lys Ile Tyr Gly Thr
210 215 220

Asp Tyr Thr Thr Lys Asp Gly Thr Gly Val Arg Asp Tyr Ile His Val
225 230 235 240

Val Asp Leu Ala Asp Gly His Ile Cys Ala Leu Gln Lys Leu Asp Asp
245 250 255

Thr Glu Ile Gly Cys Glu Val Tyr Asn Leu Gly Thr Gly Lys Gly Thr
260 265 270

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

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

Tyr Ala Ser Thr Glu Lys Ala Glu Arg Glu Leu Asn Trp Lys Ala Asn
305 310 315 320

Phe Gly Ile Glu Glu Met Cys Arg Asp Gln Trp Asn Trp Ala Ser Asn
325 330 335

Asn Pro Phe Gly Tyr Gly Ser Ser Pro Asn Ser Thr
340 345

<210> 246
<211> 1056
<212> DNA
<213> Arabidopsis thaliana

<400> 246
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PF59082SEQ List- PF59348PCT.txt

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gatgctgaag ttgtatacgc ctcgacggaa agagcagaaa gtgaattgaa ttggaaggcc 960
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ggatatgatt cctcttctga agacaactct cattaa 1056

<210> 247
<211> 351
<212> PRT
<213> Arabidopsis thaliana

<400> 247

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

Lys Leu Ala Ala Glu His Gly Glu Arg Leu Ser Phe His Gln Val Asp
50 55 60

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

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

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

PF59082SEQ List- PF59348PCT.txt

Leu Leu Glu Val Met Ala Gln His Gly Cys Lys Asn Leu Val Phe Ser
115 120 125

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

Glu Phe Pro Ile Ser Ala Leu Asn Pro Tyr Gly Arg Thr Lys Leu Phe
145 150 155 160

Ile Glu Glu Ile Cys Arg Asp Val Tyr Gly Ser Asp Pro Glu Trp Lys
165 170 175

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

Asp Ile Gly Glu Asp Pro Arg Gly Ile Pro Asn Asn Leu Met Pro Phe
195 200 205

Val Gln Gln Val Ala Val Gly Arg Arg Pro His Leu Thr Val Phe Gly
210 215 220

Asn Asp Tyr Asn Thr Lys Asp Gly Thr Gly Val Arg Asp Tyr Ile His
225 230 235 240

Val Ile Asp Leu Ala Asp Gly His Ile Ala Ala Leu Arg Lys Leu Glu
245 250 255

Asp Cys Lys Ile Gly Cys Glu Val Tyr Asn Leu Gly Thr Gly Asn Gly
260 265 270

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

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

Val Tyr Ala Ser Thr Glu Arg Ala Glu Ser Glu Leu Asn Trp Lys Ala
305 310 315 320

Lys Tyr Gly Ile Glu Glu Met Cys Arg Asp Leu Trp Asn Trp Ala Ser
325 330 335

Asn Asn Pro Tyr Gly Tyr Asp Ser Ser Ser Glu Asp Asn Ser His
340 345 350

<210> 248
<211> 1053
<212> DNA
<213> Arabidopsis thaliana

<400> 248
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PF59082SEQ List- PF59348PCT.txt

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<210> 249
<211> 350
<212> PRT
<213> Arabidopsis thaliana

<400> 249

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

Asp Asn Tyr Asp Asn Ser Ser Ala Ala Ser Leu Gln Arg Val Lys Lys
35 40 45

Leu Ala Gly Glu Asn Gly Asn Arg Leu Ser Phe His Gln Val Asp Leu
50 55 60

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

Ala Val Ile His Phe Ala Gly Leu Lys Ala Val Gly Glu Ser Val Glu
85 90 95

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

PF59082SEQ List- PF59348PCT.txt

Leu Glu Val Met Ala Gln Tyr Gly Cys Lys Asn Leu Val Phe Ser Ser
115 120 125

Ser Ala Thr Val Tyr Gly Trp Pro Lys Glu Val Pro Cys Thr Glu Glu
130 135 140

Ser Pro Ile Ser Ala Thr Asn Pro Tyr Gly Arg Thr Lys Leu Phe Ile
145 150 155 160

Glu Glu Ile Cys Arg Asp Val His Arg Ser Asp Ser Glu Trp Lys Ile
165 170 175

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

Ile Gly Glu Asp Pro Leu Gly Val Pro Asn Asn Leu Met Pro Tyr Val
195 200 205

Gln Gln Val Ala Val Gly Arg Arg Pro His Leu Thr Val Phe Gly Thr
210 215 220

Asp Tyr Lys Thr Lys Asp Gly Thr Gly Val Arg Asp Tyr Ile His Val
225 230 235 240

Met Asp Leu Ala Asp Gly His Ile Ala Ala Leu Arg Lys Leu Asp Asp
245 250 255

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

Ser Val Leu Glu Met Val Ala Ala Phe Glu Lys Ala Ser Gly Lys Lys
275 280 285

Ile Pro Leu Val Met Ala Gly Arg Arg Pro Gly Asp Ala Glu Val Val
290 295 300

Tyr Ala Ser Thr Glu Lys Ala Glu Arg Glu Leu Asn Trp Lys Ala Lys
305 310 315 320

Asn Gly Ile Glu Glu Met Cys Arg Asp Leu Trp Asn Trp Ala Ser Asn
325 330 335

Asn Pro Tyr Gly Tyr Asn Ser Ser Ser Asn Gly Ser Ser Ser
340 345 350

<210> 250
<211> 1137
<212> DNA
<213> Populus tremuloides

<400> 250
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Seite 264

PF59082SEQ List- PF59348PCT.txt

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aaaatctttg ctgaaaatgc atttgatgct gtgatgcatt tcgctgctgt tgcataatggt 360
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gttttagaag caatggcagc acataagggtg aagacattga tttattctag cacttggtgca 480
acttacggcg agcctgttaa gatgccgatt acagaacaaa ctctcagct tccaatcaac 540
ccctatggaa aagccaagaa aatggcagaa gatatcataa ttgacttctc aaaaaccact 600
gacatggctg tcatgatcct aagatacttc aatgttattg ggtctgatcc agaaggaaga 660
ttaggggaag ctccgcaacc tgaacttcgt gagcatggcc gaatctctgg cgcttggttt 720
gatgcagctc gaggaataat accaggacta aaacagagaa tcacaattca gtggatagac 780
tataaaactg ctgatggcac gtgtgtacgg gactatatcg atgtcactga cctggctgat 840
gccccatgtg aagctcttgc ccatgcaaag cctcgaaaag ttggcattta caatgttgga 900
actggaaaag gtagatcagt gaaggagttt gtcgaggcat gtaagaaggc aacagggtgtg 960
gacataaagg ttgaatacct caatcgtcgg ccaggagact atgctgaggt cttcagtgac 1020
ccttccaaaa taaaacaaga gctaaactgg aaagctcaat atactgacct taagaagagt 1080
ttgcagattg catggaaatg gcagaagtca catttgaatg gttacagtca cagttaa 1137

<210> 251
<211> 378
<212> PRT
<213> Populus tremuloides

<400> 251

Met Asp Tyr Leu Asp Ser Arg Arg Lys Ser Arg Cys Ala Gly Lys Ile
1 5 10 15

Ile Ala Ala Ala Leu Cys Ile Thr Phe Ser Gln His Glu Leu Gly Val
20 25 30

Thr His Val Leu Val Thr Gly Gly Ala Gly Tyr Ile Gly Ser His Ala
35 40 45

Ala Leu Arg Leu Leu Lys Asp Ser Tyr Arg Val Thr Lys Val Asp Asn
50 55 60

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

Pro Glu Pro Gly Arg Leu Gln Phe Ile Tyr Ala Asp Leu Gly Asp Ala
85 90 95

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

His Phe Ala Ala Val Ala Tyr Val Gly Glu Ser Thr Met Glu Pro Leu
115 120 125

Arg Tyr Tyr His Asn Ile Thr Ser Asn Thr Leu Val Val Leu Glu Ala
130 135 140

Met Ala Ala His Lys Val Lys Thr Leu Ile Tyr Ser Ser Thr Cys Ala
145 150 155 160

Thr Tyr Gly Glu Pro Val Lys Met Pro Ile Thr Glu Gln Thr Pro Gln
165 170 175

Leu Pro Ile Asn Pro Tyr Gly Lys Ala Lys Lys Met Ala Glu Asp Ile
180 185 190

Ile Ile Asp Phe Ser Lys Thr Thr Asp Met Ala Val Met Ile Leu Arg
195 200 205

Tyr Phe Asn Val Ile Gly Ser Asp Pro Glu Gly Arg Leu Gly Glu Ala
210 215 220

Pro Gln Pro Glu Leu Arg Glu His Gly Arg Ile Ser Gly Ala Cys Phe
225 230 235 240

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

Gln Trp Ile Asp Tyr Lys Thr Ala Asp Gly Thr Cys Val Arg Asp Tyr
260 265 270

Ile Asp Val Thr Asp Leu Val Asp Ala His Val Lys Ala Leu Ala His
275 280 285

Ala Lys Pro Arg Lys Val Gly Ile Tyr Asn Val Gly Thr Gly Lys Gly
290 295 300

Arg Ser Val Lys Glu Phe Val Glu Ala Cys Lys Lys Ala Thr Gly Val
305 310 315 320

Asp Ile Lys Val Glu Tyr Leu Asn Arg Arg Pro Gly Asp Tyr Ala Glu
325 330 335

Val Phe Ser Asp Pro Ser Lys Ile Lys Gln Glu Leu Asn Trp Lys Ala
340 345 350

Gln Tyr Thr Asp Leu Lys Lys Ser Leu Gln Ile Ala Trp Lys Trp Gln
355 360 365

Lys Ser His Leu Asn Gly Tyr Ser His Ser

<210> 252
 <211> 1254
 <212> DNA
 <213> Populus tremuloides

<400> 252
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 gctaccctca cagctttatg tataattatg ctaaagcaat ctccgacctt ttattctcca 180
 agcccgttct ctttgcataga agaaggggtg atccatgtcc tagtgacagg tgggtgctggc 240
 tacattgggt cccatgctgc attgcgactt ttgaaggatg gttaccgagt aaccatagtg 300
 gacaaccttt ctcgaggaaa cataggtgca gtcaagggtt tacaagaatt atttcagag 360
 cccgggaggc ttcagtttat atatgctgac ctgggagatc ctaaaactgt taacattatc 420
 ttctcacaaa atgcatttga tgctgtgatg ctttttgcgg cagttgcata tgttggggaa 480
 agcaccatgg aacccttgaa gtactatcac aatatcacat caaataacctt ggtagttttg 540
 gaggcaatgg ctgcaaatga tgtaaagact ttgatataat caagtacatg tgcaacatat 600
 ggggagcctg aaaagatgcc gattactgaa gtaactccac aggtacccat taatccatat 660
 ggaaaagcta agaagatggc agaagatatc atccttgatt tttctaaaaa ctcagacatg 720
 gcaattatga tattgagata cttcaatgtg attggatcag atccagatgg caggtttaggt 780
 gaggtccta gacctgaact gcgtgagcat ggacgaattt ccggtgcttg tttcgatgca 840
 gctcgtggta ttattgctgg gctgaagggt aaaggaacag actataagac gcatgatgga 900
 acttgataaa gagattatat tgacgttact gatcttggtg atgctcatgt taaagcactt 960
 gaaaaggcaa tgcctggtaa agtaggaatc tacaatgttg gcactggaaa gggtagatca 1020
 gtcaaggagt ttgttaaggc atgtaaaaag gcaactgggt tagatatcaa agttgactat 1080
 ttacctgcc gtctggtga ctacgtgaa gtattcagtg acccatcaaa aatttaccgc 1140
 gagctgaact ggacagcgca atacacggat ctccagaaga gcttacagac tgcattggaga 1200
 tggcaaaaat cacatcaaaa tgggtatgga tcccctttgg tgatggcttc ttga 1254

<210> 253
 <211> 417
 <212> PRT
 <213> Populus tremuloides

<400> 253
 Met Leu Asn Phe Gly Arg Thr Arg Ala Gln Thr Arg Ser Asn Arg Ser
 1 5 10 15
 Ile Ser Leu Gly Gly Met Asp Tyr Ser Asp Pro Lys Arg Lys Asn Asn
 20 25 30
 Val Val Gly Lys Ile Leu Leu Ala Ala Thr Leu Thr Ala Leu Cys Ile
 35 40 45

PF59082SEQ List- PF59348PCT.txt

Ile Met Leu Lys Gln Ser Pro Thr Phe Tyr Ser Pro Ser Pro Phe Ser
50 55 60

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

Tyr Ile Gly Ser His Ala Ala Leu Arg Leu Leu Lys Asp Gly Tyr Arg
85 90 95

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

Val Leu Gln Glu Leu Phe Pro Glu Pro Gly Arg Leu Gln Phe Ile Tyr
115 120 125

Ala Asp Leu Gly Asp Pro Lys Thr Val Asn Ile Ile Phe Ser Gln Asn
130 135 140

Ala Phe Asp Ala Val Met His Phe Ala Ala Val Ala Tyr Val Gly Glu
145 150 155 160

Ser Thr Met Glu Pro Leu Lys Tyr Tyr His Asn Ile Thr Ser Asn Thr
165 170 175

Leu Val Val Leu Glu Ala Met Ala Ala Asn Asp Val Lys Thr Leu Ile
180 185 190

Tyr Ser Ser Thr Cys Ala Thr Tyr Gly Glu Pro Glu Lys Met Pro Ile
195 200 205

Thr Glu Val Thr Pro Gln Val Pro Ile Asn Pro Tyr Gly Lys Ala Lys
210 215 220

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

Ala Ile Met Ile Leu Arg Tyr Phe Asn Val Ile Gly Ser Asp Pro Asp
245 250 255

Gly Arg Leu Gly Glu Ala Pro Arg Pro Glu Leu Arg Glu His Gly Arg
260 265 270

Ile Ser Gly Ala Cys Phe Asp Ala Ala Arg Gly Ile Ile Ala Gly Leu
275 280 285

Lys Val Lys Gly Thr Asp Tyr Lys Thr His Asp Gly Thr Cys Ile Arg
290 295 300

Asp Tyr Ile Asp Val Thr Asp Leu Val Asp Ala His Val Lys Ala Leu
305 310 315 320

PF59082SEQ List- PF59348PCT.txt

Glu Lys Ala Met Pro Gly Lys Val Gly Ile Tyr Asn Val Gly Thr Gly
325 330 335

Lys Gly Arg Ser Val Lys Glu Phe Val Lys Ala Cys Lys Lys Ala Thr
340 345 350

Gly Val Asp Ile Lys Val Asp Tyr Leu Pro Arg Arg Pro Gly Asp Tyr
355 360 365

Ala Glu Val Phe Ser Asp Pro Ser Lys Ile Tyr Arg Glu Leu Asn Trp
370 375 380

Thr Ala Gln Tyr Thr Asp Leu Gln Lys Ser Leu Gln Thr Ala Trp Arg
385 390 395 400

Trp Gln Lys Ser His Gln Asn Gly Tyr Gly Ser Pro Leu Val Met Ala
405 410 415

Ser

<210> 254
<211> 1233
<212> DNA
<213> Populus tremuloides

<400> 254
atggtgcaca agggctctgg tatggatttc ctggattcaa gaagaaagag caattctgct 60
ggaaaagtta ttgcagttgc attcttcatt gcagtatgca ttgtcatgct caagcaagtg 120
tactcaccta gttataccag ccccgacatg ttctcccaac atgagctagg cgtaacgcat 180
gtgttggtga ccggaggtgc tggttacata ggttctcacg ctgcacttcg actcttgaag 240
gattcatacc gagtaactat agtggacaat ctctctcgag ggaatctcgg tgcgggttaaa 300
gttcttcaag agctatttcc agagcctggg agattgcagt tcatatatgc tgacctagga 360
gatgcaaaag ctgtaaacia aatctttgcc gaaaatgcat ttgatgctgt gatgcatttt 420
gctgctgttg catatgttgg tgaaagtaca atagagcccc ttagatatta tcacaatatc 480
acatcaaata ctttggttgt cttggaagca atggctgcac ataatgtgaa gacattaatc 540
tattcgagca cttgtgcaac gtacggagaa cctattaaga tgccgattag agaagaaact 600
cctcagcttc caatcaaccc ctatggaaaa gccaaagaaa tggcagaaga tatkataatt 660
gacttctcca acaccactga catggctgtc atgacctaag gcacccagca ttctgatcaa 720
aataatgcct atgtttacag atacttcaat gttattgggt ctgacccgga aggaagatta 780
ggggaagctc cacgacctga gcttcgtgag catggccgaa tctctggtgc ttgttttgat 840
gcagctcgag ggataacacc tggactcaag gttaaaggga cagactataa aacagctgat 900
ggcacatgtg tacgcgacta tatcgatgtc actgacctgg ttgatgccca tgtgaaagct 960
cttgcccacg caaaacctcg gaaagttggc atttacaatg ttggaactgg aaaaggcaga 1020

PF59082SEQ List- PF59348PCT.txt

tcagtgaagg agtttggtga tgcgtgtaag aaggcaacag gcgtggacat aaaggttgaa 1080
 taccttgatc gccggccagg agactatgct gaggtcttca gtgatccttc caaaataaaa 1140
 caagagctaa gctggacagc tcaatatact gaccttcaga agagtttaca gattgcttgg 1200
 aaatggcaga agtcacattt gaatggttat tga 1233

