

PF58635.ST25.txt
SEQUENCE LISTING

<110> CropDesign N.V.
<120> Plants having enhanced yield-related traits and a method for making the same
<130> PF58635
<150> EP 06126279.6
<151> 2006-12-15

<150> US 60/883,168
<151> 2007-01-03

<160> 131

<170> PatentIn version 3.3

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<212> DNA
<213> Arabidopsis thaliana

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<212> PRT
<213> Arabidopsis thaliana

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Ser Phe Pro Thr Tyr Phe Asn Phe Pro Arg Arg Lys Leu Leu Lys Leu
35 40 45
Leu Glu Ala Ala Asp Lys Asn Asn Leu Val Val Ala Pro Lys Ile Thr
50 55 60

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Ala Lys Gly Lys Gln Ile Val Val Phe Leu Asp Tyr Asp Gly Thr Leu
          115         120         125
Ser Pro Ile Val Glu Asp Pro Asp Lys Ala Phe Ile Thr His Glu Met
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Arg Glu Val Val Lys Asp Val Ala Ser Asn Phe Pro Thr Ala Ile Val
145          150         155         160
Thr Gly Arg Ser Ile Glu Lys Val Arg Ser Phe Val Gln Val Asn Glu
          165         170         175
Ile Tyr Tyr Ala Gly Ser His Gly Met Asp Ile Glu Gly Pro Thr Asn
          180         185         190
Glu Asn Ser Asn Gly Gln Ser Asn Glu Arg Val Leu Phe Gln Pro Ala
          195         200         205
Arg Glu Phe Leu Pro Met Ile Glu Lys Val Val Asn Ile Leu Glu Glu
          210         215         220
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225          230         235         240
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          245         250         255
Ala Glu Val Val Lys Ser Val Leu Ile Asp Tyr Pro Lys Leu Lys Leu
          260         265         270
Thr Gln Gly Arg Lys Val Leu Glu Ile Arg Pro Thr Ile Lys Trp Asp
          275         280         285
Lys Gly Gln Ala Leu Asn Phe Leu Leu Lys Ser Leu Gly Tyr Glu Asn
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 <213> Triticum aestivum

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PF58635.ST25.txt

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260 265 270
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275 280 285
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Asp Ser Glu Asn Val Ile Pro Ile Tyr Ile Gly Asp Asp Arg Thr Asp
305 310 315 320
Glu Asp Ala Phe Lys Val Leu Arg Glu Arg Asn Cys Gly Tyr Gly Ile
325 330 335
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340 345 350
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 <213> Glycine max

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225     230     235     240
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Val His Tyr Arg Asn Val Asp Glu Lys Tyr Trp Asn Trp Val Gly Gln
      260     265     270
His Val His Asp Val Leu Lys Gly Tyr Pro Arg Leu Arg Leu Thr His
      275     280     285
Gly Arg Lys Val Leu Glu Ile Arg Pro Val Ile Asn Trp Asp Lys Gly
      290     295     300
Lys Ala Val Thr Phe Leu Leu Glu Ser Leu Gly Leu Asn Asn Cys Asp
305     310     315     320
Asp Val Leu Pro Ile Tyr Ile Gly Asp Asp Arg Thr Asp Glu Asp Ala
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Phe Lys Val Leu Arg Glu Gly Asn Lys Gly Tyr Gly Ile Leu Val Ser
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Ser Ala Pro Lys Glu Ser Asn Ala Ile Tyr Ser Leu Arg Asp Pro Ser
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<210> 7

PF58635.ST25.txt

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

PF58635.ST25.txt

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Ala	Val	Glu	Phe	Leu	Leu	Glu	Ser	Leu	Gly	Leu	Ser	Asn	Cys	Asp	Asp		
225					230					235				240			
Val	Leu	Pro	Ile	Tyr	Val	Gly	Asp	Asp	Arg	Thr	Asp	Glu	Asp	Ala	Phe		
			245					250						255			
Lys	Phe	Leu	Arg	Glu	Gly	Ser	Leu	Gly	Tyr	Gly	Ile	Leu	Val	Thr	Pro		
		260					265					270					
Ala	Pro	Lys	Glu	Ser	Ser	Ala	Tyr	Tyr	Ser	Leu	Arg	Asp	Pro	Ser	Glu		
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 Lys Gln Ile Ile Met Phe Leu Asp Tyr Asp Gly Thr Leu Ser Leu Ile

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Ala Leu Thr Met Phe Glu Glu Ile Ala Glu Ala Ser Lys Gly Lys Gln
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Gly Val Ala Arg Tyr Phe Pro Thr Ala Ile Val Thr Gly Arg Cys Arg
145 150 155 160
Asp Lys Val Arg Arg Phe Val Lys Leu Pro Gly Leu Tyr Tyr Ala Gly
165 170 175
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Lys Asn Asn Lys Gly Val Leu Phe Gln Ala Ala Asn Glu Phe Leu Pro
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210 215 220
Glu Gly Ala Asn Val Glu Asn Asn Lys Phe Cys Val Ser Val His Tyr
225 230 235 240
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245 250 255
Ser Ile Leu Ser Glu Tyr Pro Lys Leu Arg Leu Thr Gln Gly Arg Lys
260 265 270
Val Leu Glu Ile Arg Pro Thr Ile Lys Trp Asp Lys Gly Lys Ala Leu
275 280 285
Glu Phe Leu Leu Glu Ser Leu Gly Phe Ala Asn Ser Asn Asp Val Leu
290 295 300
Pro Ile Tyr Ile Gly Asp Asp Arg Thr Asp Glu Asp Ala Phe Lys Val
305 310 315 320
Leu Arg Asn Lys Gly Gln Gly Phe Gly Ile Leu Val Ser Lys Ile Pro
325 330 335
Lys Glu Thr Ser Ala Thr Tyr Ser Leu Gln Glu Pro Ser Glu Val Gly
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 Leu Glu Ala Ala Asp Lys Asn Asn Leu Val Val Ala Pro Lys Ile Thr
 50 55 60
 Ser Met Ile Asp Ser Met Arg Asp Ser Ser Pro Thr Arg Leu Arg Ser
 65 70 75 80
 Ser Ser Tyr Asp Ser Val Ser Asp Asn Asp Asp Lys Thr Ser Trp Ile
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 Val Arg Phe Pro Ser Ala Leu Asn Met Phe Asp Glu Ile Val Asn Ala
 100 105 110
 Ala Lys Gly Lys Gln Ile Val Met Phe Leu Asp Tyr Asp Gly Thr Leu
 115 120 125
 Ser Pro Ile Val Glu Asp Pro Asp Lys Ala Phe Ile Thr His Glu Met
 130 135 140
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 Thr Gly Arg Ser Ile Glu Lys Val Arg Ser Phe Val Gln Val Asn Glu
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195 200 205
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210 215 220
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225 230 235 240
Leu Ser Val His Phe Arg Arg Val Asp Glu Lys Arg Trp Pro Ala Leu
245 250 255
Ala Glu Val Val Lys Ser Val Leu Ile Asp Tyr Pro Lys Leu Lys Leu
260 265 270
Thr Gln Gly Arg Lys Val Leu Glu Ile Arg Pro Thr Ile Lys Trp Asp
275 280 285
Lys Gly Gln Ala Leu Asn Phe Leu Leu Lys Ser Leu Gly Tyr Glu Asn
290 295 300
Ser Asp Asp Val Val Pro Val Tyr Ile Gly Asp Asp Arg Thr Asp Glu
305 310 315 320
Asp Ala Phe Lys Val Leu Arg Glu Arg Gly Gln Gly Phe Gly Ile Leu
325 330 335
Val Ser Lys Val Pro Lys Asp Thr Asn Ala Ser Tyr Ser Leu Gln Asp
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<213> Arabidopsis thaliana

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Thr Arg Pro Lys Ser Phe Asn Ser Gln Ser Cys Trp Ile Lys Glu His
65     70     75     80
Pro Ser Ala Leu Asn Met Phe Glu Glu Ile Leu His Lys Ser Glu Gly
85     90     95
Lys Gln Ile Val Met Phe Leu Asp Tyr Asp Gly Thr Leu Ser Pro Ile
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Cys Arg Glu Lys Val Ser Ser Phe Val Lys Leu Thr Glu Leu Tyr Tyr
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165    170    175
Tyr Lys Lys Glu Asn Gln Ser Leu Leu Cys Gln Pro Ala Thr Glu Phe
180    185    190
Leu Pro Val Ile Asn Glu Val Tyr Lys Lys Leu Val Glu Asn Thr Gln
195    200    205
Ser Ile Pro Gly Ala Lys Val Glu Asn Asn Lys Phe Cys Ala Ser Val
210    215    220
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Val Arg Ser Val Leu Lys Asn Tyr Pro Lys Leu Met Leu Thr Gln Gly
245    250    255
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260    265    270
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<210> 18
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	275	280	285	
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Ile Gly Asp Asp Thr Thr Asp Glu Asp Ala Phe Lys Val Leu Arg Asp				
305	310	315	320	
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	325	330	335	
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<400> 19

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<210> 20
 <211> 377
 <212> PRT

<213> Arabidopsis thaliana

<400> 20

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Phe Met Met Asn Ser Arg Lys Lys Ile Pro Lys Leu Asp Asp Val Arg
35     40     45
Ser Asn Gly Trp Leu Asp Ala Met Ile Ser Ser Ser Pro Pro Arg Lys
50     55     60
Arg Leu Val Lys Asp Phe Asn Ile Glu Ile Ala Pro Glu Asp Asp Phe
65     70     75     80
Ser Gln Arg Ala Trp Met Leu Lys Tyr Pro Ser Ala Ile Thr Ser Phe
85     90     95
Ala His Ile Ala Ala Gln Ala Lys Asn Lys Lys Ile Ala Val Phe Leu
100    105    110
Asp Tyr Asp Gly Thr Leu Ser Pro Ile Val Asp Asp Pro Asp Arg Ala
115    120    125
Ile Met Ser Asp Ala Met Arg Ala Ala Val Lys Asp Val Ala Lys Tyr
130    135    140
Phe Pro Thr Ala Ile Ile Ser Gly Arg Ser Arg Asp Lys Val Tyr Gln
145    150    155    160
Leu Val Gly Leu Thr Glu Leu Tyr Tyr Ala Gly Ser His Gly Met Asp
165    170    175
Ile Met Thr Pro Val Asn Pro Asn Gly Ser Pro Glu Asp Pro Asn Cys
180    185    190
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195    200    205
Ala Lys Glu Phe Ile Pro Val Ile Glu Glu Val Tyr Asn Asn Leu Val
210    215    220
Glu Ile Thr Lys Cys Ile Lys Gly Ala Lys Val Glu Asn His Lys Phe
225    230    235    240
Cys Thr Ser Val His Tyr Arg Asn Val Asp Glu Lys Asp Trp Pro Leu
245    250    255
Val Ala Gln Arg Val His Asp His Leu Lys Arg Tyr Pro Arg Leu Arg
260    265    270
Ile Thr His Gly Arg Lys Val Leu Glu Val Arg Pro Val Ile Glu Trp
275    280    285
Asn Lys Gly Lys Ala Val Glu Phe Leu Leu Glu Ser Leu Gly Leu Ser
290    295    300
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305    310    315    320
Glu Asp Ala Phe Lys Val Leu Arg Glu Gly Asn Arg Gly Phe Gly Ile
325    330    335
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<210> 21

<211> 1283

<212> DNA

<213> Arabidopsis thaliana

<400> 21

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PF58635.ST25.txt

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<210> 22
 <211> 349
 <212> PRT
 <213> Arabidopsis thaliana

<400> 22

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

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                245                250                255
Val Arg Pro Ile Ile Lys Trp Asp Lys Gly Lys Ala Leu Glu Phe Leu
                260                265                270
Leu Glu Ser Leu Gly Tyr Ala Asn Cys Thr Asp Val Phe Pro Leu Tyr
                275                280                285
Ile Gly Asp Asp Arg Thr Asp Glu Asp Ala Phe Lys Val Leu Arg Glu
                290                295                300
Arg Arg Gln Gly Leu Gly Ile Leu Val Ser Lys Phe Pro Lys Glu Thr
305                310                315                320
Ser Ala Ser Tyr Ser Leu Gln Glu Pro Asp Glu Val Met Glu Phe Leu
                325                330                335
Gln Arg Leu Val Glu Trp Lys Gln Leu Arg Ser Gly Ala
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<210> 23
 <211> 1280
 <212> DNA
 <213> Arabidopsis thaliana

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tccaagaaaa agcttctcaa gaacatcgac atcatcaatg gtggtggaca aagaatcaac    180
gcttggttag attcaatgcg tgcttcttct cctactcatc tcaaatctct tccttcttct    240
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gacaaggtgt ataactttgt gaagcttgct gagctgtatt atgctggaag ccatggcatg    540
gacattaaag gtccagcaaa aggccttctcc agacacaaga ggggttaaaca gtctcttctg    600
taccaaccag ctaatgacta tcttcccatg atcgatgaag tttatagaca actcttgga    660
aaaacaaaat cgactccagg agccaaagta gaaaaccaca agttttgtgc ttctgtgcac    720
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attgaatggg ataaaggaaa ggctcttgag ttcttgtag aatcacttgg atttggaac    900
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gatgcttcgt attctttgca agatccatcc gaggtgatgg atttcttacg acgattggtg   1080
gaatggaaac aaatgcagcc aagaatgtga aatgataata taataaacga gtgacaatat   1140
tcgaaatgcc aatggatgta tataatgaat atgttcatgc ctaacttttt taggaacgtt   1200
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<210> 24
 <211> 369
 <212> PRT
 <213> Arabidopsis thaliana

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20     25     30
Leu Pro Pro Cys Leu Ile Ser Ile Ser Lys Lys Lys Leu Leu Lys Asn
35     40     45
Ile Asp Ile Ile Asn Gly Gly Gly Gln Arg Ile Asn Ala Trp Val Asp
50     55     60
Ser Met Arg Ala Ser Ser Pro Thr His Leu Lys Ser Leu Pro Ser Ser
65     70     75     80

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PF58635.ST25.txt

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100 105 110
Ile Val Met Phe Leu Asp Tyr Asp Gly Thr Leu Ser Pro Ile Val Asp
115 120 125
Asp Pro Asp Lys Ala Phe Met Ser Ser Lys Met Arg Arg Thr Val Lys
130 135 140
Lys Leu Ala Lys Cys Phe Pro Thr Ala Ile Val Thr Gly Arg Cys Ile
145 150 155 160
Asp Lys Val Tyr Asn Phe Val Lys Leu Ala Glu Leu Tyr Tyr Ala Gly
165 170 175
Ser His Gly Met Asp Ile Lys Gly Pro Ala Lys Gly Phe Ser Arg His
180 185 190
Lys Arg Val Lys Gln Ser Leu Leu Tyr Gln Pro Ala Asn Asp Tyr Leu
195 200 205
Pro Met Ile Asp Glu Val Tyr Arg Gln Leu Leu Glu Lys Thr Lys Ser
210 215 220
Thr Pro Gly Ala Lys Val Glu Asn His Lys Phe Cys Ala Ser Val His
225 230 235 240
Phe Arg Cys Val Asp Glu Lys Lys Trp Ser Glu Leu Val Leu Gln Val
245 250 255
Arg Ser Val Leu Lys Lys Phe Pro Thr Leu Gln Leu Thr Gln Gly Arg
260 265 270
Lys Val Phe Glu Ile Arg Pro Met Ile Glu Trp Asp Lys Gly Lys Ala
275 280 285
Leu Glu Phe Leu Leu Glu Ser Leu Gly Phe Gly Asn Thr Asn Asn Val
290 295 300
Phe Pro Val Tyr Ile Gly Asp Asp Arg Thr Asp Glu Asp Ala Phe Lys
305 310 315 320
Met Leu Arg Asp Arg Gly Glu Gly Phe Gly Ile Leu Val Ser Lys Phe
325 330 335
Pro Lys Asp Thr Asp Ala Ser Tyr Ser Leu Gln Asp Pro Ser Glu Val
340 345 350
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355 360 365
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<211> 1558
<212> DNA
<213> Arabidopsis thaliana

<400> 25
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catacatgtc aagtgtcatg cgtagtgcag tgcaaaatgt tgccaagtat ttccctaccg 660
cgatcattag tggaagaagc cgggataagg tgtatgagtt tgttaatttg agtgaacttt 720
attacgccgg aagccatgga atggacatca tgagtccgcg aggagaatct ttaaaccatg 780
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PF58635.ST25.txt

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tagaagaaaa gaactggaca ttggttgcac agtgtgtaga tgatgtcatc agaacatatac 1020
caaaactacg gctaacacat ggccggaagg ttttagagat ccgtcctgtg attgactggg 1080
acaaagggaa agctgtgaca tttctacttg aatcactcgg cctaaacaac tgtgaggatg 1140
ttcttccaat ctatgttggg gatgatcgaa cagacgaaga tgcatttaag gtactacgag 1200
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<210> 26
 <211> 385
 <212> PRT
 <213> Arabidopsis thaliana

