

**Table S2:** PCR-based markers used for recombination mapping

Marker	Nearest gene	Primer name (5' to 3' sequence)	Enzyme	Amplicon size (bp)	
				Col	Ler
<b>Chromosome 2</b>					
RGA1	<i>At2g01570</i>	RGA1-1 (GGTTCGTCCGGTTTAGCGCCGGCAC) RGA1-2 (CAGTTCCGGTTTAGGTCTTGGTCCG)	<i>RsaI</i>	185, 112	297
T8K22	<i>At2g02670</i>	T8K22-1 (TCCGCGAACGAACAGGAG) T8K22-2 (GCAAGGTTTGTGCTAATAA)		123	112
T20F6	<i>At2g02800</i>	T20F6-1 (TTCGTGTAGGAGCAATAG) T20F6-2 (CCCTTCGTTCTCAACATC)		168	119
PLS2	<i>At2g19290</i>	PLS2-1 (TACGCGAATTATTTTTAGGAGA) PLS2-2 (AATTTATTTTGAGTCGGATGC)		70	80
Ped1	<i>At2g33150</i>	Ped1-1 (CCAGCCAAGTAAGTGATGGTGCAGG) Ped1-2 (GCAGGGTCAACACCAACTGCAGC)		289	257
SEC 221	<i>At2g45540</i>	SEC221-1 (GGTGTTTTTGCATGGTTCTTTTCGCTTC) SEC221-Taql (ATATGAATTTGAACCGCACAATAGCCGTCG)	<i>TaqI</i>	172	143, 29
SNP9553	<i>At2g46720</i>	SNP9553-1 (TGC GTTTGATGTTTTGAATATGTATGAGAAG) SNP9553-2 (ATATAAGTCACAATTATTTGCAGCCG)	<i>MbolI</i>	219	187, 32
<b>Chromosome 3</b>					
nga172	<i>At3g03340</i>	nga6172-1 (TACATCCGAATGCCATTGTTCCCTATCATTG) nga6172-2 (AGCACATCAAGCTGCTTCCTTATAGCGTCC)		170	150
SEC305	<i>At3g05850</i>	SEC305-1 (ATATAGCAAAGCGTGACAGCAGAG) SEC305-2 (GGGGACCTTATTAGCTGCGACTTCTG)	<i>TaqI</i>	73, 71	144
SEC310	<i>At3g06010</i>	SEC310-1 (TTGCACTGGTATGAATGTTATGTCTGAAA) SEC310-RsaI (TGTTTTCTTTCTCTAAACGTCCATCGTA)	<i>RsaI</i>	75, 25	100
SEC327	<i>At3g06470</i>	SEC327-Taql (CTCTGGGACCCACTTTCATGAAAATTAGTC) SEC327-2 (CGAAGTTTGGGGAGTTGACGTTTGAAGAT)	<i>TaqI</i>	100	71, 29
SEC328	<i>At3g07530</i>	SEC328-DdeI (AAGCATTGACTACCAGAGCTATTAGTGTC) SEC328-2 (CTCAAACAATACTCACAGAATAACAATG)	<i>DdeI</i>	178	152, 26
SEC320	<i>At3g07770</i>	SEC320-1 (AACTAACACGAAAATAAACCAACATACAAAC) SEC320-EcoRI (ACGTTTGATGGTACAATTCATCATGCGAAT)	<i>EcoRI</i>	204, 28	232
SEC321	<i>At3g07810</i>	SEC321-1 (AAAAACAATAAAGATGCAGAATGGCTACT) SEC321-RsaI (TTTGATTATCCTCGTCTTCTTTCTGGAATG)	<i>RsaI</i>	137, 29	166
SEC316	<i>At3g08910</i>	SEC316-1 (GATATCTTCTCGGAGTTCTTTGGCTTC) SEC316-Hinfl (AGGGGCAGCTTTCCTCGGTGGAACAAGATT)	<i>Hinfl</i>	86	59, 27
SEC314	<i>At3g10200</i>	SEC314-1 (CAGGTTGGGGAATATGATGACTAATG) SEC314-MseI (GTTTTTCATGACCATCTTTGGGAGCAAATTA)	<i>MseI</i>	132, 28	160
nga162	<i>At3g13960</i>	nga6162-F (CATGCAATTTGCATCTGAGG) nga6162-R (CTCTGTCACTCTTTTCCTCTGG)		107	89
MRC8	<i>At3g18160</i>	MRC8-F1 (CTCTTTTATACGCAAATATGCCTCAGTAGC) MRC8-R1 (ACTGAAAGATATGTAATACACGGTGCCT)	<i>TaqI</i>	150, 100	250
LCS341	<i>At3g23633</i>	LCS341-1 (AGTTTTTCTTCTTTTTGTATTTATGTG) LCS341-Hinfl (TTGTGCTTTTGCTTTTTAAAGCCGATT)	<i>Hinfl</i>	142, 30	172
LCS336	<i>At3g25200</i>	LCS336-1 (AGGTCTGAAAAAGCTGAGTTGAGGTC) LCS336-Scal (GGAGTCGGATATAGCAGTACCAATACAGTA)	<i>Scal</i>	128, 30	158
F13I12	<i>At3g47200</i>	F13I12-F (GATGAACACCAATTCCTCTATGAAGTAAGC) F13I12-R (ATATTTCTTTCCCGTTAGGTGGTTGTC)	<i>RsaI</i>	180, 63	301
T4C21	<i>At3g60770</i>	T4C21-1 (CTTGCTCCAGTAACACTTTTCACCTGTGG) T4C21-4 (GATGTGTTTGCTTGCCTCTCCAAGTTAGC)	<i>ApoI</i>	122, 95	217
Nga6	<i>At3g62220</i>	nga66-1 (GTCCAGGGAACAAAGTGGGTCCCTTGG) nga66-2 (GTCACACCCACAACCTCGTAAAGCGCG)		280	250

