

Jing Zhao, Maria B. Mantilla Perez, Jieyun Hu, Maria G. Salas Fernandez*.

Genome-wide association study for nine plant architecture traits in *Sorghum Bicolor*

Supplemental Table S1. Identification of Gibberellin (GA) candidate genes in sorghum.

Gene	Name Function	ID (Model species)	ID Sorghum	Coordinate	BLAST Identity	BLAST E-Value	Pfam Domains
<i>CPS1</i> ^{‡¶}	<i>Ent-copalyl diphosphate synthase</i>	<i>At4g02780</i> <i>Os02g0278700</i>	<i>Sb01g021990</i> [†]	26915971 - 26925014	46% 65%	0 0	Terpene synth Terpene synth C
<i>GAMT1</i> [‡]	<i>Gibberellic acid methyltransferase 1</i>	<i>At4g26420</i>	<i>Sb03g032230</i>	60648950 - 60652225	30%	6.00E-50	Methyltransf 7
<i>KS1</i> ^{‡¶}	<i>Ent-kaurene synthase</i>	<i>At1g79460</i> <i>Os04g0611800</i>	<i>Sb06g028220</i> [†]	57054005- 57058330	46% 70%	0 0	Terpene synth Terpene synth C
<i>KS3</i> ^{‡¶}	<i>Ent-kaurene synthase</i>	<i>At1g79460</i> <i>Os04g0611800</i>	<i>Sb06g028210</i> [†]	57045616 - 57050067	48% 68%	3E-138 0	
<i>CYP714D1</i> [‡]	<i>Cytochrome P450714D1</i>	<i>Os05g0482400</i>	<i>Sb09g023680</i>	53324808 - 53333470	78%	0	P450
<i>KAO1</i> ^{‡¶}	<i>ent-kaurenoic acid oxidase</i>	<i>At2g32440</i> <i>Os06g0110000</i>	<i>Sb10g000920</i>	612730 - 616375	58% 82%	0 0	P450
<i>KO1</i> ^{‡¶}	<i>Ent-kaurene oxidase</i>	<i>At5g25900</i> <i>Os06g0570100</i>	<i>Sb10g022520</i> [†]	50447232 - 50452777	56% 80%	0 0	P450
<i>GA20ox1</i> ^{‡¶}	<i>Gibberellin 20- oxidase</i>	<i>At4g25420</i> <i>Os03g0856700</i>	<i>Sb01g000580</i>	462325 - 464149	59% 74%	2.00E-156 0	DIOX_N 2OG-FelI_Oxy
<i>GA20ox2</i> ^{‡¶}	<i>Gibberellin 20-</i>	<i>At1g44090</i>	<i>Sb03g041900</i> [†]	69376586 -	51%	3.00E-121	DIOX_N

	<i>oxidase</i>	<i>Os01g0883800</i>		69378900	83%	0	2OG-FeII_Oxy
<i>GA20ox3[‡]¶</i>	<i>Gibberellin 20-oxidase</i>	<i>Os07g0169700</i>	<i>Sb02g003940</i>	4376629-4377866	61%	5.00E-148	DIOX_N 2OG-FeII_Oxy
<i>GA3ox[‡]</i>	<i>Gibberellin 3-oxidase</i>	<i>At4g21690</i>	<i>Sb01g000650</i>	580090 - 581169	29%	3.00E-45	DIOX_N 2OG-FeII_Oxy
<i>GA3ox2[‡]¶</i>	<i>Gibberellin 3-oxidase</i>	<i>At1g15550</i> <i>Os01g0177400</i>	<i>Sb03g004020</i>	4284218 - 4286411	40% 81%	8.00E-88 0	DIOX_N 2OG-FeII_Oxy
<i>GA2ox1[‡]¶</i>	<i>Gibberellin 2-oxidase</i>	<i>At1g02400</i> <i>Os05g0158600</i>	<i>Sb09g004520[†]</i>	5485906 - 5490693	47% 73%	6.00E-95 2.00E-152	DIOX_N 2OG-FeII_Oxy
<i>GA2ox2[‡]¶</i>	<i>Gibberellin 2-oxidase</i>	<i>At1g47990</i>	<i>Sb03g013450</i>	16764890-16770701	47%	6.00E-89	DIOX_N 2OG-FeII_Oxy
<i>GA2ox5[‡]¶</i>	<i>Gibberellin 2-oxidase</i>	<i>At1g78440</i>	<i>Sb09g028360</i>	57265477 - 57266870	49%	6.00E-103	DIOX_N 2OG-FeII_Oxy
<i>GA2ox6[‡]¶</i>	<i>Gibberellin 2-oxidase</i>	<i>At2g34555</i> <i>Os01g0757200</i>	<i>Sb03g035000</i>	63174161 - 63175793	49% 83%	8.00E-112 0	DIOX_N 2OG-FeII_Oxy
<i>GA2ox7[‡]¶</i>	<i>Gibberellin 2-oxidase</i>	<i>Os05g0514600</i>	<i>Sb09g025470</i>	54884503-54885823	74%	1.00E-49	DIOX_N 2OG-FeII_Oxy
<i>GA2ox8[‡]¶</i>	<i>Gibberellin 2-oxidase</i>	<i>At1g50960</i> <i>Os07g0103500</i>	<i>Sb02g000460</i>	417567 - 418643	41% 62%	3.00E-73 3.00E-146	DIOX_N 2OG-FeII_Oxy
<i>GA2ox10[‡]¶</i>	<i>Gibberellin 2-oxidase</i>	<i>At4g21200</i> <i>Os04g0522500</i>	<i>Sb06g022880</i>	52091261-52094279	49% 74%	2.00E-108 9.00E-171	DIOX_N 2OG-FeII_Oxy

<i>SLN1</i> [§]		18254373 [#]			83%	0	
<i>RHT1</i> [§]	<i>DELLA</i> protein	75207630 ^{††}	<i>Sb01g010660</i>	9419975 -	83%	0	DELLA
<i>GAI</i> [§]		<i>At1g14920</i>		9422628	55%	0	GRAS
<i>SLR1</i> ^{§¶}		<i>Os03g0707600</i>			84%	0	
<i>GID1</i> ^{§¶}	Gibberellin receptor <i>GID1</i>	<i>At3g05120</i> <i>Os05g0407500</i>	<i>Sb09g020080</i>	49162045 - 49164861	61% 83%	2.00E-155 0	Abhydrolase 3
<i>SLY1/</i> <i>GID2a</i> ^{§¶}	F-box protein <i>GID2</i>	<i>At4g24210</i> <i>Os02g0580300</i>	<i>Sb04g024040</i> [†]	53756926 - 53757936	42% 61%	3.00E-30 3.00E-64	F-box
<i>RBX1</i> [§]	RING-box protein 1	<i>At5G20570</i>	<i>Sb03g008660</i> [†]	9288095 - 9290599	97%	8.00E-68	Zf-rbx1
<i>CUL1</i> [§]	Cullin-1	<i>At4g02570</i>	<i>Sb04g027970</i> [†]	57920345 - 57923199	34%	9.00E-139	Cullin Cullin _Nedd8
<i>SKP1</i> [§]	UFO-binding protein 1	<i>At1g75950</i>	<i>Sb07g021450</i> [†]	55486464 - 55486970	72%	2.00E-73	Skp poz Skp1
<i>PIF3</i> [§]	Phytochrome- associated protein 3	<i>At1g09530</i>	<i>Sb09g003090</i>	3387511 - 3389459	59%	8.00E-43	HLH
<i>PIF4</i> [§]	Phytochrome- associated protein 4	<i>At2g43010</i>	<i>Sb01g013843</i>	12946309 - 12953676	34%	8.00E-49	HLH

[†]GA candidate Genes in *Sorghum bicolor* for which limited GBS data was available and that were successfully scored using Sequenome technology

^{††}GA genes in biosynthesis pathway

[§]GA genes in signaling pathway

[#]GA protein ID in *Hordeum vulgare*

[¶]GA protein ID in *Triticum aestivum*

Os, *Oryza sativa* ; At, *Arabidopsis thaliana*

Physical positions were determined using Phytozome v1.4.

Supplemental Table S2. Allelic information for newly developed markers on Gibberellin (GA) genes using Sequenom technology.

