

PF59233.ST25.txt
SEQUENCE LISTING

<110> Cropdesign N.V.
Crop Functional Genomics Center

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

<130> PF59233

<150> EP 07108768.8
<151> 2007-05-23

<150> US 60/932,226
<151> 2007-05-29

<150> EP 07110086.1
<151> 2007-06-12

<150> US 60/937,994
<151> 2007-06-29

<160> 155

<170> PatentIn version 3.3

<210> 1
<211> 848
<212> DNA
<213> Brassica rapa

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<210> 2
<211> 268
<212> PRT
<213> Brassica rapa

<400> 2

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

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<210> 3
<211> 841
<212> DNA
<213> Brassica rapa

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<222> (662)..(662)
<223> n is a, c, g, or t

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ctccttcccc atccgcttct ctccgggtccc tcgtccctct cccctcacct caatccgctt 180
cctcttctcg ccggagcttc gctgtcaagg gccaaaccga tgatcttcca ttggttgga 240
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aggtcaagct ctctgattac attgggaaaa agtatgtgat tctctttttt ctacccttg 360
acttcacttt cgtctgccca acagaaatta ctgccttcag tgaccgatat gcagaatttg 420
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anaatcttgg tattggccga agtgttgatg agacaatgag aacccttcag gcattacagt 720
acatccagga aggccctggg gaagtctgcc ctgcaggatg gaaaccaggg gagaagtcaa 780
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<210> 4
<211> 273
<212> PRT
<213> Brassica rapa

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<220>
<221> UNSURE
<222> (219)..(219)
<223> Xaa can be any naturally occurring amino acid

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<400> 4
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20 25 30
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35 40 45
Leu Val Pro Leu Pro Ser Pro Gln Ser Ala Ser Ser Ser Arg Arg Ser
50 55 60
Phe Ala Val Lys Gly Gln Thr Asp Asp Leu Pro Leu Val Gly Asn Lys
65 70 75 80
Ala Pro Asp Phe Glu Ala Glu Gly Val Phe Asp Gln Glu Phe Ile Lys
85 90 95
Phe Ile Lys Val Lys Leu Ser Asp Tyr Ile Gly Lys Lys Tyr Val Ile
100 105 110
Leu Phe Phe Leu Pro Leu Asp Phe Thr Phe Val Cys Pro Thr Glu Ile
115 120 125
Thr Ala Phe Ser Asp Arg Tyr Ala Glu Phe Glu Lys Leu Asn Thr Glu
130 135 140
Val Leu Gly Val Ser Val Asp Ser Val Ser Val Phe Ser His Leu Ala
145 150 155 160
Gly Val Gln Thr Asp Arg Lys Phe Gly Gly Leu Gly Asp Leu Asn Tyr
165 170 175
Pro Leu Ile Ser Asp Val Thr Lys Ser Ile Ser Lys Ser Phe Gly Val
180 185 190
Leu Ile His Asp Gln Gly Ile Ala Leu Arg Gly Leu Phe Ile Ile Asp
195 200 205
Lys Glu Gly Val Ile Gln His Ser Thr Ile Xaa Asn Leu Gly Ile Gly
210 215 220
Arg Ser Val Asp Glu Thr Met Arg Thr Leu Gln Ala Leu Gln Tyr Ile
225 230 235 240
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245 250 255
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260 265 270
Ile

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<210> 5
 <211> 1002
 <212> DNA
 <213> Arabidopsis thaliana

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 gtttttccag caaagtcttc actttcctct ccactctgtt ctttcttctg aaccctttct 180
 tctccttccg catctgcttc tctcgcgtcc ggatttgctc gacgctcttc cctcagctcc 240
 acttctcgtc ggagctttgc tgtcaaagcc caggccgatg atcttccact ggttggaac 300
 aaggcgctg attttgaggc agaggctgtg tttgatcaag agttcatcaa ggttaagctc 360
 tctgattaca ttggaagaa gtatgtgatt ctcttttctt acccattgga ctttactttc 420
 gtctgcccac cagagattac tgccttcagt gaccggcatt cagaatttga gaagttgaac 480
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 ttcataatcg acaaggaagg agtgatccaa cattccacca tcaacaatct tggatttggc 720
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 ctcagcaaag agtacttctc agctatttag aaactctact atgatagcaa aaaggtacaa 900
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<210> 6
 <211> 266
 <212> PRT
 <213> Arabidopsis thaliana

<400> 6
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 35 40 45
 Phe Ala Arg Arg Ser Ser Leu Ser Ser Thr Ser Arg Arg Ser Phe Ala
 50 55 60
 Val Lys Ala Gln Ala Asp Asp Leu Pro Leu Val Gly Asn Lys Ala Pro
 65 70 75 80
 Asp Phe Glu Ala Glu Ala Val Phe Asp Gln Glu Phe Ile Lys Val Lys
 85 90 95
 Leu Ser Asp Tyr Ile Gly Lys Lys Tyr Val Ile Leu Phe Phe Tyr Pro
 100 105 110
 Leu Asp Phe Thr Phe Val Cys Pro Thr Glu Ile Thr Ala Phe Ser Asp
 115 120 125
 Arg His Ser Glu Phe Glu Lys Leu Asn Thr Glu Val Leu Gly Val Ser
 130 135 140
 Val Asp Ser Val Phe Ser His Leu Ala Trp Val Gln Thr Asp Arg Lys
 145 150 155 160
 Ser Gly Gly Leu Gly Asp Leu Asn Tyr Pro Leu Ile Ser Tyr Phe Thr
 165 170 175

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Lys Ser Ile Ser Lys Ser Phe Gly Val Leu Ile His Asp Gln Gly Ile
      180      185      190
Ala Leu Arg Gly Leu Phe Ile Ile Asp Lys Glu Gly Val Ile Gln His
      195      200      205
Ser Thr Ile Asn Asn Leu Gly Ile Gly Gln Ser Val Asp Glu Thr Met
      210      215      220
Arg Thr Leu Gln Ala Leu Gln Tyr Ile Gln Glu Asn Pro Asp Glu Val
      225      230      235      240
Cys Pro Ala Gly Trp Lys Pro Gly Glu Lys Ser Met Lys Pro Asp Pro
      245      250      255
Lys Leu Ser Lys Glu Tyr Phe Ser Ala Ile
      260      265

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<210> 7
 <211> 988
 <212> DNA
 <213> Brassica napus

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cctacggaga ttactgcctt cagtgcctt tatgaagaat ttgagaagct aaacacggaa 480
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aagtcaggag ggctgggtga cctgaactac ccacttgtct ctgatatcac taaatccatt 600
tcaaaatctt ttggagtgtc catccctgat cagggcattg cactgagagg gcttttcac 660
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<210> 8
 <211> 270
 <212> PRT
 <213> Brassica napus

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<400> 8
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Arg Thr Leu Pro Ser Thr Ser Val Ser Thr Ser Ser Ser Leu Arg Ser
      35      40      45
Cys Phe Ser Ser Ile Ser Pro Leu Thr Cys Ile Arg Ser Ser Ser Arg
      50      55      60
Pro Ser Phe Ala Val Lys Ala Gln Ala Asp Asp Leu Pro Leu Val Gly
      65      70      75      80
Asn Lys Ala Pro Asp Phe Glu Ala Glu Ala Val Phe Asp Gln Glu Phe

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Phe	Leu	Tyr	Pro	Leu	Asp	Phe	Thr	Phe	Val	Cys	Pro	Thr	Glu	Ile	Thr				
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Ala	Phe	Ser	Asp	Arg	Tyr	Glu	Glu	Phe	Glu	Lys	Leu	Asn	Thr	Glu	Val				
		130				135					140								
Leu	Gly	Val	Ser	Val	Asp	Ser	Val	Phe	Ser	His	Leu	Ala	Trp	Val	Gln				
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Asp	Gln	Gly	Ile	Ala	Leu	Arg	Gly	Leu	Phe	Ile	Ile	Asp	Lys	Lys	Gly				
		195					200					205							
Val	Ile	Gln	His	Ser	Thr	Ile	Asn	Asn	Leu	Gly	Ile	Gly	Arg	Ser	Val				
		210				215					220								
Asp	Glu	Thr	Met	Arg	Thr	Leu	Gln	Ala	Leu	Gln	Tyr	Val	Gln	Glu	Asn				
225				230						235					240				
Pro	Asp	Glu	Val	Cys	Pro	Ala	Gly	Trp	Lys	Pro	Gly	Glu	Lys	Ser	Met				
			245					250						255					
Lys	Pro	Asp	Pro	Lys	Leu	Ser	Lys	Glu	Tyr	Phe	Ser	Ala	Ile						
		260						265					270						

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 <211> 1146
 <212> DNA
 <213> Arabidopsis thaliana

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<210> 10
 <211> 271
 <212> PRT

<213> *Arabidopsis thaliana*

<400> 10

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

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<210> 11

<211> 867

<212> DNA

<213> *Spinacia oleracea*

<400> 11

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aacagacagg aaatctggag ggcttggtga tctgaactat ccccttattt cagatgtcac 540
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<210> 12
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 <212> PRT
 <213> Spinacia oleracea

<400> 12
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 35 40 45
 Phe Ala Arg Arg Ser Ser Leu Ser Ser Thr Ser Arg Arg Ser Phe Ala
 50 55 60
 Val Lys Ala Gln Ala Asp Leu Pro Leu Val Gly Asn Lys Ala Pro
 65 70 75 80
 Asp Phe Glu Ala Glu Ala Val Phe Asp Gln Glu Phe Ile Lys Val Lys
 85 90 95
 Leu Ser Asp Tyr Ile Gly Lys Lys Tyr Val Ile Leu Phe Phe Tyr Pro
 100 105 110
 Leu Asp Phe Thr Phe Val Cys Pro Thr Glu Ile Thr Ala Phe Ser Asp
 115 120 125
 Arg His Ser Glu Phe Glu Lys Leu Asn Thr Glu Val Leu Gly Val Ser
 130 135 140
 Val Asp Ser Val Phe Ser His Leu Ala Trp Val Gln Thr Asp Arg Lys
 145 150 155 160
 Ser Gly Gly Leu Gly Asp Leu Asn Tyr Pro Leu Ile Ser Asp Val Thr
 165 170 175
 Lys Ser Ile Ser Lys Ser Phe Gly Val Leu Ile His Asp Gln Gly Ile
 180 185 190
 Ala Leu Arg Gly Leu Phe Ile Ile Asp Lys Glu Gly Val Ile Gln His
 195 200 205
 Ser Thr Ile Asn Asn Leu Gly Ile Gly Arg Ser Val Asp Glu Thr Met
 210 215 220
 Arg Thr Leu Gln Ala Leu Gln Tyr Thr Gly Asn Pro Asp Glu Val Cys
 225 230 235 240
 Pro Ala Gly Trp Lys Pro Gly Glu Lys Ser Met Lys Pro Asp Pro Lys
 245 250 255
 Leu Ser Lys Glu Tyr Phe Ser Ala Ile
 260 265

<210> 13
 <211> 990
 <212> DNA
 <213> Nicotiana tabacum

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PF59233.ST25.txt

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agtgaacttc cacttggttg aaatcaagcg ccagactttg aggctgaagc tgtttttgat 300
caagaattca tcaagggtta actatctgag tacattggga agaagtatgt cattctcttt 360
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tatggagaat ttgaaaagtt gaacacagaa atattgggtg tttccgtaga cagtgtgttc 480
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ccattaattt ccgacgtgac caagtcaatt tcaaaatcat acaatgttct gatccccgat 600
caggaattg cattgagagg acttttcatc attgacaagg aaggagttat tcagcattca 660
accattaaca atcttggaat tggtcgtagt gttgatgaaa cattgagaac tcttcaggca 720
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<210> 14
 <211> 271
 <212> PRT
 <213> Nicotiana tabacum

<400> 14

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

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Met Lys Pro Asp Pro Lys Gly Ser Lys Glu Tyr Phe Ala Ser Ile
245 250 255
260 265 270

<210> 15
<211> 944
<212> DNA
<213> Phaseolus vulgaris

<400> 15
tctattctat ctacactcac tctctcactc tcccactctc ccatggcttc ctcagctccc 60
tgtgcttctc tcatatcctc aaaccctaac attctcttct ctcccaaatt cccttcttct 120
tccttttctt ccctctcctt cccaatttc cccaactctc ttttcaaacc tttacgcact 180
tctctcaatc cttcatctcc ccctctcaga accttcgttg ccagggttc gagtgaactt 240
ccattagttg ggaacacagc accggatttt gaagcagagg ccgtttttga tcaggagtgc 300
atcaaggtca aactatctga ttatattggg aaaaaatatg ttatcctctt tttctatcca 360
ctggacttca cattcgtttg tccgacagaa atcactgcct tcagtgcacc gtatgcagag 420
tttgaggcac taaatacaga aattttgggt gtttcagttg acagtgtttt ttcacacctt 480
gcatgggttc aaactgatag aaagtcgggt ggtcttggcg acttgaatta tccattgatt 540
tctgatgtca ccaaattccat ctcaaaatct tatgatgttc tcattcccga tcaggggatt 600
gcattgagag gattgttcat tattgacaag gaaggggtta ttcagcattc taccattaac 660
aacctggcca ttggtagaag tggtgatgag acaaagagaa cgctccaggc cttgcagtat 720
gtgcaggaga acccagatga agtttgccca gctgggtgga agcctggtga gaagtccatg 780
aaaccagacc ctaaacttag caaagagtac ttctctgcta tttagggagg ataatggttg 840
aagagtagca attgctcata tgtatcaatc aatgataatt tgtataatgc aacgcaagtt 900
tataaagttt tgattgagag ggtctcatga ttatacaaaa aaaa 944

<210> 16
<211> 260
<212> PRT
<213> Phaseolus vulgaris

<400> 16
Met Ala Ser Ser Ala Pro Cys Ala Ser Leu Ile Ser Ser Asn Pro Asn
1 5 10 15
Ile Leu Phe Ser Pro Lys Phe Pro Ser Ser Ser Phe Ser Ser Leu Ser
20 25 30
Phe Pro Asn Ser Pro Asn Ser Leu Phe Lys Pro Leu Arg Thr Ser Leu
35 40 45
Asn Pro Ser Ser Pro Pro Leu Arg Thr Phe Val Ala Arg Ala Ser Ser
50 55 60
Glu Leu Pro Leu Val Gly Asn Thr Ala Pro Asp Phe Glu Ala Glu Ala
65 70 75 80
Val Phe Asp Gln Glu Phe Ile Lys Val Lys Leu Ser Asp Tyr Ile Gly
85 90 95
Lys Lys Tyr Val Ile Leu Phe Phe Tyr Pro Leu Asp Phe Thr Phe Val
100 105 110
Cys Pro Thr Glu Ile Thr Ala Phe Ser Asp Arg Tyr Ala Glu Phe Glu
115 120 125
Ala Leu Asn Thr Glu Ile Leu Gly Val Ser Val Asp Ser Val Phe Ser
130 135 140
His Leu Ala Trp Val Gln Thr Asp Arg Lys Ser Gly Gly Leu Gly Asp
145 150 155 160
Leu Asn Tyr Pro Leu Ile Ser Asp Val Thr Lys Ser Ile Ser Lys Ser

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```

                165                170                175
Tyr Asp Val Leu Ile Pro Asp Gln Gly Ile Ala Leu Arg Gly Leu Phe
                180                185                190
Ile Ile Asp Lys Glu Gly Val Ile Gln His Ser Thr Ile Asn Asn Leu
                195                200                205
Ala Ile Gly Arg Ser Val Asp Glu Thr Lys Arg Thr Leu Gln Ala Leu
                210                215                220
Gln Tyr Val Gln Glu Asn Pro Asp Glu Val Cys Pro Ala Gly Trp Lys
225                230                235                240
Pro Gly Glu Lys Ser Met Lys Pro Asp Pro Lys Leu Ser Lys Glu Tyr
                245                250                255
Phe Ser Ala Ile
                260

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```

<210> 17
<211> 1044
<212> DNA
<213> Pisum sativum

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```

<220>
<221> misc_feature
<222> (968)..(968)
<223> n is a, c, g, or t

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<400> 17
atggcttgct cagctccatt tgctttctct ctatatccaa accctaacac actcttctct 60
cccaaattct cttctccgcg cctctcttct ctctcaatcc ccaatgcacc caattctctc 120
cccaaactac gcaattccct cctcttttcc ctcaaccgct cctcttctct tcgccgcact 180
ttcgtcggtta gggcttcttg tgaattacca ttagttggga actcagcgcc ggattttgaa 240
gctgaagctg ttttcgatca ggagtttatc aaggtcaaac tatctgaata tattgggaag 300
aaatatgtta tctctttttt ctaccatttg gacttcacgt tcgtttgccc aacagaaatc 360
actgctttca gtgaccggca tgcagagttt gatgcaataa atactgagat tttgggtggt 420
tcagttgaca gtgtgttctc gcaccttgca tgggttcaat cagatagaaa gtcaggtggc 480
cttggtgact tgaaatatcc tctggtttct gatgtcacca aatccatatt ggaatcttac 540
gggtgttctca ttcccgatca gggaattgca ttgagaggat tgttcattat cgataaggaa 600
ggggtgatcc aacattccac catcaacaac ctcggaattg gtagaagtgt tgacgagaca 660
aagagaacac tccaggcttt gcagtatgtg caggagaacc cagatgaagt ttgccctgct 720
gggtggaagc ctggtgagaa gtccatgaaa ccagacccca aaggtagcaa agagtacttt 780
gctgctgtgt agaattggcta atagtaaatt gctatgagta ttaactactc atctgtatca 840
tttgggatgt aaaaggattt tgttttatgt aattctatcc attttgaatt atgaggccta 900
tggtgttagc cataaaaaata aaaagtatga ggtccaaaag tgtgtgggta cagaagcatg 960
cttgtgtgcc ttgatttttg agtgaattat gaattgatgt attatctgta aaaaaaaaaa 1020
aaaaaaaaaa aaaaaaaaaa aaaa 1044

```

```

<210> 18
<211> 263
<212> PRT
<213> Pisum sativum

```

```

<400> 18
Met Ala Cys Ser Ala Pro Phe Ala Ser Leu Leu Tyr Ser Asn Pro Asn
1                5                10                15
Thr Leu Phe Ser Pro Lys Phe Ser Ser Pro Arg Leu Ser Ser Leu Ser
                20                25                30

```

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

<210> 19
<211> 1078
<212> DNA
<213> Oryza sativa

<400> 19
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gctctgcggc catggccgcc tgctgctcct ccctgcgcac cgccgtctcc tcctcctccg 120
ccaagccctt cgccggcatc cccccgcgcg cgccgcactc cctctccctc ccccgcgctc 180
ccgcgcgccg gcccctccgc ctctccgcct cctcatccag atccgcccgg gccagcagct 240
tcgtcgcccc cgccggcggg gtggacgatg cgccgctggg cggaacaag gcgcccgact 300
tcgatgcgga ggcagtcttc gaccaggagt tcatcaacgt gaagctgtcc gactacatcg 360
ggaagaagta cgtcattctc ttcttctacc cgttggactt caccttcgtc tgcccgaccg 420
agattaccgc tttcagtgac agatacgatg agttcgagaa gttgaacact gagatcctcg 480
gtgtttcaat tgacagtgtg ttctcccatc ttgcatgggt gcagacagac aggaaatctg 540
gtgggcttgg tgatctgaaa taccatttga tttcagatgt tactaaatca atttcgaagt 600
ccttttgggt cttgatccct gaccagggaa ttgctctgag aggacttttc atcattgaca 660
aggaggaggt gattcagcac tctaccatta acaaccttgc cattggacgc agtgtagatg 720
agaccatgag gacccttcag gcgttgacgt acgtccagga caaccggac gaggtgtgcc 780
cggcgggatg gaagcccggt gacaagtcca tgaagcctga cccaaggga agcaaggagt 840
acttcgcggc catctaagca cacatatgca tatgcctggg gatggatgta gggagttttt 900
ttgctttcgc gagagccatt gcgtttcgtc tccaaagtgt agtaccgtgt gctcgtctga 960
tcggattttg ttacttggtc gccaccagct gttactttgt tccctaaca ataaggcttt 1020

gttttggtcg tggtatacat gtatacatgt tagtgcggtt caagatcgct tctgtttt 1078

<210> 20
 <211> 261
 <212> PRT
 <213> Oryza sativa

<400> 20
 Met Ala Ala Cys Cys Ser Ser Leu Ala Thr Ala Val Ser Ser Ser Ser
 1 5 10 15
 Ala Lys Pro Leu Ala Gly Ile Pro Pro Ala Ala Pro His Ser Leu Ser
 20 25 30
 Leu Pro Arg Ala Pro Ala Ala Arg Pro Leu Arg Leu Ser Ala Ser Ser
 35 40 45
 Ser Arg Ser Ala Arg Ala Ser Ser Phe Val Ala Arg Ala Gly Gly Val
 50 55 60
 Asp Asp Ala Pro Leu Val Gly Asn Lys Ala Pro Asp Phe Asp Ala Glu
 65 70 75 80
 Ala Val Phe Asp Gln Glu Phe Ile Asn Val Lys Leu Ser Asp Tyr Ile
 85 90 95
 Gly Lys Lys Tyr Val Ile Leu Phe Phe Tyr Pro Leu Asp Phe Thr Phe
 100 105 110
 Val Cys Pro Thr Glu Ile Thr Ala Phe Ser Asp Arg Tyr Asp Glu Phe
 115 120 125
 Glu Lys Leu Asn Thr Glu Ile Leu Gly Val Ser Ile Asp Ser Val Phe
 130 135 140
 Ser His Leu Ala Trp Val Gln Thr Asp Arg Lys Ser Gly Gly Leu Gly
 145 150 155 160
 Asp Leu Lys Tyr Pro Leu Ile Ser Asp Val Thr Lys Ser Ile Ser Lys
 165 170 175
 Ser Phe Gly Val Leu Ile Pro Asp Gln Gly Ile Ala Leu Arg Gly Leu
 180 185 190
 Phe Ile Ile Asp Lys Glu Gly Val Ile Gln His Ser Thr Ile Asn Asn
 195 200 205
 Leu Ala Ile Gly Arg Ser Val Asp Glu Thr Met Arg Thr Leu Gln Ala
 210 215 220
 Leu Gln Tyr Val Gln Asp Asn Pro Asp Glu Val Cys Pro Ala Gly Trp
 225 230 235 240
 Lys Pro Gly Asp Lys Ser Met Lys Pro Asp Pro Lys Gly Ser Lys Glu
 245 250 255
 Tyr Phe Ala Ala Ile
 260

<210> 21
 <211> 1067
 <212> DNA
 <213> Secale cereale

<400> 21
 tcttcatatt cggaaccct atctatctgg aggtaccgc ggccgcccc gggaactccc 60
 cgctgacaa ccaaggccat ggcgtgcgc ttctccgct ccaccgtgtc cacggcgcc 120
 gcgctcgtcg cgtccccgaa gccagccggg gcgcccagtg cctgtcggtt ccccgcgctt 180
 cgcaggggcc gcgcaggcct ccgtgcgcg cggtcgagg acgccagggc ccgcagcttc 240
 gtcgcccgcg ccgcagccga gtacgacctg ccaactggtg ggaacaaagc accggacttc 300

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gctgcgagg ccgtgttcga ccaggagttc atcaacgtca agctatctga ttacattggg 360
aagaagtatg tgattctttt cttctaccct ctggacttca ccttcgtctg cccaactgag 420
attacggctt tcagcgacag acatgaggag ttcgagaaga taaacactga aattcttggt 480
gtttcagttg atagtgtgtt ttcccatctt gcatgggtgc agacagagag gaaatctggt 540
ggacttggtg atcttaagta tcctctggtt tctgatgtca ccaaataaat ctcaaagtct 600
tttgggtgat tgatccctga tcagggaatt gctctgagag gattattcat gattgacaag 660
gaggggtgtga ttcagcattc cactattaac aaccttggtg ttggccgcag tgtggatgag 720
accttgagaa cccttcaggc tctgcaatac gtccaagaaa acccagacga ggtctgcccg 780
gcaggatgga aaccggggga aaagtcgatg aagcctgacc ctaagggcag caaggagtac 840
ttcgtgcca tctagatgcg acctttgcgc tcacagtctg agttttgtca tggccatttc 900
tggttacttg tgttcttggtg acccgagttg tagttatcac gcgtccaatt gcctctgtaa 960
ttcctccaat aagggtttgt ctgtgtgttg attttccctc ctccaatttg gaaagcccaa 1020
tccaagattg gaaataaaac cttctgcccac ccaaaaaaaa aaaaaaaa 1067

```

<210> 22
 <211> 258
 <212> PRT
 <213> Secale cereale

<400> 22

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

Ala Ile

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<210> 23
<211> 876
<212> DNA
<213> *Riccia fluitans*

<400> 23
g ttgggaaag gcagcaaata tggcaaccgc ctgtgctgca gtgtctgcag tggctgttcc 60
t gtggcctct gtagctaacc acattgcgtc ttcacatcatc gggaccccat cccttgccat 120
t cccaggtct tatgagggtt taaacaaatc ctccggcgct agaattgcac cccgatcaac 180
c tccgctttt cgcaagcccg tcaactgggt ctccctcaag cagttctcga agggaaaagt 240
c gcttctgcg agatgtgcgt cacctcttgt tggaaatgtc gcccggact tcgaggcgga 300
g gccgttttt gaccaagagt tcgtgaagat caagctctcg gagtacattg ggaagagata 360
c gttgttctt ttcttctacc ctcttgactt caccttcgtt tgcccaacag aaattaccgc 420
a ttttagcgac aaacacgaag agtttgagaa gttgaacacc gaagttattg gggtttctac 480
t gacagtgtg ttttcccatc ttgcctggat tcaaaactgac agaaaatctg gaggacttgg 540
t gacttgaag taccacttg tgctcgactt gaccaagaag atcgctgaag attttggagt 600
a ttgatcccc gatcagggca ttgcattgcg aggattgttc atcatcgaca aggagggcgt 660
c attcagcac gcaaccatta acaatttggc catcggcaga agtgtggagg agacgcttcg 720
a actctgcag gctgtacaat atgtgcagga gaaccagac gaggtctgcc ccgctggctg 780
g aagccgggt gaaaagacca tgaagcctga cacaagctc agcaaggagt acttcgcaca 840
a gtataggcc gaaaatagct tcgtttggaa tacata 876

<210> 24
<211> 275
<212> PRT
<213> *Riccia fluitans*

<400> 24
Met Ala Thr Ala Cys Ala Ala Val Ser Ala Val Ala Val Pro Val Ala
1 5 10 15
Ser Val Ala Asn His Ile Ala Ser Ser Ser Ser Gly Thr Pro Ser Leu
20 25 30
Ala Ile Pro Arg Ser Tyr Glu Gly Leu Asn Lys Ser Phe Gly Ala Arg
35 40 45
Ile Ala Pro Arg Ser Thr Ser Ala Phe Arg Lys Pro Val Thr Gly Val
50 55 60
Ser Leu Lys Gln Phe Ser Lys Gly Lys Val Ala Ser Ala Arg Cys Ala
65 70 75 80
Ser Pro Leu Val Gly Asn Val Ala Pro Asp Phe Glu Ala Glu Ala Val
85 90 95
Phe Asp Gln Glu Phe Val Lys Ile Lys Leu Ser Glu Tyr Ile Gly Lys
100 105 110
Arg Tyr Val Val Leu Phe Phe Tyr Pro Leu Asp Phe Thr Phe Val Cys
115 120 125
Pro Thr Glu Ile Thr Ala Phe Ser Asp Lys His Glu Glu Phe Glu Lys
130 135 140
Leu Asn Thr Glu Val Ile Gly Val Ser Thr Asp Ser Val Phe Ser His
145 150 155 160
Leu Ala Trp Ile Gln Thr Asp Arg Lys Ser Gly Gly Leu Gly Asp Leu
165 170 175
Lys Tyr Pro Leu Val Ser Asp Leu Thr Lys Lys Ile Ala Glu Asp Phe
180 185 190
Gly Val Leu Ile Pro Asp Gln Gly Ile Ala Leu Arg Gly Leu Phe Ile

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```

      195              200              205
Ile Asp Lys Glu Gly Val Ile Gln His Ala Thr Ile Asn Asn Leu Ala
      210              215              220
Ile Gly Arg Ser Val Glu Glu Thr Leu Arg Thr Leu Gln Ala Val Gln
225              230              235              240
Tyr Val Gln Glu Asn Pro Asp Glu Val Cys Pro Ala Gly Trp Lys Pro
              245              250              255
Gly Glu Lys Thr Met Lys Pro Asp Thr Lys Leu Ser Lys Glu Tyr Phe
      260              265              270
Ala Gln Val
      275

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<210> 25
 <211> 1255
 <212> DNA
 <213> Chlamydomonas incerta

