

PF60795.ST25.txt
SEQUENCE LISTING

<110> CropDesign N.V.
<120> Plants having improved growth characteristics under reduced nutrient availability and a method for making the same
<130> PF60795
<150> US 11/799,083
<151> 2007-04-30
<160> 52
<170> PatentIn version 3.3
<210> 1
<211> 1050
<212> DNA
<213> Oryza sativa

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gcgcagatgc ttctcttcg cggcggcggc agcgccaaca gcggcggtt cttccgaggc 120
gtgccggcgg cgggtgctgg gatggatgaa tcgcggtcgt cgtcgtcggc ggcgggggcg 180
ggggcggaagc ggccgttctt cacgacgcac gaggagctcc tggaggagga gtactacgac 240
gagcaggcgc cggagaagaa gcggcggtc acggcggagc aggtgcagat gctggagcgg 300
agcttcgagg aggagaacaa gctggagccg gagcggaaga cggagctcgc ccgccgcctc 360
ggcatggccc cccggcaggt cgccgtcttg ttccagaacc gccgcgccg ctggaagacc 420
aagcagctcg agcacgactt cgaccgcctc aaggccgcct acgacgccct cgccgcgcac 480
caccatgccc tcctctccga caacgaccgc ctccgcgcgc aggtaatctc attaaccgag 540
aagctgcaag acaaggagac gtcgccgtcg tcggcgacca tcaccaccgc ggcgcaggag 600
gtcgaccagc cggacgaaca cacggaggcc gcgtcaacca ccggcttcgc caccgtcgac 660
ggcgcattgg cggcgccacc gccgggccac cagcagccgc cgcataaaga tgatcttggtg 720
agcagcggcg gcaccaacga cgacggcgat ggcggcgcgg ccgtggtggt cttcgacgtc 780
accgagggcg ccaacgaccg cctcagctgc gactcgcggt acttcgccga cgccgcggag 840
gcgtacgagc gcgactgcgc cgggcactac gccctctcgt cggaggagga ggacggcggc 900
gcggtcagcg acgagggtg cagcttcgac ctccccgacg ccgccgccgc cgccgcgcgc 960
atgttcggcg ccgccggagt tgtgcaccac gacgccgcgg acgacgagga ggcgcagctc 1020
ggcagctgga ccgctggtt ctggagctga 1050

<210> 2
<211> 349
<212> PRT
<213> Oryza sativa

<400> 2
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Cys Pro Gly Gly Ala Gln Met Leu Leu Phe Gly Gly Gly Gly Ser Ala
20 25 30
Asn Ser Gly Gly Phe Phe Arg Gly Val Pro Ala Ala Val Leu Gly Met
35 40 45
Asp Glu Ser Arg Ser Ser Ser Ala Ala Gly Ala Gly Ala Lys Arg
50 55 60
Pro Phe Phe Thr Thr His Glu Glu Leu Leu Glu Glu Glu Tyr Tyr Asp
65 70 75 80
Glu Gln Ala Pro Glu Lys Lys Arg Arg Leu Thr Ala Glu Gln Val Gln
85 90 95

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Met Leu Glu Arg Ser Phe Glu Glu Glu Asn Lys Leu Glu Pro Glu Arg
      100      105      110
Lys Thr Glu Leu Ala Arg Arg Leu Gly Met Ala Pro Arg Gln Val Ala
      115      120      125
Val Trp Phe Gln Asn Arg Arg Ala Arg Trp Lys Thr Lys Gln Leu Glu
      130      135      140
His Asp Phe Asp Arg Leu Lys Ala Ala Tyr Asp Ala Leu Ala Ala Asp
145      150      155      160
His His Ala Leu Leu Ser Asp Asn Asp Arg Leu Arg Ala Gln Val Ile
      165      170      175
Ser Leu Thr Glu Lys Leu Gln Asp Lys Glu Thr Ser Pro Ser Ser Ala
      180      185      190
Thr Ile Thr Thr Ala Ala Gln Glu Val Asp Gln Pro Asp Glu His Thr
      195      200      205
Glu Ala Ala Ser Thr Thr Gly Phe Ala Thr Val Asp Gly Ala Leu Ala
      210      215      220
Ala Pro Pro Pro Gly His Gln Gln Pro Pro His Lys Asp Asp Leu Val
225      230      235      240
Ser Ser Gly Gly Thr Asn Asp Asp Gly Asp Gly Gly Ala Ala Val Val
      245      250      255
Val Phe Asp Val Thr Glu Gly Ala Asn Asp Arg Leu Ser Cys Glu Ser
      260      265      270
Ala Tyr Phe Ala Asp Ala Ala Glu Ala Tyr Glu Arg Asp Cys Ala Gly
      275      280      285
His Tyr Ala Leu Ser Ser Glu Glu Glu Asp Gly Gly Ala Val Ser Asp
      290      295      300
Glu Gly Cys Ser Phe Asp Leu Pro Asp Ala Ala Ala Ala Ala Ala
305      310      315      320
Met Phe Gly Ala Ala Gly Val Val His His Asp Ala Ala Asp Asp Glu
      325      330      335
Glu Ala Gln Leu Gly Ser Trp Thr Ala Trp Phe Trp Ser
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<210> 3
 <211> 1197
 <212> DNA
 <213> *Oryza sativa*

<400> 3

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agaccgggtgc	tcggcatgga	ggaaggaggg	cgcgcgctca	agcggccctt	cttcaccacc	180
cccgacgagc	tcctcgaaga	ggagtactac	gacgagcagc	tcccggagaa	gaagcggcgc	240
ctcacgccgg	agcagggtgca	tctgctggag	aggagcttcg	aggaggagaa	caagctggag	300
ccggagcgga	agacggagct	ggcgcggaag	ctagggctgc	agccgcggca	ggtcgcgctg	360
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ctcaaggcgt	cgttcgacgc	cctccgcgcc	gaccacgacg	ccctcctcca	ggacaaccac	480
cgctccact	ctcaggtcat	gtcgttgacc	gagaagctgc	aagagaagga	gacgacgacc	540
gagggcagcg	cggcgcgcg	cggtgacgtc	ccgggcttgc	ctgcggcggc	cgacgtgaag	600
gtcgccgtcc	cggacgccga	ggaaccggcg	ctggaggagg	cggcgggcgc	gttcgaggag	660
cagcaggagc	agcaggtgaa	ggccgaggac	aggctgagca	cgggcagcgg	cgggagcgcg	720
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ccccatggac	cacgcgcggg	ggggcatcca	gtcggaggag	gacgacggcg	ccggcagcga	900
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ccaccaccac	caacacgcgg	acgacgacga	ggaggacggc	cagcagatca	gctgctggtg	1020
gatgtggaac	tagattttct	gcgcgcgcgc	gtcgtcgtgc	attcaattct	cgtgttaaaa	1080
aaatcgttct	ctttttcatt	tttccgcttc	tttgtctgta	atgttgagtt	tcgatcggct	1140
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<210> 4
 <211> 343
 <212> PRT
 <213> Oryza sativa