Marker ID	S1_26921093	S1_26921237	S1_26921313	S1_26921352	S1_26922423	S1_26922474	S1_26922618	S1_26922666	S3_9289054	S3_9288955	S3_9288823	S3_9288785	S3_9288729	S3_9288688	S3_65640258
Marker	C/A	T/C	T/C	C/T	C/A	G/A	A/G	C/A	T/C	DEL /CTT	A/G	DEL /G	G/A	DEL /A	C/T
34911	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
48770	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
152651	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533750	C	T	T	C	A	G	A	C	C	DEL	A	G	A	A.DEL	T
533752	C	T	T	C	C	A	A	C	T	CTT	A	DEL	G	A	T
533754	C	C	T	C	A	G	A	C	T	CTT	A	DEL	G	A	T
533755	C	T	T	C	C	G	G	C	C	CTT	G	G	A	A.DEL	T
533757	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
533758	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
533759	C	T	T	C	C	G	A	C	T	CTT	N	DEL	G	A	T
533760	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
533761	C	T	T	C	C	G	G	C	C	CTT	G	G	A	A.DEL	T
533762	C	T	N	T	C	N	N	C	C	DEL	A	G	A	A.DEL	N
533766	C	T	T	T	C	G	A	C	T	CTT	N	DEL	G	A	T
533769	N	N	N	N	C	N	N	C	N	DEL	N	G	N	N	N
533776	C	T	T	C	A	G	A	C	C	DEL	A	G	A	A.DEL	T
533785	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
533788	C	C	T	C	A	G	A	C	T	CTT	A	DEL	G	A	T
533792	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
533794	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
533800	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
533807	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533821	A	T	C	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533822	C	T	T	T	C	G	A	C	C	CTT	G	G	A	A.DEL	T
533824	C	T	T	C	C	G	G	C	C	DEL	N	G	A	A.DEL	T

533833	C	T	T	C	C	A	A	C	T	CTT	A	DEL	G	A	T
533838	C	T	T	T	N	G	A	N	C	N	A	G	A	A.DEL	T
533839	C	T	T	C	C	G	A	C	C	CTT	A	G	A	A.DEL	T
533841	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
533842	C	C	T	C	A	G	A	C	T	CTT	A	DEL	G	A	T
533843	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533845	C	C	T	C	A	G	A	C	T	CTT	A	DEL	G	A	T
533852	C	C	T	C	A	G	A	C	C	CTT	A	G	A	A.DEL	T
533855	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533856	C	C	T	C	A	G	A	C	T	CTT	N	DEL	G	A	T
533863	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533866	C	T	T	C	C	G	A	A	C	CTT	G	G	A	A.DEL	C
533869	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533871	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533876	C	T	T	C	N	G	A	N	T	N	A	DEL	G	A	T
533877	C	T	T	C	C	G	A	A	C	CTT	A	G	A	A.DEL	T
533901	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533902	C	T	T	Y	C	G	A	C	C	CTT.DEL	R	G	A	A.DEL	T
533910	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533911	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
533912	N	T	T	C	C	G	G	C	C	DEL	A	G	A	A.DEL	T
533913	C	T	T	C	C	G	A	C	N	CTT	A	DEL	G	A	T
533919	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
533924	C	T	N	C	C	N	N	C	C	DEL	A	G	A	A.DEL	N
533936	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533937	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533938	C	C	T	C	A	G	A	C	C	DEL	A	G	A	A.DEL	T
533939	C	T	T	C	C	A	A	C	C	CTT	G	G	A	A.DEL	T
533940	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
533943	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
533948	N	N	T	N	C	G	A	C	N	DEL	N	G	N	N	T
533955	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533956	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
533957	C	T	T	N	C	G	A	C	T	CTT	N	DEL	G	A	T
533961	C	T	T	C	C	G	A	C	T	CTT	N	DEL	G	A	T

533962	N	N	T	N	C	G	A	C	N	CTT	N	DEL	N	N	T
533964	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
533965	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533967	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
533970	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
533972	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
533976	C	T	T	C	C	A	A	C	T	CTT	N	DEL	G	A	T
533979	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533980	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
533985	C	T	T	T	C	G	A	C	C	CTT	G	G	A	A.DEL	T
533986	C	T	T	C	C	G	G	C	C	CTT	G	G	A	A.DEL	T
533987	C	T	T	C	C	G	G	C	C	CTT	G	G	A	A.DEL	T
533989	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
533991	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
533996	C	T	T	C	C	A	A	C	C	CTT	G	G	A	A.DEL	T
533997	N	T	T	T	C	G	A	C	C	DEL	N	G	A	A.DEL	T
533998	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
534009	C	C	T	C	A	G	A	C	T	CTT	A	DEL	G	A	T
534021	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
534037	C	C	N	C	A	G	A	C	T	CTT	A	DEL	G	A	T
534054	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
534063	C	T	T	T	C	G	A	C	T	CTT	N	DEL	G	A	T
534070	C	T	T	C	C	G	A	C	C	CTT	N	G	A	A.DEL	T
534075	N	N	T	N	C	G	A	C	N	CTT	N	G	N	N	T
534079	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
534088	C	T	T	C	C	G	A	A	C	CTT	A	G	A	A.DEL	T
534096	C	T	T	C	C	A	A	C	C	CTT	A	N	A	A.DEL	T
534097	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
534099	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
534101	C	T	T	C	C	A	A	C	C	DEL	A	G	A	A.DEL	T
534104	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
534105	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
534108	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
534112	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
534114	C	T	N	T	C	G	A	C	C	CTT	G	G	A	A.DEL	T
534115	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T

534116	C	C	T	C	A	G	A	C	C	DEL	N	G	A	A.DEL	T
534117	A	T	C	C	C	G	A	C	T	CTT	A	DEL	G	A	T
534123	C	C	T	C	A	G	A	C	C	DEL	A	G	A	A.DEL	T
534124	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
534127	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
534128	C	C	T	C	A	G	A	C	C	CTT	G	G	A	A.DEL	T
534132	C	C	T	C	A	G	A	C	C	CTT	G	G	A	A.DEL	T
534135	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
534137	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
534138	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
534139	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
534144	A	T	T	C	N	G	A	N	C	N	A	G	A	A.DEL	T
534145	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
534155	N	N	T	N	A	G	A	C	N	DEL	N	G	N	N	T
534157	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
534163	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
534167	N	N	T	N	A	G	A	C	N	CTT	N	DEL	N	N	T
542718	C	C	T	C	A	G	A	C	T	CTT	A	DEL	G	A	T
548797	C	T	T	T	C	G	A	C	T	CTT	N	DEL	G	A	T
552856	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
552861	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
561071	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
561472	C	T	T	T	C	G	A	C	T	CTT	N	DEL	G	A	T
564164	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
564165	C	T	T	C	C	G	G	C	T	CTT	A	DEL	G	A	T
576332	C	T	T	C	N	G	A	N	C	N	A	DEL.G	A	A.DEL	T
576333	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
576340	C	T	T	C	N	G	A	N	C	N	A	DEL	A	A.DEL	T
576345	C	T	T	C	C	G	A	C	C	DEL	A	DEL	A	A.DEL	T
576347	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
576348	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
576349	C	T	T	C	C	G	G	C	T	CTT	A	DEL	G	A	T
576350	C	T	T	C	C	G	A	C	T	CTT	N	DEL	G	A	T
576352	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
576359	C	C	T	C	A	G	A	C	T	CTT	A	G	G	A	T
576364	C	T	T	C	C	G	A	C	C	DEL	A	DEL	A	A.DEL	T

576366	C	C	T	C	A	G	A	C	Y	CTT	N	DEL.G	R	A.DEL	T
576373	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
576375	C	C	T	C	A	G	A	C	C	DEL	A	G	A	A.DEL	T
576376	C	T	T	C	C	G	A	C	T	CTT	N	DEL	G	A	T
576380	C	T	T	C	C	G	G	C	T	CTT	A	DEL	G	A	T
576381	C	C	N	C	A	G	A	C	T	CTT	A	DEL	G	A	T
576385	C	T	T	T	C	G	A	C	T	CTT	N	DEL	G	A	T
576386	C	T	T	C	C	A	A	C	T	CTT	N	DEL	G	A	T
576387	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
576390	C	C	T	C	A	G	A	C	C	DEL	N	G	A	A.DEL	T
576391	C	C	T	C	A	G	A	C	C	DEL	A	G	A	A.DEL	T
576393	C	T	N	C	C	N	N	C	T	CTT	A	DEL	G	A	N
576394	C	T	N	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
576399	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
576418	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
576422	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
576425	C	T	T	N	C	G	A	C	T	CTT	N	DEL	G	A	T
576426	C	C	T	C	A	G	A	C	T	CTT	A	DEL	G	A	T
576428	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
576435	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
576437	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
585295	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
595699	C	T	T	C	C	G	A	C	T	CTT	N	DEL	G	A	T
595702	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
595714	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
595718	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
595720	C	C	T	C	A	G	A	C	T	CTT	A	DEL	G	A	T
595739	C	T	T	C	C	G	A	C	T	CTT	N	DEL	G	A	T
595740	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
595741	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
595743	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
595744	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
595745	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
597945	C	T	T	T	C	G	A	C	C	DEL	N	G	A	A.DEL	T
597946	C	T	T	C	C	G	A	C	T	CTT	N	DEL	G	A	T
597949	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T