<210> 255
 <211> 410
 <212> PRT
 <213> Populus tremuloides
 <400> 255

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

PF59082SEQ List- PF59348PCT.txt

Gly Lys Ala Lys Lys Met Ala Glu Asp Ile Ile Ile Asp Phe Ser Asn
210 215 220

Thr Thr Asp Met Ala Val Met Ile Leu Ser Ile Gln His Ser Asp Gln
225 230 235 240

Asn Asn Ala Tyr Val Tyr Arg Tyr Phe Asn Val Ile Gly Ser Asp Pro
245 250 255

Glu Gly Arg Leu Gly Glu Ala Pro Arg Pro Glu Leu Arg Glu His Gly
260 265 270

Arg Ile Ser Gly Ala Cys Phe Asp Ala Ala Arg Gly Ile Thr Pro Gly
275 280 285

Leu Lys Val Lys Gly Thr Asp Tyr Lys Thr Ala Asp Gly Thr Cys Val
290 295 300

Arg Asp Tyr Ile Asp Val Thr Asp Leu Val Asp Ala His Val Lys Ala
305 310 315 320

Leu Ala His Ala Lys Pro Arg Lys Val Gly Ile Tyr Asn Val Gly Thr
325 330 335

Gly Lys Gly Arg Ser Val Lys Glu Phe Val Asp Ala Cys Lys Lys Ala
340 345 350

Thr Gly Val Asp Ile Lys Val Glu Tyr Leu Asp Arg Arg Pro Gly Asp
355 360 365

Tyr Ala Glu Val Phe Ser Asp Pro Ser Lys Ile Lys Gln Glu Leu Ser
370 375 380

Trp Thr Ala Gln Tyr Thr Asp Leu Gln Lys Ser Leu Gln Ile Ala Trp
385 390 395 400

Lys Trp Gln Lys Ser His Leu Asn Gly Tyr
405 410

<210> 256

<211> 627

<212> DNA

<213> Populus tremuloides

<400> 256

atggctggac aaacaattct tgtgactggt ggggctgggt ttattggcac tcacacagta 60

gtacagctcc taaaggaagg ttttaagggt tcaatcattg acaatcttga taattctgtc 120

actgaagctg ttgatcgtgt taaggaagtg gtgggtcctc agctttctaa gaatcttgaa 180

ttcaatctgg gtgatcttag aaacaaggat gatttggaga agttgttttc aagaactaag 240

ttcgatgctg tgatccattt tgctggtctc aaggcagttg gggagagtgt tgctaattcca 300

cgtagatatt ttgacaataa tctggttggc accatcaatc tctatgaagt tatggcaaaa 360

PF59082SEQ List- PF59348PCT.txt

tacaattgca agaagatggt tttctcatca tcagcaactg tttatggcca acctgaaaaa	420
attcccttggtg ttgaggactt caacctaattg gcaatgaatc cttatggacg taccaagaaa	480
ttgctcgaga tattcaaaag gcagaaccag aatggagtat cattttactt aggtactttca	540
accccggtggg agctcatgag agtggtaaac ttggtgaaga tcccaagggt atcccaaaca	600
atctcatgcc ctacatacaa caagtag	627

<210> 257
 <211> 208
 <212> PRT
 <213> Populus tremuloides

<400> 257

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

Ile	Asp	Asn	Leu	Asp	Asn	Ser	Val	Thr	Glu	Ala	Val	Asp	Arg	Val	Lys
		35					40					45			

Glu	Val	Val	Gly	Pro	Gln	Leu	Ser	Lys	Asn	Leu	Glu	Phe	Asn	Leu	Gly
	50					55					60				

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

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

Val	Ala	Asn	Pro	Arg	Arg	Tyr	Phe	Asp	Asn	Asn	Leu	Val	Gly	Thr	Ile
			100					105					110		

Asn	Leu	Tyr	Glu	Val	Met	Ala	Lys	Tyr	Asn	Cys	Lys	Lys	Met	Val	Phe
		115					120					125			

Ser	Ser	Ser	Ala	Thr	Val	Tyr	Gly	Gln	Pro	Glu	Lys	Ile	Pro	Cys	Val
	130					135					140				

Glu	Asp	Phe	Asn	Leu	Met	Ala	Met	Asn	Pro	Tyr	Gly	Arg	Thr	Lys	Lys
145					150					155					160

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

Leu	Gly	Thr	Ser	Thr	Pro	Trp	Glu	Leu	Met	Arg	Val	Val	Asn	Leu	Val
			180					185					190		

Lys	Ile	Pro	Arg	Val	Ser	Gln	Thr	Ile	Ser	Cys	Pro	Thr	Tyr	Asn	Lys
		195					200					205			

PF59082SEQ List- PF59348PCT.txt

<210> 258
 <211> 1047
 <212> DNA
 <213> Populus tremuloides

<400> 258
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 attgctctta aaagagttaa agaactcgcc ggtgatttcg gtaaaaacct cgtctttcac 180
 caggttgatc tccgggataa gccagcactg gaaaaaattt ttgccaggac aaaatttgat 240
 gctgtcattc actttgctgg gctgaaagcg gttggtgaga gtgtgcagaa accattgctt 300
 tactttaaca acaatctcat tggaacaatt accctgctag aagttatgac ttcccatgga 360

 tgcaagcagt tgggtgtttc atcttcggct actgtttatg gttgcccaa ggaggttcca 420
 tgtacagaag agtttccttt gtctgctgcc agcccatagc gaagaaccaa gctcttcatt 480
 gaagggatct gctgtgatat ccaccgttca gactctgaat ggaagatcat tttgcttaga 540
 tacttcaatc cagttggtgc acatccaagt ggtcatattg gtgaggatcc acttggaatt 600
 ccaaacaatc tcatgcccta tgtgcagcaa gttgctgttg gcaggcggcc tcatctaacc 660
 gtttatggaa ctgattattc aactaaagat ggcactgggg tacgtgatta cattcatggt 720
 gttgatttag cggatgggca cattgctgca ttgcgtaagc tctctgatgc taatataggt 780
 tgtgaagtgt acaacttggg aacaggaaaa ggtacatccg ttctggagat gggtgcggca 840
 tttgaaaagg catctagaaa gaaaattccc cttgtaattg ccgctcggcg acctggtgat 900
 gctgaaattg tgtatgcagc aacagagaag gcagaacgtg aattgaattg gaaggcaaaa 960
 tatggcattg atgagatgtg tagggatcaa tggaactggg ccggcaagaa cccttatggc 1020
 tatggatctt ctgacagcac taactaa 1047

<210> 259
 <211> 348
 <212> PRT
 <213> Populus tremuloides

<400> 259
 Met Ala Lys Ser Ile Leu Val Thr Gly Gly Ala Gly Tyr Ile Gly Ser
 1 5 10 15

 His Thr Val Leu Gln Leu Leu Leu Gly Gly Tyr Ser Ile Val Val Val
 20 25 30

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

 Leu Ala Gly Asp Phe Gly Lys Asn Leu Val Phe His Gln Val Asp Leu
 50 55 60

PF59082SEQ List- PF59348PCT.txt

Arg Asp Lys Pro Ala Leu Glu Lys Ile Phe Ala Arg Thr Lys Phe Asp
 65 70 75 80
 Ala Val Ile His Phe Ala Gly Leu Lys Ala Val Gly Glu Ser Val Gln
 85 90 95
 Lys Pro Leu Leu Tyr Phe Asn Asn Asn Leu Ile Gly Thr Ile Thr Leu
 100 105 110
 Leu Glu Val Met Thr Ser His Gly Cys Lys Gln Leu Val Phe Ser Ser
 115 120 125
 Ser Ala Thr Val Tyr Gly Cys Pro Lys Glu Val Pro Cys Thr Glu Glu
 130 135 140
 Phe Pro Leu Ser Ala Ala Ser Pro Tyr Gly Arg Thr Lys Leu Phe Ile
 145 150 155 160
 Glu Gly Ile Cys Cys Asp Ile His Arg Ser Asp Ser Glu Trp Lys Ile
 165 170 175
 Ile Leu Leu Arg Tyr Phe Asn Pro Val Gly Ala His Pro Ser Gly His
 180 185 190
 Ile Gly Glu Asp Pro Leu Gly Ile Pro Asn Asn Leu Met Pro Tyr Val
 195 200 205
 Gln Gln Val Ala Val Gly Arg Arg Pro His Leu Thr Val Tyr Gly Thr
 210 215 220
 Asp Tyr Ser Thr Lys Asp Gly Thr Gly Val Arg Asp Tyr Ile His Val
 225 230 235 240
 Val Asp Leu Ala Asp Gly His Ile Ala Ala Leu Arg Lys Leu Ser Asp
 245 250 255
 Ala Asn Ile Gly Cys Glu Val Tyr Asn Leu Gly Thr Gly Lys Gly Thr
 260 265 270
 Ser Val Leu Glu Met Val Ala Ala Phe Glu Lys Ala Ser Arg Lys Lys
 275 280 285
 Ile Pro Leu Val Met Ala Ala Arg Arg Pro Gly Asp Ala Glu Ile Val
 290 295 300
 Tyr Ala Ala Thr Glu Lys Ala Glu Arg Glu Leu Asn Trp Lys Ala Lys
 305 310 315 320
 Tyr Gly Ile Asp Glu Met Cys Arg Asp Gln Trp Asn Trp Ala Gly Lys
 325 330 335

Asn Pro Tyr Gly Tyr Gly Ser Ser Asp Ser Thr Asn
340 345

<210> 260
<211> 990
<212> DNA
<213> Populus tremuloides

<400> 260
atggcctata atattctgggt tacaggcgggt gctgggttaca taggaagcca cacgggtgctg 60
caacttttat taggcggcta caaactgtgt gttgttgata acctcgacaa cgcctctgat 120
attgctctta aaagagttaa agaactcgcc ggtgatttcg gcaaaaacct cgtctttcac 180
caggttgatc tccgggacaa gccggctctg gaaaatgttt tcgccgagac aaagtttgat 240
gctgtcattc actttgctgg gctgaaagca gttggtgaga gtatgcagaa accattgctt 300
tatttcaaca ataatctcat tggaacaatt actctgctag aagttatggc tgctcatgga 360
tgcaagcagg taattttctc taggttgctt tgcattgggtg ttttcatctt cagctactgt 420
ttatggttgg ccgaaggagg ttccatgtac agaagagttc cttttgtctg ctgcaaaccc 480
atatggaaga accaagagat ctgccgcgat atctacagtt cagattctga atggaagatc 540
atattactca gatactttaa tccagttgggt gcacatccaa gtggctatat tggtgaggat 600
cctcgtggaa ttccaaacaa tctcatgccc tatgtgcagc aagttgctgt tggcaggagg 660
cctcatctaa cagtttttgg aactgattat ccaacaaaag acggtaccgg ggtacgtgat 720
tacattcatg ttgtcgattt agcagatggg cacattgctg cattgcgtaa gctctctgaa 780
gctaatatag gttgtgaagt gtacaacttg ggaacagggg aaggtagatc agttctggag 840
atggtcgcag catttgaaaa ggcattctgga aagagtccca tcttcgtgtg ccagaaaatt 900
cctcttgtaa tggctgatcg gcgacctggg gatgctgaaa ctgtgtatgc agcaacagag 960
aaggcagaac gtgaattgag ttggaagtaa 990

<210> 261
<211> 329
<212> PRT
<213> Populus tremuloides

<400> 261
Met Ala Tyr Asn Ile Leu Val Thr Gly Gly Ala Gly Tyr Ile Gly Ser
1 5 10 15
His Thr Val Leu Gln Leu Leu Leu Gly Gly Tyr Asn Thr Val Val Val
20 25 30
Asp Asn Leu Asp Asn Ala Ser Asp Ile Ala Leu Lys Arg Val Lys Glu
35 40 45
Leu Ala Gly Asp Phe Gly Lys Asn Leu Val Phe His Gln Val Asp Leu
50 55 60
Arg Asp Lys Pro Ala Leu Glu Asn Val Phe Ala Glu Thr Lys Phe Asp
Seite 275

65					70					75					80
Ala	Val	Ile	His	Phe 85	Ala	Gly	Leu	Lys	Ala 90	Val	Gly	Glu	Ser	Met 95	Gln
Lys	Pro	Leu	Leu 100	Tyr	Phe	Asn	Asn	Asn 105	Leu	Ile	Gly	Thr	Ile 110	Thr	Leu
Leu	Glu	Val 115	Met	Ala	Ala	His	Gly 120	Cys	Lys	Gln	Val	Ile 125	Phe	Ser	Arg
Leu	Leu 130	Cys	Ile	Gly	Val	Phe 135	Ile	Phe	Ser	Tyr	Cys 140	Leu	Trp	Leu	Ala
Glu 145	Gly	Gly	Ser	Met	Tyr 150	Arg	Arg	Val	Pro	Phe 155	Val	Cys	Cys	Lys	Pro 160
Ile	Trp	Lys	Asn	Gln 165	Glu	Ile	Cys	Arg	Asp 170	Ile	Tyr	Ser	Ser	Asp 175	Ser
Glu	Trp	Lys	Ile 180	Ile	Leu	Leu	Arg	Tyr 185	Phe	Asn	Pro	Val	Gly 190	Ala	His
Pro	Ser	Gly 195	Tyr	Ile	Gly	Glu	Asp 200	Pro	Arg	Gly	Ile	Pro 205	Asn	Asn	Leu
Met	Pro 210	Tyr	Val	Gln	Gln	Val 215	Ala	Val	Gly	Arg	Arg 220	Pro	His	Leu	Thr
Val 225	Phe	Gly	Thr	Asp	Tyr 230	Pro	Thr	Lys	Asp	Gly 235	Thr	Gly	Val	Arg	Asp 240
Tyr	Ile	His	Val	Val 245	Asp	Leu	Ala	Asp	Gly 250	His	Ile	Ala	Ala	Leu 255	Arg
Lys	Leu	Ser	Glu 260	Ala	Asn	Ile	Gly	Cys 265	Glu	Val	Tyr	Asn	Leu 270	Gly	Thr
Gly	Lys	Gly 275	Thr	Ser	Val	Leu	Glu 280	Met	Val	Ala	Ala	Phe 285	Glu	Lys	Ala
Ser	Gly 290	Lys	Ser	Pro	Ile	Phe 295	Val	Cys	Gln	Lys	Ile 300	Pro	Leu	Val	Met
Ala 305	Asp	Arg	Arg	Pro	Gly 310	Asp	Ala	Glu	Thr	Val 315	Tyr	Ala	Ala	Thr	Glu 320
Lys	Ala	Glu	Arg	Glu 325	Leu	Ser	Trp	Lys							

$\langle 210 \rangle$	262
$\langle 211 \rangle$	1254

PF59082SEQ List- PF59348PCT.txt

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<212> DNA
<213> Populus tremuloides

<400> 262
atgctaagtt ttggcaggac cagaactcag ccaaggtcca atagatctat gtcccttgga      60
ggcatggatt tttcagatcc aaaaagaaaa aataatgttg taggaaagat tcttttggcc      120
gcttccctaa cagctgtatg tataattatg ctgaaacaat ctccaacctt taattctcca      180
agcccgttct ctttgcgtga agatgggggtg atccatgtcc ttgtgacagg tggtgctggc      240
tacattgggt cccatgcagc attgcgactt ttgaaggatg gttaccgagt aaccatagtg      300
gacaaccttt ctcgaggaaa cttaggtgca gtcaagggtt tacaagagtt atttcctgag      360
cctgggaggc ttcagtttat atatgctgac ttgggagagc ctaaaactgt taacagcatc      420
ttttcacaaa atgcatttga tgctgtgatg cattttgcag cagttgcata tgttggggaa      480
agcaccgtgt acccccttaa gtactatcac aacattacat caaatacctt ggtagtgttg      540
gagtcaatgg ctgcaaatga tgtaaagact ttgatataatt caagcacatg tgcaacatat      600
ggggagcctg aaaagatgcc tattactgaa gacactccac aggtacccat taatccatat      660
ggaaaagcta agaagatggc agaagatatc atccttgact tctctaaaaa ttcagacatg      720
gcaattatga tattgagata cttcaatgtg attggatcag atccagatgg aagggttaggt      780
gaggctccta gacctgaact gcgtgagcac ggacgaattt ctggtgcttg ttttgatgct      840
gctcgtggta ttgttgctgg actaaagggt aaaggaacgg actataagac acacgatgga      900
acttgataaa gagattatat cgatgttact gatcttggtg atgctcatgt taaagcactt      960
gaaaaggcaa tgcctgggaa agttggaatc tacaatgttg gcaactggaat gggtagatca     1020
gtcaacgagt ttgtacatgc atgtaaaaag gcaaccggtg tagatatcaa agtagactat     1080
ttacctcgcc ggctgggtga ctatgctgaa gtgttttagtg acccatcaaa aattaaccgt     1140
gagctgaact ggacagcaca atacactgat ctccaaaaga gtttacaggt tgcattggaga     1200
tggcaaaaat cacatcaaaa tgggtatgga tccccttttg tgatggcttc ttga           1254

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<210> 263
<211> 417
<212> PRT
<213> Populus tremuloides

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<400> 263
Met Leu Ser Phe Gly Arg Thr Arg Thr Gln Pro Arg Ser Asn Arg Ser
1          5          10          15

Met Ser Leu Gly Gly Met Asp Phe Ser Asp Pro Lys Arg Lys Asn Asn
          20          25          30