<400> 26

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			20					25					30		
Ser	Ser	Ala	Ala	Ala	Thr	Ala	Ile	Ser	Gln	Asn	Asn	Asn	Leu	Leu	Leu
		35					40					45			
Thr	Val	Pro	Arg	Lys	Lys	Thr	Gly	Ile	Leu	Asp	Asp	Val	Lys	Ser	Asn
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Gly	Trp	Leu	Asp	Ala	Met	Lys	Ser	Ser	Ser	Pro	Pro	Pro	Thr	Ile	Leu
65					70					75					80
Asn	Lys	Asp	Asn	Leu	Ser	Asn	Asp	Ala	Thr	Asp	Met	Thr	Tyr	Arg	Glu
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Trp	Met	Gln	Leu	Lys	Tyr	Pro	Ser	Ala	Leu	Thr	Ser	Phe	Glu	Lys	Ile
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Met	Ser	Phe	Ala	Lys	Gly	Lys	Arg	Ile	Ala	Leu	Phe	Leu	Asp	Tyr	Asp
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Gly	Thr	Leu	Ser	Pro	Ile	Val	Glu	Glu	Pro	Asp	Cys	Ala	Tyr	Met	Ser
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Ser	Ala	Met	Arg	Ser	Ala	Val	Gln	Asn	Val	Ala	Lys	Tyr	Phe	Pro	Thr
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Ala	Ile	Ile	Ser	Gly	Arg	Ser	Arg	Asp	Lys	Val	Tyr	Glu	Phe	Val	Asn
				165					170					175	
Leu	Ser	Glu	Leu	Tyr	Tyr	Ala	Gly	Ser	His	Gly	Met	Asp	Ile	Met	Ser
			180					185					190		
Pro	Ala	Gly	Glu	Ser	Leu	Asn	His	Glu	His	Ser	Arg	Thr	Val	Ser	Val
		195					200						205		
Tyr	Glu	Gln	Gly	Lys	Asp	Val	Asn	Leu	Phe	Gln	Pro	Ala	Ser	Glu	Phe
	210					215					220				
Leu	Pro	Met	Ile	Asp	Lys	Val	Leu	Cys	Ser	Leu	Ile	Glu	Ser	Thr	Lys
225					230					235					240
Asp	Ile	Lys	Gly	Val	Lys	Val	Glu	Asp	Asn	Lys	Phe	Cys	Ile	Ser	Val
				245					250					255	
His	Tyr	Arg	Asn	Val	Glu	Glu	Lys	Asn	Trp	Thr	Leu	Val	Ala	Gln	Cys
			260					265						270	
Val	Asp	Asp	Val	Ile	Arg	Thr	Tyr	Pro	Lys	Leu	Arg	Leu	Thr	His	Gly
		275					280					285			
Arg	Lys	Val	Leu	Glu	Ile	Arg	Pro	Val	Ile	Asp	Trp	Asp	Lys	Gly	Lys
	290					295					300				
Ala	Val	Thr	Phe	Leu	Leu	Glu	Ser	Leu	Gly	Leu	Asn	Asn	Cys	Glu	Asp
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PF58635.ST25.txt

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                340                      345                      350
Ala Val Pro Lys Asp Ser Asn Ala Phe Tyr Ser Leu Arg Asp Pro Ser
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Gly
385

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<210> 27
 <211> 1530
 <212> DNA
 <213> Arabidopsis thaliana

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gttcccaaaa gacaccagtg cgtcgtattc ttacaagac ccacctgagg tgatgaattt     1200
cttgggacgg ttggtgagt ggaaacagat gcagcaataa acgtgcaagg ggcaatgaag     1260
tacatttagt agtcttttta ataaaacgag aatattcata actataggtg catatataga     1320
tataatatgt acatccctaa cctataatgg aacattgtac aagatcctct tatagattga     1380
tcttgttcat cacaatctt ttcttttagt aaaagagatt atatgaacaa gaaaaatggg     1440
gaacttttat cgatttgggg atatattatt atagccttct atctttattg cttgtaggca     1500
atttcttact tttcaagtta ggctattgta
1530

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<210> 28
 <211> 370
 <212> PRT
 <213> Arabidopsis thaliana

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<400> 28
Met Val Ser Gln Asn Val Val Val Ser Asp Ala Lys Thr Gly Ile Ile
1          5          10          15
Thr Val Ser Thr Val Ser Asn Ser Ser Val Phe Thr Pro Thr Ala Gln
20        25        30
Lys Pro Pro Thr Ala Pro Gly Tyr Ile Ser Val Ser Lys Lys Lys Leu
35        40        45
Leu Lys Asn Leu Glu Ile Asn Gly Ala Asp Gln Ser Gln Arg Leu Asn
50        55        60
Ser Trp Val Asp Ser Met Arg Ala Ser Ser Pro Thr His Leu Lys Ser

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65					70					75					80
Leu	Ser	Ser	Phe	Ser	Ser	Glu	Glu	Glu	His	Asn	Ser	Trp	Ile	Lys	Arg
				85					90					95	
His	Pro	Ser	Ala	Leu	Asn	Met	Phe	Glu	Arg	Ile	Ile	Glu	Glu	Ala	Arg
			100					105					110		
Gly	Lys	Gln	Ile	Val	Met	Phe	Leu	Asp	Tyr	Asp	Gly	Thr	Leu	Ser	Pro
		115					120					125			
Ile	Val	Asp	Asp	Pro	Asp	Arg	Ala	Phe	Met	Thr	Ser	Lys	Met	Arg	Arg
		130					135					140			
Thr	Val	Lys	Lys	Met	Ala	Lys	Cys	Phe	Pro	Thr	Ser	Ile	Val	Thr	Gly
145					150					155					160
Arg	Cys	Ile	Asp	Lys	Val	Tyr	Ser	Phe	Val	Lys	Leu	Ala	Glu	Leu	Tyr
				165					170					175	
Tyr	Ala	Gly	Ser	His	Gly	Met	Asp	Ile	Lys	Gly	Pro	Thr	Lys	Gly	Phe
			180					185					190		
Ser	Arg	Tyr	Asn	Lys	Asp	Lys	Pro	Ser	Val	Leu	Tyr	Gln	Pro	Ala	Gly
		195					200					205			
Asp	Phe	Leu	Pro	Met	Ile	Asp	Glu	Val	Tyr	Lys	Gln	Leu	Val	Glu	Lys
	210					215					220				
Thr	Lys	Ser	Thr	Pro	Gly	Ala	Lys	Val	Glu	Asn	Asn	Lys	Phe	Cys	Leu
225					230					235					240
Ser	Val	His	Phe	Arg	Cys	Val	Asp	Glu	Lys	Lys	Trp	Ser	Glu	Leu	Ala
				245					250					255	
Ser	Lys	Val	Arg	Ser	Val	Val	Lys	Asn	Tyr	Pro	Thr	Leu	Lys	Leu	Ser
			260					265					270		
Gln	Gly	Arg	Lys	Val	Phe	Glu	Ile	Arg	Pro	Ile	Ile	Lys	Trp	Asn	Lys
		275					280					285			
Gly	Lys	Ala	Leu	Glu	Phe	Leu	Leu	Glu	Ser	Leu	Gly	Phe	Glu	Asn	Cys
	290					295					300				
Asn	Asp	Val	Phe	Pro	Ile	Tyr	Ile	Gly	Asp	Asp	Lys	Thr	Asp	Glu	Asp
305					310				315						320
Ala	Phe	Lys	Leu	Leu	Arg	Gly	Arg	Gly	Gln	Gly	Phe	Gly	Ile	Leu	Val
				325					330					335	
Ser	Lys	Phe	Pro	Lys	Asp	Thr	Ser	Ala	Ser	Tyr	Ser	Leu	Gln	Asp	Pro
			340					345					350		
Pro	Glu	Val	Met	Asn	Phe	Leu	Gly	Arg	Leu	Val	Glu	Trp	Lys	Gln	Met
		355					360					365			
Gln	Gln														
	370														

<210> 29
 <211> 1178
 <212> DNA
 <213> Populus trichocarpa

<400> 29
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 gccaaacagg gtattgatat caccatcgca atggtgctgc ccaagtctct gttttcacct 120
 gttgtgccaa agccattgcc tgccgctcct ggtgggtatt tcacaataac ccgaaagagg 180
 ttctcgaaga agacagaaac tggaggcaaa atcagttcct gggttgattc tatgagggat 240
 tcttcaccta cccgtgtcaa atccaccact tctttatcag aaactgaaga gaaaaattct 300
 tggattgtaa accatccttc tgctctgaac atgtttgagc aaatagttaa aggctcaaag 360
 ggaaagcaga ttgtgatgtt ccttgattat gatggtacac tgtcaccat tgttgaagat 420
 cctgacagag cattcatgac caatgagatg agagaagctg tcagggacgt tgctagatac 480
 tttcccacgg ctatagtgac gggaaggtgt agaaaaagg tgtatagctt tgtaagattg 540
 gcagggtctt attatgctgg tagccatggc atggacatca agggaccatc caaaaataat 600
 tgcaaatacg aaaaaggtgg tgtaactctt caacctgcc gtgaattttt acccatgatt 660
 gatgaggtgt acaatgtctt gttggagaga acaaaatcta tcccaggagc taaagtagaa 720
 aacaacaaat tttgcgtatc cgtacacttt cgatgtgttg aggaaaagat gtgggctata 780

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ttagtagagc aagtcgcatc agttctcaat gattatccca agcttagatt aactcaaggg 840
aggaagggtt tagagatccg acccaccatt aaatgggaca agggcaaagc tcttgaattc 900
ttgtagaggt cattaggata tgccaattct actgacgttt ttccgggtcta tattggagat 960
gatcgaactg atgaggacgc attcaagggt ctaagaaaca gggggcaagg gcttgggatt 1020
cttgtttcta aagttcccaa ggaaacaaat gcctcttatt ctctacagga accaaaagag 1080
gcaagttcct taatgtaaca agcaagttgt tatactttta tttgtggtaa taattattgt 1140
taaattttca gttttgcaag ttcgactaat aaatcata 1178

```

<210> 30
 <211> 355
 <212> PRT
 <213> Populus trichocarpa

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<400> 30
Met Thr Asn Gln Asn Val Val Val Pro Asp Ala Lys Gln Gly Ile Asp
1      5      10
Ile Thr Ile Ala Met Val Leu Pro Lys Ser Leu Phe Ser Pro Val Val
20     25     30
Pro Lys Pro Leu Pro Ala Ala Pro Gly Gly Tyr Phe Thr Ile Thr Arg
35     40     45
Lys Arg Phe Ser Lys Lys Thr Glu Thr Gly Gly Lys Ile Ser Ser Trp
50     55     60
Val Asp Ser Met Arg Asp Ser Ser Pro Thr Arg Val Lys Ser Thr Thr
65     70     75     80
Ser Leu Ser Glu Thr Glu Glu Lys Asn Ser Trp Ile Val Asn His Pro
85     90     95
Ser Ala Leu Asn Met Phe Glu Gln Ile Val Lys Gly Ser Lys Gly Lys
100    105    110
Gln Ile Val Met Phe Leu Asp Tyr Asp Gly Thr Leu Ser Pro Ile Val
115    120    125
Glu Asp Pro Asp Arg Ala Phe Met Thr Asn Glu Met Arg Glu Ala Val
130    135    140
Arg Asp Val Ala Arg Tyr Phe Pro Thr Ala Ile Val Thr Gly Arg Cys
145    150    155    160
Arg Lys Lys Val Tyr Ser Phe Val Arg Leu Ala Gly Leu Tyr Tyr Ala
165    170    175
Gly Ser His Gly Met Asp Ile Lys Gly Pro Ser Lys Asn Asn Cys Lys
180    185    190
Tyr Glu Lys Gly Gly Val Leu Phe Gln Pro Ala Ser Glu Phe Leu Pro
195    200    205
Met Ile Asp Glu Val Tyr Asn Val Leu Leu Glu Arg Thr Lys Ser Ile
210    215    220
Pro Gly Ala Lys Val Glu Asn Asn Lys Phe Cys Val Ser Val His Phe
225    230    235    240
Arg Cys Val Glu Glu Lys Met Trp Ala Ile Leu Val Glu Gln Val Arg
245    250    255
Ser Val Leu Asn Asp Tyr Pro Lys Leu Arg Leu Thr Gln Gly Arg Lys
260    265    270
Val Leu Glu Ile Arg Pro Thr Ile Lys Trp Asp Lys Gly Lys Ala Leu
275    280    285
Glu Phe Leu Leu Glu Ser Leu Gly Tyr Ala Asn Ser Thr Asp Val Phe
290    295    300
Pro Val Tyr Ile Gly Asp Asp Arg Thr Asp Glu Asp Ala Phe Lys Val
305    310    315    320
Leu Arg Asn Arg Gly Gln Gly Leu Gly Ile Leu Val Ser Lys Val Pro
325    330    335
Lys Glu Thr Asn Ala Ser Tyr Ser Leu Gln Glu Pro Lys Glu Ala Ser
340    345    350
Ser Leu Met

```

355

<210> 31
 <211> 1184
 <212> DNA
 <213> Populus trichocarpa

<400> 31
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 gccagaaaag gtgttgatat caccatcaca atggccctgt ccaagtctct gttttcacct 120
 gttgtgccga agccattgcc agctgctcct ggtgggtatt tcacaatatc ccggaagatg 180
 ttcgcaaaga agactgaaac tggaggcaaa accaattcct gggctgattc tatgagagat 240
 tcttcacctt cccgtgtcaa atccactacg tctttatcag aaatcgagga gaaaaatact 300
 tggattgtaa atcatccttc tgctttgaac atgttcgagc aaatagttaa tggctcaaag 360
 ggaaaacaga ttgtaatgtt tttagattat gatggtacac tgtcacccat tgttgaagat 420
 cctgacaggg cattcatgac caacgagatg agagaagctg ttagggacgt cgctagatac 480
 tttccactg ctatagtacg gggaagggtg agggataagg tgtacagctt cgtaagattg 540
 gcagggcctt attacgtggt tagccatggc atggacatca agggaccatc caagaattgt 600
 tgcagaaaca aaaaagatta tcaagggtga ctttttcaac ctgccagtga ttttttacct 660
 atgattgatg aggtgtacaa tgctttgctg gagagaacaa agtatatccc aggggctaga 720
 gtagaagaca acaaattttg catatccgta cactttcgtt gtgtcgagga aaagatgtgg 780
 gctgcattag tagagcaagt aagatcagtt ctcaatgggt atccaaaact tcgattaact 840
 caagggagga aggttttaga gatccgaccc accattaaat gggacaaggg caaagctctt 900
 gagttcgtgt tggaatcatt aggatatgcc aattctactg atgttttacc agtttatatt 960
 ggagatgatc gaactgatga ggatgcattc aaggttctaa gaaacagggg acaagggctt 1020
 gggattcttg tttctaaagt tcccaaggaa acaaatgcct cgtattctct acaagagcca 1080
 acagaggcaa gttctttaat ctaacaagca aaggggttat gattaatttc tgggtgctaata 1140
 tatggttgat tttcaatctt acaagatgga ctgatgaatt atgt 1184

<210> 32
 <211> 357
 <212> PRT
 <213> Populus trichocarpa

<400> 32
 Met Thr Asn Gln Asn Val Val Val Pro Asn Ala Arg Lys Gly Val Asp
 1 5 10 15
 Ile Thr Ile Thr Met Ala Leu Ser Lys Ser Leu Phe Ser Pro Val Val
 20 25 30
 Pro Lys Pro Leu Pro Ala Ala Pro Gly Gly Tyr Phe Thr Ile Ser Arg
 35 40 45
 Lys Met Phe Ala Lys Lys Thr Glu Thr Gly Gly Lys Thr Asn Ser Trp
 50 55 60
 Ala Asp Ser Met Arg Asp Ser Ser Pro Thr Arg Val Lys Ser Thr Thr
 65 70 75 80
 Ser Leu Ser Glu Ile Glu Glu Lys Asn Thr Trp Ile Val Asn His Pro
 85 90 95
 Ser Ala Leu Asn Met Phe Glu Gln Ile Val Asn Gly Ser Lys Gly Lys
 100 105 110
 Gln Ile Val Met Phe Leu Asp Tyr Asp Gly Thr Leu Ser Pro Ile Val
 115 120 125
 Glu Asp Pro Asp Arg Ala Phe Met Thr Asn Glu Met Arg Glu Ala Val
 130 135 140
 Arg Asp Val Ala Arg Tyr Phe Pro Thr Ala Ile Val Thr Gly Arg Cys
 145 150 155 160
 Arg Asp Lys Val Tyr Ser Phe Val Arg Leu Ala Gly Leu Tyr Tyr Ala
 165 170 175
 Gly Ser His Gly Met Asp Ile Lys Gly Pro Ser Lys Asn Cys Cys Arg
 180 185 190

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

<210> 33
<211> 1337
<212> DNA
<213> Populus trichocarpa

<400> 33
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acggcggccc agaaacctcc agcggcacca ggtggttaca tatccatttc tagaaagaaa 180
ctcttaaaga atctggaaat caatggagga gcaagaatta atgcttggtg tgattccatg 240
agagcctcat ctctactca tatcaagtcc acgccttctg ttaatgaaga ccaaagctca 300
tggtattcttc accacccatc agcactggag atgtttgagc agataattga tgcctctaaa 360
ggaaagcaaa ttgttatgtt cttggactat gatggcacac tttctcctat tgttgatgac 420
ccagataaag ctttcatgtc caagcaggtg atgagagcaa cagtgaagaa gcttgcaaga 480
tttttcccta ctgcaatagt gagggtgagg tgcagagaca aggtgtataa ctttgtagcg 540
ttagcagaac tgtactatgc tggaagccat ggcatggaca ttaaaggacc agcaaaaggc 600
tccaaatata agaaagttag tgagctttac cactgtatgt gcaagtacca tccaggcggt 660
gatggtggtg tctttcaggc tgccagtga tttcttccca tgatagatga ggtttacgaa 720
gaattggtag agaaaactaa aacaactcca ggggccaagg tggagaacaa caaattctgc 780
ctctctgtgc actatcgctg cgttgatgag aaaaaatgga gtggactggc acaagtagtt 840
aagtcagtg tgaaggagta cccaaagcct cgacttactc aaggaagaaa ggttttagaa 900
atccgcccta ccattaaatg ggacaaagga aaggctcttg aatttttgtt agagtcaact 960
ggattcgcca attgactga tgtttttcct gtttacattg gagatgatag aacagacgaa 1020
gatgcattta aggtactaag agagagagga caaggttttg gtatcttggt ctctaaaatc 1080
ccaaaggaca ctagtgcac ttattcccta caggaaccca cccaggcaag ttatggattt 1140
cttgcgacgt ttggtggagt ggaaacggct ggcctttcaa gggcggtcaa ggggtggtgta 1200
aagagtagtg ggaagattga gacagtacag atatacccac cccttcaaga aatgtaatta 1260
aggggtggat gtttagactat gtgatcatct cttgttcaag attaaaaagt atgaacaaga 1320
aaagtaggga aatataa 1337