597950	N	N	T	N	N	G	A	N	N	N	N	G	N	N	T
597951	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
597952	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
597957	C	T	T	C	A	G	A	C	C	DEL	A	G	A	A.DEL	T
597960	C	T	T	C	C	G	A	A	T	CTT	A	DEL	G	A	T
597961	C	T	T	T	C	G	A	C	C	CTT	G	G	A	A.DEL	T
597964	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
597965	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
597966	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
597967	C	T	N	C	C	G	A	C	T	CTT	A	DEL	G	A	T
597968	C	T	T	C	C	G	A	C	T	CTT	N	DEL	G	A	T
597971	N	N	T	N	C	G	A	C	N	CTT	N	DEL	N	N	T
597972	C	T	T	C	C	G	G	C	T	CTT	A	DEL	G	A	T
597973	C	T	T	T	C	G	A	C	C	CTT	A	G	A	A.DEL	T
597976	C	T	N	T	C	G	A	C	T	CTT	A	DEL	G	A	T
597980	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
597982	C	T	T	C	C	G	G	C	C	DEL	A	G	A	A.DEL	T
598069	N	N	T	N	A	G	A	C	N	CTT	N	DEL	N	N	T
598070	C	T	T	T	A	G	A	C	T	CTT	A	DEL	G	A	T
601816	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
609456	C	T	T	C	C	G	A	C	C	CTT	A	G	A	A.DEL	T
629034	N	T	T	C	N	G	A	N	T	N	N	DEL	G	A	T
629059	C	T	T	T	C	G	A	C	C	DEL	A	G	A	A.DEL	T
641874	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
642992	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
642998	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
651492	C	T	T	C	C	G	A	C	T	CTT	N	DEL	G	A	T
651496	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
653616	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
655970	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
655971	C	T	T	C	C	G	G	C	T	CTT	A	DEL	G	A	T
655972	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
655973	C	T	T	C	C	G	G	C	C	DEL	A	G	A	A.DEL	T
655974	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
655975	C	T	T	C	C	G	A	C	T	CTT	N	DEL	G	A	T
655976	C	T	N	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T

655977	C	T	N	C	C	N	N	C	C	CTT	G	G	A	A.DEL	N
655978	C	T	N	C	C	N	N	A	C	DEL	N	G	A	A.DEL	N
655979	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
655980	C	T	T	T	A	G	A	C	T	CTT	A	DEL	G	A	T
655981	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
655982	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
655985	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A	T
655986	C	T	T	C	C	G	G	C	C	DEL	A	G	A	A.DEL	T
655987	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
655988	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
655989	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
655990	C	T	T	C	C	G	G	C	T	CTT	A	DEL	G	A	T
655991	N	T	T	C	C	G	A	C	C	DEL	N	G	A	N	T
655992	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
655993	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
655995	C	C	T	C	A	G	A	C	T	CTT	A	DEL	G	A	T
655996	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
655997	C	T	T	C	C	G	G	C	T	CTT	A	DEL	G	A	T
655998	C	T	T	C	C	G	A	A	C	CTT	A	G	A	A.DEL	T
655999	C	T	T	T	A	G	A	C	T	CTT	A	DEL	G	A	T
656000	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
656001	C	T	N	C	C	N	N	C	C	CTT	G	G	A	A.DEL	N
656003	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
656004	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
656011	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
656012	C	T	T	C	C	G	G	C	T	CTT	A	DEL	G	A	T
656013	C	C	T	C	A	G	A	C	N	CTT	A	DEL	G	A	T
656015	N	T	T	C	C	G	G	C	C	CTT	G	G	A	A.DEL	T
656016	C	T	T	C	C	G	A	C	C	CTT	G	G	A	A.DEL	T
656017	N	N	T	N	C	G	G	C	N	CTT	N	DEL	N	N	T
656018	C	T	T	C	C	G	A	C	T	CTT	N	DEL	G	A	T
656019	C	T	T	C	C	G	G	C	C	DEL	A	G	A	A.DEL	T
656022	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
656023	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
656024	N	N	T	N	C	G	A	C	N	CTT	N	DEL	N	N	T
656025	N	N	T	N	A	G	A	C	N	CTT	N	DEL	N	N	T

656071	C	T	T	N	C	G	A	C	C	CTT	G	G	A	A.DEL	T
656072	C	T	T	T	C	G	G	C	C	CTT	A	G	A	A.DEL	T
656074	C	T	T	C	C	G	A	C	C	CTT	A	G	A	A.DEL	T
656075	C	T	T	C	C	G	A	C	T	DEL	N	G	G	A	T
656076	C	T	T	C	C	G	A	C	C	CTT	A	DEL	A	A.DEL	T
656077	C	T	T	C	C	G	G	C	C	DEL	A	G	A	A.DEL	T
656078	C	T	T	C	C	G	A	C	C	CTT	A	G	A	A.DEL	T
656079	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
656080	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
656081	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
656082	C	C	T	C	A	G	A	C	T	CTT	A	DEL	G	A	T
656083	C	T	T	T	C	G	A	C	C	DEL	A	G	A	N	T
656086	C	T	N	C	C	N	N	C	T	CTT	A	DEL	G	A	N
656087	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
656089	C	T	T	T	C	G	A	C	C	CTT	G	G	A	A.DEL	T
656090	C	T	T	C	C	G	G	C	C	CTT	G	G	A	A.DEL	T
656093	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
656094	C	T	T	T	N	G	A	N	T	N	A	DEL	G	A	T
656095	C	T	T	C	C	G	A	A	C	CTT	A	G	A	A.DEL	T
656096	C	T	T	C	C	G	A	A	T	CTT	N	DEL	G	A	T
656100	C	C	T	C	A	G	A	C	T	CTT	N	DEL	G	A	T
656101	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
656102	N	N	T	N	C	G	A	C	N	CTT	N	DEL	N	N	T
656103	C	C	T	C	A	G	A	C	T	CTT	A	DEL	G	A	T
656104	C	T	T	T	C	G	A	C	C	DEL	N	G	A	A.DEL	T
656105	C	T	T	T	C	G	A	C	T	CTT	A	DEL	G	A	T
656106	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
656107	C	T	T	C	C	G	G	C	C	DEL	A	G	A	A.DEL	T
656108	N	N	T	N	A	G	A	C	N	CTT	N	DEL	N	N	T
656109	C	T	T	C	C	G	G	C	C	DEL	A	G	A	A.DEL	T
656110	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
656111	C	T	T	C	C	G	A	C	C	DEL	N	G	A	A.DEL	T
656112	C	T	T	C	C	G	A	C	C	DEL	A	G	A	A.DEL	T
656113	C	C	T	C	A	G	A	C	N	DEL	A	G	A	A.DEL	T
656114	C	C	T	C	A	G	A	C	T	CTT	A	DEL	G	A	T
656115	C	T	T	T	C	G	A	C	C	CTT	A	G	A	A.DEL	T

656116	C	T	T	C	C	G	G	C	C	CTT	G	G	A	A.DEL	T
656117	C	T	T	C	C	G	A	C	T	CTT	A	DEL	G	A	T
656118	N	N	T	N	C	A	A	C	N	DEL	N	G	N	N	T
Marker ID	S3_65641338	S3_65641391	S3_69377305	S3_69378216	S3_69378263	S3_69378415	S3_69378542	S4_53757359	S4_53757720	S4_53757838	S4_53757908	S4_53757923	S4_56583718	S4_57921556	S6_57048580
Marker	A/G	DEL/T	C/T	C/T	DEL/ATCCGCTCCG	T/A	C/T	C/T	G/A	A/G	A/G	A/T	C/G	A/G	G/A
34911	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
48770	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
152651	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533750	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533752	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533754	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	A	G
533755	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533757	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533758	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
533759	A	DEL	T	N	DEL	T	C	C	A	A	A	A	C	G	G
533760	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533761	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533762	N	DEL	T	N	DEL	T	C	C	A	A	N	A	C	G	G
533766	A	DEL	T	C	DEL	T	C	Y	A	A	A	A	C	G	G
533769	N	DEL	T	N	N	T	N	C	N	N	N	N	C	G	N
533776	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533785	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533788	A	DEL	T	C	DEL	T	C	N	A	A	A	A	C	A	G
533792	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
533794	N	T	T	C	DEL	T	C	C	A	A	N	A	C	G	G
533800	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533807	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A

