

SUPPLEMENTARY MATERIALS

to the article A. Zatybekov, S. Abugalieva, S. Didorenko, A. Rsaliyev, A. Maulenbay, C. Fang, Y. Turuspekov
 “Genome-wide association study for charcoal rot resistance in soybean harvested in Kazakhstan”

Supplementary Material 1

Name of accession	Country of origin	Resistance to CR in 2021	Resistance to CR in 2022	Average data of resistance to CR during 2021-2022	SE	σ^2
Yaselda	Belarus	1	1	1	0	0
Pripyat	Belarus	1	1	1	0	0
OAC Vision	Canada	1	1	1	0	0
Emerson	Canada	3	3	3	0	0
P-73-3	Canada	1	1	1	0	0
Supra	Canada	2	1	1,5	0,5	0,5
Maple Ridge	Canada	1	1	1	0	0
Maple Glen	Canada	2	1	1,5	0,5	0,5
Maple Amber	Canada	1	1	1	0	0
Gaillard	Canada	1	1	1	0	0
KG 20	Canada	4	2	3	1	2
Accord	Canada	3	1	2	1	2
Kharbin	China	2	1	1,5	0,5	0,5
Kheikhek14	China	1	1	1	0	0
LMF	Poland	2	1	1,5	0,5	0,5
Chabem Wekoju	Poland	2	1	1,5	0,5	0,5
Arctic	Poland	1	1	1	0	0
Nawiko	Poland	1	1	1	0	0
Warsawska	Poland	3	3	3	0	0
Kasatka	Russia	1	2	1,5	0,5	0,5
Severnaya5	Russia	3	1	2	1	2
Smena	Russia	1	1	1	0	0
Rassvet	Russia	3	2	2,5	0,5	0,5
Amurskaya 401	Russia	4	4	4	0	0
Soer3491	Russia	3	1	2	1	2
Soer-3	Russia	3	1	2	1	2
Nadejda	Russia	3	1	2	1	2
Lidiya	Russia	5	2	3,5	1,5	4,5
VNIIS 1	Russia	5	2	3,5	1,5	4,5
Luhezarnaya	Russia	3	1	2	1	2
PEP27	Russia	5	2	3,5	1,5	4,5
Sibniik 315	Russia	1	1	1	0	0
VNIIS 2	Russia	4	2	3	1	2

Supplementary Material 1 (continued)

Name of accession	Country of origin	Resistance to CR in 2021	Resistance to CR in 2022	Average data of resistance to CR during 2021-2022	SE	σ^2
Soer4	Russia	1	2	1,5	0,5	0,5
Bara	Russia	5	3	4	1	2
Zolotistaya	Russia	3	1	2	1	2
Zlata	Russia	1	1	1	0	0
Soer 5	Russia	5	3	4	1	2
Okskaya	Russia	1	1	1	0	0
Svetlaya	Russia	1	1	1	0	0
Maleta	Russia	1	1	1	0	0
Vega	Russia	2	1	1,5	0,5	0,5
Luch nadezhdy	Russia	2	1	1,5	0,5	0,5
Zakat	Russia	3	5	4	1	2
Svapa	Russia	3	2	2,5	0,5	0,5
Lancetnaya	Russia	2	1	1,5	0,5	0,5
Zernica	Russia	3	5	4	1	2
Niva 70	Russia	1	3	2	1	2
Sibiryachka	Russia	2	2	2	0	0
Eldorado	Russia	4	2	3	1	2
Garmoniya	Russia	1	1	1	0	0
Romantika	Russia	1	1	1	0	0
Belgorodskaya 6	Russia	1	1	1	0	0
Veidelevskaya 17	Russia	1	1	1	0	0
Yantarnaya	Russia	3	5	4	1	2
Altom	Russia	3	1	2	1	2
PEP26	Russia	2	5	3,5	1,5	4,5
Belor	Russia	2	3	2,5	0,5	0,5
Soer345	Russia	1	5	3	2	8
Gribskaya	Russia	1	1	1	0	0
Krasivaya mehta	Russia	1	1	1	0	0
Carola	USA	1	1	1	0	0
Daksoy	USA	1	3	2	1	2
Dawson	USA	2	5	3,5	1,5	4,5
USKHI 6	Ukraine	2	3	2,5	0,5	0,5
Prikarpatkaya 81	Ukraine	3	1	2	1	2