<210> 34
<211> 408
<212> PRT
<213> Populus trichocarpa

<400> 34

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Met Thr Asn Gln Asn Val Val Val Ala Asp Thr Asn Ser Gly Leu Asn
1      5      10      15
Leu Ala Ile Thr Val His Val Thr Asn Ser Ser Ile Phe Thr Thr Ala
20      25      30
Ala Gln Lys Pro Pro Ala Ala Pro Gly Gly Tyr Ile Ser Ile Ser Arg
35      40      45
Lys Lys Leu Leu Lys Asn Leu Glu Ile Asn Gly Gly Ala Arg Ile Asn
50      55      60
Ala Trp Val Asp Ser Met Arg Ala Ser Ser Pro Thr His Ile Lys Ser
65      70      75      80
Thr Pro Ser Val Asn Glu Asp Gln Ser Ser Trp Ile Leu His His Pro
85      90      95
Ser Ala Leu Glu Met Phe Glu Gln Ile Ile Asp Ala Ser Lys Gly Lys
100     105     110
Gln Ile Val Met Phe Leu Asp Tyr Asp Gly Thr Leu Ser Pro Ile Val
115     120     125
Asp Asp Pro Asp Lys Ala Phe Met Ser Lys Gln Val Met Arg Ala Thr
130     135     140
Val Arg Lys Leu Ala Arg Phe Phe Pro Thr Ala Ile Val Ser Gly Arg
145     150     155     160
Cys Arg Asp Lys Val Tyr Asn Phe Val Arg Leu Ala Glu Leu Tyr Tyr
165     170     175
Ala Gly Ser His Gly Met Asp Ile Lys Gly Pro Ala Lys Gly Ser Lys
180     185     190
Tyr Lys Lys Val Ser Glu Leu Tyr His Cys Ile Cys Lys Tyr His Pro
195     200     205
Gly Gly Asp Gly Val Val Phe Gln Ala Ala Ser Glu Phe Leu Pro Met
210     215     220
Ile Asp Glu Val Tyr Glu Leu Val Glu Lys Thr Lys Thr Thr Pro
225     230     235     240
Gly Ala Lys Val Glu Asn Asn Lys Phe Cys Leu Ser Val His Tyr Arg
245     250     255
Cys Val Asp Glu Lys Lys Trp Ser Gly Leu Ala Gln Val Val Lys Ser
260     265     270
Val Leu Lys Glu Tyr Pro Lys Leu Arg Leu Thr Gln Gly Arg Lys Val
275     280     285
Leu Glu Ile Arg Pro Thr Ile Lys Trp Asp Lys Gly Lys Ala Leu Glu
290     295     300
Phe Leu Leu Glu Ser Leu Gly Phe Ala Asn Cys Thr Asp Val Phe Pro
305     310     315     320
Val Tyr Ile Gly Asp Asp Arg Thr Asp Glu Asp Ala Phe Lys Val Leu
325     330     335
Arg Glu Arg Gly Gln Gly Phe Gly Ile Leu Val Ser Lys Ile Pro Lys
340     345     350
Asp Thr Ser Ala Ser Tyr Ser Leu Gln Glu Pro Thr Gln Ala Ser Tyr
355     360     365
Gly Phe Leu Ala Thr Phe Gly Gly Val Glu Thr Ala Gly Leu Ser Arg
370     375     380
Ala Val Lys Gly Gly Val Lys Ser Ser Gly Lys Ile Glu Thr Val Gln
385     390     395     400
Ile Tyr Pro Pro Leu Gln Glu Met
405

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<210> 35
 <211> 1253
 <212> DNA
 <213> Populus trichocarpa
 <400> 35

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tcttacgcac catcgggagg atcaactctcc tctagcaagt atagaaacgt taacattcct    180
agaaaaaagc ctgggaaact tgatgaagtc tgctcgaacg catgtctgga tgccatgaaa    240
tcctcatcac cccctcgcaa gaagctcatt aaggatggtg ctgacacagc ttacggcacc    300
tggatgctca agcatccatc agcactcaac tcatttgagg aaattgcaaa ttttgccaaa    360
aacaaaaaga tagcaatggt tctagactac gatggtactc tctctccaat agtagatgac    420
ccagataatg cccttatgtc tgatgatatg cgttttgag taagaaactt cgcaaaatat    480
ttcccaacgg cgattattag tggaagaagt cgtgacaagg tttatcagct tgtaggacta    540
acagaattgt attatgctgg tagtcatggg atggacatct tgggccctgt acgaaaagcg    600
gtgtccaatg accatccaaa ctgtaatgaa tcaactactg accaacaggg caaggaggtg    660
aatctgtttc agcctgctag agaatttata cctctgatcg atgaggtttt tagaaccctt    720
gtcgaggata ctaaggggat caaaggtgca aaagttgaga atcataaatt ttgcgtctct    780
gtacatttcc gtaatgtaga tgagaagaac tggcaatcta ttgcacaatg tgttcaggat    840
atttttagata agtatcctcg tttgcgaaaa actcatggac ggaaggtttt agagggtccgt    900
ccaatgattg actggaataa aggaaaagca gttgaatttt tgcttgaatc tctaggtcta    960
agtaatagag atgatgtact cccaatttat attggtgatg atctgacaga tgaagatgca   1020
ttcaagggtgc tccgggaggg gaatcgaggc tgtggaattt tgggtgtcatc tagaccctaa   1080
gaaaccaatg cagtttactc tctcagagat ccatcggagg tgatgaaatt tctcaattcc   1140
ctgggtgacat ggaagaaggt ggatgcatcc tgaataatag gaggaacatc tgatgacatg   1200
cagagataat ttagaaattt gattttgaat attttataga tattttgcaa aat           1253

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<210> 36
 <211> 380
 <212> PRT
 <213> Populus trichocarpa

<400> 36

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

				245				250				255			
Asp	Glu	Lys	Asn	Trp	Gln	Ser	Ile	Ala	Gln	Cys	Val	Gln	Asp	Ile	Leu
260				265				270							
Asp	Lys	Tyr	Pro	Arg	Leu	Arg	Lys	Thr	His	Gly	Arg	Lys	Val	Leu	Glu
275				280				285							
Val	Arg	Pro	Met	Ile	Asp	Trp	Asn	Lys	Gly	Lys	Ala	Val	Glu	Phe	Leu
290				295				300							
Leu	Glu	Ser	Leu	Gly	Leu	Ser	Asn	Arg	Asp	Asp	Val	Leu	Pro	Ile	Tyr
305				310				315				320			
Ile	Gly	Asp	Asp	Leu	Thr	Asp	Glu	Asp	Ala	Phe	Lys	Val	Leu	Arg	Glu
325				330				335							
Gly	Asn	Arg	Gly	Cys	Gly	Ile	Leu	Val	Ser	Ser	Arg	Pro	Lys	Glu	Thr
340				345				350							
Asn	Ala	Val	Tyr	Ser	Leu	Arg	Asp	Pro	Ser	Glu	Val	Met	Lys	Phe	Leu
355				360				365							
Asn	Ser	Leu	Val	Thr	Trp	Lys	Lys	Val	Asp	Ala	Ser				
370				375				380							

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<210> 37
<211> 1271
<212> DNA
<213> Populus trichocarpa
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<400>	37						
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ccttactcac	caccaggagg	atcactctcc	tctagcaagt	atagtaggaa	aaagccaggg		180
aagcttgacg	aagtctgctc	gagtggatgg	ctggatgcc	tgaatcttc	atcacccct		240
cgaagaagc	tctttaagga	tggttctgac	accgcttaca	gttctggat	gttcaagcat		300
ccatcagcac	tcaattcatt	tgaggaaatt	gcaaatTTTg	ctaaaaacaa	gaagatagca		360
atgtttctag	actatgatgg	gactctttct	ccaattgtag	atgaccggga	taatgcgttt		420
atgtctgatg	atatgcgttc	tattgtaaaa	aacgttgcca	agtatttccc	aacggcgatt		480
attagtgga	gaagtcgtga	caaggtttat	cagctggtag	gactaacaga	actatattat		540
gctgtagtgc	atgggatgga	cattttgggc	cctgtaggaa	aagcttcaat	gtccaatgat		600
catccaaact	atagtgaaac	tactactgac	caacagggca	aggaggtgaa	tctgttcacg		660
cctgctagag	aattttatacc	tatgatcgat	gaggttttta	gaacccttgt	cgagaatact		720
aagggaatcg	agggtgcaaa	agtcgagaat	cacaaatTTT	gtgcctctgt	gcatttccga		780
aatgtagatg	aggagaactg	gcaacctatt	gcacaatgtg	ttcaggatat	tctagataag		840
taccctcggt	tgcggagAAC	tcatggacgg	aaggtttttag	aggtcggtcc	aatgattgac		900
tgaataaaag	ggaaggcagt	tgaattcctg	cttgaatctc	tagggctaag	taacagagac		960
gacgtgctct	caattttatat	cggcgatgat	ctgtcagatg	aggatgcgtt	caagggtgctc		1020
cgggagggga	atcgagggtta	tggaaattctc	gtatcatcta	gacccaaaga	aaccagtgca		1080
gtttactctc	tcaaagatcc	aattgaggtg	atgaaatttc	ttaactcctt	ggtgacatgg		1140
aagaaggtag	aagaagggtg	atgcatcctg	aataacagga	ggactatctg	atgacatgca		1200
tatagcttag	gtttttgatt	tcgagcattt	taattattga	tattacataa	taaagaggct		1260
gttggtacag	c						1271

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<210> 38
<211> 386
<212> PRT
<213> Populus trichocarpa
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<400> 38															
Met	Asp	Val	Glu	Ser	Asn	His	Ser	Ser	Pro	Val	Leu	Ala	Asp	Pro	Ala
1				5					10					15	
Ser	Ile	Asn	Ser	Ser	Arg	Leu	Gly	Ile	Tyr	Ser	Asn	Leu	Leu	Pro	Tyr
			20					25					30		
Ser	Pro	Pro	Gly	Gly	Ser	Leu	Ser	Ser	Ser	Lys	Tyr	Ser	Arg	Lys	Lys
		35					40					45			

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Pro Gly Lys Leu Asp Glu Val Cys Ser Ser Gly Trp Leu Asp Ala Met
50 55 60
Lys Ser Ser Ser Pro Pro Arg Lys Lys Leu Phe Lys Asp Gly Ser Asp
65 70 75 80
Thr Ala Tyr Ser Ser Trp Met Phe Lys His Pro Ser Ala Leu Asn Ser
85 90 95
Phe Glu Glu Ile Ala Asn Phe Ala Lys Asn Lys Lys Ile Ala Met Phe
100 105 110
Leu Asp Tyr Asp Gly Thr Leu Ser Pro Ile Val Asp Asp Pro Asp Asn
115 120 125
Ala Phe Met Ser Asp Asp Met Arg Ser Ile Val Lys Asn Val Ala Lys
130 135 140
Tyr Phe Pro Thr Ala Ile Ile Ser Gly Arg Ser Arg Asp Lys Val Tyr
145 150 155 160
Gln Leu Val Gly Leu Thr Glu Leu Tyr Tyr Ala Gly Ser His Gly Met
165 170 175
Asp Ile Leu Gly Pro Val Gly Lys Ala Ser Met Ser Asn Asp His Pro
180 185 190
Asn Tyr Ser Glu Ser Thr Thr Asp Gln Gln Gly Lys Glu Val Asn Leu
195 200 205
Phe Gln Pro Ala Arg Glu Phe Ile Pro Met Ile Asp Glu Val Phe Arg
210 215 220
Thr Leu Val Glu Asn Thr Lys Gly Ile Glu Gly Ala Lys Val Glu Asn
225 230 235 240
His Lys Phe Cys Ala Ser Val His Phe Arg Asn Val Asp Glu Glu Asn
245 250 255
Trp Gln Pro Ile Ala Gln Cys Val Gln Asp Ile Leu Asp Lys Tyr Pro
260 265 270
Arg Leu Arg Arg Thr His Gly Arg Lys Val Leu Glu Val Arg Pro Met
275 280 285
Ile Asp Trp Asn Lys Gly Lys Ala Val Glu Phe Leu Leu Glu Ser Leu
290 295 300
Gly Leu Ser Asn Arg Asp Asp Val Leu Ser Ile Tyr Ile Gly Asp Asp
305 310 315 320
Leu Ser Asp Glu Asp Ala Phe Lys Val Leu Arg Glu Gly Asn Arg Gly
325 330 335
Tyr Gly Ile Leu Val Ser Ser Arg Pro Lys Glu Thr Ser Ala Val Tyr
340 345 350
Ser Leu Lys Asp Pro Ile Glu Val Met Lys Phe Leu Asn Ser Leu Val
355 360 365
Thr Trp Lys Lys Val Glu Glu Gly Gly Cys Ile Leu Asn Asn Arg Arg
370 375 380
Thr Ile
385

<210> 39

<211> 1307

<212> DNA

<213> Populus trichocarpa

<400> 39

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acaaactctg	gaatcaactt	ggcaatcaca	gtgcatgtaa	caaattcctc	tatcttcacc	120
acggccgcgc	agaagcctcc	ggcggctcct	ggtggttaca	tctctatttc	cagaaagaaa	180
cttttaaaga	atcttgaaat	cagtggagga	gcaagattta	atgcttgggt	taattccatg	240
agaacctctt	ctcctactca	tgtcaagtcc	acaccttctg	ctaatgacga	ccaaagctca	300
tggattcttc	accacccatc	agcaactggag	atgtttgagc	agataattga	tgcttccaaa	360
ggaaagcaaa	tagttatgtt	cttggactat	gatggcacac	tttctcctat	cgttgatgac	420
ccagatagag	ctttcatgtc	caagaagggt	gatgagagca	acagtgagaa	agcttgcgag	480

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atcttttctt actgcaatag tgagtgggag atgcagagac aagcagaact gtactatgct 540
ggaagccatg gcatggacat caaaggacca gccaaaggca gcaaatacaa gaaaggcagt 600
gaaggtgttg tttttcaagc tggcagttag tttcttccaa tgatagatga ggttttacaaa 660
gaactggtag agaaaactaa aacaactcca ggggccaagg tggaaaataa caaattctgt 720
ctctctgtgc actatcgctg cgttgatgag aagaaatgga gtggactggc tcaagtagtt 780
aagtcagtgt tgaaggagta cccaaagctt cgacttactc aaggaagaaa ggtttttagaa 840
atccgcccta ccattaaatg ggacaaagga aaggctcttg aatttttgtt agagtctctt 900
ggatttcgcca attgtactga tgtttttcct gtttacattg gagatgatag aacagacgag 960
gatgcattta aggtgctgag agagagagga caaggttttg gtatcttggg ctctaaattc 1020
cccaaggaca ctagtgcac ttattcccta caagaaccca cccaggcaag tagtatccaa 1080
tacatgcata attgctgtca tggatttttt gcaacgtttg gtgcagtgga aacggctagc 1140
ctttcaaggg cagtcaaggg tttaagatgg agtaggaaaa tcgaaacagt atatatatat 1200
atatacccac cccttcaaga aatgtaatta aggtggggat cgatgttaga ccacgtaatt 1260
tcttggttcag gttaaaaaaa tatgaacaag aaaaaggaa gggaaaa 1307

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<210> 40

<211> 398

<212> PRT

<213> Populus trichocarpa

<400> 40

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

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Asp Asp Arg Thr Asp Glu Asp Ala Phe Lys Val Leu Arg Glu Arg Gly
305                      310                      315                      320
Gln Gly Phe Gly Ile Leu Val Ser Lys Phe Pro Lys Asp Thr Ser Ala
                      325                      330                      335
Ser Tyr Ser Leu Gln Glu Pro Thr Gln Ala Ser Ser Ile Gln Tyr Met
                      340                      345                      350
His Asn Cys Cys His Gly Phe Phe Ala Thr Phe Gly Ala Val Glu Thr
                      355                      360                      365
Ala Ser Leu Ser Arg Ala Val Lys Gly Leu Arg Trp Ser Arg Lys Ile
                      370                      375                      380
Glu Thr Val Tyr Ile Tyr Ile Tyr Pro Pro Leu Gln Glu Met
385                      390                      395

```

<210> 41
 <211> 1274
 <212> DNA
 <213> Populus trichocarpa

<400> 41

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gtgctcactg attctgctcc cctaagcaag tcaaggctac gcgggtacca ccatggtttg      120
atgctgccgt actcaccctc aggtgcacct ttctcgtaa atctattact atctattcct      180
aggaggaaaa ctggagtgtg tgatgatgtt cgctcctgtg gttggctgga tgccatgaaa      240
tcatcatctc ctactcataa gaagtttgcc aaggatatta accatgagct ttccgcacct      300
gatccagaag ttgcctatcg cacctggctg cttaaataac catctgcgct tgcattcttc      360
gagcaaattg caaactttgc aaaaggcaag agaatcgctt tatttctgga ttatgatggt      420
actctttcac caattgttga aaatcctgac aatgccttca tgtctgctga tatgcgttcc      480
attgtaaagg aagtggcaaa atatttccca acagcaataa tcagtgggaa aagccgtgac      540
aaggtgtatg agttttagg gcttacagaa ctctactatg cgggtagtca tggtaggat      600
atcatgggcc ctgtcaggca atctgtatct gacgaccacc gaaattgtat caagtctacg      660
gacaagcagg gcaacgaagt taacttattc cagcctgcaa gagaattttt acctatgatt      720
gacgaggttt atagtccct tgtcaggatt accgaagata ttaaaggggc aacagttgag      780
aacaataaat tctgtgtctc tgtacattac cgtaacgttg atcaagataa ctggaaatca      840
gttggggagc gtgtccagga tgtcataaag aagtatcctc gcctgcgatt gactcatggg      900
aggaagggtt tagaaatccg tcccgcatc aattgggaca aggggaaagc tcttgaattt      960
ctacttgaat cactagatct cagcaattgt gatgatgtgc tgccgattta tgttgagat      1020
gaccggacag atgaagatgc atttaagggt ttgagagaga ggaactgtgg ttatggcatt      1080
tttgtatcaa aatcaccgaa ggaaagcaat gcgtattact ctctcagaga cccagcagag      1140
gtcatggagt ttctcaagtc cctggtgaca tggaagaaat cgagtgcctt ataaatgtta      1200
caaggaatta cataaagagg agaatactat aacatacaca gacaacatga aaggcatttt      1260
atattcttaa gttc