533821	A	DEL	C	T	ATCCGCTCCG	A	T	Y	A	A	A	A	C	G	G
533822	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533824	A	DEL	C	T	ATCCGCTCCG	A	T	Y	A	A	A	A	C	G	G
533833	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533838	A	N	T	C	DEL	N	C	N	A	A	A	A	N	N	G
533839	A	T	C	C	ATCCGCTCCG	N	C	C	A	A	A	A	C	G	G
533841	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533842	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533843	A	DEL	T	C	DEL	W	C	C	A	A	A	A	C	G	G
533845	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533852	A	DEL	T	C	DEL	W	C	C	A	A	A	A	C	G	G
533855	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533856	A	DEL	C	N	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
533863	A	DEL	T	N	DEL	T	C	C	A	A	A	A	C	G	G
533866	G	T	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
533869	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533871	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
533876	A	N	T	C	DEL	N	C	N	A	A	A	A	N	N	G
533877	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533901	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533902	A	DEL	T	C	DEL	T	C	Y	R	R	R	W	C	G	R
533910	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533911	A	DEL	T	N	DEL	T	C	C	A	A	A	A	C	G	G
533912	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533913	A	T	T	C	DEL	T	C	N	A	A	A	A	C	G	G
533919	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	A
533924	N	DEL	T	N	DEL	T	C	C	A	A	N	A	C	G	A
533936	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
533937	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
533938	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
533939	A	DEL	T	N	DEL	T	C	Y	G	G	G	T	C	G	G
533940	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
533943	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
533948	A	DEL	C	T	N	A	N	C	N	N	A	N	C	G	N
533955	A	DEL	C	N	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
533956	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	A

533957	A	T	C	T	ATCCGCTCCG	A	T	Y	A	A	A	A	C	G	N
533961	A	T	T	N	DEL	T	C	C	A	A	A	A	C	G	A
533962	A	T	T	C	N	T	N	C	N	N	A	N	C	G	N
533964	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533965	A	T	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	A
533967	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
533970	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533972	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
533976	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533979	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
533980	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	A
533985	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533986	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533987	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533989	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
533991	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
533996	A	DEL	T	N	DEL	T	C	C	A	A	A	A	C	G	G
533997	A	DEL	C	T	N	A	T	Y	A	A	A	A	C	G	G
533998	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
534009	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
534021	A	T	C	T	ATCCGCTCCG	A	T	Y	A	A	A	A	C	G	G
534037	A	DEL	T	N	DEL	T	C	C	A	A	N	A	C	G	G
534054	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
534063	A	DEL	C	C	ATCCGCTCCG	W	C	C	A	A	A	A	C	G	G
534070	A	DEL	C	C	ATCCGCTCCG	N	C	C	A	A	A	A	C	G	G
534075	A	DEL	C	C	N	T	N	N	N	N	A	N	C	G	N
534079	A	DEL	C	C	N	N	C	N	A	A	A	A	C	G	G
534088	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
534096	A	T	N	C	ATCCGCTCCG	N	C	Y	A	A	A	A	C	G	G
534097	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
534099	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	A
534101	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
534104	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
534105	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
534108	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
534112	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A

534114	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
534115	N	T	T	C	DEL	T	C	C	A	A	N	A	C	G	G
534116	A	T	T	C	DEL	T	C	Y	A	A	A	A	C	G	G
534117	A	T	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
534123	A	DEL	T	T	ATCCGCTCCG	A	C	Y	A	A	A	A	C	G	A
534124	A	DEL	T	C	DEL	T	C	Y	A	A	A	A	C	G	A
534127	A	DEL	T	C	DEL	T	C	Y	A	A	A	A	C	G	A
534128	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
534132	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
534135	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
534137	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
534138	A	DEL	T	N	DEL	T	C	N	A	A	A	A	C	G	A
534139	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
534144	A	N	C	T	ATCCGCTCCG	N	T	N	A	A	A	A	N	N	N
534145	A	DEL	C	C	ATCCGCTCCG	N	C	C	A	A	A	A	C	G	A
534155	A	DEL	T	C	N	T	N	C	N	N	A	N	C	G	N
534157	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
534163	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
534167	A	DEL	T	C	N	T	N	C	N	N	A	N	C	G	N
542718	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	A
548797	A	T	T	C	DEL	N	C	C	A	A	A	A	C	G	A
552856	A	DEL	C	N	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
552861	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	A
561071	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
561472	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
564164	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	A
564165	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
576332	A	N	T	T	ATCCGCTCCG	N	T	N	A	N	A	A	N	N	N
576333	A	DEL	T	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
576340	A	N	T	T	ATCCGCTCCG	N	T	N	A	A	A	A	N	N	G
576345	A	DEL	T	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
576347	A	DEL	T	C	DEL	T	C	C	A	A	A	A	G	G	G
576348	A	DEL	C	C	DEL	T	C	Y	G	G	G	T	G	G	A
576349	A	T	T	C	DEL	T	C	Y	G	G	G	T	C	G	A
576350	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
576352	A	DEL	T	T	ATCCGCTCCG	A	T	C	A	N	A	A	C	G	G

576359	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
576364	A	DEL	T	N	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
576366	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
576373	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
576375	A	DEL	Y	C	ATCCGCTCCG	T	C	Y	A	A	A	A	C	G	G
576376	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
576380	N	T	T	C	DEL	T	C	C	A	A	N	A	C	G	G
576381	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
576385	A	DEL	C	C	ATCCGCTCCG	T	C	C	A	A	A	A	C	G	G
576386	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
576387	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
576390	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	A
576391	A	DEL	T	N	DEL	T	C	C	A	A	A	A	C	G	G
576393	N	DEL	T	N	DEL	T	C	N	A	A	N	A	C	G	G
576394	A	DEL	C	T	ATCCGCTCCG	N	T	C	A	A	A	A	C	G	G
576399	A	T	C	T	ATCCGCTCCG	A	T	Y	A	A	A	A	C	G	A
576418	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
576422	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	N	G
576425	A	DEL	T	C	DEL	T	N	C	A	A	A	A	C	G	G
576426	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
576428	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
576435	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
576437	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	A
585295	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
595699	A	DEL	T	N	DEL	T	C	C	A	A	N	A	C	G	G
595702	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
595714	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
595718	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
595720	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
595739	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
595740	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
595741	A	DEL	T	C	DEL	T	C	Y	A	A	A	A	C	G	G
595743	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
595744	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
595745	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
597945	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G

597946	A	T	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
597949	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
597950	A	N	T	C	N	N	N	N	N	N	A	N	N	N	N
597951	A	DEL	C	C	ATCCGCTCCG	N	C	C	A	A	A	A	C	G	G
597952	A	T	T	N	DEL	T	C	C	A	A	A	A	C	G	G
597957	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
597960	A	DEL	T	C	DEL	T	C	Y	A	A	A	A	C	G	G
597961	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
597964	N	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
597965	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	A
597966	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
597967	A	T	T	N	DEL	T	C	C	A	A	N	A	C	G	G
597968	A	DEL	T	N	DEL	T	C	C	A	A	A	A	C	G	G
597971	A	DEL	T	C	N	T	N	C	N	N	A	N	C	G	N
597972	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
597973	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
597976	A	DEL	T	N	DEL	T	C	Y	A	A	A	A	C	G	G
597980	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
597982	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
598069	A	DEL	T	C	N	T	N	C	N	N	A	N	C	G	N
598070	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
601816	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
609456	A	T	C	C	ATCCGCTCCG	T	C	N	G	G	G	T	C	G	G
629034	A	N	T	N	DEL	N	C	N	A	A	A	A	N	N	G
629059	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
641874	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
642992	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
642998	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
651492	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
651496	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
653616	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
655970	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
655971	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
655972	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
655973	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
655974	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G

655975	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
655976	A	DEL	C	N	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
655977	N	T	T	N	DEL	T	C	C	A	A	N	A	C	G	G
655978	N	DEL	T	N	DEL	T	C	C	A	A	N	A	C	G	G
655979	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
655980	A	T	T	N	DEL	T	C	Y	G	G	G	T	C	G	G
655981	A	DEL	T	C	DEL	T	C	Y	A	A	A	A	C	G	G
655982	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
655985	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	N	A	A	C	G	G
655986	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
655987	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
655988	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
655989	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
655990	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
655991	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
655992	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
655993	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
655995	A	DEL	T	C	DEL	T	C	Y	G	G	G	T	C	G	A
655996	A	DEL	C	N	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
655997	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
655998	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
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656000	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	A
656001	N	T	T	N	DEL	T	C	C	A	A	N	A	C	G	G
656003	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
656004	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656011	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
656012	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656013	A	DEL	T	C	DEL	T	C	C	A	N	A	A	C	G	N
656015	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656016	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	A
656017	A	DEL	T	C	N	T	N	C	N	N	A	N	C	G	N
656018	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
656019	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656022	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
656023	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G

