

SEQUENCE LISTING

<110> Hexima Limited
Anderson, Marilyn
Heath, Robyn

<120> MULTI-GENE EXPRESSION VEHICLE

<130> 30222500/EJH/AJH

<150> US 60803206

<151> 2006-05-25

<160> 20

<170> PatentIn version 3.4

<210> 1

<211> 397

<212> PRT

<213> Nicotiana glauca

<400> 1

Met Ala Val His Arg Val Ser Phe Leu Ala Leu Leu Leu Leu Phe Gly
1 5 10 15

Met Ser Leu Leu Val Ser Asn Val Glu His Ala Asp Ala Lys Ala Cys
20 25 30

Thr Leu Asn Cys Asp Pro Arg Ile Ala Tyr Gly Val Cys Pro Arg Ser
35 40 45

Glu Glu Lys Lys Asn Asp Arg Ile Cys Thr Asn Cys Cys Ala Gly Thr
50 55 60

Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe Val Cys Glu Gly
65 70 75 80

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Glu Ser Asp Pro Arg Asn Pro Lys Ala Cys Thr Leu Asn Cys Asp Pro
85 90 95

Arg Ile Ala Tyr Gly Val Cys Pro Arg Ser Glu Glu Lys Lys Asn Asp
100 105 110

Arg Ile Cys Thr Asn Cys Cys Ala Gly Thr Lys Gly Cys Lys Tyr Phe
115 120 125

Ser Asp Asp Gly Thr Phe Val Cys Glu Gly Glu Ser Asp Pro Arg Asn
130 135 140

Pro Lys Ala Cys Pro Arg Asn Cys Asp Pro Arg Ile Ala Tyr Gly Ile
145 150 155 160

Cys Pro Leu Ala Glu Glu Lys Lys Asn Asp Arg Ile Cys Thr Asn Cys
165 170 175

Cys Ala Gly Lys Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe
180 185 190

Val Cys Glu Gly Glu Ser Asp Pro Lys Asn Pro Lys Ala Cys Pro Arg
195 200 205

Asn Cys Asp Gly Arg Ile Ala Tyr Gly Ile Cys Pro Leu Ser Glu Glu
210 215 220

Lys Lys Asn Asp Arg Ile Cys Thr Asn Cys Cys Ala Gly Lys Lys Gly
225 230 235 240

Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe Val Cys Glu Gly Glu Ser
245 250 255

Asp Pro Lys Asn Pro Lys Ala Cys Pro Arg Asn Cys Asp Gly Arg Ile
260 265 270

Ala Tyr Gly Ile Cys Pro Leu Ser Glu Glu Lys Lys Asn Asp Arg Ile

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275

280

285

Cys Thr Asn Cys Cys Ala Gly Lys Lys Gly Cys Lys Tyr Phe Ser Asp
 290 295 300

Asp Gly Thr Phe Val Cys Glu Gly Glu Ser Asp Pro Arg Asn Pro Lys
 305 310 315 320

Ala Cys Pro Arg Asn Cys Asp Gly Arg Ile Ala Tyr Gly Ile Cys Pro
 325 330 335

Leu Ser Glu Glu Lys Lys Asn Asp Arg Ile Cys Thr Asn Cys Cys Ala
 340 345 350

Gly Lys Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe Ile Cys
 355 360 365

Glu Gly Glu Ser Glu Tyr Ala Ser Lys Val Asp Glu Tyr Val Gly Glu
 370 375 380

Val Glu Asn Asp Leu Gln Lys Ser Lys Val Ala Val Ser
 385 390 395

<210> 2

<211> 281

<212> PRT

<213> Nicotiana alata

<400> 2

Met Ala Ala His Arg Val Ser Phe Leu Ala Leu Leu Leu Leu Phe Gly
 1 5 10 15

Met Ser Leu Leu Val Ser Asn Val Glu His Ala Asp Ala Lys Ala Cys
 20 25 30

Thr Leu Asn Cys Asp Pro Arg Ile Ala Tyr Gly Val Cys Pro Arg Ser

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

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Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe Ile Cys Glu Gly Glu Ser
245 250 255

Glu Tyr Ala Ser Lys Val Asp Glu Tyr Val Gly Glu Val Glu Asn Asp
260 265 270

Leu Gln Lys Ser Lys Val Ala Val Ser
275 280

<210> 3

<211> 53

<212> PRT

<213> Artificial

<220>

<223> Synthetic construct: T1 peptide sequence.