Table S2 continued

Marker	Nearest gene	Primer name (5' to 3' sequence)	Enzyme	Amplicon size (bp)	
				Col	Ler
<b>Chromosome 4</b>					
LCS413	<i>At4g25150</i>	LCS413-1 (GGGTTCTTATAATCCACTTCCTC) LCS413-XhoI (GAATCAAGGAGAAGAGAATGAGATTCTCGA)	<i>XhoI</i>	163, 30	193
LCS414	<i>At4g27830</i>	LCS414-1 (TTTTGGTTTACATCGCTAC) LCS414-EcoRI (TATTTACACTTCATATTTAAAAATTGAATT)	<i>EcoRI</i>	225	195, 30
LW 147	<i>At4g34270</i>	Nga1107-1 (GAAGAAATAATTTACTCAAAGCGCG) Nga1107-2 (GAGCGACGAATCGACAGAATTAGGG)		170	160
Nga1107	<i>At4g38760</i>	LW147-1 (TCGAAGGAAACCCAAAAA) LW147-2 (TTGAGGCGTTGAAGGAAG)	<i>RsaI</i>	357, 104	461
LCS416	<i>At4g39300</i>	LCS416-1 (ATACTGATTAGATGTGAAACTGGATG) LCS416-XbaI (AATCTAAGACCAACTAGACATATATCTCTA)	<i>XbaI</i>	194	163, 31
LCS417	<i>At4g39350</i>	LCS417-1 (TATCCCAATCTAATCTATCACAACCCCTTCC) LCS417-2 (AGCCAGCAATGAGCCGACCACCAG)	<i>SpeI</i>	279, 156	435
<b>Chromosome 5</b>					
CIW18	<i>At5g05170</i>	CIW18-1 (AACACAACATGGTTTCAGT) CIW18-2 (GCCGTTTGTCTCTTCCAC)		135	129
nga249	<i>At5g08550</i>	nga249-F (TTACCGTCAATTTTCATCGCCG) nga249-R (TGGATCCCTAACTGTAAAATCCC)		125	115
nga106	<i>At5g16520</i>	nga106-F (GTTATGGAGTTTCTAGGGCAGC) nga106-R (TGCCCCATTTTGTCTTCTC)		150	120
F7K24	<i>At5g19270</i>	F7K24-1 (TGCAAAATCTAGCTATCG) F7K24-2 (ACTTTTGTATGGCTAATGAG)		125	141
MWD9	<i>At5g22420</i>	MWD9-1 (TAGGGTCGTGGTTGGTTG) MWD9-2 (CTGGCCTCTCTATCTGATAC)		133	118
GA3	<i>At5g25900</i>	GA3-1 (CGGAGGCTATCATGTCCCTGC) GA3-2 (CCCAACGCTTCTTATCCATGTTGC)		156	144
S0191	<i>At5g37780</i>	S0191-F2 (AGCATATCTCCACCAATCATGCAAATG) S0191-R2 (GTGAGGCTGATGTTGATGGAGATGGTC)		180	200
K16E1	<i>At5g42590</i>	K16E1-F (GGTGATCGTCATGTGTCTC) K16E1-R (AACTACTAGTTCATTGTAAA)		166	148
MNJ7	<i>At5g47445</i>	MNJ7-1 (CGAAGAAGAAGAACTTTCTG) MNJ7-2 (GTTAAGTGTAACCGGTATG)		111	101
JV57	<i>At5g60710</i>	JV57-1 (TCCGATTGGTCTAAAGTACGAC) JV57-2 (TTTGATGGACTCTTACATTGGAAA)		180	140
MBK5	<i>At5g63640</i>	MBK5-1 (GTACAAAATCACTGTTGTTTACC) MBK5-2 (CAGCTTGAGCATTTTACAGAGACG)		220	200
MHJ24	<i>At5g64060</i>	MHJ24-1 (CACAAGTTCAACATCAGTCGGATG) MHJ24-2 (GTGGAGATTATCTATCTGCTTACC)	<i>BsmAI</i>	300, 150	450
MNA5	<i>At5g65290</i>	MNA5-4 (GTTAGAGGCAACGAGATCAGATAG) MNA5-5 (CCGAACCGAGATCGAACCAAGG)	<i>MspA1I</i>	135, 110	245
DDM1	<i>At5g66750</i>	DDM1-3 (GGAGCTCGTCGCTCCGGTTGC) DDM1-4 (CACCGACTCAGCACTAGTCTCCC)	<i>RsaI</i>	470	350, 120
M555	<i>At5g67620</i>	M555a-1 (CTCTTGAATTATTAAGTTGACTAG) M555a-2 (CCTTTAATTAGTTATCAAATC)	<i>AccI</i>	155	100, 50