Supplementary Material 1 (continued)

Name of accession	Country of origin	Resistance to CR in 2021	Resistance to CR in 2022	Average data of resistance to CR during 2021-2022	SE	σ^2
Chernovickaya7	Ukraine	3	4	3,5	0,5	0,5
Terek	Ukraine	1	1	1	0	0
Ustyа	Ukraine	1	1	1	0	0
Khorol	Ukraine	3	5	4	1	2
Yug30	Ukraine	1	1	1	0	0
Estophita	Ukraine	1	3	2	1	2
Podyaka	Ukraine	3	1	2	1	2
Victorina	Ukraine	5	1	3	2	8
Annushka	Ukraine	1	1	1	0	0
Amour	France	2	1	1,5	0,5	0,5
Kalmit	France	3	5	4	1	2
Sepia	France	1	1	1	0	0
Amphor	France	3	1	2	1	2
Toury	Czech Republic	2	3	2,5	0,5	0,5
Rana	Czech Republic	1	1	1	0	0
Turijskaja	Czech Republic	1	5	3	2	8
Fiskeby5	Sweden	2	2	2	0	0
Fiskeby3	Sweden	5	3	4	1	2
308/1	Kazakhstan	1	4	2,5	1,5	4,5
422/1	Kazakhstan	1	2	1,5	0,5	0,5
186/1	Kazakhstan	3	2	2,5	0,5	0,5
173/1	Kazakhstan	1	1	1	0	0
126/1	Kazakhstan	1	1	1	0	0
209/1	Kazakhstan	2	2	2	0	0
261/1	Kazakhstan	1	1	1	0	0
350/1	Kazakhstan	4	3	3,5	0,5	0,5
362/2	Kazakhstan	2	2	2	0	0
371/2	Kazakhstan	1	1	1	0	0
407/2	Kazakhstan	1	1	1	0	0
404/2	Kazakhstan	3	1	2	1	2
Roza	Kazakhstan	1	1	1	0	0
Misula	Kazakhstan	1	1	1	0	0
Almaty	Kazakhstan	3	2	2,5	0,5	0,5
Zhalpaksai	Kazakhstan	2	1	1,5	0,5	0,5

Supplementary Material 1 (continued)

Name of accession	Country of origin	Resistance to CR in 2021	Resistance to CR in 2022	Average data of resistance to CR during 2021-2022	SE	σ^2
Agassiz	USA	3	1	2	1	2
Evans	USA	1	1	1	0	0
Lambert	USA	1	1	1	0	0
Mc call	USA	1	1	1	0	0
Parker	USA	2	1	1,5	0,5	0,5
Dekabig	USA	3	1	2	1	2
Jachynes 74 Brond	USA	1	1	1	0	0
Wilstar 194	USA	2	1	1,5	0,5	0,5
Lara	Serbia	2	1	1,5	0,5	0,5
Cobb 266	USA	2	1	1,5	0,5	0,5
OAO Wallace	Canada	3	2	2,5	0,5	0,5
GEO	Canada	2	1	1,5	0,5	0,5
Buster	Canada	2	1	1,5	0,5	0,5
SL 01 26	Canada	3	1	2	1	2
SI 02 25	Canada	3	1	2	1	2
RCAT Persian	Canada	1	1	1	0	0
Enterprise	Canada	2	1	1,5	0,5	0,5
Voevodzhanka	Serbia	1	1	1	0	0
Ana	Serbia	2	1	1,5	0,5	0,5
Nikko	Serbia	2	1	1,5	0,5	0,5
Sava	Serbia	2	1	1,5	0,5	0,5
Venera	Serbia	2	1	1,5	0,5	0,5
Zen	Switzerland	5	3	4	1	2
Protina	France	1	2	1,5	0,5	0,5
Sponsor	France	5	3	4	1	2
Isidor	France	2	5	3,5	1,5	4,5
Shama	France	3	1	2	1	2
Safrfna	France	4	1	2,5	1,5	4,5
Santana	France	5	2	3,5	1,5	4,5
Lada	Russia	1	1	1	0	0
Lira	Russia	1	1	1	0	0
Bystrica 2	Russia	1	3	2	1	2
Vesta	Russia	4	2	3	1	2
Renta	Russia	1	1	1	0	0