<400> 3

Asp Arg Ile Cys Thr Asn Cys Cys Ala Gly Thr Lys Gly Cys Lys Tyr
1 5 10 15

Phe Ser Asp Asp Gly Thr Phe Val Cys Glu Gly Glu Ser Asp Pro Arg
20 25 30

Asn Pro Lys Ala Cys Pro Arg Asn Cys Asp Pro Arg Ile Ala Tyr Gly
35 40 45

Ile Cys Pro Leu Ala
50

<210> 4

<211> 53

<212> PRT

<213> Artificial

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<220>

<223> Synthetic construct: T5 peptide sequence.

<400> 4

Asp Arg Ile Cys Thr Asn Cys Cys Ala Gly Thr Lys Gly Cys Lys Tyr
1 5 10 15

Phe Ser Asp Asp Gly Thr Phe Val Cys Glu Gly Glu Ser Asp Pro Lys
20 25 30

Asn Pro Lys Ala Cys Pro Arg Asn Cys Asp Pro Arg Ile Ala Tyr Gly
35 40 45

Ile Cys Pro Leu Ser
50

<210> 5

<211> 5

<212> PRT

<213> Artificial

<220>

<223> Synthetic construct: linker peptide sequence.

<400> 5

Glu Glu Lys Lys Asn
1 5

<210> 6

<211> 948

<212> DNA

<213> Artificial

<220>

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<223> Synthetic construct: MGEV-5 sequence

<400> 6

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ggatccatgg ctgctcacag agttagtttc cttgctctcc tcctcttatt tggaatgtct      60

ctgcttgtaa gcaatgtgga acatgcagat gccaaggctt gtaccttaaa ctgtgatcca      120

agaattgcct atggagtttg cccgcgttca gaagaaaaga agaattctga ggatcggata      180

tgcaccaact gttgtgcagg cacgaaggtt tgtaagtact tcagtgatga tggaactttt      240

gtttgtgaag gagagtctga tcctagaaat ccaaaggctt gtctctcgaa ttgcgatcca      300

agaattgcct atgggatttg ccacttttca gaagaaaaga agaattctag aaaggaatcg      360

gaatctgaat cttggtgcaa aggaaaacaa ttctggccag aacttattgg tgtaccaaca      420

aagcttgcta aggaaataat tgagaaggaa aatccatcca taaatgatgt tccaataata      480

ttgaatggca ctccagtccc agctgatttt agatgtaatc gagttcgtct ttttgataac      540

at ttgtgggtg atgttgtaca aattcctagg gtggctgaag aaaagaagaa ttctagagat      600

cggatatgca ccaactgttg cgcaggcacg aagggttgta agtacttcag tgatgatgga      660

acttttgttt gtgaaggaga gtctgatcct agaaatccaa aggcttgtag cttaaactgt      720

gatccaagaa ttgcctatgg agtttgcccg cgttcagaag aaaagaagaa totcgaggat      780

cggatatgca ccaattgttg cgcaggcaag aagggttgta agtacttttag tgatgatgga      840

acttttattt gtgaaggaga atctgaatat gccagcaaag tggatgaata tgttggtgaa      900

gtggagaatg atctccagaa gtccaagggt gctgtttcct aagtcgac                      948

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<210> 7

<211> 24

<212> DNA

<213> Artificial

<220>

<223> Synthetic construct: oligonucleotide useful as a primer.