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

Ile Met Leu Lys Gln Ser Pro Thr Phe Asn Ser Pro Ser Pro Phe Ser
50          55          60

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PF59082SEQ List- PF59348PCT.txt

Leu Arg Glu Asp Gly Val Ile His Val Leu Val Thr Gly Gly Ala Gly
 65 70 75 80
 Tyr Ile Gly Ser His Ala Ala Leu Arg Leu Leu Lys Asp Gly Tyr Arg
 85 90 95
 Val Thr Ile Val Asp Asn Leu Ser Arg Gly Asn Leu Gly Ala Val Lys
 100 105 110
 Val Leu Gln Glu Leu Phe Pro Glu Pro Gly Arg Leu Gln Phe Ile Tyr
 115 120 125
 Ala Asp Leu Gly Glu Pro Lys Thr Val Asn Ser Ile Phe Ser Gln Asn
 130 135 140
 Ala Phe Asp Ala Val Met His Phe Ala Ala Val Ala Tyr Val Gly Glu
 145 150 155 160
 Ser Thr Val Tyr Pro Leu Lys Tyr Tyr His Asn Ile Thr Ser Asn Thr
 165 170 175
 Leu Val Val Leu Glu Ser Met Ala Ala Asn Asp Val Lys Thr Leu Ile
 180 185 190
 Tyr Ser Ser Thr Cys Ala Thr Tyr Gly Glu Pro Glu Lys Met Pro Ile
 195 200 205
 Thr Glu Asp Thr Pro Gln Val Pro Ile Asn Pro Tyr Gly Lys Ala Lys
 210 215 220
 Lys Met Ala Glu Asp Ile Ile Leu Asp Phe Ser Lys Asn Ser Asp Met
 225 230 235 240
 Ala Ile Met Ile Leu Arg Tyr Phe Asn Val Ile Gly Ser Asp Pro Asp
 245 250 255
 Gly Arg Leu Gly Glu Ala Pro Arg Pro Glu Leu Arg Glu His Gly Arg
 260 265 270
 Ile Ser Gly Ala Cys Phe Asp Ala Ala Arg Gly Ile Val Ala Gly Leu
 275 280 285
 Lys Val Lys Gly Thr Asp Tyr Lys Thr His Asp Gly Thr Cys Ile Arg
 290 295 300
 Asp Tyr Ile Asp Val Thr Asp Leu Val Asp Ala His Val Lys Ala Leu
 305 310 315 320
 Glu Lys Ala Met Pro Gly Lys Val Gly Ile Tyr Asn Val Gly Thr Gly
 325 330 335

Met Gly Arg Ser Val Asn Glu Phe Val His Ala Cys Lys Lys Ala Thr
340 345 350

Gly Val Asp Ile Lys Val Asp Tyr Leu Pro Arg Arg Pro Gly Asp Tyr
355 360 365

Ala Glu Val Phe Ser Asp Pro Ser Lys Ile Asn Arg Glu Leu Asn Trp
370 375 380

Thr Ala Gln Tyr Thr Asp Leu Gln Lys Ser Leu Gln Val Ala Trp Arg
385 390 395 400

Trp Gln Lys Ser His Gln Asn Gly Tyr Gly Ser Pro Leu Val Met Ala
405 410 415

Ser

<210> 264
<211> 1575
<212> DNA
<213> Populus tremuloides

<400> 264
atgattctgg tcacaggcgg cgccggcttc atcggctcgc atagctgcgt ggaactcgcc 60
gctgcgggcg agccctacct gatctacgac aacttcagca acagcagccc cgatgtgctc 120
gaacgcatgg aacgcatcac gggccggcgc ccgctgtgcg tcgagggaga cgtgcgcgac 180

cgcgccgcgc tggaccggt gtttgccgag cactccatcc gcgaggtgat ccacttcgcc 240
gcgctcaagg ccgtgggcca gtccgtggcc cagccgctgc gctactacga acacaacgtg 300
ggcggcacgg tggccctgct gcaggccatg cggacggcgg gcgtgcgcag cctggtgttc 360
tcctcctcgg ccacggtcta cggcgatccg gccagcctgc cgatccgcga agactttccg 420
ctgtccgcca ccaacccta cggccgcagc aagctgtgga tcgaggaaat gctggccgac 480
ctggaccggg ccgaggccgg ccagtggagc ctggcacggc tgcgctactt caaccctgtg 540
ggcgcccatg aaagcggcct gatcggcgag gaccgcgcgc acatcccca caacctcatg 600
ccctatgtgt cgcaggtcgc catcggccag cgccagcagc tcagtgtcta tggcgatgac 660
tatgcgacgc cggacggcac gggcgtgcgc gactacatcc acgtcaccga cctggcgcgc 720
ggccacctgg cggcgctgcg ctatctgcgc gagcagcagg gcctgctgac cgtgaacctg 780
ggcacggggc gcccgggtctc ggtgctggag atggtcaagg ccttcgagcg cgccagcggc 840
cgccccgtgc cctaccagat cgtggcgcgc cgaccggcg acgtggcca gtgctgggcc 900
gaccccgccg aggccgagcg gctgctgggc tggaaggcca tgctggacct ggaccgcatc 960
gcctgcgggc gccgagggcg tggatatctt tcgcccttgt ttcacgccct agccaagagt 1020
ctgcccacgc ttgccaaacg catcatcccc tgtcttgacg tcacgggagg gcgcgtcgtc 1080
aaaggcgtga acttcgtgga actgcgcgat gcgggcgacc cgggtggagat cgccgcgcgc 1140

PF59082SEQ List- PF59348PCT.txt

tacaacgccc agggcgcgga cgagctgacc ttcctggaca tcacggccac cagcgacggg 1200
 cgcgacctga tcctgcccac catcgaatcg gtggccagcc aggtcttcat tccgctgacc 1260
 gtgggtggtg gcgtgcgcac cgctcaggac gtgcgccgcc tgctcaacgc gggcgccgac 1320
 aagaccagct tcaactcggc cgccatcgcc aaccccgacg tgatcaatgc ggcctcggac 1380
 aagtacggcg cgcaatgcat cgctgtggcc atcgaatgcca agcggcgccac ggccgaggac 1440
 gagcagcgca tcggcgccga tggccgcgct gccggccccg gctgggacgt gtacagccac 1500
 ggcggacgca aaaacaccgg cctggacgcc gtgcactcac gcgcgccgtc agcgacgccg 1560
 tgcccgtgcc cgtga 1575

<210> 265
 <211> 524
 <212> PRT
 <213> Populus tremuloides
 <400> 265

Met Ile Leu Val Thr Gly Gly Ala Gly Phe Ile Gly Ser His Ser Cys
 1 5 10 15
 Val Glu Leu Ala Ala Ala Gly Glu Pro Tyr Leu Ile Tyr Asp Asn Phe
 20 25 30
 Ser Asn Ser Ser Pro Asp Val Leu Glu Arg Met Glu Arg Ile Thr Gly
 35 40 45
 Arg Arg Pro Leu Cys Val Glu Gly Asp Val Arg Asp Arg Ala Ala Leu
 50 55 60
 Asp Arg Leu Phe Ala Glu His Ser Ile Arg Glu Val Ile His Phe Ala
 65 70 75 80
 Ala Leu Lys Ala Val Gly Glu Ser Val Ala Gln Pro Leu Arg Tyr Tyr
 85 90 95
 Glu His Asn Val Gly Gly Thr Val Ala Leu Leu Gln Ala Met Arg Thr
 100 105 110
 Ala Gly Val Arg Ser Leu Val Phe Ser Ser Ser Ala Thr Val Tyr Gly
 115 120 125
 Asp Pro Ala Ser Leu Pro Ile Arg Glu Asp Phe Pro Leu Ser Ala Thr
 130 135 140
 Asn Pro Tyr Gly Arg Ser Lys Leu Trp Ile Glu Glu Met Leu Ala Asp
 145 150 155 160
 Leu Asp Arg Ala Glu Ala Gly Gln Trp Ser Leu Ala Arg Leu Arg Tyr
 165 170 175
 Phe Asn Pro Val Gly Ala His Glu Ser Gly Leu Ile Gly Glu Asp Pro

180

185

190

Arg Asp Ile Pro Asn Asn Leu Met Pro Tyr Val Ser Gln Val Ala Ile
195 200 205

Gly Gln Arg Gln Gln Leu Ser Val Tyr Gly Asp Asp Tyr Ala Thr Pro
210 215 220

Asp Gly Thr Gly Val Arg Asp Tyr Ile His Val Thr Asp Leu Ala Arg
225 230 235 240

Gly His Leu Ala Ala Leu Arg Tyr Leu Arg Glu Gln Gln Gly Leu Leu
245 250 255

Thr Val Asn Leu Gly Thr Gly Arg Pro Val Ser Val Leu Glu Met Val
260 265 270

Lys Ala Phe Glu Arg Ala Ser Gly Arg Pro Val Pro Tyr Gln Ile Val
275 280 285

Ala Arg Arg Pro Gly Asp Val Ala Gln Cys Trp Ala Asp Pro Ala Glu
290 295 300

Ala Glu Arg Leu Leu Gly Trp Lys Ala Met Leu Asp Leu Asp Arg Ile
305 310 315 320

Ala Cys Gly Arg Arg Gly Arg Gly Ile Phe Ser Pro Leu Phe His Ala
325 330 335

Leu Ala Lys Ser Leu Pro Met Leu Ala Lys Arg Ile Ile Pro Cys Leu
340 345 350

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

Arg Asp Ala Gly Asp Pro Val Glu Ile Ala Ala Arg Tyr Asn Ala Gln
370 375 380

Gly Ala Asp Glu Leu Thr Phe Leu Asp Ile Thr Ala Thr Ser Asp Gly
385 390 395 400

Arg Asp Leu Ile Leu Pro Ile Ile Glu Ser Val Ala Ser Gln Val Phe
405 410 415

Ile Pro Leu Thr Val Gly Gly Gly Val Arg Thr Val Glu Asp Val Arg
420 425 430

Arg Leu Leu Asn Ala Gly Ala Asp Lys Thr Ser Phe Asn Ser Ala Ala
435 440 445

Ile Ala Asn Pro Asp Val Ile Asn Ala Ala Ser Asp Lys Tyr Gly Ala

450

Gln Cys Ile Val Val Ala Ile Asp Ala Lys Arg Arg Thr Ala Glu Asp
465 470 475 480

Glu Gln Arg Ile Gly Ala Asp Gly Arg Ala Ala Gly Pro Gly Trp Asp
485 490 495

Val Tyr Ser His Gly Gly Arg Lys Asn Thr Gly Leu Asp Ala Val His
500 505 510

Ser Arg Ala Pro Ser Ala Thr Pro Cys Pro Cys Pro
515 520

<210> 266
<211> 1059
<212> DNA
<213> Ostreococcus tauri

<400> 266
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cggctcctgc aagcgggagc gcgcgtcacc gtcgtggata actttgacaa ctcgtgcgcg 120
gaatctttaa agcgcgtgag aaacatcgtg ggcgaggacg cgggggagcg tttgacgcac 180
cacgaggttg attgctgcga taaagtcgag ctcgatggcg tcttcgcgctc ggcgggggtg 240
acgttcgatg cggtgataca cttcgccggg ttgaaggcgg tgggagagag cgtggccgag 300
ccgatgaagt attacgagaa taacatcgtg agcacgctgg tgctgtgcga gacgatggcg 360
aaacacgggt gtaagacgat ttttttttagc tcgagcgcga ccgtgtacgg ggagccggcg 420
tcggtgccgt gcacggaaga tttcccgacg gcggcggtga acccgtagcg acggaccaag 480
ttgttcatcg aacacatttt gagcgatctc tacgtgagtg ataaggagtg gaagggtggcg 540
ctgttgcgat actttaacct ggtcggtagc cagcagagtg ggacgctggg ggaggatccc 600
aagggaatcc cgaataactt gatgccattc gtgcagcaag tcgccgtcgg tcgacgaccc 660
gagctcaacg tgtttgggaa cgactatcca accaaggatg gaaccggctg acgtgattac 720
attcatgtcg tcgatttggc cgacggacac gtcgaggcgg taaagaaact cagcagtgat 780
cccgacgagg gtttgctcac cgtcaacctc gggacgggga agagcacgag cgtcttagag 840
ctcgtcgcgg cgttcgagaa ggcgtccggg aagaaaattc cgtgcaagat tgcgatcgt 900
cgcgaggtg acgccgcaga ggtgtacggg gcgacagata aggcgttcaa ggttctcggg 960
tggcgtgcac ttcgcacat cgaagactgc tgcacgatc agtggaagtg ggcgagctcg 1020
aaccgtacg ggtacgcagg taagcccgac gacgcgtaa 1059

<210> 267
<211> 352
<212> PRT
<213> Ostreococcus tauri

<400> 267

Met Thr Trp Asn Val Leu Val Thr Gly Gly Ala Gly Tyr Ile Gly Ser
1 5 10 15

His Thr Cys Val Arg Leu Leu Gln Ala Gly Ala Arg Val Thr Val Val
20 25 30

Asp Asn Phe Asp Asn Ser Cys Ala Glu Ser Leu Lys Arg Val Arg Asn
35 40 45

Ile Val Gly Glu Asp Ala Gly Ala Arg Leu Thr His His Glu Val Asp
50 55 60

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

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

Ser Val Ala Glu Pro Met Lys Tyr Tyr Glu Asn Asn Ile Val Ser Thr
100 105 110

Leu Val Leu Cys Glu Thr Met Ala Lys His Gly Cys Lys Thr Ile Ile
115 120 125

Phe Ser Ser Ser Ala Thr Val Tyr Gly Glu Pro Ala Ser Val Pro Cys
130 135 140

Thr Glu Asp Phe Pro Thr Ala Ala Leu Asn Pro Tyr Gly Arg Thr Lys
145 150 155 160

Leu Phe Ile Glu His Ile Leu Ser Asp Leu Tyr Val Ser Asp Lys Glu
165 170 175

Trp Lys Val Ala Leu Leu Arg Tyr Phe Asn Pro Val Gly Ala His Glu
180 185 190

Ser Gly Thr Leu Gly Glu Asp Pro Lys Gly Ile Pro Asn Asn Leu Met
195 200 205

Pro Phe Val Gln Gln Val Ala Val Gly Arg Arg Pro Glu Leu Asn Val
210 215 220

Phe Gly Asn Asp Tyr Pro Thr Lys Asp Gly Thr Gly Arg Arg Asp Tyr
225 230 235 240

Ile His Val Val Asp Leu Ala Asp Gly His Val Ala Ala Val Lys Lys
245 250 255

Leu Thr Ser Asp Pro Asp Ala Gly Leu Leu Thr Val Asn Leu Gly Thr
260 265 270

Gly Lys Ser Thr Ser Val Leu Glu Leu Val Ala Ala Phe Glu Lys Ala

275

280

285

Ser Gly Lys Lys Ile Pro Cys Lys Ile Val Asp Arg Arg Ala Gly Asp
 290 295 300

Ala Ala Glu Val Tyr Gly Ala Thr Asp Lys Ala Phe Lys Val Leu Gly
 305 310 315 320

Trp Arg Ala Leu Arg Thr Ile Glu Asp Cys Cys Ile Asp Gln Trp Lys
 325 330 335

Trp Ala Ser Ser Asn Pro Tyr Gly Tyr Ala Gly Lys Pro Asp Asp Ala
 340 345 350

<210> 268
 <211> 2100
 <212> DNA
 <213> *Ostreococcus tauri*

<400> 268
 atgacagctc agttacaaag tgaaagtact tctaaaattg ttttggttac aggtggtgct 60
 ggatacattg gttcacacac tgtggttagag ctaattgaga atggatatga ctgtgttggt 120
 gctgataacc tgtcgaattc aacttatgat tctgtagcca ggtagaggt cttgaccaag 180
 catcacattc ctttctatga ggttgatttg tgtgaccgaa aaggctctgga aaagggttttc 240
 aaagaatata aaattgattc ggtaattcac tttgctgggt taaaggctgt aggtgaatct 300
 acacaaatcc cgctgagata ctatcacaat aacatttttg gaactgtcgt tttattagag 360
 ttaatgcaac aatacaacgt ttccaaattt gttttttcat cttctgctac tgtctatggt 420
 gatgctacga gattcccaaa tatgattcct atcccagaag aatgtccctt agggcctact 480
 aatccgatatg gtcatacgaa atacgccatt gagaatatct tgaatgatct ttacaatagc 540
 gacaaaaaaa gttggaagtt tgctatcttg cgttatttta acccaattgg cgcacatccc 600
 tctggattaa tcggagaaga tccgctaggt ataccaaaca atttgttgcc atatatggct 660
 caagtagctg ttggtaggcg cgagaagctt tacatcttcg gagacgatta tgattccaga 720
 gatggtaccc cgatcagga ttatatccac gtagttgatc tagcaaaagg tcatattgca 780
 gccctgcaat acctagaggc ctacaatgaa aatgaagggt tgtgtcgtga gtggaacttg 840
 ggttccggtg aaggttctac agtttttgaa gtttatcatg cattctgcaa agcttctggt 900
 attgatcttc catacaaagt tacgggcaga agagcagggt atgttttgaa cttgacggct 960
 aaaccagata gggccaaacg cgaactgaaa tggcagaccg agttgcagggt tgaagactcc 1020
 tgcaaggatt tatggaaatg gactactgag aatccttttg gttaccagtt aaggggtgtc 1080
 gaggccagat tttccgctga agatatgctg tatgacgcaa gatttgtgac tattggtgcc 1140
 ggcaccagat ttcaagccac gtttgccaat ttgggcgcca gcattgttga cctgaaagtg 1200
 aacggacaat cagttgttct tggctatgaa aatgaggaag ggtatttgaa tcctgatagt 1260
 gcttatatag gcgccacgat cggcagggtat gctaatacgta tttcgaaggg taagtttagt 1320