```

<210> 42
 <211> 387
 <212> PRT
 <213> Populus trichocarpa

<400> 42

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

```

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				85					90					95					
Arg	Thr	Trp	Leu	Leu	Lys	Tyr	Pro	Ser	Ala	Leu	Ala	Ser	Phe	Glu	Gln				
			100						105					110					
Ile	Ala	Asn	Phe	Ala	Lys	Gly	Lys	Arg	Ile	Ala	Leu	Phe	Leu	Asp	Tyr				
			115						120					125					
Asp	Gly	Thr	Leu	Ser	Pro	Ile	Val	Glu	Asn	Pro	Asp	Asn	Ala	Phe	Met				
			130						135				140						
Ser	Ala	Asp	Met	Arg	Ser	Ile	Val	Lys	Glu	Val	Ala	Lys	Tyr	Phe	Pro				
			145										155		160				
Thr	Ala	Ile	Ile	Ser	Gly	Arg	Ser	Arg	Asp	Lys	Val	Tyr	Glu	Phe	Val				
					165					170					175				
Gly	Leu	Thr	Glu	Leu	Tyr	Tyr	Ala	Gly	Ser	His	Gly	Met	Asp	Ile	Met				
			180						185					190					
Gly	Pro	Val	Arg	Gln	Ser	Val	Ser	Asp	Asp	His	Arg	Asn	Cys	Ile	Lys				
			195						200					205					
Ser	Thr	Asp	Lys	Gln	Gly	Asn	Glu	Val	Asn	Leu	Phe	Gln	Pro	Ala	Arg				
			210							215				220					
Glu	Phe	Leu	Pro	Met	Ile	Asp	Glu	Val	Tyr	Ser	Ser	Leu	Val	Arg	Ile				
			225							230				235		240			
Thr	Glu	Asp	Ile	Lys	Gly	Ala	Thr	Val	Glu	Asn	Asn	Lys	Phe	Cys	Val				
					245					250					255				
Ser	Val	His	Tyr	Arg	Asn	Val	Asp	Gln	Asp	Asn	Trp	Lys	Ser	Val	Gly				
			260						265					270					
Glu	Arg	Val	Gln	Asp	Val	Ile	Lys	Lys	Tyr	Pro	Arg	Leu	Arg	Leu	Thr				
			275						280					285					
His	Gly	Arg	Lys	Val	Leu	Glu	Ile	Arg	Pro	Ala	Ile	Asn	Trp	Asp	Lys				
			290						295				300						
Gly	Lys	Ala	Leu	Glu	Phe	Leu	Leu	Glu	Ser	Leu	Asp	Leu	Ser	Asn	Cys				
			305							310				315		320			
Asp	Asp	Val	Leu	Pro	Ile	Tyr	Val	Gly	Asp	Asp	Arg	Thr	Asp	Glu	Asp				
					325					330				335					
Ala	Phe	Lys	Val	Leu	Arg	Glu	Arg	Asn	Cys	Gly	Tyr	Gly	Ile	Phe	Val				
			340						345					350					
Ser	Lys	Ser	Pro	Lys	Glu	Ser	Asn	Ala	Tyr	Tyr	Ser	Leu	Arg	Asp	Pro				
			355						360					365					
Ala	Glu	Val	Met	Glu	Phe	Leu	Lys	Ser	Leu	Val	Thr	Trp	Lys	Lys	Ser				
			370				375						380						
Ser	Ala	Leu																	
			385																

<210> 43
 <211> 1271
 <212> DNA
 <213> Populus trichocarpa

<400> 43
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 ccatgtctac cctcaggcgg tgcagctttt tcgccgaatc tatggttatc tattcctaag 180
 aagaaaactg gagttcttga tgatgttcgc tccattgggt ggctggacgc aatgaaatca 240
 tcatctcctc ctcacaagaa gtttaacaag gatattaaca tggagctttc ctcgcctgat 300
 ccggaagctg cctaccgcac ttggcttctt aaatatccat ctgctcttgc atcttttgag 360
 caaattgcaa actttgcaaa aggcaagaga atcgcttgt tcctggatta tgatggtact 420
 ctatcgccga ttgtagaaaa tcccgacaat gccctcatgt ctgatgttat gcgttctgct 480
 gtaaagaaag tggcaaaata ttcccccaca gcaataatta gtggaagaag ccgtgacaag 540
 gtatacgagt ttgtaggact cacagaactc tattatgcgg gtagccatgg aatggatatt 600
 gtggggccctg ttaggcactc cacatctgat gatcacccaa attgtatcga gtctacggac 660
 atgcagggaa atgaagttaa ttattccag ccagctagag aatttttacc tatgatcgac 720
 gaggttttta gctcccttct caagagtacc gaagaaatta aaggtgcaac agttgagaac 780

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aataaattct gtgtctctgt acattaccga aatgttgatg aagataaatg gaaagcagtt      840
tgggagtgtg tcgaagatgt cattaagaag taccctcgcc tgcgattgac ttttgggagg      900
aagggttttag aaattcgtcc cacgatcaat tgggacaagg ggaaagctct tgtgtttcta      960
cttgaatcac taggtctcag caattgtgat gatgtgctcc ctatttatgt tggagatgac     1020
cggacagatg aagatgcatt taagattttg agagagagga actgtgggta tgggattctg     1080
gtatcaaaat caccgaagga aagcaatgca tattactctc tcagggaccc atccgaggtc     1140
atggagtttc tcaagtccct tgtgatgtgg aagaagtcga gtgctcaata aatgctacaa     1200
ggaatacaca aggaagagga gaataactcta atatacacat acaacatgaa agactttata     1260
tgtttttttc t

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<210> 44
<211> 386
<212> PRT
<213> Populus trichocarpa

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<400> 44
Met Asp Leu Lys Ser Asn His Ser Ala Pro Val Leu Thr Asp Ser Ala
1      5      10      15
Pro Leu Gly Lys Ser Arg Leu Gly Gly His His Gly Leu Phe Pro Cys
      20      25      30
Ser Pro Ser Gly Gly Ala Ala Phe Ser Pro Asn Leu Trp Leu Ser Ile
      35      40      45
Pro Lys Lys Lys Thr Gly Val Leu Asp Asp Val Arg Ser Ile Gly Trp
      50      55      60
Leu Asp Ala Met Lys Ser Ser Ser Pro Pro His Lys Lys Phe Asn Lys
65      70      75      80
Asp Ile Asn Met Glu Leu Ser Ser Pro Asp Pro Glu Ala Ala Tyr Arg
      85      90      95
Thr Trp Leu Leu Lys Tyr Pro Ser Ala Leu Ala Ser Phe Glu Gln Ile
      100     105     110
Ala Asn Phe Ala Lys Gly Lys Arg Ile Ala Leu Phe Leu Asp Tyr Asp
      115     120     125
Gly Thr Leu Ser Pro Ile Val Glu Asn Pro Asp Asn Ala Leu Met Ser
      130     135     140
Asp Val Met Arg Ser Ala Val Lys Lys Val Ala Lys Tyr Phe Pro Thr
145     150     155     160
Ala Ile Ile Ser Gly Arg Ser Arg Asp Lys Val Tyr Glu Phe Val Gly
      165     170     175
Leu Thr Glu Leu Tyr Tyr Ala Gly Ser His Gly Met Asp Ile Val Gly
      180     185     190
Pro Val Arg His Ser Thr Ser Asp Asp His Pro Asn Cys Ile Glu Ser
      195     200     205
Thr Asp Met Gln Gly Asn Glu Val Asn Leu Phe Gln Pro Ala Arg Glu
      210     215     220
Phe Leu Pro Met Ile Asp Glu Val Phe Ser Ser Leu Leu Lys Ser Thr
225     230     235     240
Glu Glu Ile Lys Gly Ala Thr Val Glu Asn Asn Lys Phe Cys Val Ser
      245     250     255
Val His Tyr Arg Asn Val Asp Glu Asp Lys Trp Lys Ala Val Trp Glu
      260     265     270
Cys Val Glu Asp Val Ile Lys Lys Tyr Pro Arg Leu Arg Leu Thr Phe
      275     280     285
Gly Arg Lys Val Leu Glu Ile Arg Pro Thr Ile Asn Trp Asp Lys Gly
      290     295     300
Lys Ala Leu Val Phe Leu Leu Glu Ser Leu Gly Leu Ser Asn Cys Asp
305     310     315     320
Asp Val Leu Pro Ile Tyr Val Gly Asp Asp Arg Thr Asp Glu Asp Ala
      325     330     335
Phe Lys Ile Leu Arg Glu Arg Asn Cys Gly Tyr Gly Ile Leu Val Ser

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PF58635.ST25.txt

340 345 350
 Lys Ser Pro Lys Glu Ser Asn Ala Tyr Tyr Ser Leu Arg Asp Pro Ser
 355 360 365
 Glu Val Met Glu Phe Leu Lys Ser Leu Val Met Trp Lys Lys Ser Ser
 370 375 380
 Ala Gln
 385

<210> 45
 <211> 1768
 <212> DNA
 <213> Oryza sativa

<400> 45
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 agtctttcat taagtaaaac tttctgaaca tttgaagtgc aacggagctg gcgttttatg 120
 gcttttcccta tgaagcaatc cacatctctg atatatagtg gtactcgttc tgaacatgac 180
 aagttctcag gtattttctct gttgatgaac tgcctccaca cctgcagtga caagaagaca 240
 ctgaagaagt ggtttttcat cgacaagaca gttggctaaa ttcagcagtg cactcgctct 300
 taaagcgatc gatcatactt ctttcttgat ctcatcatcc taaattttcc caaatggatt 360
 tgagcaatag ctcacctgtc atcacctgac cgggtggcgat cagccagcag ttgttgggag 420
 gcctgccttc aaatctgatg cagttttcag tcatgcccgg tggctactcc agctctggca 480
 tgaacgttgg tgtcagtagg ctcaaaatcg aggaagtcct tgtcaatgga ctgcttgatg 540
 ccatgaaatc ctcgtcacct cgcaggaggc tgaatgtagc atttggcgag gacaattcat 600
 ctgaagaaga agaccctgct tacagcgctt ggatggcaaa atgtccttct gctttggctt 660
 ccttcaagca aattgtagcc agtgcacaag ggaagaagat tgctgtgttt ctagactatg 720
 acggcacact gtcgcctatt gtggatgatc ctgacaaagc agtgatgtct cccgtgatga 780
 gagctgctgt gagaaatgtt gcgaagtact tccccactgc aattgtcagc ggaagggtccc 840
 gcaataaggt gtttgaattt gtaaaactga aggagcttta ttatgctgga agccatggta 900
 tggacataat ggcaccttca gcaaatcatg agcacagtgc tgaaaagagc aaacaggcca 960
 atctcttcca acctgcacac gactttctgc caatgatcga tgaggttacc aagtcctctt 1020
 tgcaagttgt cagtggaatt gaaggtgcaa ctgttgagaa caacaaattc tgcgtttctg 1080
 tacattatcg caacgttgca gagaaggatt ggaaactggc cgcacggctc gtaaacgaag 1140
 tgctggaggc ttttctcgt ctcaaagtaa ccaatggagc aatggtttta gaggttcgtc 1200
 cggtgatcga ctgggacaag ggaaaggctg tggagtttct gctccagtca ctcggtgctaa 1260
 atgactctga aaatgtgatc cccatctaca ttggagacga cagaactgac gaagacgctt 1320
 tcaaggtact tcgacagcga aattgcggtt atggaatact agtttcacag gttcccaagg 1380
 aaactgaagc cttctactcg ctgagagatc catctgaagt gatggagttc ctcaatttct 1440
 tgggtgagatg gaagaagcac tcagtgtgaa aaaaagaaga cagtctgagc aggttttact 1500
 aatactactc cggcagaaat aactgtagtt tccgaggcga caattttgaa gcattggacg 1560
 ctgtagatag atgtaataac tctctagata tgtggttcca attcattctt attgatcgat 1620
 gttattgtat tgttcatggt ctccaccgct gagaaaaatt aatcagtgat ggttgatccg 1680
 gtctcttgcc attgtaagtt gtaagcaaga aggcctctt cttagtatcc atgctgatga 1740
 acgaaattaa aaccttcatt tttcgtgt 1768

<210> 46
 <211> 371
 <212> PRT
 <213> Oryza sativa

<400> 46
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 1 5 10 15
 Ser Gln Gln Leu Leu Gly Gly Leu Pro Ser Asn Leu Met Gln Phe Ser
 20 25 30
 Val Met Pro Gly Gly Tyr Ser Ser Ser Gly Met Asn Val Gly Val Ser
 35 40 45
 Arg Leu Lys Ile Glu Glu Val Leu Val Asn Gly Leu Leu Asp Ala Met
 50 55 60

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Lys Ser Ser Ser Pro Arg Arg Arg Leu Asn Val Ala Phe Gly Glu Asp
65 70 75 80
Asn Ser Ser Glu Glu Glu Asp Pro Ala Tyr Ser Ala Trp Met Ala Lys
85 90 95
Cys Pro Ser Ala Leu Ala Ser Phe Lys Gln Ile Val Ala Ser Ala Gln
100 105 110
Gly Lys Lys Ile Ala Val Phe Leu Asp Tyr Asp Gly Thr Leu Ser Pro
115 120 125
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130 135 140
Ala Val Arg Asn Val Ala Lys Tyr Phe Pro Thr Ala Ile Val Ser Gly
145 150 155 160
Arg Ser Arg Asn Lys Val Phe Glu Phe Val Lys Leu Lys Glu Leu Tyr
165 170 175
Tyr Ala Gly Ser His Gly Met Asp Ile Met Ala Pro Ser Ala Asn His
180 185 190
Glu His Ser Ala Glu Lys Ser Lys Gln Ala Asn Leu Phe Gln Pro Ala
195 200 205
His Asp Phe Leu Pro Met Ile Asp Glu Val Thr Lys Ser Leu Leu Gln
210 215 220
Val Val Ser Gly Ile Glu Gly Ala Thr Val Glu Asn Asn Lys Phe Cys
225 230 235 240
Val Ser Val His Tyr Arg Asn Val Ala Glu Lys Asp Trp Lys Leu Val
245 250 255
Ala Arg Leu Val Asn Glu Val Leu Glu Ala Phe Pro Arg Leu Lys Val
260 265 270
Thr Asn Gly Arg Met Val Leu Glu Val Arg Pro Val Ile Asp Trp Asp
275 280 285
Lys Gly Lys Ala Val Glu Phe Leu Leu Gln Ser Leu Gly Leu Asn Asp
290 295 300
Ser Glu Asn Val Ile Pro Ile Tyr Ile Gly Asp Asp Arg Thr Asp Glu
305 310 315 320
Asp Ala Phe Lys Val Leu Arg Gln Arg Asn Cys Gly Tyr Gly Ile Leu
325 330 335
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Pro Ser Glu Val Met Glu Phe Leu Asn Phe Leu Val Arg Trp Lys Lys
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His Ser Val
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<212> DNA
<213> Oryza sativa

<400> 47
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aacttcgtcg gcctctccga cctctactac gccgcgagcc atggcatgga catcaaggga 660
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<210> 48
 <211> 367
 <212> PRT
 <213> Oryza sativa

<400> 48

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

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 340 345 350
 Lys Arg Lys Ser Ser Ser Ser Ser Leu Met Ile Arg Pro Arg Val
 355 360 365

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 <212> DNA
 <213> Oryza sativa

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 <211> 310
 <212> PRT
 <213> Oryza sativa

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 35 40 45
 Phe Leu Asp Tyr Asp Gly Thr Leu Ser Pro Ile Val Glu Asp Pro Asp
 50 55 60
 Arg Ala Val Met Thr Asp Glu Met Arg Asp Ala Val Arg Gly Val Ala
 65 70 75 80
 Ala Arg Phe Pro Thr Ala Ile Val Ser Gly Arg Cys Arg Asp Lys Val
 85 90 95
 Leu Ser Phe Val Gly Leu Glu Glu Leu Tyr Tyr Ala Gly Ser His Gly

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

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 <211> 1791
 <212> DNA
 <213> Oryza sativa

<400> 51

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 Ala Ala Val Ser Ala Ser Ser Met Leu Gly Gly Gly Gly Ala Ala Tyr
 35 40 45
 Gln Ala Ala Val Val Ala His Val Ala Pro Val Pro Ala Ile Arg Pro
 50 55 60
 Cys Ala Ser Trp Val Val Glu Ala Met Arg Ala Ser Ser Pro Thr Arg
 65 70 75 80
 Pro Ala Ala Ala Ala Val Asp Ala Glu Tyr Asp Ala Trp Thr Gln Arg
 85 90 95
 Lys His Pro Ser Ala Leu Gly Ser Phe Glu Gln Val Ala Ala Ala Ala
 100 105 110
 Ser Gly Lys Arg Val Val Val Phe Leu Asp Tyr Asp Gly Thr Leu Ser
 115 120 125
 Pro Ile Val Ala Asp Pro Asp Met Ala Phe Met Ser Asp Glu Met Arg
 130 135 140
 Ala Ala Val Arg Asp Val Ala Glu His Phe Pro Ala Ala Ile Val Thr
 145 150 155 160
 Gly Arg Cys Val Asp Lys Val Gln Ser Phe Val Gly Leu Pro Glu Leu
 165 170 175
 Tyr Tyr Ala Gly Ser His Gly Met Asp Ile Lys Gly Pro Ser Ser Asn
 180 185 190
 Glu Glu Glu Asp Thr Lys Ile Leu Leu Gln Pro Ala Arg Glu Phe Leu
 195 200 205
 Pro Val Ile Asn Lys Ala Tyr Lys Ala Leu Met Glu Lys Thr Lys Ser
 210 215 220
 Thr Pro Gly Ala Arg Val Glu Asn Asn Lys Phe Cys Leu Ser Val His
 225 230 235 240
 Phe Arg Cys Val Asp Glu Lys Arg Trp Asn Pro Leu Ala Glu Gln Val
 245 250 255
 Lys Ala Val Leu Arg Asp Tyr Pro Glu Leu Lys Leu Thr Gln Gly Arg
 260 265 270
 Lys Val Leu Glu Ile Arg Pro Ser Ile Met Trp Asp Lys Gly Lys Ala
 275 280 285
 Val Glu Phe Leu Leu Lys Ser Leu Gly Phe Asp Asp Asp Arg Arg Asp
 290 295 300
 Val Leu Pro Val Tyr Ile Gly Asp Asp Arg Thr Asp Glu Asp Ala Phe
 305 310 315 320
 Lys Val Leu Arg Lys Arg Gly Gln Gly Leu Gly Ile Leu Val Ser Lys
 325 330 335
 Cys Ala Lys Glu Thr Asp Ala Ser Tyr Ser Leu Gln Asp Pro Ala Glu
 340 345 350
 Lys Tyr Thr Asn Ala Gly Ala His Val Phe Val Thr Met Leu Leu Thr
 355 360 365
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 405 410 415
 Val Leu Ala Leu His Val Met Arg Ala Arg His Leu Arg Ser Pro Ala
 420 425 430
 Cys Leu Pro Asn Val Ala Leu Ala Thr Ala Phe Asp Cys Ile Ser Met
 435 440 445
 Tyr Val Arg Arg Trp Gln Arg Gly Glu Val Thr Asn Val His Glu Val
