

LG	Marker Name	Band Size (bp)	T _m	Primers	Sequence	Source	Comments
B01	BM146	281	58	F	GAG ATG AGT CCT TTC CCT ACC C	2	
				R	TGC AGA CAC AAT TTA TGA AGG C		
	BM157	113	52	F	ACT TAA CAA GGA ATA GCC ACA CA	2	Also in B10
				R	GTT AAT TGT TTC CAA TAT CAA CCT G		
	BMd-10	139		F	GCT CAC GTA CGA GTT GAA TCT CAG	3	
				R	ATC TGA GAG CAG CGA CAT GGT AG		
	PV-ag003	164	49	F	TCA CGT ACG AGT TGA ATC TCA GGA T	1	
				R	GGT GTC GGA GAG GTT AAG GTT G		
	BM53	287	55	F	AAC TAA CCT CAT ACG ACA TGA AA	2	
				R	AAT GCT TGC ACT AGG GAG TT		
	BM200	221	52	F	TGG TGG TTG TTA TGG GAG AAG	2	
				R	ATT TGT CTC TGT CTA TTC CCA C		
	BMd-45	129		F	GGT TGG GAA GCC TCA TAC AG	3	
				R	ATC TTC GAC CCA CCT TGC T		
B02	PV-at006	132	50	F	CCG TTG CCT GTA TTT CCC CAT	1	Also in B5
				R	CGT GTG AAG TCA TCT GGA GTG GTC		
	PV-gccacc001	95	48	F	CGT TAG ATC CCG CCC AAT AGT	1	
				R	CCG TCC AGG AAG AGC GAG C		
	PV-gaat002	167	50	F	AAA CAC ACA AAA AGT TGG ACG CAC	1	
				R	TTC GTG AGG TAG GAG TTT GGT GG		
	BMd-17	116		F	GTT AGA TCC CGC CCA ATA GTC	3	
				R	AGA TAG GAA GGG CGT GGT TT		
	BMd-19	154		F	GCC AAC CAC ATT CTT CCC TAC	3	
				R	GGA AGC GAG GCA GTT ATC TTT		
	BMd-47	150		F	ACC TGG TCC CTC AAA CCA AT	3	
				R	CAA TGG AGC ACC AAA GAT CA		
	BMd-18	156		F	AAA GTT GGA CGC ACT GTG ATT	3	
				R	TCG TGA GGT AGG AGT TTG GTG		
	BM139	115	50	F	TTA GCA ATA CCG CCA TGA GAG	2	
				R	ACT GTA GCT CAA ACA GGG CAC		
	BM167	165	50	F	TCC TCA ATA CTA CAT CGT GTG ACC	2	
				R	CCT GGT GTA ACC CTC GTA ACA G		
	BM164	182	52	F	CCA CCA CAA GGA GAA GCA AC	2	
				R	ACC ATT CAG GCC GAT ACT CC		
	BM143	143	55	F	GGG AAA TGA ACA GAG GAA A	2	
				R	ATG TTG GGA ACT TTT AGT GTG		
	BM142	157	55	F	TTC CGC TGA TTG GAT ATT AGA G	2	
				R	AGC CCG TTC CTT CGT TTA G		
	BMd-7	166		F	GGA TAT GGT GGT GAT CAA GGA	3	
				R	CAT ACC CAA TGC CAT GTT CTC		
	BMd-2	106		F	AGC GAC AGC AAG AGA ACC TC	3	
				R	CAA CAA ACG GTG ATT GAC CA		
	GATS91	229	53	F	GAG TGC GGA AGC GAG TAG AG	2	
				R	TCC GTG TTC CTC TGT CTG TG		
	BM152	127	50	F	AAG AGG AGG TCG AAA CCT TAA ATC G	2	
				R	CCG GGA CTT GCC AGA AGA AC		
	BM156	267	52	F	CTT GTT CCA CCT CCC ATC ATA GC	2	
				R	TGC TTG CAT CTC AGC CAG AAT C		