<400> 4
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 Gln Met Leu Phe Leu Asp Cys Gly Ala Gly Gly Gly Gly Val Gly Gly
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 35 40 45
 Gly Gly Arg Gly Val Lys Arg Pro Phe Phe Thr Thr Pro Asp Glu Leu
 50 55 60
 Leu Glu Glu Glu Tyr Tyr Asp Glu Gln Leu Pro Glu Lys Lys Arg Arg
 65 70 75 80
 Leu Thr Pro Glu Gln Val His Leu Leu Glu Arg Ser Phe Glu Glu Glu
 85 90 95
 Asn Lys Leu Glu Pro Glu Arg Lys Thr Glu Leu Ala Arg Lys Leu Gly
 100 105 110
 Leu Gln Pro Arg Gln Val Ala Val Trp Phe Gln Asn Arg Arg Ala Arg
 115 120 125
 Trp Lys Thr Lys Gln Leu Glu Arg Asp Phe Asp Arg Leu Lys Ala Ser
 130 135 140
 Phe Asp Ala Leu Arg Ala Asp His Asp Ala Leu Leu Gln Asp Asn His
 145 150 155 160
 Arg Leu His Ser Gln Val Met Ser Leu Thr Glu Lys Leu Gln Glu Lys
 165 170 175
 Glu Thr Thr Thr Glu Gly Ser Ala Gly Ala Ala Val Asp Val Pro Gly
 180 185 190
 Leu Pro Ala Ala Ala Asp Val Lys Val Ala Val Pro Asp Ala Glu Glu
 195 200 205
 Pro Ala Leu Glu Glu Ala Ala Ala Ala Phe Glu Glu Gln Gln Glu Gln
 210 215 220
 Gln Val Lys Ala Glu Asp Arg Leu Ser Thr Gly Ser Gly Gly Ser Ala
 225 230 235 240
 Val Val Asp Thr Asp Ala Gln Leu Val Val Gly Cys Gly Arg Gln His
 245 250 255
 Leu Ala Ala Val Asp Ser Ser Val Glu Ser Tyr Phe Pro Gly Gly Asp
 260 265 270
 Glu Tyr His Asp Cys Val Met Gly Pro Met Asp His Ala Ala Gly Gly
 275 280 285
 Ile Gln Ser Glu Glu Asp Asp Gly Ala Gly Ser Asp Glu Gly Cys Ser
 290 295 300
 Tyr Tyr Ala Asp Asp Ala Gly Val Leu Phe Ala Asp His Gly His His
 305 310 315 320
 His His His Gln His Ala Asp Asp Asp Glu Glu Asp Gly Gln Gln Ile
 325 330 335
 Ser Cys Trp Trp Met Trp Asn
 340

<210> 5
 <211> 819
 <212> DNA
 <213> Zea mays

<400> 5
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cacgaggagc tcctagagga ggagtactac gacgagcagg cgccggagaa gaagcgccga 240
ctgacggcgg agcaggtgca gctgctggag cggagcttcg aagaagagaa caagctggag 300
ccggagcgca agaccgagct ggctcgccgc ctggggatgg cgccccgcca ggtagctgtt 360
tggttccaga accgccgcgc gcgctggaag accaagcaac tcgagaccga ctatgaccgc 420
ctcaaggctg cttacgacgc actcgccgcc gaccaccagg gcctcctggc cgacaacgat 480
aacctccggg cacaggtgat ctccctgacg gagaagctgc aaggcaagga gacatccccg 540
tcggcaacca ctgctgcca agaggtcgac cagccagacg aacacaccgc tgtgtcaggc 600
acggaagaac tgctggcgca gcagctcaag gacaacctcc acagcagcgg cgactgcact 660
ggccatggca ccctctcttc ggaagaagac gacggtggcg tggtcagtga cgagggctgc 720
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<210> 6
 <211> 272
 <212> PRT
 <213> Zea mays

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20      25      30
Asn Gly Phe Phe Arg Gly Val Pro Met Ala Val Leu Gly Met Asp Asp
35      40      45
Ala Thr Arg Val Gly Lys Arg Pro Phe Phe Thr Thr His Glu Glu Leu
50      55      60
Leu Glu Glu Glu Tyr Tyr Asp Glu Gln Ala Pro Glu Lys Lys Arg Arg
65      70      75      80
Leu Thr Ala Glu Gln Val Gln Leu Leu Glu Arg Ser Phe Glu Glu Glu
85      90      95
Asn Lys Leu Glu Pro Glu Arg Lys Thr Glu Leu Ala Arg Arg Leu Gly
100     105     110
Met Ala Pro Arg Gln Val Ala Val Trp Phe Gln Asn Arg Arg Ala Arg
115     120     125
Trp Lys Thr Lys Gln Leu Glu Thr Asp Tyr Asp Arg Leu Lys Ala Ala
130     135     140
Tyr Asp Ala Leu Ala Ala Asp His Gln Gly Leu Leu Ala Asp Asn Asp
145     150     155     160
Asn Leu Arg Ala Gln Val Ile Ser Leu Thr Glu Lys Leu Gln Gly Lys
165     170     175
Glu Thr Ser Pro Ser Ala Thr Thr Ala Ala Gln Glu Val Asp Gln Pro
180     185     190
Asp Glu His Thr Ala Val Ser Gly Thr Glu Glu Leu Leu Ala Gln Gln
195     200     205
Leu Lys Asp Asn Leu His Ser Ser Gly Asp Cys Thr Gly His Gly Thr
210     215     220
Leu Ser Ser Glu Glu Asp Asp Gly Gly Val Val Ser Asp Glu Gly Cys
225     230     235     240
Ser Phe Ala Leu Pro Asp Ala Met Phe Ala Ala Gly Phe Thr His His
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<210> 7
 <211> 993
 <212> DNA
 <213> Zea mays

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atgcttggcc ttgaagaagg gcgcggcgta aaacggccct tcttcacctc gcccgcgcgag 180
ctcctcgagg aagagtacta cgacgagcag ctgccggaga agaagcgccg cctcacccca 240
gagcaggtgc ttctgctgga gaggagcttc gaggaggaga acaagctgga gccggagcgc 300
aagacggagc tggcgcgcaa gctgggcctg cagcctcgcc aggtggccgt ctggttccag 360
aaccgccgcg cccggtggaa gaccaagcag ctcgagcgcg acttcgaccg cctcaaggcc 420
tccttcgacg ctctccgagc ggaccacgac gccctcctcc aggacaacaa ccgcctccgc 480
tcacaggttg tgtcgttgac cgagaagctg caagagaagg aggatgcgac ggagggcggc 540
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gaggagccag cagagcctgc ggcgacgttc gaggtgctgc aggaggtgaa gtccgaggac 660
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gacgacgacg gcgccggcag cgacgagggg tgcagctact acgccgacga agccgcgcgc 900
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<210> 8
<211> 330
<212> PRT
<213> Zea mays

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

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				260				265				270			
Gly	Ala	Gly	Gly	Ile	Gln	Ser	Asp	Asp	Asp	Gly	Ala	Gly	Ser	Asp	
		275				280					285				
Glu	Gly	Cys	Ser	Tyr	Tyr	Ala	Asp	Glu	Ala	Ala	Ala	Ala	Ala	Ala	Ala
	290				295					300					
Phe	Phe	Ala	Gly	His	Ala	Thr	His	His	His	Ala	Asp	Glu	Asp	Glu	Asp
305				310						315					320
Ala	Gly	Gln	Ile	Ser	Trp	Trp	Met	Trp	Asn						
			325					330							

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acacacgagg	agctcctgga	ggaggagtac	tacgacgagc	aggcgcccg	gaagaagcgc		240
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<400>	10															
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1				5				10						15		
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			20					25					30			
Ser	Asn	Gly	Phe	Phe	Arg	Gly	Val	Pro	Met	Ala	Val	Leu	Gly	Met	Asp	
		35					40					45				
Asp	Ala	Thr	Arg	Val	Gly	Lys	Arg	Pro	Phe	Phe	Thr	Thr	His	Glu	Glu	
	50					55					60					
Leu	Leu	Glu	Glu	Glu	Tyr	Tyr	Asp	Glu	Gln	Ala	Pro	Glu	Lys	Lys	Arg	
65					70					75					80	
Arg	Leu	Thr	Ala	Glu	Gln	Val	Gln	Leu	Leu	Glu	Arg	Ser	Phe	Glu	Glu	
				85					90					95		
Glu	Asn	Lys	Leu	Glu	Pro	Glu	Arg	Lys	Thr	Glu	Leu	Ala	Arg	Arg	Leu	
			100					105					110			
Gly	Met	Ala	Pro	Arg	Gln	Val	Ala	Val	Trp	Phe	Gln	Asn	Arg	Arg	Ala	
		115					120					125				
Arg	Trp	Lys	Thr	Lys	Gln	Leu	Glu	Thr	Asp	Tyr	Asp	His	Leu	Lys	Ala	
	130				135						140					
Ala	Tyr	Asp	Ala	Leu	Ala	Ala	Asp	His	Gln	Gly	Leu	Leu	Ala	Asp	Asn	
145				150						155					160	
Asp	Ser	Leu	Arg	Ala	Gln	Val	Val	Ser	Leu	Thr	Glu	Lys	Leu	Gln	Gly	
				165					170					175		