Supplementary Material 1 (continued)

Name of accession	Country of origin	Resistance to CR in 2021	Resistance to CR in 2022	Average data of resistance to CR during 2021-2022	SE	σ^2
Vilana	Russia	2	2	2	0	0
Del'ta	Russia	3	3	3	0	0
Runa	Russia	5	3	4	1	2
Astra	Russia	2	1	1,5	0,5	0,5
Slaviya	Russia	1	1	1	0	0
Biser 291	Bulgaria	3	1	2	1	2
Zispida 641	Belgium	3	1	2	1	2
Iskra	Kazakhstan	1	1	1	0	0
Perizat	Kazakhstan	1	1	1	0	0
Zhansaya	Kazakhstan	2	1	1,5	0,5	0,5
Vita	Kazakhstan	2	1	1,5	0,5	0,5
Danaya	Kazakhstan	2	1	1,5	0,5	0,5
Sabira	Kazakhstan	2	1	1,5	0,5	0,5
Pamyat' YuGK	Kazakhstan	3	3	3	0	0
Evrika	Kazakhstan	2	1	1,5	0,5	0,5
Lastochka	Kazakhstan	3	2	2,5	0,5	0,5
Sulamit	Kazakhstan	3	1	2	1	2
Kazakhstanskaya 230	Kazakhstan	2	3	2,5	0,5	0,5
Akku	Kazakhstan	3	2	2,5	0,5	0,5
Radost'	Kazakhstan	2	1	1,5	0,5	0,5
Nadezhda	Kazakhstan	5	3	4	1	2
Xinjiang a don 1	China	2	1	1,5	0,5	0,5
Xinjiang heihe 38	China	2	2	2	0	0
Xinjiang D09-676	China	3	1	2	1	2
Xinjiang D10-51	China	1	1	1	0	0
Xinjiang D10-130	China	3	1	2	1	2
Xinjiang D10-135	China	1	1	1	0	0
Xinjiang D11-252	China	1	1	1	0	0
Лыбидь	Ukraine	2	1	1,5	0,5	0,5
Cheremosh	Ukraine	2	1	1,5	0,5	0,5
Korsak	Ukraine	3	2	2,5	0,5	0,5
Tanais	Ukraine	5	3	4	1	2
Desna	Ukraine	2	2	2	0	0
1054	Korea	3	2	2,5	0,5	0,5

Supplementary Material 1 (continued)