LG	Marker Name	Band Size (bp)	T _m	Primers	Sequence	Source	Comments
B03	VA-ag001	163	48	F	GGG TAG TAA AGG AAA GAG AAG AAA GAG	1	
				R	CCA CCT TCT CGT ACT GTT CCA TG		
	PV-at008	161	49	F	AGT CGC CAT AGT TGA AAT TTA GGT G	1	
				R	CTT ATT AAA ACG TGA GCA TAT GTA TCA TTC		
	BM172	107	50	F	CTG TAG CTC AAA CAG GGC ACT	2	
				R	GCA ATA CCG CCA TGA GAG AT		
	BMd-36	164		F	CAT AAC ATC GAA GCC TCA CAG T	3	
				R	ACG TGC GTA CGA ATA CTC AGT C		
	BM197	201	54	F	TGG ACT GGT CGA TAC GAA GC	2	
				R	CCC AGA AGA TTG AGA ACA CCA C		
	BM181	192	50	F	ATG CTG CGA GTT AAT GAT CG	2	
				R	TGA GGA GCA AAC AGA TGA GG		
	BM98	247	55	F	GCA TCA CAA AGG ACT GAG AGC	2	
				R	CCC AAG CAA AGA GTC GAT TT		
	GATS54	114	50	F	GAA CCT GCA AAG CAA AGA AGC	2	
				R	TCA CTC TTC AAC CAG ATC GAA		
B04	BM159	198	52	F	GGT GCT GTT GCT GCT GTT AT	2	
				R	GGG AGA TGT GGT AAG ATA ATG AAA		
	BMd-1	165		F	CAA ATC GCA ACA CCT CAC AA	3	
				R	GTC GGA GCC ATC ATC TGT TT		
	AG1	132	52	F	CAT GCA GAG GAA GCA GAG TG	2	
				R	GAG CGT CGT CGT TTC GAT		
	PV-atgc001	126	49	F	TGC CAC CAC AGC TTT CTC CTC	1	
				R	TAT GAG AGA AGC GGT TGG CAC G		
	PV-atgc002	144	49	F	AGC TTT CAC ACT ATG ACA CCA CTG G	1	
				R	TGC GAC ATG AGA GAA AGA CAC GG		
	PV-ag004	201	48	F	TTG ATG ACG TGG ATG CAT TGC	1	
				R	AAA GGG CTA GGG AGA GTA AGT TGG		
	PV-gaat001	164	49	F	AAG GAT GGG TTC CGT GCT TG	1	
				R	CAC GGT ACA CGA AAC CAT GCT ATC		
	PV-at003	139	49	F	ACC TAG AGC CTA ATC CTT CTG CGT	1	
				R	GAA TGT GAA TAT CAG AAA GCA AAT GG		
B04	PV-ctt001	152	48	F	CCA ACC ACA TTC TTC CCT ACG TC	1	
				R	GCG AGG CAG TTA TCT TTA GGA GTG		
	BMd-15	166		F	TTG CCA TCG TTG CTT AAT TG	3	
				R	TTG GAG GAA GCC ATG TAT GC		
	BMd-16	136		F	ATG ACA CCA CTG GCC ATA CA	3	
				R	GCA CTG CGA CAT GAG AGA AA		
	BMd-9	135		F	TAT GAC ACC ACT GGC CAT ACA	3	
				R	CAC TGC GAC ATG AGA GAA AGA		
	BMd-26	141		F	CTT GCC TTG TGC TTC CTT CT	3	
				R	TCC ATT CCC AAC CAA GTT TC		
	BM140	190	55	F	TGC ACA ACA CAC ATT TAG TGA C	2	
				R	CCT ACC AAG ATT GAT TTA TGG G		
	PV-at001	239	47	F	GGG AGG GTA GGG AAG CAG TG	1	Also in B11
				R	GCG AAC CAC GTT CAT GAA TGA		
	BM68	170	56	F	TTC GTT CAC AAC CTC TTG CAT T	2	
				R	TGC TTG TTA TCT TGC CCA CTG		
B04	BM199	304	56	F	AAG GAG AAT CAG AGA AGC CAA AAG	2	
				R	TGA GGA ATG GAT GTA GCT CAG G		
	BM161	185	52	F	TGC AAA GGG TTG AAA GTT GAG AG	2	
				R	TTC CAA TGC ACC AGA CAT TCC		