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<400> 25
atggccgctc tgcagtcgcg ttcccgcgtcc tcggcggtgg ccttctcgcg ccaggcgcgc      60
gtggccccgc gcgttgccct cagcgttgct cgccgcaacc tggtcgtgcg cgcttcccac      120
gctgagaagc ctctggtcgg ctccgtcgcc cctgacttca aggcccaggc cgtgttcgac      180
caggagttcc aggagattac cctgagcaag taccgcggca agtacgtggt gctgttcttc      240
taccctctgg acttcacctt cgtgtgcccc accgagatca ccgccttctc ggaccgctac      300
aaggagttca aggacatcaa caccgaggtc ctgggcgtgt ccgtggacag ccagttcacc      360
cacctggcct ggattcagac cgaccgcaag gagggctggc tgggcgacct gaactacccc      420
ctggtggctg acctgaagaa ggagatctcc aaggcctacg gcgtcctgac cgaggacggc      480
atctccctgc gcggcctggt catcatcgac aaggagggcg ttgtgcagca cgccaccatc      540
aacaacctgg ctttcggcgc ctcggtcgac gagaccaagc gtgtgctgca ggccatccag      600
tacgtgcagt ccaaccccgga tgaggtctgc cccgcgggct ggaagcccgg tgacaagacc      660
atgaagcccg accccaaggg ctccaaggag tacttcgccc ccgtgtaaat tgacccttga      720
ttgagagtca atgacacgcg agggcgctcat cgcagtactc gggggcatgc tgcagatcag      780
caggcatgcg gacgagacca gtgcattggc aggctaggcg cacacgggag gcagagccag      840
tgccggcgga gcggcgagcg gcggctgtgg aagcaggcgc tagcagcagc ggcggccgcg      900
gcggcgctgc tctccatggg tgcgcctgca agcagcatgt gcatgtggac tcggtgcttc      960
tcgttgatgg gtcagggcgg cgttgccggt ggtgcggacc ggcggtaat cgcacgtagc     1020
tcaattgttg cgtgcggggc ctgtgcgggc tggcgtgacg gcacgcaacc tgtgtggggc     1080
ctgttggtac gctcgcgata atgcagtgcg cggtccgagc ggagggacgc ggcggtgaat     1140
agctgctgta gtttcaggca gggatttacc aggtgacggg tggttgcgcc cacacccgaa     1200
cggctgtgat cccaattttc catgagaggg cttgcagatg gacggcgtgt gatcg      1255

```

<210> 26
 <211> 235
 <212> PRT
 <213> Chlamydomonas incerta

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<400> 26
Met Ala Ala Leu Gln Ser Ala Ser Arg Ser Ser Ala Val Ala Phe Ser
1              5              10              15
Arg Gln Ala Arg Val Ala Pro Arg Val Ala Ser Ser Val Ala Arg Arg
      20              25              30
Asn Leu Val Val Arg Ala Ser His Ala Glu Lys Pro Leu Val Gly Ser
      35              40              45
Val Ala Pro Asp Phe Lys Ala Gln Ala Val Phe Asp Gln Glu Phe Gln
      50              55              60

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Glu	Ile	Thr	Leu	Ser	Lys	Tyr	Arg	Gly	Lys	Tyr	Val	Val	Leu	Phe	Phe
65					70					75					80
Tyr	Pro	Leu	Asp	Phe	Thr	Phe	Val	Cys	Pro	Thr	Glu	Ile	Thr	Ala	Phe
				85					90					95	
Ser	Asp	Arg	Tyr	Lys	Glu	Phe	Lys	Asp	Ile	Asn	Thr	Glu	Val	Leu	Gly
				100				105					110		
Val	Ser	Val	Asp	Ser	Gln	Phe	Thr	His	Leu	Ala	Trp	Ile	Gln	Thr	Asp
				115			120					125			
Arg	Lys	Glu	Gly	Gly	Leu	Gly	Asp	Leu	Asn	Tyr	Pro	Leu	Val	Ala	Asp
						135					140				
Leu	Lys	Lys	Glu	Ile	Ser	Lys	Ala	Tyr	Gly	Val	Leu	Thr	Glu	Asp	Gly
145					150					155					160
Ile	Ser	Leu	Arg	Gly	Leu	Phe	Ile	Ile	Asp	Lys	Glu	Gly	Val	Val	Gln
				165					170					175	
His	Ala	Thr	Ile	Asn	Asn	Leu	Ala	Phe	Gly	Arg	Ser	Val	Asp	Glu	Thr
				180				185					190		
Lys	Arg	Val	Leu	Gln	Ala	Ile	Gln	Tyr	Val	Gln	Ser	Asn	Pro	Asp	Glu
		195					200					205			
Val	Cys	Pro	Ala	Gly	Trp	Lys	Pro	Gly	Asp	Lys	Thr	Met	Lys	Pro	Asp
		210				215					220				
Pro	Lys	Gly	Ser	Lys	Glu	Tyr	Phe	Ala	Ala	Val					
225					230					235					

<210> 27
 <211> 612
 <212> DNA
 <213> Nostoc sp.

<400> 27	
atgtccatca cctacggaac acaagaaagc ctccgcggtg gtcaacaggc tcccgacttt	60
acagcaacag ctgtagttga tcaggaattc aagacaatta agctttccga ctatcgtggt	120
aagtacgttg tctgtttctt ctatccccta gactttacct ttgtttgccc cacggagatc	180
acagcattta gcgatcgcta cgaagaattc aagaaactta acaccgaaat tctcgggtgtg	240
tccgttgata gcgagttctc ccacctagct tggattcaaa ctgatcgtaa gtctggtggt	300
ggtggcgacc taaattatcc cttagtttcc gatattaaga aagagggttag cgacgcttac	360
aacgtactag acccagcagc aggtatcgct ttacgtggtc tgttcacat cgataaagat	420
ggtatcattc agcacgctac cattaacaac ctagcttttg gtcgtagcgt tgatgaaacc	480
ctacggacat tgcaagcaat ccagtatgtc cagtctcacc cagatgaagt ttgccctgct	540
ggttggaac ctggggaaaa gaccatgact cccgaccctg tgaagtccaa agtttacttc	600
gctgctgtgt aa	612

<210> 28
 <211> 203
 <212> PRT
 <213> Nostoc sp.

<400> 28	
Met Ser Ile Thr Tyr Gly Thr Gln Glu Ser Leu Arg Val Gly Gln Gln	
1	5 10 15
Ala Pro Asp Phe Thr Ala Thr Ala Val Val Asp Gln Glu Phe Lys Thr	
	20 25 30
Ile Lys Leu Ser Asp Tyr Arg Gly Lys Tyr Val Val Leu Phe Phe Tyr	
	35 40 45
Pro Leu Asp Phe Thr Phe Val Cys Pro Thr Glu Ile Thr Ala Phe Ser	

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```

      50              55              60
Asp Arg Tyr Glu Glu Phe Lys Lys Leu Asn Thr Glu Ile Leu Gly Val
65              70              75              80
Ser Val Asp Ser Glu Phe Ser His Leu Ala Trp Ile Gln Thr Asp Arg
      85              90              95
Lys Ser Gly Gly Val Gly Asp Leu Asn Tyr Pro Leu Val Ser Asp Ile
      100              105              110
Lys Lys Glu Val Ser Asp Ala Tyr Asn Val Leu Asp Pro Ala Ala Gly
      115              120              125
Ile Ala Leu Arg Gly Leu Phe Ile Ile Asp Lys Asp Gly Ile Ile Gln
      130              135              140
His Ala Thr Ile Asn Asn Leu Ala Phe Gly Arg Ser Val Asp Glu Thr
145              150              155              160
Leu Arg Thr Leu Gln Ala Ile Gln Tyr Val Gln Ser His Pro Asp Glu
      165              170              175
Val Cys Pro Ala Gly Trp Gln Pro Gly Glu Lys Thr Met Thr Pro Asp
      180              185              190
Pro Val Lys Ser Lys Val Tyr Phe Ala Ala Val
      195              200

```

<210> 29
 <211> 609
 <212> DNA
 <213> Synechococcus sp.

```

<400> 29
ctacttgga atcgccgcga agaactcctt ggatttcact gggtcggggt gcatgggttt 60
ctggccgggc tgccagttgg ccggggcaaac ttcacgagg tgagattgca cgtattggat 120
agcttgacag gtgcgcaagg ttatcatccac actgcccagca aagccaggt tgtaaatggt 180
ggcgtgctgg atgatccctt ctttgctgat gatgaacagg ccgcgcagcg ccacaccggc 240
ctccggatcc agaacattgt aggcagcgct gatctccttt ttcagggtcag agaccagagg 300
ataccttagc tcgcccaccc ctccggcttt gcggtcgggtc tggatccagg ccaagtgaga 360
gtattcgctg tccaccgaga cgcccaggat ctccggtatcc agcttggaag agtcgtcata 420
gcggtcgcta aaggccgtga tctccgttgg gcagacaaag gtgaagtcca aggggtagaa 480
gaacagcacc acatacttct taccgccgga gtcggagagc ttcaccgtct tgaattccat 540
gtcatagacg gcggtggccg aaaaatcggg agcggggtgc cccactcgca ggcacacctc 600
ctgagacat
609

```

<210> 30
 <211> 202
 <212> PRT
 <213> Synechococcus sp.

```

<400> 30
Met Ser Gln Glu Gly Cys Leu Arg Val Gly Gln Pro Ala Pro Asp Phe
1      5      10      15
Ser Ala Thr Ala Val Tyr Asp Met Glu Phe Lys Thr Val Lys Leu Ser
      20      25      30
Asp Tyr Arg Gly Lys Lys Tyr Val Leu Phe Phe Tyr Pro Leu Asp
      35      40      45
Phe Thr Phe Val Cys Pro Thr Glu Ile Thr Ala Phe Ser Asp Arg Tyr
      50      55      60
Asp Asp Phe Ala Lys Leu Asp Thr Glu Ile Leu Gly Val Ser Val Asp
65      70      75      80

```

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```

Ser Glu Tyr Ser His Leu Ala Trp Ile Gln Thr Asp Arg Lys Ala Gly
      85                      90          95
Gly Val Gly Glu Leu Arg Tyr Pro Leu Val Ser Asp Leu Lys Lys Glu
      100                    105          110
Ile Ser Ala Ala Tyr Asn Val Leu Asp Pro Glu Ala Gly Val Ala Leu
      115                    120          125
Arg Gly Leu Phe Ile Ile Asp Lys Glu Gly Ile Ile Gln His Ala Thr
      130                    135          140
Ile Asn Asn Leu Ala Phe Gly Arg Ser Val Asp Glu Thr Leu Arg Thr
      145                    150          155          160
Leu Gln Ala Ile Gln Tyr Val Gln Ser His Pro Asp Glu Val Cys Pro
      165                    170          175
Ala Asn Trp Gln Pro Gly Gln Lys Thr Met His Pro Asp Pro Val Lys
      180                    185          190
Ser Lys Glu Phe Phe Ala Ala Ile Ala Lys
      195                    200

```

<210> 31
 <211> 612
 <212> DNA
 <213> Nodularia spumigena

```

<400> 31
atgtccctca cttacgcaac agaaggatgc ctccgcggtg gtcaacaggc tcttgaattt 60
acagccacag ctgtggtaga tcaagaattt aagaccatta aactttccga ctatcgcggt 120
aagtatgtgg ttctgttttt ctacccttta gactttacct ttgtttgcc cactgagatc 180
acagcattta gcgatcgcta cgaagaattt aagaaagtta acacagaagt tctcgggtgtt 240
tccgttgata gcgaattctc tcacctagcc tggattcaaa ctgaacgcaa gtctgggtggt 300
gtcggcgacc tcaattatcc cttagtttcg gacatcaaaa aagagattag cgccacctac 360
aatgtccttg acccagccgc aggtattgct ttacgcggtt tgttcattat tgataaagat 420
ggtatcatcc agcattctac agtgaataac ctgcgctttg gtcgcagcgt tgatgaaacc 480
ctgcggacat tgcaagccct tcagtatggt cagtctcacc ccgatgaagt ttgcccagcc 540
ggttggaac ctggtgatca aacaatggtt cctgaccctg tgaagtcgaa agtctacttc 600
tcggctgtct ag 612

```

<210> 32
 <211> 203
 <212> PRT
 <213> Nodularia spumigena

```

<400> 32
Met Ser Leu Thr Tyr Ala Thr Glu Gly Cys Leu Arg Val Gly Gln Gln
1      5      10      15
Ala Pro Glu Phe Thr Ala Thr Ala Val Val Asp Gln Glu Phe Lys Thr
      20      25      30
Ile Lys Leu Ser Asp Tyr Arg Gly Lys Tyr Val Val Leu Phe Phe Tyr
      35      40      45
Pro Leu Asp Phe Thr Phe Val Cys Pro Thr Glu Ile Thr Ala Phe Ser
      50      55      60
Asp Arg Tyr Glu Glu Phe Lys Lys Val Asn Thr Glu Val Leu Gly Val
      65      70      75      80
Ser Val Asp Ser Glu Phe Ser His Leu Ala Trp Ile Gln Thr Glu Arg
      85      90      95
Lys Ser Gly Gly Val Gly Asp Leu Asn Tyr Pro Leu Val Ser Asp Ile

```

			100					105				110			
Lys	Lys	Glu	Ile	Ser	Ala	Thr	Tyr	Asn	Val	Leu	Asp	Pro	Ala	Ala	Gly
		115					120					125			
Ile	Ala	Leu	Arg	Gly	Leu	Phe	Ile	Ile	Asp	Lys	Asp	Gly	Ile	Ile	Gln
		130				135					140				
His	Ser	Thr	Val	Asn	Asn	Leu	Ala	Phe	Gly	Arg	Ser	Val	Asp	Glu	Thr
145				150						155					160
Leu	Arg	Thr	Leu	Gln	Ala	Leu	Gln	Tyr	Val	Gln	Ser	His	Pro	Asp	Glu
			165						170					175	
Val	Cys	Pro	Ala	Gly	Trp	Gln	Pro	Gly	Asp	Gln	Thr	Met	Val	Pro	Asp
		180						185					190		
Pro	Val	Lys	Ser	Lys	Val	Tyr	Phe	Ser	Ala	Val					
		195				200									

<210>	33
<211>	594
<212>	DNA
<213>	Thermosynechococcus elongatus

<400>	33					
ttagccacg	gttcaaaat	agactttgga	tttgacagg	tcagggttca	tcgtcttgtc	60
accggggtgc	cagcccgcg	ggcagacttc	atcggggtga	gtttgaacgt	attgaatcgc	120
ttggagtacc	cgcagggtct	catcaacact	gcggccaaag	gccaaagttat	tgattgttgc	180
gtgttgata	atcccttctt	tatcaatgat	gaacagacct	cgcaggggcca	cgccttcttc	240
ggtcaggaca	ttgtaggcag	tgctgatgtc	ttttttcagg	tcagacacca	agggatat	300
aagatgcgcg	acaccaccag	ctttgcgatk	agttttgtgtc	caagccaagt	gggagaactg	360
gctatccaca	gacacgcccc	ggatttcggg	gttcaatttg	gcaaattcat	cgtagcgatk	420
gctaanaaggca	acaatttccg	tggggcgagac	aaaggtaaag	tccaaagggat	agaaaaagag	480
aacaaacgtac	ttaacggcgt	agtcogagag	cttgatgtgtt	ttgaactctt	ggtcataaac	540
aqcaaccgct	tcaaaaatcgg	ggcgcgggtt	accgacgcgc	aqacactcac	acat	594

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<210> 34
<211> 197
<212> PRT
<213> Thermosynechococcus elongatus
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<400>	34															
Met	Ser	Glu	Cys	Leu	Arg	Val	Gly	Gln	Pro	Ala	Pro	Asp	Phe	Glu	Ala	
1			5					10					15			
Val	Ala	Val	Tyr	Asp	Gln	Glu	Phe	Lys	Thr	Ile	Lys	Leu	Ser	Asp	Tyr	
			20					25					30			
Arg	Gly	Lys	Tyr	Val	Val	Leu	Phe	Phe	Tyr	Pro	Leu	Asp	Phe	Thr	Phe	
		35					40					45				
Val	Cys	Pro	Thr	Glu	Ile	Val	Ala	Phe	Ser	Asp	Arg	Tyr	Asp	Glu	Phe	
	50				55					60						
Ala	Lys	Leu	Asn	Thr	Glu	Ile	Leu	Gly	Val	Ser	Val	Asp	Ser	Gln	Phe	
65				70					75					80		
Ser	His	Leu	Ala	Trp	Thr	Gln	Thr	Asp	Arg	Lys	Ala	Gly	Gly	Val	Gly	
			85					90					95			
Asp	Leu	Lys	Tyr	Pro	Leu	Val	Ser	Asp	Leu	Lys	Lys	Asp	Ile	Ser	Thr	
		100					105					110				
Ala	Tyr	Asn	Val	Leu	Thr	Glu	Glu	Gly	Val	Ala	Leu	Arg	Gly	Leu	Phe	
	115					120				125						
Ile	Ile	Asp	Lys	Glu	Gly	Ile	Ile	Gln	His	Ala	Thr	Ile	Asn	Asn	Leu	

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

```

<210> 35
 <211> 693
 <212> DNA
 <213> *Ostreococcus tauri*

```

<400> 35
atgttggtccg cgagtttgtc caagagcgcg ttacgcccc gggcgtcggc gctccagaag 60
agcggttaagg ggaagaactt ctcccgatcc gccgtccgcg tggaaagcgcg caagccgctc 120
gtggggtacc cggcgccgga gtttagcgcc gaggcgggtgt tcgatcaaga gttccaagac 180
atcaagctct cggattaccg cggcaagtac gtcgtgctct tcttctaccc gctcgatttt 240
acctttgtgt gcccgacgga aatcaccgcc ttctccgata gctacgaaga gttcgcgaag 300
ctcaacacccg aagtcctcgg cgtgagcggt gactccaagt tctctcactt ggcgtggttg 360
caaaccgacc gcaacgacgg cggcctcggc gacttggcct acccgctcgt cagtgcctc 420
aagcgcgaaa tctgcgaatc gtacgatgtg ttgtacgaag acggcaccgc gctccgtggg 480
ttgtacatca tcgatcgtga gggcgtcac cagcactaca catgcaacaa cgctccgttc 540
ggccgcaacg tcgacgagtg cctgcgcgtg cttcaagcga tccaatacgt tcaaaacaac 600
ccagacgagg tgtgcccgcg gggctggacc ccgggtgcgg cgacgatgaa gccggatccg 660
aagggctcga aggaatactt caaggcgatc taa 693

```

<210> 36
 <211> 230
 <212> PRT
 <213> *Ostreococcus tauri*

```

<400> 36
Met Leu Ser Ala Ser Leu Ser Lys Ser Ala Phe Thr Pro Arg Ala Ser
1          5          10          15
Ala Leu Gln Lys Ser Val Lys Gly Lys Asn Phe Ser Arg Ser Ala Val
          20          25          30
Arg Val Glu Ala Arg Lys Pro Leu Val Gly Tyr Pro Ala Pro Glu Phe
          35          40          45
Ser Ala Glu Ala Val Phe Asp Gln Glu Phe Gln Asp Ile Lys Leu Ser
          50          55          60
Asp Tyr Arg Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Leu Asp Phe
65          70          75          80
Thr Phe Val Cys Pro Thr Glu Ile Thr Ala Phe Ser Asp Arg Tyr Glu
          85          90          95
Glu Phe Ala Lys Leu Asn Thr Glu Val Leu Gly Val Ser Val Asp Ser
          100          105          110
Lys Phe Ser His Leu Ala Trp Leu Gln Thr Asp Arg Asn Asp Gly Gly
          115          120          125
Leu Gly Asp Leu Ala Tyr Pro Leu Val Ser Asp Leu Lys Arg Glu Ile
          130          135          140
Cys Glu Ser Tyr Asp Val Leu Tyr Glu Asp Gly Thr Ala Leu Arg Gly

```

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145		150		155		160									
Leu	Tyr	Ile	Ile	Asp	Arg	Glu	Gly	Val	Ile	Gln	His	Tyr	Thr	Cys	Asn
		165				170								175	
Asn	Ala	Pro	Phe	Gly	Arg	Asn	Val	Asp	Glu	Cys	Leu	Arg	Val	Leu	Gln
		180				185							190		
Ala	Ile	Gln	Tyr	Val	Gln	Asn	Asn	Pro	Asp	Glu	Val	Cys	Pro	Ala	Gly
		195				200						205			
Trp	Thr	Pro	Gly	Ala	Ala	Thr	Met	Lys	Pro	Asp	Pro	Lys	Gly	Ser	Lys
	210					215					220				
Glu	Tyr	Phe	Lys	Ala	Ile										
225					230										

<210> 37
 <211> 609
 <212> DNA
 <213> Synechococcus sp.

<400> 37	
ctacttggca accgccgcga agaactcctt ggatttcacc gggtcgggggt tcagggttct	60
ctggccgggc tgccagttgg ccgggcaaac ttcacgggg tgagcttgca cgtactggat	120
ggcctgcagg gtgcgcaggg ttcatccac gctgcggcca aaggccaggt tgttgatggt	180
ggcgtgctgg atgatccctt ccttgtcgat gatgaacagg ccgcgcaaag ccaccctgc	240
cgccggatcc aggacattgt aggcggcgct gatctccttt ttcaggtcgg agaccagcgg	300
atacctcagc tcgccacccc ctccggcttt gcggtcggtc tgaatccagg ccaggtgaga	360
gtactcgcta tccaccgaga cgccgaggat ctccgtgtcc agcttggaac actcgtcgta	420
gcgatcgctg aaagccgtga tctccgtcgg gcagacgaag gtgaagtcca aggggtagaa	480
gaacagcacc acgtacttct tgccccggta gtcggagagc ctcaccgtct taaattccat	540
gtcgtaaaacg gcagtggcgg aaaaatcggg agcgggctgc cccaccgcga gacatccttc	600
ctgagacat	609

<210> 38
 <211> 202
 <212> PRT
 <213> Synechococcus sp.

<400> 38	
Met Ser Gln Glu Gly Cys Leu Arg Val Gly Gln Pro Ala Pro Asp Phe	
1	15
Ser Ala Thr Ala Val Tyr Asp Met Glu Phe Lys Thr Val Arg Leu Ser	
20	30
Asp Tyr Arg Gly Lys Lys Tyr Val Val Leu Phe Phe Tyr Pro Leu Asp	
35	45
Phe Thr Phe Val Cys Pro Thr Glu Ile Thr Ala Phe Ser Asp Arg Tyr	
50	60
Asp Glu Phe Ala Lys Leu Asp Thr Glu Ile Leu Gly Val Ser Val Asp	
65	80
Ser Glu Tyr Ser His Leu Ala Trp Ile Gln Thr Asp Arg Lys Ala Gly	
85	95
Gly Val Gly Glu Leu Arg Tyr Pro Leu Val Ser Asp Leu Lys Lys Glu	
100	110
Ile Ser Ala Ala Tyr Asn Val Leu Asp Pro Ala Ala Gly Val Ala Leu	
115	125
Arg Gly Leu Phe Ile Ile Asp Lys Glu Gly Ile Ile Gln His Ala Thr	
130	140

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Ile	Asn	Asn	Leu	Ala	Phe	Gly	Arg	Ser	Val	Asp	Glu	Thr	Leu	Arg	Thr
145					150					155					160
Leu	Gln	Ala	Ile	Gln	Tyr	Val	Gln	Ala	His	Pro	Asp	Glu	Val	Cys	Pro
			165						170					175	
Ala	Asn	Trp	Gln	Pro	Gly	Gln	Arg	Thr	Leu	Asn	Pro	Asp	Pro	Val	Lys
			180					185					190		
Ser	Lys	Glu	Phe	Phe	Ala	Ala	Val	Ala	Lys						
		195					200								

<210> 39
 <211> 603
 <212> DNA
 <213> Synechococcus sp.

<400> 39	
tcaaccgatg gcgagaaaat actccttgga acctttcgga tcgggcttca tggctcttttc	60
gccgggcgctc cagttggcgg ggcagacttc atcgggggttg gactgcacgt actggaaggc	120
ctgaagcaca cgcaggggtt cgtccacatt ccggccaaca ggacaggttg tgatcgtgga	180
gtgcatgata acgccatcgg gatcgatgat gaacagtcca cgcaaagcaa cgccttcggc	240
gtcgtccagc acgttgatat cgggtggcgat ttccttcttg aggtcagcga ccaggggata	300
gttgatgtcg ccagaccgc cctgattgag gggagtctga atccaggcca gatggctgaa	360
ctggctgtca acggaacgc cgaggacttc ggtgttcttg ctggagaaat cggcgtagcg	420
gtcgctgaag gccgtgattt ctgtggggca gacgaagggtg aaatccaggg gatagaagaa	480
gagcaccacg tacttgccgc ggtactggga caggagatt tccttgaatt cctggtccac	540
cactgcagtg gcagtgaat cgggggcctg ctggcccaca cgaaggcaac cggctctcgt	600
cat	603

<210> 40
 <211> 200
 <212> PRT
 <213> Synechococcus sp.

<400> 40	
Met Thr Glu Thr Gly Cys Leu Arg Val Gly Gln Gln Ala Pro Asp Phe	
1 5 10 15	
Thr Ala Thr Ala Val Val Asp Gln Glu Phe Lys Glu Ile Ser Leu Ser	
20 25 30	
Gln Tyr Arg Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Leu Asp Phe	
35 40 45	
Thr Phe Val Cys Pro Thr Glu Ile Thr Ala Phe Ser Asp Arg Tyr Ala	
50 55 60	
Asp Phe Ser Ser Lys Asn Thr Glu Val Leu Gly Val Ser Val Asp Ser	
65 70 75 80	
Gln Phe Ser His Leu Ala Trp Ile Gln Thr Pro Arg Asn Gln Gly Gly	
85 90 95	
Leu Gly Asp Ile Asn Tyr Pro Leu Val Ala Asp Leu Lys Lys Glu Ile	
100 105 110	
Ala Thr Ala Tyr Asn Val Leu Asp Ala Glu Gly Val Ala Leu Arg	
115 120 125	
Gly Leu Phe Ile Ile Asp Pro Asp Gly Val Ile Met His Ser Thr Ile	
130 135 140	
Asn Asn Leu Pro Val Gly Arg Asn Val Asp Glu Thr Leu Arg Val Leu	
145 150 155 160	
Gln Ala Phe Gln Tyr Val Gln Ser Asn Pro Asp Glu Val Cys Pro Ala	

				165					170					175	
Asn	Trp	Thr	Pro	Gly	Glu	Lys	Thr	Met	Lys	Pro	Asp	Pro	Lys	Gly	Ser
			180					185					190		
Lys	Glu	Tyr	Phe	Ser	Ala	Ile	Gly								
		195					200								

<210>	41
<211>	597
<212>	DNA
<213>	<i>Synechococcus elongatus</i>

<400>	41						
ctagactgca	gcgaagaact	ctttcgactt	aacagggtcg	gggttcacgc	tcgctgcacc		60
cgttgccaa	ttggcggggc	aaacttcac	gggttgactt	tggacgtact	gaatggcttg		120
cagcaccgc	agggtttcat	caacgctgcg	gccaaacgcc	aggttggtga	tgggtggcgtg		180
ctggatcaca	ccttccttct	cgatgatgaa	cagaccgcgc	agggcaatgc	cttcagcccg		240
atcaagcacg	ttgtaggcag	tgctgatttc	ttcttgagg	tcagcaacca	gcgggtaagc		300
caagtcaccc	aaaccacctt	ctttacggct	ggtttgaatc	caagccaagt	ggctgaattg		360
gctatcgacc	gagacaccca	agatttcggt	gttcagggtc	gaaaagtcct	catagcgatc		420
gctaaaagca	gtaatttcgg	tcggggcaac	aaagggtgaag	tcgaggggat	agaagaacag		480
aacacgctat	tgtccccggt	aattggatag	cttgatcgtc	tggaaattcct	gatcaacgac		540
tgcagtcgct	tcaaaaatcg	ggcccaattg	gccgacgcgc	aggaatcctt	cggtcat		597

<210>	42
<211>	198
<212>	PRT
<213>	Synechococcus elongatus

[illegible]

195

<210> 43
 <211> 597
 <212> DNA
 <213> *Prochlorococcus marinus*

<400> 43
 ttatagactt gagaaatact ctttgcctcc ttctggatct ggcttcattg tcttttcccc 60
 tggagtccaa ttggcaggac atacctcgct tgggttggct tgaacatatt gaaatgcttg 120
 aagaactctc aaggtctcat caacatttct tcctacaggt aggttggtta tagtagcgtg 180
 catgatcaca ccattctgat cgatgatata aagacctctt aaagcaacac cctctgcac 240
 gtcgagaacg ttataagcca atgaaatctc tttcttttaa tcggcaacca agggataatt 300
 gatatcgcca atgcctccat catttctttg agtttgaatc caggcaagggt ggctaaaattg 360
 actgtctaca gataccccta agacctcagt gttcttactt gaaaattcgg agtatctatc 420
 gctaaaagcg gtaatttcag ttggacatac aaaagtaaaa tctagagggt aaaagaaaag 480
 cacaacatat ttacctctgt aatttgaaag tgatatttcc ttgaattcct ggtctatcac 540
 tgcagtagca gtaaaatcag gagcttttctg gccaacacgg atacattcgt tcgtcat 597