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Lys Glu Thr Ser Pro Ser Ala Thr Thr Ala Ala Gln Glu Val Asp Gln
      180      185      190
Pro Asp Glu His Thr Ala Ala Ser Gly Thr Glu Lys Leu Leu Ala Gln
      195      200      205
Gln Leu Lys Asp Asp Leu His Ser Ser Gly Asp Cys Thr Gly His Gly
      210      215      220
Ala Leu Ser Ser Glu Glu Glu Asp Gly Gly Val Val Ser Asp Glu Gly
      225      230      235      240
Ser Phe Asp Leu Pro Asp Ala Met Phe Ala Ala Gly Val Thr His His
      245      250      255
Gly Ala Asp Ala Glu Glu Ala Gln Leu Ala Asn Trp Thr Ser Trp Phe
      260      265      270
Trp Asn

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<210> 11
 <211> 828
 <212> DNA
 <213> Sorghum bicolor

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ggtgttccga tggcggtcct gggcatggac gacgcgacgc gcgtgggcaa gcggcctttc 180
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gacaacgata gcctccgggc acaggtgatc tccctaacgg ataagctgca acgcaaggag 540
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gagggctgca gctttgatct cccggatgcc atgttcgctg ccgggggtcac ccaccatggc 780
gccgaggagg cgcagctggc caactggaca tcctggttct ggaactga 828

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<210> 12
 <211> 275
 <212> PRT
 <213> Sorghum bicolor

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<400> 12
Met Asp Pro Ser Ala Val Ser Phe Asp Ser Gly Gly Ala Arg Arg Gly
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      20      25      30
Ala Asn Ser Asn Gly Phe Phe Arg Gly Val Pro Met Ala Val Leu Gly
      35      40      45
Met Asp Asp Ala Thr Arg Val Gly Lys Arg Pro Phe Phe Thr Thr His
      50      55      60
Glu Glu Leu Leu Glu Glu Tyr Tyr Asp Glu Gln Ala Pro Glu Lys
      65      70      75      80
Lys Arg Arg Leu Thr Ala Glu Gln Val Gln Leu Leu Glu Arg Ser Phe
      85      90      95
Glu Glu Glu Asn Lys Leu Glu Pro Glu Arg Lys Thr Glu Leu Ala Arg
      100      105      110
Arg Leu Gly Met Ala Pro Arg Gln Val Ala Val Trp Phe Gln Asn Arg
      115      120      125
Arg Ala Arg Trp Lys Thr Lys Gln Leu Glu Thr Asp Tyr Asp Arg Leu

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

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<210> 13
 <211> 1023
 <212> DNA
 <213> Triticum aestivum

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<400> 13
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ccggtcctcg gcggcatgga agaagggcgc ggcgtaagc ggcccttctt cacctcgccg 180
gatgacatgc tcgaggagga gtactacgac gagcagctcc cggagaagaa gcggcgccctc 240
accccgagc aggtccacct gctggagagg agcttcgagg aggagaacaa gctggagccg 300
gagaggaaga cggagctggc ccgcaagctc gggctgcagc cacgccaggt ggccgtctgg 360
ttccagaacc gccgcgcccg gtggaagaca aagacgctgg agcgcgactt cgaccgcctc 420
aaggcgctct tcgacgccct ccggggccgac cacgacgccc tcctccagga caaccaccgg 480
ctccggtcac aggtggtaac gttgaccgag aagatgcaag ataaggaggc gccggaaggc 540
agcttcggtg cagccgccga cgcctcggag ccggagcagg cggcggcgga ggcgaaggct 600
tccttgggcg acgccgagga gcaggccgcg gcagcgagg cggttcgagg ggtgcagcag 660
cagctgcacg tgaaggacga ggagaggctg agcccgggga gcggcgggag cgcggtgctg 720
gacgcgaggg acgcgctgct cgggagcgga tgcggcctcg ccggcgtggt ggacagcagc 780
gtggactcgt actgcttccc ggggggcgcc gcgcgcgac agtaccacga gtgcgtggtg 840
ggccccgtgg cgggcggcat ccagtcggag gaggacgac gcgcgggcag cgacgagggc 900
tgcagctact accccgacga cgcgcgcgtc ttcttcgccg ccgcgcaagg gcacggccac 960
catcgcacgg acgacgacga tcagcaggac gacggccaga tcagctactg gatgtggaac 1020
tag 1023

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<210> 14
 <211> 340
 <212> PRT
 <213> Triticum aestivum

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<400> 14
Met Glu Pro Gly Arg Leu Ile Phe Asn Thr Ser Gly Ser Gly Asn Gly
1          5          10          15
Gln Met Leu Phe Met Asp Cys Gly Ala Gly Gly Ile Ala Gly Ala Ala
          20          25          30
Gly Met Phe His Arg Gly Val Arg Pro Val Leu Gly Gly Met Glu Glu
          35          40          45
Gly Arg Gly Val Lys Arg Pro Phe Phe Thr Ser Pro Asp Asp Met Leu
          50          55          60

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

<210> 15
 <211> 819
 <212> DNA
 <213> Arabidopsis thaliana

<400> 15	
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cttggaatc tcaatcccgt cgtccaagga ggaggagcaa gatcgatgat gaacatggag	120
gaaacttcga agcgaaggcc cttcttttagc tcccctgagg atctctacga cgatgacttt	180
tacgacgacc agttgcctga aaagaagcgt cgcctcacta ccgaacaagt gcatctgctg	240
gagaaaagct tcgagacaga gaacaagcta gagcctgaac gcaagactca gcttgccaag	300
aagcttggtc tacagccaag gcaagtggct gtctggtttc agaatcgccg agctcgttgg	360
aaaacaaaac agcttgagag agactacgat cttctcaagt ccacttacga ccaacttctt	420
tctaactacg actccatcgt catggacaac gataagctca gatccgaggt tacttccctg	480
accgaaaagc ttcagggcaa acaagagaca gctaataaac cacctgggtc agtgcccga	540
ccaaaccaac ttgatccgtt ttacattaat gcgagcagaa tcaaaaccga ggaccgggta	600
agttcaggga gcgttgggag cgcggtacta gacgacgacg cacctcaact actagacagc	660
tgtgactctt acttcccaag catcgtaccc atccaagaca acagcaacgc cagtgatcat	720
gacaatgacc ggagctgttt cgcgacgctc tttgtgcccc ccacttcacc gtcgcacgat	780
catcacggtg aatcattggc tttctgggga tggccttag	819

<210> 16

PF60795.ST25.txt

<211> 272
<212> PRT
<213> Arabidopsis thaliana

<400> 16

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

<210> 17
<211> 969
<212> DNA
<213> Daucus carota

<400> 17

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atggcggggtc ggagggtggt ctatgggggag ggagccaata cgacgtcggc tagcctgttg      60
tttcatagtc aaagacctga gccttttcttt ctttctgcac cttctccttc tctaattggt      120
tcaaaatcca tggtttagctt tcaagatgct aagcgaaaaa atccctacga tgggttcttt      180
atgcbggtcat atgatgaaga agaaattggg gatgaagaat atgatgaata ctttcagcag      240
cctgagaaga agaggaggct caaggctgat caaatccagt ttcttgagaa aagttttgag      300
actgataaca agcttgagcc tgaaagaaaa gttcagcttg caaaagaact cggcttgacag      360
ccaagacagg ttgcgatatg gtttcagaac cgtcgagcac ggtggaagac caaaacacta      420
gaaaaagatt atgatgtatt gcaaaatagc tacaacagcc tcaaggctga ctatgacaat      480
ctacttgccg agaaagaaaa acttaaagcc gaggttctcg acctgacaga caagctactt      540
ctcaaagaag ataaggggag caagacagta gtttttgata agcaaaagggt gtctgcagca      600
ttccaacaag aacgtgttag taatgacata tctgtgggtg aagtactcag taactcagtt      660
atggactgca agcaagaaga tcataactct gtgaaaagtg atgcagttga ttctgacagt      720
ccacactaca gtgatgaagt ctactccagt tttatggagc cagtggatcg ctcttatggt      780
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PF60795.ST25.txt

tttgaacctg ctcagtcgga tatatctcaa gatgaagaag atgacatggg gaacaactta	840
tttctcccat catatcatgt tttctcaaag actgaagacg gtagttactc cgaccagcct	900
tcgaactcct cgtacttttg cttcccagtt gaagatcata cgtttggctt ttgggggtact	960
gaattataa	969