656068	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
656070	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
656071	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	A
656072	A	DEL	T	N	DEL	T	C	C	A	A	A	A	C	G	G
656074	A	T	T	C	ATCCGCTCCG	T	T	C	A	A	A	A	C	G	G
656075	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	A
656076	A	T	T	C	ATCCGCTCCG	T	T	N	A	A	A	A	C	G	G
656077	A	DEL	T	C	DEL	T	C	N	A	A	A	A	C	G	G
656078	A	T	C	C	ATCCGCTCCG	N	C	Y	A	A	A	A	C	G	G
656079	A	DEL	T	C	DEL	T	C	N	A	A	A	A	C	G	G
656080	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656081	A	DEL	T	N	DEL	T	C	C	A	A	A	A	C	G	G
656082	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656083	A	DEL	T	C	N	T	C	C	A	A	A	A	C	G	G
656086	N	T	T	N	DEL	T	C	C	A	A	N	A	C	G	G
656087	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656089	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656090	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656093	A	DEL	C	C	ATCCGCTCCG	N	C	C	A	A	A	A	C	G	G
656094	A	N	C	C	ATCCGCTCCG	N	C	N	A	A	A	A	N	N	G
656095	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656096	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656100	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656101	A	DEL	T	N	DEL	T	C	C	A	A	A	A	C	G	G
656102	A	DEL	C	T	N	A	N	N	N	N	A	N	C	G	N
656103	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656104	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656105	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	A
656106	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656107	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656108	A	DEL	T	C	N	W	N	C	N	N	A	N	C	G	N
656109	A	T	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
656110	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	A
656111	A	DEL	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656112	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	A	A	A	C	G	G
656113	A	DEL	C	T	ATCCGCTCCG	A	T	C	A	N	A	A	C	G	G

656114	A	DEL	Y	C	DEL	T	C	C	A	A	A	A	C	G	G
656115	A	T	C	C	ATCCGCTCCG	T	C	Y	A	A	A	A	C	G	G
656116	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656117	A	T	T	C	DEL	T	C	C	A	A	A	A	C	G	G
656118	A	T	T	C	N	T	N	C	N	N	A	N	C	G	N
Marker ID	S6_57048727	S6_57048766	S6_57049108	S6_57049169	S6_57049184	S6_57049241	S6_57049318	S6_57049320	S6_57054656	S6_57054908	S6_57056736	S7_55486664	S7_55486691	S7_55486754	S9_49164319
Marker	C/A	T/C	A/T	G/A	A/G	DEL /C	T/G	DEL /A	G/T	DEL /T	DEL /A	T/C	DEL /G	G/A	GCT /DEL
34911	C	T	A	G	A	C.DEL	N	A	G	T	A	N	G	G	DEL
48770	C	T	A	G	A	DEL	K	A	G	T	A	T	G	G	DEL
152651	C	T	A	G	A	C.DEL	T	A	G	T	A	T	G	G	DEL
533750	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533752	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL
533754	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
533755	C	T	A	G	A	N	T	A	G	T	A	T	G	G	DEL
533757	C	T	A	G	A	C.DEL	N	A	N	N	A	N	N	G	DEL
533758	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
533759	C	T	A	G	A	N	T	A	G	T	A	N	N	G	DEL
533760	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
533761	C	T	A	G	A	C	T	A	G	T	A	N	G	G	N
533762	N	T	N	G	N	N	T	A	G	T	A	T	N	G	N
533766	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533769	N	N	N	A	N	N	N	DEL	T	DEL	DEL	Y	N	N	N
533776	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533785	C	T	A	G	A	C.DEL	T	A	G	T	A	N	G	G	DEL
533788	C	T	A	G	A	C	N	A	G	T	A	N	G	G	DEL
533792	A	C	T	N	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
533794	C	T	A	G	A	DEL	T	A	T	DEL	DEL	N	N	G	DEL

533800	C	T	A	G	A	C.DEL	T	A	G	T	A	N	G	G	DEL
533807	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
533821	C	T	A	G	A	C	T	A	G	T	A	C	DEL	G	GCT
533822	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533824	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
533833	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533838	C	T	A	N	A	C	T	A	G	T	A	N	G	G	DEL
533839	C	T	A	G	A	N	T	A	G	DEL	A	C	N	G	DEL
533841	C	T	A	G	A	C.DEL	T	A	G	T	A	N	N	G	DEL
533842	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL
533843	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
533845	C	T	A	G	A	DEL	N	A	G	T	A	N	G	G	DEL
533852	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533855	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533856	C	T	A	G	A	C.DEL	T	A	G	T	A	N	G	G	DEL
533863	C	T	A	G	A	C.DEL	N	A	G	T	A	T	G	G	DEL
533866	C	T	A	G	A	N	T	A	G	T	A	N	G	N	DEL
533869	C	T	A	G	A	DEL	N	A	G	T	A	N	G	G	DEL
533871	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533876	C	T	A	N	A	C.DEL	T	A	G	T	DEL	N	N	G	DEL
533877	C	T	A	G	A	C.DEL	T	A	G	T	A	N	G	G	DEL
533901	C	T	A	G	A	C.DEL	T	A	G	T	A	N	G	G	DEL
533902	M	T	A	R	R	C.DEL	K	DEL.A	N	N	A	T	G	G	GCT.DEL
533910	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
533911	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533912	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL
533913	C	T	A	G	A	C	N	A	T	DEL	DEL	N	G	G	DEL
533919	A	C	A	A	G	DEL	G	DEL	G	DEL	A	T	G	G	DEL
533924	N	C	N	A	N	DEL	G	DEL	G	DEL	A	N	N	G	N
533936	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL
533937	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533938	C	T	A	G	A	N	N	A	G	T	A	C	DEL	G	DEL
533939	C	T	A	G	A	N	T	A	G	T	A	N	G	G	GCT
533940	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533943	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
533948	C	N	A	G	A	N	N	A	G	T	A	N	G	N	DEL

533955	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
533956	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
533957	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
533961	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
533962	A	N	T	A	G	N	N	DEL	T	DEL	DEL	N	N	N	DEL
533964	C	T	A	G	A	C.DEL	T	A	G	T	A	N	N	G	DEL
533965	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
533967	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
533970	C	T	A	G	A	N	T	A	G	T	A	N	N	G	DEL
533972	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
533976	C	T	A	G	A	C	N	A	G	T	A	T	G	G	DEL
533979	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
533980	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
533985	C	T	A	G	A	N	T	A	G	T	A	T	G	G	DEL
533986	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533987	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533989	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
533991	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533996	C	T	A	G	A	N	T	A	G	T	A	N	G	G	GCT
533997	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
533998	C	T	A	G	A	DEL	T	A	G	T	A	N	N	G	DEL
534009	C	T	A	G	A	C.DEL	N	A	G	T	A	N	G	G	DEL
534021	C	T	A	G	A	N	T	A	G	DEL	A	N	G	G	DEL
534037	N	T	A	G	A	N	T	A	G	T	A	N	N	G	N
534054	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
534063	C	T	A	G	A	C.DEL	N	A	G	T	A	N	G	G	DEL
534070	C	T	A	G	A	C.DEL	T	A	G	T	A	T	G	G	DEL
534075	C	N	A	G	A	N	N	A	G	T	A	N	G	N	DEL
534079	C	T	A	G	A	C.DEL	N	A	G	T	A	N	N	G	DEL
534088	C	T	A	G	A	N	N	A	G	T	A	N	N	G	DEL
534096	C	T	A	G	A	DEL	T	N	G	N	A	C	DEL	G	DEL
534097	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
534099	A	C	N	A	G	DEL	G	DEL	N	N	DEL	N	G	G	DEL
534101	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
534104	A	C	T	A	G	DEL	G	DEL	T	DEL	N	N	G	G	DEL
534105	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL

534108	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
534112	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
534114	C	T	A	G	A	C	T	A	G	T	A	T	G	G	DEL
534115	C	T	N	G	A	DEL	T	A	T	DEL	DEL	N	N	G	DEL
534116	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL
534117	C	T	A	G	A	N	T	A	G	T	A	C	N	G	N
534123	A	C	A	A	G	DEL	G	DEL	G	DEL	A	N	G	G	DEL
534124	A	C	A	A	G	DEL	G	DEL	G	DEL	A	N	G	G	DEL
534127	A	C	A	A	G	DEL	G	DEL	G	DEL	A	N	G	G	DEL
534128	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
534132	C	T	A	G	A	C	T	A	G	T	A	T	N	A	DEL
534135	C	T	A	G	A	C	T	A	G	T	A	T	G	G	DEL
534137	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
534138	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	N	G	DEL
534139	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL
534144	C	T	A	N	A	N	T	A	G	T	A	N	G	G	GCT
534145	C	N	A	N	G	DEL	K	A	G	DEL	A	N	N	G	DEL
534155	C	N	A	G	A	N	N	A	G	T	A	N	G	N	DEL
534157	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
534163	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
534167	C	N	A	G	A	N	N	A	G	DEL	A	N	G	N	DEL
542718	A	C	A	A	G	DEL	G	DEL	G	DEL	A	N	G	G	DEL
548797	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
552856	C	T	A	G	A	DEL	T	A	T	DEL	DEL	N	G	G	DEL
552861	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	N	G	DEL
561071	C	T	A	G	A	C.DEL	T	A	G	T	A	N	N	G	DEL
561472	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
564164	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	T	G	A	DEL
564165	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	T	G	N	DEL
576332	C	T	A	N	A	DEL	T	A	G	DEL	A	N	G	G	DEL
576333	C	T	A	G	A	DEL	T	A	G	T	A	N	N	G	DEL
576340	C	T	A	N	A	N	T	A	G	T	A	N	G	G	DEL
576345	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
576347	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
576348	A	C	A	A	G	DEL	G	A	G	DEL	A	N	G	G	DEL
576349	A	C	A	A	G	DEL	G	A	G	DEL	A	N	G	G	DEL