PF59082SEQ List- PF59348PCT.txt

ttatgcaaca aagactatca gttaaccgtt aataacggcg ttaatgcgaa tcatagtagt 1380
atcggttctt tccacagaaa aagattttttg ggacccatca ttcaaaatcc ttcaaaggat 1440
gtttttaccg ccgagtacat gctgatagat aatgagaagg acaccgaatt tccaggtgat 1500
ctattggtaa ccatacagta tactgtgaac gttgcccaaa aaagtttgga aatggtatat 1560
aaaggtaaatt tgactgctgg tgaagcgacg ccaataaatt taacaaatca tagttatttc 1620
aatctgaaca agccatatgg agacactatt gagggtagcg agattatggt gcgttcaaaa 1680
aaatctgttg atgtcgacaa aaacatgatt cctacgggta atatcgtcga tagagaaatt 1740
gctaccttta actctacaaa gccaacggtc ttaggcccc aaaaatcccc gtttgattgt 1800
tgttttgtgg tggatgaaaa tgctaagcca agtcaaatca atactctaaa caatgaattg 1860
acgcttattg tcaaggcttt tcatcccgat tccaatatta cattagaagt tttaagtaca 1920
gagccaactt atcaatttta taccggtgat ttcttgtctg ctggttacga agcaagacaa 1980
ggttttgcaa ttgagcctgg tagatacatt gatgctatca atcaagagaa ctggaaagat 2040
tgtgtaacct tgaaaaacgg tgaaacttac gggccaaga ttgtctacag attttcctga 2100

<210> 269
<211> 699
<212> PRT
<213> *Ostreococcus tauri*

<400> 269

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

Thr Gly Gly Ala Gly Tyr Ile Gly Ser His Thr Val Val Glu Leu Ile
20 25 30

Glu Asn Gly Tyr Asp Cys Val Val Ala Asp Asn Leu Ser Asn Ser Thr
35 40 45

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

Phe Tyr Glu Val Asp Leu Cys Asp Arg Lys Gly Leu Glu Lys Val Phe
65 70 75 80

Lys Glu Tyr Lys Ile Asp Ser Val Ile His Phe Ala Gly Leu Lys Ala
85 90 95

Val Gly Glu Ser Thr Gln Ile Pro Leu Arg Tyr Tyr His Asn Asn Ile
100 105 110

Leu Gly Thr Val Val Leu Leu Glu Leu Met Gln Gln Tyr Asn Val Ser
115 120 125

Lys Phe Val Phe Ser Ser Ser Ala Thr Val Tyr Gly Asp Ala Thr Arg
130 135 140

PF59082SEQ List- PF59348PCT.txt

Phe Pro Asn Met Ile Pro Ile Pro Glu Glu Cys Pro Leu Gly Pro Thr
 145 150 155 160
 Asn Pro Tyr Gly His Thr Lys Tyr Ala Ile Glu Asn Ile Leu Asn Asp
 165 170 175
 Leu Tyr Asn Ser Asp Lys Lys Ser Trp Lys Phe Ala Ile Leu Arg Tyr
 180 185 190
 Phe Asn Pro Ile Gly Ala His Pro Ser Gly Leu Ile Gly Glu Asp Pro
 195 200 205
 Leu Gly Ile Pro Asn Asn Leu Leu Pro Tyr Met Ala Gln Val Ala Val
 210 215 220
 Gly Arg Arg Glu Lys Leu Tyr Ile Phe Gly Asp Asp Tyr Asp Ser Arg
 225 230 235 240
 Asp Gly Thr Pro Ile Arg Asp Tyr Ile His Val Val Asp Leu Ala Lys
 245 250 255
 Gly His Ile Ala Ala Leu Gln Tyr Leu Glu Ala Tyr Asn Glu Asn Glu
 260 265 270
 Gly Leu Cys Arg Glu Trp Asn Leu Gly Ser Gly Lys Gly Ser Thr Val
 275 280 285
 Phe Glu Val Tyr His Ala Phe Cys Lys Ala Ser Gly Ile Asp Leu Pro
 290 295 300
 Tyr Lys Val Thr Gly Arg Arg Ala Gly Asp Val Leu Asn Leu Thr Ala
 305 310 315 320
 Lys Pro Asp Arg Ala Lys Arg Glu Leu Lys Trp Gln Thr Glu Leu Gln
 325 330 335
 Val Glu Asp Ser Cys Lys Asp Leu Trp Lys Trp Thr Thr Glu Asn Pro
 340 345 350
 Phe Gly Tyr Gln Leu Arg Gly Val Glu Ala Arg Phe Ser Ala Glu Asp
 355 360 365
 Met Arg Tyr Asp Ala Arg Phe Val Thr Ile Gly Ala Gly Thr Arg Phe
 370 375 380
 Gln Ala Thr Phe Ala Asn Leu Gly Ala Ser Ile Val Asp Leu Lys Val
 385 390 395 400
 Asn Gly Gln Ser Val Val Leu Gly Tyr Glu Asn Glu Glu Gly Tyr Leu
 405 410 415

PF59082SEQ List- PF59348PCT.txt

Asn Pro Asp Ser Ala Tyr Ile Gly Ala Thr Ile Gly Arg Tyr Ala Asn
 420 425 430
 Arg Ile Ser Lys Gly Lys Phe Ser Leu Cys Asn Lys Asp Tyr Gln Leu
 435 440 445
 Thr Val Asn Asn Gly Val Asn Ala Asn His Ser Ser Ile Gly Ser Phe
 450 455 460
 His Arg Lys Arg Phe Leu Gly Pro Ile Ile Gln Asn Pro Ser Lys Asp
 465 470 475 480
 Val Phe Thr Ala Glu Tyr Met Leu Ile Asp Asn Glu Lys Asp Thr Glu
 485 490 495
 Phe Pro Gly Asp Leu Leu Val Thr Ile Gln Tyr Thr Val Asn Val Ala
 500 505 510
 Gln Lys Ser Leu Glu Met Val Tyr Lys Gly Lys Leu Thr Ala Gly Glu
 515 520 525
 Ala Thr Pro Ile Asn Leu Thr Asn His Ser Tyr Phe Asn Leu Asn Lys
 530 535 540
 Pro Tyr Gly Asp Thr Ile Glu Gly Thr Glu Ile Met Val Arg Ser Lys
 545 550 555 560
 Lys Ser Val Asp Val Asp Lys Asn Met Ile Pro Thr Gly Asn Ile Val
 565 570 575
 Asp Arg Glu Ile Ala Thr Phe Asn Ser Thr Lys Pro Thr Val Leu Gly
 580 585 590
 Pro Lys Asn Pro Gln Phe Asp Cys Cys Phe Val Val Asp Glu Asn Ala
 595 600 605
 Lys Pro Ser Gln Ile Asn Thr Leu Asn Asn Glu Leu Thr Leu Ile Val
 610 615 620
 Lys Ala Phe His Pro Asp Ser Asn Ile Thr Leu Glu Val Leu Ser Thr
 625 630 635 640
 Glu Pro Thr Tyr Gln Phe Tyr Thr Gly Asp Phe Leu Ser Ala Gly Tyr
 645 650 655
 Glu Ala Arg Gln Gly Phe Ala Ile Glu Pro Gly Arg Tyr Ile Asp Ala
 660 665 670
 Ile Asn Gln Glu Asn Trp Lys Asp Cys Val Thr Leu Lys Asn Gly Glu
 675 680 685

Thr Tyr Gly Ser Lys Ile Val Tyr Arg Phe Ser
690 695

<210> 270
<211> 1024
<212> DNA
<213> Escherichia coli

<400> 270
atggctattc tcgttacagg tgggtgctggt tatattgcat cacatactat actgagtttg 60
atagagcagg gtaatgaagt aattattatt gataatttat caaattcata ttatgattcg 120
ttattgaaaa taaaagagat tactggatgt gattgtcttt ttataaaagg agatatacctt 180
gacaaaaaac tcttgctaaa aatatttgat gaaaataata tcaactgctgt gatgcatttt 240
gctggtgcaa agtctgtaag tgaatctggt atcagacctt tgcaatacta tcgaaataat 300
gtctctggca ctttttcttt agttgaggca atggaggagt ctggtgtaga aaatttaata 360
tttagctctt cagcaactgt ctatggtgag ccaaagatta ttctgtgaa tgaaagttgt 420
gctatagggtg gtactacaaa tccgtatgga acgtccaagt tatttgtaga gaactttttg 480
cgggattatt ctaaggcatc ccctaatttt aaaactatag tattaagata ttttaaccct 540
atcggtgctc actcatctgg aaaaataggt gaagatccta acggaattcc gaataacttg 600

atgcccttta tatgccaggt tgctatcggt aaacaaaaaa cgctcaagat ctacggaaat 660
gattatccta ctaaagatgg tactgggatt cgcgattata ttcatgttat ggatcttgct 720
gaaggatcatg ttgctgcatt aaataatatt aatcaaggag ctaattatag agtttacaac 780
cttgaacag gaattggata ctctgtgttg gaattattag aagcatttca gaaagttaca 840
actcggagag ttccctatgt ttttactaaa aggcgttcag gtgatattgc tgaatgttgg 900
tctgatccta ccaaagcgta tgaagaatta ggatggaaag caaggcgagg gttagaagat 960
atgattcgtg atgcatggaa ttggcagcaa aaaaatccaa atggatttaa gaaagtttaa 1020
gtaa 1024

<210> 271
<211> 339
<212> PRT
<213> Escherichia coli

<400> 271
Met Ala Ile Leu Val Thr Gly Gly Ala Gly Tyr Ile Ala Ser His Thr
1 5 10 15

Ile Leu Ser Leu Ile Glu Gln Gly Asn Glu Val Ile Ile Ile Asp Asn
20 25 30

Leu Ser Asn Ser Tyr Tyr Asp Ser Leu Leu Lys Ile Lys Glu Ile Thr
35 40 45

Gly Cys Asp Cys Leu Phe Tyr Lys Gly Asp Ile Leu Asp Lys Lys Leu
50 55 60

PF59082SEQ List- PF59348PCT.txt

Leu 65 Leu Lys Ile Phe 70 Asp 70 Glu Asn Asn Ile 75 Thr 75 Ala Val Met His 80 Phe 80
 Ala 85 Gly Ala Lys 85 Ser 85 Val Ser Glu Ser 90 Val 90 Ile Arg Pro Leu 95 Gln 95 Tyr
 Tyr 100 Arg Asn 100 Asn 100 Val Ser Gly Thr 105 Phe 105 Ser Leu Val Glu 110 Ala 110 Met Glu
 Glu 115 Ser 115 Gly 115 Val Glu Asn Leu 120 Ile 120 Phe Ser Ser Ser 125 Ala 125 Thr Val Tyr
 Gly 130 Glu 130 Pro Lys Ile Ile 135 Pro 135 Val Asn Glu Ser 140 Cys 140 Ala Ile Gly Gly
 Thr 145 Thr 145 Asn Pro Tyr 150 Gly 150 Thr Ser Lys Leu 155 Phe 155 Val Glu Asn Phe 160 Leu 160
 Arg 165 Asp Tyr Ser 165 Lys 165 Ala Ser Pro Asn 170 Phe 170 Lys Thr Ile Val 175 Leu 175 Arg
 Tyr 180 Phe 180 Asn Pro 180 Ile Gly Ala His 185 Ser 185 Ser Gly Lys Ile 190 Gly 190 Glu Asp
 Pro 195 Asn 195 Gly 195 Ile Pro Asn Asn 200 Leu 200 Met Pro Phe Ile 205 Cys 205 Gln Val Ala
 Ile 210 Gly 210 Lys Gln Lys Thr 215 Leu 215 Lys Ile Tyr Gly 220 Asn 220 Asp Tyr Pro Thr
 Lys 225 Asp 225 Gly Thr Gly 230 Ile 230 Arg Asp Tyr Ile 235 His 235 Val Met Asp Leu 240 Ala 240
 Glu 245 Gly His Val 245 Ala 245 Ala Leu Asn Asn 250 Ile 250 Asn Gln Gly Ala 255 Asn 255 Tyr
 Arg 260 Val Tyr 260 Asn 260 Leu Gly Thr Gly 265 Ile 265 Gly Tyr Ser Val 270 Leu 270 Glu Leu
 Leu 275 Glu 275 Ala 275 Phe Gln Lys Val 280 Thr 280 Thr Arg Arg Val 285 Pro 285 Tyr Val Phe
 Thr 290 Lys 290 Arg Arg Ser Gly 295 Asp 295 Ile Ala Glu Cys 300 Trp 300 Ser Asp Pro Thr
 Lys 305 Ala Tyr Glu Glu 310 Leu 310 Gly Trp Lys Ala 315 Arg 315 Arg Gly Leu Glu 320 Asp 320
 Met 325 Ile Arg Asp 325 Ala 325 Trp Asn Trp Gln 330 Gln 330 Lys Asn Pro Asn 335 Gly 335 Phe

Lys Lys Val

<210> 272
 <211> 53
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> primer 1

 <400> 272
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<210> 273
 <211> 49
 <212> DNA
 <213> Artificial sequence

 <220>
 <223> primer 2

 <400> 273
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<210> 274
 <211> 2194
 <212> DNA
 <213> Oryza sativa

 <400> 274
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 catccaccta ctttagtggc aatcgggcta aataaaaaag agtcgctaca ctagtttcgt 180
 tttccttagt aattaagtgg gaaaatgaaa tcattattgc ttagaatata cgttcacatc 240
 tctgtcatga agttaaatga ttcgaggtag ccataattgt catcaaactc ttcttgaata 300
 aaaaaatctt tctagctgaa ctcaatgggt aaagagagag atttttttta aaaaaataga 360
 atgaagatat tctgaacgta ttggcaaaga tttaaacata taattatata attttatagt 420
 ttgtgcattc gtcatatcgc acatcattaa ggacatgtct tactccatcc caatttttat 480
 ttagtaatta aagacaattg acttattttt attatttatc ttttttcgat tagatgcaag 540
 gtacttacgc acacactttg tgctcatgtg catgtgtgag tgcacctcct caatacacgt 600
 tcaactagca acacatctct aatatcactc gcctatttaa tacatttagg tagcaatatc 660
 tgaattcaag cactccacca tcaccagacc actttttaata atatctaaaa taaaaaaat 720
 aattttacag aatagcatga aaagtatgaa acgaactatt taggtttttc acatacaaaa 780
 aaaaaaagaa ttttgctcgt gcgcgagcgc caatctccca tattgggcac acaggcaaca 840
 acagagtggc tgcccacaga acaaccaca aaaaacgatg atctaacgga ggacagcaag 900
 tccgcaacaa cttttaaca gcaggctttg cggccaggag agaggaggag aggcaaagaa 960
 aaccaagcat cctccttctc ccatctataa attcctcccc ctttttcccc tctctatata 1020

PF59082SEQ List- PF59348PCT.txt

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tgtgtagtac gggcgttgat gttaggaaag gggatctgta tctgtgatga ttcctgttct 1260
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aagctgtaat cgggtagatt atactgcttg ttcttatgat tcatttcctt tgtgcagttc 2160
ttggtgtagc ttgccacttt caccagcaaa gttc 2194

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<210> 275
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 <213> Artificial sequence

<220>
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 <400> 275

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 20 25 30

Asn Ala Ser Glu Leu Ala Ile Leu Arg Val Arg Glu Leu Ala Gly His
 35 40 45

Asn Ala Asn Asn Leu Asp Phe Arg Lys Val Asp Leu Arg Asp Lys Gln
 50 55 60

Ala Leu Asp Gln Ile Phe Ser Ser Gln Arg Phe Glu Ala Val Ile His
 65 70 75 80

PF59082SEQ List- PF59348PCT.txt

Phe Ala Gly Leu Lys₈₅ Ala Val Gly Glu Ser₉₀ Val Gln Lys Pro Leu₉₅ Leu
Tyr Tyr Asp Asn₁₀₀ Asn Leu Ile Gly Thr₁₀₅ Ile Thr Leu Leu Gln₁₁₀ Val Met
Ala Ala His₁₁₅ Gly Cys Thr Lys Leu₁₂₀ Val Phe Ser Ser₁₂₅ Ala Thr Val
Tyr Gly₁₃₀ Trp Pro Lys Glu Val₁₃₅ Pro Cys Thr Glu Glu₁₄₀ Ser Pro Leu Cys
Ala Met Asn Pro Tyr Gly₁₅₀ Arg Thr Lys Leu Val₁₅₅ Ile Glu Asp Met Cys₁₆₀
Arg Asp Leu His Ala₁₆₅ Ser Asp Pro Asn Trp₁₇₀ Lys Ile Ile Leu Leu₁₇₅ Arg
Tyr Phe Asn Pro₁₈₀ Val Gly Ala His Pro₁₈₅ Ser Gly Tyr Ile Gly₁₉₀ Glu Asp
Pro Cys Gly₁₉₅ Ile Pro Asn Asn Leu₂₀₀ Met Pro Phe Val Gln₂₀₅ Gln Val Ala
Val Gly₂₁₀ Arg Arg Pro Ala Leu₂₁₅ Thr Val Tyr Gly Thr₂₂₀ Asp Tyr Asn Thr
Lys Asp Gly Thr Gly Val₂₃₀ Arg Asp Tyr Ile His₂₃₅ Val Val Asp Leu Ala₂₄₀
Asp Gly His Ile Ala₂₄₅ Ala Leu Arg Lys Leu₂₅₀ Tyr Glu Asp Ser Asp₂₅₅ Arg
Ile Gly Cys Glu₂₆₀ Val Tyr Asn Leu Gly₂₆₅