<210> 18
 <211> 322
 <212> PRT
 <213> Daucus carota

<400> 18

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

<210> 19
 <211> 1038
 <212> DNA
 <213> Glycine max

PF60795.ST25.txt

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<400> 19
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ctcccttgct cctctgaagt ccttgagtct ctttgggctc agacctctaa ccctgcttcc 120
ttccaagggt caaaacccgt ggttgatttt gagaatgtaa gtgggagcag gatgacggat 180
aggcctttct ttcaagcgtt ggagaaggaa gagaactgtg atgaggatta cgaggggtgt 240
ttccaccaac cggggaagaa aaggaggctc acaagcgaac aagttcagtt ccttgaaagg 300
aactttgagg tagagaacaa gcttgaaccc gaaaggaaag tccaacttgc aaaagagctt 360
ggcttgacgc caaggcaagt tgctatatgg ttccaaaacc gaagggcaag gttcaagacc 420
aagcagctag aaaaagacta tggcgtgttg aaagctagtt atgacagact caaaagtgc 480
tatgaaagtc ttgttcaaga gaatgacaag ttaaaagcag aggtgaattc tctggagagc 540
aaattgattc ttagagataa agagaaggag gagaattcgg atgacaagtc atctcctgat 600
gatgctgtca attcttcttc accccacaac aacaaggagc ctatggattt attaattatt 660
tcaaaaaatg caacaacaac aacaacatct gaaaatggga ccaaagtgtt gtcaccactc 720
ccactcccta ttatggtaac atgctgcaag caagaagatg ccaactcagc caaaagtgat 780
gtccttgatt cggatagccc acattgcact tcattcgtgg agcctgctga ttccctctcat 840
gcctttgaac cagaagacca ctcagaagac ttctcccaag atgaagagga taaccttagt 900
gaaaaccttt tgatgacctt cccttcttct tgttgcttac ctaaggttga agaacactgc 960
tatgacggcc ctctgaaaaa ctcttgtaat tttggcttcc aggttgagga tcaaaccttc 1020
tgtttctggc cctattga 1038

```

```

<210> 20
<211> 345
<212> PRT
<213> Glycine max

```

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

```

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260	265	270
Val Glu Pro Ala Asp Ser Ser His	Ala Phe Glu Pro Glu Asp His Ser	
275	280	285
Glu Asp Phe Ser Gln Asp Glu Glu Asp Asn Leu Ser Glu Asn Leu Leu		
290	295	300
Met Thr Phe Pro Ser Ser Cys Cys Leu Pro Lys Val Glu Glu His Cys		
305	310	315
Tyr Asp Gly Pro Pro Glu Asn Ser Cys Asn Phe Gly Phe Gln Val Glu		
325	330	335
Asp Gln Thr Phe Cys Phe Trp Pro Tyr		
340	345	

<210> 21
 <211> 858
 <212> DNA
 <213> Craterostigma plantagineum

<400> 21
 atgaactctg ctcgattttt ctctgaccca tcttcccacg gcaacatgct gcagtttctt 60
 gggaacgccg gcggcgattc atccgttttc cgaggaacaa gatcgtcgtc ggtgctgaac 120
 atggaggaga gctcgttaaa acgacagatt ttcagcggcg gcggcggcga tgaattctac 180
 gacgaggaat actacgacga gcagttgttg cctgagaaga agcgccgact caccgccgag 240
 caggttcact tgcttgagaa gagcttcgag gctgagaaca agcttgagcc tgagcgaaag 300
 gctgagctgg cgaagaagct cggattgcag ccgaggcaag tcgccatttg gttccaaaac 360
 cgccgagcac ggtggaagac taagcagtta gagagggact acgacaagct taagtcttcc 420
 tatgattctc ttctctcaac ctacgactct attcgccagg aaaacgacaa gctcaaagcc 480
 gagctccttt ccctgaacga gaaattgcaa cccaaagacg acgacgaccc atcggcgcga 540
 ataggtcgaa atctcagttc atcgtcgccg cctgtcgacg cggctgagcc gccgtgcctg 600
 aagctgacgg tgaaggtgga ggaccgcctg agcacgggga gcaacggcag cgcagtaatg 660
 gacggcgacg gacctcagca gctcctcgac gacagcggcg actcgtactt cgagaacgac 720
 gaggaatacg actgcgccgc cgcaagtttg gctgctgcga aggaggacga cggcagcgat 780
 gagggcgggg gttacttcac cgaggctctc gcggcgaggg aggaggaggc gccgtttgct 840
 tgggtgtattt ggtcttaa 858

<210> 22
 <211> 285
 <212> PRT
 <213> Craterostigma plantagineum

<400> 22
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 20 25 30
 Thr Arg Ser Ser Ser Val Leu Asn Met Glu Glu Ser Ser Leu Lys Arg
 35 40 45
 Gln Ile Phe Ser Gly Gly Gly Gly Asp Glu Phe Tyr Asp Glu Glu Tyr
 50 55 60
 Tyr Asp Glu Gln Leu Leu Pro Glu Lys Lys Arg Arg Leu Thr Ala Glu
 65 70 75 80
 Gln Val His Leu Leu Glu Lys Ser Phe Glu Ala Glu Asn Lys Leu Glu
 85 90 95
 Pro Glu Arg Lys Ala Glu Leu Ala Lys Lys Leu Gly Leu Gln Pro Arg
 100 105 110
 Gln Val Ala Ile Trp Phe Gln Asn Arg Arg Ala Arg Trp Lys Thr Lys
 115 120 125
 Gln Leu Glu Arg Asp Tyr Asp Lys Leu Lys Ser Ser Tyr Asp Ser Leu
 130 135 140
 Leu Ser Thr Tyr Asp Ser Ile Arg Gln Glu Asn Asp Lys Leu Lys Ala

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

```

<210> 23
 <211> 813
 <212> DNA
 <213> Gossypium hirsutum

<220>
 <221> misc_feature
 <222> (808)..(808)
 <223> n is a, c, g, or t

```

<400> 23
atggagtctg gccgtctttt tttcaatccc tccactaccc accgcaacat gttgcttctc      60
gggaacactg aacctatctt tcgaggggca agaacaatgg ttagcatgga ggaaaaccca      120
aagaagcgac tgttcttcag ctgcgccgag gatttgtagc acgaagagta ctacgacgag      180
cagttgcccg agaaaaagcg tcgccttacg tcggagcagg tgtatctgct agagaagagc      240
tttgaggcag agaacaagct ggagccggag aggaagagcc agttggccaa gaagttagga      300
ctgcaaccaa ggcaggtggc ggtatggttc cagaaccgcc gtgcaagggt gaagacaaag      360
cagcttgaaa gggactatga cctcctcaaa tcttcctttg attcccttca gtccaattat      420
gacactattc tcaaagaaaa tgagaagctc aaatctgagg tagcttcctt gactgaaaaa      480
ctacaagcca aagatgtggc aacagaagca atagcagggtg aaaaggatga aggggtagga      540
gctgagatgg cctccgccct ccaattcagt atgaagggtg aggaccgtct tagtagcggc      600
agtgtcggaa gcgcggtggt ggatgaggat gccccacagc tgggtggacag cggcaattcc      660
tactttccaa gcgatgaata ctccagaggc attggccctt tcgatggggt tcagtcggaa      720
gatgaggatg gcagtgataa ttgcgggagt tacttctccg atgtgttcgc aaccacagag      780
cagggagcat taggattgtg ggcctggntc taa                                813

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<210> 24
 <211> 270
 <212> PRT
 <213> Gossypium hirsutum

<220>
 <221> misc_feature
 <222> (270)..(270)
 <223> Xaa can be any naturally occurring amino acid

```

<400> 24
Met Glu Ser Gly Arg Leu Phe Phe Asn Pro Ser Thr Thr His Arg Asn
1          5          10          15
Met Leu Leu Leu Gly Asn Thr Glu Pro Ile Phe Arg Gly Ala Arg Thr
          20          25          30