Name of accession	Country of origin	Resistance to CR in 2021	Resistance to CR in 2022	Average data of resistance to CR during 2021-2022	SE	σ^2
1031	Korea	5	5	5	0	0
1070	Korea	4	1	2,5	1,5	4,5
1034	Korea	3	1	2	1	2
1076	Korea	3	5	4	1	2
1065	Korea	3	1	2	1	2
1017	Korea	2	1	1,5	0,5	0,5
1044	Korea	1	1	1	0	0
1069	Korea	2	3	2,5	0,5	0,5
1028	Korea	1	1	1	0	0
1055	Korea	1	1	1	0	0
1095	Korea	3	4	3,5	0,5	0,5
1026	Korea	3	2	2,5	0,5	0,5
1003	Korea	4	4	4	0	0
1022	Korea	3	2	2,5	0,5	0,5
1033	Korea	1	1	1	0	0
Hei lun 48	China	3	2	2,5	0,5	0,5
Hua i doe 1	China	1	3	2	1	2
Xu nong 35	China	2	1	1,5	0,5	0,5
Xu nong 26	China	3	2	2,5	0,5	0,5
Bey jiang 91	China	3	4	3,5	0,5	0,5
Dong doe 641	China	1	1	1	0	0
Jin nong 62	China	5	4	4,5	0,5	0,5
Dong doe 1	China	1	1	1	0	0
Ken lun 8	China	3	2	2,5	0,5	0,5
Jin yuan 55	China	1	3	2	1	2
Ken feng 20	China	2	2	2	0	0
551	China	1	3	2	1	2
Dong doe 29	China	3	1	2	1	2
Jing xin 2	China	3	4	3,5	0,5	0,5
Dong doe 339	China	3	2	2,5	0,5	0,5
Heihe 47	China	1	3	2	1	2
Hei feng 50	China	4	2	3	1	2
Dong doe 027	China	5	4	4,5	0,5	0,5
Mei feng 18	China	5	4	4,5	0,5	0,5

Supplementary Material 1 (continued)

Name of accession	Country of origin	Resistance to CR in 2021	Resistance to CR in 2022	Average data of resistance to CR during 2021-2022	SE	σ^2
Klaxxon	France	1	1	1	0	0
Major	France	2	1	1,5	0,5	0,5
Versiya	Ukraine	4	2	3	1	2
Dina	Russia	1	1	1	0	0
Picket K6298	USA	3	1	2	1	2
Mriya	Ukraine	1	1	1	0	0
K 9961	Russia	2	2	2	0	0
Ros'	Belarus	1	1	1	0	0
Spritna	Ukraine	3	1	2	1	2
Fora	Russia	1	4	2,5	1,5	4,5
Mal'vina	Ukraine	3	1	2	1	2
OAC Erin	Canada	2	2	2	0	0
10991	Canada	1	1	1	0	0
Vatra	Ukraine	1	1	1	0	0
Feya	Ukraine	2	3	2,5	0,5	0,5
Odesskaya150	Ukraine	1	2	1,5	0,5	0,5
9224	Hungary	2	2	2	0	0
Darika	Moldova	1	2	1,5	0,5	0,5
Osobliva	Ukraine	5	4	4,5	0,5	0,5
VNIIS 1	Russia	1	4	2,5	1,5	4,5
ISZ 13	Hungary	2	3	2,5	0,5	0,5
Rainer 58	Moldova	3	2	2,5	0,5	0,5
Oktyabr' 70	Russia	5	3	4	1	2
Selekta 301	Russia	2	3	2,5	0,5	0,5
Majesta	Canada	3	3	3	0	0
Poltava	Ukraine	1	1	1	0	0
Don'ka	Ukraine	3	2	2,5	0,5	0,5
Skleya	Ukraine	2	1	1,5	0,5	0,5
K2132	China	2	2	2	0	0
Kuban'	Ukraine	2	2	2	0	0
1674	China	1	1	1	0	0
Shelby	USA	3	1	2	1	2
Maurau	Czech Republic	3	1	2	1	2
Bellemondeau	Canada	1	1	1	0	0

Supplementary Material 1 (end)

Name of accession	Country of origin	Resistance to CR in 2021	Resistance to CR in 2022	Average data of resistance to CR during 2021-2022	SE	σ^2
Ussurisskaya 267	Russia	2	4	3	1	2
Primorskaya 495	Russia	1	3	2	1	2
Crystal	Canada	5	2	3,5	1,5	4,5
RCAT Bobcat	Canada	2	2	2	0	0
6877	Philippines	5	2	3,5	1,5	4,5
Morsoy	USA	2	3	2,5	0,5	0,5
391	Kazakhstan	4	3	3,5	0,5	0,5
Colby	Canada	1	1	1	0	0
Lincoln	USA	4	4	4	0	0
Viktoriya	Ukraine	3	1	2	1	2
Chabarovskaya 4429	Russia	1	4	2,5	1,5	4,5
K1889	China	3	1	2	1	2
Harrow Manuchu	China	3	1	2	1	2
Nhat 11	Vietnam	5	3	4	1	2
Peremoga	Ukraine	3	2	2,5	0,5	0,5
CH 147020-1	Belarus	5	4	4,5	0,5	0,5