<210> 276
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Motif 1: NAD+ binding

<220>
<221> UNSURE
<222> (2)..(3)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> UNSURE
<222> (5)..(6)
<223> Xaa can be any naturally occurring amino acid

<400> 276

Gly Xaa Xaa Gly Xaa Xaa Gly
1 5

<210> 277

<211> 4

<212> PRT

<213> Artificial sequence

<220>

<223> Motif 2: active site

<220>

<221> UNSURE

<222> (4)..(4)

<223> /replace = "Ser"

<400> 277

Tyr Gly Arg Thr
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<210> 278

<211> 12

<212> PRT

<213> Artificial sequence

<220>

<223> Motif 3: conserved region

<400> 278

Leu Val Thr Gly Gly Ala Gly Tyr Ile Gly Ser His
1 5 10

<210> 279

<211> 5

<212> PRT

<213> Artificial sequence

<220>

<223> Motif 4: conserved region

<220>

<221> UNSURE

<222> (2)..(2)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> VARIANT

<222> (4)..(4)

<223> /replace = "Leu"

<400> 279

Val Xaa His Phe Ala
1 5

<210> 280

<211> 11

<212> PRT

<213> Artificial sequence

<220>

<223> Motif 5: conserved region

<400> 280

Asp Gly Thr Gly Val Arg Asp Tyr Ile His Val
 1 5 10

<210> 281

<211> 1047

<212> DNA

<213> Brassica napus

<400> 281

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gtttctctcc aacgcgtcaa aaaactcgcc ggcgataacg gaaaccgcct ctccttcac    180
caggtggatc tcagagacag gcctgcgctt gagaagattt tctctgaaac taagtttgat    240

gcagtgatac actttgctgg acttaaagca gtaggtgaga gtgtggagaa gcctttgctc    300
tattataata ataacctttt tggcactgtt atccttttgg aggttatgtc tcaattcggc    360
tgcaaaaatc ttgtgttttc gtcattcagct actgtctatg gctggccaaa agaggttcct    420
tgcaccgagg agtccccaat ttctgcaacc aacccttatg gccgtaccaa gctttttatc    480
gaggaaattt gccgggatgt acatcgctcc gaccctgaat ggaagatcat attgcttaga    540
tacttcaacc ctgttggtgc acatcctagt ggttacattg gtgaagatcc tcttgggggt    600
ccaaacaacc tcatgcctta tgtccaacaa gttgcagttg gccggagacc tcacctcacc    660
gtctttggaa ctgactataa caciaaggat ggcacagggg tgagagatta cattcatgtg    720
attgacttag cagatggaca tatagccgct ctgcgcaagc tggatgatct caaaatcagt    780
tgtgaggtat acaatcttgg aacgggtaat ggaacatcag ttctagaaat ggttgctgcc    840
tttgagaagg catccggaaa gaaaatccct ttggtgttgg ctggacgacg tcctggagac    900
gctgagattg ttacgcctc aaccgagaaa gcagaacgcg agctaaactg gaaggctaag    960
tatgggattg aagacatgtg tagggatcta tggaactggg ccagcaataa tccttacggc   1020
tacgcctcct ccaatggctc ctcttaa                                   1047

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<210> 282

<211> 348

<212> PRT

<213> Brassica napus

<400> 282

Met Val Lys Asn Val Leu Val Thr Gly Gly Ala Gly Tyr Ile Gly Ser
 1 5 10 15

His Thr Val Leu Gln Leu Leu Asn Gly Gly Tyr Ser Ala Val Val Val
 20 25 30

PF59082SEQ List- PF59348PCT.txt

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

Tyr Ala Ser Thr Glu Lys Ala Glu Arg Glu Leu Asn Trp Lys Ala Lys
305 310 315 320

Tyr Gly Ile Glu Asp Met Cys Arg Asp Leu Trp Asn Trp Ala Ser Asn
325 330 335

Asn Pro Tyr Gly Tyr Ala Ser Ser Asn Gly Ser Ser
340 345

<210> 283
<211> 1047
<212> DNA
<213> Brassica napus

<400> 283
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gtttctctcc aacgcgtcaa aaaactcgcc ggcgataacg gaaaccgcct ctccttcac 180
caggtggatc tcagagacag gcctgcgctt gagaagattt tctcagaaac taagtttgat 240
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tgtaccgagg agtccccaat ttctgcaacc aacccttatg gccgtaccaa gctttttatc 480
gaggaaattt gccgggatgt acatcgctcc gaccctgaat ggaagatcat attgctcaga 540
tacttcaacc ctgttggtgc acatcctagt ggttacattg gtgaagatcc tcttgggggt 600
ccaaacaacc tcatgcctta tgtccaacaa gttgcagttg gccggagacc tcacctcacc 660
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gctgagattg ttacgcctc aaccgagaaa gcagaacgcg agctaaactg gaaggctaag 960
tatgggattg aagacatgtg tagggatcta tggaactggg ccagcaataa tccttacggc 1020
tacgcctcct ccaatggctc ctcttaa 1047

<210> 284
<211> 348
<212> PRT
<213> Brassica napus

<400> 284

Met Val Lys Asn Val Leu Val Thr Gly Gly Ala Gly Tyr Ile Gly Ser
1 5 10 15

His Thr Val Leu Gln Leu Leu Asn Gly Gly Tyr Ser Val Val Val Val
20 25 30

PF59082SEQ List- PF59348PCT.txt

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

PF59082SEQ List- PF59348PCT.txt

Tyr Ala Ser Thr Glu Lys Ala Glu Arg Glu Leu Asn Trp Lys Ala Lys
305 310 315 320

Tyr Gly Ile Glu Asp Met Cys Arg Asp Leu Trp Asn Trp Ala Ser Asn
325 330 335

Asn Pro Tyr Gly Tyr Ala Ser Ser Asn Gly Ser Ser
340 345

<210> 285
<211> 1068
<212> DNA
<213> Zea mays

<400> 285
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aacgcctccg aggccgccct cggccgcgtc gccgagctcg ccgggcacga cggcgccaac 180
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ctcaaattga aggccaagta cgggatcgag gagatgtgca gagatctgtg gaactgggag 1020
agcaagaacc cgtacgggta cgctgggtca cgcgacaaca gcaaatga 1068

<210> 286
<211> 355
<212> PRT
<213> Zea mays

<400> 286
Met Val Ser Ala Val Leu Arg Thr Ile Leu Val Thr Gly Gly Ala Gly
1 5 10 15

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

PF59082SEQ List- PF59348PCT.txt

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

PF59082SEQ List- PF59348PCT.txt

Gly Asp Ala Glu Ile Val Tyr Ala Ala Thr Ala Lys Ala Glu Lys Glu
305 310 315 320

Leu Lys Trp Lys Ala Lys Tyr Gly Ile Glu Glu Met Cys Arg Asp Leu
325 330 335

Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly Tyr Ala Gly Ser Arg Asp
340 345 350

Asn Ser Lys
355

<210> 287
<211> 1068
<212> DNA
<213> Zea mays

<400> 287
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cacacggtgc tgcagctgct gcagcagggc ttccgcgtcg tcgtcgtcga caacctcgac 120
aacgcctccg aggccgccct cgcccgctc gccgagctcg ccgggcacga cggcgccaac 180
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aagcccctac ttactacga caacaacctg gtcggcacca tcacctcct cgagggtgatg 360
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aaggaagtac catgcaccga agaattcccg ctctgcgcca ccaatcccta tgggcggaca 480
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ccctgcggtg tcccgaacaa cctgatgcc tacgtgcagc aagtcgctgt tgggaagtta 660
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ctcaaagtga aggccaagta cgggatcgag gagatgtgca gagatctgtg gaactgggcg 1020
agcaagaacc cgtacgggta cgctgggtca cgcgacaaca gcaaatga 1068

<210> 288
<211> 355
<212> PRT
<213> Zea mays

<400> 288

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

PF59082SEQ List- PF59348PCT.txt

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

PF59082SEQ List- PF59348PCT.txt

Lys Ala Ser Gly Lys Lys Ile Pro Leu Val Phe Ala Gly Arg Arg Pro
290 295 300

Gly Asp Ala Glu Ile Val Tyr Ala Ala Thr Ala Lys Ala Glu Lys Glu
305 310 315 320

Leu Lys Trp Lys Ala Lys Tyr Gly Ile Glu Glu Met Cys Arg Asp Leu
325 330 335

Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly Tyr Ala Gly Ser Arg Asp
340 345 350

Asn Ser Lys
355

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<211> 1068
<212> DNA
<213> Zea mays

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<211> 355
<212> PRT
<213> Zea mays

PF59082SEQ List- PF59348PCT.txt

<400> 290

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

Val Val Val Val Asp Asn Leu Asp Asn Ala Ser Glu Ala Ala Leu Ala
35      40      45

Arg Val Ala Glu Leu Ala Gly His Asp Gly Ala Asn Leu Val Phe His
50      55      60

Lys Val Asp Leu Arg Asp Arg His Ala Leu Val Asp Ile Phe Ser Ser
65      70      75      80

His Arg Phe Glu Ala Val Ile His Phe Ala Gly Leu Lys Ala Val Gly
85      90      95

Glu Ser Val His Lys Pro Leu Leu Tyr Tyr Asp Asn Asn Leu Val Gly
100     105     110

Thr Ile Thr Leu Leu Glu Val Met Ala Ala Asn Gly Cys Lys Lys Leu
115     120     125

Val Phe Ser Ser Ser Ala Thr Val Tyr Gly Trp Pro Lys Glu Val Pro
130     135     140

Cys Thr Glu Glu Phe Pro Leu Cys Ala Thr Asn Pro Tyr Gly Arg Thr
145     150     155     160

Lys Leu Val Ile Glu Asp Ile Cys Arg Asp Val His Arg Ser Asp Pro
165     170     175

Asp Trp Lys Ile Ile Leu Leu Arg Tyr Phe Asn Pro Val Gly Ala His
180     185     190

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

Met Pro Tyr Val Gln Gln Val Ala Val Gly Arg Leu Pro His Leu Thr
210     215     220

Val Tyr Gly Thr Asp Tyr Ser Thr Lys Asp Gly Thr Gly Val Arg Asp
225     230     235     240

Tyr Ile His Val Val Asp Leu Ala Asp Gly His Ile Ala Ala Leu Arg
245     250     255

Lys Leu Tyr Glu Asp Ser Asp Lys Ile Gly Cys Glu Val Tyr Asn Leu
260     265     270

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PF59082SEQ List- PF59348PCT.txt

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

Lys Ala Ser Gly Lys Lys Ile Pro Leu Val Phe Ala Gly Arg Arg Pro
290 295 300

Gly Asp Ala Glu Ile Val Tyr Ala Ala Thr Ala Lys Ala Glu Lys Glu
305 310 315 320

Leu Lys Trp Lys Ala Lys Tyr Gly Ile Glu Glu Met Cys Arg Asp Leu
325 330 335

Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly Tyr Ala Gly Ser Arg Asp
340 345 350

Asn Ser Lys
355

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<211> 1272
<212> DNA
<213> Zea mays

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aacaatccat atggcaaac aaagctcggt gttgaagata ttgcccggga tatctaccgt 540
tcagatcctg aatggaagat cattttactt aggtacttca atccagttgg tgctcatcct 600
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caagttgcgg ttggtaggag gccagctcta acagttttag gaaatgacta tgcaacaaga 720
gatgggactg ggggtccgaga ttacatccat gtggttgacc ttgctgacgg acatattgct 780
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gaccaatgga actgggcccag caagaaccct tatggctatg gatcacctga ctctatcaag 1080
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PF59082SEQ List- PF59348PCT.txt

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<210> 292
 <211> 423
 <212> PRT
 <213> Zea mays

<400> 292

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

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

Ser Ser Glu Leu Ala Val Arg Arg Val Ala Ala Leu Ala Gly Asp His
 50 55 60

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

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

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

Tyr Asp Asn Asn Val Ile Gly Thr Ile Asn Leu Leu Glu Val Met Ser
 115 120 125

Val His Gly Cys Lys Lys Leu Val Phe Ser Ser Ser Ala Ala Val Tyr
 130 135 140

Gly Ser Pro Lys Asn Ser Pro Cys Thr Glu Asn Phe Pro Leu Thr Pro
 145 150 155 160

Asn Asn Pro Tyr Gly Lys Thr Lys Leu Val Val Glu Asp Ile Cys Arg
 165 170 175

Asp Ile Tyr Arg Ser Asp Pro Glu Trp Lys Ile Ile Leu Leu Arg Tyr
 180 185 190

Phe Asn Pro Val Gly Ala His Pro Ser Gly Tyr Leu Gly Glu Asp Pro
 195 200 205

Arg Gly Ile Pro Asn Asn Leu Met Pro Tyr Val Gln Gln Val Ala Val

210

Gly Arg Arg Pro Ala Leu Thr Val Leu Gly Asn Asp Tyr Ala Thr Arg
225 230 235 240

Asp Gly Thr Gly Val Arg Asp Tyr Ile His Val Val Asp Leu Ala Asp
245 250 255

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

Cys Glu Ala Tyr Asn Leu Gly Thr Gly Arg Gly Thr Ser Val Leu Glu
275 280 285

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

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

Thr Lys Ala Glu Arg Glu Leu Asn Trp Lys Ala Lys Tyr Gly Ile Glu
325 330 335

Glu Met Cys Arg Asp Gln Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly
340 345 350

Tyr Gly Ser Pro Asp Ser Ile Lys Gln Asn Gly His Gln Thr Asn Gly
355 360 365

Ser Ala Asp Ser Ser Lys Gln Asn Gly His Arg Thr Asn Gly Ser Thr
370 375 380

Asp Ser Pro Lys Arg Asn Gly His His Ala Tyr Gly Ser Ala Asp Ser
385 390 395 400

Pro Lys Arg Asn Gly His Cys Val Phe Gly Ser Ser Asp Leu Lys Pro
405 410 415

Asn Gly Asn Gly His Leu Arg
420

<210> 293
<211> 1272
<212> DNA
<213> Zea mays

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gtcgtcatcg acaacctcaa caactcctcc gagctggccg tccgccgcgt cgccgcgctc 180
gcgggggacc actcccgcaa cctctctttc cacaagattg atctccgtga caaggagaca 240

PF59082SEQ List- PF59348PCT.txt

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cacctgcgct ga 1272

<210> 294
<211> 423
<212> PRT
<213> Zea mays

<400> 294

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

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

Ser Ser Glu Leu Ala Val Arg Arg Val Ala Ala Leu Ala Gly Asp His
50 55 60

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

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

Ala Gly Leu Lys Ala Val Gly Glu Ser Val Gln Lys Pro Leu Leu Tyr
Seite 307

100

105

110

Tyr Asp Asn₁₁₅ Asn Val Ile Gly Thr₁₂₀ Ile Asn Leu Leu Glu₁₂₅ Val Met Ser
 Val His₁₃₀ Gly Cys Lys Lys Leu₁₃₅ Val Phe Ser Ser Ser₁₄₀ Ala Ala Val Tyr
 Gly₁₄₅ Ser Pro Lys Asn₁₅₀ Pro Cys Thr Glu₁₅₅ Phe Pro Leu Thr Pro₁₆₀
 Asn Asn Pro Tyr Gly₁₆₅ Lys Thr Lys Leu Val₁₇₀ Val Glu Asp Ile Cys₁₇₅ Arg
 Asp Ile Tyr Arg₁₈₀ Ser Asp Pro Glu Trp₁₈₅ Lys Ile Ile Leu Leu₁₉₀ Arg Tyr
 Phe Asn Pro₁₉₅ Val Gly Ala His Pro₂₀₀ Ser Gly Tyr Leu Gly₂₀₅ Glu Asp Pro
 Arg Gly₂₁₀ Ile Pro Asn Asn Leu₂₁₅ Met Pro Tyr Val Gln₂₂₀ Gln Val Ala Val
 Gly₂₂₅ Arg Arg Pro Ala Leu₂₃₀ Thr Val Leu Gly Asn₂₃₅ Asp Tyr Ala Thr Arg₂₄₀
 Asp Gly Thr Gly Val₂₄₅ Arg Asp Tyr Ile His₂₅₀ Val Val Asp Leu Ala₂₅₅ Asp
 Gly His Ile Ala₂₆₀ Ala Leu Gln Lys Leu₂₆₅ Phe Glu Asn Ser Ser₂₇₀ Ile Gly
 Cys Glu Ala₂₇₅ Tyr Asn Leu Gly Thr₂₈₀ Gly Arg Gly Thr Ser₂₈₅ Val Leu Glu
 Ile Val₂₉₀ Lys Ala Phe Glu Lys₂₉₅ Ala Ser Gly Lys Lys₃₀₀ Ile Pro Leu Ile
 Phe Gly Glu Arg Arg Pro₃₁₀ Gly Asp Ala Glu Ile₃₁₅ Leu Phe Ser Glu Thr₃₂₀
 Thr Lys Ala Glu Arg₃₂₅ Glu Leu Asn Trp Lys₃₃₀ Ala Lys Tyr Gly Ile₃₃₅ Glu
 Glu Met Cys Arg₃₄₀ Asp Gln Trp Asn Trp₃₄₅ Ala Ser Lys Asn Pro₃₅₀ Tyr Gly
 Tyr Gly Ser₃₅₅ Pro Asp Ser Ile Lys₃₆₀ Gln Asn Gly His Gln₃₆₅ Thr Asn Gly
 Ser Ala Asp Ser Ser Lys Gln₃₇₅ Asn Gly His Arg Thr₃₈₀ Asn Gly Ser Thr