```

PF60795.ST25.txt

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

<210> 25
 <211> 858
 <212> DNA
 <213> Lycopersicon esculentum

<220>
 <221> misc_feature
 <222> (294)..(294)
 <223> n is a, c, g, or t

<400> 25	
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tcgaagaggc gacccttctt tagctcgccg gaggatctat atgacgagga atactacgac	180
gagcagtcac cggagaagaa gcgcggtctc actcctgagc aggtgcactt gttggagaag	240
agctttgaga cagaaaacaa gctggagccc gagcgcaaaa cccagctggc ctanaagctg	300
gggctgcagc ccagacaggt ggctgtatgg ttccaaaacc gccgtgcccg gtggaagacc	360
aagcagctcg agagggatta tgatcagctc aaatcctctt atgactccct tctctctgat	420
tttgactccg ttcgcaaaga taacgataag ctcaaatctg aggttgtttc attgatggaa	480
aagttacagg ggaaagtggg ttgaggagca gggggaaatg aaaaatctga catcttggag	540
gtggatgcta tgacgatcct tcaagtgaag gtgaaggctg gggaccggtt gagcagtggc	600
agtggatggga gcgcggtggg agatgagcat agttcacagc tggatggacag tggggactca	660
tattttcaca ctgatcatga ggagtatcca gggcctggag gatgcaatgt tctccacccc	720
atggatgggt tacaatcgga ggaagatgat ggtagtgatg atcatggcag ttgccatggc	780
tacttctcta acgtctttgt ggcagaagag cagcaccatg aacaaggaga agagcctatt	840
ggatggttct ggtcttaa	858

<210> 26

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<211> 285
 <212> PRT
 <213> Lycopersicon esculentum
 <220>
 <221> misc_feature
 <222> (98)..(98)
 <223> Xaa can be any naturally occurring amino acid

<400> 26
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 20 25 30
 Thr Met Met Lys Met Glu Asp Ser Ser Lys Arg Arg Pro Phe Phe Ser
 35 40 45
 Ser Pro Glu Asp Leu Tyr Asp Glu Glu Tyr Tyr Asp Glu Gln Ser Pro
 50 55 60
 Glu Lys Lys Arg Arg Leu Thr Pro Glu Gln Val His Leu Leu Glu Lys
 65 70 75 80
 Ser Phe Glu Thr Glu Asn Lys Leu Glu Pro Glu Arg Lys Thr Gln Leu
 85 90 95
 Ala Xaa Lys Leu Gly Leu Gln Pro Arg Gln Val Ala Val Trp Phe Gln
 100 105 110
 Asn Arg Arg Ala Arg Trp Lys Thr Lys Gln Leu Glu Arg Asp Tyr Asp
 115 120 125
 Gln Leu Lys Ser Ser Tyr Asp Ser Leu Leu Ser Asp Phe Asp Ser Val
 130 135 140
 Arg Lys Asp Asn Asp Lys Leu Lys Ser Glu Val Val Ser Leu Met Glu
 145 150 155 160
 Lys Leu Gln Gly Lys Val Val Gly Gly Ala Gly Gly Asn Glu Lys Ser
 165 170 175
 Asp Ile Leu Glu Val Asp Ala Met Thr Ile Leu Gln Val Lys Val Lys
 180 185 190
 Ala Gly Asp Arg Leu Ser Ser Gly Ser Gly Gly Ser Ala Val Val Asp
 195 200 205
 Glu His Ser Ser Gln Leu Val Asp Ser Gly Asp Ser Tyr Phe His Thr
 210 215 220
 Asp His Glu Glu Tyr Pro Gly Pro Gly Gly Cys Asn Val Pro Pro Pro
 225 230 235 240
 Met Asp Gly Leu Gln Ser Glu Glu Asp Asp Gly Ser Asp Asp His Gly
 245 250 255
 Ser Cys His Gly Tyr Phe Ser Asn Val Phe Val Ala Glu Glu Gln His
 260 265 270
 His Glu Gln Gly Glu Glu Pro Ile Gly Trp Phe Trp Ser
 275 280 285

<210> 27
 <211> 972
 <212> DNA
 <213> Lycopersicon esculentum

<400> 27
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 cctgcctctt cttcttctaa tttcttgga tccagtctta tggtagttt tcgcggtgtt 180
 aatggaggga agagatcatt ctttgattcg ttcgatcagg atgacaatga agctgatgaa 240
 ttgggggaat atcttcatca agcggagaag aagaggcgac ttactgacaa ccaagttcag 300
 tttcttgaga agagttttgg ggaagagaac aaacttgaac cagaaagaaa agttcagctt 360

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cgatggaaga	ctaagcagct	cgagaaagat	tatgatgaat	tgaggaatag	atacgatact	480
ctgaaatcaa	attacaataa	tcttctcaag	gaaaaagaag	atcttcgaac	tgaagttttc	540
cgtctcaccg	gtaagctggt	tatcaaagag	aaaggaaatg	ggcaattgga	tttgcgcgat	600
gaacacaaaac	actccaatgc	attggcaaaa	gaaaccgtgg	ttgatccaat	gtccaatgta	660
ccagctctgg	ttgttaagca	ccagcaggaa	gatttaagct	ctgctaagag	tgatgttttc	720
gactcagaaa	gcccacgtta	caccagtaga	atgcattcct	cagtcgtaga	tcaggatgat	780
tctgctcgcg	cattttgaac	tgatcagtcg	gattccatctc	aggatgatga	tgaaaacttc	840
agcaagaata	tgctttctac	tgccaaccta	cttggc aaag	acgcgagtag	tgattatccc	900
gcgacatcat	caaatttgag	ttactttgga	tttccagttg	aagaccaagg	ttttggtttc	960
tggacttatt	aa					972

<210>	28
<211>	323
<212>	PRT
<213>	Lycopersicon esculentum

<400>																	28
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Phe	Thr	Gln	Lys	Gln	Arg	Asp	Val	Phe	Ser	Ser	Ser	Thr	Ala	Pro	Lys		
			20					25					30				
Gly	His	Leu	Gly	Ser	Leu	Phe	Ala	Pro	Ala	Ser	Ser	Ser	Ser	Asn	Phe		
		35					40					45					
Leu	Gly	Ser	Ser	Ser	Met	Val	Ser	Phe	Arg	Gly	Val	Asn	Gly	Gly	Lys		
	50					55					60						
Arg	Ser	Phe	Phe	Asp	Ser	Phe	Asp	Gln	Asp	Asp	Asn	Glu	Ala	Asp	Glu		
65					70					75					80		
Leu	Gly	Glu	Tyr	Leu	His	Gln	Ala	Glu	Lys	Lys	Arg	Arg	Leu	Thr	Asp		
				85					90					95			
Asn	Gln	Val	Gln	Phe	Leu	Glu	Lys	Ser	Phe	Gly	Glu	Glu	Asn	Lys	Leu		
			100					105						110			
Glu	Pro	Glu	Arg	Lys	Val	Gln	Leu	Ala	Lys	Glu	Leu	Gly	Leu	Gln	Pro		
		115					120					125					
Arg	Gln	Ile	Ala	Ile	Trp	Phe	Gln	Asn	Arg	Arg	Ala	Arg	Trp	Lys	Thr		
	130					135					140						
Lys	Gln	Leu	Glu	Lys	Asp	Tyr	Asp	Glu	Leu	Arg	Asn	Arg	Tyr	Asp	Thr		
145					150					155					160		
Leu	Lys	Ser	Asn	Tyr	Asn	Asn	Leu	Leu	Lys	Glu	Lys	Glu	Asp	Leu	Arg		
				165					170					175			
Thr	Glu	Val	Phe	Arg	Leu	Thr	Gly	Lys	Leu	Phe	Ile	Lys	Glu	Lys	Gly		
			180					185						190			
Asn	Gly	Gln	Leu	Asp	Leu	Arg	Asp	Glu	His	Lys	His	Ser	Asn	Ala	Leu		
		195					200					205					
Ala	Lys	Glu	Thr	Val	Val	Asp	Pro	Met	Ser	Asn	Val	Pro	Ala	Leu	Val		
	210					215					220						
Val	Lys	His	Gln	Gln	Glu	Asp	Leu	Ser	Ser	Ala	Lys	Ser	Asp	Val	Phe		
225					230					235					240		
Asp	Ser	Glu	Ser	Pro	Arg	Tyr	Thr	Ser	Arg	Met	His	Ser	Ser	Val	Val		
				245					250					255			
Asp	Gln	Asp	Asp	Ser	Ala	Arg	Ala	Phe	Glu	Thr	Asp	Gln	Ser	Asp	Ser		
			260					265						270			
Ser	Gln	Asp	Asp	Asp	Glu	Asn	Phe	Ser	Lys	Asn	Met	Leu	Ser	Thr	Ala		
		275					280					285					
Asn	Leu	Leu	Gly	Lys	Asp	Ala	Asp	Asp	Asp	Tyr	Pro	Ala	Thr	Ser	Ser		
	290					295					300						
Asn	Leu	Ser	Tyr	Phe	Gly	Phe	Pro	Val	Glu	Asp	Gln	Gly	Phe	Gly	Phe		
305					310		</										