LG	Marker Name	Band Size (bp)	T _m	Primers	Sequence	Source	Comments
B05	PV-at006b	132	50	F	CCG TTG CCT GTA TTT CCC CAT	1	Also in B2
				R	CGT GTG AAG TCA TCT GGA GTG GTC		
	BMd-53	105		F	TGC TGA CCA AGG AAA TTC AG	3	
				R	GGA GGA GGC TTA AGC ACA AA		
	BM175	170	50	F	CAA CAG TTA AAG GTC GTC AAA TT	2	
				R	CCA CTC TTA GCA TCA ACT GGA		
	BMd-20	123		F	GTT GCC ACC GGT GAT AAT CT	3	
				R	GTG AGG CAA GAA GCC TTC AA		
	BM155	114	50	F	GTT CAT GTT TGT TTG ACA GTT CA	2	
				R	CAG AAG TTA GTG TTG GTT TGA TAC A		
	BMd-50	124		F	TGG TGA GAG AAG GAC AAT AGC A	3	
				R	GCC GCT TGT GAC GTT TAT TT		
B06	BMd-28b	151		F	TGC ATC AAC TTT AGG AGC TTG	3	
				R	TCT TGT CTT ATC AGC AGG TGG A		
	BMd-28a	151		F	TGC ATC AAC TTT AGG AGC TTG	3	
				R	TCT TGT CTT ATC AGC AGG TGG A		
	BM138	203	50	F	TGT CCC TAA GAA CGA ATA TGG AAT C	2	
				R	GAA TCA AGC AAC CTT GGA TCA TAA C		
	PV-at004	163	47	F	AAT CTG CCG AGA GTG GTC CTG CC	1	
				R	GAT TGA AAT ATC AAA GAG AAT TGT TAC		
	BMd-37	134		F	GGC ACG AGC AAC AAT CCT T	3	
				R	CCA TCA TAG AGG GCA ACC AC		
	BM170	179	50	F	AGC CAG GTG CAA GAC CTT AG	2	
				R	AGA TAG GGA GCT GGT GGT AGC		
B07	BM137	155	55	F	CCG TAT CCG AGC ACC GTA AC	2	
				R	CGC TTA CTC ACT GTA CGC ACG		
	BMd-12	167		F	CAT CAA CAA GGA CAG CCT CA	3	
				R	GCA GCT GGC GGT AAA ACA G		
	BM158	130	52	F	CCG AGC ACC GTA ACT GAA TGC	2	
				R	CGC TCG CTT ACT CAC TGT ACG C		
	BM210	166	52	F	ACC ACT GCA ATC CTC ATC TTT G	2	
				R	CCC TCA TCC TCC ATT CTT ATC G		
	BMd-40	197		F	AAC CTT CTT GCG CTG ATC TC	3	
				R	TAG TGG CCA TTC CTC GAT CT		
	BM183	149	52	F	CTC AAA TCT ATT CAC TGG TCA GC	2	
				R	TCT TAC AGC CTT GCA GAC ATC		
B07	BM160	211	52	F	CGT GCT TGG CGA ATA GCT TTG	2	
				R	CGC GGT TCT GAT CGT GAC TTC		
	BM150	196	50	F	CGA ACT ATT TGA TAC TCA TGT GC	2	
				R	TTG CAG GAC AGA TAA GTT AGA AGA		
	BM201	102	50	F	TGG TGC TAC AGA CTT GAT GG	2	
				R	TGT CAC CTC TCT CCT CCA AT		
	BM185	105	52	F	AAG GAG GTT TCT ACC TAA TTC C	2	
				R	AAA GCA GGG ATG TAG TTG C		
	BM205a	137	50	F	CTA GAC CAG GCA AAG CAA GC	2	Also in B11
				R	TGA GCT GGG ATT TCA TTT CTG		
	BM209	129	56	F	CAA CCA ATG AAT GCT GAC AAT G	2	
				R	CAA TTT CTT GAT TGA AAG GCA AT		