<400> 7

gtggagaggc tattcggcta tgac

24

<210> 8

<211> 21

<212> DNA

<213> Artificial

<220>

<223> Synthetic construct: oligonucleotide useful as a primer.

<400> 8

cgggtagcca acgctatgtc c

21

<210> 9

<211> 28

<212> DNA

<213> Artificial

<220>

<223> Synthetic construct: oligonucleotide useful as a primer.

<400> 9

gctctagaaa ggaatcggaa tctgaatc

28

<210> 10

<211> 41

<212> DNA

<213> Artificial

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<220>

<223> Synthetic construct: oligonucleotide useful as a primer.

<400> 10

gctctagaat tcttcttttc ttcagccacc ctaggaattt g

41

<210> 11

<211> 67

<212> PRT

<213> Solanum tuberosum

<400> 11

Lys Glu Ser Glu Ser Glu Ser Trp Cys Lys Gly Lys Gln Phe Trp Pro
1 5 10 15

Glu Leu Gly Val Pro Thr Lys Leu Ala Lys Glu Glu Lys Glu Asn Pro
20 25 30

Ser Asn Asp Val Pro Leu Asn Gly Thr Pro Val Pro Ala Asp Phe Arg
35 40 45

Cys Asn Arg Val Arg Leu Phe Asp Asn Leu Gly Asp Val Val Gln Pro
50 55 60

Arg Val Ala

65

<210> 12

<211> 313

<212> PRT

<213> Artificial

<220>

<223> Synthetic construct: sequence of MGEV-5

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<400> 12

Gly Ser Met Ala Ala His Arg Val Ser Phe Leu Ala Leu Leu Leu Leu
1 5 10 15

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

Ala Cys Thr Leu Asn Cys Asp Pro Arg Ile Ala Tyr Gly Val Cys Pro
35 40 45

Arg Ser Glu Glu Lys Lys Asn Leu Glu Asp Arg Ile Cys Thr Asn Cys
50 55 60

Cys Ala Gly Thr Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe
65 70 75 80

Val Cys Glu Gly Glu Ser Asp Pro Arg Asn Pro Lys Ala Cys Pro Arg
85 90 95

Asn Cys Asp Pro Arg Ile Ala Tyr Gly Ile Cys Pro Leu Ser Glu Glu
100 105 110

Lys Lys Asn Ser Arg Lys Glu Ser Glu Ser Glu Ser Trp Cys Lys Gly
115 120 125

Lys Gln Phe Trp Pro Glu Leu Ile Gly Val Pro Thr Lys Leu Ala Lys
130 135 140

Glu Ile Ile Glu Lys Glu Asn Pro Ser Ile Asn Asp Val Pro Ile Ile
145 150 155 160

Leu Asn Gly Thr Pro Val Pro Ala Asp Phe Arg Cys Asn Arg Val Arg
165 170 175

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

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

Gly Thr Lys Gly Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe Val Cys
 210 215 220

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

Asp Pro Arg Ile Ala Tyr Gly Val Cys Pro Arg Ser Glu Glu Lys Lys
 245 250 255

Asn Leu Glu Asp Arg Ile Cys Thr Asn Cys Cys Ala Gly Lys Lys Gly
 260 265 270

Cys Lys Tyr Phe Ser Asp Asp Gly Thr Phe Ile Cys Glu Gly Glu Ser
 275 280 285

Glu Tyr Ala Ser Lys Val Asp Glu Tyr Val Gly Glu Val Glu Asn Asp
 290 295 300

Leu Gln Lys Ser Lys Val Ala Val Ser
 305 310

<210> 13

<211> 238

<212> PRT

<213> Artificial

<220>

<223> Synthetic construct: soluble, modified green fluorescent
 protein.