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<210> 29
 <211> 1014
 <212> DNA
 <213> Medicago sativa

<400> 29
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 attttgcttc agaatcaaca acaaactcct cgtggaaact cttctcaaca acctcttgat 120
 tctcttttcc tttcttcttc tgcttctttc tttggttcaa gatctatggt gagttttgaa 180
 gatgttcaag gaaggaaaag gcgcaacagg tctttctttg gaggatttga tcttgacgaa 240
 aacggagagg atgagatgga tgagtacttt catcaatccg agaagaaacg gcgtctctca 300
 gtggatcaag ttcagtttct tgagaaaagc tttgaggagg acaacaaact tgaaccagag 360
 agggaaaacca agctagctaa agaccttggt ttgcagccac ggcaagttgc tatttggttt 420
 caaaaccgctc gtgcaagggtg gaagactaaa cagcttgaga aggattatga ttctcttaat 480
 gatggttatg agtctcttaa gacagagtat gacaaccttc tcaaagagaa agataggtta 540
 caatctgagg tggcaagcct aactgaaaag gtacttgaaa gagagaaaaca agagggaaaa 600
 ttcaaacaag gtgaaagtga aacaaaggaa ttcttgaagg aaccaacaat taataagcct 660
 ttggttgatt cagtttctga ggggtgaagga tccaaattgt caattgttga ggcttctaata 720
 aataataata ataataacaa acttgaagat attagttcag caaggagtga catattggat 780
 tgtgaaagtc cacgctacac tgatggagtg ttagagacat gtgattcttc ctatgtattt 840
 gaacctgaat atcaatcgga cctatcacaa gatgaagaag atcacaattt attgcctcct 900
 tacatcttta caaaacttga agatgtgaat tactccgacc cgccacataa ttcaacaagt 960
 tatggatttc aagaggaaga tcatcatcaa gctctttggc cttggtctta ttag 1014

<210> 30
 <211> 337
 <212> PRT
 <213> Medicago sativa

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

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

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<210> 31
<211> 843
<212> DNA
<213> Aquilegia formosa x Aquilegia pubescens

```