<210> 44
 <211> 198
 <212> PRT
 <213> *Prochlorococcus marinus*

<400> 44
 Met Thr Asn Glu Cys Ile Arg Val Gly Gln Lys Ala Pro Asp Phe Thr
 1 5 10 15
 Ala Thr Ala Val Ile Asp Gln Glu Phe Lys Glu Ile Ser Leu Ser Asn
 20 25 30
 Tyr Arg Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Leu Asp Phe Thr
 35 40 45
 Phe Val Cys Pro Thr Glu Ile Thr Ala Phe Ser Asp Arg Tyr Ser Glu
 50 55 60
 Phe Ser Ser Lys Asn Thr Glu Val Leu Gly Val Ser Val Asp Ser Gln
 65 70 75 80
 Phe Ser His Leu Ala Trp Ile Gln Thr Gln Arg Asn Asp Gly Gly Ile
 85 90 95
 Gly Asp Ile Asn Tyr Pro Leu Val Ala Asp Leu Lys Lys Glu Ile Ser
 100 105 110
 Leu Ala Tyr Asn Val Leu Asp Asp Ala Glu Gly Val Ala Leu Arg Gly
 115 120 125
 Leu Tyr Ile Ile Asp Pro Asp Gly Val Ile Met His Ala Thr Ile Asn
 130 135 140
 Asn Leu Pro Val Gly Arg Asn Val Asp Glu Thr Leu Arg Val Leu Gln
 145 150 155 160
 Ala Phe Gln Tyr Val Gln Ala Asn Pro Asp Glu Val Cys Pro Ala Asn
 165 170 175
 Trp Thr Pro Gly Glu Lys Thr Met Lys Pro Asp Pro Glu Gly Ser Lys
 180 185 190
 Glu Tyr Phe Ser Ser Leu
 195

<210> 45
 <211> 600

PF59233.ST25.txt

<212> DNA
<213> *Porphyra purpurea*

```
<400> 45
ttatgcagcc gcaaaataat ttttagatct tataggatcc ggattcattg ttctatcacc      60
agggtttccaa tttgctggac atacttcacg tggatgggct tgaacatatt gaattgcttg      120
cagaactcctt aaagtttctt caacgcttct tccaaactcc agattgttaa cggtagaata      180
ttgaattata ccttttaggat ctataataaa taatcccctt agggctacac cccactatt      240
taatacatta taggcaatgc taatttcttt ttttagatct gatactaaag gatactcaag      300
atctcctaata ccaccagatt ctcgatctgt ttgcaaccaa gctaagtgaag aatattcgct      360
atccacagaa acgcctaaga tttctgtggt aagttcagaa aaatcagaat acttatcact      420
gaacgcgggtt atttctgtag ggcaaacaaa agtaaaatct aaagggtaaa aaaataagat      480
gacatactta tttttaaaagt cagataatct tattgtttta aattcttggt cataaacagc      540
tgtagctgaa aagtcaggcg cgatctggcc tacttgaaga caattgtgtc ctgaaatcat      600
```

<210> 46
<211> 199
<212> PRT
<213> *Porphyra purpurea*

```
<400> 46
Met Ile Ser Gly His Asn Cys Leu Gln Val Gly Gln Ile Ala Pro Asp
1          5          10          15
Phe Ser Ala Thr Ala Val Tyr Asp Gln Glu Phe Lys Thr Ile Lys Leu
20          25          30
Ser Asp Phe Lys Asn Lys Tyr Val Ile Leu Phe Phe Tyr Pro Leu Asp
35          40          45
Phe Thr Phe Val Cys Pro Thr Glu Ile Thr Ala Phe Ser Asp Lys Tyr
50          55          60
Ser Asp Phe Ser Glu Leu Asn Thr Glu Ile Leu Gly Val Ser Val Asp
65          70          75          80
Ser Glu Tyr Ser His Leu Ala Trp Leu Gln Thr Asp Arg Glu Ser Gly
85          90          95
Gly Leu Gly Asp Leu Glu Tyr Pro Leu Val Ser Asp Leu Lys Lys Glu
100         105         110
Ile Ser Ile Ala Tyr Asn Val Leu Asn Ser Gly Gly Val Ala Leu Arg
115         120         125
Gly Leu Phe Ile Ile Asp Pro Lys Gly Ile Ile Gln Tyr Ser Thr Val
130         135         140
Asn Asn Leu Glu Phe Gly Arg Ser Val Glu Glu Thr Leu Arg Val Leu
145         150         155         160
Gln Ala Ile Gln Tyr Val Gln Ala His Pro Asp Glu Val Cys Pro Ala
165         170         175
Asn Trp Lys Pro Gly Asp Arg Thr Met Asn Pro Asp Pro Ile Lys Ser
180         185         190
Lys Asn Tyr Phe Ala Ala Ala
195
```

<210> 47
<211> 681
<212> DNA
<213> *Gracilaria tenuistipitata*

<400> 47

PF59233.ST25.txt

```

atgttattat gttgttttat tactgttatt ttatataata tagacaatac taaattttat    60
aacaggaagt gtagtattaa aatgataaca aataataata ttttgagagt tggtaacaa    120
gcccccaatt tttctgctat tgctgtatat gatcaagagt ttaagaaaat aacactgtct    180
gattacttgg gtaagtatgt aatattactg ttttatcctt tagatttcac atttgtttgt    240
ccaactgaga tcaactgctt cagtgtttca tataaagaga ttcaaagtct gaatacagaa    300
gttttgggta tatctgttga cagtgaatat tcacatttag catggttgca aatggaaaga    360
gatattggag gcttaggaga tottaattac ccgtagttt ctgatttaac aaaacagatt    420
agtgttcat ataatgttct aacagaagaa ggtaaagcat taagagggtt atttattgtt    480
gatcagcaag gaattataca atattcttta gttaataatt tagactttgg ccgtagtatt    540
agtgaaacta taagaacact taaagctatc caatatgtac aatctcacc agatgaagtt    600
tgtccagcaa attggcagcc aggaaaagct actataatta atagtcctca aaaatcgaaa    660
aattattttc aatctatata g                                681

```

<210> 48
 <211> 226
 <212> PRT
 <213> Gracilaria tenuistipitata

```

<400> 48
Met Leu Leu Cys Cys Phe Ile Thr Val Ile Leu Tyr Asn Ile Asp Asn
1          5          10          15
Thr Lys Phe Tyr Asn Arg Lys Cys Ser Ile Lys Met Ile Thr Asn Asn
          20          25          30
Asn Ile Leu Arg Val Gly Gln Gln Ala Pro Asn Phe Ser Ala Ile Ala
          35          40          45
Val Tyr Asp Gln Glu Phe Lys Lys Ile Thr Leu Ser Asp Tyr Leu Gly
          50          55          60
Lys Tyr Val Ile Leu Leu Phe Tyr Pro Leu Asp Phe Thr Phe Val Cys
65          70          75          80
Pro Thr Glu Ile Thr Ala Phe Ser Asp Ser Tyr Lys Glu Ile Gln Ser
          85          90          95
Leu Asn Thr Glu Val Leu Gly Ile Ser Val Asp Ser Glu Tyr Ser His
          100          105          110
Leu Ala Trp Leu Gln Met Glu Arg Asp Ile Gly Gly Leu Gly Asp Leu
          115          120          125
Asn Tyr Pro Leu Val Ser Asp Leu Thr Lys Gln Ile Ser Ala Ser Tyr
          130          135          140
Asn Val Leu Thr Glu Glu Gly Lys Ala Leu Arg Gly Leu Phe Ile Val
145          150          155          160
Asp Gln Gln Gly Ile Ile Gln Tyr Ser Leu Val Asn Asn Leu Asp Phe
          165          170          175
Gly Arg Ser Ile Ser Glu Thr Ile Arg Thr Leu Lys Ala Ile Gln Tyr
          180          185          190
Val Gln Ser His Pro Asp Glu Val Cys Pro Ala Asn Trp Gln Pro Gly
          195          200          205
Lys Ala Thr Ile Ile Asn Ser Pro Gln Lys Ser Lys Asn Tyr Phe Gln
          210          215          220
Ser Ile
225

```

<210> 49
 <211> 924
 <212> DNA
 <213> Mus musculus

PF59233.ST25.txt

```

<400> 49
gcctagggct ctctcggttt cgagatctct ttctgtgtc taaccgtgtc tggaagtcca 60
tgtgtccggc tcttggtcac gcagtaatgg cctccggcaa cgcgcaaadc ggaaagtccg 120
ctctgactt cagggccaca gcggtggtgg atggtgcctt caaggaaadc aagctttcgg 180
actacagagg gaagtacgtg gtctctcttt tctaccact ggacttcact tttgtttgcc 240
ccacggagat catcgctttt agcgaccatg ctgaggactt ccgaaagcta ggctgcgagg 300
tgctgggagt gtctgtggac tctcagttca cccacctggc gtggatcaat accccacgga 360
aagagggagg cttgggcccc ctgaatatcc ctctgcttgc tgacgtgact aaaagcttgt 420
cccagaatta cggcgtgttg aaaaatgatg agggcattgc ttacaggggt ctctttatca 480
tcgatgcaa ggggtgtcctt cgccagatca cagtcaatga cctacctgtg ggccgctctg 540
tagacgaggc tctccgccta gtccaggcct ttcagtatac agacgagcat ggggaagtct 600
gccctgctgg ctggaagccc ggcagtgaca ccatcaagcc caatgtggat gacagcaagg 660
aatactttct caaacacaac tgagatgggt aaacatcggt gagcctgaag cttggatttc 720
acctgtgccc caacctggat gtctgtgtct ggcccagaaa atgctagatt ttctccact 780
ctctgaaggg gctggagtct aggctgaggc tttctcatta cccacctgga atctggtgaa 840
tagtgatcct gccctgagca cacctagctg ggcccaggct tataggaaac caataaagta 900
ttagggacag tgtaaaaaaa aaaa 924

```

```

<210> 50
<211> 198
<212> PRT
<213> Mus musculus

```

```

<400> 50
Met Ala Ser Gly Asn Ala Gln Ile Gly Lys Ser Ala Pro Asp Phe Thr
1 5 10 15
Ala Thr Ala Val Val Asp Gly Ala Phe Lys Glu Ile Lys Leu Ser Asp
20 25 30
Tyr Arg Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Leu Asp Phe Thr
35 40 45
Phe Val Cys Pro Thr Glu Ile Ile Ala Phe Ser Asp His Ala Glu Asp
50 55 60
Phe Arg Lys Leu Gly Cys Glu Val Leu Gly Val Ser Val Asp Ser Gln
65 70 75 80
Phe Thr His Leu Ala Trp Ile Asn Thr Pro Arg Lys Glu Gly Gly Leu
85 90 95
Gly Pro Leu Asn Ile Pro Leu Leu Ala Asp Val Thr Lys Ser Leu Ser
100 105 110
Gln Asn Tyr Gly Val Leu Lys Asn Asp Glu Gly Ile Ala Tyr Arg Gly
115 120 125
Leu Phe Ile Ile Asp Ala Lys Gly Val Leu Arg Gln Ile Thr Val Asn
130 135 140
Asp Leu Pro Val Gly Arg Ser Val Asp Glu Ala Leu Arg Leu Val Gln
145 150 155 160
Ala Phe Gln Tyr Thr Asp Glu His Gly Glu Val Cys Pro Ala Gly Trp
165 170 175
Lys Pro Gly Ser Asp Thr Ile Lys Pro Asn Val Asp Asp Ser Lys Glu
180 185 190
Tyr Phe Ser Lys His Asn
195

```

```

<210> 51
<211> 877

```

PF59233.ST25.txt

<212> DNA

<213> Rattus norvegicus

<400> 51

```

gaattcggca cgaggggtcgt ccgcgtgtcc ggctcttgcc cacgcagtc tggcctccgg      60
caacgcgcac atcggaaagc ctgcccctga cttcacgggc accgccgtgg tggatggtgc      120
ctttaaggaa atcaagcttt cagactacag agggaagtac gtggtcctct ttttctatcc      180
actggacttc acttttgttt gccccacgga gatcatcgct tttagcgacc acgctgagga      240
cttccgaaag ctaggctgcg aggtgctggg agtgtctgtg gactctcagt tcacccacct      300
ggcctggatc aataccccac ggaaggaggg aggcttgggc ccaactgaata tccctctgct      360
tgctgatgtg actaaaagct tgtcccagaa ttacggcgtg ttgaaaaatg atgagggcat      420
cgcttacagg ggcctcttta tcatcgatgc caaggggtgc cttcgccaga tcacagtcaa      480
cgacctacct gtgggacgct ctgtagatga ggctctccgc ctggtccagg cctttcagta      540
tacagatgag catggggaag tctgtcctgc tggctggaag cccggcagtg acaccatcaa      600
acccaatgtg gatgacagca aggaataactt ctccaaacac aactgagatg ggtaaaccatc      660
ggtgagcctg aatccccgat ctcacctgcg cccttacctg gatgtcctgt gctggcccag      720
aaaacgctag atcttcctct acattctaaa ggggctggag gctaggccga ggctttctca      780
ttaccacctt ggaatctggt gaatagtgc cctgccctga gcacaccag ctgggcccag      840
gtctatagga aaccaataaa gtattagga cagtgtg      877

```

<210> 52

<211> 198

<212> PRT

<213> Rattus norvegicus

<400> 52

```

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

```

<210> 53

PF59233.ST25.txt

<211> 1089
<212> DNA
<213> Oryza sativa

```
<400> 53
gccttcgtct cgacacgttt gcattgcagc agtcataaag tttcttcttc gtttctgctc      60
ccagtgctaa ggcagcacag tcgttcgtcg ccatgccagg gctcaccatc ggcgacaccg      120
tccccaacct ggagctggac tccacccacg gcaagatccg catccacgac ttcgtcggcg      180
acacctatgt catcctcttc tcccaccccg gcgacttcac cccggtctgc accacggagc      240
tggcagccat ggccggctac gccaaaggag tcgacaagag gggcgtcaag ctgctcggca      300
tctcctgcga cgacgtgcag tctcacaagg actggatcaa ggacatcgag gcctacaagc      360
ctgggaaccg cgtgacgtac ccgatcatgg ccgatccgag ccgcgaggcc atcaagcagc      420
tgaacatggt cgaccgagac gagaaggatt ccaacggcgg ccacctcccg tcccgcgcgc      480
tgcacatcgt cggccccgac aagaagggtga agctgagctt cctgtaccgg gcgtgcgtgg      540
ggcggaacat ggatgaggtg gtgcgtgcgg tcgacgcgct gcagacggcg gcgaagcacg      600
cgggtggcgac gccggtgaac tggaaagccc gcgagcgcgt cgtcatccct cccggcgtct      660
ccgacgacga ggcgaaggag aagttccccc aggggttcga caccgcgcac ctgccgtccg      720
gcaagggcta cctccgcttc accaagggtcg gctagatcat atcgatatcg acctcgctct      780
tcgtacatca tgtgcgccac gcgtgcgtga tagcgtgtgc tggcgtgatg actatgcgag      840
atgcatccct gtgtgtgttg gtgtggataa tgccgctacg tttggaacag tagtgcattt      900
actctgtgct actgtctgaa ctttggctgt ttggcagact gtttatgtac ccgtatgttc      960
gccctgttac taatagagtg ggtgttgtgg ttggcaagta ctctcctcgg acaacatttt     1020
aactttgact actaataaca aacaaattaa aaagatcaat cagatgttac tagacatctt     1080
aattttatt                                     1089
```

<210> 54
<211> 220
<212> PRT
<213> Oryza sativa

```
<400> 54
Met Pro Gly Leu Thr Ile Gly Asp Thr Val Pro Asn Leu Glu Leu Asp
1          5          10          15
Ser Thr His Gly Lys Ile Arg Ile His Asp Phe Val Gly Asp Thr Tyr
          20          25          30
Val Ile Leu Phe Ser His Pro Gly Asp Phe Thr Pro Val Cys Thr Thr
          35          40          45
Glu Leu Ala Ala Met Ala Gly Tyr Ala Lys Glu Phe Asp Lys Arg Gly
          50          55          60
Val Lys Leu Leu Gly Ile Ser Cys Asp Asp Val Gln Ser His Lys Asp
65          70          75          80
Trp Ile Lys Asp Ile Glu Ala Tyr Lys Pro Gly Asn Arg Val Thr Tyr
          85          90          95
Pro Ile Met Ala Asp Pro Ser Arg Glu Ala Ile Lys Gln Leu Asn Met
          100          105          110
Val Asp Pro Asp Glu Lys Asp Ser Asn Gly Gly His Leu Pro Ser Arg
          115          120          125
Ala Leu His Ile Val Gly Pro Asp Lys Lys Val Lys Leu Ser Phe Leu
          130          135          140
Tyr Pro Ala Cys Val Gly Arg Asn Met Asp Glu Val Val Arg Ala Val
145          150          155          160
Asp Ala Leu Gln Thr Ala Ala Lys His Ala Val Ala Thr Pro Val Asn
          165          170          175
Trp Lys Pro Gly Glu Arg Val Val Ile Pro Pro Gly Val Ser Asp Asp
```

				180					185					190		
Glu	Ala	Lys	Glu	Lys	Phe	Pro	Gln	Gly	Phe	Asp	Thr	Ala	Asp	Leu	Pro	
		195					200					205				
Ser	Gly	Lys	Gly	Tyr	Leu	Arg	Phe	Thr	Lys	Val	Gly					
	210					215					220					

```
<210> 55
<211> 465
<212> DNA
<213> Oryza sativa
```

<400>	55						
atggcggtgcg	ccttctccgt	ctcctctgcc	gcggcgccctc	tcgcctcccc	gaaggggggac		60
ctgccgttgg	tcgggaacaa	ggcgccggac	ttcgaggcg	aggccatgtt	cgaccagggg		120
ttcatcaagt	ctaaatgcat	gtttgtaagc	tctgcagaga	tactgcttt	cagcgacaga		180
tatgaggagt	ttgagaagat	aaatactgaa	gttctcggtg	tttcgattga	cagtgtggg		240
attgctctga	gaggattatt	catcattgac	aaggagggtg	tgattcagca	ttctaccatt		300
aacaaccttg	ctattggccg	tagcgtggat	gagacgtta	ggacccttca	ggccctacag		360
tatgtccaag	aaaaccggga	tgaggtttgc	ccagctggat	ggaaccttg	ggagaagtca		420
atgaagcctg	accccaagga	cagcaaggag	gaacaagaat	gctga			465

```
<210> 56
<211> 154
<212> PRT
<213> Oryza sativa
```

[illegible]

```
<210> 57
<211> 1085
<212> DNA
<213> Oryza sativa
```

<400> 57

PF59233.ST25.txt

```

cattccatca cagacagttc gcagaatcgc agcagcttag cttaattact tttttcacca 60
actcaacttt cagttaattt ccggttaatc ctcgattcct catcatgcct ggactcacc 120
tcggcgacgt cgtccccgac ctggagctcg acaccacca cggcaagatc cgcctccacg 180
acttcgtcgg cgacgcctac gtcacatcat tctccacccc cgctgacttc acgccggtct 240
gcacgacgga gctgtcggag atggcgggct acgccggcga gttcgcacaag aggggcgtca 300
agctcctcgg ctctcctcgc gacgacgtcg agtcgcacaa ggactggatc aaggacatcg 360
aggcctacaa gcctggccgc cgcgtcggct tcccgatcgt cgcgcacccg gacagggagg 420
cgatcaggca gctcaacatg atcgacgccg acgagaagga caccgcgcgc gccgagctcc 480
ccaaccgggc gtcacacatc gtcggggccg acaagaaggt gaagctgagc ttctgtttcc 540
cggcgtgcac gggggcggaac atggcggagg tgctgcgcgc gacggacgcg ctgctgacgg 600
cggcgaggca ccgggtggcg acgccgggtga actggaagcc cggcgagcgc gtcgtcatcc 660
cccccgcggt ctccgacgag gaggccaaag cgaggttccc ggccgggttc gagaccgcc 720
agctgccctc caacaagtgc tacctccgct tcaccaggt ggactgagag actgatggtg 780
agggagggag ggagagatct gggcgcgtcg tttcgtgtgt aataaaccaa cgcacgacgt 840
agatgcttcc acgtgtgtgt ttcccggtct gcttcgattg atcgatcgat cattcggtaa 900
gtactctagt tatgtgtaat ctgctgtttg ggtgtagtgg tgcatttgct gttctgttgc 960
ctgaaagtga cgaacggatt atgtttgtca tttgtatgta aaatgtaacc gtatgttttt 1020
tatttatccc ttccgaaatt actgtggaat atagtgaagt aatgctgtta ataaacagcc 1080
cgttt 1085

```

<210> 58
 <211> 220
 <212> PRT
 <213> Oryza sativa

```

<400> 58
Met Pro Gly Leu Thr Leu Gly Asp Val Val Pro Asp Leu Glu Leu Asp
1      5      10      15
Thr Thr His Gly Lys Ile Arg Leu His Asp Phe Val Gly Asp Ala Tyr
20     25     30
Val Ile Ile Phe Ser His Pro Ala Asp Phe Thr Pro Val Cys Thr Thr
35     40     45
Glu Leu Ser Glu Met Ala Gly Tyr Ala Gly Glu Phe Asp Lys Arg Gly
50     55     60
Val Lys Leu Leu Gly Phe Ser Cys Asp Asp Val Glu Ser His Lys Asp
65     70     75     80
Trp Ile Lys Asp Ile Glu Ala Tyr Lys Pro Gly Arg Arg Val Gly Phe
85     90     95
Pro Ile Val Ala Asp Pro Asp Arg Glu Ala Ile Arg Gln Leu Asn Met
100    105    110
Ile Asp Ala Asp Glu Lys Asp Thr Ala Gly Gly Glu Leu Pro Asn Arg
115    120    125
Ala Leu His Ile Val Gly Pro Asp Lys Lys Val Lys Leu Ser Phe Leu
130    135    140
Phe Pro Ala Cys Thr Gly Arg Asn Met Ala Glu Val Leu Arg Ala Thr
145    150    155    160
Asp Ala Leu Leu Thr Ala Ala Arg His Arg Val Ala Thr Pro Val Asn
165    170    175
Trp Lys Pro Gly Glu Arg Val Val Ile Pro Pro Gly Val Ser Asp Glu
180    185    190
Glu Ala Lys Ala Arg Phe Pro Ala Gly Phe Glu Thr Ala Gln Leu Pro
195    200    205
Ser Asn Lys Cys Tyr Leu Arg Phe Thr Gln Val Asp
210    215    220

```

PF59233.ST25.txt

<210> 59
 <211> 1248
 <212> DNA
 <213> Oryza sativa

<400> 59
 atcgattccc ccaacatatt aggggtcacg cctcccaaag tcaaaacagc ccagcccga 60
 caagcatttc ctggaacact tcgcccctcca ccaccatggc cgccgcgcgc tccaccctcg 120
 cctccctctc cgccaccgcg gccgcggcgc ccggcaagcg cctcctctct tcttccccct 180
 cccgctccct ctccctctcc ctgcctctcc ggcgcgcgat cgccgtcatg cccacacctc 240
 gcgctggcat cctctccgcc gcaccgagga ggcgcgtgtc ggctcggcc ccggccgcgg 300
 ccaccatcgc ggtcggggac aagctccccg acgcgacgct ctctacttc gactcgcccg 360
 acggggagct gaagacgggtg accgtgcgcg acctcaccgc cggaagaag gtggtcctct 420
 tcgcggtccc cggcgcgttc accccgacct gcacgcagaa gcacgtcccg gggttcgtcg 480
 ccaaggccgg ggagctccgc gccaaagggg tcgacgccgt ggctgcgtc tccgtcaacg 540
 acgcgttcgt gatgcgggcg tggaaggaga gcctcggcgt cggcgacgag gtgctcctcc 600
 tctccgacgg caacggcgag ctgcgccgcg ccatgggcgt cgagctcgac ctctccgaca 660
 agcccgcgcg cctcggcgtg cgttcccgcg gctacgcgct cctggcggag gacggcgtcg 720
 tcaagtgct caacctcgag gagggcggcg ccttcaccac cagcagcgcc gaggagatgc 780
 tcaaggcgct ctgaagcgtg aacaactcaa gccatcctcc acttttcac tcaaatctcc 840
 atagctcgtg tcgttgcccta cttctctcaa gtgttcgctt cttttcctga ataataaatc 900
 atggcaacaa tgggtggaccg tgcagagtag tgttgtcggt ttgatgtgtg aagcttctat 960
 agcgaacata gtgtgcaatt tttaggtaac atatatgagt cttggccttg cactgtttgt 1020
 caggtagtaa caacttgga cagctataga ctgtagtaac agagttcctt tcatgttgaa 1080
 tggtagggt gtgatgtgtt ctgagctga ataaacgtgc tctggtaaact actgtcacca 1140
 gatcagacta tggagtagta gtaagatttt gcttggttaa ttgggcaatg gctatttttc 1200
 aggatcggtc agttgagata aacatgtttt gctgttcaga tgagttcg 1248

<210> 60
 <211> 232
 <212> PRT
 <213> Oryza sativa

<400> 60
 Met Ala Ala Ala Ser Thr Leu Ala Ser Leu Ser Ala Thr Ala Ala
 1 5 10 15
 Ala Ala Ala Gly Lys Arg Leu Leu Leu Ser Ser Pro Ser Arg Ser Leu
 20 25 30
 Ser Leu Ser Leu Ala Ser Arg Gly Arg Ile Ala Val Met Pro His Leu
 35 40 45
 Arg Ala Gly Ile Leu Ser Ala Ala Pro Arg Arg Ala Val Ser Ala Ser
 50 55 60
 Ala Pro Ala Ala Ala Thr Ile Ala Val Gly Asp Lys Leu Pro Asp Ala
 65 70 75 80
 Thr Leu Ser Tyr Phe Asp Ser Pro Asp Gly Glu Leu Lys Thr Val Thr
 85 90 95
 Val Arg Asp Leu Thr Ala Gly Lys Lys Val Val Leu Phe Ala Val Pro
 100 105 110
 Gly Ala Phe Thr Pro Thr Cys Thr Gln Lys His Val Pro Gly Phe Val
 115 120 125
 Ala Lys Ala Gly Glu Leu Arg Ala Lys Gly Val Asp Ala Val Ala Cys
 130 135 140
 Val Ser Val Asn Asp Ala Phe Val Met Arg Ala Trp Lys Glu Ser Leu

PF59233.ST25.txt

```

145          150          155          160
Gly Val Gly Asp Glu Val Leu Leu Leu Ser Asp Gly Asn Gly Glu Leu
          165          170          175
Ala Arg Ala Met Gly Val Glu Leu Asp Leu Ser Asp Lys Pro Ala Gly
          180          185          190
Leu Gly Val Arg Ser Arg Arg Tyr Ala Leu Leu Ala Glu Asp Gly Val
          195          200          205
Val Lys Val Leu Asn Leu Glu Glu Gly Gly Ala Phe Thr Thr Ser Ser
          210          215          220
Ala Glu Glu Met Leu Lys Ala Leu
225          230