 450 455 460
 Tyr Val Leu Ser Arg Ile Glu Phe Val Pro Tyr Met Ala Ser Thr Gly
 465 470 475 480
 Glu Gln Arg Ser Thr Gly Glu Thr Ala Val Gly Ala Ala Ala Ala Gly
 485 490 495
 Met Tyr Arg Met Val Pro Leu His Ala Ala Lys Trp Gly Asp Lys Trp
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 Arg Met Ser Gly Glu Arg Met Ala Ala Gly Val Asp Cys Arg Arg Arg
 515 520 525
 Glu Asp Leu Pro Ser Ser Gly Asp Gly Tyr Arg Gln Glu Glu Ile Asp
 530 535 540
 Gly Gly His Gly Val Pro Cys Ser Ile Gly Ala Val Glu Ala Ser Ala
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 Ile Ile Val Ser Asp Ala Pro Glu Gly Leu Ile Ser Thr Leu Thr Thr
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 <212> DNA
 <213> Oryza sativa

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PF58635.ST25.txt

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<210> 54
 <211> 359
 <212> PRT
 <213> Oryza sativa

<400> 54

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

PF58635.ST25.txt

Lys Leu Thr Glu Leu Tyr Tyr Ala Gly Ser His Gly Met Asp Ile Met
 145 150 155 160
 Gly Pro Val Gly Glu His Asp Ser Val Thr Asn His Arg Ser Ser Ile
 165 170 175
 Asn Ser Asn Arg Lys Gln Gly Lys Gly Val Lys Ile Phe Gln Ala Gly
 180 185 190
 Thr Glu Phe Leu Pro Met Ile Asn Glu Val Phe Arg Leu Leu Ile Asp
 195 200 205
 Lys Thr Lys Ala Ile Asp Gly Val Lys Ile Glu Asn Asn Lys Phe Cys
 210 215 220
 Val Ser Val His Tyr Arg Asn Val Glu Glu Lys Asn Trp Gln Leu Val
 225 230 235 240
 Ser Gln Cys Thr Asn Asp Val Leu Lys Val Tyr Pro Arg Leu Arg Leu
 245 250 255
 Thr His Gly Arg Lys Val Leu Glu Ile Arg Pro Val Ile Asp Trp Asn
 260 265 270
 Lys Gly Lys Ala Val Glu Phe Leu Leu Asp Ser Leu Asp Leu Ala Ser
 275 280 285
 Cys Lys Asn Val Leu Pro Ile Tyr Ile Gly Asp Asp Cys Thr Asp Glu
 290 295 300
 Asp Ala Phe Lys Val Leu Arg Asp Asp Lys Arg Gly Phe Gly Ile Leu
 305 310 315 320
 Val Ser Ser Val Pro Lys Asp Ser His Ala Leu Tyr Ser Leu Ile Asp
 325 330 335
 Pro Ser Glu Val Met Glu Phe Leu Lys Arg Leu Val Met Trp Lys Asn
 340 345 350
 Glu Glu Ala Ser His Asn Lys
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<210> 55
 <211> 1517
 <212> DNA
 <213> Oryza sativa

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 cgcggttgat tttgggggat gacgaaccac gccggttcg ccgcggacga cgcggtcacc 180
 gcggccgtgc cgggtgcaggc ggcgcagggc ggcgcgcat tcccgccgtt cctggcgccg 240
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 ggggtggcga cgggtgcccg atcttggccg cgccacgcca agcccgtctc cggcgccgag 360
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 aagaacaaca acaagagtta tatgcatgga tggtaactga tcatgcatga tcgatgcatg 1380
 cggtggtgaa aaccggggct tttggctttg aaggtgtcta ttaccgtatc cttctggcca 1440

PF58635.ST25.txt

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<211> 366
<212> PRT
<213> Oryza sativa

<400> 56
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Ala Pro Ser Ser Arg Leu Thr Asp Cys Lys Lys Ala Ala Ala His Val
35 40 45
Asp Leu Ala Gly Ala Gly Gly Val Ala Thr Val Pro Gly Ser Trp Pro
50 55 60
Arg His Ala Lys Pro Val Ser Gly Ala Glu Leu Asp Asp Trp Met Glu
65 70 75 80
Lys His Pro Ser Ala Leu Ala Trp Phe Glu Ser Val Ala Ala Ala Ala
85 90 95
Lys Gly Lys Glu Ile Val Val Phe Leu Asp Tyr Asp Gly Thr Leu Ser
100 105 110
Pro Ile Val Ala Asp Pro Asp Arg Ala Phe Met Ser Asp Glu Met Arg
115 120 125
Glu Ala Val Arg Gly Val Ala Lys His Phe Pro Thr Ala Ile Val Ser
130 135 140
Gly Arg Cys Ile Asp Lys Val Phe Asp Phe Val Lys Leu Glu Glu Leu
145 150 155 160
Tyr Tyr Ala Gly Ser His Gly Met Asp Ile Arg Gly Pro Thr Ala Ala
165 170 175
Ala Ser Glu Tyr Asn His Asn Met Lys Ala Lys Gln Gly Asp Ala Val
180 185 190
Thr Phe Gln Pro Ala Ala Asp Phe Leu Pro Val Ile Glu Glu Val Tyr
195 200 205
His Val Leu Lys Glu Arg Met Ala Ser Ile Arg Gly Ser Leu Val Glu
210 215 220
Asn Asn Lys Phe Cys Leu Ser Val His Tyr Arg Cys Val Asp Glu Ala
225 230 235 240
Glu Trp Gly Val Leu Asp Gly Lys Val Arg Ala Val Ile Glu Gly Tyr
245 250 255
Pro Asp Leu Arg Leu Ser Lys Gly Arg Lys Val Leu Glu Ile Arg Pro
260 265 270
Val Ile Asp Trp Asp Lys Gly Ser Ala Leu Gln Phe Leu Leu Lys Ser
275 280 285
Leu Gly Tyr Glu Gly Arg Asn Asn Val Phe Pro Ile Tyr Ile Gly Asp
290 295 300
Asp Arg Thr Asp Glu Asp Ala Phe Lys Val Leu Arg Asn Met Gly Gln
305 310 315 320
Gly Ile Gly Ile Leu Val Thr Lys Val Pro Lys Glu Thr Ala Ala Ser
325 330 335
Tyr Thr Leu Arg Glu Pro Ser Glu Val Lys Glu Phe Leu Arg Lys Leu
340 345 350
Val Lys Ile Lys Ile Asn Gly Asp Lys Gly Leu Ile Gly Lys
355 360 365

<210> 57
<211> 1395
<212> DNA

PF58635.ST25.txt

<213> Oryza sativa

<400> 57

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gtgcggcgca agtgcctgca ggcggcgcag cagctggagc tcggcgccgg gctgcgcggc      180
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ttcgccgact gcagcgacgt gctgccggtc tacatcggcg acgaccgcac ggacgaggac     1140
gcgttcaagg ttttgcggcg gcgtgggcag ggctgggga tcctggtgtc caagcacccc     1200
aaggagacga ggcgctcctt ctccctccag gagccgcgcg agctgaagaa aagctcagtg     1260
cactaccacac tgccggcaca acgtagcaac aggtgaacc gcatattggt caattggtgg     1320
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<210> 58

<211> 464

<212> PRT

<213> Oryza sativa

<400> 58

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

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195	200	205
Lys His Phe Pro Thr Ala Ile Val Ser Gly Arg Cys Arg Asp Lys Val		
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Phe Glu Phe Val Lys Leu Ala Glu Leu Tyr Tyr Ala Gly Ser His Gly		
225	230	235
Met Asp Ile Lys Gly Pro Ala Ser Arg His Ala Ala Ala Lys Ser Pro		
245	250	255
Pro His Asn Lys Gly Val Leu Phe Gln Pro Ala Ser Glu Phe Leu Pro		
260	265	270
Met Ile Glu Gln Val His Gln Arg Leu Glu Gln Ala Thr Ser Ser Ile		
275	280	285
Pro Gly Ala Lys Val Glu Asn Asn Lys Phe Cys Val Ser Val His Phe		
290	295	300
Arg Cys Val Asp Glu Lys Ser Trp Gly Ala Leu Ala Glu Thr Val Arg		
305	310	315
Arg Val Val Arg Glu Phe Pro Arg Leu Arg Leu Ser Gln Gly Arg Met		
325	330	335
Val Phe Glu Val Arg Pro Thr Ile Lys Trp Asp Lys Gly Lys Ala Leu		
340	345	350
Glu Phe Leu Leu Asp Ser Leu Gly Phe Ala Asp Cys Ser Asp Val Leu		
355	360	365
Pro Val Tyr Ile Gly Asp Asp Arg Thr Asp Glu Asp Ala Phe Lys Val		
370	375	380
Leu Arg Arg Arg Gly Gln Gly Val Gly Ile Leu Val Ser Lys His Pro		
385	390	395
Lys Glu Thr Ser Ala Ser Phe Ser Leu Gln Glu Pro Ala Glu Leu Lys		
405	410	415
Lys Ser Ser Val His Tyr Pro Leu Pro Ala Gln Arg Ser Asn Arg Leu		
420	425	430
Asn Arg Ile Leu Val Asn Trp Trp Gly Glu Gly Leu Lys Asp Lys Leu		
435	440	445
Cys Ala Leu Glu Pro Ser His Glu Arg Glu Gly Cys Met Ala Pro His		
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<210> 59
 <211> 1878
 <212> DNA
 <213> Oryza sativa

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aaaaagaagc ctctgcctgg aaagatcgaa gaagtccgcg ccgctggatg gcttgatctc	600
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gctgacgagc ttgatttgct ataccgtaat tgggtgggtga accatccatc tgctttaaca	720
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cgtgataagg tttttgactt tgtgaaacta actgaactgt attacgctgg aagtcatgga	960
atggatatca tggggcctgt taggaagtct gattcgagtg gtcagcatgt ggaatgtatc	1020
aggtccactg attcagaggg taaagaggtc aacctcttcc aacctgcaag tgagttttta	1080
cctatgatta gcgaggtgta caaaaagctc agtgaaagta ttaaggacat tgatggtgca	1140

PF58635.ST25.txt

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<210> 60
 <211> 382
 <212> PRT
 <213> Oryza sativa

<400> 60

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

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305		310		315		320									
Pro	Ile	Tyr	Val	Gly	Asp	Asp	Lys	Thr	Asp	Glu	Asp	Ala	Phe	Lys	Val
				325					330					335	
Leu	Lys	Ala	Asn	Ser	Ile	Gly	Phe	Gly	Ile	Leu	Val	Ser	Ser	Val	Pro
				340					345					350	
Lys	Asp	Thr	Asp	Ala	Phe	Tyr	Ser	Val	Arg	Asp	Pro	Ala	Glu	Val	Met
				355					360					365	
Glu	Phe	Leu	Lys	Lys	Leu	Ala	Ser	Trp	Lys	Glu	Glu	Ser	Thr		
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<210> 61
 <211> 1830
 <212> DNA
 <213> Aquilegia spp.

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 <212> PRT
 <213> Aquilegia spp.

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 Met Asp Cys Met Pro Asn Ser Ser Asp Lys Lys Thr Leu Lys Arg Thr
 20 25 30
 Tyr Lys Pro Lys Lys Leu Asn Leu Asp Pro Met Asp Ile Lys Ser Asn

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35	40	45
His Ala Ala Pro Val Leu Thr Asp Pro Val Pro Ile Thr Lys Ser Arg		
50	55	60
Leu Gly Ile His Ser Ser Leu Leu Pro Tyr Ser Pro Gly Ala Thr Phe		
65	70	75
Ser Ser Gly Met Tyr Ile Thr Ile Pro Arg Arg Lys Val Ile Pro Ser		80
	85	90
Lys Leu Asp Asp Ile Arg Ser Ser Gly Trp Leu Asp Ala Met Lys Ser		95
	100	105
Ser Ser Pro Pro Arg Lys Lys Leu Thr Lys Asp Ser Asn Ile Glu Val		110
	115	120
Ala Ala Asp Asp Ser Gln Leu Val Tyr Arg Ser Trp Met Leu Lys Tyr		125
	130	135
Pro Ser Ala Leu Ala Ser Phe Glu Gln Ile Met Asn Tyr Ala Lys Gly		140
145	150	155
Lys Arg Ile Ala Leu Phe Leu Asp Tyr Asp Gly Thr Leu Ser Pro Ile		160
	165	170
Val Asp Asp Pro Glu Arg Ala Phe Met Ser Thr Ala Met Arg Ser Ala		175
	180	185
Val Lys Asn Val Ala Val Cys Phe Pro Thr Ala Ile Ile Ser Gly Arg		190
	195	200
Ser Arg Asp Lys Val Tyr Glu Phe Val Gly Leu Thr Glu Leu Tyr Tyr		205
	210	215
Ala Gly Ser His Gly Met Asp Ile Met Gly Pro Val Arg Gln Ser Asp		220
225	230	235
Thr Gly Asp Asn His Ser Asn Cys Ile Arg Ser Thr Asp Lys Gln Gly		240
	245	250
Lys Glu Val Asn Leu Phe Gln Pro Ala Ser Glu Phe Leu Pro Met Ile		255
	260	265
Asp Glu Val Phe Ser Ser Leu Val Glu Phe Thr Lys Gly Ile Glu Gly		270
	275	280
Ala Lys Val Glu Asn Asn Lys Phe Cys Val Ser Val His Tyr Arg Asn		285
	290	295
Val Asp Glu Lys Asn Trp Thr Thr Val Ala His Gly Val His Gly Ile		300
305	310	315
Leu Lys Asp Tyr Pro Arg Leu Arg Leu Thr His Gly Arg Lys Val Leu		320
	325	330
Glu Val Arg Pro Val Ile Asp Trp Asp Lys Gly Lys Ala Val Glu Phe		335
	340	345
Leu Leu Asp Ser Leu Gly Leu Ser Glu Ser Asp Asp Val Leu Pro Ile		350
	355	360
Tyr Val Gly Asp Asp Arg Thr Asp Glu Asp Ala Phe Lys Val Leu Arg		365
	370	375
Glu Lys Asn Arg Gly Tyr Gly Ile Leu Val Ser Ser Val Pro Lys Glu		380
385	390	395
Ser Asn Ala Phe Tyr Ser Leu Lys Asp Pro Ser Glu Val Met Ser Phe		400
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Leu Lys Ser Leu Val Arg Trp Lys Lys Ser Arg Ile		415
	420	425

<210> 63
 <211> 1648
 <212> DNA
 <213> Aquilegia spp.

<400> 63
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 acttttctta atatctcttc tgtgaatctt tagtctttct tgaaagaaaa atccaatctt 180

PF58635.ST25.txt

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gtggtgggtt cagatgtaaa atctgggtta gcaataacag ttgcagtgtc gaattcgtct 360
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cgtagcaagc ttttaaagaa gcttgaagaa acaggtggag ttacagaagg gagaattaat 480
gcttgggttg aatccatgag agcatcttct cctactcgta ttagaccggc agtttctttg 540
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gaagaaataa caaatgcttc taaagggaag caaattgtga tgttcttaga ttatgatggt 660
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gctgttagag atgttgcaag atacttttct actgcaattg tgagcgggag atgcagagat 780
aaggtgtata gctttgtacg cttagcagaa ctgtactatg ctggaagtca tggatggac 840
attaaaggac caaccaaag ttacaaaaac aagaaaagga accaacctgt attgtttcaa 900
ccagcaaagt agtttttgcc catgattgat gaggtttaca aagcattgtt agagaaaacc 960
aaatcaactc caggtgctaa agtggagaac aataggttct gtgtatctgt gcattttaga 1020
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tcttattctc ttcaagaacc ttcagagggt atggatttcc ttcaccggtt agttgaatgg 1380
aagcgtatgt cagttcgagg gcattctaga gtatagtaaa agagcaactt tcccatctag 1440
gagtgacaat gatccaagac tggggaaaat tatatgtatt ttcctttgtt caggaaaaaa 1500
gttaaaagaa aaaaaaagg cttttctcct ttgcttttct ttgggtttgg gggcctcctt 1560
gtaagttgta actactgatg tacaagggga aatgttttca ccaaagcagc ctaatcccat 1620
tatcagggga aggcaaacat tacatttg 1648

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<210> 64
 <211> 376
 <212> PRT
 <213> Aquilegia spp.

<400> 64

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

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210	215	220
Thr Lys Ser Thr Pro Gly Ala Lys Val Glu Asn Asn Arg Phe Cys Val		
225	230	235
Ser Val His Phe Arg Cys Val Asp Glu Lys Ser Trp Thr Glu Leu Ala		240
	245	250
Glu Gln Val Arg Ser Val Leu Lys Glu Tyr Pro Lys Leu Arg Leu Thr		255
	260	265
Gln Gly Arg Lys Val Leu Glu Ile Arg Pro Thr Ile Lys Trp Asp Lys		270
	275	280
Gly Lys Ala Leu Glu Phe Leu Leu Glu Ser Leu Gly Phe Ala Asn Cys		285
	290	295
Asn Asn Val Leu Pro Leu Tyr Ile Gly Asp Asp Arg Thr Asp Glu Asp		300
305	310	315
Ala Phe Lys Val Leu Arg Asp Arg Gly Gln Gly Phe Gly Ile Leu Val		320
	325	330
Ser Lys Val Pro Lys Glu Thr Asn Ala Ser Tyr Ser Leu Gln Glu Pro		335
	340	345
Ser Glu Val Met Asp Phe Leu His Arg Leu Val Glu Trp Lys Arg Met		350
	355	360
Ser Val Arg Gly His Ser Arg Val		365
	370	375

<210> 65
 <211> 1116
 <212> DNA
 <213> Brassica campestris

<400> 65

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cttctcaaga	acctagaaat	catcaatgat	ggcgaaagaa	tcaacgcttg	ggtagattca	180
atgcgagctt	cttctcctac	tcatccaaaa	tactccctt	cttccatctc	ctcagagcaa	240
caactcagtt	catggatcat	gcagcatcct	tctgcattag	aaatgtttga	gaaaatcaca	300
gaagcttcgg	gagggaaaca	aatcgtaata	tttctagatt	atgacggtac	tctctctccc	360
atcgttgatg	atccagacag	agctttcatg	tcaagcaaga	tgagaagaac	agtaaaaaaa	420
ctggctaagt	gttttccaac	tgctatagtt	actggtagat	gcctagacaa	ggtgtataac	480
