

SEQUENCE LISTING

<110> GENOPLANTE VALOR
 <120> METHOD FOR IMPROVING HOMOLOGOUS RECOMBINATION
 <130> BRV 10 - WO
 <150> EP09160685.5
 <151> 2009-05-19
 <160> 17
 <170> PatentIn version 3.3
 <210> 1
 <211> 25
 <212> PRT
 <213> artificial
 <220>
 <223> Consensus sequence 1
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 <223> X is I or V
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 <223> Xaa is Ile or Val
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 Ser Ile Asp Val Gly Ala Gly Val Ile Asp Ala Asp Tyr Arg Gly Pro
 1 5 10 15
 Val Gly Val Xaa Leu Phe Asn His Ser
 20 25
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 <223> Xaa is Leu or Met
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 <222> (9)..(9)

<223> Xaa is Val or Ile

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<221> VARIANT

<222> (15)..(15)

<223> Xaa is Val or Ile

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<221> VARIANT

<222> (16)..(16)

<223> Xaa is Ala or Gly

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<221> VARIANT

<222> (17)..(17)

<223> Xaa is Val or Ile

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<221> VARIANT

<222> (19)..(19)

<223> Xaa is His, Gln or Glu

<220>

<221> VARIANT

<222> (25)..(25)

<223> Xaa is Val or Ile

<400> 2

Val	Pro	Ala	Arg	Gly	Lys	Ala	Xaa	Xaa	Pro	Thr	Asp	Leu	Ser	Xaa	Xaa
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Xaa	Pro	Xaa	Gly	Thr	Tyr	Ala	Arg	Xaa	Ala	Pro	Arg	Ser	Gly	Leu
			20					25					30	

<210> 3

<211> 137

<212> PRT

<213> Artificial

<220>

<223> Consensus sequence 3

<400> 3

Lys	Val	Lys	Lys	Leu	Ser	Glu	Lys	Ala	Val	Ile	Pro	Thr	Arg	Gly	Ser
1				5					10					15	

Pro	Leu	Ser	Ala	Gly	Tyr	Asp	Leu	Ser	Ser	Ala	Val	Asp	Ser	Lys	Val
			20					25						30	

Pro	Ala	Arg	Gly	Lys	Ala	Leu	Ile	Pro	Thr	Asp	Leu	Ser	Ile	Ala	Val
			35				40					45			