```

<210> 61
 <211> 946
 <212> DNA
 <213> Oryza sativa

```

<400> 61
acacccaaac ccgacgaaca gccgcagctg caggccacgc atcctcgccg tgaatctccc      60
accgcgctcc ggcgatggca ttcgcggtct ccaccgcctg caggccgtcc ctgctcctgc      120
ccccgcgcca gcgctcgctg ccgccgcggc cgcggccgct cctctgcacg ccctccaccg      180
ccgccttccg ccgcggcgcc ctcagcgcca caacaacgcc aacgccggcg cgcgcagcac      240
tgccgtcgac gacggggagg aacaggatcg tctgcggcaa ggtgagcaag ggcagcgcg      300
cgcccaactt cagctgagg gaccaggacg ggaggggcgt gtcgctgtcc aagttcaagg      360
ggaggccggt ggtggtgtac ttctaccccg ccgacgagac ccccgatgc accaagcagg      420
cctgcgcctt ccgcgactcc tacgagaagt tcaagaaggc cgcgcgcgag gtcatcgcca      480
tcagcgcgca cgacgcgcc tcccacaagg agttcaagaa gaagtacaag ctgccgttca      540
cgctgctgag cgacgagggg aacaagggtg ggaaggagtg ggtgtgccc gctgacctgt      600
tcgggacgct gccgggaagg cagacgtacg tgctcgacaa gaacggcgct gtccagtaca      660
tctacaacaa ccagttccag cccgagaagc acattggcga gacctcaag atcctccaga      720
gcctctgatt ctctcttctt tcttctctct tttttaacta caatctctca tgtatgatcc      780
atcacagtat accgagaaat taatccatct gttaatctct tctcgatcgt ttttctccct      840
cggcatgtgt atagctagtgt tatctgtaac tctgtgagta tatatacagt caaaatcggt      900
gggctgctag ctctgaattt tgccgtaagg cactctgatt ttctct      946

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<210> 62
 <211> 217
 <212> PRT
 <213> Oryza sativa

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<400> 62
Met Ala Phe Ala Val Ser Thr Ala Cys Arg Pro Ser Leu Leu Leu Pro
1          5          10          15
Pro Arg Gln Arg Ser Ser Pro Pro Arg Pro Arg Pro Leu Leu Cys Thr
          20          25          30
Pro Ser Thr Ala Ala Phe Arg Arg Gly Ala Leu Ser Ala Thr Thr Thr
          35          40          45
Pro Thr Pro Ala Arg Ala Ala Leu Pro Ser Thr Thr Gly Arg Asn Arg
          50          55          60
Ile Val Cys Gly Lys Val Ser Lys Gly Ser Ala Ala Pro Asn Phe Thr
65          70          75          80
Leu Arg Asp Gln Asp Gly Arg Ala Val Ser Leu Ser Lys Phe Lys Gly
          85          90          95
Arg Pro Val Val Val Tyr Phe Tyr Pro Ala Asp Glu Thr Pro Gly Cys

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		100						105					110				
Thr	Lys	Gln	Ala	Cys	Ala	Phe	Arg	Asp	Ser	Tyr	Glu	Lys	Phe	Lys	Lys		
		115						120					125				
Ala	Gly	Ala	Glu	Val	Ile	Gly	Ile	Ser	Gly	Asp	Asp	Ala	Ala	Ser	His		
		130						135					140				
Lys	Glu	Phe	Lys	Lys	Lys	Tyr	Lys	Leu	Pro	Phe	Thr	Leu	Leu	Ser	Asp		
		145						150					155			160	
Glu	Gly	Asn	Lys	Val	Arg	Lys	Glu	Trp	Gly	Val	Pro	Ala	Asp	Leu	Phe		
				165						170					175		
Gly	Thr	Leu	Pro	Gly	Arg	Gln	Thr	Tyr	Val	Leu	Asp	Lys	Asn	Gly	Val		
			180						185					190			
Val	Gln	Tyr	Ile	Tyr	Asn	Asn	Gln	Phe	Gln	Pro	Glu	Lys	His	Ile	Gly		
		195						200					205				
Glu	Thr	Leu	Lys	Ile	Leu	Gln	Ser	Leu									
		210						215									

<210> 63
 <211> 770
 <212> DNA
 <213> Oryza sativa

<400> 63	
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caccctcccc gacggccagc tggggtggtt cgacggggag gacaagctgc agcaggtctc	180
cgtccacggc ctgccgcgcg gcaagaaggt cgtcctcttc ggcgtccccg gtgccttcac	240
cccgacctgc agcaatcagc atgtgccagg attcataaat caggctgagc agtcaaagc	300
caagggtgta gacgacatct tgcttgtcag tgtaaacgac ccttttgtca tgaaggcgtg	360
ggcaaagtca taccctgaga ataagcatgt gaaattcctt gccgatgggtt tgggaacata	420
caccaaggca cttggtcttg agcttgacct ttccggagaaa gggcttggtt ttcgttcgag	480
acggtttgct ctcttgctg acaacctcaa gggtactgtt gcaaacattg aggaagggtg	540
ccaattcaca atctctggtg ctgaggagat cctcaaggca ctgtaagagc ttcagctctt	600
aggaacggca gcgatcactt ggacctatcg tgtcaatctt gtttaaattt gtctgcaaaa	660
tacttgtgcg aataaaattg tcgatgagct gcctagtgtg gaggacttta tgataatggt	720
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<210> 64
 <211> 162
 <212> PRT
 <213> Oryza sativa

<400> 64	
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1 5 10 15	
Trp Phe Asp Gly Glu Asp Lys Leu Gln Gln Val Ser Val His Gly Leu	
20 25 30	
Ala Ala Gly Lys Lys Val Val Leu Phe Gly Val Pro Gly Ala Phe Thr	
35 40 45	
Pro Thr Cys Ser Asn Gln His Val Pro Gly Phe Ile Asn Gln Ala Glu	
50 55 60	
Gln Leu Lys Ala Lys Gly Val Asp Asp Ile Leu Leu Val Ser Val Asn	
65 70 75 80	
Asp Pro Phe Val Met Lys Ala Trp Ala Lys Ser Tyr Pro Glu Asn Lys	
85 90 95	

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His	Val	Lys	Phe	Leu	Ala	Asp	Gly	Leu	Gly	Thr	Tyr	Thr	Lys	Ala	Leu
			100					105					110		
Gly	Leu	Glu	Leu	Asp	Leu	Ser	Glu	Lys	Gly	Leu	Gly	Ile	Arg	Ser	Arg
		115					120					125			
Arg	Phe	Ala	Leu	Leu	Ala	Asp	Asn	Leu	Lys	Val	Thr	Val	Ala	Asn	Ile
	130					135					140				
Glu	Glu	Gly	Gly	Gln	Phe	Thr	Ile	Ser	Gly	Ala	Glu	Glu	Ile	Leu	Lys
145					150					155					160
Ala	Leu														

<210> 65
 <211> 1249
 <212> DNA
 <213> Oryza sativa

<400> 65

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cgtcgcggcc	cctgctcgcc	gtcgccgccg	cccgccaccg	ccgcccgcat	ggatctctcg	180
ccgccgccgc	cgcgcggca	aggcggcgtc	gtcgtcgccc	gtcctctcag	gtgcgcggcg	240
caaggacgga	gtccacgggc	gtctccgtcg	ggttccgcgc	gccccagttc	gagctcccgg	300
agccactgac	ggggaagctc	tggacattgg	atgacttcga	aggcaacccc	gcgctgctgg	360
ttatgtttgt	atgtaatcac	tgtccattcg	taaagcatct	caaaaaagat	attgcgaagc	420
tcacctcatt	ctacatggag	aaagggttg	ctgctgttgc	catatcctcg	aactcaattg	480
tgacacaccc	acaggatggt	cctgattaca	tagctgagga	agcaaaattg	tataaatact	540
ctttccccta	tctatatgat	gagtctcaag	aagttgctaa	agcttttcga	gccgtctgca	600
cgccagagtt	ttacttggtc	aaaaaggatg	gacgaaggcc	atttgagctt	ttctaccatg	660
ggcagtttga	cgattcaaga	ccgagtaaca	acgtgccagt	taccggaagg	gatttaagtc	720
gtgcgattga	ttgtgcactt	agtggacaag	agctaccttt	tgtgccaaaa	cccagtgctc	780
ggtgcagcat	caaattggcac	ccatgaagag	cgtattgcat	tgtcatgtgc	tggaatatag	840
atgtttttcc	cccttaaatt	gaagggtgaa	catggggatt	gaggtgagcc	atgctctcta	900
ctactagaag	tatggaagca	cacacatagt	agatttatga	tagctaattt	cacatagtag	960
atztatgata	gctaatttat	aatgtaattt	ttaagggaaa	tagatgcagt	tgaggccttg	1020
tggagctgat	tcttaacggt	gtgggggctg	ttcaacttga	gagttgcaaa	actagacatg	1080
aatggcgctg	atagtgttat	gttgtgtgct	ggtgtctcat	cttggccgga	aaaagaaaaa	1140
ctgatggatg	taactggtat	ttgtgcaaca	atgggataat	gcacacaagt	acaataaccc	1200
attattatgg	ctaacacaac	accacgggt	gaaaattaaa	gatgagggc		1249

<210> 66
 <211> 252
 <212> PRT
 <213> Oryza sativa

<400> 66

Met	Ser	Leu	Ala	Thr	Ala	Ala	Ala	Gly	Ala	Gln	Pro	Phe	Val	Arg	Ser
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Ser	Ser	Ser	Ala	Ala	Ala	Ala	Ser	Ser	Ser	Arg	Pro	Leu	Leu	Ala	Val
			20					25					30		
Ala	Ala	Ala	Arg	His	Arg	Arg	Pro	His	Gly	Ser	Leu	Ala	Ala	Ala	Ala
			35				40					45			
Ala	Ala	Ala	Arg	Arg	Arg	Arg	Arg	Arg	Pro	Leu	Leu	Gln	Val	Arg	Ala
			50				55				60				
Ala	Arg	Thr	Glu	Ser	Thr	Gly	Val	Ser	Val	Gly	Phe	Arg	Ala	Pro	Gln

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

<210> 67
 <211> 994
 <212> DNA
 <213> Oryza sativa

<400> 67	
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atcacctcct ccttctccct ctcttctctc tcccgccccc tcgcaacagg cgtccgcgcc	180
gcggggggcga gaggcgccgc gaggtcggcg gcgtcggcgt ccaccgtggt ggcgaccatc	240
gccgtcggag acaagctccc cgacgcgacg ctgtctact tcgaccgggc ggacggcgag	300
ctgaagacgg tgacgggtgc ggagctgacg gcgggcagga aggcgggtgct gttcgcggtg	360
ccgggcgcgt tcacgccgac gtgctcgcag aagcacctcc cggggttcat cgagaaggcc	420
ggggagctcc acgccaagg ggtggacgcc attgcctgcg tgtcggtgaa cgacgcgttc	480
gtgatgcgcg cgtggaagga gagcctgggc ctgcgcgacg ccgacgtgct cctcctctcc	540
gacggcaacc tggagctcac gcgcgcgctc ggcgtcgaga tggacctctc cgacaagccc	600
atggggctcg gcgtcaggtc gcgcgcgtac gcgtctctcg ccgacgacgg cgtcgtcaag	660
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gtctctcgcg gttgggtgag agcgtcgtcg ttgtgaagag gaaattttgt gtgtgttttt	840
tttcggttga atgttgcatg ccatgtgctt gacgaaatga cggaataaca aaagaaaaaa	900
aactactttt atttttttgt tgaaatttgc aaaccatgtg tttgacgaaa tgtcgagata	960
tgaaagctgt gaaatcgctt acgtcacgtg cacc	994

<210> 68
 <211> 225
 <212> PRT
 <213> Oryza sativa

<400> 68

PF59233.ST25.txt

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

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<210> 69
 <211> 959
 <212> DNA
 <213> *Oryza sativa*

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<400> 69
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cacgcgcgac agcgtcgccc gtgaacaggg ccgtggtccc tgcggcgctcc cggccgcgcg 120
ggggacgcct ttgctgccga cgctcgctga cggcgcgtctc cgcggcgcca ggggcttccc 180
ctcccgctctc cccgtcgccct agccccgatg gcggctcccc cggcgtgtgg gacgctctcg 240
gcggcgtgtc cgtgctcgcc gccggcaccg gcgaagccgt tcagctcagg gacctgtggg 300
accccaccga gggggtggcc gtggtggcgc tgctccggca cttcgggtgc ttctgctgct 360
gggagctggc ctctgttctg aaggaatcca tggcgaaatt cgacgctgcc ggggccaagc 420
tgatcgccat cggcgtcggg actoctgaca aagctcgcat tctcgccgat gggctgccgt 480
tccctgttga tagcttgtac gctgaccccc agcgcaaggc ttacgacgta ttggggcttt 540
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tcaagaaggt aaccaagaac tacacgctca agggcacacc agcagacctg acgggtatct 660
tgcagcagg tggtatgctt gtgttcagag ggaaagagtt gctgtactca tggaaagaca 720
aaggcacggg tgatcatgct cctctggatg atgtcctcaa cgcttgctgc aatcgaactt 780
cttgaggtct ctagcagtcg gaagatgtgt atgtaaatat atgaaatgct cagcatgcc 840
aacagagagc aattagactc aacagtacta gatgttcgat taattatgca ttgttggttt 900
gcttatgtac ttagcatgat attggattag ctacccaatg gacatgacac tacagtctg 959

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PF59233.ST25.txt

<210> 70
 <211> 259
 <212> PRT
 <213> Oryza sativa

<400> 70
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 Ala Ala Thr Arg Ala Thr Ala Ser Pro Val Asn Arg Ala Val Val Pro
 20 25 30
 Ala Ala Ser Arg Pro Arg Gly Gly Arg Leu Cys Cys Arg Arg Ser Leu
 35 40 45
 Thr Ala Val Ser Ala Ala Ala Gly Ala Ser Pro Pro Val Ser Pro Ser
 50 55 60
 Pro Ser Pro Asp Gly Gly Ser Pro Gly Val Trp Asp Ala Leu Gly Gly
 65 70 75 80
 Val Ser Val Leu Ala Ala Gly Thr Gly Glu Ala Val Gln Leu Arg Asp
 85 90 95
 Leu Trp Asp Pro Thr Glu Gly Val Ala Val Val Ala Leu Leu Arg His
 100 105 110
 Phe Gly Cys Phe Cys Cys Trp Glu Leu Ala Ser Val Leu Lys Glu Ser
 115 120 125
 Met Ala Lys Phe Asp Ala Ala Gly Ala Lys Leu Ile Ala Ile Gly Val
 130 135 140
 Gly Thr Pro Asp Lys Ala Arg Ile Leu Ala Asp Gly Leu Pro Phe Pro
 145 150 155 160
 Val Asp Ser Leu Tyr Ala Asp Pro Glu Arg Lys Ala Tyr Asp Val Leu
 165 170 175
 Gly Leu Tyr His Gly Leu Gly Arg Thr Leu Ile Ser Pro Ala Lys Met
 180 185 190
 Tyr Ser Gly Leu Asn Ser Ile Lys Lys Val Thr Lys Asn Tyr Thr Leu
 195 200 205
 Lys Gly Thr Pro Ala Asp Leu Thr Gly Ile Leu Gln Gln Gly Gly Met
 210 215 220
 Leu Val Phe Arg Gly Lys Glu Leu Leu Tyr Ser Trp Lys Asp Lys Gly
 225 230 235 240
 Thr Gly Asp His Ala Pro Leu Asp Asp Val Leu Asn Ala Cys Cys Asn
 245 250 255
 Arg Thr Ser

<210> 71
 <211> 1183
 <212> DNA
 <213> Oryza sativa

<400> 71
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 tagggtttcg ccacgtctca cgcagccatg gccgcggcgg ccgcgtccac ctcgctcccc 120
 gtcccgcgcg tctccctccc gccgtccgct cgcccagccg ccgctccccg gcacgggtctc 180
 ctcatccccg gtgcgcgtgg gtgtttccgt ctccgeggct caccagcggc accggccgcc 240
 gccgcctcgg gctcccttc cgtgccttcc tcttccccgg aggctgggtc gggcatcggg 300
 gatgccctcg gtggcgctcg catctactcc gcggccaccg gcgagcccgt gctgttcagg 360
 gacctgtggg accagaacga gggaatggct gttgttgccc tgctaaggca ttttgggtgc 420

PF59233.ST25.txt

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ccttgctggt gggagttggc ctctgtgttg agggatacaa aagagagatt tgattcagct 480
ggtgtcaagc taatagccgt tgggtgttggc actccagata aagcccgtat tcttgctgag 540
cgttttacat ttccattgga ctacctctac gcagatcctg agcgcaaggc ctatgatctc 600
ttgggtttgt attttggtat tggtcgcaca ttcttcaatc cagccagtgc aagtgtgttt 660
tcacgatttg actccctcaa ggaggcagtg aagaactata caattgaagc caccacagat 720
gatagggcta gtgttctaca acagggtgga atgtttgtgt tcagagggaa agaattaata 780
tatgcaagga aagatgaggg cactgggtgat catgcacctc tggatgatgt cctcaacatc 840
tgttgtaaag cccctgcggc atgatattgt gtaatcaatg tcccatgaga attttcatag 900
cctggttctg ttctgtgtccc aaagttgtat gcagaaaagc atctcttgat tttggaaggc 960
tggcttctgc aaggatagta tctctttgtc tgtacgtctg atctaccatg ctgttgatat 1020
gtaatatatc agttgaaaac ttgagggatg taggcagacc aaaggacttt ctcatgccat 1080
aagctcagca gttcttttcc ttttcctcat agaaatgtac taattataga agagaatcct 1140
acactgtaca ataagtttgt gttaaagttg gcgaaatttt cct 1183

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<210> 72
 <211> 258
 <212> PRT
 <213> Oryza sativa

<400> 72

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

Ala Ala

PF59233.ST25.txt

<210> 73
 <211> 917
 <212> DNA
 <213> Oryza sativa

<400> 73
 ctcggcgcgcg ccacagccgc agaaccacac ctaggcgcgt cgaagaccca cgtagcttcc 60
 atccaagctt accgccatgg ccgcgcgcgc gccgctcccc gtaccgcacg cggccgccac 120
 cagcccgcca ccggctgcgc gcgcgagcct cctccgcgcg aggggcccgt gcgcctccct 180
 cctctaccgc cgccgcctcc gcttctccgt tgcgcgggtg gccgcgcga agcccgaggc 240
 cgtcgggagg gccggggagg cagctgcggc gccggtggaa gggctgcga aatccctgca 300
 gggggtggag gtgttcgata tgagcggaaa gccggtgcc gttgttgatc tgtggaagga 360
 caggaaggcc atcgttgctg tcgcccgcga ttttgatgc gtgctgtgcc gtaagagggc 420
 cgatcttctc gcggctaagg aggatgcaat ggaggctgca ggggttgctc ttgttttaat 480
 cggaccaggt actgttgaac aggcaaaggc attttatgac caaaccaaat tcaaaggaga 540
 agtatacgtc gatccaagtc actcatcata taatgccctt gaatttgcat ttgggctggt 600
 ctcaacgttt actccatcgc ccggtttgaa gattatacag ttgtacatgg aaggatacag 660
 gcaggattgg gaactgtcgt tcgagaagac caccagaacg aaaggtggat ggtatcaagg 720
 gggcctactt gttgcaggac caggcatcga caatatattt tatatccaca aggacaaaga 780
 agcaggagat gacctgaca tggatgatgt cttgaaagct tgctgttcct agatcactag 840
 tatcctatat catttctgtt aacctccaga cttggaagac acatgtaaat attttgccaa 900
 gttaaagtat gttatgt 917

<210> 74
 <211> 251
 <212> PRT
 <213> Oryza sativa

<400> 74
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 1 5 10 15
 Pro Arg Pro Ala Ala Ala Ser Ser Leu Leu Arg Ala Arg Gly Pro Cys
 20 25 30
 Ala Ser Leu Leu Tyr Pro Arg Arg Leu Arg Phe Ser Val Ala Pro Val
 35 40 45
 Ala Ala Ala Lys Pro Glu Ala Val Gly Arg Ala Gly Glu Ala Ala Ala
 50 55 60
 Ala Pro Val Glu Gly Leu Ala Lys Ser Leu Gln Gly Val Glu Val Phe
 65 70 75 80
 Asp Leu Ser Gly Lys Ala Val Pro Val Val Asp Leu Trp Lys Asp Arg
 85 90 95
 Lys Ala Ile Val Ala Phe Ala Arg His Phe Gly Cys Val Leu Cys Arg
 100 105 110
 Lys Arg Ala Asp Leu Leu Ala Ala Lys Gln Asp Ala Met Glu Ala Ala
 115 120 125
 Gly Val Ala Leu Val Leu Ile Gly Pro Gly Thr Val Glu Gln Ala Lys
 130 135 140
 Ala Phe Tyr Asp Gln Thr Lys Phe Lys Gly Glu Val Tyr Ala Asp Pro
 145 150 155 160
 Ser His Ser Ser Tyr Asn Ala Leu Glu Phe Ala Phe Gly Leu Phe Ser
 165 170 175
 Thr Phe Thr Pro Ser Ala Gly Leu Lys Ile Ile Gln Leu Tyr Met Glu
 180 185 190

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Gly Tyr Arg Gln Asp Trp Glu Leu Ser Phe Glu Lys Thr Thr Arg Thr
 195 200 205
 Lys Gly Gly Trp Tyr Gln Gly Gly Leu Leu Val Ala Gly Pro Gly Ile
 210 215 220
 Asp Asn Ile Leu Tyr Ile His Lys Asp Lys Glu Ala Gly Asp Asp Pro
 225 230 235 240
 Asp Met Asp Asp Val Leu Lys Ala Cys Cys Ser
 245 250

<210> 75
 <211> 886
 <212> DNA
 <213> Oryza sativa

<400> 75
 acgcgtgagt tcgtgacgcg tcacgccccg cggccttccc ctcccaaaaa gcggcaggac 60
 gcaacctgat ccccatcccc cgagcaagca aagcggagga acgcgatggc gtcggcgctg 120
 ctgaggaagg cgacggtagg cggctccgcg gcggcggcgg cggcgagggtg ggcttccagg 180
 gggctcgcgt cgggtgggctc cggtcccgac atcgtctcgg cggcgccccg cgtgtcgcgtg 240
 cagaaggccc gctcctggga cgagggcgtc gccaccaact tctccaccac ccctctcaag 300
 gacatcttcc atgggaagaa agtggtcac ttcggcctgc ctggtgcata cacaggagtc 360
 tgttcacagg cacacgtccc tagttataaa aataacattg acaagttgaa agcaaaaagg 420
 gttgactctg ttatctgtgt ctctgtgaat gacccttatg ccctgaatgg atgggcagaa 480
 aagctacagg caaaagatgc tattgaattt tatggtgatt ttgatgggag tttccacaaa 540
 agcttgatt tggaagtaga cctctctgct gctttgcttg gccgccgttc ccacagggtg 600
 tcagcctttg ttgacgatgg gaagatcaag gctttcaatg ttgaggtagc tccttctgac 660
 ttcaaggttt ctggtgccga ggtgatcttg gaccaaattc gatccgagta acgaaattct 720
 gtcgttgatt gttttctcat gcagcatgca tgcttttgct gtagtaaata aacgaaaact 780
 cgactactcg agtatccatg taaagatgtt tgtagtctgc cttgctacgc ccagaatatt 840
 tgttttctctg ttacaaatca gcttgccggg caacatgttt gtcagc 886

<210> 76
 <211> 198
 <212> PRT
 <213> Oryza sativa

<400> 76
 Met Ala Ser Ala Leu Leu Arg Lys Ala Thr Val Gly Gly Ser Ala Ala
 1 5 10 15
 Ala Ala Ala Ala Arg Trp Ala Ser Arg Gly Leu Ala Ser Val Gly Ser
 20 25 30
 Gly Ser Asp Ile Val Ser Ala Ala Pro Gly Val Ser Leu Gln Lys Ala
 35 40 45
 Arg Ser Trp Asp Glu Gly Val Ala Thr Asn Phe Ser Thr Thr Pro Leu
 50 55 60
 Lys Asp Ile Phe His Gly Lys Lys Val Val Ile Phe Gly Leu Pro Gly
 65 70 75 80
 Ala Tyr Thr Gly Val Cys Ser Gln Ala His Val Pro Ser Tyr Lys Asn
 85 90 95
 Asn Ile Asp Lys Leu Lys Ala Lys Gly Val Asp Ser Val Ile Cys Val
 100 105 110
 Ser Val Asn Asp Pro Tyr Ala Leu Asn Gly Trp Ala Glu Lys Leu Gln
 115 120 125
 Ala Lys Asp Ala Ile Glu Phe Tyr Gly Asp Phe Asp Gly Ser Phe His

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```

      130                      135                      140
Lys Ser Leu Asp Leu Glu Val Asp Leu Ser Ala Ala Leu Leu Gly Arg
145                      150                      155                      160
Arg Ser His Arg Trp Ser Ala Phe Val Asp Asp Gly Lys Ile Lys Ala
      165                      170                      175
Phe Asn Val Glu Val Ala Pro Ser Asp Phe Lys Val Ser Gly Ala Glu
      180                      185                      190
Val Ile Leu Asp Gln Ile
      195

```

```

<210>  77
<211>  22
<212>  PRT
<213>  Artificial sequence

```

```

<220>
<223>  motif 1

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<220>
<221>  UNSURE
<222>  (6)..(6)
<223>  Xaa can be any naturally occurring amino acid

```

```

<220>
<221>  UNSURE
<222>  (11)..(11)
<223>  Xaa can be any naturally occurring amino acid

```

```

<220>
<221>  VARIANT
<222>  (14)..(14)
<223>  /replace = "Gly"

```

```

<220>
<221>  VARIANT
<222>  (15)..(15)
<223>  /replace = "Met"

```

```

<220>
<221>  VARIANT
<222>  (19)..(19)
<223>  /replace = "Gly"

```

```

<220>
<221>  VARIANT
<222>  (21)..(21)
<223>  /replace = "Val"

```

```

<220>
<221>  VARIANT
<222>  (22)..(22)
<223>  /replace = "Asn"