576350	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
576352	C	T	A	G	A	DEL	T	DEL	G	T	A	N	G	G	DEL
576359	C	T	A	G	A	DEL	N	A	G	T	A	N	G	G	DEL
576364	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
576366	C	T	A	G	A	C	N	A	G	T	A	N	G.DEL	G	GCT
576373	C	T	N	G	A	C.DEL	T	A	N	N	A	N	G.DEL	G	N
576375	C	T	A	G	A	N	T	A	N	N	A	N	G	G	DEL
576376	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
576380	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
576381	C	T	A	G	A	C	T	A	G	T	A	T	G	G	DEL
576385	C	T	A	G	A	C	T	A	G	T	A	T	G	G	DEL
576386	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
576387	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
576390	A	C	N	A	G	DEL	G	DEL	G	DEL	A	N	G	G	DEL
576391	C	T	A	G	A	DEL	N	A	G	T	A	T	G	N	GCT
576393	N	T	N	G	N	N	T	A	G	T	A	N	N	G	N
576394	C	T	A	G	A	DEL	T	A	G	T	A	N	N	G	DEL
576399	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
576418	C	T	A	G	A	C.DEL	T	A	G	T	A	N	G	G	DEL
576422	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
576425	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
576426	C	T	A	G	A	N	T	A	G	T	A	N	G	N	DEL
576428	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
576435	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	T	G	G	DEL
576437	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
585295	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
595699	C	T	A	G	A	C	T	A	G	T	A	N	G	G	N
595702	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
595714	C	T	A	G	A	DEL	T	A	G	T	A	N	N	G	DEL
595718	C	T	A	G	A	N	N	A	G	T	A	N	N	G	DEL
595720	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
595739	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
595740	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
595741	C	T	A	G	A	DEL	T	A	G	T	A	N	N	G	DEL
595743	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
595744	C	T	A	G	A	N	T	A	G	T	A	T	G	G	DEL

595745	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
597945	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
597946	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
597949	C	T	A	G	A	DEL	T	A	G	T	A	T	G	G	DEL
597950	C	N	A	N	A	N	N	A	G	T	A	N	N	N	GCT
597951	C	T	A	G	A	C.DEL	N	A	G	T	A	T	G	G	DEL
597952	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
597957	C	T	A	G	A	N	T	A	G	T	A	T	G	G	DEL
597960	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
597961	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	T	G	G	DEL
597964	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	T	G	G	DEL
597965	A	C	T	A	G	DEL	G	DEL	T	DEL	A	T	G	G	DEL
597966	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	T	G	G	DEL
597967	C	T	A	G	A	DEL	N	A	G	T	A	N	N	G	N
597968	C	T	A	G	A	DEL	N	A	G	T	A	T	G	G	DEL
597971	C	N	A	G	A	N	T	A	G	T	A	N	N	N	DEL
597972	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL
597973	C	T	A	G	A	C.DEL	T	A	G	T	A	N	N	G	DEL
597976	C	T	A	G	A	C.DEL	T	A	G	T	A	N	N	G	N
597980	A	C	T	A	G	DEL	G	DEL	G	T	DEL	T	G	G	DEL
597982	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
598069	C	N	A	G	A	N	N	A	G	T	A	T	G	N	DEL
598070	C	T	A	G	A	C.DEL	T	A	G	T	A	N	G	G	DEL
601816	C	T	A	G	A	DEL	T	A	G	T	N	N	G	G	DEL
609456	C	T	A	G	A	DEL	T	A	G	DEL	A	T	G	G	DEL
629034	C	T	A	N	A	C	N	A	G	T	A	N	N	G	DEL
629059	C	T	A	G	A	N	N	A	G	T	A	N	G.DEL	G	DEL
641874	C	T	A	G	A	C	T	A	G	T	A	N	G	N	DEL
642992	C	T	A	G	A	N	T	A	G	T	A	N	N	G	DEL
642998	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
651492	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	T	G	G	DEL
651496	C	T	A	G	A	N	T	A	G	T	A	T	G	G	DEL
653616	C	T	A	G	A	DEL	T	A	G	T	A	N	G	N	DEL
655970	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
655971	C	T	A	G	A	C.DEL	N	A	G	T	A	N	G	N	DEL
655972	C	T	A	G	A	DEL	N	A	G	T	A	N	N	G	DEL

655973	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
655974	C	T	A	G	A	N	N	A	G	T	A	N	N	G	DEL
655975	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
655976	C	T	A	G	A	DEL	T	A	G	T	A	N	N	G	N
655977	N	T	N	G	N	N	T	A	G	T	A	N	N	G	N
655978	N	T	N	G	N	N	T	A	G	T	A	T	N	G	N
655979	C	T	A	G	A	DEL	T	A	T	DEL	DEL	T	G	G	DEL
655980	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
655981	C	T	A	G	A	C.DEL	T	A	G	T	A	N	G	G	DEL
655982	C	T	A	G	A	DEL	T	A	T	DEL	DEL	N	G	G	N
655985	C	T	A	G	A	C	T	A	G	T	A	N	N	G	DEL
655986	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
655987	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
655988	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
655989	C	T	A	G	A	N	T	A	G	T	A	N	N	G	DEL
655990	C	T	A	G	A	N	T	A	G	T	A	N	N	A	DEL
655991	C	T	A	G	A	N	N	A	G	T	A	T	G	G	DEL
655992	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
655993	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
655995	A	C	A	A	G	DEL	G	DEL	G	T	A	N	G	G	DEL
655996	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
655997	C	T	A	G	A	N	N	A	G	T	A	N	G	N	DEL
655998	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
655999	C	T	A	G	A	C.DEL	T	A	G	T	A	N	G	G	DEL
656000	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656001	N	T	N	G	N	DEL	T	A	G	T	DEL	T	N	G	N
656003	C	T	A	G	A	C	T	A	G	T	A	T	G	G	DEL
656004	C	T	A	G	A	N	T	A	G	T	A	T	G	G	DEL
656011	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656012	C	T	A	G	A	C	T	A	G	T	A	N	N	A	DEL
656013	A	C	N	A	G	DEL	G	DEL	G	DEL	A	N	G	G	DEL
656015	C	T	A	G	A	C	N	A	G	T	A	N	G	G	DEL
656016	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656017	C	N	A	G	A	N	N	A	G	T	A	T	G	N	DEL
656018	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
656019	C	T	A	G	A	N	T	A	G	T	A	T	G	G	DEL

656022	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
656023	C	T	A	G	A	DEL	T	A	G	T	N	N	G	G	DEL
656024	A	N	N	A	G	N	N	DEL	T	DEL	DEL	N	G	N	DEL
656025	A	N	A	A	G	N	N	DEL	G	DEL	A	N	G	N	DEL
656026	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656027	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656028	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
656029	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
656030	C	T	A	G	A	N	T	A	G	T	A	T	G	N	DEL
656031	A	C	T	A	G	N	G	DEL	T	DEL	DEL	N	N	G	DEL
656032	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
656033	C	T	A	G	A	N	T	A	G	T	A	T	G	N	DEL
656034	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL
656035	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656036	A	N	T	N	G	N	N	DEL.A	T	DEL	DEL	N	N	N	DEL
656037	C	T	A	G	A	DEL	N	A	G	T	A	N	N	G	DEL
656038	C	T	A	G	A	N	T	A	G	T	A	N	N	G	DEL
656041	C	T	A	G	A	N	N	A	G	T	A	T	G	A	DEL
656043	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656044	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
656046	C	T	A	G	A	C	N	N	G	T	A	N	G	G	DEL
656047	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656048	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	GCT
656049	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
656050	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656051	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	N	G	DEL
656052	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
656053	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656055	A	C	T	A	G	DEL	G	DEL	T	DEL	N	N	G	G	DEL
656056	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	T	G	G	DEL
656058	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
656059	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL
656062	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656063	C	C	A	G	A	DEL	G	A	T	DEL	DEL	N	G	G	DEL
656064	A	T	T	A	G	DEL	T	DEL	T	DEL	DEL	N	G	G	DEL
656065	C	C	A	N	A	DEL	G	A	G	T	A	N	G	G	DEL