LG	Marker Name	Band Size (bp)	T _m	Primers	Sequence	Source	Comments
B08	BM211	186	52	F	ATA CCC ACA TGC ACA AGT TTG G	2	
				R	CCA CCA TGT GCT CAT GAA GAT		
	BMd-25	118		F	GCA GAT CGC CTA CTC ACA AA	3	
				R	CGT TGA CGA GAA GCA TCA AG		
	BMd-44	135		F	GGC AGC TTA CTA ACC CGA AA	3	
				R	TTC CTT CCC CTT TCT TCT CC		
	BM189	114	50	F	CTC CCA CTC TCA CCC TCA CT	2	
				R	GCG CCA AGT GAA ACT AAG TAG A		
	BM151	153	50	F	CAC AAC AAG AAA GAC CTC CT	2	
				R	TTA TGT ATT AGA CCA CAT TAC TTC C		
	PV-attt001	165	48	F	CAA AAA GAA CAT AAT CAG AA	4	
				R	CTT AGT TGT ATT GAT TTG GA		
	PV-catt001	193	48	F	AGG GTG TCA TAG ATT AGA TAG	4	
				R	GAG ATC CTT ATA TTG TAA TGT G		
	PV-ct001	248	48	F	GAT ACT ATC AAG ACA CGA TTA C	4	
				R	GTA TAT ACA CTG AAG CAA TAA GT		
	PV-ag006	210	47	F	ATA TAA ATA CTA GGA CGA TGA C	4	
				R	ATA TTG ACT TAT GAG TAT CTG AG		
	PV-att001	295	49	F	GTT TCT ATA ATT TTC TCA CTT AAC	4	
				R	GTA TCA TTT ATG TTG TAT TCC T		
	PV-aaat002	238	48	F	AGG AAT ACA ACA TAA ATG ATA C	4	
				R	GAT ACT CAA AGT AAA ATT GGT		
	PV-at010	171	48	F	AGA CTC ACG TTT CTT ATT TT	4	
				R	GAC TTA ATC TTA TAT GGG ACA T		
	PV-gtat001	272	49	F	ACG TGT CCT ATA GTT TGT TAC	4	
				R	CTT TTA CTC AGG TTC TCT TTA		
	PV-taa002	300	48	F	AAG ATA ATC CTA AGA GGT GA	4	
				R	GTT ATA ATC CGA TCA TGT TT		
	PV-taaa003	221	46	F	GTC AAT ATA AAT TAT TGT AAG C	4	
				R	GAT TTA GTT TGA TTT ATT GTG T		
	PV-ttc001	192	47	F	ATA TTT AGT GGA CTG TCA AA	4	
				R	GTT ATC AAA TGT AAA GGG AT		
	PV-ttc002	203	51	F	ATA TCT TAC AGC CAT TAC ATT C	4	
				R	CTC ATC ACC CAG TCA CCT		
	PV-aat002	121	48	F	TCC TAA TTA TTT ATG GTA AGA G	4	
				R	CAA TTG TAT ATA GAG TCA ACT AAA		
	PV-ct002	122	48	F	TTA GAC TTT CAA ACA TTC AC	4	
				R	GAT ACT ACT TAA ATG AGG AAC A		
	PV-taaaa001	221	49	F	GTC AAT ATA AAT TAT TGT AAG CA	4	
				R	GAT TTA GTT TGA TTT ATT GTG T		
	PV-at011	293	48	F	TAT ACA ACG GGA GAT ATT TA	4	
				R	TGG TTA TTA AGA AGC TAA GAC		
	PV-att003	237	47	F	AAT CCT ACA AAT TAT GGC	4	
				R	TCA CTA AAG AGA TAT GAA CTA AC		
	PV-taca001	220	48	F	CTT TCC TTG AGT ATT AAG AAG	4	
				R	GAC TAT TCT AAA ATC TTC TCC T		
	PV-ag007	187	48	F	AGA TGA TAA CTG GTC TGA GT	4	
				R	TTT CTT AAA CAC TGA TGA TG		
	PV-att004	298	49	F	TAC TGT CCT TTC TTT TTC TC	4	
				R	CAT ACG GAG ATA TTT ACT CAT A		
	PV-tgtt001	244	48	F	ATA TTA ACA GTC TTA CCT TGG	4	
				R	TTT GGT AAA TAA GTG ATG TC		