```

```

<400>  77

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Pro Leu Val Gly Asn Xaa Ala Pro Asp Phe Xaa Ala Glu Ala Val Phe
 1 5 10 15
 Asp Gln Glu Phe Ile Lys
 20

<210> 78
 <211> 22
 <212> PRT
 <213> Artificial sequence

<220>
 <223> motif 2

<220>
 <221> VARIANT
 <222> (4)..(4)
 <223> /replace = "Val"

<220>
 <221> VARIANT
 <222> (6)..(6)
 <223> /replace = "Tyr"

<220>
 <221> UNSURE
 <222> (7)..(7)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> VARIANT
 <222> (10)..(10)
 <223> /replace = "Lys"

<220>
 <221> VARIANT
 <222> (12)..(12)
 <223> /replace = "Ala"

<220>
 <221> VARIANT
 <222> (13)..(13)
 <223> /replace = "Glu"

<220>
 <221> VARIANT
 <222> (14)..(14)
 <223> /replace = "Asp"

<220>
 <221> VARIANT
 <222> (15)..(15)
 <223> /replace = "Tyr"

<220>

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<221> VARIANT
 <222> (16)..(16)
 <223> /replace = "Asp" /replace = "Asn"

<220>
 <221> VARIANT
 <222> (20)..(20)
 <223> /replace = "His"

<400> 78
 Tyr Pro Leu Ile Ser Asp Xaa Thr Lys Ser Ile Ser Lys Ser Phe Gly
 1 5 10 15
 Val Leu Ile Pro Asp Gln
 20

<210> 79
 <211> 2194
 <212> DNA
 <213> Oryza sativa

<400> 79
 aatccgaaaa gtttctgcac cgttttcacc ccctaactaa caatataggg aacgtgtgct 60
 aaatataaaa tgagacctta tatatgtagc gctgataact agaactatgc aagaaaaact 120
 catccaccta ctttagtggc aatcgggcta aataaaaaag agtcgctaca ctagtttcgt 180
 tttccttagt aattaagtgg gaaaatgaaa tcattattgc ttagaatata cgttcacatc 240
 tctgtcatga agttaaatga ttcgaggtag ccataattgt catcaaactc ttcttgaata 300
 aaaaaatcct tctagctgaa ctcaatgggt aaagagagag atttttttta aaaaaataga 360
 atgaagatat tctgaacgta ttggcaaaga tttaaacata taattatata attttatagt 420
 ttgtgcattc gtcatatcgc acatcattaa ggacatgtct tactccatcc caatttttat 480
 ttagtaatta aagacaattg acttattttt attattttatc ttttttcgat tagatgcaag 540
 gtacttacgc acacactttg tgctcatgtg catgtgtgag tgcacctcct caatacacgt 600
 tcaactagca acacatctct aatatcactc gcctattttaa tacatttagg tagcaatata 660
 tgaattcaag cactccacca tcaccagacc acttttaata atatctaaaa tacaataaat 720
 aattttacag aatagcatga aaagtatgaa acgaactatt taggtttttc acatacaaaa 780
 aaaaaaagaa ttttgctcgt gcgcgagcgc caatctccca tattgggcac acaggcaaca 840
 acagagtggc tgcccacaga acaaccacaa aaaaacgatg atctaacgga ggacagcaag 900
 tccgcaacaa cctttttaaca gcaggctttg cggccaggag agaggaggag agggcaagaa 960
 aaccaagcat cctccttctc ccatctataa attcctcccc ccttttcccc tctctatata 1020
 ggaggcatcc aagccaagaa gagggagagc accaaggaca cgcgactagc agaagccgag 1080
 cgaccgcctt ctgatccat atcttcgggt cgagttcctg gtcgatctct tccctcctcc 1140
 acctcctcct cacagggtat gtgcctcctt tcggttggtc ttggatttat tgttctaggt 1200
 tgtgtagtag gggcggtgat gttaggaaag gggatctgta tctgtgatga ttctgttct 1260
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 atggttttca atcgtctgga gagctctatg gaaatgaaat ggtttaggga tcggaatcct 1380
 gcgattttgt gagtaccttt tgtttgaggt aaaatcagag caccggtgat tttgcttggt 1440
 gtaataaagt acggttggtt ggtcctcgat tctggtagtg atgcttctcg atttgacgaa 1500
 gctatccttt gtttattccc tattgaacaa aaataatcca actttgaaga cggccccggt 1560
 gatgagattg aatgattgat tcttaagcct gtccaaaatt tcgcagctgg cttgtttaga 1620
 tacagtagtc cccatcacga aattcatgga aacagttata atcctcagga acaggggatt 1680
 ccctgttctt ccgatttgct ttagtcccag aatttttttt ccctaatatc ttaaaaagtc 1740
 actttctggt tcagttcaat gaattgattg ctacaaataa tgcttttata gcgttatcct 1800
 agctgtagtt cagttaatag gtaatacccc tatagtttag tcaggagaag aacttatccg 1860
 atttctgatc tccattttta attatatgaa atgaactgta gcataagcag tattcatttg 1920
 gattattttt tttattagct ctcaccctt cattattctg agctgaaagt ctggcatgaa 1980

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ctgtcctcaa	ttttgttttc	aaattcacat	cgattatcta	tgcattatcc	tcttgtatct	2040
acctgtagaa	gtttcttttt	ggttattcct	tgactgcttg	attacagaaa	gaaatztatg	2100
aagctgtaat	cgggatagtt	atactgcttg	ttcttatgat	tcatttcctt	tgtgcagttc	2160
ttggtgtagc	ttgccacttt	caccagcaaa	gttc			2194

<210> 80
 <211> 1264
 <212> DNA
 <213> *Oryza sativa*

<400> 80	
tcgacgctac	60
ttgcagactc	120
tttcagcacc	180
acatgggtct	240
gccaaaggcc	300
ctctattcaa	360
cggaagaag	420
gaaggaggag	480
aagaatccca	540
tatctaagcg	600
caggaagcca	660
ggtaagctta	720
gatattcttc	780
tcttaaacgg	840
cgacgcccga	900
gcccgcgatg	960
aaccaaatat	1020
aattaatcta	1080
atgcacgctc	1140
tcceggggct	1200
taatcatctc	1260
gatac	1264

<210> 81
 <211> 54
 <212> DNA
 <213> Artificial sequence

<220>
 <223> primer: forward primer prm8756

<400> 81	
ggggacaagt	54

<210> 82
 <211> 52
 <212> DNA
 <213> Artificial sequence

<220>
 <223> primer: reverse primer prm8757

<400> 82

ggggaccact ttgtacaaga aagctggggtt cgagctaaat agctgagaag ag

52

<210> 83
 <211> 1317
 <212> DNA
 <213> Arabidopsis thaliana

<400> 83
 cggacaggcc acgtcgtgtc ctaaacctct tagcctttcc ctttataagt caatcttgtg 60
 tcggcttcga ctcccaacat acacaaaaca ctaaaagtag aagaaaaatg gcgactctta 120
 aggtttctga ttctgttcct gctccttctg atgatgctga gcaattgaga accgcttttg 180
 aaggatgggg tacgaacgag gacttgatca tatcaatctt ggctcacaga agtgctgaac 240
 agaggaaaagt catcaggcaa gcataccacg aaacctacgg cgaagacctt ctcaagactc 300
 ttgacaagga gctctctaac gatttcgaga gagctatctt gttgtggact cttgaaccog 360
 gtgagcgtga tgctttattg gctaataag ctacaaaaag atggacttca agcaaccaag 420
 ttcttatgga agttgcttgc acaaggacat caacgcagct gcttcacgct aggcaagctt 480
 accatgctcg ctacaagaag tctcttgaag aggacggttg tcaccacact accggtgact 540
 tcagaaagct tttggtttct cttgtttacct catacaggta cgaaggagat gaagtgaaca 600
 tgacattggc taagcaagaa gctaagctgg tccatgagaa aatcaaggac aagcactaca 660
 atgatgagga tgttattaga atcttgtcca caagaagcaa agctcagatc aatgctactt 720
 ttaaccgtta ccaagatgat catggcgagg aaattctcaa gagtcttgag gaaggagatg 780
 atgatgacaa gttccttgca cttttgaggt caaccattca gtgcttgaca agaccagagc 840
 tttactttgt cgatgttctt cgttcagcaa tcaacaaaac tggaactgat gaaggagcac 900
 ttagtagaat tgtgaccaca agagctgaga ttgacttgaa ggtcattgga gaggagtacc 960
 agcgcaggaa cagcattcct ttggagaaaag ctattaccaa agacactcgt ggagattacg 1020
 agaagatgct cgtcgacatt ctcggtgaag atgatgctta atcaatcaat cctccacaga 1080
 gaaacataag ctgctctaca gcttctgtta tctcttatct ccctctctct ctctttgatg 1140
 agtttcaaat cgtttgattt tgtttctaca aaaacctgtg ttgtttctgt tgtgtgtttt 1200
 gagttcctaa ataatgcaaa agagagagac agagagaacc agtgtggtct ctttaagtatt 1260
 atatatatga agagcattgg cctaaaacac agactaacia gtagttcttg ttttgac 1317

<210> 84
 <211> 317
 <212> PRT
 <213> Arabidopsis thaliana

<400> 84
 Met Ala Thr Leu Lys Val Ser Asp Ser Val Pro Ala Pro Ser Asp Asp
 1 5 10 15
 Ala Glu Gln Leu Arg Thr Ala Phe Glu Gly Trp Gly Thr Asn Glu Asp
 20 25 30
 Leu Ile Ile Ser Ile Leu Ala His Arg Ser Ala Glu Gln Arg Lys Val
 35 40 45
 Ile Arg Gln Ala Tyr His Glu Thr Tyr Gly Glu Asp Leu Leu Lys Thr
 50 55 60
 Leu Asp Lys Glu Leu Ser Asn Asp Phe Glu Arg Ala Ile Leu Leu Trp
 65 70 75 80
 Thr Leu Glu Pro Gly Glu Arg Asp Ala Leu Leu Ala Asn Glu Ala Thr
 85 90 95
 Lys Arg Trp Thr Ser Ser Asn Gln Val Leu Met Glu Val Ala Cys Thr
 100 105 110
 Arg Thr Ser Thr Gln Leu Leu His Ala Arg Gln Ala Tyr His Ala Arg
 115 120 125
 Tyr Lys Lys Ser Leu Glu Glu Asp Val Ala His His Thr Thr Gly Asp

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```

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

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<210> 85
 <211> 56
 <212> DNA
 <213> Artificial sequence

<220>
 <223> forward primer: P08727

<400> 85
 ggggacaagt ttgtacaaaa aagcaggctt aaacaatggc gactcttaag gtttct 56

<210> 86
 <211> 50
 <212> DNA
 <213> Artificial sequence

<220>
 <223> reverse primer: P09025

<400> 86
 ggggaccact ttgtacaaga aagctgggtt taagcatcat cttcaccgag 50

<210> 87
 <211> 14
 <212> PRT
 <213> Artificial sequence

<220>
 <223> signature sequence 1

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<220>
<221> VARIANT
<222> (1)..(1)
<223> / replace = "Leu" / replace = "Val"

<220>
<221> VARIANT
<222> (2)..(2)
<223> / replace = "Val" / replace = "Leu" / replace = "Ile"

<220>
<221> VARIANT
<222> (3)..(3)
<223> / replace = "Val" / replace = "Met" / replace = "Ile" / replace =
"Cys"

<220>
<221> UNSURE
<222> (4)..(4)
<223> Xaa can be any naturally occurring amino acid, preferably one of
Leu, Ser, Ile, Val, Gln or Met

<220>
<221> VARIANT
<222> (5)..(5)
<223> / replace = "Phe"

<220>
<221> VARIANT
<222> (6)..(6)
<223> / replace = "Val" / replace = "Met" / replace = "Thr" / replace =
"Ala"

<220>
<221> VARIANT
<222> (7)..(7)
<223> / replace = "Pro" / replace = "Tyr" / replace = "Met" / replace =
"Phe"

<220>
<221> VARIANT
<222> (8)..(8)
<223> / replace = "Glu" / replace = "Ser" / replace = "His"

<220>
<221> VARIANT
<222> (9)..(9)
<223> / replace = "Ala"

<220>
<221> UNSURE
<222> (10)..(10)
<223> Xaa can be any naturally occurring amino acid, preferably one of
Ala, Val, Pro, Gly, Ser, Thr or Trp

```

```

<220>
<221> VARIANT
<222> (11)..(11)
<223> / replace = "Ser" / replace = "Glu" / replace = "Ala"

<400> 87
Ala Met Leu Xaa Trp Ile Leu Asp Pro Xaa Gly Arg Asp Ala
1          5          10

<210> 88
<211> 19
<212> PRT
<213> Artificial sequence

<220>
<223> signature sequence 2

<220>
<221> VARIANT
<222> (2)..(2)
<223> /replace = "Ile" /replace = "Val" /replace = "Cys" /replace =
"Gly"

<220>
<221> UNSURE
<222> (3)..(3)
<223> Xaa can be any naturally occurring amino acid, preferably one of
Lys, Arg, Gln, Ser, Glu, Ala or Met

<220>
<221> VARIANT
<222> (5)..(5)
<223> /replace = "Arg" /replace = "Trp" /replace = "Met"

<220>
<221> VARIANT
<222> (7)..(7)
<223> /replace = "Thr" /replace = "Val"

<220>
<221> VARIANT
<222> (8)..(8)
<223> /replace = "Asn"

<220>
<221> VARIANT
<222> (9)..(9)
<223> /replace = "Ala" /replace = "Thr" /replace = "Glu"

<220>
<221> UNSURE
<222> (10)..(10)
<223> Xaa can be any naturally occurring amino acid, preferably one of

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Thr, Ser, Lys, Asn, Gly, Asp, Ala, Glu, Gln, or Arg

```
<220>
<221> VARIANT
<222> (11)..(11)
<223> /replace = "Ala" /replace = "Val" /replace = "Leu" /replace =
      "Met"

<220>
<221> VARIANT
<222> (12)..(12)
<223> /replace = "Ile" /replace = "Leu"

<220>
<221> VARIANT
<222> (13)..(13)
<223> /replace = "Thr"

<220>
<221> UNSURE
<222> (14)..(14)
<223> Xaa can be any naturally occurring amino acid, preferably one of
      Asn, Ala, Arg, Glu, Asp, Ser or Gln

<220>
<221> VARIANT
<222> (15)..(15)
<223> /replace = "Val" /replace = "Thr"

<220>
<221> VARIANT
<222> (17)..(17)
<223> /replace = "Ala" /replace = "Gly"

<220>
<221> VARIANT
<222> (18)..(18)
<223> /replace = "Gln" /replace = "Lys"

<220>
<221> VARIANT
<222> (19)..(19)
<223> /replace = "Ser"

<400> 88
Ala Phe Xaa Gly Phe Gly Cys Asp Ser Xaa Thr Val Ile Xaa Ile Leu
1          5          10          15
Thr His Arg
```

```
<210> 89
<211> 17
<212> PRT
<213> Artificial sequence
```

```

<220>
<223> signature sequence 3

<220>
<221> VARIANT
<222> (1)..(1)
<223> /replace = "Ser"

<220>
<221> VARIANT
<222> (2)..(2)
<223> /replace = "Asn" /replace = "Glu" /replace = "Thr"

<220>
<221> VARIANT
<222> (3)..(3)
<223> /replace = "Glu" /replace = "Lys"

<220>
<221> UNSURE
<222> (4)..(4)
<223> Xaa can be any naturally occurring amino acid, preferably one of
      Ser Thr, Asp, Glu, Trp, Asn or Lys

<220>
<221> UNSURE
<222> (5)..(5)
<223> Xaa can be any naturally occurring amino acid, preferably one of
      Thr, Ala, Ser, Met, His, Asp, Gly, or Trp

<220>
<221> VARIANT
<222> (7)..(7)
<223> /replace = "Thr" /replace = "Ser" /replace = "Asn"

<220>
<221> VARIANT
<222> (9)..(9)
<223> /replace = "Ile" /replace = "Ala" /replace = "Gly"

<220>
<221> VARIANT
<222> (10)..(10)
<223> /replace = "Ile" /replace = "Phe"

<220>
<221> VARIANT
<222> (11)..(11)
<223> /replace = "Thr" /replace = "Cys" /replace = "Ser" /replace =
      "Ala"

<220>
<221> VARIANT

```

```

<222> (12)..(12)
<223> /replace = "Ser"

<220>
<221> VARIANT
<222> (14)..(14)
<223> /replace = "Ala"

<220>
<221> VARIANT
<222> (15)..(15)
<223> /replace = "Asp"

<220>
<221> VARIANT
<222> (16)..(16)
<223> /replace = "Val" /replace = "Phe" /replace = "Leu" /replace =
      "Lys" /replace = "His"

<220>
<221> VARIANT
<222> (17)..(17)
<223> /replace = "Ser"

<400> 89
Thr Asp Asp Xaa Xaa Leu Ile Arg Val Val Val Thr Arg Thr Glu Ile
1          5          10          15
Asp

<210> 90
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> signtaure sequence 4

<220>
<221> VARIANT
<222> (1)..(1)
<223> /replace = "His"

<220>
<221> VARIANT
<222> (2)..(2)
<223> /replace = "Tyr"

<220>
<221> VARIANT
<222> (3)..(3)
<223> /replace = "Glu" /replace = "Val" /replace = "Ser"

<220>

```

```

<221> VARIANT
<222> (4)..(4)
<223> /replace = "Glu" /replace = "Asp"

<220>
<221> VARIANT
<222> (5)..(5)
<223> /replace = "Ala" /replace = "Leu" /replace = "Ile"

<220>
<221> VARIANT
<222> (6)..(6)
<223> /replace = "Val" /replace = "Ile"

<220>
<221> VARIANT
<222> (7)..(7)
<223> /replace = "His" /replace = "Asp"

<220>
<221> UNSURE
<222> (8)..(8)
<223> Xaa can be any naturally occurring amino acid, preferably one of
      Lys, Glu, Asp, Thr, Leu, Ser, Gln, Arg, Asn or Ala

<220>
<221> VARIANT
<222> (9)..(9)
<223> /replace = "Ala"

<220>
<221> VARIANT
<222> (10)..(10)
<223> /replace = "Ile" /replace = "Leu"

<400> 90
Tyr Phe Ala Lys Val Leu Arg Xaa Ser Met
1           5           10

<210> 91
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> signature sequence 5

<220>
<221> VARIANT
<222> (1)..(1)
<223> /replace = "Gly" /replace = "Lys" /replace = "Ser"

<220>
<221> VARIANT

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<222> (2)..(2)
<223> /replace = "Ile" /replace = "Met"

<220>
<221> VARIANT
<222> (4)..(4)
<223> /replace = "Glu"

<220>
<221> VARIANT
<222> (5)..(5)
<223> /replace = "His"

<220>
<221> VARIANT
<222> (6)..(6)
<223> /replace = "Val" /replace = "Leu"

<220>
<221> VARIANT
<222> (7)..(7)
<223> /replace = "Ala" /replace = "Glu"

<400> 91
Tyr Leu Glu His Asp Ile Gly
1 5

<210> 92
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> signature sequence 6

<220>
<221> VARIANT
<222> (1)..(1)
<223> /replace = "Leu" /replace = "Val" /replace = "Ile" /replace =
"Thr"

<220>
<221> VARIANT
<222> (2)..(2)
<223> /replace = "Leu" /replace = "Val"

<220>
<221> VARIANT
<222> (3)..(3)
<223> /replace = "Gln" /replace = "Tyr"

<220>
<221> VARIANT
<222> (4)..(4)

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```

<223> /replace = "Val"

<220>
<221> VARIANT
<222> (5)..(5)
<223> /replace = "Leu" /replace = "Val" /replace = "Ile"

<220>
<221> VARIANT
<222> (6)..(6)
<223> /replace = "Ser" /replace = "Gly" /replace = "Ala"

<220>
<221> VARIANT
<222> (7)..(7)
<223> /replace = "Asp" /replace = "Thr"

<400> 92
Phe Ile Arg Ile Phe Thr Glu Arg Ser
1 5

<210> 93
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> signature sequence 7

<220>
<221> VARIANT
<222> (2)..(2)
<223> /replace = "Lys" /replace = "Met" /replace = "Glu" /replace =
"Gln"

<220>
<221> UNSURE
<222> (3)..(3)
<223> Xaa can be any naturally occurring amino acid, preferably one of
Thr, Asp, Asn, Lys, Ser, Arg or Ala

<220>
<221> VARIANT
<222> (4)..(4)
<223> /replace = "Thr" /replace = "Leu" /replace = "Met" /replace =
"Ile"

<220>
<221> VARIANT
<222> (5)..(5)
<223> /replace = "Ile"

<220>
<221> VARIANT

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```

<222> (6)..(6)
<223> /replace = "Ile" /replace = "Val"

<220>
<221> VARIANT
<222> (7)..(7)
<223> /replace = "Thr" /replace = "Val" /replace = "Ala"

<220>
<221> VARIANT
<222> (9)..(9)
<223> /replace = "Ile" /replace = "Leu" /replace = "Ala" /replace =
"Met"

<220>
<221> VARIANT
<222> (10)..(10)
<223> /replace = "Ser"

<400> 93
Tyr Arg Xaa Phe Leu Leu Ser Leu Val Gly
1          5          10

<210> 94
<211> 2194
<212> DNA
<213> Oryza sativa

<400> 94
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aaatataaaaa tgagacctta tatatgtagc gctgataact agaactatgc aagaaaaaact    120
catccaccta ctttagtggc aatcgggcta aataaaaaag agtcgctaca ctagtttcgt      180
tttccttagt aattaagtgg gaaaatgaaa tcattattgc ttagaatata cgttcacatc      240
tctgtcatga agttaatta ttcgaggtag ccataattgt catcaaactc ttcttgaata      300
aaaaaatcct tctagctgaa ctcaatgggt aaagagagag atttttttta aaaaaataga      360
atgaagatat tctgaacgta ttggcaaaga tttaaacata taattatata attttatagt      420
ttgtgcattc gtcatatcgc acatcattaa ggacatgtct tactccatcc caatttttat      480
ttagtaatta aagacaattg acttattttt attattttatc ttttttcgat tagatgcaag      540
gtacttacgc acacactttg tgctcatgtg catgtgtgag tgcacctcct caatacacgt      600
tcaactagca acacatctct aatatcactc gcctatttaa tacatttagg tagcaatatc      660
tgaattcaag cactccacca tcaccagacc acttttaata atatctaaaa taaaaaaat      720
aattttacag aatagcatga aaagtatgaa acgaaactatt taggtttttc acatacaaaa      780
aaaaaaagaa ttttgctcgt gcgcgagcgc caatctccca tattgggcac acaggcaaca      840
acagagtggc tgcccacaga acaaccaca aaaaacgatg atctaacgga ggacagcaag      900
tccgcaacaa ccttttaaca gcaggctttg cggccaggag agaggaggag aggcaaagaa      960
aaccaagcat cctccttctc ccatctataa attcctcccc ccttttcccc tctctatata    1020
ggaggcatcc aagccaagaa gagggagagc accaaggaca cgcgactagc agaagccgag    1080
cgaccgcctt ctgatccat atcttcgggt cgagttcttg gtcgatctct tcctcctctc    1140
acctcctcct cacagggtat gtgcctccct tcggttggtt ttggatttat tgttctaggt    1200
tgtgtagtagc gggcgttgat gttaggaaag gggatctgta tctgtgatga ttctgttct    1260
tggatttggg atagaggggt tcttgatggt gcatgttatc ggttcgggtt gattagtagt    1320
atggttttca atcgtctgga gagctctatg gaaatgaaat ggtttaggga tcggaatcct    1380
gcgattttgt gagtaccttt tgtttgaggt aaaatcagag caccggtgat tttgcttggt    1440
gtaataaagt acggttggtt ggtcctcgat tctggtagtg atgcttctcg atttgacgaa    1500

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gctatccttt	gtttattccc	tattgaacaa	aaataatcca	actttgaaga	cggtcccgtt	1560
gatgagattg	aatgattgat	tcttaagcct	gtccaaaatt	tcgcagctgg	cttgtttaga	1620
tacagtagtc	cccatcacga	aattcatgga	aacagttata	atcctcagga	acaggggatt	1680
ccctgttctt	ccgatttgct	ttagtccag	aatTTTTTTT	cccaaatac	ttaaaaagtc	1740
actttctggt	tcagttcaat	gaattgattg	ctacaaataa	tgcttttata	gcgttatcct	1800
agctgtagtt	cagttaatag	gtaatacccc	tatagtttag	tcaggagaag	aacttatccg	1860
atttctgata	tccattttta	attatatgaa	atgaactgta	gcataagcag	tattcatttg	1920
gattatTTTT	tttatttagct	ctcaccctt	cattattctg	agctgaaagt	ctggcatgaa	1980
ctgtcctcaa	ttttgttttc	aaattcacat	cgattatcta	tgcatatatc	tcttgatatc	2040
acctgtagaa	gtttcttttt	ggttattcct	tgactgcttg	attacagaaa	gaaatttatg	2100
aagctgtaat	cgggtagatt	atactgcttg	ttcttatgat	tcatttcctt	tgtgcagttc	2160
ttggtgtagc	ttgccacttt	caccagcaaa	gttc			2194

<210> 95
 <211> 1244
 <212> DNA
 <213> *Oryza sativa*

<400> 95						
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gttttccgat	cgagggacga	aaatcggatt	cggtgtaaag	ttaagggacc	tcagatgaac	120
ttattccgga	gcagatttgg	gaaggaggga	cataaggccc	atgtcgcatt	tggttggaag	180
gtccagatct	ccagatcact	cagcaggatc	ggccgcgttc	gcgtagcacc	cgcggtttga	240
ttcggcttcc	cgcaaggcgg	cgcccggttg	ccgtgcgcgc	gtagcttccg	ccggaagcga	300
gcacgcgcgc	gccgcgcgac	cggtctctgc	tttgcaccgc	cttgcacgcg	atacatcgga	360
atagatagct	actactctct	ccgtttcaca	atgtaaatca	ttctactatt	ttccacattc	420
atattgatgt	taatgaatat	agacatatat	atctatttag	attcattaac	atcaatatga	480
atgtaggaaa	tgctagaatg	acttacattg	tgaattgtga	aatggacgaa	gtacctacga	540
tggtatgatg	caggatcatg	aaagaattaa	tgcaagatcg	tatctgccgc	atgcaaaatc	600
ttactaattg	cgtctgatat	atgcattgac	gcctgcattg	ggcgtgttaa	gcgtgttcat	660
ccattaggaa	gtaaccttgt	cattacttat	accagtacta	catactatat	agtattgatt	720
tcattagcaa	atctacaaaa	ctggaaagca	ataagaaata	cgggactgga	aaagactcaa	780
cattaatcac	caaataattt	gccttctcca	gcagaatata	tatctctcca	tcttgatcac	840
tgtacacact	gacagtgtac	gcataaacgc	agcagccagc	ttaactgtcg	tctcaccgtc	900
gcacactggc	cttccatctc	aggctagctt	tctcagccac	ccatcgtaca	tgtaactcgc	960
gcgcgcgcac	aggcacaagt	tacgtacaaa	acgcattgac	aaatcaaaac	caccggagaa	1020
gaatcgctcc	cgcgcgcggc	ggcgacgcgc	acgtacgaac	gcacgcacgc	acgcccaccc	1080
ccacgacacg	atcgcgcgcg	acgcgcgcgc	caccggccgt	ccacccgcgc	cctcacctcg	1140
ccgactataa	atacgtaggc	atctgcttga	tcttgtcatc	catctcacca	ccaaaaaaa	1200
aaggaaaaaa	aaacaaaaca	caccaagcca	aataaaagcg	acaa		1244

<210> 96
 <211> 1141
 <212> DNA
 <213> *Gossypium hirsutum*

<400> 96						
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aatgagggct	taatcataga	tatattgggt	cacagaaatg	ccgagcaacg	aaacttgatt	180
cgaaaaacct	acgtgaaac	ctatggagag	gatctctcca	aggcactaga	caaggagctc	240
tcgaatgact	ttgagaggct	ggttttgctt	tggtctcttg	atcctgctga	acgtgatgcc	300
cttttggtcta	atgaagccac	caaaagggtg	acttcaagca	atcaggctct	tatggaaata	360
gcttgacaaa	ggtctgccaa	ccaactgctt	cacgcaaggc	aggcttatca	tgctcggtat	420

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aagaagtcgc ttgaagagga tgttgctcat cacacgactg gcgacttccg taagctcctc 480
ctacctctag tgagttcata cagatatgag ggagaggagg tgaacatgaa tctggcgaaa 540
acagaggcga agttgcttca tgagaaaatt tcagacaaaag cttacagtga tgacgatgtc 600
ataagggttt tggctacaag aagcaaggca cagatcaatg caactctgaa tcactacaaa 660
aatgaatatg gaaatgacat aaacaaggac ttgaaggctg atcctaagga tgagttcctt 720
gcactactaa ggtccacagt gaagtgcttg gtctatccgg aaaagtattt tgagaagggtt 780
cttcgcctag caatcaatag acgaggaacg gatgaaggag ctcttactag agttgtttgc 840
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ccactgactc gtgccattgt caaggacact catggagact atgaaaaaatt gctgctggta 960
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gtttatgacc aaactataat ggtctagtgt ggttattgat gttttcctgt ttttctatgt 1080
agtattgcga gttatatgct atccaagaat tcgaagtcta tttaaaaaaa aaaaaaaaaa 1140
a 1141

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<210> 97
 <211> 316
 <212> PRT
 <213> Gossypium hirsutum

<400> 97

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

PF59233.ST25.txt

Glu Val Asp Leu Lys Ile Ile Ala Asp Glu Tyr Gln Arg Arg Asn Ser
 275 280 285
 Val Pro Leu Thr Arg Ala Ile Val Lys Asp Thr His Gly Asp Tyr Glu
 290 295 300
 Lys Leu Leu Leu Val Leu Ala Gly His Val Glu Asn
 305 310 315

<210> 98
 <211> 1112
 <212> DNA
 <213> *Lavatera thuringiaca*

<400> 98
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 caggaaagcc ttctcaggat ggggaactaa tgaggactta atcataaata tattgggtca 120
 ccgaaatgcg gacgaacgaa actcgattcg aaaagcttat actgaaaccc atggagaaga 180
 tctcctcaag gcaactggaca aggaactctc aaatgacttt gagaggctgg ttctgctttg 240
 gactcttgat cctcctgaac gtgatgcact tttggcaaat gaagccacca aaagtgggac 300
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 cgcgaggcag gcttatcatg ttcggttataa gaaatcgctt gaagaggatg ttgcccatca 420
 cacaactggc gacttccgta agcttctcct acctcttggt agtccataca gatacgaggg 480
 agatgaagtg aacatgactc tggcgaaaac agaggccaag ttactccatg agaaaatctc 540
 aaacaaagct tacagtgatg acgatgtcat cagggttttg gctacgagaa gcaagtcaca 600
 gatcaacgaa cgtcttaatc actacaaaaa tgaatacgca actgatataa acaaggacct 660
 gaaggctgac cctaaggatg agttccttgc actgctaagg tccacagtga agtgcttggt 720
 ctaccctgaa aagtatttcg agaaggttct tcgtctagca atcaataaac gaggaacgga 780
 tgaaggagct cttacgaggg ttgtttccac cagggtctgag gttgatctaa agatcatagc 840
 agatgagtac cagcgaagga acagtgtccc actgactcgt gctattgtca aggacactaa 900
 tggagactac gaaaaattgc tgctggtact tgctggagag gtggaggctt gaaccggttt 960
 tcatgagatg attttgtggt gaataaaaaa ttaatgaccg gaactctaatt ggtctagtgt 1020
 tgctattatg ttatcctggt ttttttcttc tatggtactg tgagttttat gcaataaagg 1080
 cttgttattt agaaaaaaaa aaaaaaaaaa aa 1112

<210> 99
 <211> 316
 <212> PRT
 <213> *Lavatera thuringiaca*

<400> 99
 Met Ala Thr Leu Thr Val Pro Ser Thr Leu Pro Ser Val Ser Glu Asp
 1 5 10 15
 Cys Glu Gln Leu Arg Lys Ala Phe Ser Gly Trp Gly Thr Asn Glu Asp
 20 25 30
 Leu Ile Ile Asn Ile Leu Gly His Arg Asn Ala Asp Glu Arg Asn Ser
 35 40 45
 Ile Arg Lys Ala Tyr Thr Glu Thr His Gly Glu Asp Leu Leu Lys Ala
 50 55 60
 Leu Asp Lys Glu Leu Ser Asn Asp Phe Glu Arg Leu Val Leu Leu Trp
 65 70 75 80
 Thr Leu Asp Pro Pro Glu Arg Asp Ala Leu Leu Ala Asn Glu Ala Thr
 85 90 95
 Lys Arg Trp Thr Ser Ser Asn Gln Val Ile Met Glu Ile Ala Cys Arg
 100 105 110
 Ser Ser Ser Asp Gln Leu Leu Arg Ala Arg Gln Ala Tyr His Val Arg

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

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<210> 100
 <211> 2040
 <212> DNA
 <213> Brassica rapa

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<400> 100
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gtcaaacaag cttaccaagc acgttacaag aaatctctag aggaagatgt tgcgcaacac 420
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gagtgggcac taacccgagt tgtgactaca cgaactgaag ttgatatgga acgtatcaaa 840
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tccttctcct ccagagccgg gtctagcgtc aattcacctg ctctctctct atcaatttat 1260
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PF59233.ST25.txt

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gtaaggccaa ttgtgcggcg cattattctc acctcttttt ctgttggtgga gatcacttta 1680
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tgcagtttac tcaactggtt gttactttat ggagcggtcc gtacggggcc tgaagggtgca 1800
atcgagacta cttcggtttt tcttggttgg gaagactgtc tttcaacgtc acttggtgact 1860
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aattcgctgt caacttcata tgaagattta ttatgcttgt ttctaattgc tattatagtt 1980
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<210> 101
 <211> 679
 <212> PRT
 <213> Brassica rapa