656066	C	C	A	G	A	N	G	A	G	T	A	N	G	G	DEL
656067	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
656068	C	C	A	G	A	DEL	G	A	G	T	A	N	G	G	DEL
656070	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
656071	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656072	C	T	A	G	A	DEL	T	A	G	T	A	N	G	G	DEL
656074	A	T	T	A	G	C	T	DEL	T	DEL	DEL	N	G	G	DEL
656075	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656076	A	T	T	A	G	C	N	DEL	T	DEL	DEL	N	G	G	DEL
656077	C	T	A	G	A	C	N	A	G	T	A	N	G	G	DEL
656078	C	T	A	G	A	N	N	A	G	DEL	A	N	N	G	DEL
656079	C	T	A	G	A	C.DEL	N	A	G	T	A	N	G	G	DEL
656080	C	T	A	G	A	DEL	N	A	G	T	A	N	N	G	DEL
656081	C	T	A	G	A	DEL	T	A	G	T	A	N	N	G	DEL
656082	C	T	A	G	A	C	T	A	G	T	A	T	N	G	DEL
656083	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL
656086	N	T	N	G	N	C	T	A	G	T	A	N	N	G	N
656087	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
656089	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
656090	C	T	A	G	A	DEL	T	A	G	T	A	N	G	A	DEL
656093	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
656094	C	T	A	N	A	N	N	A	G	T	A	N	G	G	DEL
656095	C	T	A	G	A	N	T	A	G	T	A	N	G	G	DEL
656096	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL
656100	C	T	A	G	A	N	N	A	G	T	A	N	G	G	GCT
656101	C	T	A	G	A	C	T	A	G	T	A	T	G	G	DEL
656102	A	N	T	A	G	N	N	DEL	T	DEL	DEL	T	G	N	DEL
656103	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
656104	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
656105	A	C	T	A	G	DEL	G	DEL	T	DEL	DEL	N	G	G	DEL
656106	C	T	A	G	A	DEL	N	A	G	T	A	N	G	G	DEL
656107	C	T	A	G	A	C	T	A	G	T	A	N	G	G	DEL
656108	C	N	A	G	A	N	N	A	G	T	A	N	G	N	GCT
656109	C	T	A	G	A	N	T	A	G	T	A	N	G	G	GCT
656110	C	N	A	N	R	DEL	G	A	G	DEL	A	N	G	G	DEL
656111	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL

656112	C	T	A	G	A	C	N	A	G	T	A	N	G	G	DEL
656113	C	T	A	G	A	N	N	A	G	T	A	N	G	G	DEL
656114	C	T	A	G	A	C	N	A	G	T	A	T	G	G	DEL
656115	C	T	A	G	A	DEL	T	A	G	DEL	A	T	G	G	DEL
656116	C	T	A	G	A	DEL	T	A	G	DEL	A	N	N	G	DEL
656117	C	T	A	G	A	DEL	N	A	G	T	A	N	G	G	DEL
656118	C	N	A	G	A	N	N	A	G	T	A	T	N	N	DEL

Marker ID	S9_5487822	S9_5487837	S9_5488006	S9_5489164	S10_50450927	S10_50450740	S10_50450406	S10_50449032	S10_50448366
Marker	C/T	C/T	T/A	DEL /A	G/A	DEL /A	C/T	G/A	A/G
34911	C	C	T	N	G	A	C	G	A
48770	T	T	A	A	G	A	C	G	A
152651	C	C	T	A	G	A	C	G	A
533750	C	C	T	A	G	DEL	C	A	G
533752	C	C	T	DEL	G	A	C	G	A
533754	C	C	T	A	G	A	C	A	A
533755	C	C	T	DEL	R	A	C	A	A
533757	C	C	T	A	G	A	C	G	A
533758	T	T	N	A	G	A	C	G	A
533759	C	C	T	N	G	A	C	G	A
533760	C	C	T	DEL	G	A	C	G	A
533761	C	C	T	A	G	A	C	G	A
533762	C	C	N	DEL	N	A	C	A	A
533766	C	C	T	A	G	A	C	A	A
533769	C	C	N	DEL	N	A	N	G	A
533776	C	C	T	A	G	DEL	C	A	G
533785	C	C	T	A	G	A	C	G	A
533788	C	C	T	A	G	A	C	A	A
533792	C	C	T	N	G	A	C	A	N

533948	T	T	N	A	G	A	N	G	A
533955	T	T	W	A	G	A	C	G	A
533956	C	C	T	A	G	A	C	A	A
533957	C	C	T	A	G	DEL	C	A	G
533961	C	C	T	DEL	G	A	C	G	A
533962	C	N	T	A	G	A	N	G	A
533964	C	C	T	DEL	G	A	C	G	A
533965	C	N	T	N	G	A	C	G	A
533967	C	C	T	A	G	A	C	G	A
533970	C	C	T	A	G	A	C	G	A
533972	C	C	T	A	G	A	C	G	A
533976	C	C	T	DEL	G	A	C	G	A
533979	T	T	A	A	G	A	C	G	A
533980	C	C	T	N	G	A	C	G	A
533985	C	C	T	A	G	A	C	G	A
533986	C	C	T	A	G	A	C	G	A
533987	C	C	T	A	G	A	C	G	A
533989	C	C	T	A	G	A	C	G	A
533991	C	N	T	A	G	A	C	G	A
533996	C	N	T	A	G	A	C	G	A
533997	T	N	A	A	G	A	N	G	A
533998	C	C	T	A	G	A	C	G	A
534009	C	C	T	A	G	A	C	A	A
534021	T	T	A	A	G	A	C	G	A
534037	C	C	N	A	G	A	C	G	A
534054	T	T	W	A	G	A	C	A	A
534063	C	C	T	A	G	A	C	G	A
534070	C	C	T	A	G	A	C	G	A
534075	C	C	T	A	G	A	N	G	A
534079	C	N	T	DEL	G	A	C	G	A
534088	C	N	T	A	G	A	C	G	A
534096	N	C	T	A	G	A	C	A	A
534097	C	C	T	A	G	A	C	G	A
534099	C	C	T	DEL	G	A	C	G	A
534101	C	C	T	A	G	A	C	G	A
534104	C	C	T	A	G	N	C	G	A

534105	T	T	N	A	G	A	C	G	A
534108	C	C	T	A	G	A	C	G	A
534112	C	C	T	A	G	A	C	G	A
534114	T	T	N	A	G	A	C	G	A
534115	C	C	T	A	G	A	C	G	A
534116	C	N	T	A	G	A	C	G	A
534117	T	N	A	A	G	A	C	A	A
534123	C	C	T	A	G	DEL	C	A	G
534124	C	C	T	A	G	DEL	C	A	G
534127	C	C	T	A	G	A	C	G	A
534128	C	C	T	A	G	A	C	G	A
534132	C	C	T	A	G	A	C	A	A
534135	T	T	A	A	G	A	C	G	A
534137	T	T	A	A	G	A	C	G	A
534138	C	C	T	A	G	A	C	G	A
534139	C	C	N	A	G	A	C	G	A
534144	T	N	W	N	G	N	C	N	N
534145	C	C	T	A	G	A	C	G	A
534155	C	C	T	A	G	DEL	N	A	G
534157	C	C	T	DEL	G	A	C	G	A
534163	T	T	A	A	G	A	C	G	A
534167	T	T	A	A	G	A	N	A	A
542718	C	C	T	A	G	A	C	G	A
548797	C	C	T	DEL	G	A	C	G	A
552856	C	C	T	DEL	G	A	C	G	A
552861	T	T	N	A	G	A	C	G	A
561071	C	C	N	A	G	A	C	G	A
561472	C	N	T	DEL	G	A	C	G	A
564164	T	T	A	A	G	A	C	G	A
564165	T	T	A	A	G	A	C	G	A
576332	C	N	W	N	G	N	C	N	N
576333	T	T	W	A	G	A	C	G	A
576340	C	N	A	N	G	N	C	N	N
576345	C	T	W	A	G	A	C	G	A
576347	T	C	T	A	G	A	C	G	A
576348	T	C	T	A	G	A	T	A	A