LG	Marker Name	Band Size (bp)	T _m	Primers	Sequence	Source	Comments
B09	PV-at007	192	49	F	AGT TAA ATT ATA CGA GGT TAG CCT AAA TC	1	
				R	CAT TCC CTT CAC ACA TTC ACC G		
	BM114	234	50	F	AGC CTG GTG AAA TGC TCA TAG	2	
				R	CAT GCT TGT TGC CTA ACT CTC T		
	BM141	218	55	F	TGA GGA GGA ACA ATG GTG GC	2	
				R	CTC ACA AAC CAC AAC GCA CC		
	BMd-46	158		F	GGC TGA CAA CAA CTC TGC AC	3	
				R	CTG GCA TAG GTT GCT CCT TC		
	BM154	218	50	F	TCT TGC GAC CGA GCT TCT CC	2	
				R	CTG AAT CTG GGA ACG ATG ACC AG		
B10	BMd-52	151		F	TCT TGG TGC GCA GAA AGT TA	3	
				R	AAG GCT TTG TTT TGA TTA AGG TT		
	BM184	160	52	F	AGT GCT CTA TCA AGA TGT GTG	2	Also in B11
				R	ACA TAA TCA ATG GGT CAC TG		
	BM188	177	58	F	TCG CCT TGA AAC TTC TTG TAT C	2	
				R	CCC TTC CAG TTA AAT CAG TCG		
	BMd-42	149		F	TCA TAG AAG ATT TGT GGA AGC A	3	
				R	TGA GAC ACG TAC GAG GCT GTA T		
	BM212	214	50	F	AGG AAG GGA TCC AAA GTC ACT C	2	
				R	TGA ACT TTC AGG TAT TGA TGA ATG AAG		
B11	GATS11	306	52	F	CAC ATT GGT GCT AGT GTC GG	2	
				R	GAA CCT GCA AAG CAA AGA GC		
	GATS11B	160	52	F	CCC ACA CAT TGG TGC TAG TG	2	
				R	AGC GCA ATG CTA CTC GAA AT		
	BM157	113	52	F	ACT TAA CAA GGA ATA GCC ACA CA	2	Also in B1
				R	GTT AAT TGT TTC CAA TAT CAA CCT G		
B11	PV-at001	239	47	F	GGG AGG GTA GGG AAG CAG TG	1	Also in B4
				R	GCG AAC CAC GTT CAT GAA TGA		
	BMd-22	121		F	GGT CAC TTC CGG AGC ATT C	3	
				R	CGG GAA ATG GAA GTC ACA GT		
	BMd-33	110		F	TAC GCT GTG ATG CAT GGT TT	3	
				R	CCT GAA AGT GCA GAG TGG TG		
	BMd-41	250		F	CAG TAA ATA TTG GCG TGG ATG A	3	
				R	TGA AAG TGC AGA GTG GTG GA		
	BMd-27	109		F	GGA CCC ACC ATC ACC ATA AC	3	
				R	TGG TGG AGG TGG AGA TTT GT		
	BM205b	137	50	F	CTA GAC CAG GCA AAG CAA GC	2	Also in B7
				R	TGA GCT GGG ATT TCA TTT CTG		
	BM184	160	52	F	AGT GCT CTA TCA AGA TGT GTG	2	Also in B9
B11				R	ACA TAA TCA ATG GGT CAC TG		
	PV-ag001	157	47	F	CAA TCC TCT CTC TCT CAT TTC CAA TC	1	
				R	GAC CTT GAA GTC GGT GTC GTT T		