<400> 101

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Ala	Glu	Gln	Leu	His	Lys	Ala	Phe	Ala	Gly	Trp	Gly	Thr	Asn	Glu
			20					25					30	Lys
Leu	Ile	Ile	Ser	Ile	Leu	Ala	His	Arg	Thr	Ser	Ala	Gln	Arg	Ser
			35				40					45		Leu
Ile	Arg	Ser	Ala	Tyr	Ala	Ala	Ala	Tyr	Asn	Glu	Asp	Leu	Leu	Lys
			50				55				60			Ala
Leu	Asp	Lys	Glu	Leu	Ser	Ser	Asp	Phe	Glu	Arg	Val	Val	Met	Leu
65							70			75				80
Thr	Leu	Asp	Pro	Ala	Glu	Arg	Asp	Ala	Phe	Leu	Ala	Lys	Glu	Ser
							85			90				95
Lys	Met	Phe	Thr	Lys	Asn	Asn	Trp	Val	Leu	Val	Glu	Ile	Ala	Cys
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Arg	Cys	Pro	Leu	Asp	Leu	Phe	Lys	Val	Lys	Gln	Ala	Tyr	Gln	Ala
														125
Tyr	Lys	Lys	Ser	Leu	Glu	Glu	Asp	Val	Ala	Gln	His	Thr	Ser	Gly
														140
Leu	Arg	Lys	Leu	Leu	Leu	Pro	Leu	Val	Ser	Thr	Phe	Arg	Tyr	Glu
145														160
Asp	Glu	Val	Asn	Met	Arg	Leu	Ala	Arg	Ser	Glu	Ala	Lys	Leu	Leu
														175
Glu	Lys	Val	Ser	Glu	Lys	Ala	Phe	Ser	Asp	Asp	Asp	Phe	Ile	Arg
														190
Leu	Thr	Thr	Arg	Ser	Lys	Ala	Gln	Leu	Gly	Ala	Thr	Leu	Asn	His
														205
Asn	Asn	Glu	Tyr	Gly	Asn	Ala	Ile	Asn	Lys	His	Leu	Lys	Glu	Asp
														220
Asp	Asp	Glu	Tyr	Leu	Lys	Leu	Leu	Arg	Ala	Ala	Ile	Thr	Cys	Leu
225														240
Tyr	Pro	Glu	Lys	His	Phe	Glu	Lys	Val	Leu	Arg	Leu	Ala	Ile	Asn
														255
Met	Gly	Thr	Asp	Glu	Trp	Ala	Leu	Thr	Arg	Val	Val	Thr	Thr	Arg
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Glu	Val	Asp	Met	Glu	Arg	Ile	Lys	Glu	Glu	Tyr	Gln	Arg	Arg	Asn

PF59233.ST25.txt

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      290              295              300
Asp Met Leu Val Ser Leu Leu Gly His Gly Asp Glu Gly Thr Leu Asp
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Gly Ser Phe Ala Gly Asp Lys Arg Leu Gly Phe Ser Ser Ser Ser Gln
      325              330              335
Ser Ser Arg Arg Leu Ala Leu Ser Gly Gly Ser Ser Leu Gln Gln Arg
      340              345              350
Ile Glu Arg Thr Leu Leu Pro Leu Leu Ser Gly Tyr Arg Arg Gln
      355              360              365
Ala Pro Val Asn Ser Pro Leu Thr Ala Pro Asp Met Ser Arg Phe Cys
      370              375              380
Arg Ser Glu Glu Pro Ser Gly Ser Leu Gly Leu Ser Ser Phe Gly Gly
385              390              395              400
Ser Phe Leu Thr Arg Ala Gly Ser Ser Val Asn Ser Pro Ala Pro Leu
      405              410              415
Ser Ser Ile Tyr Val Asn Pro Ala Thr Asp Val Gly Gly Thr Pro Leu
      420              425              430
Arg Arg Pro Asp Leu Phe Leu Lys Ser Leu Arg Arg Gln Ala Ser Ser
      435              440              445
Ser Asp Ile Pro Leu Pro Arg Ser Ile Leu Ser Ile Leu His Val Trp
      450              455              460
Pro Pro Pro Pro Phe Arg Leu Cys Lys Leu Gly Leu Lys Arg Leu His
465              470              475              480
Glu Asp Pro Tyr His Gln Pro Leu Gln Thr Tyr Leu Leu Ser Gln Arg
      485              490              495
Phe Ala Asn Leu Ala Ser Asp Val Gly Gly Asn Ser Leu Arg His Thr
      500              505              510
Val Leu Ser His Met Phe Met Asn Met Thr Ser Asp Val Ser Gly Asn
      515              520              525
Pro Leu Arg Pro Pro Ala Leu Ser His Gln Lys Leu Val Arg Pro Ile
      530              535              540
Cys Arg Arg Ile Ile Leu Thr Ser Phe Ser Val Val Glu Ile Thr Leu
545              550              555              560
Leu Pro Cys Leu Pro Ser Met Asn Gly Glu Asn Phe Ser Asp Ser Phe
      565              570              575
Pro Ser Phe Ser Cys Ser Leu Leu Thr Gly Leu Leu Leu Tyr Gly Ala
      580              585              590
Val Arg Thr Gly Pro Glu Gly Ala Ile Glu Thr Thr Ser Val Phe Leu
      595              600              605
Val Gly Glu Asp Cys Leu Ser Thr Ser Leu Val Thr Ile Ser Gln Leu
      610              615              620
Ser Asn Phe Ala Val Glu Ala Leu Leu Thr His Ser Asn Leu Ile Leu
625              630              635              640
Asn Ser Leu Ser Thr Ser Tyr Glu Asp Leu Leu Cys Leu Phe Leu Ile
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Ala Ile Ile Val His Glu Leu Ser Thr Arg Gly Cys Leu Val Leu Phe
      660              665              670
Trp Leu Cys Ser Pro Cys Ile
      675

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<210> 102
<211> 1146

PF59233.ST25.txt

<212> DNA

<213> *Gossypium hirsutum*

<400> 102

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ggaatgcagc acagcgcaat tcaattcgga aagtttatgg tgaagcttat ggggaagatc      180
ttctcaagtg tttggagaag gaacttacaa gtgatttcga gcgggctgtg ctgcttttta      240
cgttggaccc tgcagagcga gatgctcatc tggctaataa agctacaaag aagttcacat      300
caagcaattg gatttctcat gagatagctt gcagtaggtc ttcgcatgaa ctactcaatg      360
tgaaaaaggc gtatcatgct cgttataaga aatcccttga agaagatggt gctcaccaca      420
ctaccggaga gtaccgcaag cttttggtcc ctcttggttag tgcattccga tatgagggag      480
aggaggtgaa catgacattg gcaaaatctg aggctaagat acttcatgat aaaatttcgg      540
acaagcatta taccgatgag gaggtgatta ggattgtatc aacaaggagt aaggcacagc      600
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aggctgatcc cagtgatgaa ttctcctcaat tactaagagc tgtgatcaag tgcttgacca      720
ccccagagca atatttcgag aaggttttac gtcaagccat caataagttg ggatccgatg      780
aatgggctct taccgagatc gtcacaactc gtgcagaggt cgacatggta cgtattaagg      840
aggcatatca acgaagaaac agcatccctc tcgaacaagc aattgctaaa gatacttcgg      900
gtgactatga gaagtttctt cttgccttga tcggagctgg agatgcatga accgtcttcg      960
gtattaagtt cctctgtatg aatgtttagt ttgccttata cgctatgact taataattta     1020
tgcttggttt ttcatcgttt tcattatcta aagcattgct tgcttccatg atagaacatt     1080
caaaataaaa tgattgagtt cgttttaaaa aaaaaaaaaa aaaaaaaagg aaaaaaaaaa     1140
aaaaaa                                           1146

```

<210> 103

<211> 315

<212> PRT

<213> *Gossypium hirsutum*

<400> 103

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

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

<210>	104
<211>	1180
<212>	DNA
<213>	Capsicum annuum

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ggatctactt	aaagagcttg	acagagaact	tacccatgat	tttgagaaat	tgtgtgctagt		240
gtggacgttg	gaccccttcag	aacgtgatgc	tcatttggtc	aaaggaagcta	ctaagagatg		300
gacaaaaagc	aactttgttc	ttgtggagct	agcttgtagc	agatcgcccta	aagaactggt		360
tttggtcagg	gaagccttatc	atgcacgtta	caagaaatct	cttgaagagg	atgttgcccta		420
tcacactact	ggggatcacc	gcaagctttt	ggtacctctt	gtgagctcct	accgatatgg		480
aggagaggag	gtggacttgc	gccttgctaa	agcagaatct	aaaattctgc	atgagaagat		540
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gcaactcaat	gctactttga	atcattacaa	agatgaacat	ggtgaggata	tcctaaagca		660
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cccgagcac	ctttttgtgg	aggttcttcg	tgatgcaatc	aacaggagag	ggacagagga		780
agatcatctg	acaagagtta	ttgctacaag	ggctgaggtc	gatctgaaga	ttatcgctga		840
tgagtaccag	aagagggata	gcattcccct	gggtcgcgcc	attgccaaag	atacaagagg		900
agattatgag	agtatgctgt	tggctttgct	tggacaagag	gaggactgag	gaggatttgg		960
ccacttatgt	tttacaatga	caagaataaa	tatgccatcc	cctatatgag	aattggcatc		1020
cgttgtatgt	ttgatgattg	agtgtggtct	gtttatgagc	ttttagtccct	tttttcttct		1080
cgtgagaaac	ttctaatatg	caacttttgt	ctgtctacat	atgttttcta	ataatatgca		1140
tcqattagtt	ctaaaaaaaa	aaaaaaaaaaaa	aaaaaaaaaaaa				1180

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<210> 105
<211> 322
<212> PRT
<213> Capsicum annuum
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[illegible]

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<210> 106
<211> 1197
<212> DNA
<213> Nicotiana tabacum
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ctcatccgaa	ttatttctac	taggagtaaa	gcacagctga	atgcaacatt	caaccactac	660
cttgaccaac	atggcagtga	aatcaacaag	gatctggaaa	ctgattctga	tgatgagtag	720
ctgaaattac	tcagcgcagc	aatagaatgc	ttgaaaaccc	cagagaaaca	ctttgagaaa	780
gttcttcgat	tggctatcaa	gggtacaggc	acagacgaat	gggaccttac	tagagttgtc	840
actactcggg	ctgaagttga	catggaacgt	atcaaagaag	agtaccataa	gaggaacagt	900
gttccattgg	accgtgcaat	tgctggagac	acttcaggag	actatgaaag	gatgcttctg	960
gcttttgattg	ggcatggaga	tgcttgaatg	gaatatgtgt	tctaagattg	gataagaaac	1020
tatttcctaa	tgtctgaagt	ttgaatttgt	ttgatgatgt	gtgcatgtat	gccagagttt	1080
tggtttgcat	tatatggatt	taaataatcc	aggtgttgtg	ttttgttttt	ttcttcactt	1140
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<210> 107

<211> 316

<212> PRT

<213> Nicotiana tabacum

<400> 107

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

PF59233.ST25.txt

275	280	285
Val Pro Leu Asp Arg Ala Ile Ala Gly Asp Thr Ser Gly Asp Tyr Glu		
290	295	300
Arg Met Leu Leu Ala Leu Ile Gly His Gly Asp Ala		
305	310	315

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 <211> 1086
 <212> DNA
 <213> *Gossypium hirsutum*

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 atgggggtaca aatgagcaat tgattatcga catTTTggct cacaggaatg cagctcagcg 180
 caatttgatt cgtaaaactt atcgtgaagc ttatggggaa gatctcctta agtctttgga 240
 tgaggaactt tcaagtgact ttgagcgagc tgtggtgctg tttacttttg accctgcaga 300
 gcgtgatgca tttctggctc atgaagctac aaagaggttc acatcaagcc attgggttct 360
 catggaaatt gcttgacta ggtcttcaca tgaactgttc aatgtgagga aggcgtatca 420
 cgatctttac aagaaatccc ttgaagaaga tgttgccgac cataccaagg gagactaccg 480
 caagcttttg gtccacttg ttagtgcatc ccgataccag ggagaggagg tgaacatgac 540
 actggcaagg tcggaggcaa agatacttcg tgagaagata tcagacaagc agtacagtga 600
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 cgaattcctc aaattgctga gagctgcaat caagtgcctg actgtccctg agaaatattt 780
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 gctgcttgcg ttgattggag ctggagacgt ctgagctgct ttcctatatt gagttgttgg 1020
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<210> 109
 <211> 316
 <212> PRT
 <213> *Gossypium hirsutum*

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

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

<210> 110
 <211> 1196
 <212> DNA
 <213> Nicotiana tabacum

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aggatgggga acaaatgaga agttgatcat atcaattttg gctcatagaa atgctgctca	180
acgcaagttg attcaacaga cttatgctga gacttttggg gaagatctcc ttaaagagtt	240
ggacagagaa cttaccaatg attttgagaa attggtggtg gtgtggacat tggatccttc	300
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gaaccattac aaagatgaat atgaagaaga tatcctgaag caattggaag agggggatga	720
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gttggtctctg cttggacaag aggaggacta agaaggtttt gcttctgttt cataatgacc	1020
agaataaaca tgctatcccc tatatttgag agttggcatc cgttgatgc ttgatgatta	1080
agcgtggtct gtttaacgtg agcttttagt ccttttcttc ttgtgataaa ctttgaatgt	1140
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<210> 111
 <211> 314

PF59233.ST25.txt

<212> PRT

<213> Nicotiana tabacum

<400> 111

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

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<210> 112

<211> 945

<212> DNA

<213> Solanum tuberosum

<400> 112

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atggcaagtc ttacagttcc ggcagaagtt ccttccgtag ctgaagactg tgaacaactc      60
cgatctgcct tcaaaggatg gggaacgaac gagaagttga ttatatcaat tttggctcat      120
agaaatgctg ctcagcgcaa attgattcga cagacttatg ctgaaacttt tggggaagat      180

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PF59233.ST25.txt

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ctacttaaag agttggacag agaacttacc catgattttg agaaattggt gctaatatgg 240
acactggatc cgtcagaacg tgatgcctat ttggctaagg aagctactaa gagatggaca 300
aaaagcaact ttgttcttgt ggagatagct tgtactagat ctctaaaga actggttttg 360
gcaagggaag cttatcatgc tcgtaacaag aaatctcttg aagaggacgt tgcttatcac 420
actactgggg atcaccgcaa gcttttggtt cctcttgtga gtcctaccg atatggagga 480
gacgaggtgg acttgcgctt tgctaaagca gaatctaaag tactgcatga gaagatctcc 540
gataaggctt acagtgcgca tgaggtcatt agaatttttag ccacaaggag caaagcgcaa 600
ctcaatgcta ctttgaatca ttacaaagat gaatatggtg aggatatcct aaagcaattg 660
gaagatgagg atgagtttgt tgcactattg agggccacca taaaagggtct tgtctaccct 720
gagcactatt tcgtggaggt tcttcgtgat gcaattaaca ggagaggaac agaggaagat 780
catctgagcc gagttatcgc tacaagggct gaggtggatc tgaagactat cgctaacgag 840
taccagaaga gggatagcat tcctctgggt cgcgccattg ccaaagatac aggaggagat 900
tatgagaata tgctggtggc ttctacttga caagaggagg aatga 945

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<210> 113
 <211> 314
 <212> PRT
 <213> Solanum tuberosum

<400> 113

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

PF59233.ST25.txt

Asp Leu Lys Thr Ile Ala Asn Glu Tyr Gln Lys Arg Asp Ser Ile Pro
 275 280 285
 Leu Gly Arg Ala Ile Ala Lys Asp Thr Gly Gly Asp Tyr Glu Asn Met
 290 295 300
 Leu Val Ala Leu Leu Gly Gln Glu Glu Glu
 305 310

<210> 114
 <211> 1160
 <212> DNA
 <213> Lycopersicon esculentum

<400> 114
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 cgatctgcct tcaaaggatg gggaacgaat gagaagttga ttatatcaat tttggctcat 120
 agaaatgcgg ctcaacgcaa attgattcga cagacttatg ctgagacttt tggggaagat 180
 ctgctttaaag agttggacag agaacttact catgattttg agaaattggt ggtagtatgg 240
 acactggatc ctgcagaacg tgatgcctat ttggctaagg aagctactaa gagatggaca 300
 aaaagcaact ttgttcttgt ggagatagct tgtaccagat ctccataaga actggttttg 360
 gcaagagaag cttatcatgc tcgtaacaag aaatctctcg aagaggacgt tgcttatcac 420
 actactgggg atcaccgcaa gcttttggtg cctcttggtg gctcctaccg atatggggga 480
 gatgaggtgg acttgcgact tgctaaagca gaatctaaag tgctgcatga gaagatctcc 540
 gataaggcct acagtgcaga tgagggtcatt agaattttag ccacaaggag caaagcgcaa 600
 ctcaatgcta ctttgaatca ttacaaagat gaatatggtg aggatatcct aaagcaatta 660
 gaagatgagg atgagtttgt tgcactgtta agggccacca taaaaggctc tgtctacccc 720
 gagcactatt tcgtggaggt tcttcgtgat gcaattaaca ggagaggaac agaggaagat 780
 catctaaccg gagttatcgc tacaagggct gaggtcgatc tgaagactat cgctaaccgag 840
 taccagaaga gggatagcgt tcctctgggt cgcgccattg ccaaagatac aggaggagat 900
 tatgagaata tgctgggtgc tttacttggg caagaggagg aataagaagc ggattggctc 960
 acttctgttt ataatgacca gataatatgc cattctccat atatttcaga gttggcatgt 1020
 gtttgatgat tgagagtggg ctgttcacat gagcttttagt ccttttcttc ttgtgagaaa 1080
 ctttgaatat gaatctttgt gctgtctaaa aatgttctct aatgatttgc atccactaaa 1140
 aaaaaaaaaa aaaaaaaaaa 1160

<210> 115
 <211> 314
 <212> PRT
 <213> Lycopersicon esculentum

<400> 115
 Met Ala Ser Leu Thr Val Pro Ala Glu Val Pro Ser Val Ala Glu Asp
 1 5 10 15
 Cys Glu Gln Leu Arg Ser Ala Phe Lys Gly Trp Gly Thr Asn Glu Lys
 20 25 30
 Leu Ile Ile Ser Ile Leu Ala His Arg Asn Ala Ala Gln Arg Lys Leu
 35 40 45
 Ile Arg Gln Thr Tyr Ala Glu Thr Phe Gly Glu Asp Leu Leu Lys Glu
 50 55 60
 Leu Asp Arg Glu Leu Thr His Asp Phe Glu Lys Leu Val Val Val Trp
 65 70 75 80
 Thr Leu Asp Pro Ala Glu Arg Asp Ala Tyr Leu Ala Lys Glu Ala Thr
 85 90 95
 Lys Arg Trp Thr Lys Ser Asn Phe Val Leu Val Glu Ile Ala Cys Thr
 100 105 110

Arg	Ser	Pro 115	Lys	Glu	Leu	Val	Leu	Ala	Arg	Glu	Ala	Tyr 125	His	Ala	Arg
Asn	Lys	Lys 130	Ser	Leu	Glu	Glu	Asp	Val	Ala	Tyr	His	Thr	Thr	Gly	Asp
His	Arg	Lys 145	Leu	Leu	Val	Pro	Leu	Val	Ser	Ser	Tyr	Arg	Tyr	Gly	Gly
Asp	Glu	Val	Asp	Leu	Arg	Leu	Ala	Lys	Ala	Glu	Ser	Lys	Val	Leu	His
Glu	Lys	Ile 180	Ser	Asp	Lys	Ala	Tyr	Ser	Asp	Asp	Glu	Val	Ile	Arg	Ile
Leu	Ala	Thr 195	Arg	Ser	Lys	Ala	Gln	Leu	Asn	Ala	Thr	Leu	Asn	His	Tyr
Lys	Asp	Glu 210	Tyr	Gly	Glu	Asp	Ile	Leu	Lys	Gln	Leu	Glu	Asp	Glu	Asp
Glu	Phe	Val	Ala	Leu	Leu	Arg	Ala	Thr	Ile	Lys	Gly	Leu	Val	Tyr	Pro
Glu	His	Tyr	Phe	Val	Glu	Val	Leu	Arg	Asp	Ala	Ile	Asn	Arg	Arg	Gly
Thr	Glu	Glu	Asp	His	Leu	Thr	Arg	Val	Ile	Ala	Thr	Arg	Ala	Glu	Val
Asp	Leu	Lys 275	Thr	Ile	Ala	Asn	Glu	Tyr	Gln	Lys	Arg	Asp	Ser	Val	Pro
Leu	Gly	Arg	Ala	Ile	Ala	Lys	Asp	Thr	Gly	Gly	Asp	Tyr	Glu	Asn	Met
Leu	Val	Ala	Leu	Leu	Gly	Gln	Glu	Glu	Glu						

<210>	116
<211>	1242
<212>	DNA
<213>	Lycopersicon esculentum

<400>	116						
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aggaatgcc	gacaacgcaa	gttaatccga	gattcttatg	ctgctgctta	tggagaggat		180
cttctcaagg	acttggaattc	tgaactgaca	agtgattttc	agcgtgtggt	gcttctctgg		240
actttgagtc	ctgctgagcg	cgacgcctac	ttgggttaatg	aggctaccaa	acgtctgact		300
gctagcaatt	ggggatatcat	ggaaattgct	tgtaccaggt	cttctgatga	tctttttaag		360
gcgaggcg	cctaccatgc	tccatacaag	aatcacttg	aagaagatgt	tgttatcat		420
acagtggggg	atttccgtaa	gcttttggtt	cctcttataa	ctgcattcag	atatgaagga		480
gatgaggtga	acatgacatt	agcaagaaga	ggaagcaaat	atctgcattga	gaagatctct		540
gacaaggctt	accatgacga	ggagatcatc	cgaatcattt	ctactaggag	taaagcacag		600
ctgagtgccta	cgttcaacca	ctaccatgat	caccatggcc	atgaaatcat	caaggatctg		660
gaagctgatg	atgacgatga	gtacctgaaa	ctactcagag	cagcaataga	atgcttgaaa		720
cccagagaa	actttgagaa	agttcttcga	ttggctatca	agaagctggg	tacagacgaa		780
tgggatctta	ctagagttgt	tgccactcgg	gctgaagttg	acatggagcg	tatcaaagaa		840
gagtaccata	ggaggaacag	tgttacattg	gaccgtgcaa	ttgctggaga	cacttcagga		900
gactatgaaa	aatgctttct	ggctctgatt	gggcacggag	atgcttgaat	tacatgtgct		960
gaaaccttaa	gataataaaa	aactctactt	attttctgaa	ctttcatttg	cttttatgat		1020
ctatgggtgtg	tactctcaga	gtttggttct	gtgtttatat	gaactaaaaa	cactcgggag		1080
ttgagttgtg	ttttgttttc	gccttccatt	ttcatttccg	acttctactg	gttttgccgt		1140
ctaaataagc	atagctttcaa	ctttggcttg	aacggatctt	gtttctttat	aactcagaaa		1200
tagattatgt	atcttggttc	gtaaaaaaa	aaaaaaaaa	aa			1242

PF59233.ST25.txt

<210> 117
 <211> 315
 <212> PRT
 <213> Lycopersicon esculentum

<400> 117
 Met Ser Ser Leu Lys Val Pro Ala Ser Val Pro Asp Pro Tyr Glu Asp
 1 5 10 15
 Ala Glu Gln Leu Lys Lys Ala Phe Lys Gly Trp Gly Thr Asn Glu Glu
 20 25 30
 Leu Ile Ile Gln Ile Leu Ala His Arg Asn Ala Arg Gln Arg Lys Leu
 35 40 45
 Ile Arg Asp Ser Tyr Ala Ala Ala Tyr Gly Glu Asp Leu Leu Lys Asp
 50 55 60
 Leu Asp Ser Glu Leu Thr Ser Asp Phe Gln Arg Val Val Leu Leu Trp
 65 70 75 80
 Thr Leu Ser Pro Ala Glu Arg Asp Ala Tyr Leu Val Asn Glu Ala Thr
 85 90 95
 Lys Arg Leu Thr Ala Ser Asn Trp Gly Ile Met Glu Ile Ala Cys Thr
 100 105 110
 Arg Ser Ser Asp Asp Leu Phe Lys Ala Arg Gln Ala Tyr His Ala Pro
 115 120 125
 Tyr Lys Lys Ser Leu Glu Glu Asp Val Ala Tyr His Thr Val Gly Asp
 130 135 140
 Phe Arg Lys Leu Leu Val Pro Leu Ile Thr Ala Phe Arg Tyr Glu Gly
 145 150 155 160
 Asp Glu Val Asn Met Thr Leu Ala Arg Lys Gly Ser Lys Tyr Leu His
 165 170 175
 Glu Lys Ile Ser Asp Lys Ala Tyr His Asp Glu Glu Ile Ile Arg Ile
 180 185 190
 Ile Ser Thr Arg Ser Lys Ala Gln Leu Ser Ala Thr Phe Asn His Tyr
 195 200 205
 His Asp His His Gly His Glu Ile Ile Lys Asp Leu Glu Ala Asp Asp
 210 215 220
 Asp Asp Glu Tyr Leu Lys Leu Leu Arg Ala Ala Ile Glu Cys Leu Lys
 225 230 235 240
 Pro Arg Glu His Phe Glu Lys Val Leu Arg Leu Ala Ile Lys Lys Leu
 245 250 255
 Gly Thr Asp Glu Trp Asp Leu Thr Arg Val Val Ala Thr Arg Ala Glu
 260 265 270
 Val Asp Met Glu Arg Ile Lys Glu Glu Tyr His Arg Arg Asn Ser Val
 275 280 285
 Thr Leu Asp Arg Ala Ile Ala Gly Asp Thr Ser Gly Asp Tyr Glu Lys
 290 295 300
 Met Leu Leu Ala Leu Ile Gly His Gly Asp Ala
 305 310 315

<210> 118
 <211> 1226
 <212> DNA
 <213> Arabidopsis thaliana

<400> 118

PF59233.ST25.txt

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cagaggcaga gatcttaaga gttaaagact aatcccaaca atggcgtctc tcaaagtccc    120
aagcaatggt cctcttcccg aagatgacgc cgagcaactc cacaaggctt tttcaggatg    180
gggtaccaac gagaagctga tcatatcaat actagctcac aggaacgcag cacaacgcag    240
cttgatccgc agcgtttatg cagctaccta caatgaggat cttctcaaag cattagacaa    300
agagctttct agcgaacttg agagagctgt gatgttgagg actcttgatc caccagagag    360
agatgcttat ttggctaaag aatccaccaa gatgttcacc aagaacaatt gggttcttgt    420
tgaaatcgct tgcacaaggc ctgctcttga gcttatcaag gtcaagcaag cttaccaagc    480
tcgataacaag aaatcaatcg aggaagatgt cgcgcaacac acatctgggtg accttcgtaa    540
gctcttgctt cctcttggtga gcactttcag gtatgaagga gatgatgtga acatgatgct    600
tgcaagatct gaagctaaga tacttcacga gaagggtctc gagaaatctt acagtgcaga    660
tgacttcatc agaattcttg caacaagaag caaagcacag ctcggtgcaa cactcaacca    720
ctacaacaac gagtatggaa acgccattaa caagaacttg aaggaagagt cggacgacaa    780
tgactacatg aaactactaa gagctgtaat cacatgtttg acataccctg agaagcattt    840
tgagaagggt cttcgtctat caatcaacaa aatgggaaca gacgaatggg gactaaccgg    900
agtcgtgact acacgaactg aagttgacat ggaacgcac aaagaggaat atcagcgaag    960
aaacagcatt cctttggacc gtgctatcgc caaagacact tctggtgact atgaggacat   1020
gcttggtgct cttctcggac atggcgatgc ttgaaactgt ttcaactttc gagttcctcc   1080
tttctcttac tgcatggttt gttttaaata aaagagttgt gaaactgggt ctgcaactat   1140
ttatcaatga tcgtttgagt ttgttaaatt tgaatcaaaa tctgtttttc tttcttttaa   1200
atacaatcta aagcacaac taaagc                                1226

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<210> 119
 <211> 317
 <212> PRT
 <213> Arabidopsis thaliana

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<400> 119
Met Ala Ser Leu Lys Val Pro Ser Asn Val Pro Leu Pro Glu Asp Asp
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Ala Glu Gln Leu His Lys Ala Phe Ser Gly Trp Gly Thr Asn Glu Lys
20        25        30
Leu Ile Ile Ser Ile Leu Ala His Arg Asn Ala Ala Gln Arg Ser Leu
35        40        45
Ile Arg Ser Val Tyr Ala Ala Thr Tyr Asn Glu Asp Leu Leu Lys Ala
50        55        60
Leu Asp Lys Glu Leu Ser Ser Asp Phe Glu Arg Ala Val Met Leu Trp
65        70        75        80
Thr Leu Asp Pro Pro Glu Arg Asp Ala Tyr Leu Ala Lys Glu Ser Thr
85        90        95
Lys Met Phe Thr Lys Asn Asn Trp Val Leu Val Glu Ile Ala Cys Thr
100       105       110
Arg Pro Ala Leu Glu Leu Ile Lys Val Lys Gln Ala Tyr Gln Ala Arg
115       120       125
Tyr Lys Lys Ser Ile Glu Glu Asp Val Ala Gln His Thr Ser Gly Asp
130       135       140
Leu Arg Lys Leu Leu Leu Pro Leu Val Ser Thr Phe Arg Tyr Glu Gly
145       150       155       160
Asp Asp Val Asn Met Met Leu Ala Arg Ser Glu Ala Lys Ile Leu His
165       170       175
Glu Lys Val Ser Glu Lys Ser Tyr Ser Asp Asp Asp Phe Ile Arg Ile
180       185       190
Leu Thr Thr Arg Ser Lys Ala Gln Leu Gly Ala Thr Leu Asn His Tyr
195       200       205

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PF59233.ST25.txt

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

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<210> 120
 <211> 1172
 <212> DNA
 <213> Nicotiana tabacum

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<400> 120
ctgcttgcatt tttcgagtct tgacaatcat aaaaatggct agtcttactg ttccggcaga      60
agttccttca gtagctgaag actgtgaaca actccgatct gccttcaaag ggtggggaac      120
aaacgagaag ttgatcatat caattttggc tcatagaaat gctgctcaac gcaagttgat      180
tcaacagact tatgctgaga ctttttggta agatctcctt aaagagttgg acagagaact      240
taccaatgat ttgagaaat tgggtggtagt gtggacattg gatccttcag aacgcgatgc      300
ctatttggct aaggaagcta ctaagagatg gacaaaaagc aattttggtc ttgtggaaat      360
agcttgtacc agatctccta aagaattggt tttggcacgg gaagcttacc atgctcgtaa      420
caagaaatct cttgaagagg acgttgctta tcacactact ggggaacacc gcaagctttt      480
ggtagctcct gtgagctcct atcgatatgg aggagacgag gtggacttgc gtcttgctaa      540
agctgaagct aaaatactgc atgagaagat ctccgataag gcttacagtg acaatgaggt      600
catcagaatt ctagccacaa ggagtaaagc acagatcaat gctactctga atcattacaa      660
agatgaatat gaagaggata tcctaaagca attggaagag ggggatgagt ttgttggact      720
attgagggca accataaaag gtcttgtcta caccgagcac tacttcgtgg aggttcttcg      780
agatgcaatt aacaggagag gaacagagga agatcatctg accagagtta tcgctacaag      840
ggctgaggtt gatatgaaga ctatcgctga tgagtaccag aagagggata gcatccatct      900
gggtcgcgcc attgccaaag atacaagagg agattatgag agtatgttgt tggtctgtgt      960
tggaacaagag gaggactaag aaggatttgc tttataatga ccggaataaa tatgatatac     1020
cctatatattg agagttggca tccgctgtat gtttgatgat tgagcgtggt ctgtttaacg     1080
tgagcgttga gtccttttct tctcactttg aatatgcaac tttatgctat ctaagaatat     1140
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<210> 121
 <211> 314
 <212> PRT
 <213> Nicotiana tabacum

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<400> 121
Met Ala Ser Leu Thr Val Pro Ala Glu Val Pro Ser Val Ala Glu Asp
1          5          10          15
Cys Glu Gln Leu Arg Ser Ala Phe Lys Gly Trp Gly Thr Asn Glu Lys
          20          25          30
Leu Ile Ile Ser Ile Leu Ala His Arg Asn Ala Ala Gln Arg Lys Leu
          35          40          45

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PF59233.ST25.txt

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

<210> 122
 <211> 1215
 <212> DNA
 <213> Solanum tuberosum

<400> 122	
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aaaatggcaa gtcttacagt tccggcagaa gttccttccg tcgctgaaga ctgtgaacaa	120
ctccgatctg ccttcaaagg atggggaacg aacgagaagt tgattatatc aattttggct	180
catagaaatg ctgctcagcg caaattgatt cgacagactt atgctgaaac ttttggggaa	240
gatctactta aagagattgg gacaggaaga aacttaaccc atgattttga gaaattgggtg	300
ctaataatgga cactggatcc gtcagaacgt gatgcctatt tggctaagga agctactaag	360
agatggacaa aaagcaactt tgttcttgtg gagatagctt gtactagatc tcctaaagaa	420
ctggttttgg caaggaagc ttatcatgct cgtaacaaga aatctctcga agaggacgtt	480
gcttatcaca ctactgggga tcaccgcaag cttttggtac ctcttgtagag ctcctaccga	540
tatggaggag acgaggtgga cttgcgcctt gctaaagcag aatctaaagt actgcatgag	600
aagatctccg ataaggctta cagtgcgat gaggtcatta gaattttagc cacaaggagc	660
aaagcgcaac tcaatgctac tttgaatcat tacaagatg aatatggtga ggatataccta	720
aagcaattgg aagatgagga tgagtttgtt gcaactattga gggccaccat aaaaggtcctt	780

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gtctaccctg	agcactatatt	cgtggagggtt	cttcgtgatg	caattaacag	gagaggaaca	840
gaggaagatc	atctgagccg	agttattgct	acaagggctg	aggtcgatct	gaagactatc	900
gctaacgagt	accagaagag	ggatagcatt	cctctgggtc	gcgccattgc	caaagataca	960
ggaggagatt	atgagaatat	gctggtggct	ttacttggac	aagaggagga	atgaggagga	1020
ttggctcact	tctgtgttat	aatgaccaga	ataaatatgc	catctcccat	atatttcaga	1080
gttggcatct	gtttgatgat	tgagtgtggt	ctgttttcac	atgagctttt	agtccttttc	1140
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aaaaaaaaaa	aaaaa					1215

<210> 123
 <211> 316
 <212> PRT
 <213> Solanum tuberosum

<400> 123

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

305

310

315

<210> 124
 <211> 1176
 <212> DNA
 <213> Arabidopsis thaliana

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 aggatgatca tatcaatctt ggctcacaga aatgcaacgc aacgtagttt cattcgtgcc 180
 gtttatgctg ctaactacaa taaggatctt ctcaaggaat tagacagaga gctttccggt 240
 gactttgagc gagctgtgat gttgtggact tttgaaccag cggagagaga tgcttatttg 300
 gcaaaagaat ctacaaaaat gttcaccaaa aacaattggg ttcttgctga aatcgcttgt 360
 actagatctg ctcttgaact ctttaatgcc aagcaagcat accaagcccg ctacaagacc 420
 tccctcgagg aagacgtcgc ataccacaca tctggagaca ttcgaaagct cttggtacct 480
 cttgtgagca cttttaggtg cgatggagat gaagtgaaca tgacgttagc taggtccgag 540
 gctaagatac ttcacgagaa gatcaaggaa aaggcttatg ctgatgatga tctcataaga 600
 atcttgacaa ccaggagcaa agcacaaaac agcgcaactc tcaatcacta caaaaacaat 660
 ttcggaactt ccatgagcaa atacctaaag gaggattcgg aaaacgaata cattcaattg 720
 ctcaaagccg tgatcaaagc cttgacatat ccagagaagt attttgagaa agttctacgt 780
 caagccatca acaaatggg aacagatgag tggggactaa cgagagtggg cactacacga 840
 gcagagtttg acatggaacg gatcaaagag gaatatatac gtagaaacag tgttcctctt 900
 gatcgagcca ttgctaaaga cactcatggt gactatgagg atatacttct cgctcttctc 960
 ggacatgacc atgcttgaaa taacatttgc aagttttgtt taagaaaaaa aactaaattt 1020
 tatcgctttg tgtttaataa aacagttgtg gttggacttg caacttggtc atgttaagaa 1080
 tttagtgtct tcagtttcat ttgtcgtcga tgttttcagt tatttttttt tttaaatcta 1140
 aaaattataa aaccatatca aaaattatta ttgatac 1176

<210> 125
 <211> 316
 <212> PRT
 <213> Arabidopsis thaliana

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

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

<210> 126
 <211> 1182
 <212> DNA
 <213> Medicago sativa

<400> 126	
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gtcgatccgc gaaacttaca cgcagaccca tggagaagat cttcttaaag atcttgacaa	180
agaactttca agtgattttg agaaagctgt gctgctgtgg acattggatc cggccgagcg	240
tgatgcattt ttagccaatc aagcaactaa aatgttgact tcaaacaatt cgatcatcgt	300
ggaaattgct tccacaagat ctccacttga acttcttaag gcaaagcaag catatcaagt	360
ccgtttcaaa aagtcccttg aagaagatgt tgccatcat acttctggtg acatccgcaa	420
gcttttggtt cctcttggtg gcatacaccg ttatgagggg gatgaggtga acatgacatt	480
ggcaaaatct gaagctaaat tgcttcatga gaagattgcg gataaggctt acaatcatga	540
tgacctgatc aggattgtaa caacaaggag taaagcgcaa ttaaatgcaa ctttgaatca	600
ctataacaat gagtttggga atgtaataga caaggatttg gaaactgatt cggatgatga	660
atatctgaaa ttattgaggg cagcaattaa gggcttgacc taccctgaga aatattttga	720
ggaactcctt aggctggcta taaacaagat gggaaccgat gaaaatgctc ttactagagt	780
ggtgacaact agagctgagg ttgatttgca gcgaattgcg gaggaatacc agagaagaaa	840
cagtgttctt ctggaccgtg caattgacaa agacacttct ggagactatc agaaaattct	900
ccttgactg atgggacatg atgagtaagt tcttaatctg tccagtagtc atggagtggc	960
tgtttgact atctgttttc ccttcatcat cagcgtgatt ttgctgcgga tctcttgata	1020
gtatacagaa ttccgtgact tgctgtggta actatgcttg tgatatgtat gaactattgt	1080
ggtttttaa ataatgtttt gaatatggac tgaaattcaa aacagaactt tgccttctta	1140
aataatgaaa cagctatcat atttctctcc ttaaaaaaaaa aa	1182

<210> 127
 <211> 308
 <212> PRT
 <213> Medicago sativa

PF59233.ST25.txt

<400> 127

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

<210> 128

<211> 951

<212> DNA

<213> Brassica rapa

<400> 128

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agaaatgccg	agcaacgcag	cttcatccgt	gctgtttatg	ctgctaacta	caataaggat	180
cttctcaagg	aattagacaa	agagctatcc	ggtgacttcg	agcgagctgt	gatgttgtgg	240
acacttgaac	cagcggagag	agatgcgtat	ttggctaagg	aatcaacaaa	aatgttcact	300
aaagacaatt	gggttctagt	tgaaatcgct	tgtactagat	cttcccttga	gtttttcaag	360

PF59233.ST25.txt

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gccaaagcaag cataccaagt tcgctacaag acatctattg aggaagatgt cgcctaccac 420
acatctggag atgtccgaaa gctcttgggt cctcttgtga gtacctttag gtacgatgga 480
gatgaagtaa acatgatgat tgctaagtct gaggctaaga tacttcacga gaagatggag 540
gcgaaggatt acaatgatgg agatctcatt agaatcctga caacaagaag caaagctcaa 600
atcagtgcaa cactcaacca cttcaaaaat aagttcggaa cttccattac aaaatacctt 660
aaagaggatt cgcacaacga atatgttcag ctacttaaag ccgtgatcaa atgcttgact 720
tatccagaga aatattttga gaaagttctt cgtcaagcca tcaacaaaat gggaactgac 780
gagtggggac ttactagagt ggtcaccaca cgagctgagc tcgacatgga acggatcaaa 840
gaggaatact tgccgaggaa cagtgtccca cttgaccgag ccattgccaa agacactcat 900
ggtgactatg aggatattct tctagctctt atcggacatg gccatgcttg a 951

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<210> 129
 <211> 316
 <212> PRT
 <213> Brassica rapa

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<400> 129
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20     25     30
Met Ile Ile Ser Ile Leu Ala His Arg Asn Ala Glu Gln Arg Ser Phe
35     40     45
Ile Arg Ala Val Tyr Ala Ala Asn Tyr Asn Lys Asp Leu Leu Lys Glu
50     55     60
Leu Asp Lys Glu Leu Ser Gly Asp Phe Glu Arg Ala Val Met Leu Trp
65     70     75     80
Thr Leu Glu Pro Ala Glu Arg Asp Ala Tyr Leu Ala Lys Glu Ser Thr
85     90     95
Lys Met Phe Thr Lys Asp Asn Trp Val Leu Val Glu Ile Ala Cys Thr
100    105    110
Arg Ser Ser Leu Glu Phe Phe Lys Ala Lys Gln Ala Tyr Gln Val Arg
115    120    125
Tyr Lys Thr Ser Ile Glu Glu Asp Val Ala Tyr His Thr Ser Gly Asp
130    135    140
Val Arg Lys Leu Leu Val Pro Leu Val Ser Thr Phe Arg Tyr Asp Gly
145    150    155    160
Asp Glu Val Asn Met Met Ile Ala Lys Ser Glu Ala Lys Ile Leu His
165    170    175
Glu Lys Met Glu Ala Lys Asp Tyr Asn Asp Gly Asp Leu Ile Arg Ile
180    185    190
Leu Thr Thr Arg Ser Lys Ala Gln Ile Ser Ala Thr Leu Asn His Phe
195    200    205
Lys Asn Lys Phe Gly Thr Ser Ile Thr Lys Tyr Leu Lys Glu Asp Ser
210    215    220
Asp Asn Glu Tyr Val Gln Leu Leu Lys Ala Val Ile Lys Cys Leu Thr
225    230    235    240
Tyr Pro Glu Lys Tyr Phe Glu Lys Val Leu Arg Gln Ala Ile Asn Lys
245    250    255
Met Gly Thr Asp Glu Trp Gly Leu Thr Arg Val Val Thr Thr Arg Ala
260    265    270
Glu Leu Asp Met Glu Arg Ile Lys Glu Glu Tyr Leu Arg Arg Asn Ser
275    280    285
Val Pro Leu Asp Arg Ala Ile Ala Lys Asp Thr His Gly Asp Tyr Glu

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PF59233.ST25.txt

290 295 300
 Asp Ile Leu Leu Ala Leu Ile Gly His Gly His Ala
 305 310 315

<210> 130
 <211> 1235
 <212> DNA
 <213> Arabidopsis thaliana

<400> 130
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 agagacgaag aaacagagag attctctcga aaatggccac cattagagta ccaaacgaag 120
 ttccttctcc agctcaggat tctgaaactc tcaaacaagc tattcgcgga tggggaacag 180
 atgagaaggc gattatacga gtttttagggc aaagagacca gagccagaga aggaagatta 240
 gagaaagtgt tagagagatt tatggcaaag atcttatcga tgttctatcc tccgaactgt 300
 ctggtgattt catgaaagct gtggtttcgt ggacgtatga tccagcagag agagacgcaa 360
 ggcttgtgaa caagattttg aacaaggaga agaagaagaa aagcttagag aatttgaagg 420
 ttatagtaga gatctcttgc acgacttccc caaaccattt gattgctgtg aggaaagctt 480
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 ttgcaaagtt actggtgaca ttggcaagta cattcagata tgacaaagat aggactgatg 600
 cagaagtagc tactattgag gcggtatgc tacgtgaagc catagagaag aaacaattag 660
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 ttgttgctta caagaagaat tatggggtca caattgataa ggatgttgat ggatgtccag 780
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 aacactttgc aaaggttgga agagattcga ttgaggggtt tggacagat gaggattcgt 900
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 aggacttcat tatcacctta cttggatcca aaatctgacg gttctttcgt ttctttgtca 1080
 gttgttatat tcttggcttt gcttgtgact tgtataatca atcaatacat tgtattccaa 1140
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 aaagcaaatc tatgtttaat tttgttttca aaatt 1235

<210> 131
 <211> 321
 <212> PRT
 <213> Arabidopsis thaliana

<400> 131
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 20 25 30
 Ala Ile Ile Arg Val Leu Gly Gln Arg Asp Gln Ser Gln Arg Arg Lys
 35 40 45
 Ile Arg Glu Ser Phe Arg Glu Ile Tyr Gly Lys Asp Leu Ile Asp Val
 50 55 60
 Leu Ser Ser Glu Leu Ser Gly Asp Phe Met Lys Ala Val Val Ser Trp
 65 70 75 80
 Thr Tyr Asp Pro Ala Glu Arg Asp Ala Arg Leu Val Asn Lys Ile Leu
 85 90 95
 Asn Lys Glu Lys Lys Lys Lys Ser Leu Glu Asn Leu Lys Val Ile Val
 100 105 110
 Glu Ile Ser Cys Thr Thr Ser Pro Asn His Leu Ile Ala Val Arg Lys
 115 120 125

PF59233.ST25.txt

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

<210> 132

<211> 951

<212> DNA

<213> Arabidopsis thaliana

<400> 132

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cgcaatgcaa cacaacgagc tctcatcgaa caagaatacg aaaccaaatt ctcgatgac 180
ctccgaaaac gtctccactc tgagcttcat ggtcatctca agaaagccgt tcttttgtgg 240
atgcctgaag cagtggagcg agacgcttca atactgaaac gtcctttaag aggagccgtg 300
actgatcata aagcgattgc tgagattata tgcacacgat ctggctctca gcttcgtcag 360
atcaaacagg tctactcaaa cactttcggg gtgaaacttg aagaggacat cgaatccgaa 420
gcttctggca atcacaaaag agttttgctc gcgtatttga aactacgcg atatgaagga 480
ccagagatcg ataatgcgag ttagagagaac gatgctagga ctctcaagag cgcggttgca 540
aggaagcata aatctgatga ccagacgttg attcagatat tcaactgaccg aagcaggact 600
catttggtcg ctgtaagatc tacttaccgt tccatgtacg gcaaagaact tggaaaggcc 660
ataagagatg agactcgcg gaacttcgag catgtccttc taacaatttt acaatgtgct 720
gaaaactctt gtttctatct cgcaaaggca ttgaggaaat caatgaaagg attaggaaca 780
gatgacacgg cgttgataag aatcgtggtg acgagagcag aggtggatat gcagttcatc 840
atcacagaat accgtaagag atacaagaag actttgtaca atgctgttca ttctgataca 900
actagtcatt acaggacttt tctcctctct cttttaggcc ccaacgtttg a 951

<210> 133

<211> 316

<212> PRT

<213> Arabidopsis thaliana

<400> 133

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