<400> 13

Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val

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

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Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val
210 215 220

Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys
225 230 235

<210> 14

<211> 105

<212> PRT

<213> Nicotiana glauca

<400> 14

Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Met Met
1 5 10 15

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

Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala
35 40 45

Cys Ile Ser Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg
50 55 60

Arg Cys Leu Cys Thr Lys Pro Cys Val Phe Asp Glu Lys Met Thr Lys
65 70 75 80

Thr Gly Ala Glu Ile Leu Ala Glu Glu Ala Lys Thr Leu Ala Ala Ala
85 90 95

Leu Leu Glu Glu Glu Ile Met Asp Asn
100 105

<210> 15

<211> 237

<212> DNA

<213> Nicotiana alata

<220>

<221> CDS

<222> (1) .. (234)

<400> 15

atg gca aac tcc atg cgc ttc ttt gct act gtg tta ctt cta aca ttg 48
Met Ala Asn Ser Met Arg Phe Phe Ala Thr Val Leu Leu Leu Thr Leu
1 5 10 15

ctt ttc atg gct aca gag atg gga cca atg aca att gca gag gca aga 96
Leu Phe Met Ala Thr Glu Met Gly Pro Met Thr Ile Ala Glu Ala Arg
20 25 30

act tgc gag tct cag agc cac cgt ttc aag gga cca tgc gca aga gat 144
Thr Cys Glu Ser Gln Ser His Arg Phe Lys Gly Pro Cys Ala Arg Asp
35 40 45

agc aac tgt gcc acc gtc tgt ttg aca gaa gga ttt tcc ggt ggc gac 192
Ser Asn Cys Ala Thr Val Cys Leu Thr Glu Gly Phe Ser Gly Gly Asp
50 55 60

tgc cgt gga ttc cgc cgc cgt tgt ttc tgt acc agc cct tgc taa 237
Cys Arg Gly Phe Arg Arg Arg Cys Phe Cys Thr Ser Pro Cys
65 70 75

<210> 16

<211> 78

<212> PRT

<213> Nicotiana glauca

<400> 16

Met Ala Asn Ser Met Arg Phe Phe Ala Thr Val Leu Leu Leu Thr Leu

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

<210> 17

<211> 5

<212> PRT

<213> Artificial

<220>

<223> Synthetic construct: consensus sequence for linker peptide in MGEV polypeptide.

<220>

<221> MISC_FEATURE

<222> (1)..(2)

<223> At positions 1 and 2, Xaa can be Glutamate or Aspartate.

<220>

<221> MISC_FEATURE

<222> (3)..(4)

<223> At positions 3 and 4, Xaa can be Lysine or Arginine.

<220>

<221> MISC_FEATURE

<222> (5)..(5)

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<223> At position 5, Xaa can be Asparagine or Glutamine..

<400> 17

Xaa Xaa Xaa Xaa Xaa

1 5

<210> 18

<211> 1812

<212> DNA

<213> Escherichia coli

<400> 18

atgttacgtc ctgtagaaac cccaacccgt gaaatcaaaa aactcgacgg cctgtgggca	60
ttcagtctgg atcgcgaaaa ctgtggaatt gatcagcggtt ggtgggaaaag cgcgttacaa	120
gaaagccggg caattgctgt gccaggcagt tttaacgata agttcgccga tgcagatatt	180
cgtaattatg cgggcaacgt ctggtatcag cgcgaagtct ttataccgaa aggttgggca	240
ggccagcgta tctgtctgcg tttcgatgcy gtcactcatt acggcaaagt gtgggtcaat	300
aatcaggaag tgatggagca tcagggcggc tatacgccat ttgaagccga tgtcacgccg	360
tatgttattg ccgggaaaag tgtacgtata accgtttgtg tgaacaacga actgaactgg	420
cagactatcc cgccgggaat ggtgattacc gacgaaaacg gcaagaaaaa gcagtcttac	480
ttccatgatt tctttaacta tgccggaata catcgacgcy taatgctcta caccacgccg	540
aacacctggg tggacgatat caccgtggtg acgcatgtcg cgcaagactg taaccacgccg	600
tctgttgact ggcagggtggg ggccaatggg gatgtcagcy ttgaactgcy tgatgcggat	660
caacagggtg ttgcaactgg acaaggcact agcgggactt tgcaagtggg gaatccgcac	720