```

<400> 31
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ttgaaaagac gtccttttta tagttcaaca gatgaactaa ttgaagagga gttttatgat      180
gaacagctac ctgaaaagaa acgtcgtctt acttctgagc aggttcatct attggagaag      240
agctttgaga cagagaacaa gctggaacca gatcgtaaga cccagcttgc taagaagctt      300
gggttgcaac cgagacaagt tgcagtttgg tttcagaata gacgagctcg ttggaagact      360
aagcaactag agagagatta tgatcttctt aaagcttctt atgattccct tcgttctgat      420
tacgatgaca ttgttaaaga gaatgagaag ctcaaatctg aggtggtttc cttaactggg      480
aagttgcagg tcaaggaggg agctgggatg gagttaaatac agatatctga cccaccactc      540
tccactgaag aaaatgttga tgtaactacg atgcaattta atgttaaggt tgaggatcgc      600
ttgagctctg gcagtggggt aagtgctgtg gttgatgagg aatgtcgaca gcttggtgac      660
agtgttgatt cctatttccc tggcgatgac tatggtcaat gcataggccc agtagatgga      720
gtccagtcag aagaagatga cattagtgac gacagccgga gctatttctc agatgtcttt      780
ccagctgcac cagagcagaa ccaccaggag agtgagacat tgggttggtg ggactgggct      840
taa
      843

```

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<210> 32
<211> 280
<212> PRT
<213> Aquilegia formosa x Aquilegia pubescens

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```

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

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

<210> 33
 <211> 2193
 <212> DNA
 <213> Oryza sativa

<400> 33
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 aaatataaaa tgagacctta tatatgtagc gctgataact agaactatgc aagaaaaact 120
 catccaccta ctttagtggc aatcgggcta aataaaaaag agtcgctaca ctagtttctgt 180
 tttccttagt aattaagtgg gaaaatgaaa tcattattgc ttagaatata cgttcacatc 240
 tctgtcatga agttaaatta ttcgaggttag ccataattgt catcaaactc ttcttgaata 300
 aaaaaatcct tctagctgaa ctcaatgggt aaagagagag atttttttta aaaaaataga 360
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 ttgtgcattc gtcatatcgc acatcattaa ggacatgtct tactccatcc caatttttat 480
 ttagtaatta aagacaattg acttattttt attattttatc ttttttcgat tagatgcaag 540
 gtacttacgc acacactttg tgctcatgtg catgtgtgag tgcacctcct caatacacgt 600
 tcaactagca acacatctct aatatcactc gcctatttaa tacatttagg tagcaatatc 660
 tgaattcaag cactccacca tcaccagacc acctttaata atatctaaaa tacaaaaaat 720
 aattttacag aatagcatga aaagtatgaa acgaactatt taggtttttc acatacaaaa 780
 aaaaaaagaa ttttgctcgt gcgagagcgc caatctccca tattgggcac acaggcaaca 840
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 aaccaagcat cctcctcctc ccatctataa attcctcccc ctttttcccc tctctatata 1020
 ggaggcatcc aagccaagaa gagggagagc accaaggaca cgcgactagc agaagccgag 1080
 cgaccgcctt cttcgatcca tatcttccgg tcgagttcct ggtcgatctc ttccctcctc 1140
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 tgtagtacgg gcgttgatgt taggaaaggg gatctgtatc tgtgatgatt cctgttcttg 1260
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 gattttgtga gtaccttttg tttgaggtaa aatcagagca ccggtgattt tgcttggtgt 1440
 aataaaaagta cggttgtttg gtccctcgatt ctggtagtga tgcttctcga tttgacgaag 1500
 ctatcctttg tttattccct attgaacaaa aataatccaa ctttgaagac ggtcccgttg 1560
 atgagattga atgattgatt cttaagcctg tccaaaattt cgcagctggc ttgttttagat 1620
 acagtagtcc ccatcacgaa attcatggaa acagttataa tcctcaggaa caggggattc 1680
 cctgttcttc cgatttgctt tagtcccaga attttttttc ccaaatatct taaaaagtca 1740

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gctgtagttc agttaatagg taatacccct atagtttagt caggagaaga acttatccga 1860
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attatttttt ttattagctc tcaccccttc attattctga gctgaaagtc tggcatgaac 1980
tgtcctcaat tttgttttca aattcacatc gattatctat gcattatcct cttgtatcta 2040
cctgtagaag tttctttttg gttattcctt gactgcttga ttacagaaag aaatttatga 2100
agctgtaatc gggatagtta tactgcttgt tcttatgatt catttccttt gtgcagttct 2160
tgggtgtagct tgccactttc accagcaaag ttc 2193
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<210> 34
 <211> 49
 <212> DNA
 <213> Artificial sequence

<220>
 <223> primer: prm6000

<400> 34
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<210> 35
 <211> 48
 <212> DNA
 <213> Artificial sequence

<220>
 <223> primer: prm6001

<400> 35
 ggggaccact ttgtacaaga aagctgggtg atcagctcca gaaccagg 48

<210> 36
 <211> 834
 <212> DNA
 <213> Oryza sativa

<400> 36
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 gagatgatgg cgtgcggcgg cggcggggag aagaagcggc ggctgagcgt ggagcagggt 180
 cgcgcgctgg agcggagctt cgaggtggag aacaagcttg agcctgagcg gaaggcgcgg 240
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 aaggagctga aggcgaagct cggggacgag gaggcggcgg cgagcttcac gtcggtgaag 480
 gaggagccgg cggcctccga cggggccacc gcggcgggat ttgggtcgtc cgacagcgac 540
 tcaagcgcgg tgctgaacga cgtggacgcg gccgcgcggc cgcccgcggc gacggacgcg 600
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 gcagcgggcg cggcgagcca cgaggaggtg ttcttcacg gcaatttcct caaggtggag 720
 gaggacgaga cggggttcct cgacgacgac gagccgtgcg gcgggttctt cgccgacgat 780
 cagccccgcg cgctctcgtc gtggtgggac gaaccacgag agcactggaa ctga 834

<210> 37
 <211> 277
 <212> PRT
 <213> Oryza sativa

<400> 37
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	20	25	30
Glu Ala Glu Gly Asp Val Glu Glu Glu Met Met Ala Cys Gly Gly Gly			
	35	40	45
Gly Glu Lys Lys Arg Arg Leu Ser Val Glu Gln Val Arg Ala Leu Glu			
	50	55	60
Arg Ser Phe Glu Val Glu Asn Lys Leu Glu Pro Glu Arg Lys Ala Arg			
65	70	75	80
Leu Ala Arg Asp Leu Gly Leu Gln Pro Arg Gln Val Ala Val Trp Phe			
	85	90	95
Gln Asn Arg Arg Ala Arg Trp Lys Thr Lys Gln Leu Glu Arg Asp Tyr			
	100	105	110
Ala Ala Leu Arg His Ser Tyr Asp Ser Leu Arg Leu Asp His Asp Ala			
	115	120	125
Leu Arg Arg Asp Lys Asp Ala Leu Leu Ala Glu Ile Lys Glu Leu Lys			
	130	135	140
Ala Lys Leu Gly Asp Glu Glu Ala Ala Ala Ser Phe Thr Ser Val Lys			
145	150	155	160
Glu Glu Pro Ala Ala Ser Asp Gly Pro Pro Ala Ala Gly Phe Gly Ser			
	165	170	175
Ser Asp Ser Asp Ser Ser Ala Val Leu Asn Asp Val Asp Ala Ala Gly			
	180	185	190
Ala Ala Pro Ala Ala Thr Asp Ala Leu Ala Pro Glu Ala Cys Thr Phe			
	195	200	205
Leu Gly Ala Pro Pro Ala Ala Gly Ala Gly Ala Gly Ala Ala Ala Ala			
	210	215	220
Ala Ser His Glu Glu Val Phe Phe His Gly Asn Phe Leu Lys Val Glu			
225	230	235	240
Glu Asp Glu Thr Gly Phe Leu Asp Asp Asp Glu Pro Cys Gly Gly Phe			
	245	250	255
Phe Ala Asp Asp Gln Pro Pro Pro Leu Ser Ser Trp Trp Ala Glu Pro			
	260	265	270
Thr Glu His Trp Asn			
275			

<210> 38
 <211> 750
 <212> DNA
 <213> Oryza sativa

<400> 38
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 tcgctggagt ccatgttcgc gacgcagacc aagctggagc cgaggcagaa gctgcagctc 180
 gccagggagc tcggcctgca gcctcgccag gtcgccatct ggttccagaa caagcgcgcg 240
 cgggtggaagt ccaagcagct cgagcgcgag tactccgccc tccgcgacga ctacgacgcc 300
 ctctctctgca gctacgagtc cctcaagaag gagaagctcg ccctcatcaa gcagctggag 360
 aagctggcgg agatgctgca ggagccacgg gggaagtacg gcgataatgc cggggacgac 420
 gcgcggctcg gcgcgctcgc cggcataaag aaggaggagt tcgtcggcgc gggcggcgcc 480
 gccacgctct actcgtcggc cgagggtggc ggcagacga cgacgacgac ggccaagttg 540
 atgccccact tcggcagcga cgacgtcgac gcggggctct tcctccggcc gtcgtcgcag 600
 catcatccgc cgccgccgca cgccggtgcc ggcttcacgt cctccgagcc ggccgccgac 660
 caccagtct tcaacttcca ctcgagctgg ccgtcgtcca cggagcagac ctgcagcagc 720
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<210> 39
 <211> 249
 <212> PRT

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<213> Oryza sativa

<400> 39

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

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<210> 40

<211> 945

<212> DNA

<213> Populus tremuloides

<400> 40

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tttcttggtt caagatccat gatgagtttt gaagatgttc atcaagcaaa cggatcaacc 180
aggccttttt tccgctcgtt tgatcacgaa gacaatggag acgatgatct ggatgaatat 240
tttcatcaac ctgaaaagaa gaggagactt actgttgatc aagttcagtt tcttgaaaag 300
agttttgagc ttgagaacaa gcttgaacct gaaaggaaaa tccagcttgc aaaggatctt 360
ggccttcagc cgcgtcaggt tgctatatgg tttcaaaacc gccgagcaag atggaagact 420
aaacagctgg aaaaggatta tgacgttttg caatctagct acaatagcct taaggctgac 480
tatgacaacc tcctcaagga gaaggagaaa ctaaaagctg aggttaatct tctcaccgac 540
aagttgctcc tcaaagagaa agagaaggga atctcagaat tgtctgataa agatgcatta 600
tcgcaagagc cacctaaaag ggctatagct gattcagctt ccgagggtga agtgtcgaaa 660
atctcaacag tggcctgtaa gcaggaagat atcagctcag ccaaaagcga catatttgat 720