```

<210> 134

<211> 1337

<212> DNA

<213> Arabidopsis thaliana

<400> 134

```

acagaaacca aaccaagagc cggaatcaa aaacagtaat aaaagatcaa ctgcaagaaa      60
atggctcttc ctctcgagct cgaaagcctc actgaagcca tctcagctgg gatgggaatg      120
ggagttgatg agaatgcatt gataagcaca ctggggaaat cgaaaagga acatagaaaa      180
ttgttttaga aagcaagcaa aagtttcttt gttgaagatg aggaaagagc ttttgagaaa      240
tgtcatgatc acttcgtcag acacctcaag cttgagttct cccgcttcaa tactgcggtg      300

```

PF59233.ST25.txt

```

gtgatgtggg caatgcatcc atgggagaga gatgcaaggt tggatgaagaa agctttgaag 360
aaaggagaag aagcttataa cctcatcggt gaggtctcat gcacacgctc tgctgaggat 420
ctcctcgggtg cacgtaaagc ttaccactct ctcttcgacc aatcaatgga agaagacatt 480
gcctctcacg tccacgggtcc tcacgcgaag ttgcttggtg ggctcgtgag tgcttataga 540
tacgaaggaa ataaggtgaa ggatgattct gccaaatccg atgctaagat tctagccgaa 600
gcagtggcctt cttcaggcga agaagccgtg gagaaggatg aggttggttag gattttgacc 660
acaagaagca aacttcatct ccaacatctc tacaacactc ttaacgaaat caaaggctct 720
gatcttcttg ggggtgtatc taagtcttct ctctcfaatg aagcattgat ttgtttgctc 780
aaaccggctc tgtatttcag caagattttg gatgcgtctc tgaacaaaga cgcagacaag 840
actaccaaga aatggttgac aagagtgttc gttacaagag cagatcatag tgatgagatg 900
aatgagatca aagaagagta caataacctt tatggtgaga ctttggctca aagaatccaa 960
gagaagataa aagggaacta cagagatttc ttgctcacac ttctctcaa atccgattga 1020
tttcgtgttg agaaacctat taccaatact tttggttatt gaagatttat gatttccctt 1080
tttatggttt tatgtttcta attcctaaat ttgcgttttc tctaccgttt ggtaataaag 1140
acatgaaaat ttgatgaact cggatgaatcg agagtaagag ttttgcgatt gtgacaatga 1200
gtgattaata caaggattaa gctccaataa aaaaatgttg cataaatcag aaatgaaact 1260
tgtaactctt cttttcttta tgtgaaactt gtaactctat ttgaaagatt ctatgtgacc 1320
actaaaccga attacgg 1337

```

<210> 135

<211> 319

<212> PRT

<213> Arabidopsis thaliana

<400> 135

```

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

```

PF59233.ST25.txt

```

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

```

<210> 136
 <211> 1110
 <212> DNA
 <213> Arabidopsis thaliana

```

<400> 136
gtctcatcta gagagctaga gaaatattca gtggtcggag aatggcgtct ctcaaaattc      60
cagcaaatat tcctcttccc gaagaagact ccgagcagct ccacaaggca ttcaaaggat      120
ggggaactaa tgaagggatg atcatatcaa ttttggtcga tagaaacgca acgcaacgca      180
gtttcattcg tgccgtttat gctgctaact acaataagga tcttctcaag gaattagacg      240
gagagctttc tgggtgacttt gagagagttg tgatgtttgt gactcttgat ccaacggaga      300
gagatgcgta tttggccaat gaatctacca aattgttcac caaaaacatt tgggtcctag      360
ttgaaatcgc ttgtactaga ctttctcttg agtttttcaa gaccaagcaa gcataccatg      420
ttcgctacaa gacctctctc gaggaagatg ttgcatacca tacatctgga aatatccgaa      480
agctattggt tcctcttgtg agcaccttca ggtacgatgg aaatgctgat gaggtcaacg      540
tgaagctggc tagatccgaa gctaagacac ttcacaagaa gatcactgag aaggcttaca      600
ctgatgaaga tctcatcaga atcttgacaa caaggagcaa agcacagatc aatgcaacac      660
tcaatcactt caaggacaag tttggaagtt ccattaacaa gtttctcaaa gaagattcga      720
acgatgatta tgttcaatta ctcaaaaccg cgatcaaatg cttgacatat ccagagaagt      780
acttttgagaa ggtttctacgt cgagccatca acaggatggg aacagacgag tgggcactta      840
ctagagtggg cactacaaga gcagaggtcg acctggagcg gatcaaagaa gaatacttac      900
gcaggaacag tgttctctct gatcgagcca ttgctaata gacttctggt gactacaagg      960
atatgcttct cgcccttctt ggacatgacc atgcttgaaa caacatcatc gtttcatagt    1020
cttttataag acagttgtta tttgtttttc attttctttg aacttttggtc cttagttttt    1080
acatttttact gcaacaactt attctggttt                                     1110

```

<210> 137
 <211> 318
 <212> PRT
 <213> Arabidopsis thaliana

```

<400> 137
Met Ala Ser Leu Lys Ile Pro Ala Asn Ile Pro Leu Pro Glu Glu Asp
1                5                10                15
Ser Glu Gln Leu His Lys Ala Phe Lys Gly Trp Gly Thr Asn Glu Gly
                20                25                30
Met Ile Ile Ser Ile Leu Ala His Arg Asn Ala Thr Gln Arg Ser Phe
                35                40                45
Ile Arg Ala Val Tyr Ala Ala Asn Tyr Asn Lys Asp Leu Leu Lys Glu
                50                55                60
Leu Asp Gly Glu Leu Ser Gly Asp Phe Glu Arg Val Val Met Leu Trp
65                70                75                80

```

PF59233.ST25.txt

```

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

```

<210> 138
 <211> 951
 <212> DNA
 <213> Arabidopsis thaliana

```

<400> 138
atggccacca ttgtttctcc tccacatttc tcccctgtcg aagacgctga aaacatcaag      60
gcggcttgct aaggatgggg aaccaatgaa aatgccatca tctcgatctt aggacaccgg      120
aatttgttcc agaggaagct cataagacaa gcttaccagg agatttacca tgaggatctc      180
attcaccagc tcaaatctga gctctctggc aattttgaga gagctatattg cttgtggggtc      240
ttggatcctc cagagagaga tgctctcttg gctaacttgg ctcttcaaaa gcctattcct      300
gactacaagg ttcttgctga aattgcctgc atgagatccc ctgaagatat gttagctgct      360
agacgtgctt accgttgctt ctacaagcat tctcttgagg aagacttggc ctcccgact      420
attggcgaca tcaggagact cttgggttgca atgggtgtctg cttataaata tgatggagaa      480
gaaattgatg agatgctggc gcaatcagag gctgcgattc ttcattgatga aatccttggg      540
aaggctgttg atcacgaaga aacgatcagg gtgttaagta caaggagcag catgcagctt      600
agcgcaatct tcaaccgcta caaggatata tatggcacat cgatcactaa ggatctcctc      660
aatcacccta caaatgagta cctgagtgca ctacgtgcag ccatcaggtg catcaaaaac      720
cctaccgggt attatgcaaa ggttttgcgc aattcaatca acacgggtggg gactgatgaa      780
gatgctctga accgtgtgat tgtcacacga gcagaaaagg acctgacgaa tataactggg      840
ctgtacttta agaggaacaa tgtgagtcct gatcaagcta tagcaaaaga gacatcaggg      900
gactacaagg cctttcttct agctttgcta ggacatggaa aacaacttta g      951

```

PF59233.ST25.txt

<210> 139
 <211> 316
 <212> PRT
 <213> Arabidopsis thaliana

<400> 139
 Met Ala Thr Ile Val Ser Pro Pro His Phe Ser Pro Val Glu Asp Ala
 1 5 10 15
 Glu Asn Ile Lys Ala Ala Cys Gln Gly Trp Gly Thr Asn Glu Asn Ala
 20 25 30
 Ile Ile Ser Ile Leu Gly His Arg Asn Leu Phe Gln Arg Lys Leu Ile
 35 40 45
 Arg Gln Ala Tyr Gln Glu Ile Tyr His Glu Asp Leu Ile His Gln Leu
 50 55 60
 Lys Ser Glu Leu Ser Gly Asn Phe Glu Arg Ala Ile Cys Leu Trp Val
 65 70 75 80
 Leu Asp Pro Pro Glu Arg Asp Ala Leu Leu Ala Asn Leu Ala Leu Gln
 85 90 95
 Lys Pro Ile Pro Asp Tyr Lys Val Leu Val Glu Ile Ala Cys Met Arg
 100 105 110
 Ser Pro Glu Asp Met Leu Ala Ala Arg Arg Ala Tyr Arg Cys Leu Tyr
 115 120 125
 Lys His Ser Leu Glu Glu Asp Leu Ala Ser Arg Thr Ile Gly Asp Ile
 130 135 140
 Arg Arg Leu Leu Val Ala Met Val Ser Ala Tyr Lys Tyr Asp Gly Glu
 145 150 155 160
 Glu Ile Asp Glu Met Leu Ala Gln Ser Glu Ala Ala Ile Leu His Asp
 165 170 175
 Glu Ile Leu Gly Lys Ala Val Asp His Glu Glu Thr Ile Arg Val Leu
 180 185 190
 Ser Thr Arg Ser Ser Met Gln Leu Ser Ala Ile Phe Asn Arg Tyr Lys
 195 200 205
 Asp Ile Tyr Gly Thr Ser Ile Thr Lys Asp Leu Leu Asn His Pro Thr
 210 215 220
 Asn Glu Tyr Leu Ser Ala Leu Arg Ala Ala Ile Arg Cys Ile Lys Asn
 225 230 235 240
 Pro Thr Arg Tyr Tyr Ala Lys Val Leu Arg Asn Ser Ile Asn Thr Val
 245 250 255
 Gly Thr Asp Glu Asp Ala Leu Asn Arg Val Ile Val Thr Arg Ala Glu
 260 265 270
 Lys Asp Leu Thr Asn Ile Thr Gly Leu Tyr Phe Lys Arg Asn Asn Val
 275 280 285
 Ser Leu Asp Gln Ala Ile Ala Lys Glu Thr Ser Gly Asp Tyr Lys Ala
 290 295 300
 Phe Leu Leu Ala Leu Leu Gly His Gly Lys Gln Leu
 305 310 315

<210> 140
 <211> 1298
 <212> DNA
 <213> Oryza sativa

<400> 140
 gttgcagatt actaccacca cctcccaaaa atcccaatcg aatcgaaatc gaatcgagtc

60

PF59233.ST25.txt

```

gagtcgccgc cggagccgga gacggaggcg gcagcggcgc agcggtaatg gcgagcctca 120
ccctgccgcc ggcccccacc aacctcgcc aggacgcat cgacctccac aaggccttca 180
aagggtttgg ctgtgatagt acaacagtta taaatatact tactcatcgt gactcgatgc 240
aacgcgcgct cattcaacag gaatacagga ctatgtattc tgaggatctc tctcgccgta 300
tatcatctga actcagtgga caccacaaga aagcaatgct gctatggatt cttgatcctg 360
ctggacgaga tgcaactggt ttgagagaag ctctgagtgg tgatactatt gacctgagag 420
cagccactga gataatatgt tccaggacac catcgagct gcaaataatg aaacagactt 480
atcatgcaaa atttggtact tatcttgagc acgacattgg tcagcgacac tcaggcgacc 540
atcagaagct cttgcttgct tatgtgggga ttccacgcta tgaaggctct gaggttgatc 600
ctactatagt gacacacgat gcaaaggacc tctataaagc tggtagagaa aggctgggca 660
ctgatgagaa gaccttcac cgcattttca ctgaacgcag ctgggcacac atggcatctg 720
ttgcctctgc ttaccatcat atgtatgac ggtcactgga gaaggttgtg aagagcgaaa 780
catctggaaa ctttgaactt gctctgctaa ctatcctcag atgcgctgag aatccagcca 840
agtattttgc aaaggctctg cggaaagtcca tgaaaggatg gggcactgat gatagtacac 900
ttataagggt tgtagtaaca aggactgaga tcgacatgca atatatcaag gctgagtact 960
acaagaaata caaaaaatca ttagctgaag ctatccattc cgagacctca ggaaattatc 1020
gaacattcct ctttctctta gttggtagcc attaggctac atttcgtcga ccctgtggca 1080
cttgacgttc catgactatc ctaaatgcag tggttctacc tggaaactgt aaaatttcgc 1140
catcattgtg ctctctattc gtgtgtgctt gcttaaaaaat gtgtgtatat atataacctg 1200
ggcattaaat agttggtgct taatatggtt tgggtggttc atctgacaag tcactcgtaa 1260
ctcgggtgcat ttattcgaat aagtgatggt atttggtc 1298