ctctggcaac cgggtgaagg ttatctctat gaactgtgcg tcacagccaa aagccagaca	780
gagtgtgata tctacccgct tcgctcggc atccggtcag tggcagtga gggcgaacag	840
ttcctgatta accacaaacc gttctacttt actggctttg gtcgtcatga agatgcggac	900
ttgcgtggca aaggattcga taacgtgctg atgggtgcacg accacgcatt aatggactgg	960
attggggcca actcctaccg tacctcgcat tacccttacg ctgaagagat gtcgactgg	1020
gcagatgaac atggcatcgt ggtgattgat gaaactgctg ctgtcggctt taacctctct	1080
ttaggcattg gtttcgaagc gggcaacaag ccgaaagaac tgtacagcga agaggcagtc	1140
aacggggaaa ctgagcaagc gcacttacag gcgattaaag agctgatagc gcgtgacaaa	1200
aaccacccaa gcgtgggtgat gtggagtatt gccaacgaac cggatacccg tccgcaaggt	1260
gcacgggaat atttcgcgcc actggcgga gcaacgcgta aactcgacc gacgcgtccg	1320
atcacctgcg tcaatgtaat gttctgogac gctcacaccg ataccatcag cgatctcttt	1380
gatgtgctgt goctgaaccg ttattacgga tggatgtcc aaagcggcga tttggaaacg	1440
gcagagaagg tactggaaaa agaacttctg gcctggcagg agaaactgca tcagccgatt	1500
atcatcaccg aatacggcgt ggatacgtta gccgggctgc actcaatgta caccgacatg	1560
tggagtgaag agtatcagtg tgcattggctg gatatgtatc accgcgtctt tgatcgogtc	1620
agcgcgctcg tcggtgaaca ggtatggaat ttgcgcgatt ttgcgacctc gcaaggcata	1680
ttgcgcgttg gcggtaacaa gaaagggatc ttactcgcg accgcaaacc gaagtcggcg	1740
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ggcaaacat ga	1812

<210> 19
 <211> 603
 <212> PRT
 <213> Escherichia coli

<400> 19

Met Leu Arg Pro Val Glu Thr Pro Thr Arg Glu Ile Lys Lys Leu Asp
 1 5 10 15

Gly Leu Trp Ala Phe Ser Leu Asp Arg Glu Asn Cys Gly Ile Asp Gln
 20 25 30

Arg Trp Trp Glu Ser Ala Leu Gln Glu Ser Arg Ala Ile Ala Val Pro
 35 40 45

Gly Ser Phe Asn Asp Gln Phe Ala Asp Ala Asp Ile Arg Asn Tyr Ala
 50 55 60

Gly Asn Val Trp Tyr Gln Arg Glu Val Phe Ile Pro Lys Gly Trp Ala
 65 70 75 80

Gly Gln Arg Ile Val Leu Arg Phe Asp Ala Val Thr His Tyr Gly Lys
 85 90 95

Val Trp Val Asn Asn Gln Glu Val Met Glu His Gln Gly Gly Tyr Thr
 100 105 110

Pro Phe Glu Ala Asp Val Thr Pro Tyr Val Ile Ala Gly Lys Ser Val
 115 120 125

Arg Ile Thr Val Cys Val Asn Asn Glu Leu Asn Trp Gln Thr Ile Pro
 130 135 140

Pro Gly Met Val Ile Thr Asp Glu Asn Gly Lys Lys Lys Gln Ser Tyr
 145 150 155 160

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Phe His Asp Phe Phe Asn Tyr Ala Gly Ile His Arg Ser Val Met Leu
 165 170 175