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

Lys His Ser Ile Asp Val Gly Ala Gly Val Ile Asp Ala Asp Tyr Arg
65 70 75 80

Gly Pro Val Gly Val Ile Leu Phe Asn His Ser Asp Ala Asp Phe Glu
85 90 95

Val Lys Phe Gly Asp Arg Ile Ala Gln Leu Ile Ile Glu Lys Ile Val
100 105 110

Thr Pro Asp Val Val Glu Val Asp Asp Leu Asp Glu Thr Val Arg Gly
115 120 125

Asp Gly Gly Phe Gly Ser Thr Gly Val
130 135

<210> 4
<211> 166
<212> PRT
<213> Arabidopsis thaliana

<400> 4

Met Ala Cys Val Asn Glu Pro Ser Pro Lys Leu Gln Lys Leu Asp Arg
1 5 10 15

Asn Gly Ile His Gly Asp Ser Ser Pro Ser Pro Phe Phe Lys Val Lys
20 25 30

Lys Leu Ser Glu Lys Ala Val Ile Pro Thr Arg Gly Ser Pro Leu Ser
35 40 45

Ala Gly Tyr Asp Leu Ser Ser Ala Val Asp Ser Lys Val Pro Ala Arg
50 55 60

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

Thr Tyr Ala Arg Ile Ala Pro Arg Ser Gly Leu Ala Trp Lys His Ser
85 90 95

Ile Asp Val Gly Ala Gly Val Ile Asp Ala Asp Tyr Arg Gly Pro Val
100 105 110

Gly Val Ile Leu Phe Asn His Ser Asp Ala Asp Phe Glu Val Lys Phe
115 120 125

Gly Asp Arg Ile Ala Gln Leu Ile Ile Glu Lys Ile Val Thr Pro Asp
 130 135 140

Val Val Glu Val Asp Asp Leu Asp Glu Thr Val Arg Gly Asp Gly Gly
 145 150 155 160

Phe Gly Ser Thr Gly Val
 165

<210> 5
 <211> 171
 <212> PRT
 <213> Zea mays
 <400> 5

Met Ala Ala Ser Asn Gly Ala Ala Ala Val Asp Glu Thr Val Ala Ala
 1 5 10 15

Thr Asp Ser Val Gln Glu Pro Pro Gln Lys Ile Ser Lys Ile Ser Pro
 20 25 30

Leu Leu Lys Val Lys Lys Leu Ser Glu Lys Ala Val Leu Pro Ser Arg
 35 40 45

Gly Ser Ala Leu Ala Ala Gly Tyr Asp Leu Ser Ser Ala Glu Glu Met
 50 55 60

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

Ala Ile Pro His Gly Thr Tyr Ala Arg Ile Ala Pro Arg Ser Gly Leu
 85 90 95

Ala Leu Lys His Ser Ile Asp Val Gly Ala Gly Val Ile Asp Ala Asp
 100 105 110

Tyr Arg Gly Pro Val Gly Val Ile Leu Phe Asn His Ser Asp Ala Asp
 115 120 125

Phe Ala Val Lys Pro Gly Asp Arg Ile Ala Gln Met Ile Ile Glu Val
 130 135 140

Ile Ala Thr Pro Glu Val Ala Glu Val Glu Asp Leu Asp Ala Thr Val
 145 150 155 160

Arg Gly Asp Gly Gly Phe Gly Ser Thr Gly Val
 165 170

<210> 6
 <211> 169
 <212> PRT
 <213> Lycopersicon esculentum

<400> 6

Met Ala Glu Asn Gln Ile Asn Ser Pro Glu Ile Thr Glu Pro Ser Pro
 1 5 10 15

Lys Val Gln Lys Leu Asp His Pro Glu Asn Gly Asn Val Pro Phe Phe
 20 25 30

Arg Val Lys Lys Leu Ser Glu Asn Ala Val Leu Pro Ser Arg Ala Ser
 35 40 45

Ser Leu Ala Ala Gly Tyr Asp Leu Ser Ser Ala Ala Glu Thr Lys Val
 50 55 60

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

Pro Gln Gly Thr Tyr Ala Arg Ile Ala Pro Arg Ser Gly Leu Ala Trp
 85 90 95

Lys Tyr Ser Ile Asp Val Gly Ala Gly Val Ile Asp Ala Asp Tyr Arg
 100 105 110