PF59082SEQ List- PF59348PCT.txt

Asp Ser Pro Lys Arg Asn Gly His His Ala Tyr Gly Ser Ala Asp Ser
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Pro Lys Arg Asn Gly His Cys Val Phe Gly Ser Ser Asp Leu Lys Pro
405 410 415

Asn Gly Asn Gly His Leu Arg
420

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<211> 1272
<212> DNA
<213> Zea mays

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cacctgcgct ga 1272

<210> 296
<211> 423
<212> PRT
<213> Zea mays

<400> 296

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

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

Ser Ser Glu Leu Ala Val Arg Arg Val Ala Ala Leu Ala Gly Asp His
50     55     60

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

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

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

Tyr Asp Asn Asn Val Ile Gly Thr Ile Asn Leu Leu Glu Val Met Ser
115    120    125

Val His Gly Cys Lys Lys Leu Val Phe Ser Ser Ser Ala Ala Val Tyr
130    135    140

Gly Ser Pro Lys Asn Ser Pro Cys Thr Glu Asn Phe Pro Leu Thr Pro
145    150    155    160

Asn Asn Pro Tyr Gly Lys Thr Lys Leu Val Val Glu Asp Ile Cys Arg
165    170    175

Asp Ile Tyr Arg Ser Asp Pro Glu Trp Lys Ile Ile Leu Leu Arg Tyr
180    185    190

Phe Asn Pro Val Gly Ala His Pro Ser Gly Tyr Leu Gly Glu Asp Pro
195    200    205

Arg Gly Ile Pro Asn Asn Leu Met Pro Tyr Val Gln Gln Val Ala Val
210    215    220

Gly Arg Arg Pro Ala Leu Thr Val Leu Gly Asn Asp Tyr Ala Thr Arg
225    230    235    240

Asp Gly Thr Gly Val Arg Asp Tyr Ile His Val Val Asp Leu Ala Asp
245    250    255

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

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PF59082SEQ List- PF59348PCT.txt

Cys Glu Ala Tyr Asn Leu Gly Thr Gly Arg Gly Thr Ser Val Leu Glu
275 280 285

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

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

Thr Lys Ala Glu Arg Glu Leu Asn Trp Lys Ala Lys Tyr Gly Ile Glu
325 330 335

Glu Met Cys Arg Asp Gln Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly
340 345 350

Tyr Gly Ser Pro Asp Ser Ile Lys Gln Asn Gly His Gln Thr Asn Gly
355 360 365

Ser Ala Asp Ser Ser Lys Gln Asn Gly His Arg Thr Asn Gly Ser Thr
370 375 380

Asp Ser Pro Lys Arg Asn Gly His His Ala Tyr Gly Ser Ala Asp Ser
385 390 395 400

Pro Lys Arg Asn Gly His Cys Val Phe Gly Ser Ser Asp Leu Lys Pro
405 410 415

Asn Gly Asn Gly His Leu Arg
420

<210> 297
<211> 1272
<212> DNA
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PF59082SEQ List- PF59348PCT.txt

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cacctgcgct ga 1272

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<210> 298
 <211> 423
 <212> PRT
 <213> Zea mays

<400> 298

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 1 5 10 15

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

Leu Leu Leu Ala Gly Phe Arg Ala Val Val Val Asp Asn Leu Asn Asn
 35 40 45

Ser Ser Glu Leu Ala Val Arg Arg Val Ala Ala Leu Ala Gly Asp His
 50 55 60

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

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

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

Tyr Asp Asn Asn Val Ile Gly Thr Ile Asn Leu Leu Glu Val Met Ser
 115 120 125

Val His Gly Cys Lys Lys Leu Val Phe Ser Ser Ser Ala Ala Val Tyr
 130 135 140

Gly Ser Pro Lys Asn Ser Pro Cys Thr Glu Asn Phe Pro Leu Thr Pro
 Seite 312

Asn Gly Asn Gly His Leu Arg
420

PF59082SEQ List- PF59348PCT.txt

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<212> DNA
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aacgcctccg aggccgccct cgcgcgcgtc gccgagctcg ccgggcacga cggcgccaac 180
ctcgtcttcc acaaggttga ccttcgcgac aggcacgcgt tgggtggacat cttctcgtcg 240
cacaggttcg aggctgtcat tcactttgct gggctcaagg ctggtgggga gagcgtgcac 300
aagcccctac ttactacga caacaacctg gtcggcacca tcaccctcct ggaggatgatg 360
gctgcgaacg gctgcaagaa gctgggtgttc tcgtcatctg caactgtcta tgggtggccc 420
aaggaagtac cctgcaccga agaattcccg ctctgcgcca ccaatcccta tgggcggaca 480
aagcttgtga ttgaagacat ctgccgcgac gtccaccgct ccgaccccga ctggaagatc 540
atactgtcga ggtacttcaa ccccgttggc gctcatccaa gcgggtacat cggcgaagac 600
ccctgcggtg tcccgaacaa cctgatgcc tacgtgcagc aagtcgctgt tgggaagtta 660
cctcacctca cggctctacgg gacggactac agcaccaagg atgggactgg ggtgcgtgat 720
tacatccacg ttgtcgacct ggctgacggc cacatagcag ccctgaggaa gctctacgaa 780
gactccgaca aaataggctg tgaagtgtac aacttgggga ctggaaaggg gacgtccgtg 840
ttggaaatgg tggctgcatt cgagaaggct tctgggaaga aaatccctct ggtgttcgtc 900
gggcgaagac ccggagacgc agagatcgtc tacgccgcaa ctgccaaggc agagaaggag 960
ctcaaattga aggccaagta cgggatcgag gagatgtgca gagatctgtg gaactgggcg 1020
agcaagaacc cgtacgggta cgctgggtca cgcgacaaca gcaaatga 1068

<210> 300
<211> 355
<212> PRT
<213> Zea mays

<400> 300
Met Val Ser Ala Val Leu Arg Thr Ile Leu Val Thr Gly Gly Ala Gly
1 5 10 15
Tyr Ile Gly Ser His Thr Val Leu Gln Leu Leu Gln Gln Gly Phe Arg
20 25 30
Val Val Val Val Asp Asn Leu Asp Asn Ala Ser Glu Ala Ala Leu Ala
35 40 45
Arg Val Ala Glu Leu Ala Gly His Asp Gly Ala Asn Leu Val Phe His
50 55 60

PF59082SEQ List- PF59348PCT.txt

Lys Val Asp Leu Arg Asp Arg His Ala Leu Val Asp Ile Phe Ser Ser
 65 70 75 80
 His Arg Phe Glu Ala Val Ile His Phe Ala Gly Leu Lys Ala Val Gly
 85 90 95
 Glu Ser Val His Lys Pro Leu Leu Tyr Tyr Asp Asn Asn Leu Val Gly
 100 105 110
 Thr Ile Thr Leu Leu Glu Val Met Ala Ala Asn Gly Cys Lys Lys Leu
 115 120 125
 Val Phe Ser Ser Ser Ala Thr Val Tyr Gly Trp Pro Lys Glu Val Pro
 130 135 140
 Cys Thr Glu Glu Phe Pro Leu Cys Ala Thr Asn Pro Tyr Gly Arg Thr
 145 150 155 160
 Lys Leu Val Ile Glu Asp Ile Cys Arg Asp Val His Arg Ser Asp Pro
 165 170 175
 Asp Trp Lys Ile Ile Leu Leu Arg Tyr Phe Asn Pro Val Gly Ala His
 180 185 190
 Pro Ser Gly Tyr Ile Gly Glu Asp Pro Cys Gly Val Pro Asn Asn Leu
 195 200 205
 Met Pro Tyr Val Gln Gln Val Ala Val Gly Lys Leu Pro His Leu Thr
 210 215 220
 Val Tyr Gly Thr Asp Tyr Ser Thr Lys Asp Gly Thr Gly Val Arg Asp
 225 230 235 240
 Tyr Ile His Val Val Asp Leu Ala Asp Gly His Ile Ala Ala Leu Arg
 245 250 255
 Lys Leu Tyr Glu Asp Ser Asp Lys Ile Gly Cys Glu Val Tyr Asn Leu
 260 265 270
 Gly Thr Gly Lys Gly Thr Ser Val Leu Glu Met Val Ala Ala Phe Glu
 275 280 285
 Lys Ala Ser Gly Lys Lys Ile Pro Leu Val Phe Ala Gly Arg Arg Pro
 290 295 300
 Gly Asp Ala Glu Ile Val Tyr Ala Ala Thr Ala Lys Ala Glu Lys Glu
 305 310 315 320
 Leu Lys Trp Lys Ala Lys Tyr Gly Ile Glu Glu Met Cys Arg Asp Leu
 325 330 335
 Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly Tyr Ala Gly Ser Arg Asp
 Seite 315

Asn Ser Lys
355

<210> 301
<211> 1065
<212> DNA
<213> Oryza sativa

<400> 301
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cacaccgtcc tccagcttct ccaactcggc ttccgcgttg tcgtcctcga caacctcgac 120
aacgcctccg agctcgccat cctccgcgtc aggggaactcg ccggacacaa cgccaacaac 180
ctcgacttcc gcaaggttga cctccgcgac aagcaagcgt tggaccaaatt cttctcctct 240
caaaggtttg aggctgtcat ccattttgcc gggctgaaag ctggttgga gagcgtgcag 300
aagcccctgc ttactacga caacaacctc atcggcacca tcaactctct gcaggatcatg 360
gccgcacatg gctgcacaa gctgggtgtt tcatcatccg caactgtcta cgggtggccc 420
aaggaggtgc cctgcactga agaattccca ctttgtgcaa tgaacctcta cggcagaaca 480
aagctggtta tcgaagacat gtgccgggat ctgcatgcct cagacccaaa ctggaagatc 540
atactgctcc gatacttcaa ccctgttgga gtcacccaa gcgggtacat tggtagggac 600
ccctgcggca tcccaaaca cctcatgccc ttctgccagc aggtcgctgt tggcaggagg 660
ccggccctta ccgtctatgg aaccgactac aacaccaagg atggaactgg ggttcgtgac 720
tatatccatg ttgttgatct agcggatggt catatcgccg cgttaaggaa gctctatgaa 780

gattctgata gaataggatg tgaggtgtac aatctgggca ctggaaaggg gacatctgtg 840
ctggaaatgg ttgcagcatt cgagaaagct tctggaaaga aaatcccgct tgtatttctt 900
ggacgaaggc ctggagatgc cgagatcggt tacgctcaaa ctgccaaagc tgagaaggaa 960
ctgaaatgga aggcaaaata cggggtagag gagatgtgca gggacctgtg gaattgggag 1020
agcaagaacc cctacgggta tggatcgccg gacagtagca actga 1065

<210> 302
<211> 354
<212> PRT
<213> Oryza sativa

<400> 302
Met Val Ser Ala Leu Leu Arg Thr Ile Leu Val Thr Gly Gly Ala Gly
1 5 10 15

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

Val Val Val Leu Asp Asn Leu Asp Asn Ala Ser Glu Leu Ala Ile Leu
35 40 45

PF59082SEQ List- PF59348PCT.txt

Arg Val Arg Glu Leu Ala Gly His Asn Ala Asn Asn Leu Asp Phe Arg
50 55 60

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

Gln Arg Phe Glu Ala Val Ile His Phe Ala Gly Leu Lys Ala Val Gly
85 90 95

Glu Ser Val Gln Lys Pro Leu Leu Tyr Tyr Asp Asn Asn Leu Ile Gly
100 105 110

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

Val Phe Ser Ser Ser Ala Thr Val Tyr Gly Trp Pro Lys Glu Val Pro
130 135 140

Cys Thr Glu Glu Ser Pro Leu Cys Ala Met Asn Pro Tyr Gly Arg Thr
145 150 155 160

Lys Leu Val Ile Glu Asp Met Cys Arg Asp Leu His Ala Ser Asp Pro
165 170 175

Asn Trp Lys Ile Ile Leu Leu Arg Tyr Phe Asn Pro Val Gly Ala His
180 185 190

Pro Ser Gly Tyr Ile Gly Glu Asp Pro Cys Gly Ile Pro Asn Asn Leu
195 200 205

Met Pro Phe Val Gln Gln Val Ala Val Gly Arg Arg Pro Ala Leu Thr
210 215 220

Val Tyr Gly Thr Asp Tyr Asn Thr Lys Asp Gly Thr Gly Val Arg Asp
225 230 235 240

Tyr Ile His Val Val Asp Leu Ala Asp Gly His Ile Ala Ala Leu Arg
245 250 255

Lys Leu Tyr Glu Asp Ser Asp Arg Ile Gly Cys Glu Val Tyr Asn Leu
260 265 270

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

Lys Ala Ser Gly Lys Lys Ile Pro Leu Val Phe Ala Gly Arg Arg Pro
290 295 300

Gly Asp Ala Glu Ile Val Tyr Ala Gln Thr Ala Lys Ala Glu Lys Glu
305 310 315 320

Leu Lys Trp Lys Ala Lys Tyr Gly Val Glu Glu Met Cys Arg Asp Leu
325 330 335

Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly Tyr Gly Ser Pro Asp Ser
340 345 350

Ser Asn

<210> 303
<211> 1176
<212> DNA
<213> Glycine max

<400> 303
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cactttcgct caccacttaa gatttccaac aaccctctc tgcaaacgc ttcgcataag 120
gtacttatgc gcgataagac tgtactggta accggcggag cgggttacat cggcagccac 180
accgttcttc agctcttgct cggagggtttc agagccgtcg tcctcgacaa cctcgaaaat 240
tcctccgagg ttgccatcca cagagtcagg gagctcgccg gcgaatttgg gaacaacctc 300
tcctttcaca aggtggacct acgggacaga gctgctctag accaaatatt ttcttcaca 360
caattcgatg ctgtcataca ttttgctgga ctgaaagcag taggagaaaag tgtgcaaaaa 420
cctttactat actataacaa caacttgact gggacaatca ctctattgga agtcatggct 480
gcccatggat gcaagaagct cgtgttttca tcttcagcaa ctgtatatgg ttggccaaag 540
gaggttccat gcacagaaga gttccctctg tcagcaatga acccatatgg acgaactaag 600
cttatcattg aagaaatttg ccgtgatgtc cactgtgcag agccagattg taaaataatt 660
ttgttaagat acttcaacc agttgggtgca caccctcagt gttatattgg ggaggatcct 720
cgtggaattc caaacaatct catgccattt gttcagcaag tagcagttgg ccgacggcct 780
gcactgacag tttttggaaa tgattataat acaagtgatg gcactggggg tcgggattac 840

attcatgttg ttgatttagc agatgggcac attgctgcat tgcttaaact agatgaacct 900
aatataggtt gtgaggttta taacctggga acaggaaagg gaacatcagt tttggagatg 960
gtagagctt ttgaaatggc atctggaaag aaaattccac ttgtgatggc tggccgtaga 1020
cctggtgatg ctgaaattgt ttatgcatca acaagaaaag cggaagaga gcttaaatgg 1080
aaggcaaaat atggcattga tgagatgtgc cgtgatcaat ggaattgggc tagcaaaaac 1140
ccttatggct atggagatca gggctccacc gattaa 1176

<210> 304
<211> 391
<212> PRT
<213> Glycine max

<400> 304

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

PF59082SEQ List- PF59348PCT.txt

Ile Asn Ser Pro His Phe Arg Ser Pro Leu Lys Ile Ser Asn Asn Pro
20 25 30

Ser Leu Gln Asn Ala Ser His Lys Val Leu Met Arg Asp Lys Thr Val
35 40 45

Leu Val Thr Gly Gly Ala Gly Tyr Ile Gly Ser His Thr Val Leu Gln
50 55 60

Leu Leu Leu Gly Gly Phe Arg Ala Val Val Leu Asp Asn Leu Glu Asn
65 70 75 80

Ser Ser Glu Val Ala Ile His Arg Val Arg Glu Leu Ala Gly Glu Phe
85 90 95

Gly Asn Asn Leu Ser Phe His Lys Val Asp Leu Arg Asp Arg Ala Ala
100 105 110

Leu Asp Gln Ile Phe Ser Ser Thr Gln Phe Asp Ala Val Ile His Phe
115 120 125

Ala Gly Leu Lys Ala Val Gly Glu Ser Val Gln Lys Pro Leu Leu Tyr
130 135 140

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

Ala His Gly Cys Lys Lys Leu Val Phe Ser Ser Ser Ala Thr Val Tyr
165 170 175

Gly Trp Pro Lys Glu Val Pro Cys Thr Glu Glu Phe Pro Leu Ser Ala
180 185 190

Met Asn Pro Tyr Gly Arg Thr Lys Leu Ile Ile Glu Glu Ile Cys Arg
195 200 205

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

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

Arg Gly Ile Pro Asn Asn Leu Met Pro Phe Val Gln Gln Val Ala Val
245 250 255

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

Asp Gly Thr Gly Val Arg Asp Tyr Ile His Val Val Asp Leu Ala Asp
275 280 285

PF59082SEQ List- PF59348PCT.txt

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

Glu Val Tyr Asn Leu Gly Thr Gly Lys Gly Thr Ser Val Leu Glu Met
305 310 315 320

Val Arg Ala Phe Glu Met Ala Ser Gly Lys Lys Ile Pro Leu Val Met
325 330 335

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

Lys Ala Glu Arg Glu Leu Lys Trp Lys Ala Lys Tyr Gly Ile Asp Glu
355 360 365

Met Cys Arg Asp Gln Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly Tyr
370 375 380