tttgtcaagc	tagctgagct	gtattatgct	ggcagccatg	gcatggacat	taaagggcca	540
gcaaaaggct	tctccagaca	caagagggtt	aaacagtctc	ttctgtacca	accagccagt	600
gattatcttc	ccatgatcga	tgaagtctat	agacaacttt	tggagaaaac	caaatcaact	660
cctggagtca	tagtagaaaa	caacaagttc	tgtgcttctg	tgcactttcg	ttgcgtcgat	720
gagaagaaat	ggagcgaaat	ggttctacag	gttcggtcgg	tattaaatga	ataccctagg	780
cttaaactga	accaaggtcg	aaagggtttc	gaaatacgtc	ctatgattga	atgggataaa	840
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ccagttttaca	tcggtgatga	ccggaccgac	gaagatgcat	ttaagctgct	acgagacaga	960
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aatgcagcca	agagtgtgaa	gaggatgtat	gtataa			1116

<210> 66
 <211> 371
 <212> PRT
 <213> Brassica campestris

<400> 66

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

PF58635.ST25.txt

35	40	45
Asn Asp Gly Glu Arg Ile	Asn Ala Trp Val Asp	Ser Met Arg Ala Ser
50	55	60
Ser Pro Thr His Pro Lys	Ser Leu Pro Ser Ser	Ile Ser Ser Glu Gln
65	70	75
Gln Leu Ser Ser Trp Ile	Met Gln His Pro Ser	Ala Leu Glu Met Phe
85	90	95
Glu Lys Ile Thr Glu Ala	Ser Gly Gly Lys Gln	Ile Val Ile Phe Leu
100	105	110
Asp Tyr Asp Gly Thr Leu	Ser Pro Ile Val Asp	Asp Pro Asp Arg Ala
115	120	125
Phe Met Ser Ser Lys Met	Arg Arg Thr Val Lys	Lys Leu Ala Lys Cys
130	135	140
Phe Pro Thr Ala Ile Val	Thr Gly Arg Cys Leu	Asp Lys Val Tyr Asn
145	150	155
Phe Val Lys Leu Ala Glu	Leu Tyr Tyr Ala Gly	Ser His Gly Met Asp
165	170	175
Ile Lys Gly Pro Ala Lys	Gly Phe Ser Arg His	Lys Arg Val Lys Gln
180	185	190
Ser Leu Leu Tyr Gln Pro	Ala Ser Asp Tyr Leu	Pro Met Ile Asp Glu
195	200	205
Val Tyr Arg Gln Leu Leu	Glu Lys Thr Lys Ser	Thr Pro Gly Val Ile
210	215	220
Val Glu Asn Asn Lys Phe	Cys Ala Ser Val His	Phe Arg Cys Val Asp
225	230	235
Glu Lys Lys Trp Ser Glu	Leu Val Leu Gln Val	Arg Ser Val Leu Asn
245	250	255
Glu Tyr Pro Arg Leu Lys	Leu Asn Gln Gly Arg	Lys Val Phe Glu Ile
260	265	270
Arg Pro Met Ile Glu Trp	Asp Lys Gly Lys Ala	Leu Glu Phe Leu Leu
275	280	285
Glu Ser Leu Gly Phe Gly	Asn Ser Asn Asn Val	Phe Pro Val Tyr Ile
290	295	300
Gly Asp Asp Arg Thr Asp	Glu Asp Ala Phe Lys	Leu Leu Arg Asp Arg
305	310	315
Gly Glu Gly Cys Gly Val	Leu Val Ser Lys Phe	Pro Lys Asp Thr Asp
325	330	335
Ala Ser Tyr Tyr Leu Gln	Asp Pro Ser Glu Ala	Ser Asp Glu Phe Leu
340	345	350
Ala Thr Ile Gly Gly Val	Glu Thr Asn Ala Ala	Lys Ser Val Lys Arg
355	360	365
Met Tyr Val		
370		

<210> 67
 <211> 1098
 <212> DNA
 <213> Brassica rapa

<400> 67
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 ctcgagatca tcaatggtgg acaaagagtc aacgcttggg tcgattcaat gcgggcttct 180
 tctcctactc atctcaaact actaccttct tctgtctcct cagagaaaca cctcagctca 240
 tggatcatgc agcatccttc agcattagaa atgtttgaga agatcacaca ggcttcagga 300
 gggaaacaaa tcgtaatgtt tcttgattat gatggtactc tctctcccat cgttgatgat 360
 ccagacaaag ctttcatgtc aagcaagatg agaagaactg tgaaaaaatt ggctaaatgt 420
 ttcccaactg caatagttac cggtagatgc atagacaagg tgtataactt tgtgaagctg 480
 gctgagctgt attatgctgg aagccatggc atggacatta aaggtccagc aaaaggtttc 540

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gtagaaaacc acaagtttac cgcttctgtg cactttcggt gcgtggaaga gaagaaatgg 720
agcgaactgg ttctacaggt tcggtcggta ttagagaaat atcctacgct caaactgagc 780
caaggtcggg aggttttcga aatccgtcct atgatcgatt gggataaagg aaaagctctt 840
gagttcttgt tagagtcact tgggtttggg aactctaaca acgttttccc ggtttacatc 900
ggcgacgacg ggaccgacga agatgcattt aagatgctac gagtcagggg tgaaggcctt 960
ggcatacttg tctccaaatt tcccaaggat acagatgctt cgtattctct gcaagatccg 1020
tccgaggcaa gtccacacac gcgtatatta tacctttctg ttctaaata taagatgttt 1080
agcagggccg atttataa 1098
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<210> 68
 <211> 362
 <212> PRT
 <213> Brassica rapa

<400> 68

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

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Leu Gln Asp Pro Ser Glu Ala Ser Pro His Thr Arg Ile Leu Tyr Leu
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 Ser Val Pro Lys Tyr Lys Met Phe Ser Arg
 355 360

<210> 69
 <211> 1280
 <212> DNA
 <213> *Gossypium hirsutum*

<400> 69
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 agagttaatt catgggtcga ttccatgaga gcttcttctc caactcatat gaaatcagca 180
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 gacattaaag gccctgaaaa aggttccaaa tctaacaaag atactgaatc tgttcttttc 540
 caaccagcta gtgaatttct tcccatgatt gatgagggtt ataaacagtt gggtgaaact 600
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 cggtgtgttg atgaaaagaa atggagtga tggcacaac aagtgaagtc tgttttaaaa 720
 gactacccca agcttcggct aactcaaggc cgaaagggtt tggaaatccg tcctacaatc 780
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 aattattggt ttaagatgag agaaatgatt ataaaagctt tgtacatctt tgtaactagt 1200
 tggggtagaa aggttcaagt cttgtagctt cataacttgt ctattaatgc ataggaaagc 1260
 aatggtttcg gattaatggt 1280

<210> 70
 <211> 304
 <212> PRT
 <213> *Gossypium hirsutum*

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

PF58635.ST25.txt

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

<210> 71
 <211> 1509
 <212> DNA
 <213> Hordeum vulgare

<400> 71

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 <212> PRT
 <213> hordeum vulgare

<400> 72

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Val Ser Gly Arg Cys Arg Asp Lys Val Phe Glu Phe Val Lys Leu Ala
65 70 75 80
Glu Leu Tyr Tyr Ala Gly Ser His Gly Met Asp Ile Lys Gly Pro Ala
85 90 95
Lys Ser Ser Ser Gly His Ala Lys Ser Lys Ala Lys Gly Val Leu Phe
100 105 110
Gln Pro Ala Ser Glu Phe Leu Pro Met Ile Glu Glu Val His Gln Arg
115 120 125
Leu Ile Glu Glu Thr Lys His Val Ala Gly Ala Lys Val Glu Asn Asn
130 135 140
Lys Phe Cys Val Ser Val His Phe Arg Cys Val Asp Glu Lys Ser Trp
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Leu Arg Met Ser Gln Gly Arg Met Val Phe Glu Val Arg Pro Thr Ile
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Phe Ala Asp Cys Ser Asn Val Leu Pro Val Tyr Ile Gly Asp Asp Arg
210 215 220
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225 230 235 240
Gly Ile Leu Val Ser Lys His Pro Lys Asp Thr Ser Ala Ser Phe Ser
245 250 255
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<212> DNA
<213> Medicago truncatula

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<210> 74
 <211> 366
 <212> PRT
 <213> Medicago truncatula

<400> 74

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Gly	Tyr	Val	His	Ile	Pro	Arg	Arg	Arg	Ile	Leu	Lys	Asn	Leu	Glu	Ile
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Asn	Gly	Gly	Gln	Arg	Ile	Asn	Thr	Trp	Ile	Asp	Ser	Met	Arg	Ala	Ser
	50					55					60				
Ser	Pro	Thr	His	Val	Lys	Ser	Ser	Pro	Ser	Leu	Ala	Glu	Glu	Tyr	Asn
65					70					75				80	
Ser	Trp	Ile	Leu	Arg	His	Pro	Ser	Ala	Leu	Asp	Met	Phe	Glu	Gln	Ile
				85					90					95	
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	130					135					140				
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	195						200					205			
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	210					215					220				
Asn	His	Lys	Phe	Cys	Thr	Ser	Val	His	Phe	Arg	Cys	Val	Asp	Glu	Lys
225					230					235				240	
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Asp	Arg	Thr	Asp	Glu	Asp	Ala	Phe	Lys	Lys	Leu	Arg	Asp	Ile	Asp	Gln
305					310					315					320
Gly	Phe	Gly	Ile	Leu	Val	Ser	Lys	Phe	Pro	Lys	Asp	Thr	Ala	Ala	Ala
				325					330					335	
Tyr	Ser	Leu	Gln	Glu	Pro	Asn	Glu	Val	Met	Glu	Phe	Leu	Gln	Arg	Leu
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 <212> DNA
 <213> Medicago truncatula

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<210> 76
 <211> 379
 <212> PRT
 <213> Medicago truncatula

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 Arg Thr Ser Met Pro Glu Leu Met Ala Leu Phe Asp Gly Leu Leu Gly

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Ser Pro Thr Arg Thr Arg His Asp Ser Glu Asn Arg Asp Gln Thr His		
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Trp Thr Leu Phe His Pro Ser Ala Leu Asn Met Phe Ser Lys Ile Met		
	100	105
Tyr Asn Thr Asn Gly Lys Gln Ile Val Val Phe Leu Asp Tyr Asp Gly		
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Thr Leu Ser Pro Ile Val Ala Asp Pro Asp Lys Ala Tyr Met Ser Lys		
	130	135
Lys Met Arg Val Thr Leu Lys Asp Ile Ala Arg His Phe Pro Thr Ala		
145	150	155
Ile Val Ser Gly Arg Cys Leu Asn Lys Leu Phe Ser Phe Val Arg Leu		
	165	170
Ala Glu Leu Tyr Thr Ala Gly Ser His Gly Met Asp Ile Lys Gly Pro		
	180	185
Thr Asn Arg Arg Ser Thr Lys Lys Gly Asn Asn Asp Gly Val Leu Leu		
	195	200
Gln Pro Ala Ser Glu Phe Leu Pro Met Ile Asn Glu Val Tyr Lys Ile		
	210	215
Leu Val Glu Lys Thr Lys Cys Val Pro Gly Ala Met Val Glu Asn Asn		
225	230	235
Lys Phe Cys Leu Ser Val His Phe Arg Asn Val Asp Glu Lys Ser Trp		
	245	250
Glu Ala Leu Gly Glu Gln Val Ser Leu Val Met Asn Asp Tyr Pro Lys		
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Leu Lys Leu Thr Gln Gly Arg Lys Val Leu Glu Ile Arg Pro Ile Ile		
	275	280
Lys Trp Asp Lys Gly Arg Ala Leu Glu Phe Leu Leu Glu Ser Leu Gly		
	290	295
Phe Ala Asn Ser Lys Gly Val Phe Pro Ile Tyr Ile Gly Asp Asp Arg		
305	310	315
Thr Asp Glu Asp Ala Phe Lys Val Leu Arg Asn Arg Gly Gln Gly Cys		
	325	330
Gly Ile Leu Val Ser Lys Ile Ser Lys Glu Thr Asn Ala Ser Tyr Thr		
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<210> 77
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 <212> DNA
 <213> Nicotiana benthamiana

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 <211> 390
 <212> PRT
 <213> Nicotiana benthamiana

<400> 78

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Phe	Thr	Thr	Val	Ala	Gln	Lys	Pro	Pro	Pro	Ala	Pro	Gly	Ser	Cys	Ile
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His	His	Lys	Ser	Thr	Pro	Pro	Leu	Ser	Asp	Asp	Ile	Asn	Ser	Trp	Met
				85					90					95	
Val	Gln	His	Pro	Ser	Ala	Leu	Asp	Met	Phe	Glu	Gln	Ile	Ile	Ser	Ala
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		115					120					125			
Ser	Pro	Ile	Val	Glu	Asp	Pro	Asp	Gln	Ala	Phe	Met	Ser	Asp	Ala	Met
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	210					215					220				
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225					230					235				240	
Ala	Ser	Val	His	Phe	Arg	Cys	Val	Asp	Glu	Lys	Lys	Trp	Gly	Glu	Leu
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PF58635.ST25.txt

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Cys  Thr  Asp  Val  Phe  Pro  Val  Tyr  Ile  Gly  Asp  Asp  Arg  Thr  Asp  Glu
305                                     310                                     320
Asp  Ala  Phe  Lys  Val  Leu  Arg  Glu  Arg  Gly  Gln  Gly  Phe  Gly  Ile  Leu
                325                330                335
Val  Ser  Lys  Ile  Pro  Lys  Asp  Thr  His  Ala  Ser  Tyr  Ser  Leu  Gln  Glu
                340                345                350
Pro  Ser  Glu  Val  Met  Val  Phe  Leu  Arg  Arg  Leu  Val  Glu  Trp  Lys  Lys
                355                360                365
Leu  Ser  Leu  Arg  Arg  Gln  Phe  Arg  Ile  Arg  Arg  Gln  Ile  Glu  Glu  Ile
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Lys  Ala  Ser  Leu  Arg  Asn
385                                     390

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<210> 79
 <211> 1675
 <212> DNA
 <213> Nicotiana tabacum

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cttgatttct  gccataaaaa  gatattgggc  acaatggacc  tgaaatcaaa  tacttcccca      180
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```

<210> 80
 <211> 384
 <212> PRT
 <213> Nicotiana tabacum

<400> 80

PF58635.ST25.txt

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20      25      30
Pro Thr Gly Ala Thr Phe Ser Pro Thr Leu Phe Leu Thr Ile Pro Arg
35      40      45
Lys Lys Pro Gly Ile Leu Asp Asp Val Arg Ser Asn Thr Trp Leu Asp
50      55      60
Ala Met Lys Ser Ser Ser Pro Thr His Ser Lys Lys Asn Lys Asp Ser
65      70      75      80
Asn Ala Glu Leu Thr Ala Asn Glu Ser Asp Leu Ala Tyr Arg Ile Trp
85      90      95
Met Leu Lys Tyr Pro Ser Ala Leu Ser Ser Phe Glu Gln Ile Thr Asn
100     105     110
Tyr Ala Lys Gly Lys Arg Ile Ala Leu Phe Leu Asp Tyr Asp Gly Thr
115     120     125
Leu Ser Pro Ile Val Asp Asp Pro Asp Arg Ala Phe Met Ser Gly Ala
130     135     140
Met Arg Ala Thr Val Arg Asn Val Ala Lys Tyr Phe Pro Thr Ala Ile
145     150     155     160
Ile Ser Gly Arg Ser Arg Asp Lys Val Tyr Asp Phe Val Gly Leu Ala
165     170     175
Glu Leu Tyr Tyr Ala Gly Ser His Gly Met Asp Ile Met Gly Pro Val
180     185     190
Arg Ser Val Ser Asp Asp Tyr Ser Cys Ile Arg Ser Thr Asn Lys Gln
195     200     205
Gly Lys Glu Val Asn Leu Phe Gln Pro Ala Gly Glu Phe Leu Pro Met
210     215     220
Ile Asp Glu Val Phe Arg Ser Leu Ile Glu Leu Thr Lys Asp Ile Thr
225     230     235     240
Gly Ala Lys Val Glu Asn Asn Lys Phe Cys Val Ser Val His Tyr Arg
245     250     255
Asn Val Asp Glu Lys Ser Trp Ser Ala Ile Gly Glu Ser Val Asp Glu
260     265     270
Leu Leu Lys His Tyr Pro Arg Leu Arg Leu Thr His Gly Arg Lys Val
275     280     285
Leu Glu Val Arg Pro Val Leu Asn Trp Asp Lys Gly Lys Ala Val Glu
290     295     300
Phe Leu Leu Glu Ser Leu Gly Leu Lys Asn Cys Asp Asp Val Leu Pro
305     310     315     320
Ile Tyr Val Gly Asp Asp Arg Thr Asp Glu Asp Ala Phe Lys Val Leu
325     330     335
Arg Glu Gly Asn Lys Gly Tyr Gly Ile Leu Val Ser Ser Ala Pro Lys
340     345     350
Glu Ser Ser Ala Phe Tyr Ser Leu Arg Asp Pro Ser Glu Val Met Glu
355     360     365
Phe Leu Lys Cys Leu Val Ser Trp Lys Lys Ser Ser Gly Phe Ser Tyr
370     375     380