Gly Pro Val Gly Val Val Leu Phe Asn His Ser Glu Val Asp Phe Glu
 115 120 125

Val Lys Val Gly Asp Arg Ile Ala Gln Leu Ile Val Gln Lys Ile Val
 130 135 140

Thr Pro Glu Val Glu Gln Val Asp Asp Leu Asp Ser Thr Val Arg Gly
 145 150 155 160

Ser Gly Gly Phe Gly Ser Thr Gly Val
 165

<210> 7
 <211> 171
 <212> PRT
 <213> Oryza sativa

<400> 7

Met Ala Thr Ala Thr Asn Gly Asn Ala Ser Ala Ala Ala Ala Ala

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Asp	Ser	Ala	Val	Gln	Glu	Pro	Pro	His	Lys	Ile	Ala	Lys	Val	Ala	Pro				
			20				25						30						
Leu	Leu	Lys	Val	Lys	Lys	Leu	Ser	Glu	Asn	Ala	Val	Leu	Pro	Ser	Arg				
		35				40						45							
Gly	Ser	Ala	Leu	Ala	Ala	Gly	Tyr	Asp	Leu	Ser	Ser	Ala	Ala	Glu	Val				
		50				55						60							
Val	Val	Pro	Ala	Arg	Gly	Lys	Ala	Met	Val	Pro	Thr	Asp	Leu	Ser	Ile				
65				70						75			80						
Ala	Ile	Pro	Glu	Gly	Thr	Tyr	Ala	Arg	Val	Ala	Pro	Arg	Ser	Gly	Leu				
			85						90			95							
Ala	Leu	Lys	His	Ser	Ile	Asp	Val	Gly	Ala	Gly	Val	Ile	Asp	Ala	Asp				
			100						105			110							
Tyr	Arg	Gly	Pro	Val	Gly	Val	Ile	Leu	Phe	Asn	His	Ser	Asp	Thr	Asp				
		115					120						125						
Phe	Ala	Val	Lys	Pro	Gly	Asp	Arg	Ile	Ala	Gln	Met	Ile	Ile	Glu	Val				
		130					135			140									
Ile	Val	Thr	Pro	Glu	Val	Ala	Glu	Val	Glu	Asp	Leu	Asp	Ala	Thr	Val				
145				150						155			160						
Arg	Gly	Glu	Gly	Gly	Phe	Gly	Ser	Thr	Gly	Val									
			165						170										
<210>		8																	
<211>		176																	
<212>		PRT																	
<213>		Vitis vinifera																	
<400>		8																	
Met	Ala	Gln	His	Asp	Pro	Gln	Cys	Arg	Ser	Pro	Glu	Ile	Glu	Glu	Pro				
1				5						10			15						
Ala	Pro	Lys	Leu	Gln	Lys	Leu	His	Gln	Asn	Gly	Val	Ser	Gln	Asp	Ser				
		20					25						30						
Gln	Cys	Pro	Leu	Ser	Leu	Leu	Arg	Val	Lys	Lys	Leu	Ser	Glu	Arg	Ala				
		35					40						45						

Val Leu Pro Ser Arg Ala Ser Pro Leu Ser Ala Gly Tyr Asp Leu Ser
50 55 60

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

Thr Asp Leu Ser Ile Gly Ile Pro Glu Gly Thr Tyr Ala Arg Ile Ala
85 90 95

Pro Arg Ser Gly Leu Ala Trp Lys Tyr Ser Ile Asp Val Gly Ala Gly
100 105 110

Val Ile Asp Ala Asp Tyr Arg Gly Pro Val Gly Val Ile Leu Phe Asn
115 120 125

His Ser Asp Val Asp Phe Glu Val Lys Val Gly Asp Arg Ile Ala Gln
130 135 140

Leu Ile Ile Glu Lys Ile Ile Thr Pro Glu Val Met Glu Val Glu Asp
145 150 155 160

Leu Asp Ser Thr Glu Arg Gly Val Gly Gly Phe Gly Ser Thr Gly Val
165 170 175

<210> 9
<211> 170
<212> PRT
<213> poplar trees

<400> 9

Met Pro Pro Ala Asn Leu Gln Asn His Ser Pro Asp Ile Lys Glu Pro
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Ser Pro Lys Val Pro Lys Leu Gln His Asp Asn Ile Pro Ser Tyr Leu
20 25 30