Gly Asp Gln Gly Ser Thr Asp
385 390

<210> 305
<211> 1053
<212> DNA
<213> Glycine max

<400> 305
atgcctgccc aatcgattct ggttaccgga ggagccggtt acatcggtag ccacaccatc 60
cttcagcttc tcctcagcgg ttaccatgtc ttcgccgtcg acaacttcga caattcttcc 120
gaaaccgcca tcaacagagt caaggaactc gccggagaat tagcaaataa cttttccttt 180
tgcaagcttg acttgcgga cagagctgcc ctcgagaaaa tattttcaac cgtaaagttt 240
gatgccgtca tacattttgc tgggcttaaa gcagtgggtg aaagcgtgaa gaaaccactg 300
ctctactttg acaacaattt gatagggaca atcgttctat ttgaagtcac ggctgcccac 360
ggatgcaaga agcttggtgt ctcattctca gcaactgtat atgggtggcc aaaggagggtc 420
ccatgtaccg aagagttccc tttgtcagca acaaaccat atggacgaac caagcttatac 480
atcgaagaaa tttgtcgcga tatccaccgt gcagattcag attggacagt tatactattg 540
agatacttca acccagttgg tgcacatccc agtgggtata ttggtgagga tcctcttgga 600
attccaaaca atctcatgcc ctttgttcaa caagtggcag ttggcagacg ccctgcattg 660
acagtttttg gaagcgatta taaaacaact gacggcactg gagttcgtga ttacattcat 720
gttcttgatt tagcagatgg gcatattgct gcgttgcgta aactggatga tcctaaaata 780
ggttgtgagg ttataactt gggaacagga aagggaacat cagttttgga gatggtaaac 840
gcttttgaac aggcctctgg aaagaaaatt ccacttgcaa tggcgggtcg gagacctgga 900
gatgctgaaa ttgtttatgc atcaacagaa aaagcggaaa gagaacttaa ttggaagact 960
aaatatagca tcgatgatat gtgccgcgat caatggaatt gggctagcaa aaacccttat 1020

ggctatggtg catctgcaga ttcctccaat tga

1053

<210> 306
 <211> 350
 <212> PRT
 <213> Glycine max

<400> 306

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

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

Val Asp Asn Phe Asp Asn Ser Ser Glu Thr Ala Ile Asn Arg Val Lys
 35 40 45

Glu Leu Ala Gly Glu Leu Ala Asn Asn Leu Ser Phe Cys Lys Leu Asp
 50 55 60

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

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

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

Leu Phe Glu Val Met Ala Ala His Gly Cys Lys Lys Leu Val Phe Ser
 115 120 125

Ser Ser Ala Thr Val Tyr Gly Trp Pro Lys Glu Val Pro Cys Thr Glu
 130 135 140

Glu Phe Pro Leu Ser Ala Thr Asn Pro Tyr Gly Arg Thr Lys Leu Ile
 145 150 155 160

Ile Glu Glu Ile Cys Arg Asp Ile His Arg Ala Asp Ser Asp Trp Thr
 165 170 175

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

Tyr Ile Gly Glu Asp Pro Leu Gly Ile Pro Asn Asn Leu Met Pro Phe
 195 200 205

Val Gln Gln Val Ala Val Gly Arg Arg Pro Ala Leu Thr Val Phe Gly
 210 215 220

Ser Asp Tyr Lys Thr Thr Asp Gly Thr Gly Val Arg Asp Tyr Ile His
 225 230 235 240

PF59082SEQ List- PF59348PCT.txt

Val Leu Asp Leu Ala Asp Gly His Ile Ala Ala Leu Arg Lys Leu Asp
245 250 255

Asp Pro Lys Ile Gly Cys Glu Val Tyr Asn Leu Gly Thr Gly Lys Gly
260 265 270

Thr Ser Val Leu Glu Met Val Asn Ala Phe Glu Gln Ala Ser Gly Lys
275 280 285

Lys Ile Pro Leu Ala Met Ala Gly Arg Arg Pro Gly Asp Ala Glu Ile
290 295 300

Val Tyr Ala Ser Thr Glu Lys Ala Glu Arg Glu Leu Asn Trp Lys Thr
305 310 315 320

Lys Tyr Ser Ile Asp Asp Met Cys Arg Asp Gln Trp Asn Trp Ala Ser
325 330 335

Lys Asn Pro Tyr Gly Tyr Gly Ala Ser Ala Asp Ser Ser Asn
340 345 350

<210> 307
<211> 1050
<212> DNA
<213> Glycine max

<400> 307
atgcgcgaca agactgtgct ggtaaccggc ggagccggtt acatcggcac ccacaccgtt 60
cttcagctct tgctcggagg ttgcagaacc gtcgtcgtcg acaatctcga caattcctcc 120
gaggtttcta tccaccgagt cagggagctt gccggcgaat ttgggaacaa cctctccttt 180
cacaaggtgg acctacggga cagggatgca ctagagcaaa tttttgtttc cacacaattt 240
gatgctgtca tacactttgc tggactgaaa gcagtaggag aaagtgtgca aaaaccttta 300
ctatactata acaacaactt gactgggaca atcactctat tggaagtcac ggctgcccac 360
ggatgcaaga agctcgtgtt ctcttcttca gcaactgtat atgggttgcc aaaggaagtt 420
ccatgcacag aagagttccc tctgtcagca atgaacccat atggacgaac taagcttata 480
attgaagaaa tttgccgtga tgtccactgt gcagagccag attgtaaaat aattttgtta 540
agatacttca acccagttgg tgcacacccc agcgggtata ttggggagga tcctcgcgga 600
attccaaaca atctcatgcc atttgttcag caagtagcag ttggccgacg gcctgcactg 660
acagtttttg gaaatgatta taatacaagt gatggcactg gggttcggga ttacattcat 720
gttggttgatt tagcagatgg gcacattgct gcattgctta aactagatga acctaata 780
ggttgtgagg ttataacct gggaacagga aagggaacat cagttttgga gatgggttaga 840
gcttttgaaa tggcatctgg aaagaaaatt ccacttgtga tggctggccg tagacctggt 900
gatgctgaaa ttgtttatgc atcaacaaag aaagcggaaa gagagcttaa atggaaggca 960
aaatatggca ttgatgatgt gtgccgtgat caatggaatt gggctagcaa aaacccttat 1020

ggctatggag atcagggctc caccgattaa

1050

<210> 308
 <211> 349
 <212> PRT
 <213> Glycine max

<400> 308

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

Thr His Thr Val Leu Gln Leu Leu Leu Gly Gly Cys Arg Thr Val Val
 20 25 30

Val Asp Asn Leu Asp Asn Ser Ser Glu Val Ser Ile His Arg Val Arg
 35 40 45

Glu Leu Ala Gly Glu Phe Gly Asn Asn Leu Ser Phe His Lys Val Asp
 50 55 60

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

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

Gln Lys Pro Leu Leu Tyr Tyr Asn Asn Asn Leu Thr Gly Thr Ile Thr
 100 105 110

Leu Leu Glu Val Met Ala Ala His Gly Cys Lys Lys Leu Val Phe Ser
 115 120 125

Ser Ser Ala Thr Val Tyr Gly Trp Pro Lys Glu Val Pro Cys Thr Glu
 130 135 140

Glu Phe Pro Leu Ser Ala Met Asn Pro Tyr Gly Arg Thr Lys Leu Ile
 145 150 155 160

Ile Glu Glu Ile Cys Arg Asp Val His Cys Ala Glu Pro Asp Cys Lys
 165 170 175

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

Tyr Ile Gly Glu Asp Pro Arg Gly Ile Pro Asn Asn Leu Met Pro Phe
 195 200 205

Val Gln Gln Val Ala Val Gly Arg Arg Pro Ala Leu Thr Val Phe Gly
 210 215 220

Asn Asp Tyr Asn Thr Ser Asp Gly Thr Gly Val Arg Asp Tyr Ile His
 225 230 235 240

PF59082SEQ List- PF59348PCT.txt

Val Val Asp Leu Ala Asp Gly His Ile Ala Ala Leu Leu Lys Leu Asp
245 250 255

Glu Pro Asn Ile Gly Cys Glu Val Tyr Asn Leu Gly Thr Gly Lys Gly
260 265 270

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

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

Val Tyr Ala Ser Thr Lys Lys Ala Glu Arg Glu Leu Lys Trp Lys Ala
305 310 315 320

Lys Tyr Gly Ile Asp Glu Met Cys Arg Asp Gln Trp Asn Trp Ala Ser
325 330 335

Lys Asn Pro Tyr Gly Tyr Gly Asp Gln Gly Ser Thr Asp
340 345

<210> 309
<211> 1050
<212> DNA
<213> Glycine max

<400> 309
atgcgcgaca agactgtgct ggtaaccggc ggagccgggtt acatcggcac ccacaccggtt 60
cttcagctct tgctcggagg ttgcagaacc gtcgtcgtcg acaatctcga caattcctcc 120
gaggtttcta tccaccgagt caggagcgtt gccggcgaat ttgggaacaa cctctccttt 180
cacaaggtgg acctacggga cagggatgca ctagagcaaa tttttgtttc cacacaattt 240
gatgctgtca tacactttgc tggactgaaa gcagtaggag aaagtgtgca aaaaccttta 300
ctatactata acaacaactt gactgggaca atcactctat tggaagtcac ggctgcccac 360
ggatgcaaga agctcgtggt ctcttcttca gcaactgtat atgggttgcc aaaggaagtt 420
ccatgcacag aagagttccc tctgtcagca atgaaccacat atggacgaac taagcttatc 480
attgaagaaa tttgtcgtga tgtccaccgt gcagagccag attggaaaat aatattgtta 540
agatacttca acccagtcgg tgcacaccct agcgggttgta ttggggagga tccccgcgga 600
attccaaaca atctcatgcc atttgttcag caagtagcag ttggccgacg gcctgcactg 660
acagtttttg gaaatgatta taatacaact gatggcactg gggttcggga ttacattcat 720
gttggtgatt tagcagatgg gcacattgct gcattgctta aactagatga acctaataata 780
ggttgtgagg ttataacct gggaacagga aagggaacat cagttttgga gatgggttaga 840
gcttttgaaa tggcatctgg aaagaaaatt ccacttgtga tggctggccg tagacctggt 900
gatgctgaaa ttgtttatgc atcaacaaag aaagcggaaa gagagcttaa atggaaggca 960
aaatatggca ttgatgagat gtgccgaaat caatggaatt gggctagcaa aaacccttat 1020

ggctatggag atcagggctc caccgattaa

1050

<210> 310
 <211> 349
 <212> PRT
 <213> Glycine max

<400> 310

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

Thr His Thr Val Leu Gln Leu Leu Leu Gly Gly Cys Arg Thr Val Val
 20 25 30

Val Asp Asn Leu Asp Asn Ser Ser Glu Val Ser Ile His Arg Val Arg
 35 40 45

Glu Leu Ala Gly Glu Phe Gly Asn Asn Leu Ser Phe His Lys Val Asp
 50 55 60

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

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

Gln Lys Pro Leu Leu Tyr Tyr Asn Asn Asn Leu Thr Gly Thr Ile Thr
 100 105 110

Leu Leu Glu Val Met Ala Ala His Gly Cys Lys Lys Leu Val Phe Ser
 115 120 125

Ser Ser Ala Thr Val Tyr Gly Trp Pro Lys Glu Val Pro Cys Thr Glu
 130 135 140

Glu Phe Pro Leu Ser Ala Met Asn Pro Tyr Gly Arg Thr Lys Leu Ile
 145 150 155 160

Ile Glu Glu Ile Cys Arg Asp Val His Arg Ala Glu Pro Asp Trp Lys
 165 170 175

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

Cys Ile Gly Glu Asp Pro Arg Gly Ile Pro Asn Asn Leu Met Pro Phe
 195 200 205

Val Gln Gln Val Ala Val Gly Arg Arg Pro Ala Leu Thr Val Phe Gly
 210 215 220

Asn Asp Tyr Asn Thr Thr Asp Gly Thr Gly Val Arg Asp Tyr Ile His
 225 230 235 240

PF59082SEQ List- PF59348PCT.txt

Val Val Asp Leu Ala Asp Gly His Ile Ala Ala Leu Leu Lys Leu Asp
245 250 255

Glu Pro Asn Ile Gly Cys Glu Val Tyr Asn Leu Gly Thr Gly Lys Gly
260 265 270

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

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

Val Tyr Ala Ser Thr Lys Lys Ala Glu Arg Glu Leu Lys Trp Lys Ala
305 310 315 320

Lys Tyr Gly Ile Asp Glu Met Cys Arg Asn Gln Trp Asn Trp Ala Ser
325 330 335

Lys Asn Pro Tyr Gly Tyr Gly Asp Gln Gly Ser Thr Asp
340 345

<210> 311
<211> 1176
<212> DNA
<213> Glycine max

<400> 311
atggcatcgc gcgtcagcat tggcaacctt acctcctccg cgccgtatat taattcccct 60
cactttcgct caccacttaa gatttccaac aaccctctc tgcaaaacgc ttcgcataag 120
gtacttatgc gcgataagac tgtactggta accggcggag ccggttacat cggcagccac 180
accgttcttc agctcttgct cggaggtttc agagccgtcg tcctcgacaa cctcgaaaat 240
tcctccgagg ttgccatcca cagagtcagg gagctcgccg gcgaatttgg gaacaacctc 300
tcctttcaca aggtggacct acgggacaga gctgctctag accaaatatt ttcttcaca 360
caattcgatg ctgtcataca ttttgctgga ctgaaagcag taggagaaaag tgtgcaaaaa 420
cctttactat actataacaa caacttgact gggacaatca ctctattgga agtcatggct 480
gcccattgat gcaagaagct cgtgttttca tcttcagcaa ctgtatatgg ttggccaaag 540
gaggttccat gcacagaaga gttccctctg tcagcaatga acccatatgg acgaactaag 600
cttatcattg aagaaatttg ccgtgatgtc cactgtgcag agccagattg taaaataatt 660
ttgttaagat acttcaaccc agttggtgca caccacagtg gttatatattg ggaggatcct 720
cgtggaattc caaacaatct catgccattt gttcagcaag tagcagttgg ccgacggcct 780
gcactgacag tttttgaaa tgattataat acaagtgatg gcactggggt tcgggattac 840
attcatgttg ttgatttagc agatgggcac attgctgcat tgcttaaaact agatgaacct 900
aatatagggt gtgaggttta taacctggga acaggaaagg gaacatcagt tttggagatg 960
gtagagctt ttgaaatggc atctggaaag aaaattccac ttgtgatggc tggccgtaga 1020

PF59082SEQ List- PF59348PCT.txt

cctggtgatg ctgaaattgt ttatgcatca acaaagaaag cggaaagaga gcttaaatgg 1080
aaggcaaaat atggcattga tgagatgtgc cgtgatcaat ggaattgggc tagcaaaaac 1140
ccttatggct atggagatca gggctccacc gattaa 1176

<210> 312
<211> 391
<212> PRT
<213> Glycine max

<400> 312

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

Ile Asn Ser Pro His Phe Arg Ser Pro Leu Lys Ile Ser Asn Asn Pro
20 25 30

Ser Leu Gln Asn Ala Ser His Lys Val Leu Met Arg Asp Lys Thr Val
35 40 45

Leu Val Thr Gly Gly Ala Gly Tyr Ile Gly Ser His Thr Val Leu Gln
50 55 60

Leu Leu Leu Gly Gly Phe Arg Ala Val Val Leu Asp Asn Leu Glu Asn
65 70 75 80

Ser Ser Glu Val Ala Ile His Arg Val Arg Glu Leu Ala Gly Glu Phe
85 90 95

Gly Asn Asn Leu Ser Phe His Lys Val Asp Leu Arg Asp Arg Ala Ala
100 105 110

Leu Asp Gln Ile Phe Ser Ser Thr Gln Phe Asp Ala Val Ile His Phe
115 120 125

Ala Gly Leu Lys Ala Val Gly Glu Ser Val Gln Lys Pro Leu Leu Tyr
130 135 140

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

Ala His Gly Cys Lys Lys Leu Val Phe Ser Ser Ser Ala Thr Val Tyr
165 170 175

Gly Trp Pro Lys Glu Val Pro Cys Thr Glu Glu Phe Pro Leu Ser Ala
180 185 190

Met Asn Pro Tyr Gly Arg Thr Lys Leu Ile Ile Glu Glu Ile Cys Arg
195 200 205

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

PF59082SEQ List- PF59348PCT.txt

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

Arg Gly Ile Pro Asn Asn Leu Met Pro Phe Val Gln Gln Val Ala Val
 245 250 255

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

Asp Gly Thr Gly Val Arg Asp Tyr Ile His Val Val Asp Leu Ala Asp
 275 280 285

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

Glu Val Tyr Asn Leu Gly Thr Gly Lys Gly Thr Ser Val Leu Glu Met
 305 310 315 320

Val Arg Ala Phe Glu Met Ala Ser Gly Lys Lys Ile Pro Leu Val Met
 325 330 335

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

Lys Ala Glu Arg Glu Leu Lys Trp Lys Ala Lys Tyr Gly Ile Asp Glu
 355 360 365

Met Cys Arg Asp Gln Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly Tyr
 370 375 380