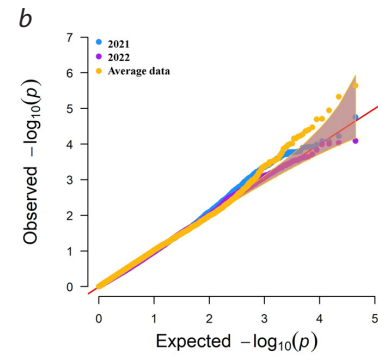
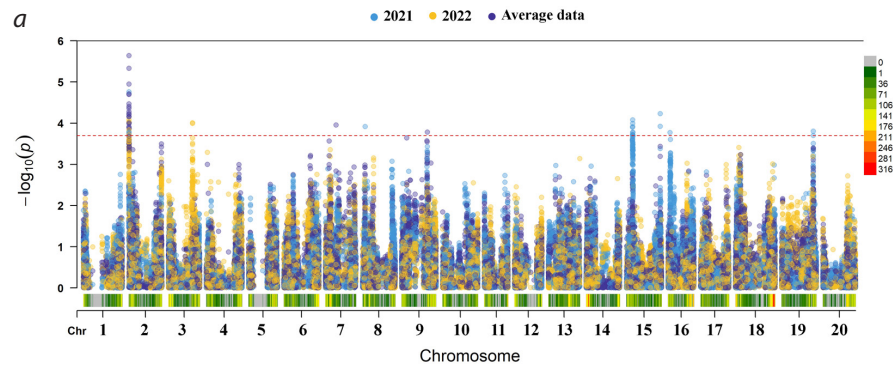
Supplementary Material 2