LG	Marker Name	Band Size (bp)	T _m	Primers	Sequence	Source	Comments
Unlinked	PV-ag005	139	48	F	GCT CAC GTA CGA GTT GAA TCT CAG	1	
				R	ATC TGA GAG CAG CGA CAT GGT AG		
	PV-ctt002	164	49	F	TCG CCG GGA AAG TTG CCA GT	1	
				R	TAG AAG GAG CGA GGG CCA TG		
	PV-at009	360	46	F	ATC TTT AAA TTA CTA ATT TTC TTG TAT CGT	1	
				R	TTC ATC TTT ATT ACA CAA CCT GAC TCA		
	PV-ccct001	150	50	F	CAC CAA TGT CTC CGG CGC A	1	
				R	CGG TTG CCG TCG AAT GTG AT		
	PV-atcc001	171	49	F	ATG CAT GTT CCA ACC ACC TTC TC	1	
				R	GGA GTG GAA CCC TTG CTC TCA TC		
	PV-gat001	182	47	F	ACA CCT TAT CAT TTA GAG GAA AAG AGA	1	
				R	ACC CGA ACT GGC TGC AAC AG		
	PV-cca001	151	48	F	CCA GCT ACC ATC TCC TCC ATC CG	1	
				R	TAG TGG TGG AGG TGG AGA TTT		
	PV-cca002	179	49	F	TAA TTT CTC TCT TCC CAT CCC AAA C	1	
				R	GTA GTA ATA AGG AGG AGG CGG TGA G		
	PV-atct001	193	49	F	CAA TTA AAA CTC AAC CAA CCC AAA TA	1	
				R	TTT CCC GCC ATA GAA TAT GTG AGA		
	PV-aaat001	203	49	F	TGG AGC CAT CTG TCT CTT ACC CAC	1	
				R	GAG CAC GAG TCA CGT TTG CAA C		
	PV-ggc001	238	49	F	CTG AAG CCC GAA TCT TGC GA	1	
				R	CGC GAG AGG TGA ACG AAA GC		
	PV-cca003	115	49	F	GCA AGA GAA CAC TGA AGA GGA TCG	1	
				R	GAC ATT ACT CAT TTC ATC ATC TAC TAC ACG		
	PV-at002	254	49	F	GTT TCT TCC TTA TGG TTA GGT TGT TTG	1	
				R	TCA CGT TAT CAC CAG CAT CGT AGT A		
	PV-tta001	106	49	F	CGA GGA GGA AGG AGA AGA CGG	1	
				R	GAG GGT TAT CAC AAG GAA GAC ACG		
	PV-ag002	144	49	F	CCT CTC TCC CGA ACT TAT TCA TCT C	1	
				R	TGG CCA TAG ATT GCA TGA CAA AT		
	PV-atcc002	192	48	F	ACT TCT TTC ATC ATC CAT CCA TCC	1	
				R	TAT CTT GGC TCT CTT CCT CTT CC		
	PV-gttt001	153	49	F	TAT ACA CAC GAA CTT TGC ATT CCG	1	
				R	ACA TGC AAG TTC ACA CGG TCC TC		
	PV-atcc003	176	49	F	TCT CCA TGC ATG TTC CAA CCA C	1	
				R	GGA GTG GAA CCC TTG CTC TCA TC		
	PV-tttc001	161	50	F	TTT ACG CAC CGC AGC ACC AC	1	
				R	TGG ACT CAT AGA GGC GCA GAA AG		
	PV-at005	305	48	F	GAC GTT CGC AGT ATT TTG TGA TAT AGA	1	
				R	CAT AAT ACC ATG CTC CTA CTC TAC A		
	PV-cct001	149	49	F	CCA ACC ACA TTC TTC CCT ACG TC	1	
				R	GCG AGG CAG TTA TCT TTA GGA GTG		
	BM3	193	56	F	CAG AAG TGC TTA TCC CCG AG	2	
				R	TGA AAT CTT CCC CTC CTT CA		
	BM6	153	48	F	AGG GTT TAC ACA CGA CAG GC	2	
				R	GGT TGA TAT GCC CTC ATG GT		
	BM16	149	54	F	CAC CGG GAG TGG CTG ACA	2	
				R	GTT TGG GGC GGA GTT CGA		
	BM20	146	55	F	ATC CGT AGA GAG GTG AAC GG	2	
				R	ATG AGT GCA GTT TGG TGC AG		