Gly Asp Gln Gly Ser Thr Asp
 385 390

<210> 313
 <211> 1059
 <212> DNA
 <213> Helianthus annuus

<400> 313
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 gttttgcagt tggtgttaaa tggttacagt acggtggtgg ttgataattt ggataattcg 120
 tcggaagttg ctatcagtcg ggttcgagaa ctcgctggtg atcgtggtcg taatctgtct 180
 tttcacaaga tggatatccg ggataagcct gcactagagc agctttttgc ttctacaaag 240
 tttgacgcgg ttatacattt tgctggatta aaggcagttg gtgaaagcgt gcagaagccg 300
 ttgatgtatt acaacaataa tatcgttggt actataactt tattggaagt tatggctgcc 360
 tatggctgca agaagcttgt gttttcatca tcggctactg tttatggctg gccaaaggag 420
 ttgccgtgca cagaagagtt tcccttgtct gcagccaacc cgtatggacg aacaaagcta 480

PF59082SEQ List- PF59348PCT.txt

atgatcgagg agatgtgccg agatgtatat gcttcagacc ctgagtggaa atttgtattg 540
 ttgcggtatt ttaaccctgt tgggtcacat cccagtggcc gaattggcga agatcctcat 600
 ggaattccaa acaatcttat gccttttatt cagcatgttg ctgttggttag acaacctgcg 660
 cttaaagtgt tcggaactga ttactccaca aaagatggaa ctgggggtacg tgattacatc 720
 catgtcgttag atttagcaga cggacatact gcggcggttg cgaaactttc tgatcccaaa 780
 ataggtttg aagtttataa cttggggact ggtaaaggga catctgtttt ggagatggta 840
 tcagcctttg aaaaggcatc aggaaagaaa atcccattaa taaagactgc acgacgacct 900
 ggtgatgctg agattgtata tgcgtcaaca acaaaggcag aacgcgagtt aaactggaag 960
 gcaaagtatg gaatagagga gatgtgcaga gatcagtgga actgggctag caggaatcct 1020
 tacggctatc agactgaagc aaagaaactt ggtgcatga 1059

<210> 314
 <211> 352
 <212> PRT
 <213> Helianthus annuus

<400> 314

Met Thr Arg Pro Met Cys Ile Leu Val Thr Gly Gly Ala Gly Tyr Ile
 1 5 10 15

Gly Ser His Thr Val Leu Gln Leu Leu Asn Gly Tyr Ser Thr Val
 20 25 30

Val Val Asp Asn Leu Asp Asn Ser Ser Glu Val Ala Ile Ser Arg Val
 35 40 45

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

Asp Ile Arg Asp Lys Pro Ala Leu Glu Gln Leu Phe Ala Ser Thr Lys
 65 70 75 80

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

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

Thr Leu Leu Glu Val Met Ala Ala Tyr Gly Cys Lys Lys Leu Val Phe
 115 120 125

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

Glu Glu Phe Pro Leu Ser Ala Ala Asn Pro Tyr Gly Arg Thr Lys Leu
 145 150 155 160

Met Ile Glu Glu Met Cys Arg Asp Val Tyr Ala Ser Asp Pro Glu Trp

165

170

175

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

Gly Arg Ile Gly Glu Asp Pro His Gly Ile Pro Asn Asn Leu Met Pro
195 200 205

Phe Ile Gln His Val Ala Val Gly Arg Gln Pro Ala Leu Lys Val Phe
210 215 220

Gly Thr Asp Tyr Ser Thr Lys Asp Gly Thr Gly Val Arg Asp Tyr Ile
225 230 235 240

His Val Val Asp Leu Ala Asp Gly His Thr Ala Ala Leu Ala Lys Leu
245 250 255

Ser Asp Pro Lys Ile Gly Cys Glu Val Tyr Asn Leu Gly Thr Gly Lys
260 265 270

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

Lys Lys Ile Pro Leu Ile Lys Thr Ala Arg Arg Pro Gly Asp Ala Glu
290 295 300

Ile Val Tyr Ala Ser Thr Thr Lys Ala Glu Arg Glu Leu Asn Trp Lys
305 310 315 320

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

Ser Arg Asn Pro Tyr Gly Tyr Gln Thr Glu Ala Lys Lys Leu Gly Ala
340 345 350

<210> 315
<211> 1497
<212> DNA
<213> Zea mays

<400> 315
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gcacacagac aactcatcct ctcccctctc tctctcacac acacacatcc atcatcccat 120
ccctgtgacg ggcgatccga gggcctaccg acgatggtgt cgcctgtgct ccggaccatc 180
ctcgtgacgg gcggcgccgg gtacatcggc agccacacgg tgctgcagct gctgcagcag 240
ggcttccgcg tcgtcgtcgt cgacaacctc gacaacgcct ccgaggccgc cctcgcccgc 300
gtcgccgagc tcgcccggca cgacggcgcc aacctcgtct tccacaaggt tgaccttcgc 360
gacaggcacg cgttggtgga catcttctcg tcgcacaggt tcgaggctgt cattcacttt 420
gctgggctca aggctgttgg ggagagcgtg cacaagcccc tactttacta cgacaacaac 480

PF59082SEQ List- PF59348PCT.txt

ctggtcggca ccatcacct cctggagggtg atggctgcga acggctgcaa gaagctgggtg 540
 ttctcgtcat ctgcaactgt ctatgggtgg cccaaggaag taccctgcac cgaagaattc 600
 ccgctctgcg ccaccaatcc ctatgggctg acaaagcttg tgattgaaga catctgccgc 660
 gacgtccacc gctccgacct cgactggaag atcatactgc tcaggtactt caaccccgtt 720
 ggcgctcatc caagcgggta catcggcgaa gaccctgcg gtgtcccgaa caacctgatg 780
 ccctacgtgc agcaagtcgc tgttgggagg ttacctcacc tcacggtcta cgggacggac 840
 tacagacca aggatgggac tggggtgcgt gattacatcc acgttgtcga cctggctgac 900
 ggccacatag cagccctgag gaagctctac gaagactccg aaaaaatagg ctgtgaagtg 960
 tacaacttgg ggactggaaa ggggacgtcc gtgttgaaa tgggtggctgc attcgagaag 1020
 gcttctggga agaaaatccc tctggtgttc gctgggcaa gaccggaga cgcagagatc 1080
 gtctacgccg caactgcaa ggcagagaag gagtcaaat ggaaggcaa gtacgggatc 1140
 gaggagatgt gcagagatct gtggaactgg gcgagcaaga acccgtagcg gtacgctggg 1200
 tcacgcgaca acagcaaatg aaccacccat ccatgcatcc catcctgcag taggagcaag 1260
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<210> 316
 <211> 355
 <212> PRT
 <213> Zea mays

<400> 316

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

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

Val Val Val Val Asp Asn Leu Asp Asn Ala Ser Glu Ala Ala Leu Ala
 35 40 45

Arg Val Ala Glu Leu Ala Gly His Asp Gly Ala Asn Leu Val Phe His
 50 55 60

Lys Val Asp Leu Arg Asp Arg His Ala Leu Val Asp Ile Phe Ser Ser
 65 70 75 80

His Arg Phe Glu Ala Val Ile His Phe Ala Gly Leu Lys Ala Val Gly
 85 90 95

Glu Ser Val His Lys Pro Leu Leu Tyr Tyr Asp Asn Asn Leu Val Gly
 100 105 110

PF59082SEQ List- PF59348PCT.txt

Thr Ile Thr Leu Leu Glu Val Met Ala Ala Asn Gly Cys Lys Lys Leu
115 120 125

Val Phe Ser Ser Ser Ala Thr Val Tyr Gly Trp Pro Lys Glu Val Pro
130 135 140

Cys Thr Glu Glu Phe Pro Leu Cys Ala Thr Asn Pro Tyr Gly Arg Thr
145 150 155 160

Lys Leu Val Ile Glu Asp Ile Cys Arg Asp Val His Arg Ser Asp Pro
165 170 175

Asp Trp Lys Ile Ile Leu Leu Arg Tyr Phe Asn Pro Val Gly Ala His
180 185 190

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

Met Pro Tyr Val Gln Gln Val Ala Val Gly Arg Leu Pro His Leu Thr
210 215 220

Val Tyr Gly Thr Asp Tyr Ser Thr Lys Asp Gly Thr Gly Val Arg Asp
225 230 235 240

Tyr Ile His Val Val Asp Leu Ala Asp Gly His Ile Ala Ala Leu Arg
245 250 255

Lys Leu Tyr Glu Asp Ser Asp Lys Ile Gly Cys Glu Val Tyr Asn Leu
260 265 270

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

Lys Ala Ser Gly Lys Lys Ile Pro Leu Val Phe Ala Gly Arg Arg Pro
290 295 300

Gly Asp Ala Glu Ile Val Tyr Ala Ala Thr Ala Lys Ala Glu Lys Glu
305 310 315 320

Leu Lys Trp Lys Ala Lys Tyr Gly Ile Glu Glu Met Cys Arg Asp Leu
325 330 335

Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly Tyr Ala Gly Ser Arg Asp
340 345 350

Asn Ser Lys
355

<210> 317
<211> 1980
<212> DNA
<213> Zea mays

PF59082SEQ List- PF59348PCT.txt

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<400> 317
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tctggtcgag gaggcggagg ccggtgccgg cgggcgggcg gggaggtagg tagcagcttg 180
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gttcacgggt gcaagaagtt ggtgttctca tcacagctg cagtttatgg atcacccaaa 660
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ttacttaggt acttcaatcc agttggtgct catcctagtg gatattcttg cgaggacca 840
cgaggaattc ccaacaatct tatgccctat gttcagcaag ttgcggttgg taggaggcca 900
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attgttaaag catttgagaa ggcttctggg aagaaaatac ctctgatttt tggtgaaaga 1140
cgcccagggt atgcagagat tctgttttca gagactacta aagcagagag ggagcttaac 1200
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tccgctgact cctccaagca gaatggccac cgcacaaacg gttcaactga ctcaccaag 1380
cggaacggcc accatgcgta tgggtctgct gactaccca agcgcaacgg gactgcgtt 1440
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aacggggaaa agttgcacct gtgtacgatt atttatttgt acctgtaata tttatggaga 1860

actagcctcg ccgcaaatag ccctgatgaa ttcagctgca gtttattccc aaaaaaaaaa 1920
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaggggcccc 1980

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PF59082SEQ List- PF59348PCT.txt

<210> 318
 <211> 423
 <212> PRT
 <213> Zea mays

<400> 318

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

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

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

Ser Ser Glu Leu Ala Val Arg Arg Val Ala Ala Leu Ala Gly Asp His
 50 55 60

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

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

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

Tyr Asp Asn Asn Val Ile Gly Thr Ile Asn Leu Leu Glu Val Met Ser
 115 120 125

Val His Gly Cys Lys Lys Leu Val Phe Ser Ser Ser Ala Ala Val Tyr
 130 135 140

Gly Ser Pro Lys Asn Ser Pro Cys Thr Glu Asn Phe Pro Leu Thr Pro
 145 150 155 160

Asn Asn Pro Tyr Gly Lys Thr Lys Leu Val Val Glu Asp Ile Cys Arg
 165 170 175

Asp Ile Tyr Arg Ser Asp Pro Glu Trp Lys Ile Ile Leu Leu Arg Tyr
 180 185 190

Phe Asn Pro Val Gly Ala His Pro Ser Gly Tyr Leu Gly Glu Asp Pro
 195 200 205

Arg Gly Ile Pro Asn Asn Leu Met Pro Tyr Val Gln Gln Val Ala Val
 210 215 220

Gly Arg Arg Pro Ala Leu Thr Val Leu Gly Asn Asp Tyr Ala Thr Arg
 225 230 235 240

Asp Gly Thr Gly Val Arg Asp Tyr Ile His Val Val Asp Leu Ala Asp

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

Cys Glu Ala Tyr Asn Leu Gly Thr Gly Arg Gly Thr Ser Val Leu Glu
275 280 285

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

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

Thr Lys Ala Glu Arg Glu Leu Asn Trp Lys Ala Lys Tyr Gly Ile Glu
325 330 335

Glu Met Cys Arg Asp Gln Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly
340 345 350

Tyr Gly Ser Pro Asp Ser Ile Lys Gln Asn Gly His Gln Thr Asn Gly
355 360 365

Ser Ala Asp Ser Ser Lys Gln Asn Gly His Arg Thr Asn Gly Ser Thr
370 375 380

Asp Ser Pro Lys Arg Asn Gly His His Ala Tyr Gly Ser Ala Asp Ser
385 390 395 400

Pro Lys Arg Asn Gly His Cys Val Phe Gly Ser Ser Asp Leu Lys Pro
405 410 415

Asn Gly Asn Gly His Leu Arg
420

<210> 319
<211> 1444
<212> DNA
<213> Glycine max

<400> 319
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caactcctct ttgcacaagc cactcatgcg cgacaagact gtgctggtaa ccggcggagc 180
cggttacatc ggcaccaca ccgtttctca gctcttgctc ggaggttgca gaaccgtcgt 240
cgtcgacaat ctcgacaatt cctccgaggt ttctatccac cgagtcaggg agcttgccgg 300
cgaatttggg aacaacctct cttttcaca ggtggaccta cgggacaggg atgcactaga 360

gcaaattttt gtttcacac aatttgatgc tgtcatacac tttgctggac tgaaagcagt 420
aggagaaagt gtgcaaaaac ctttactata ctataacaac aacttgactg ggacaatcac 480
Seite 335

PF59082SEQ List- PF59348PCT.txt

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tctattggaa gtcattggctg cccatggatg caagaagctc gtgttctctt cttcagcaac 540
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cccatatgga cgaactaagc ttatcattga agaaatttgc cgtgatgtcc actgtgcaga 660
gccagattgt aaaataattt tgtaagata cttcaacca gttggtgcac accccagcgg 720
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ggaaagagag cttaaagga aggcaaaata tggcattgat gagatgtgcc gtgatcaatg 1140
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catg 1444

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<210> 320
 <211> 387
 <212> PRT
 <213> Glycine max

<400> 320

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

Ile Asn Ser Pro His Phe Arg Ser Gln Leu Lys Leu Ser Ser Asn Ser
 20 25 30

Ser Leu His Lys Pro Leu Met Arg Asp Lys Thr Val Leu Val Thr Gly
 35 40 45

Gly Ala Gly Tyr Ile Gly Thr His Thr Val Leu Gln Leu Leu Leu Gly
 50 55 60

Gly Cys Arg Thr Val Val Val Asp Asn Leu Asp Asn Ser Ser Glu Val
 65 70 75 80

Ser Ile His Arg Val Arg Glu Leu Ala Gly Glu Phe Gly Asn Asn Leu
 85 90 95

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

PF59082SEQ List- PF59348PCT.txt

Phe Val Ser Thr Gln Phe Asp Ala Val Ile His Phe Ala Gly Leu Lys
 115 120 125
 Ala Val Gly Glu Ser Val Gln Lys Pro Leu Leu Tyr Tyr Asn Asn Asn
 130 135 140
 Leu Thr Gly Thr Ile Thr Leu Leu Glu Val Met Ala Ala His Gly Cys
 145 150 155 160
 Lys Lys Leu Val Phe Ser Ser Ser Ala Thr Val Tyr Gly Trp Pro Lys
 165 170 175
 Glu Val Pro Cys Thr Glu Glu Phe Pro Leu Ser Ala Met Asn Pro Tyr
 180 185 190
 Gly Arg Thr Lys Leu Ile Ile Glu Glu Ile Cys Arg Asp Val His Cys
 195 200 205
 Ala Glu Pro Asp Cys Lys Ile Ile Leu Leu Arg Tyr Phe Asn Pro Val
 210 215 220
 Gly Ala His Pro Ser Gly Tyr Ile Gly Glu Asp Pro Arg Gly Ile Pro
 225 230 235 240
 Asn Asn Leu Met Pro Phe Val Gln Gln Val Ala Val Gly Arg Arg Pro
 245 250 255
 Ala Leu Thr Val Phe Gly Asn Asp Tyr Asn Thr Ser Asp Gly Thr Gly
 260 265 270
 Val Arg Asp Tyr Ile His Val Val Asp Leu Ala Asp Gly His Ile Ala
 275 280 285
 Ala Leu Leu Lys Leu Asp Glu Pro Asn Ile Gly Cys Glu Val Tyr Asn
 290 295 300
 Leu Gly Thr Gly Lys Gly Thr Ser Val Leu Glu Met Val Arg Ala Phe
 305 310 315 320
 Glu Met Ala Ser Gly Lys Lys Ile Pro Leu Val Met Ala Gly Arg Arg
 325 330 335
 Pro Gly Asp Ala Glu Ile Val Tyr Ala Ser Thr Lys Lys Ala Glu Arg
 340 345 350
 Glu Leu Lys Trp Lys Ala Lys Tyr Gly Ile Asp Glu Met Cys Arg Asp
 355 360 365
 Gln Trp Asn Trp Ala Ser Lys Asn Pro Tyr Gly Tyr Gly Asp Gln Gly
 370 375 380

Ser Thr Asp
385