Set number	QTL	SNP	Chromosome	Position	2021				2022				Average data				MAF	H&B, P Value	Effect
					MLM	MLMM	FarmCPU	BLINK	MLM	MLMM	FarmCPU	BLINK	MLM	MLMM	FarmCPU	BLINK			
Set 1	qMac.ph 2-1	S02_230834	2	230834					3,1118E-04	2,1800E-04	2,5649E-04	2,5649E-04	1,4013E-04	8,9648E-05	6,2009E-05	6,2009E-05	0,474	0,417	-0,292
Set 1		S02_231008	2	231008					1,0916E-04	6,7724E-05	8,1502E-05	8,1502E-05	5,3757E-05	3,0375E-05	2,0130E-05	2,0130E-05	0,480	0,361	-0,318
Set 1		S02_234679	2	234679					1,2250E-04	7,7095E-05	9,2555E-05	9,2555E-05	1,2245E-04	7,7063E-05	5,2987E-05	5,2987E-05	0,476	0,417	-0,306
Set 1		S02_234706	2	234706					1,8601E-04	1,2306E-04	1,4639E-04	1,4639E-04	5,2497E-05	2,9565E-05	1,9572E-05	1,9572E-05	0,488	0,361	-0,310
Set 1		S02_234713	2	234713					3,5288E-04	2,5050E-04	2,9394E-04	2,9394E-04	1,0397E-04	6,4107E-05	4,3757E-05	4,3757E-05	0,490	0,417	0,298
Set 1		S02_263409	2	263409					2,3950E-04	1,6306E-04	1,9293E-04	1,9293E-04	8,3818E-05	5,0274E-05	3,3988E-05	3,3988E-05	0,496	0,417	-0,306
Set 1		S02_264237	2	264237					4,8058E-04	3,5205E-04	4,1041E-04	4,1041E-04	1,3390E-04	8,5190E-05	5,8802E-05	5,8802E-05	0,484	0,417	0,297
Set 1		S02_264738	2	264738					2,9375E-04	2,0452E-04	2,4094E-04	2,4094E-04	3,6210E-04	2,5775E-04	1,8588E-04	1,8588E-04	0,472	0,548	0,288
Set 1		S02_264741	2	264741					7,4951E-04	5,7280E-04	6,6147E-04	6,6147E-04	1,5376E-04	9,9474E-05	6,9084E-05	6,9084E-05	0,498	0,417	-0,288
Set 1		S02_267462	2	267462					3,4394E-04	2,4351E-04	2,8590E-04	2,8590E-04	1,5573E-04	1,0090E-04	7,0115E-05	7,0115E-05	0,486	0,417	-0,293
Set 1		S02_271951	2	271951					3,3667E-04	2,3782E-04	2,7935E-04	2,7935E-04	2,0623E-04	1,3806E-04	9,7137E-05	9,7137E-05	0,496	0,463	0,288
Set 1		S02_294071	2	294071					4,6184E-04	3,3700E-04	3,9319E-04	3,9319E-04	5,4753E-04	4,0626E-04	2,9830E-04	2,9830E-04	0,476	0,564	-0,274
Set 1		S02_295711	2	295711					8,9837E-04	6,9783E-04	8,0277E-04	8,0277E-04	2,6321E-04	1,8108E-04	1,2876E-04	1,2876E-04	0,484	0,476	-0,282
Set 1		S02_330064	2	330064	2,0988E-04	1,4080E-04	1,6161E-04	1,6161E-04	6,6752E-04	5,0474E-04	5,8456E-04	5,8456E-04	1,5867E-05	7,4666E-06	4,6828E-06	4,6828E-06	0,264	0,264	0,337
Set 1		S02_331810	2	331810	2,6717E-05	1,3642E-05	1,7452E-05	1,7452E-05					8,8111E-06	3,7575E-06	2,2937E-06	2,2937E-06	0,266	0,246	-0,357