Leu Arg Val Lys Lys Leu Ser Glu Asn Ala Val Leu Pro Ser Arg Gly
35 40 45

Ser Pro Leu Ser Ala Gly Tyr Asp Leu Ser Ser Ala Ser Lys Ala Lys
50 55 60

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

Ile Pro Glu Gly Thr Tyr Ala Arg Ile Ala Pro Arg Ser Gly Leu Thr

85

90

95

Trp Lys His Ser Ile Asp Val Gly Ala Gly Val Ile Asp Ala Asp Tyr
 100 105 110

Arg Gly Pro Val Gly Val Ile Leu Phe Asn His Ser Asp Val Asp Phe
 115 120 125

Glu Val Lys Val Gly Asp Arg Ile Ala Gln Leu Ile Ile Glu Lys Ile
 130 135 140

Val Thr Pro Asn Val Met Glu Val Glu Asp Leu Asp Ala Thr Val Arg
 145 150 155 160

Gly Ala Gly Gly Phe Gly Ser Thr Gly Val
 165 170

<210> 10
 <211> 498
 <212> DNA
 <213> Arabidopsis thaliana

<400> 10
 atggccttgcg taaacgaacc atcacctaaa ctccaaaagc tgcaccgaaa cggaatccat 60
 ggcgattcat caccatcacc attcttcaaa gtgaagaaac tctccgagaa agctgttata 120
 ccaacacgcg gctcaccact ctccgctgga tacgatctct caagtgcggt ggattcaaaa 180
 gttccagcga gaggtaaagc gcttatccca acggatctaa gtatcgctgt tcccgaagga 240
 acttacgcga gaattgcgcc gagatctggt ttggccttgga aacattcgat tgatgttggt 300
 gctgggtgtga ttgatgctga ttatagagga cctgttggtg tgattttggt taatcattct 360
 gatgctgatt ttgaggttaa gttcggtgat cgaatcgccg agttgattat cgagaagatt 420
 gtgactcctg atgttggtga ggttgatgat ttggatgaga ctgttcgtgg tgatgggtgg 480
 tttggttcta ctggtgtc 498

<210> 11
 <211> 513
 <212> DNA
 <213> Zea mays

<400> 11
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 caggagcctc cccagaagat ctccaagatc tctcccctgc tcaaggtgaa gaagctctcc 120
 gagaaggcag tgctgccgtc ccgcggctcc gctctcgccg ccggctacga cctctcgagt 180
 gccgaggaga tggtggtgcc ggcgcgtggc aaggcgcttg tgccgaccga cctcagcgtc 240

gccatcccgc acggaaccta cgcgcgcata gcgcccaggt cggggctggc gctgaagcac 300
 tccatcgacg tgggcgcggg cgtgatcgac gcggactacc gaggccccgt cggcgtcatac 360
 ctcttcaacc actccgacgc cgacttcgcc gtgaagcccc gcgacaggat cgcgcagatg 420
 atcatcgagg tgatcgcgac gcccgaggtc gcggaggtgg aggacctcga cgccaccgtc 480
 cgtggggacg gaggggttcgg gtccaccggc gtc 513

<210> 12
 <211> 513
 <212> DNA
 <213> *Oryza sativa*

<400> 12
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 caggagcccc cgcacaagat cgccaagggt gctcccttgc tcaagggtcaa gaagctctcc 120
 gagaacgccg tcctgccgtc ccgcggctcc gccctcgccg ccggctacga cctgtcgagc 180
 gcggcgaggg tcgtcgtgcc ggcgaggggg aaggcgatgg tgccgacgga cctcagcatc 240
 gccatcccgg agggcaccta cgcgcgcgtc gcgccgaggt ctgggctggc gttgaagcac 300
 tcgatcgacg taggcgcggg ggtgatcgac gccgactacc gtggcccggg aggggtcatac 360
 ctcttcaacc actccgacac cgacttcgcc gtgaagcccc gcgaccggat cgcgcagatg 420
 atcatcgagg tgatcgtgac gccggaggtc gccgaggtgg aggacctcga cgccaccgtc 480
 aggggagagg gaggggttcgg atccaccggc gtc 513

<210> 13
 <211> 31
 <212> DNA
 <213> Artificial

<220>
 <223> Primer

<400> 13
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<210> 14
 <211> 31
 <212> DNA
 <213> Artificial

<220>
 <223> Primer

<400> 14
 ctactgcagt tagacaccag tagaaccaaa a 31

<210> 15
 <211> 21
 <212> DNA
 <213> Artificial

<220>
 <223> Primer

<400> 15
 cttcttcgtc ttacacatca c 21

<210> 16
 <211> 34
 <212> DNA
 <213> Artificial

<220>
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<400> 16
 gactcgagtc tagatggctt gcgtaaacga acca 34

<210> 17
 <211> 32
 <212> DNA
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<220>
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<400> 17
 gagaattcat cgattcgatc accgaactta ac 32