tcagacagcc cacattacgc tgatgggttg cattcctcac tcttagaggc aggagattct 780
tcatatgttt tcgaaccgga tcaatcagat ttgtcacaag atgaagaaga taacttttagc 840
aagagcttat tgccctcata cgtcttttccg aagcttgaag atgacgatta ctctgacccg 900
cctgcaagtt ttgaagatca tgccttttgg tcctggtcat actaa      945

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PF60795.ST25.txt

<210> 41
 <211> 314
 <212> PRT
 <213> Populus tremuloides

<400> 41
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 20 25 30
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 35 40 45
 Ser Phe Glu Asp Val His Gln Ala Asn Gly Ser Thr Arg Pro Phe Phe
 50 55 60
 Arg Ser Phe Asp His Glu Asp Asn Gly Asp Asp Asp Leu Asp Glu Tyr
 65 70 75 80
 Phe His Gln Pro Glu Lys Lys Arg Arg Leu Thr Val Asp Gln Val Gln
 85 90 95
 Phe Leu Glu Lys Ser Phe Glu Leu Glu Asn Lys Leu Glu Pro Glu Arg
 100 105 110
 Lys Ile Gln Leu Ala Lys Asp Leu Gly Leu Gln Pro Arg Gln Val Ala
 115 120 125
 Ile Trp Phe Gln Asn Arg Arg Ala Arg Trp Lys Thr Lys Gln Leu Glu
 130 135 140
 Lys Asp Tyr Asp Val Leu Gln Ser Ser Tyr Asn Ser Leu Lys Ala Asp
 145 150 155 160
 Tyr Asp Asn Leu Leu Lys Glu Lys Glu Lys Leu Lys Ala Glu Val Asn
 165 170 175
 Leu Leu Thr Asp Lys Leu Leu Leu Lys Glu Lys Glu Lys Gly Ile Ser
 180 185 190
 Glu Leu Ser Asp Lys Asp Ala Leu Ser Gln Glu Pro Pro Lys Arg Ala
 195 200 205
 Ile Ala Asp Ser Ala Ser Glu Gly Glu Val Ser Lys Ile Ser Thr Val
 210 215 220
 Ala Cys Lys Gln Glu Asp Ile Ser Ser Ala Lys Ser Asp Ile Phe Asp
 225 230 235 240
 Ser Asp Ser Pro His Tyr Ala Asp Gly Val His Ser Ser Leu Leu Glu
 245 250 255
 Ala Gly Asp Ser Ser Tyr Val Phe Glu Pro Asp Gln Ser Asp Leu Ser
 260 265 270
 Gln Asp Glu Glu Asp Asn Phe Ser Lys Ser Leu Leu Pro Pro Tyr Val
 275 280 285
 Phe Pro Lys Leu Glu Asp Asp Asp Tyr Ser Asp Pro Pro Ala Ser Phe
 290 295 300
 Glu Asp His Ala Phe Trp Ser Trp Ser Tyr
 305 310

<210> 42
 <211> 954
 <212> DNA
 <213> Populus tremuloides

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 agccaaagag gcccttggtgc tgcttctcaa cctcttgaag cttttttcct ttctggctct 120
 tctccttctt ttcttggttc aagatccatg atgagttttg cagatgttca ccaagcaaat 180
 ggatcaacta gaccgttttt ccgccatat gatcacgaag acaacggcga cgatgatttg 240
 gatgaatatt ttcatacaacc tgaaaagaag aggagactta ctgttgatca agttcagttt 300
 cttgaaagaa gttttgaggt tgagaacaag cttgaaccgg aaaggaaaat ccagctggcg 360

PF60795.ST25.txt

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aaggatcttg gcttgcagcc tcggcaggtt gccatatggt ttcaaaaccg ccgggcaaga 420
tggaagacga aacagcttga aaaagattat gaggttctgc aatctagcta caatggcctt 480
aaggctgact acgacaacct cttcaaggag aaggagaaac taaaagctga gggttaatctt 540
ctcaccaacg agttgctcct taaagagaaa gagaaaggaa gctcagaatt gtctgataaa 600
gatgcattat ctcaagagcc acccaaaaag gcaatagccg attcagcttc agagggtgaa 660
gtgtcgaaaa cttcaaccgt ggcttgccag caggaagata ttagctcagc caaaagtgat 720
atgtttgatt cagacagccc acattttgcg gatgggttac attcctcact cttagaggca 780
ggtgattctt cacatgtctt cgagcccgac caatcggatt tatcacaaga tgaagaagat 840
aacttgagca agagtctttt gcctccgtac gtctttccaa agcttgaaga tggtgattac 900
tctgaccgcg cagcaagttt tgaagatcat gccttttggg gctggtcata ctaa 954

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<210> 43
 <211> 317
 <212> PRT
 <213> *Populus tremuloides*

<400> 43

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

<210> 44

PF60795.ST25.txt

<211> 909
<212> DNA
<213> Populus tremuloides

<400> 44
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tctatggtta attttaggaa tgatggagga gacactgtag acatgtcttt tttccaacca 180
catgtcaaag aagaaagtag cgatgaggat tatgatgcgc accttaagcc atctgaaaag 240
aaaaggcggc ttacagctgc tcaagtccag tttcttgaga agagctttga ggcgagagaat 300
aagcttgaac cagagaggaa gatgcagctt gctaaagaac tcggcttgca gcctcgccag 360
gttgcaatat ggtttcaaaa ccgtagagct cggttcaaga acaagcagct ggaaagggac 420
tacgactcct tgagaatcag ctttgacaaa ctcaaggctg attatgacaa actcctcctc 480
gagaagcaga atttgaaaaa cgagcttctt tcaactgaaag aaaaattgct tagcagagag 540
gaaagtatgg aaagttcaga accatttgat gtcatccatt caccggatgc agaacttgag 600
cctattcctg atacagtgtc tgaaaatggt tccgccattg tgccaatggt gacacccaaa 660
caagaagaaa gttcagctaa aaatgatgtt ttcaactcag acagcccacg ttcatttttg 720
gagccccgtg attgttatcg tgttttcgag tcagaccaac cagatttttc ccaagttgaa 780
gaagataatc tcaccaggag ctttctaccc cctccgtact ttccaaaact ctaccgagag 840
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atttactga 909

<210> 45
<211> 302
<212> PRT
<213> Populus tremuloides

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

				245					250					255		
Ser	Gln	Val	Glu	Glu	Asp	Asn	Leu	Thr	Arg	Ser	Phe	Leu	Pro	Pro	Pro	
			260					265					270			
Tyr	Phe	Pro	Lys	Leu	Tyr	Arg	Glu	Pro	Pro	Ala	Ser	Ser	Arg	Asn	Phe	
		275					280					285				
Glu	Phe	Ser	Ala	Glu	Asp	Gln	Pro	Phe	Trp	Ser	Trp	Ile	Tyr			
	290					295					300					

<400>	46						
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ggttcaaatt	cagtgggttaa	ttttgagaat	ggtggtggtta	gcaacagagt	ggtaacagat		180
agacccttct	ttcaacaact	tgagaaagaa	gagaattgtg	gtgatgaaga	ttatgaagca		240
tgctaccatc	aacaaggaaa	gaaaaggagg	ctttcaagtg	aacaagttca	atttcttgaa		300
aagagttttg	aggtagaaaa	caagcttgaa	cctgatagga	aagttcaact	tgcaaaagag		360
cttggtttgc	aaccaagaca	agttgctata	tggtttcaaa	acagaagggc	aaggttcaaa		420
actaaacagc	ttgaaaaaga	ttatggcaca	tgaaagcta	gcttgatag	tctcaaagat		480
gattatgata	atcttcttca	agagaatgac	aagttaaaag	aagaggtgaa	ttctctcaag		540
aacaaattga	tccaagaga	taaagaaaaa	gtgaattcag	aagacaaatc	atcaccagaa		600
gcaatcaatt	cacctcataa	caacatagat	ccaatggata	taatttcaat	tacaaattca		660
gaaaatgggt	ccaaaatgtc	actcccta	atggtactaa	aatgtaagca	agaagatgcc		720
aattcagcta	aaagtgatgt	gcttgattct	gatagccac	attgcaatga	tgggaacaat		780
ctttcttctt	tcatagagcc	tacagattca	gatttctcac	aagatgaaga	ggataatgat		840
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			20					25					30			
Val	His	Thr	Pro	Ala	Ser	Phe	Gln	Gly	Ser	Asn	Ser	Val	Val	Asn	Phe	
		35					40					45				
Glu	Asn	Gly	Gly	Gly	Ser	Asn	Arg	Val	Val	Thr	Asp	Arg	Pro	Phe	Phe	
	50					55					60					
Gln	Gln	Leu	Glu	Lys	Glu	Asn	Cys	Gly	Asp	Glu	Asp	Tyr	Glu	Ala		
65				70					75					80		
Cys	Tyr	His	Gln	Gln	Gly	Lys	Lys	Arg	Arg	Leu	Ser	Ser	Glu	Gln	Val	
				85					90					95		
Gln	Phe	Leu	Glu	Lys	Ser	Phe	Glu	Val	Glu	Asn	Lys	Leu	Glu	Pro	Asp	
			100					105					110			
Arg	Lys	Val	Gln	Leu	Ala	Lys	Glu	Leu	Gly	Leu	Gln	Pro	Arg	Gln	Val	
		115					120					125				
Ala	Ile	Trp	Phe	Gln	Asn	Arg	Arg	Ala	Arg	Phe	Lys	Thr	Lys	Gln	Leu	
	130					135					140					
Glu	Lys	Asp	Tyr	Gly	Thr	Leu	Lys	Ala	Ser	Phe	Asp	Ser	Leu	Lys	Asp	
145				150						155					160	
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PF60795.ST25.txt

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

<210> 48
 <211> 984
 <212> DNA
 <213> Phaseolus vulgaris

<400> 48
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 ttccaagggt caaaatctat gggtgatttt gagaatgtta gtgggggcag ggtgacggat 180
 aggccctttt ttcaagcggt ggagaaggaa gataactgtg atgatgatta tgagggttgc 240
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 aactttgagg tcgagaacaa gcttgaacct gaaaggaagg tccaacttgc aaaggagctt 360
 ggcttgcagc caaggcaagt ggctatatgg ttccaaaacc gaagggaag gttcaagacc 420
 aagcagctag aaaaagatta tggcacattg aaagctagct atgacagact caaagggtgac 480
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 aaattgattc ttagagataa agagaaggag aattcggacg acaagtcac tcctgatgct 600
 gtcaattcac cccacaaaga gcctatggat ttaatttcaa attcaacatc tgaaaatggg 660
 accaaagtgt cactccctat tatggtaaca tgcaagcaag aagatgccaa ttcagccaaa 720
 agtgatgtgc ttgattcgga cagcccacat tgcaactgat ggaaccatcc ctcttcattc 780
 gtggagcctg ctgattcctc ccattgctttt gaaccagacc actccgactt ctcccaagat 840
 gaagaggata atcttagtga aagccttttg accctccctt gcttaccaaa gggttgaaaga 900
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 accttctgtt tctggcccta ttga 984

<210> 49
 <211> 327
 <212> PRT
 <213> Phaseolus vulgaris

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Gln	Asn	Asp	Arg	Leu	Pro	Cys	Ser	Ser	Glu	Val	Leu	Glu	Ser	Leu	Trp				
		20						25					30						
Ala	His	Thr	Ser	Asn	Ala	Ala	Ser	Phe	Gln	Gly	Ser	Lys	Ser	Met	Val				
	35						40					45							
Asp	Phe	Glu	Asn	Val	Ser	Gly	Gly	Arg	Val	Thr	Asp	Arg	Pro	Phe	Phe				

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