Set 1		S02_343408	2	343408	2,2326E-04	1,5082E-04	1,7026E-04	1,7026E-04					3,2850E-05	1,7300E-05	1,1215E-05	1,1215E-05	0,274	0,314	-0,325
Set 1		S02_354437	2	354437					4,3549E-04	3,1590E-04	3,6907E-04	3,6907E-04	9,5772E-05	5,8441E-05	3,9746E-05	3,9746E-05	0,482	0,417	0,299
Set 1		S02_409693	2	409693					5,3865E-04	3,9904E-04	4,6407E-04	4,6407E-04	2,1726E-04	1,4631E-04	1,0317E-04	1,0317E-04	0,492	0,463	-0,289
Set 1		S02_434019	2	434019						9,7254E-04			2,5350E-04	1,7368E-04	1,2331E-04	1,2331E-04	0,498	0,478	0,279
Set 1		S02_434127	2	434127					8,1183E-04	6,2494E-04	7,2049E-04	7,2049E-04	4,0074E-04	2,8825E-04	2,0879E-04	2,0879E-04	0,488	0,564	-0,275
Set 1		S02_504447	2	504447									4,9230E-04	3,6150E-04	2,6419E-04	2,6419E-04	0,494	0,540	0,263
Set 1		S02_642808	2	642808					4,2315E-04	3,0605E-04	3,5772E-04	3,5772E-04	4,7537E-04	3,4786E-04	2,5384E-04	2,5384E-04	0,498	0,564	0,276
Set 1		S02_642893	2	642893					2,8445E-04	1,9736E-04	2,3265E-04	2,3265E-04	2,0787E-04	1,3929E-04	9,8028E-05	9,8028E-05	0,490	0,463	-0,290
Set 1		S02_662230	2	662230					5,4137E-04	4,0124E-04	4,6655E-04	4,6655E-04	2,7680E-04	1,9148E-04	1,3647E-04	1,3647E-04	0,500	0,477	-0,281
Set 1		S03_35230252	3	35230252					1,3303E-04	8,4570E-05	1,0133E-04	1,0133E-04					0,151	0,633	0,443
Set 1		S03_35230282	3	35230282					2,8095E-04	1,9466E-04	2,2951E-04	2,2951E-04					0,155	0,633	0,416
Set 1	qMac.ph 3-1	S03_35271930	3	35271930					3,9633E-04	2,8475E-04	3,3326E-04	3,3326E-04					0,155	0,633	0,404
Set 1		S03_35281739	3	35281739					3,7053E-04	2,6437E-04	3,0987E-04	3,0987E-04					0,157	0,633	-0,406
Set 1		S03_35294437	3	35294437					1,2908E-04	8,1756E-05	9,8024E-05	9,8024E-05					0,155	0,633	0,436
Set 2	qMac.ph 3-2	Gm03_37245981	3	37245981					3,8056E-04	2,7226E-04	2,5718E-04	2,5718E-04					0,155	0,655	-0,397
Set 1	qMac.ph 7-1	S07_5459756	7	5459756									5,0719E-04	3,7355E-04	2,7346E-04	2,7346E-04	0,161	0,540	-0,338
Set 1	qMac.ph 7-2	S07_15585048	7	15585048									2,3252E-04	1,5778E-04	1,1160E-04	1,1160E-04	0,157	0,412	0,364
Set 1	qMac.ph 8-1	S08_3858712	8	3858712	1,5896E-04	1,0326E-04	1,2103E-04	1,2103E-04									0,228	0,486	-0,437
Set 1	qMac.ph 9-1	S09_7368126	9	7368126									4,3486E-04	3,1540E-04	2,2932E-04	2,2932E-04	0,071	0,540	0,483