```

<210> 81
 <211> 1471
 <212> DNA
 <213> Nicotiana tabacum

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<400> 81
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gttttttttaa tcttttcaag ggtaattttg tgttgccaaa tgacgaacca gaatgtgatt      180
gtttctgacc caagatcagg gttggagtct tctttcttat cgttctcacc ggcggtaccc      240

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PF58635.ST25.txt

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agagctttctt cccacctcg tagatcctct gaaactgaga atctcaagtc ttggattggt 420
catcatccct cagctttgaa catgttcgag gaaattataa atgcttcaaa agggaaacaa 480
ataataatgt ttttgacta tgatggtaca ttgtctccta ttgttgatga tcctgacaaa 540
gcctttatga ctgctgagat gagggaagca gtgagagaca catccaagta ttttcctaca 600
gcaatagtga gtggaagatg cagagcaaaa gtctttaatt tcgtaaagtt atcagaactg 660
tattatgctg gaagtcatgg aatggacatt aaggcgctg ctaaaggacg caaatataga 720
aatggaaata atcgaactgt tctctgccaa cctgccagag aatttttacc catgattgat 780
gaggtatata aatctttagt ggagaaaaca aaatctatag caggagctaa agtggaacac 840
aacaattctt gcttatccgt acatttccgt cgtgttgaag agaaggtgtg gactgaatta 900
gctgagcaag tgaagtcagt gactaaggaa taccaaaac ttcgattaac tcaaggaaga 960
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gaaagtattg tgcacttctc acttatatcc t 1471

```