Tyr Thr Thr Pro Asn Thr Trp Val Asp Asp Ile Thr Val Val Thr His
 180 185 190

Val Ala Gln Asp Cys Asn His Ala Ser Val Asp Trp Gln Val Val Ala
 195 200 205

Asn Gly Asp Val Ser Val Glu Leu Arg Asp Ala Asp Gln Gln Val Val
 210 215 220

Ala Thr Gly Gln Gly Thr Ser Gly Thr Leu Gln Val Val Asn Pro His
 225 230 235 240

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

Lys Ser Gln Thr Glu Cys Asp Ile Tyr Pro Leu Arg Val Gly Ile Arg
 260 265 270

Ser Val Ala Val Lys Gly Glu Gln Phe Leu Ile Asn His Lys Pro Phe
 275 280 285

Tyr Phe Thr Gly Phe Gly Arg His Glu Asp Ala Asp Leu Arg Gly Lys
 290 295 300

Gly Phe Asp Asn Val Leu Met Val His Asp His Ala Leu Met Asp Trp
 305 310 315 320

Ile Gly Ala Asn Ser Tyr Arg Thr Ser His Tyr Pro Tyr Ala Glu Glu
 325 330 335

Met Leu Asp Trp Ala Asp Glu His Gly Ile Val Val Ile Asp Glu Thr
 340 345 350

Ala Ala Val Gly Phe Asn Leu Ser Leu Gly Ile Gly Phe Glu Ala Gly
 355 360 365

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

Gln Gln Ala His Leu Gln Ala Ile Lys Glu Leu Ile Ala Arg Asp Lys
385 390 395 400

Asn His Pro Ser Val Val Met Trp Ser Ile Ala Asn Glu Pro Asp Thr
405 410 415

Arg Pro Gln Gly Ala Arg Glu Tyr Phe Ala Pro Leu Ala Glu Ala Thr
420 425 430

Arg Lys Leu Asp Pro Thr Arg Pro Ile Thr Cys Val Asn Val Met Phe
435 440 445

Cys Asp Ala His Thr Asp Thr Ile Ser Asp Leu Phe Asp Val Leu Cys
450 455 460

Leu Asn Arg Tyr Tyr Gly Trp Tyr Val Gln Ser Gly Asp Leu Glu Thr
465 470 475 480

Ala Glu Lys Val Leu Glu Lys Glu Leu Leu Ala Trp Gln Glu Lys Leu
485 490 495

His Gln Pro Ile Ile Ile Thr Glu Tyr Gly Val Asp Thr Leu Ala Gly
500 505 510

Leu His Ser Met Tyr Thr Asp Met Trp Ser Glu Glu Tyr Gln Cys Ala
515 520 525

Trp Leu Asp Met Tyr His Arg Val Phe Asp Arg Val Ser Ala Val Val
530 535 540

Gly Glu Gln Val Trp Asn Phe Ala Asp Phe Ala Thr Ser Gln Gly Ile
545 550 555 560

Leu Arg Val Gly Gly Asn Lys Lys Gly Ile Phe Thr Arg Asp Arg Lys

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565

570

575

Pro Lys Ser Ala Ala Phe Leu Leu Gln Lys Arg Trp Thr Gly Met Asn

580

585

590

Phe Gly Glu Lys Pro Gln Gln Gly Gly Lys Gln

595

600

<210> 20

<211> 36

<212> PRT

<213> Solanum tuberosum

<400> 20

Met Glu Ser Lys Phe Ala His Ile Ile Val Phe Phe Leu Leu Ala Thr

1

5

10

15

Ser Phe Glu Thr Leu Met Ala Arg Lys Glu Gly Asp Gly Ser Glu Val

20

25

30

Ile Lys Leu Leu

35