Supplementary Material 2 (end)

Set number	QTL	SNP	Chromosome	Position	2021				2022				Average data				MAF	H&B, P Value	Effect
					MLM	MLMM	FarmCPU	BLINK	MLM	MLMM	FarmCPU	BLINK	MLM	MLMM	FarmCPU	BLINK			
Set 1	qMac.ph 9-2	S09_36928447	9	36928447									4,9803E-04	3,6613E-04	2,6773E-04	2,6773E-04	0,147	0,540	0,338
Set 1		S09_37287856	9	37287856	6,6204E-04	5,0021E-04	4,7031E-04	4,7031E-04					5,2612E-04	3,8886E-04	2,8502E-04	2,8502E-04	0,123	0,528	0,391
Set 1		S09_37712255	9	37712255									3,2859E-04	2,3153E-04	1,6628E-04	1,6628E-04	0,137	0,489	-0,356
Set 2	qMac.ph 10-1	Gm10_33347216	10	33347216	3,4330E-04	2,4303E-04	1,7365E-04	1,7365E-04									0,327	0,840	0,345
Set 2	qMac.ph 13-1	Gm13_36411761	13	36411761					7,9227E-04	7,9227E-04			1,7676E-04	1,1626E-04	1,2352E-04	1,2352E-04	0,222	0,538	0,328
Set 1	qMac.ph 15-1	S15_8857792	15	8857792	3,8796E-04	2,7815E-04	2,5985E-04	2,5985E-04									0,266	0,486	0,359
Set 1		S15_9090050	15	9090050	4,2400E-04	3,0676E-04	2,7241E-04	2,7241E-04									0,296	0,486	0,346
Set 1		S15_9090854	15	9090854	2,2078E-04	1,4896E-04	1,2596E-04	1,2596E-04									0,163	0,486	-0,467
Set 1		S15_9095446	15	9095446	3,9417E-04	2,8306E-04	2,3633E-04	2,3633E-04									0,155	0,486	0,472
Set 1		S15_9095476	15	9095476	3,2003E-04	2,2488E-04	1,9039E-04	1,9039E-04									0,157	0,486	-0,473
Set 1		S15_9095737	15	9095737	4,2062E-04	3,0407E-04	2,5764E-04	2,5764E-04									0,163	0,486	0,440
Set 1		S15_9274253	15	9274253	3,0658E-04	2,1444E-04	1,9278E-04	1,9278E-04									0,192	0,486	-0,434
Set 1		S15_9318442	15	9318442	1,5002E-04	9,6774E-05	8,3066E-05	8,3066E-05									0,192	0,486	0,449
Set 1		S15_9325304	15	9325304	1,4710E-04	9,4671E-05	8,3121E-05	8,3121E-05									0,167	0,486	-0,482
Set 1		S15_9483998	15	9483998	2,6712E-04	1,8408E-04	1,6658E-04	1,6658E-04									0,183	0,486	-0,449
Set 1		S15_9509216	15	9509216	4,7076E-04	3,4418E-04	2,9013E-04	2,9013E-04									0,188	0,489	0,418
Set 1		S15_9524522	15	9524522	1,7569E-04	1,1547E-04	1,0245E-04	1,0245E-04									0,192	0,486	-0,446
Set 1		S15_9550196	15	9550196	3,9953E-04	2,8731E-04	2,4686E-04	2,4686E-04									0,190	0,486	-0,419
Set 1		S15_9550937	15	9550937	2,0995E-04	1,4085E-04	1,2318E-04	1,2318E-04									0,190	0,486	-0,443
Set 1		S15_9551321	15	9551321	3,4328E-04	2,4301E-04	2,1223E-04	2,1223E-04									0,190	0,486	-0,430
Set 1		S15_9568867	15	9568867	2,7087E-04	1,8695E-04	1,6676E-04	1,6676E-04									0,190	0,486	0,430
Set 1		S15_9568885	15	9568885	2,7087E-04	1,8695E-04	1,6676E-04	1,6676E-04									0,190	0,486	0,430
Set 1		S15_9709481	15	9709481	3,3002E-04	2,3265E-04	1,9641E-04	1,9641E-04									0,188	0,486	-0,427
Set 1		S15_9792989	15	9792989	4,7034E-04	3,4384E-04	2,9932E-04	2,9932E-04									0,192	0,489	-0,410
Set 1		S15_9805981	15	9805981	3,4890E-04	2,4741E-04	2,1045E-04	2,1045E-04									0,187	0,486	-0,425
Set 1	qMac.ph 15-3	S15_49773459	15	49773459	9,2227E-05	5,6010E-05	5,9168E-05	5,9168E-05					6,5551E-04	4,9485E-04	3,6647E-04	3,6647E-04	0,462	0,537	0,259
Set 1		S15_49773474	15	49773474	1,8367E-04	1,2134E-04	1,1942E-04	1,1942E-04						8,4522E-04	6,3926E-04	6,3926E-04	0,460	0,624	0,249
Set 1	qMac.ph 16-1	S16_2710543	16	2710543	2,7733E-04	1,9190E-04	1,6863E-04	1,6863E-04									0,290	0,486	-0,358
Set 1		S16_3274861	16	3274861	4,5971E-04	3,3530E-04	2,5021E-04	2,5021E-04									0,095	0,489	-0,545
Set 2	qMac.ph 17-1	Gm17_37843080	17	37843080					1,8180E-04	1,1995E-04	1,1272E-04	1,1272E-04					0,290	0,655	0,327
Set 2	qMac.ph 18-1	Gm18_6840290	18	6840290									3,4924E-04	2,4768E-04	2,4890E-04	2,4890E-04	0,415	0,552	0,249
Set 1	qMac.ph 19-1	S19_46393383	19	46393383	2,5938E-04	1,7817E-04	1,9865E-04	1,9865E-04					7,8970E-04	6,0638E-04	4,5226E-04	4,5226E-04	0,391	0,542	0,331
Set 1		S19_46393578	19	46393578	3,7856E-04	2,7073E-04	3,1074E-04	3,1074E-04					7,4395E-04	5,6816E-04	4,2268E-04	4,2268E-04	0,391	0,539	-0,323
Set 1		S19_46398331	19	46398331	1,9938E-04	1,3297E-04	1,5684E-04	1,5684E-04					7,0808E-04	5,3831E-04	3,9965E-04	3,9965E-04	0,379	0,538	0,344

Supplementary Material 3



Supplementary Material 4