```

<210> 141
 <211> 315
 <212> PRT
 <213> *Oryza sativa*

<400> 141

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

PF59233.ST25.txt

```

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

```

<210> 142
 <211> 1222
 <212> DNA
 <213> Oryza sativa

```

<400> 142
ctccccgccg cataaatccc cttcgcctcc ccgccgcgcc ccgcggcgctc gcacgatctc      60
actgaggcat aaagtgaag accgtgattg gatcgatcac cggagcgacg atcaatggcg      120
acgtccaccg tgcccgcgcg cgtgccgccg gtcgccgagg actgcgagca gctgcgcaag      180
gcgttcaaag ggtggggcac gaacgagaag ctcacatctt ccacccctcg ccaccgcgac      240
gcggcgcgag gccggggcgat ccgcccgcgc tacgccgagg cgtacggcga ggagctgctc      300
cgcgccctca acgacgagat ccacggcaaa ttcgagaggg cggatgatcca gtggacgctg      360
gacccggcgg agcgggacgc ggtgctggcg aacgaggagg cgaggaagtg gcacccgggg      420
ggccgcgcgc tcgtcgagat cgcgtgcacg cgcactccat cgcagctctt cgctgcgaag      480
caggcgctacc acgagcgctt caagaggctc ctcgaggagg acgtcgcggc gcacatcacc      540
ggcgactacc gtaagctttt ggtgccactt gtgactgtat atcgctatga tgggccagag      600
gtgaacacat cgttggcaca ttctgaagcc aaaatactcc atgagaagat ccatgacaag      660
gcttacagtg acgatgaaat catcaggatt ctcaccacaa ggagcaaagc acagtacta      720
gcaacattca atagttacaa tgatcagttc ggccatccaa tctaagga tcttaaagct      780
gatcctaagg acgagttcct tggtagacta agggcgatca taagatgctt cacttgccct      840
gacagatact ttgagaaagt cattcgattg gctctaggag gaatgggcac agacgagaac      900
tctcttacaa ggatcataac aactcgtgcc gaggtagacc tgaagctgat aaaggaggcc      960
taccagaaga gaaacagtgt cccattggag cgagctgttg ctaaagatac aaccagagac     1020
tacgaggata tactccttgc cctccttggg gcagagttag gtgtatatct gctccatctc     1080
gtctgtctga tctccttgt ttgatcgga aataagatct gcatagaact gtgttctatt     1140
ttgttgtttc tgaatgatac aagtgagcta gtctgcatag cagtgtctat ataataaaat     1200
ctgtcctgca tactggtttg tc                                     1222

```

<210> 143
 <211> 314
 <212> PRT
 <213> Oryza sativa

```

<400> 143
Met Ala Thr Leu Thr Val Pro Ala Ala Val Pro Pro Val Ala Glu Asp
  1          5          10          15
Cys Glu Gln Leu Arg Lys Ala Phe Lys Gly Trp Gly Thr Asn Glu Lys
          20          25          30
Leu Ile Ile Ser Ile Leu Ala His Arg Asp Ala Ala Gln Arg Arg Ala

```

PF59233.ST25.txt

```

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

```

<210> 144
 <211> 1152
 <212> DNA
 <213> Oryza sativa

```

<400> 144
agcacagcac agcacacatc tcgtccagtc catccatggc gagcctgagc gtgccgccgg 60
tgccgacgga cccgcggcgc gacgcgatcg acctccacag ggcgttcaag gggttcggct 120
gcgacgccac ggcggtgacc gccatcctcg cccaccgcga cgcctcccag cgcgccctaa 180
tccggcgcca ctacgcggcg gtctaccacc aggacctcct ccaccgcctc gccgccgagc 240
tctcggggcca ccacaagcgc gccgtcctgc tctgggtgct cgaccggcg tcccgcgacg 300
ccgccgtcct ccaccaggcg ctcaacggcg acgtcaccga catgagggcg gccaccgagg 360
tggtgtgctc caggacgccg tcgcagctgc tcgtggtgag gcaggcctac ctgcgcagg 420
tcggcgcgcg cggcgggcgc ggcctcgagc acgacgtcgc cgtcagggcg tccggcgacc 480
accagaggct gcttctggcg tacctgcgct cgccgcggta cgagggggccc gaggtggtcg 540
acatggcgcg ggcggcgcgc gacgccaggg agctgtacag ggccggcgag aggcggctcg 600
gcaccgacga gaggacgttc atccgcgtct tctccgagcg cagcgccgcc cacatggcgg 660
ccgtcgccgc cgcgtaccac cacatgtacg accgctccct cgagaaggct gtgaagagtg 720

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PF59233.ST25.txt

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aaacttcagg gaactttggg tttggcctgc tgacaatcct caggtgcgcc gagagcccgg 780
ccaagtactt cgccaagggt ctccacgagg cgatgaaggg gctgggcacc aacgacacga 840
cgctgatcag ggtggtgacg acgagggcgg aggtggacat gcagtacatc aaggcggagt 900
accaccggag ctacaagcgc tcgctcgccg acgccgtcca ctccgagacc tccggcaact 960
accgcacctt cctcctctcc ctcatcgccc gcgaccgcta acgtcgattg gtttcggtct 1020
ctttgagcgt gtgttaaggg acgcatttgt tccatagcgc acaaacatgg caattattta 1080
tgtgcgtgtg tagtggtgtg ttcgaacggt cgtttttcgt gtaataaaaa aaattgagtt 1140
tgctgtcttg tg 1152

```

<210> 145
 <211> 321
 <212> PRT
 <213> *Oryza sativa*

<400> 145

Met	Ala	Ser	Leu	Ser	Val	Pro	Pro	Val	Pro	Thr	Asp	Pro	Arg	Arg	Asp
1			5					10					15		
Ala	Ile	Asp	Leu	His	Arg	Ala	Phe	Lys	Gly	Phe	Gly	Cys	Asp	Ala	Thr
		20						25				30			
Ala	Val	Thr	Ala	Ile	Leu	Ala	His	Arg	Asp	Ala	Ser	Gln	Arg	Ala	Leu
		35					40					45			
Ile	Arg	Arg	His	Tyr	Ala	Ala	Val	Tyr	His	Gln	Asp	Leu	Leu	His	Arg
	50					55				60					
Leu	Ala	Ala	Glu	Leu	Ser	Gly	His	His	Lys	Arg	Ala	Val	Leu	Leu	Trp
65				70					75					80	
Val	Leu	Asp	Pro	Ala	Ser	Arg	Asp	Ala	Ala	Val	Leu	His	Gln	Ala	Leu
			85					90					95		
Asn	Gly	Asp	Val	Thr	Asp	Met	Arg	Ala	Ala	Thr	Glu	Val	Val	Cys	Ser
		100						105					110		
Arg	Thr	Pro	Ser	Gln	Leu	Leu	Val	Arg	Gln	Ala	Tyr	Leu	Ala	Arg	
		115					120				125				
Phe	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Leu	Glu	His	Asp	Val	Ala	Val	Arg
	130					135					140				
Ala	Ser	Gly	Asp	His	Gln	Arg	Leu	Leu	Leu	Ala	Tyr	Leu	Arg	Ser	Pro
145					150					155				160	
Arg	Tyr	Glu	Gly	Pro	Glu	Val	Val	Asp	Met	Ala	Ala	Ala	Ala	Arg	Asp
			165					170					175		
Ala	Arg	Glu	Leu	Tyr	Arg	Ala	Gly	Glu	Arg	Arg	Leu	Gly	Thr	Asp	Glu
		180						185				190			
Arg	Thr	Phe	Ile	Arg	Val	Phe	Ser	Glu	Arg	Ser	Ala	Ala	His	Met	Ala
		195					200				205				
Ala	Val	Ala	Ala	Ala	Tyr	His	His	Met	Tyr	Asp	Arg	Ser	Leu	Glu	Lys
	210					215				220					
Ala	Val	Lys	Ser	Glu	Thr	Ser	Gly	Asn	Phe	Gly	Phe	Gly	Leu	Leu	Thr
225					230					235				240	
Ile	Leu	Arg	Cys	Ala	Glu	Ser	Pro	Ala	Lys	Tyr	Phe	Ala	Lys	Val	Leu
			245					250					255		
His	Glu	Ala	Met	Lys	Gly	Leu	Gly	Thr	Asn	Asp	Thr	Thr	Leu	Ile	Arg
		260						265					270		
Val	Val	Thr	Thr	Arg	Ala	Glu	Val	Asp	Met	Gln	Tyr	Ile	Lys	Ala	Glu
		275					280					285			
Tyr	His	Arg	Ser	Tyr	Lys	Arg	Ser	Leu	Ala	Asp	Ala	Val	His	Ser	Glu
	290					295				300					
Thr	Ser	Gly	Asn	Tyr	Arg	Thr	Phe	Leu	Leu	Ser	Leu	Ile	Gly	Arg	Asp

305

310

315

320

Arg

<210> 146

<211> 1272

<212> DNA

<213> *Oryza sativa*

<400> 146

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cgggtctcct ctctctcccc gccgacgcgc actcgatccc ccccgctccc gcctccgcct    60
ccgcctccgc gtgcgccatc tcgagatccc ccgcattggc acgctcaccg tcccctccgc   120
cgtcccgccc gtgcgccgac actgcgacca gctccgcaag gccttccaag ggtggggcac   180
gaacgaggcg ctcatcatct ccatactggc ccaccgcgac gcggcgcgagc ggcgcgccat   240
ccgccgcgcc tacgccgaca cctacggcga ggagctcctc cgcagcatca ccgacgagat   300
ctccggcgac ttcgagaggg ccgtgatcct gtggacgctg gacccggcgg agcgcgacgc   360
ggtgctcgcc aacgaggctg cgaggaagtg gtacccaggg agcgggagcc gcgtgctggt   420
cgagatcgcg tgcgcgcgcg gccccgcgca gctgttcgcg gtcaggcagg cctaccacga   480
gcgcttcaag cgctcgctcg aggaggacgt cgcggcgcac gccactggtg acttccgcaa   540
gctcttggtg ccacttataa gtgcttaccg ctatgagggg ccggaagtca acacaaagtt   600
ggcacattca gaagccaaaa ttctgcatga gaagatccag cataaggcat atggtgatga   660
tgagatcatc agaattctca ctactaggag caaggctcag ttgattgcga cattcaatcg   720
ttacaatgat gaatatggtc acccaatcaa caaggatctc aaggctgata ccaaggacga   780
gttcttttcc acgctgcgtg caatcatccg ctgcttctgt tgccctgaca ggtacttcga   840
gaaagtcatc aggttggcca tcgcaggcat gggaacagac gagaactccc tcactaggat   900
cattaccact cgtgccgagg tggatctgaa gctgatcacg gaggcgtacc agaagaggaa   960
cagtgtcccc ctggagcgtg cggtcgcagg ggacacctcc ggggactacg agaggatgct  1020
tcttgctctt ctgggtcagg agcagtgagc catgcctatc ttgccagtc acacacttca  1080
tgtgatcatg tcatatcaga gaataaacct gttatgcagg ggacacagcc gtggtgatta  1140
tgatgttggt tttccagtgt acggtactgt ttgctgcagc ttgcataaca gtgacgatga  1200
aataaatcat agtggaatgc gttggctcat gggacctcac ttattttgca actttttgac  1260
aggtcttatt tc                                     1272

```

<210> 147

<211> 317

<212> PRT

<213> *Oryza sativa*

<400> 147

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Met Ala Thr Leu Thr Val Pro Ser Ala Val Pro Pro Val Ala Asp Asp
1           5           10          15
Cys Asp Gln Leu Arg Lys Ala Phe Gln Gly Trp Gly Thr Asn Glu Ala
20          25          30
Leu Ile Ile Ser Ile Leu Ala His Arg Asp Ala Ala Gln Arg Arg Ala
35          40          45
Ile Arg Arg Ala Tyr Ala Asp Thr Tyr Gly Glu Glu Leu Leu Arg Ser
50          55          60
Ile Thr Asp Glu Ile Ser Gly Asp Phe Glu Arg Ala Val Ile Leu Trp
65          70          75          80
Thr Leu Asp Pro Ala Glu Arg Asp Ala Val Leu Ala Asn Glu Val Ala
85          90          95
Arg Lys Trp Tyr Pro Gly Ser Gly Ser Arg Val Leu Val Glu Ile Ala
100         105         110
Cys Ala Arg Gly Pro Ala Gln Leu Phe Ala Val Arg Gln Ala Tyr His

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

```

<210> 148
 <211> 1491
 <212> DNA
 <213> *Oryza sativa*

```

<400> 148
agtaatacgc aaggaatacc tggatcatac gatacgaata tctagagaca aaacatgatt      60
tgagtgtatt atgatcgaga aagaagctca aaaggctcttg aaaagtcgaa acgtccatca      120
ctgaaattcg gtttcatgcc ctcagatccc attgctgagt aggacgcaga ttttcttct      180
tcctaccatt tcctttctct tgcttccttt ttgggtcattt gagatagctt tatccatcct      240
ttagcaaaaa ggaaaccaat agctagcaat acttgccatc atatatacct gggcaatggc      300
cggccaagca aactcagttc tctacattga acacttcagg tttgagttaga catggcctct      360
cgggtgtctt ttaccacagg ttttgaggat gagtgcagag agatccatga tgcgtgcaac      420
cagccacgcc gtttgagcgt tctcttggtc catcggagcc catcggagag gcagaaaatc      480
aaggcgactt accgtacagt gttcggcgaa gatctcgccg gagaagtgca gaaaatcctc      540
atgggtcaacc aggaagatga gctctgcaag ctgctctacc tgtgggtgct cgaccctgct      600
gagcgcgacg cgatcatggc tcgggacgcc gtcgagaatg gcggcgccac ggattaccgg      660
gtcctggttg agatcttcac acgccggaag cagaaccagc tcttcttcac caatcaggca      720
taccttgcca ggttcaagaa gaacctggag caggacatgg tcacagagcc gtctcatcct      780
taccagaggc tattggtagc acttgcaacc tcccacaagt cgcaccacga tgaacttagt      840
cggcacattg caaaatgtga cgccaggagg ctctatgatg cgaagaacag cggcatggga      900
tcggctcgacg aggtgtgcat tcttgagatg ttcagcaaga ggagcatccc acagctcagg      960
ctagcattct gcagttacaa gcacatatat gggcatgact acaccaaggc actgaagaaa     1020
aatggcttcg gtgagtttga acaatctttg aggggtgttg tgaagtgcac ctacaatcct     1080
tccatgtatt tctccaagct gctgcataga agtctgcaat gctcagcgac caataaaagg     1140
ttggttacaa gggctatttt gggcagtgac gatgtcgata tggacaagat caagtcagtg     1200
ttcaaaagta gttatggaaa ggaccttgag gatttcatcc ttgaaagctt gcctgagaat     1260
gattacagag actttctttt aggtgcggcc aaggggtcaa gggcctcatg aagtctgtgg     1320

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PF59233.ST25.txt

agagagatcc ttgaattatc tagggaaagt aaaggggtgca tatactgctt tgcattgtaag 1380
agcaaattga ccatcaaaaa cagcagtttt atgttatctg agaattaggat ttaggtgaga 1440
acatcatgct cattttgttt attttggtg aaaaaagtta tcagttcaac t 1491

<210> 149
<211> 319
<212> PRT
<213> Oryza sativa

<400> 149
Met Ala Ser Arg Cys Leu Val Thr Thr Gly Phe Glu Asp Glu Cys Arg
1 5 10 15
Glu Ile His Asp Ala Cys Asn Gln Pro Arg Arg Leu Ser Val Leu Leu
20 25 30
Ala His Arg Ser Pro Ser Glu Arg Gln Lys Ile Lys Ala Thr Tyr Arg
35 40 45
Thr Val Phe Gly Glu Asp Leu Ala Gly Glu Val Gln Lys Ile Leu Met
50 55 60
Val Asn Gln Glu Asp Glu Leu Cys Lys Leu Leu Tyr Leu Trp Val Leu
65 70 75 80
Asp Pro Ser Glu Arg Asp Ala Ile Met Ala Arg Asp Ala Val Glu Asn
85 90 95
Gly Gly Ala Thr Asp Tyr Arg Val Leu Val Glu Ile Phe Thr Arg Arg
100 105 110
Lys Gln Asn Gln Leu Phe Phe Thr Asn Gln Ala Tyr Leu Ala Arg Phe
115 120 125
Lys Lys Asn Leu Glu Gln Asp Met Val Thr Glu Pro Ser His Pro Tyr
130 135 140
Gln Arg Leu Leu Val Ala Leu Ala Thr Ser His Lys Ser His His Asp
145 150 155 160
Glu Leu Ser Arg His Ile Ala Lys Cys Asp Ala Arg Arg Leu Tyr Asp
165 170 175
Ala Lys Asn Ser Gly Met Gly Ser Val Asp Glu Ala Val Ile Leu Glu
180 185 190
Met Phe Ser Lys Arg Ser Ile Pro Gln Leu Arg Leu Ala Phe Cys Ser
195 200 205
Tyr Lys His Ile Tyr Gly His Asp Tyr Thr Lys Ala Leu Lys Lys Asn
210 215 220
Gly Phe Gly Glu Phe Glu Gln Ser Leu Arg Val Val Val Lys Cys Ile
225 230 235 240
Tyr Asn Pro Ser Met Tyr Phe Ser Lys Leu Leu His Arg Ser Leu Gln
245 250 255
Cys Ser Ala Thr Asn Lys Arg Leu Val Thr Arg Ala Ile Leu Gly Ser
260 265 270
Asp Asp Val Asp Met Asp Lys Ile Lys Ser Val Phe Lys Ser Ser Tyr
275 280 285
Gly Lys Asp Leu Glu Asp Phe Ile Leu Glu Ser Leu Pro Glu Asn Asp
290 295 300
Tyr Arg Asp Phe Leu Leu Gly Ala Ala Lys Gly Ser Arg Ala Ser
305 310 315

<210> 150
<211> 1393
<212> DNA

<213> Oryza sativa

<400> 150

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atggaaaaat accatgaaat acaaatggaa aaaatagggg agagcccaga gcattggatg      60
tgcagattaa agctatacta ctagcattca agtttttttc aactctgctg cgtaggaggc      120
gtgtgtgtgc catgtgttgc tgggtgctgt gcttggaact catccataac atacctccac      180
tcaatctcct ctctctccat ttctccccc attctctctc ctctcagct gcttctgcag      240
gtggaggaga agcagcagca gcagcagctg ttgctcccat ggcttccatc tctgtcccaa      300
accagctcc ttcccctaca gaggatgcag agagcataag aaaggcagtg caaggatggg      360
gaacggacga gaatgcgctg atcgagatcc tcggccaccg gacggcgggc cagcgggcgg      420
agatcgccgt cgcctacgag ggccctctac acgagaccct cctcgacagg ctccactccg      480
agctctccgg cgacttccgt agcgcgttga tgctgtggac gatggaccg gcggcgcggg      540
acgccaagct ggccaacgag gccctgaaga agaagaagaa gggcgagctc cgccacatct      600
gggtgctcgt cgaggctgcc tgcgcgtcgt cgccggacca cctcgtcgcc gtcaggaagg      660
cctaccgcgc cgcctacgcc tcgtcgctgg aggaggacgt ggctgctgctc tcgtgttctg      720
gggaccgcgt caggcggttc ctggtgcgcc tcgtgagctc ctaccggtac ggcgcggtg      780
gcgtcgacgg cgagctggcg atcgccgagg cgcgcgagct gcacgacgcg gtggtgggca      840
gggggcaggc gctgcacggc gacgacgtcg tccgcacgtc cggcacgagg agcaaggcgc      900
agctcgcggt gacgctggag cggtacaggc aggagcacgg caagggcacg gacgaggtcc      960
tcgacggccg ccgcgggcgc cagctcgcgg cggtgctcaa ggcgcgctc tggtgctca      1020
ctcgccgga gaagcatttc gctgaggtga tccggacatc gattctaggg cttggcaccg      1080
acgaggagat gctgacgaga gggatcgtgt cgcggggcga ggtggacatg gagaaggtag      1140
aggaggagta caaggtcagg tacaacacca cggtcacgcg cgacgtccgc ggcgacacgt      1200
cggggtagta catgaacacg cttctcacc tcgtcgggcc tgagaagtag ccatgtagca      1260
gcttgacat tttattgctt gctcatttga tttgaacaaa atacaccgtg tgatgttgca      1320
gttattagta aaatgcgagt aggatcgatg ttgttttcgt tgggtggatt aataatggag      1380
catgttttat cgc                                     1393

```

<210> 151

<211> 372

<212> PRT

<213> Oryza sativa

<400> 151

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

```

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

<210> 152
<211> 1341
<212> DNA
<213> Oryza sativa

<400> 152
gggtcttttcc ggccgctccc ggccgcccgc ggccatgtca acaacaagct cgtcaaaaac 60
cgccacgtgc cctctctgcc acgcgcgacgt gctgctgcc aaggcgcggt cagccggtctc 120
ctcgacgcac agaagccacg acctcgacga cgccccgcct cgcgcgctgc cggagtccag 180
ctgccgcagc aacgcgcgcg tgtgcgggtg cgcccgctgc cggcgccctg atctgatcag 240
tcccgaacc ggcatgcgga tgaggaacag attcggcgat ggccccaaca ggatatacag 300
ccagagtgga gcatggctgt gccgagagcg cacggcggag acttgccgga gcacaagtag 360
ccgggtccggc cgctaccggc gcctgcagcc tgcagcggtc gccggaacac gacgcgccga 420
actcataaag cggctgcaag agctctgcc cccagcaaata aaccttccaa attgttctgc 480
ttcttggaac ccacagcgac agcggcagaa aacaattgat cgaattccag atagcctaga 540
ttgtgggggtg acaatggaaa ggggcaagaa caagcgtgat ggaagtgaca atgggctcat 600
cttctctaac ctaatgcacg gtgttgctgc cgccatctat gggatatcctc ctcaccaggg 660
atacactcag gctcagagct acctactgct gccggaagca tatccacctc ctccgtggac 720
ataccctctt tctagtgtt accctctctc acctgttggt tacccttcag gtggctaccc 780
tctgtcagtc tactctgact cgtatctgca ccaaggtagc agagttgcgc gggagcaatg 840
ccctctatca tattccaata atgctgtcac ttgcaggag gatgggcaaa tgaactgtga 900
aaatggaaca gtaaatatgg agaaaagtgc aatgtcctca aataagatgg ctactagtct 960
actaaagagt tgcggcaatg tgatgccatg cagaaatatg gagagaagtg gcccgccat 1020
gtataaggtg gacatgcgcg gcagtagaa gcaattctct atgggcagca agatgatgat 1080
gtgtctgatt gtgtttggat gtctgatagc tgccttggat atgtttagaa atgttgcaca 1140

PF59233.ST25.txt

```

aaaacagatg ttttctgtcg ttagtttact ttcttttgta gtcgcgacct atgtctgcta 1200
ggagtctcta catgtaccgt aaaattgctc tttgtgtaat gtgtacttct tcatacctgta 1260
aaaatagaat cccaatcaaa ctatatatgg tttgtctgtc gggctttcaa tacaatctga 1320
gtgtcctctc tttacctttg t 1341

```

<210> 153
 <211> 388
 <212> PRT
 <213> *Oryza sativa*

<400> 153

Met	Ser	Thr	Thr	Ser	Ser	Ser	Lys	Thr	Ala	Thr	Cys	Pro	Leu	Cys	His
1				5					10					15	
Ala	Asp	Val	Leu	Leu	Pro	Arg	Arg	Arg	Ser	Ala	Gly	Ser	Ser	Thr	His
			20					25					30		
Arg	Ser	His	Asp	Leu	Asp	Asp	Gly	Pro	Ala	Pro	Pro	Ser	Pro	Glu	Ser
		35					40					45			
Ser	Cys	Arg	Ser	Asn	Ala	Ala	Val	Cys	Gly	Cys	Ala	Arg	Cys	Arg	Arg
	50				55					60					
Pro	Asp	Leu	Ile	Ser	Pro	Gly	Thr	Gly	Met	Arg	Met	Arg	Asn	Arg	Phe
65					70				75						80
Gly	Asp	Gly	Pro	Asn	Arg	Ile	Ser	Ala	Gln	Ser	Gly	Ala	Trp	Leu	Cys
				85					90					95	
Arg	Glu	Arg	Thr	Ala	Glu	Thr	Cys	Arg	Ser	Thr	Ser	Ser	Arg	Ser	Gly
			100					105					110		
Arg	Tyr	Arg	Arg	Leu	Gln	Pro	Ala	Ala	Val	Ala	Gly	Thr	Arg	Arg	Ala
	115					120						125			
Glu	Leu	Ile	Lys	Arg	Leu	Gln	Glu	Leu	Cys	His	Pro	Ala	Asn	Asn	Leu
	130					135					140				
Pro	Asn	Cys	Ser	Ala	Ser	Trp	Gln	Pro	Gln	Arg	Gln	Arg	Gln	Lys	Thr
145					150					155					160
Ile	Asp	Arg	Ile	Pro	Asp	Ser	Leu	Asp	Cys	Gly	Val	Thr	Met	Glu	Arg
				165					170					175	
Gly	Lys	Asn	Lys	Arg	Asp	Gly	Ser	Asp	Asn	Gly	Leu	Ile	Phe	Ser	Asn
		180						185					190		
Leu	Met	His	Gly	Val	Ala	Ala	Gly	Ile	Tyr	Gly	Tyr	Pro	Pro	His	Gln
	195						200					205			
Gly	Tyr	Thr	Gln	Ala	Gln	Ser	Tyr	Leu	Leu	Leu	Pro	Glu	Ala	Tyr	Pro
	210					215					220				
Pro	Pro	Pro	Trp	Thr	Tyr	Pro	Leu	Ser	Ser	Ala	Tyr	Pro	Pro	Gln	Pro
225					230					235					240
Val	Gly	Tyr	Pro	Ser	Gly	Gly	Tyr	Pro	Pro	Ala	Val	Tyr	Ser	Asp	Ser
				245						250				255	
Tyr	Leu	His	Gln	Gly	Ser	Arg	Val	Ala	Arg	Glu	Gln	Cys	Pro	Leu	Ser
			260					265					270		
Tyr	Ser	Asn	Asn	Ala	Val	Thr	Cys	Arg	Glu	Asp	Gly	Gln	Met	Asn	Cys
		275					280					285			
Glu	Asn	Gly	Thr	Val	Asn	Met	Glu	Lys	Ser	Ala	Met	Ser	Ser	Asn	Lys
	290					295					300				
Met	Ala	Thr	Ser	Leu	Leu	Lys	Ser	Cys	Gly	Asn	Val	Met	Pro	Cys	Arg
305					310					315					320
Asn	Met	Glu	Arg	Ser	Gly	Pro	Ala	Met	Tyr	Lys	Val	Asp	Met	Arg	Gly
				325					330					335	
Ser	Thr	Lys	Gln	Phe	Ser	Met	Gly	Ser	Lys	Met	Met	Met	Cys	Leu	Ile

PF59233.ST25.txt

```

          340          345          350
Val Phe Gly Cys Leu Ile Ala Ala Leu Asp Met Phe Arg Asn Val Ala
          355          360          365
Gln Lys Gln Met Phe Ser Val Val Ser Leu Leu Ser Phe Val Val Ala
          370          375          380
Thr Tyr Val Cys
385

```

<210> 154
 <211> 1276
 <212> DNA
 <213> Oryza sativa

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<210> 155
 <211> 180
 <212> PRT
 <213> Oryza sativa

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<400> 155
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Phe His Gly Ala Tyr Pro Ser Gly Tyr Pro Gly Ala Tyr Pro Leu Met
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Gln Gly Tyr Pro Asn Ser Pro Gly Gln Tyr Pro Thr Pro Gly Gly Tyr
          35          40          45
Pro Ser Ala Pro Pro Gly Gln Tyr Pro Pro Ala Gly Gly Tyr Pro Gly
          50          55          60
Ala Gln Tyr Pro Pro Ser Gly Tyr Pro Pro Ser Gln Gly Gly Tyr Pro
          65          70          75          80
Pro Gly Ala Tyr Pro Pro Ser Gly Tyr Pro Gln Gln Pro Gly Tyr Pro

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PF59233.ST25.txt

				85					90					95			
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		115					120					125					
Ala	Ala	Val	Ala	Ala	Ala	Ala	Val	Gly	Ala	His	Met	Val	Arg	Pro	Gly		
		130					135					140					
Gly	Gly	Gly	Gly	His	Gly	Met	Phe	Gly	His	His	Gly	Gly	Lys	Phe	Lys		
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Lys	Gly	Lys	Phe	Lys	His	Gly	Lys	Tyr	Gly	Lys	His	Lys	Lys	Phe	Gly		
				165					170					175			
Arg	Lys	Trp	Lys														
			180														