LG	Marker Name	Band Size (bp)	T _m	Primers	Sequence	Source	Comments
	BM25	227	55	F	CGC CTC CAA CGG TCT TCT	2	
				R	CAA GCA GGT GCG AAT CCA		
	BM48	232	58	F	GCC GTT GAG CTG GAG AGC A	2	
				R	CCT TCT TCT TGA GCC CGC TG		
	BM67	289	50	F	CCA ATG CTG CCA CAC AGA TA	2	
				R	CGC CCT TAT GAT CCA GTC CT		
	BM79B	125	52	F	CAT GGA GGT AGA GGA TAA TAA GGA G	2	
				R	CAT TAG AGC CGC CAC TTG		
	BM147	178	48	F	GGA ACC AAC AAG TTC CAC TTA G	2	
				R	GAG ACT GTG CTT TCG GAC TC		
	BM148	295	58	F	TTG AAA CTC TCT TTG CAG ACA C	2	
				R	AAC TAA TCC ATT TGC ACT ACC C		
	BM149	273	50	F	CGA TGG ATG GAT GGT TGC AG	2	
				R	GGG CCG ACA AGT TAC ATC AAA TTC		
	BM153	226	50	F	CCG TTA GGG AGT TGT TGA GG	2	
				R	TGA CAA ACC ATG AAT ATG CTA AGA		
	BM165	177	52	F	TCA AAT CCC ACA CAT GAT CG	2	
				R	TTC TTT CAT TCA TAT TAT TCC GTT CA		
	BM166	151	52	F	AAA GTG GGA GAG AAA CAC TAC ACC	2	
				R	GAT GCT GGC TTT CCA TTG AG		
	BM171	149	50	F	TGG CAT TTC AGA TTA ACA CTC C	2	
				R	CTT CCT TGC TGT TTC CAC TG		
	BM173	185	50	F	ATG CGT AAG CGA GGG AGA G	2	
				R	CCA GTA TAT AAC GCT GCT GCT G		
	BM187	191	52	F	TTT CTC CAA CTC ACT CCT TTC C	2	
				R	TGT GTT TGT GTT CCG AAT TAT GA		
	BM195	138	54	F	ACT GTA GCT CAA ACA GGG CAC T	2	
				R	TCC GAG CAC CGT AAC TGA AT		
	BM202	156	50	F	ATG CGA AAG AGG AAC AAT CG	2	
				R	CCT TTA CCC ACA CGC CTT C		
	BM213	154	52	F	AAC CCT AAG CTT CAC GCA TTT G	2	
				R	GAG AGA TTG ACG ACG GTT T		
	BMd-3	223		F	TGT TTC TTC CTT ATG GTT AGG TTG	3	
				R	GTA TCC TCC GAT CAA ATT CAC CT		
	BMd-4	146		F	CTC CAC TAC CCC AAA CAG TAC C	3	
				R	TTT GAG GAA ATG GTT GTT TGG T		
	BMd-5	122		F	CGT GGA CTT GAA TGG TTT CAG	3	
				R	TCC TTA CCC TGT TCT GCT TCT C		
	BMd-6	122		F	CAT CGA ATG CCC AAG AGA ATA	3	
				R	CTC ACT GTC TTC CAT CCA AGC		
	BMd-8	176		F	TTC ATC CTC TCT CCC GAA CTT	3	
				R	CTT TTG TGG CTG AGA CAT GGT		
	BMd-13	194		F	TCA TGC CTG AGA AAG GGT CT	3	
				R	CCC TGC ATC AGA AGT CCA AT		
	BMd-14	186		F	TCG CTC CAA GTG CAT GTA AG	3	
				R	TGG GGA AAC AAA ACA AGA AGA		
	BMd-21	190		F	GGC TCC ACC ATC GAC TAC TG	3	
				R	TGC GAT GTT TGA GCA TTT GT		
	BMd-23	127		F	GGC TTG GTC CTC TCA TTG AA	3	
				R	TGG AAA TTA CCA CCA TGC AA		

LG	Marker Name	Band Size (bp)	T _m	Primers	Sequence	Source	Comments
	BMd-24	122		F	CAC CTT ATC ATT TAG AGG AAA	3	
				R	CAC TGC TCT CCG TAG CTT CC		
	BMd-29	159		F	CTT CAC CGA TCT GAC AGC AG	3	
				R	TTT CTC CAC TGG AAC ACT CG		
	BMd-30	134		F	CAG CAA ATG CAA CGC TAA GA	3	
				R	GGT TGA ATT TTG AAA CCC TGA		
	BMd-31	161		F	TGA AGA GGA TCG CAA GGT TC	3	
				R	AGC CGA AAC ACT GTC CTT GT		
	BMd-32	150		F	ACA CCC TTC ATC TCC CTC AT	3	
				R	ACC CAT GTT GGA TGT TGG AT		
	BMd-34	119		F	ATC GCC GTT GTC GTT TCT A	3	
				R	TCG AAT TGC AAT GAC TGA GAA		
	BMd-35	128		F	TCT CTT CCT TAC CCT GTT CCG C	3	
				R	GCG TGG ACT TGA ATG GTT TC		
	BMd-48	131		F	CCC CAC CAA CTC TTT CTT CC	3	
				R	CAG AAT TGA CTT GGC GAG AA		
	BMd-49	95		F	TCT CTT CCT TAC CCT GTT CTG C	3	
				R	GGT TCA ATG CTG GCT GAG A		
	BMd-51	116		F	CGC CAA TTC TTC AAC CCT AA	3	
				R	GTA GTT CGC CCG AGG ACT G		
	BMd-54	154		F	GGC TCC ACC ATC GAC TAC TG	3	
				R	GAA TGA GGG CGC TAA GAT CA		
	Bmd-55	188		F	GTC CGT TCA TGG GTT TGA CT	3	
				R	TCG AGA TCT ACG GAG GAG TTC		
	BMd-11	161		F	GCT CAA CAT TCC AGA GGC TAA	3	
				R	TCA AAC CTA CAT AAA TAA AAC AAA ACA		
	BMd-38	178		F	GCG TTT CCA TGA ATC AAT CC	3	
				R	AAA TTC CGA ACC CGT GAA CT		
	BMd-39	126		F	CAC CGA GGA GTT TCT GTG AA	3	
				R	TTA AGT CCT TGC AGC CCT TC		
	BMd-43	176		F	CAG CAT CAA GAA GAC CCA AG	3	
				R	CAG CAC CAC TAT GGG AGG AC		
	BMd-56	193		F	AAT GCG TGA GCA TGA TTA AGG	3	
				R	TCA TCT GTC AGC ACC AAA CC		
	BMd-57	140		F	GAG GCA AAG AAG CTA TTG AA	3	
				R	TTT TTA ATT CCT GTG AAT TGT TT		
	PVBR1	404	56	F	GCA GAG GTT CTA CCT GAT CG	5	
				R	TGG TTA TCA ACT GGC TCT CC		
	PVBR2	236	56	F	CTA ACC GCC ATC AAC ATA GC	5	
				R	CGC ACT GAA GTC AAT GGT CC		
	PVBR4	159	56	F	CAA TTC TAG CAA GGA CGA ACG	5	
				R	AAA CAT TGT GAC CGC ATC CT		
	PVBR5	195	56	F	ATT AGA CGC TGA TGA CAG AG	5	
				R	AGC AGA ATC CTT TGA GTG TG		
	PVBR6	247	56	F	GGC ATA AAG AGG AAT CAA AG	5	
				R	CGC AGC TGT GTT CTC TAC G		
	PVBR7	306	56	F	AAT GGC AGG TCA GTG AAA C	5	
				R	ATG ACC ACG CAG TGA CAG AG		
	PVBR9	356	43	F	CAA CCC ATA CAA ATC ATC C	5	
				R	GCT AAT CCA TTC TCG AAG		
	PVBR10	88	54	F	ACA ACA ACA GAG AAT CTC TC	5	
				R	AAG GAT GAG AAG GAG GAC		