```

<210> 82
<211> 368
<212> PRT
<213> Nicotiana tabacum

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

```

				245				250				255				
Glu	Tyr	Pro	Lys	Leu	Arg	Leu	Thr	Gln	Gly	Arg	Lys	Val	Leu	Glu	Ile	
				260				265				270				
Arg	Pro	Ser	Ile	Lys	Trp	Asp	Lys	Gly	Lys	Ala	Leu	Glu	Phe	Leu	Leu	
				275				280				285				
Glu	Ser	Leu	Gly	Tyr	Ala	Asn	Ser	Asn	Asp	Val	Leu	Pro	Ile	Tyr	Ile	
				290				295				300				
Gly	Asp	Asp	Arg	Thr	Asp	Glu	Asp	Ala	Phe	Lys	Val	Leu	Arg	Asp	Arg	
305					310				315				320			
Gly	Gln	Gly	Phe	Gly	Ile	Leu	Val	Ser	Lys	Ala	Pro	Lys	Glu	Thr	Asn	
				325				330				335				
Ala	Ser	Tyr	Ser	Leu	Gln	Glu	Pro	Leu	Glu	Val	Met	Tyr	Phe	Leu	Asn	
				340				345				350				
Arg	Phe	Val	Glu	Trp	Lys	Arg	Ser	Ser	Ser	Gln	Arg	Tyr	Gln	Arg	Lys	
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<210> 83
<211> 1609
<212> DNA
<213> Sorghum bicolor

<220>
<221> variation
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<223> /replace = "c" /replace = "g" /replace = "t"
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tgttcccgtg	cccgccaccg	cgtggcgccg	ggatcacagc	cgccgtcgtg	cgccgcgaagt	240
gcctgcaggt	ggagctcggc	gcggggggcg	ccggggccgt	gctggggcgg	gcgtgctggg	300
gcgtggagtc	gatgcgcgcg	tcttccccca	cgcacgccaa	ggccgcgcgc	gcgctcgccg	360
ccggcgtcga	cgagcagcgc	cgcgcgcctt	ggacgggtgc	gcaccgcgtg	gcgctgggca	420
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acggcacgct	gtcgccatc	gtggacgacc	ccgacgcgcg	cttcatgagc	gagacgatgc	540
ggatggcgtg	gcgtagcgtc	gccaaagcatt	tcccgacggc	gatcgtgagc	gggcggtgcc	600
gggacaaggt	gttcgagttc	gtgaagctgg	cggagctgta	ctacgccggc	agccacggca	660
tgacatcag	aggcccagcc	aaggcctctt	ccgggcacgc	aaaggccaag	gcaaaaggcg	720
ttctgttcca	gccggtcagc	gagttcctgc	ccatgatcga	ggaggtgcac	gaccgccttg	780
tcgagacgac	gcgtgcctc	ccggggggcca	aggtggagaa	caacaagttc	tgcgtctccg	840
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tgctgcggga	gtaccggaag	ctgcggctga	ccagggggcg	gatggtgttc	gaggtgcgtc	960
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cggactgcag	caacgtcctg	cccgtgtaca	tcggcgacga	ccgcaccgac	gaggacgcct	1080
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aggcgtgtgt	gtaagtgttt	aacaagcatg	catgtacatt	agtattacct	aatagtagtt	1500
aacttatatg	ctacatatat	atatatatat	atgtagtaca	gtatatataa	gagggagaa	1560
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<400> 84

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20     25     30
Ala Gly Ile Thr Ala Ala Val Val Arg Arg Lys Cys Leu Gln Val Glu
35     40     45
Leu Gly Ala Gly Ala Ala Gly Pro Leu Leu Gly Gly Ala Cys Trp Gly
50     55     60
Val Glu Ser Met Arg Ala Ser Ser Pro Thr His Ala Lys Ala Ala Ala
65     70     75     80
Ala Leu Ala Ala Gly Val Asp Glu Glu Arg Arg Ala Ala Trp Thr Val
85     90     95
Arg His Pro Ser Ala Leu Gly Lys Phe Glu Gln Ile Val Ala Ala Ser
100    105    110
Glu Gly Lys Arg Ile Val Met Phe Leu Asp Tyr Asp Gly Thr Leu Ser
115    120    125
Pro Ile Val Asp Asp Pro Asp Ala Ala Phe Met Ser Glu Thr Met Arg
130    135    140
Met Ala Val Arg Ser Val Ala Lys His Phe Pro Thr Ala Ile Val Ser
145    150    155    160
Gly Arg Cys Arg Asp Lys Val Phe Glu Phe Val Lys Leu Ala Glu Leu
165    170    175
Tyr Tyr Ala Gly Ser His Gly Met Asp Ile Arg Gly Pro Ala Lys Ala
180    185    190
Ser Ser Arg His Ala Lys Ala Lys Ala Lys Gly Val Leu Phe Gln Pro
195    200    205
Ala Ser Glu Phe Leu Pro Met Ile Glu Glu Val His Asp Arg Leu Val
210    215    220
Glu Thr Thr Arg Cys Ile Pro Gly Ala Lys Val Glu Asn Asn Lys Phe
225    230    235    240
Cys Val Ser Val His Phe Arg Cys Val Asp Glu Lys Met Trp Gly Glu
245    250    255
Leu Ser Glu Ser Val Lys Gly Val Leu Arg Glu Tyr Pro Lys Leu Arg
260    265    270
Leu Thr Gln Gly Arg Met Val Phe Glu Val Arg Pro Thr Ile Lys Trp
275    280    285
Asp Lys Gly Lys Ala Leu Glu Phe Leu Leu Glu Ser Leu Gly Phe Ala
290    295    300
Asp Cys Ser Asn Val Leu Pro Val Tyr Ile Gly Asp Asp Arg Thr Asp
305    310    315    320
Glu Asp Ala Phe Lys Val Leu Arg Arg Arg Gly Gln Gly His Gly Val
325    330    335
Gly Ile Leu Val Ser Lys His Pro Lys Glu Thr Ser Ala Ser Tyr Ser
340    345    350
Leu Gln Glu Pro Ala Glu Val Met Glu Phe Leu Leu Arg Leu Val Glu
355    360    365
Trp Lys Gln Leu Ser Arg Ala Arg Leu Ile Arg Leu Gln
370    375    380

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<210> 85

<211> 1333

<212> DNA

<213> Solanum tuberosum

<400> 85

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PF58635.ST25.txt

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ggtgcaacat ccacagcac tggatatgtt tgagcagata atcagtgctt caaagggaaa 300
acaaattgtg atgttttttag actatgatgg cactctttcc cccattgttg aagatcctga 360
tcaagctttc atgtctgatg ctatgcgagc aacagtgaga aaacttgcta gatatttccc 420
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caagaaagga gcgcaagctg ttcttttcca accagcaagt gaatttctcc ctatgattga 600
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<210> 86
 <211> 317
 <212> PRT
 <213> Solanum tuberosum

<400> 86

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

Asp	Gln	Gly	Phe	Gly	Ile	Leu	Val	Ser	Lys	Thr	Pro	Lys	Asp	Thr	His
			260					265					270		
Ala	Ser	Tyr	Ser	Leu	Gln	Glu	Pro	Ser	Glu	Val	Met	Val	Phe	Leu	Arg
		275					280					285			
Arg	Leu	Val	Glu	Trp	Lys	Lys	Leu	Ser	Leu	Arg	Arg	Gln	Phe	Arg	Ile
	290				295						300				
Arg	Arg	Gln	Ile	Glu	Glu	Met	Lys	Ala	Ser	Leu	Arg	Asn			
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agcaccocaa	ggacaccagc	gcctccttct	cgctgcagga	gccggccgag	gtcatggagt	1200
tcctgctccg	cctcgtcgag	tggaaagcag	tctccaaggc	gcgcctcagg	ctgcggcggc	1260
aggccgacgc	ctgatcggac	gacgagatc	ggccggccgg	cggaatggc	cgaactaatt	1320
atttcaactgc	tacgtgtagc	ttagctagtt	aatgaaaatc	cctgcttgc	tcatccgaac	1380
aaagccaaag	gctacgtacg	tggatgggaa	gaaggaacgt	actacggcga	acctgcggag	1440
cattgtttgcg	ccacatggtt	tgttctaatt	aaccttctt	ctttttctgg	ggatgtatac	1500
cgtacctacc	gattatgc	gcattgtaat	tacctttgtc	cacgtacaag	gggaggaacc	1560
atggaataaaa	caaagagaaa	catgaqtaaa	taqc			1594

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

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65					70					75					80
Val	Asp	Asp	Glu	His	Ala	Ala	Trp	Met	Ala	Arg	His	Pro	Ser	Ala	Leu
				85					90					95	
Gly	Lys	Phe	Glu	Glu	Ile	Val	Ala	Ala	Ser	Lys	Gly	Lys	Gln	Ile	Val
			100					105					110		
Met	Phe	Leu	Asp	Tyr	Asp	Gly	Thr	Leu	Ser	Pro	Ile	Val	Asp	Asp	Pro
		115					120					125			
Asp	Ala	Ala	Phe	Met	Ser	Glu	Thr	Met	Arg	Met	Ala	Val	Arg	Ser	Val
	130					135				140					
Ala	Lys	His	Phe	Pro	Thr	Ala	Ile	Val	Ser	Gly	Arg	Cys	Arg	Asp	Lys
145					150					155				160	
Val	Phe	Glu	Phe	Val	Lys	Leu	Ala	Glu	Leu	Tyr	Tyr	Ala	Gly	Ser	His
			165					170					175		
Gly	Met	Asp	Ile	Lys	Gly	Pro	Ala	Lys	Ser	Ser	Lys	Ser	Lys	Ala	Lys
		180						185					190		
Gly	Val	Leu	Phe	Gln	Pro	Ala	Ser	Glu	Phe	Leu	Pro	Met	Ile	Glu	Glu
	195					200					205				
Val	His	Gln	Arg	Leu	Ile	Glu	Thr	Lys	His	Val	Ala	Gly	Ala	Lys	
	210				215				220						
Val	Glu	Asn	Asn	Lys	Phe	Cys	Val	Ser	Val	His	Phe	Arg	Cys	Val	Asp
225					230				235					240	
Glu	Lys	Ser	Trp	Gly	Ala	Leu	Ala	Glu	Thr	Val	Lys	Gly	Val	Met	Arg
			245					250					255		
Glu	Tyr	Pro	Lys	Leu	Arg	Met	Ser	Gln	Gly	Arg	Met	Val	Phe	Glu	Val
			260					265					270		
Arg	Pro	Thr	Ile	Lys	Trp	Asp	Lys	Gly	Lys	Ala	Leu	Glu	Phe	Leu	Leu
	275					280						285			
Glu	Ser	Leu	Gly	Phe	Ala	Asp	Cys	Pro	Asn	Val	Leu	Pro	Val	Tyr	Ile
	290					295				300					
Gly	Asp	Asp	Arg	Thr	Asp	Glu	Asp	Ala	Phe	Lys	Val	Leu	Arg	Arg	Arg
305					310				315					320	
Gly	Gln	Gly	Val	Gly	Ile	Leu	Val	Ser	Lys	His	Pro	Lys	Asp	Thr	Ser
			325					330						335	
Ala	Ser	Phe	Ser	Leu	Gln	Glu	Pro	Ala	Glu	Val	Met	Glu	Phe	Leu	Leu
		340						345				350			
Arg	Leu	Val	Glu	Trp	Lys	Gln	Leu	Ser	Lys	Ala	Arg	Leu	Arg	Leu	Arg
	355					360						365			
Arg	Gln	Ala	Asp	Ala											
	370														

<210> 89
 <211> 1086
 <212> DNA
 <213> Zea mays

<400> 89
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 ccggccggcc ggcatttcac gtcgttccag gcgctgaagg gcgcgccct cgactgcaag 120
 aagcacgccg ccgtggacct gtccgcgtcc gggcgggccg tcgtgggcgg cggcccctgg 180
 tttgagtcca tgaaggcttc gtcgcgcgg cgccgcggc acgccgagca cggcgactgg 240
 atggagaagc acccgtccgc attggcccag ttcgagccgc tgcttgccgc cgccaagggg 300
 aagcagatcg tgatgttcct ggactacgac ggaccctgt caccgatcgt cgaggacccc 360
 gaccgcgccg tcatgtcggg gagatgaga gaagccgtgc ggcgcgtcgc cgagcacttc 420
 cccaccgcga ttgtgagcgg aagatgcagg gacaaggtgc tcaacttcgt gaagctgacg 480
 gagctgtact acgccgggag ccatggcatg gacatccagg gccccgccg ctgcaggcag 540
 cccaaccacg tccagcaggc tgaagccgca gctgtccatt accaagctgc gagtgagttc 600
 ctgccggtca tcgaagaggt gttccgcacg ctgacggcca agatggagtc catcgccggc 660
 gccagggtgg agcacaacaa gtactgcctg tccgtccact tccgtgcgt ccgggaggag 720
 gaatggaatg ccgtgaacga ggaggtcagg tcgtgtctca gggagtaccc gaacctcaag 780

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ctcactcacg gcagaaaggt gctggagatt cgtccgtcca tcaagtggga caagggcaag 840
gccctcgagt tcttgctcaa gtctcttggc tatgctgggc gcaacgacgt cttcccgatt 900
tacatcggag atgatcgcac tgacgaggac gctttcaagg tgctccgcaa catggggcag 960
ggcatcggaa tcctggtgtc caagcttcct aaggagacgg cggcatccta ctcgctgagt 1020
gaccctgccg aggtcaagga gttcctccgc aagctggcca ataagaaggg ggcgcgccaa 1080
ccatga 1086
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<210> 90
<211> 361
<212> PRT
<213> Zea mays
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Met Thr Lys His Ala Ala Tyr Ser Ser Glu Asp Val Val Ala Ala Val
1 5 10 15
Ala Ala Pro Ala Pro Ala Gly Arg His Phe Thr Ser Phe Gln Ala Leu
20 25 30
Lys Gly Ala Pro Leu Asp Cys Lys Lys His Ala Ala Val Asp Leu Ser
35 40 45
Ala Ser Gly Ala Ala Val Val Gly Gly Gly Pro Trp Phe Glu Ser Met
50 55 60
Lys Ala Ser Ser Pro Arg Arg Ala Ala Asp Ala Glu His Gly Asp Trp
65 70 75 80
Met Glu Lys His Pro Ser Ala Leu Ala Gln Phe Glu Pro Leu Leu Ala
85 90 95
Ala Ala Lys Gly Lys Gln Ile Val Met Phe Leu Asp Tyr Asp Gly Thr
100 105 110
Leu Ser Pro Ile Val Glu Asp Pro Asp Arg Ala Val Met Ser Glu Glu
115 120 125
Met Arg Glu Ala Val Arg Arg Val Ala Glu His Phe Pro Thr Ala Ile
130 135 140
Val Ser Gly Arg Cys Arg Asp Lys Val Leu Asn Phe Val Lys Leu Thr
145 150 155 160
Glu Leu Tyr Tyr Ala Gly Ser His Gly Met Asp Ile Gln Gly Pro Ala
165 170 175
Ala Cys Arg Gln Pro Asn His Val Gln Gln Ala Glu Ala Ala Ala Val
180 185 190
His Tyr Gln Ala Ala Ser Glu Phe Leu Pro Val Ile Glu Glu Val Phe
195 200 205
Arg Thr Leu Thr Ala Lys Met Glu Ser Ile Ala Gly Ala Arg Val Glu
210 215 220
His Asn Lys Tyr Cys Leu Ser Val His Phe Arg Cys Val Arg Glu Glu
225 230 235 240
Glu Trp Asn Ala Val Asn Glu Glu Val Arg Ser Val Leu Arg Glu Tyr
245 250 255
Pro Asn Leu Lys Leu Thr His Gly Arg Lys Val Leu Glu Ile Arg Pro
260 265 270
Ser Ile Lys Trp Asp Lys Gly Lys Ala Leu Glu Phe Leu Leu Lys Ser
275 280 285
Leu Gly Tyr Ala Gly Arg Asn Asp Val Phe Pro Ile Tyr Ile Gly Asp
290 295 300
Asp Arg Thr Asp Glu Asp Ala Phe Lys Val Leu Arg Asn Met Gly Gln
305 310 315 320
Gly Ile Gly Ile Leu Val Ser Lys Leu Pro Lys Glu Thr Ala Ala Ser
325 330 335
Tyr Ser Leu Ser Asp Pro Ala Glu Val Lys Glu Phe Leu Arg Lys Leu
340 345 350
Ala Asn Lys Lys Gly Ala Arg Gln Pro
355 360
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<210> 91
<211> 1066
<212> DNA
<213> Zea mays

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<400> 91
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acgtcgcagc cgggccggcg gttcacgtcg taccgccggc cgagggcgcg cggcggatgc      120
aggctggccc cggcgggcggc ggcgcgccag gccacggacg accccggcgc cgctgggtcc      180
tgccagaaac tagtcgtgcc gcggcacgcc gacttcgacg actggatgga gaagcaccgc      240
tcggcattgg ccgcgttcga gtcggtgctg gccgccgcca aaggcaagaa gatcgtcatt      300
ttcctcgact acgacggcac cctgtcgccg atcgtcaggg accccgacag cgccgctcat      360
tccgaggaga tgccgggacgc ggtgagaggc gtggccgagc acttcccgcg ggcgatcgtg      420
agcggggagg gttagagacaa ggtgttcaac ttctggaagc tggcgagagc gtactacgcc      480
gggagccacg gcatggacat caagggcccc acagcacagt ccaagcacac caaggcaaag      540
gccggagccg ttctatgcca acctgcgagg gcgttcctgc cgggtcattga ggaggtgtac      600
cgcgcgctga cggcgagcac ggcgccgacg cccggcgcgga cgggtggagaa caacaagtcc      660
tgctctctcc tccacttccg ctgcgtccag gaggagaaat ggcgcgctct ggaggagcag      720
gtccgggtcg tgctcaagga gtaccgggac ctccgcctca ccaagggcag gaaggctctc      780
gagatccggc cgtccatcaa gtgggacaag ggcaacgccc tgcagtctct gctcgagtct      840
ctcggttttg ctggcagtaa cagtgtcttc ccgatatata tcggagacga tagcaccgac      900
gaggacgcgt tcaaggtcct gcgcaacttg gggcaaggga tcgggatcct ggtgagcaag      960
attccgaagg agaccgcgcg atcctactcc ctgcgtgaac cttctgaggt ggaggagtcc     1020
ctgcgcaagt tggtcagctg gtccaaggag agcaggcaac gggact                               1066
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<210> 92
<211> 355
<212> PRT
<213> Zea mays

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<400> 92
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20     25     30
Pro Ala Arg Ala Arg Gly Gly Cys Arg Leu Ala Pro Ala Ala Ala Ala
35     40     45
Arg Gln Ala Thr Asp Asp Pro Gly Ala Ala Gly Ser Trp Pro Glu Leu
50     55     60
Val Val Pro Arg His Ala Asp Phe Asp Asp Trp Met Glu Lys His Pro
65     70     75     80
Ser Ala Leu Ala Ala Phe Glu Ser Val Leu Ala Ala Ala Lys Gly Lys
85     90     95
Lys Ile Val Met Phe Leu Asp Tyr Asp Gly Thr Leu Ser Pro Ile Val
100    105    110
Arg Asp Pro Asp Ser Ala Val Met Ser Glu Glu Met Arg Asp Ala Val
115    120    125
Arg Gly Val Ala Glu His Phe Pro Thr Ala Ile Val Ser Gly Arg Cys
130    135    140
Arg Asp Lys Val Phe Asn Phe Val Lys Leu Ala Glu Leu Tyr Tyr Ala
145    150    155    160
Gly Ser His Gly Met Asp Ile Lys Gly Pro Thr Ala Gln Ser Lys His
165    170    175
Thr Lys Ala Lys Ala Gly Ala Val Leu Cys Gln Pro Ala Arg Ala Phe
180    185    190
Leu Pro Val Ile Glu Glu Val Tyr Arg Ala Leu Thr Ala Ser Thr Ala
195    200    205
Pro Ile Pro Gly Ala Thr Val Glu Asn Asn Lys Phe Cys Leu Ser Val
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      210              215              220
His Phe Arg Cys Val Gln Glu Glu Lys Trp Arg Ala Leu Glu Glu Gln
225              230              235              240
Val Arg Ser Val Leu Lys Glu Tyr Pro Asp Leu Arg Leu Thr Lys Gly
      245              250              255
Arg Lys Val Leu Glu Ile Arg Pro Ser Ile Lys Trp Asp Lys Gly Asn
      260              265              270
Ala Leu Gln Phe Leu Leu Glu Ser Leu Gly Phe Ala Gly Ser Asn Ser
      275              280              285
Val Phe Pro Ile Tyr Ile Gly Asp Asp Ser Thr Asp Glu Asp Ala Phe
      290              295              300
Lys Val Leu Arg Asn Leu Gly Gln Gly Ile Gly Ile Leu Val Ser Lys
305              310              315              320
Ile Pro Lys Glu Thr Arg Ala Ser Tyr Ser Leu Arg Glu Pro Ser Glu
      325              330              335
Val Glu Glu Phe Leu Arg Lys Leu Val Ser Trp Ser Lys Glu Ser Arg
      340              345              350
Gln Arg Asp
      355

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<210> 93
<211> 277
<212> PRT
<213> Artificial sequence

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<220>
<223> consensus trehalose Ppase domain

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<220>
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<222> (1)..(1)
<223> Xaa can be any naturally occurring aminao acid

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<220>
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<222> (10)..(10)
<223> Xaa can be any naturally occurring aminao acid

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<220>
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<222> (12)..(14)
<223> Xaa can be any naturally occurring aminao acid

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<220>
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<223> Xaa can be any naturally occurring aminao acid

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<220>
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<223> Xaa can be any naturally occurring aminao acid

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<220>
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<222> (22)..(24)
<223> Xaa can be any naturally occurring aminao acid

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<220>

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<222>  (26)..(28)
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<223>  Xaa can be any naturally occurring aminos acid

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<222>  (52)..(66)
<223>  Xaa can be any naturally occurring aminos acid

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<222>  (68)..(69)
<223>  Xaa can be any naturally occurring aminos acid

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<223>  Xaa can be any naturally occurring aminos acid

<220>
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<223>  Xaa can be any naturally occurring aminos acid

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<223>  Xaa can be any naturally occurring aminos acid

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<223>  Xaa can be any naturally occurring aminos acid

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<223>  Xaa can be any naturally occurring aminos acid

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<223>  Xaa can be any naturally occurring aminos acid

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<223>  Xaa can be any naturally occurring aminos acid

<220>
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<223>  Xaa can be any naturally occurring aminos acid

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<222>  (161)..(162)
<223>  Xaa can be any naturally occurring aminos acid

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<222>  (164)..(166)
<223>  Xaa can be any naturally occurring aminos acid

<220>
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<222>  (168)..(176)
<223>  Xaa can be any naturally occurring aminos acid

<220>
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<222>  (178)..(178)
<223>  Xaa can be any naturally occurring aminos acid

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 <223> Xaa can be any naturally occurring aminos acid

<220>
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 <222> (184)..(184)
 <223> Xaa can be any naturally occurring aminos acid

<220>
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 <223> Xaa can be any naturally occurring aminos acid

<220>
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 <222> (195)..(195)
 <223> Xaa can be any naturally occurring aminos acid

<220>
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 <223> Xaa can be any naturally occurring aminos acid

<220>
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 <222> (201)..(202)
 <223> Xaa can be any naturally occurring aminos acid

<220>
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 <222> (205)..(206)
 <223> Xaa can be any naturally occurring aminos acid

<220>
 <221> UNSURE
 <222> (208)..(230)
 <223> Xaa can be any naturally occurring aminos acid

<220>
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 <222> (233)..(233)
 <223> Xaa can be any naturally occurring aminos acid

<220>
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 <222> (238)..(239)
 <223> Xaa can be any naturally occurring aminos acid

<220>
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 <222> (246)..(247)
 <223> Xaa can be any naturally occurring aminos acid

<220>
 <221> UNSURE
 <222> (249)..(261)

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<223> Xaa can be any naturally occurring aminos acid

<220>

<221> UNSURE

<222> (265)..(270)

<223> Xaa can be any naturally occurring aminos acid

<220>

<221> UNSURE

<222> (272)..(272)

<223> Xaa can be any naturally occurring aminos acid

<220>

<221> UNSURE

<222> (274)..(276)

<223> Xaa can be any naturally occurring aminos acid

<400> 93

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

<210> 94

<211> 251

<212> PRT

<213> Artificial sequence

<220>

<223> trehalose Ppase domain in SEQ ID NO 2

<400> 94

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

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<210> 95

<211> 19

<212> PRT

<213> Artificial sequence

<220>

<223> serine-rich domain

<220>

<221> UNSURE

<222> (2)..(3)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> UNSURE

<222> (16)..(17)

<223> Xaa can be any naturally occurring amino acid

<400> 95

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Arg Xaa Xaa Ser Trp Val Asp Ser Met Arg Ala Ser Ser Pro Thr Xaa
1           5           10           15

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Xaa Lys Ser

<210> 96
 <211> 10
 <212> PRT
 <213> Artificial sequence

<220>
 <223> B-phosphatase box

<220>
 <221> VARIANT
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 <223> /replace = "Glu"

<400> 96
 Gly Asp Asp Arg Thr Asp Gln Asp Ala Phe
 1 5 10

<210> 97
 <211> 12
 <212> PRT
 <213> Artificial sequence

<220>
 <223> A-phosphatase box

<400> 97
 Leu Asp Tyr Asp Gly Thr Leu Ser Pro Ile Val Asp
 1 5 10

<210> 98
 <211> 2193
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 <213> Oryza sativa

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<212> DNA

<213> Glycine max

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<211> 361

<212> PRT

<213> Glycine max

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Pro Ser Ala Leu Asp Met Phe Glu Gln Ile Met Asp Ala Ser Arg Gly
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195     200     205
Lys Ser Ile Pro Gly Ala Met Val Glu Asn Asn Lys Phe Cys Cys Ser
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His Asn Lys Asn Leu Val Lys Arg Leu Glu Gly Ala Lys Val Ser Ala
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Trp Ile Asp Ser Met Arg Ala Ser Ser Pro Thr Arg Ala Lys Ser Glu
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Ser Gln Glu Lys Arg Ser Trp Ile Leu Tyr His Pro Ser Ala Leu Asn
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Thr Phe Glu Gln Ile Val Cys Ser Ala Lys Gly Lys Gln Val Val Val
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Phe Leu Asp Tyr Asp Gly Thr Leu Ser Pro Ile Val Ala Asp Pro Asp
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Lys Ala Phe Met Thr Arg Lys Met Arg Ala Thr Leu Lys Gly Ile Ala
130
Arg His Phe Pro Thr Ala Ile Val Thr Gly Arg Cys Arg Asp Lys Val
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Tyr Asn Phe Val Lys Leu Ala Glu Leu Tyr Tyr Ala Gly Ser His Gly
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Met Asp Ile Lys Gly Pro Thr Lys Ser Gln Ser Pro Lys Gln Gly Asn
180
Asn Asn Lys Ala Val Leu Phe Gln Pro Ala Ser Gln Phe Leu Pro Met
195
Ile Asp Glu Val Tyr Lys Ile Leu Leu Glu Lys Thr Lys Thr Val Pro
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Gly Ala Asn Val Glu Asn Asn Lys Phe Cys Leu Ser Val His Phe Arg
225
Cys Val Asp Glu Lys Ser Trp Ala Ala Leu Ala Glu Lys Val Arg Leu
245
Val Leu Asn Asp Tyr Pro Gln Leu Arg Leu Thr Gln Gly Arg Lys Val
260
Leu Glu Ile Arg Pro Thr Ile Lys Trp Asp Lys Gly Lys Ala Leu Glu
275
Phe Leu Leu Glu Ser Leu Gly Tyr Glu Asn Ser Asn Asp Val Phe Pro
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Ile Tyr Ile Gly Asp Asp Arg Thr Asp Glu Asp Ala Phe Lys Val Leu
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Arg Ser Arg Gly Gln Gly Ile Gly Ile Leu Val Ser Arg Val Ala Lys
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Glu Thr Asp Ala Ser Tyr Thr Leu Gln Asp Pro Ser Glu Ala Ser Ala
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<210> 127

<211> 1448

<212> DNA

<213> Brassica napus

<400> 127

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cctgtttctct tctcctccca cttactttac ctttcctcgt cataagttct tggagcttct      180
cgaagcagcc gataaaaaca gcaacagcat caacaagaac aatcttggtg ctggtaatat      240
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<210> 128
 <211> 378
 <212> PRT
 <213> Brassica napus

<400> 128

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Leu	Asp	Glu	Ile	Tyr	Tyr	Ala	Gly	Ser	His	Gly	Met	Asp	Ile	Glu	Gly
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Ile Lys Trp Asp Lys Gly Gln Ala Leu Asn Phe Leu Leu Lys Ser Leu
290 295 300
Gly Phe Glu Lys Ser Glu Asp Val Val Pro Val Tyr Ile Gly Asp Asp
305 310 315 320
Leu Thr Asp Glu Asp Ala Phe Lys Val Leu Arg Glu Arg Gly Gln Gly
325 330 335
Phe Gly Ile Leu Val Ser Lys Val Pro Lys Glu Thr Asn Ala Ser Tyr
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<210> 129
<211> 1448
<212> DNA
<213> Brassica napus

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cctgttctct tctcctccca cttactttac ctttctcgt cataagttct tggagcttct 180
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<210> 130
<211> 378
<212> PRT
<213> Brassica napus

<400> 130
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Lys Ile Ala Ser Trp Val Asp Ser Met Arg Asp Ser Ser Pro Thr Arg
65 70 75 80
Leu Arg Pro Ser Ser Arg Asp Ser Val Ser Asp Asn Asp His Lys Thr
85 90 95
Ser Trp Ile Val Arg Phe Pro Ser Ala Leu Asn Met Phe Asp Glu Ile
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Val Asn Ala Ala Lys Gly Lys Gln Ile Val Met Phe Leu Asp Tyr Asp
115 120 125
Gly Thr Leu Ser Pro Ile Val Glu Asp Pro Asp Lys Ala Tyr Ile Thr
130 135 140
His Glu Met Arg Glu Val Val Lys Asn Val Ala Leu Asn Phe Pro Thr
145 150 155 160
Ala Ile Val Thr Gly Arg Ser Ile Asp Lys Val Arg Gly Phe Val Lys
165 170 175
Leu Asp Glu Ile Tyr Tyr Ala Gly Ser His Gly Met Asp Ile Glu Gly
180 185 190
Pro Thr Ser Glu Tyr Ala Tyr Gly Gly Glu Ser Asn Gln Gly Val Leu
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Phe Gln Pro Ala Arg Glu Phe Val Pro Thr Ile Glu Lys Val Tyr Lys
210 215 220
Ile Leu Glu Glu Lys Thr Lys Trp Ile Pro Gly Ala Met Val Glu Asn
225 230 235 240
Asn Lys Phe Cys Leu Ser Val His Phe Arg Arg Val Asp Glu Lys Arg
245 250 255
Trp Ala Gly Leu Ala Glu Gln Val Lys Ser Val Leu Ile Asp Tyr Pro
260 265 270
Gln Leu Lys Leu Thr Gln Gly Arg Lys Val Leu Glu Ile Arg Pro Thr
275 280 285
Ile Lys Trp Asp Lys Gly Gln Ala Leu Asn Phe Leu Leu Lys Ser Leu
290 295 300
Gly Phe Glu Lys Ser Glu Asp Val Val Pro Val Tyr Ile Gly Asp Asp
305 310 315 320
Arg Thr Asp Glu Asp Ala Phe Lys Val Leu Arg Glu Arg Gly Gln Gly
325 330 335
Phe Gly Ile Leu Val Ser Lys Val Pro Lys Glu Thr Asn Ala Ser Tyr
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<212> DNA
<213> Oryza sativa

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