LG	Marker Name	Band Size (bp)	T _m	Primers	Sequence	Source	Comments
	PVBR11	142	56	F	AAA CTC AAA GTC GTT GTT CC	5	
				R	CCA CTG ACT CTA GCT CCT CC		
	PVBR12	193	60	F	AAG TCT CCA CCT TTC AAA TGC	5	
				R	ACG CCA TCC ACC ATC CTT		
	PVBR14	196	56	F	TGA GAA AGT TGA TGG GAT TG	5	
				R	ACG CTG TTG AAG GCT CTA C		
	PVBR15	191	50	F	CCT ACG CGA CAA GAT TGG CA	5	
				R	CAG AAA GGA AAC ATA AAC		
	PVBR16	198	56	F	AAG CAA CAG AAA AGC AGA AGA C	5	
				R	TTG TGG TGT TGA GTG TGG TG		
	PVBR18	198	46	F	GTT CTG CTT GCA GCA TAC C	5	
				R	AGA AAC ACA ATC GGA AGA G		
	PVBR19	159	45	F	GAG AGG GAG GCA TAA AGA GG	5	
				R	TGC ACT CCG ACG ATC AAG TT		
	PVBR20	197	56	F	TGA GAA AGT TGA TGG GAT TG	5	
				R	TAC GCT GTT GAA GGC TCT AC		
	PVBR21	229	56	F	GAA GAA CCG CAA GTA GAG AAG T	5	
				R	TAA CAT CAG ACG CCG ACG A		
	PVBR23	345	56	F	GAA CGG AGA CAT AAC AGC CA	5	
				R	GAG GAC CAA CCA AAC CAA GC		
	PVBR24	250	55	F	GGT AAC CAA GCT AAA GAC	5	
				R	CTC TAC CTC AAC AAA TAG TG		
	PVBR25	158	56	F	GAG CTT CTC CGT CCT GTG T	5	
				R	CGA ACT GAA TCA GAA AGG AA		

Sources:

- 1 = Yu et al., 2000. Journal of Heredity 91(6):429-434.
2 = Gaitan-Solis et al., 2002. Crop Science 42:2128-2136.
3 = Blair et al. 2003. Theoretical Applied Genetics 107:1362-1374.
4 = Caixeta et al., 2005. Crop Breeding and Applied Biotechnology 5:125-133.
5 = Buso et al., 2006. Molecular Ecology Notes 6:252-254.

Additional SSRs

Colleagues with access to additional SSR markers not described in this file are invited to add them to the list by contacting BIC@css.msu.edu

Unlinked SSRs

If you have successfully mapped any unlinked SSRs to bean consensus map, you are invited to share that information by contacting BIC@css.msu.edu