576349	C	C	T	DEL	G	A	N	A	A
576350	C	T	N	A	G	A	C	G	A
576352	C	T	A	A	G	A	C	G	A
576359	C	C	T	A	G	A	C	G	A
576364	C	Y	W	A	G	A	C	G	A
576366	C	N	T	DEL	G	A	C	A	A
576373	T	T	N	A	G	A	C	G	A
576375	C	N	T	A	G	N	C	G	A
576376	C	C	T	A	G	A	C	A	A
576380	C	C	N	DEL	G	A	C	G	A
576381	T	T	A	A	G	A	C	A	A
576385	T	T	A	A	G	A	C	G	A
576386	C	C	T	DEL	G	A	C	A	A
576387	C	C	N	A	G	N	C	G	A
576390	C	C	T	A	G	A	C	A	A
576391	C	C	T	A	G	A	C	G	A
576393	C	C	N	A	N	DEL	C	A	G
576394	T	T	A	A	G	A	C	G	A
576399	C	N	W	A	G	A	C	G	A
576418	C	C	T	A	G	A	C	G	A
576422	T	T	A	A	G	A	C	G	A
576425	C	C	T	A	G	N	C	A	A
576426	C	C	T	A	G	A	C	A	A
576428	T	T	A	A	G	A	C	G	A
576435	C	C	T	A	G	A	C	G	A
576437	T	T	A	A	G	A	C	G	A
585295	C	C	T	DEL	G	A	C	G	A
595699	C	C	T	A	G	A	C	A	A
595702	N	Y	A	A	G	A	C	A	A
595714	C	C	T	DEL	G	A	C	G	A
595718	C	C	T	A	G	A	C	G	A
595720	C	C	T	A	G	A	C	A	A
595739	C	C	T	DEL	G	A	C	G	A
595740	T	T	A	A	G	A	C	G	A
595741	T	T	N	A	G	A	C	G	A
595743	T	T	A	A	G	A	C	G	A

595744	C	C	T	A	G	A	C	G	A
595745	C	C	T	DEL	G	A	C	G	A
597945	C	C	T	A	G	A	C	A	A
597946	C	C	T	DEL	G	A	C	G	A
597949	C	C	T	A	G	A	C	G	A
597950	C	N	T	N	G	N	N	N	N
597951	C	C	T	A	G	A	C	G	A
597952	C	C	T	DEL	G	A	C	G	A
597957	C	C	T	A	G	A	C	G	A
597960	C	C	T	A	G	A	C	G	A
597961	C	C	T	A	G	A	C	G	A
597964	C	C	T	A	G	A	C	G	A
597965	C	C	T	DEL	G	A	C	G	A
597966	C	C	T	DEL	G	A	C	G	A
597967	C	C	T	DEL	G	A	C	G	A
597968	C	C	T	A	G	A	C	G	A
597971	C	C	N	A	G	A	N	G	A
597972	C	C	T	A	G	A	C	A	A
597973	C	C	T	A	G	A	C	A	A
597976	C	C	T	A	G	A	C	G	A
597980	C	C	T	A	G	A	C	G	A
597982	C	C	T	DEL	G	A	C	G	A
598069	C	C	T	DEL	G	A	N	A	A
598070	C	C	T	DEL	G	A	C	A	A
601816	C	C	T	DEL	G	A	C	G	A
609456	C	C	T	A	G	A	C	A	A
629034	C	N	T	N	G	N	C	N	N
629059	T	T	N	A	G	A	C	G	A
641874	C	C	T	A	G	A	C	G	A
642992	C	C	T	DEL	G	A	C	G	A
642998	N	N	N	N	N	N	N	N	N
651492	C	C	T	A	G	A	C	G	A
651496	T	T	A	A	G	A	C	G	A
653616	T	T	A	A	G	A	C	G	A
655970	T	T	A	A	G	A	C	G	A
655971	C	C	T	A	G	A	C	G	A

655972	T	T	A	A	G	A	C	G	A
655973	C	C	T	A	G	A	C	G	A
655974	T	T	A	A	G	A	C	G	A
655975	T	T	A	A	G	A	C	G	A
655976	T	T	A	A	G	A	C	G	A
655977	C	C	N	DEL	N	A	C	G	A
655978	C	C	N	A	N	A	C	G	A
655979	T	T	A	A	G	A	C	G	A
655980	T	T	A	A	G	A	C	G	A
655981	C	C	T	A	G	A	C	A	A
655982	T	T	A	A	G	A	C	G	A
655985	C	C	T	A	G	A	C	G	A
655986	C	C	T	A	G	A	C	G	A
655987	T	T	N	A	G	A	C	G	A
655988	T	T	A	A	G	A	C	G	A
655989	T	T	N	A	G	A	C	G	A
655990	T	T	A	A	G	A	C	G	A
655991	T	T	A	A	G	A	N	G	A
655992	N	N	A	A	G	A	C	G	A
655993	T	T	A	A	G	A	C	G	A
655995	T	T	A	A	G	A	C	G	A
655996	C	C	T	A	G	A	C	G	A
655997	T	T	A	A	G	A	C	G	A
655998	C	C	T	A	G	A	C	G	A
655999	C	C	T	DEL	G	A	C	A	A
656000	C	C	T	DEL	G	A	C	G	A
656001	T	T	N	A	N	A	C	A	A
656003	C	C	T	A	G	A	C	G	A
656004	C	C	T	A	G	A	C	G	A
656011	C	C	T	A	G	A	C	G	A
656012	C	C	T	A	G	A	C	G	A
656013	C	C	T	A	G	A	C	G	A
656015	C	C	T	A	G	A	C	G	A
656016	T	T	A	A	G	A	C	G	A
656017	C	C	T	A	G	A	N	G	A
656018	T	T	A	A	G	A	C	G	A

656019	C	C	T	A	G	A	C	G	A
656022	T	T	A	A	G	A	C	G	A
656023	T	T	A	A	G	A	C	A	A
656024	C	C	T	A	G	A	N	G	A
656025	C	C	T	A	G	A	N	G	A
656026	C	C	T	DEL	G	A	C	G	A
656027	C	C	T	DEL	G	A	C	G	A
656028	T	T	A	A	G	N	C	G	A
656029	T	T	A	A	G	A	C	A	A
656030	C	C	T	A	G	A	C	G	A
656031	C	C	T	DEL	G	A	C	G	A
656032	T	T	A	A	G	A	C	G	A
656033	C	C	T	A	G	A	C	G	A
656034	C	C	T	DEL	G	A	C	G	A
656035	C	C	T	DEL	G	A	C	G	A
656036	C	N	T	N	G	N	N	N	N
656037	C	C	T	A	G	A	C	G	A
656038	N	T	A	A	G	A	C	A	A
656041	C	C	T	A	G	A	C	G	A
656043	C	C	T	DEL	G	N	C	G	A
656044	C	C	T	DEL	G	A	C	G	A
656046	C	C	T	A	G	A	C	G	A
656047	C	C	T	DEL	G	A	C	G	A
656048	C	C	T	A	G	A	C	A	A
656049	Y	N	A	A	G	A	C	G	A
656050	C	C	T	DEL	G	A	C	G	A
656051	C	C	T	A	G	A	C	G	A
656052	C	C	T	A	G	A	C	G	A
656053	C	C	T	A	G	A	C	G	A
656055	C	C	T	DEL	G	A	C	G	A
656056	C	C	T	DEL	G	A	C	G	A
656058	C	C	T	A	G	A	C	G	A
656059	T	T	A	A	G	A	C	G	A
656062	C	C	T	A	G	A	C	G	A
656063	T	T	N	A	G	A	C	G	A
656064	T	T	N	A	G	A	C	G	A

656065	C	N	T	N	G	N	C	N	N
656066	C	C	T	A	G	A	C	A	A
656067	N	N	N	N	N	N	N	N	N
656068	C	C	T	A	G	A	C	A	A
656070	N	N	N	N	N	N	N	N	N
656071	C	C	T	A	G	A	C	G	A
656072	C	C	T	DEL	N	A	C	A	A
656074	C	C	T	A	G	A	C	G	A
656075	C	C	T	A	G	A	C	G	A
656076	T	T	A	A	G	A	C	G	A
656077	T	N	N	A	G	A	C	A	A
656078	C	C	T	A	G	A	C	A	A
656079	C	C	T	A	G	A	C	A	A
656080	T	T	A	A	G	A	C	G	A
656081	T	T	A	A	G	A	C	G	A
656082	C	C	T	A	G	A	C	A	A
656083	T	T	A	A	G	A	C	G	A
656086	C	C	N	A	N	A	C	G	A
656087	C	C	T	A	G	A	C	G	A
656089	C	C	T	A	G	A	C	G	A
656090	C	C	N	A	G	A	C	A	A
656093	C	C	N	A	G	N	C	A	A
656094	C	N	T	N	G	N	C	N	N
656095	C	C	T	A	G	A	C	A	A
656096	C	C	T	A	G	N	C	G	A
656100	T	T	A	A	G	A	C	A	A
656101	C	C	T	A	G	A	C	G	A
656102	T	T	A	A	G	A	N	G	A
656103	C	C	T	A	G	A	C	G	A
656104	C	C	T	A	G	A	C	G	A
656105	C	C	T	A	G	A	C	G	A
656106	C	C	T	DEL	G	N	C	G	A
656107	C	C	T	DEL	G	A	C	G	A
656108	C	C	T	A	G	A	N	A	A
656109	Y	T	W	A	G	A	C	G	A
656110	C	C	T	A	G	A	C	A	A

656111	T	T	A	A	G	A	C	A	A
656112	T	T	A	A	G	A	C	G	A
656113	C	C	T	A	G	A	C	G	A
656114	C	C	T	A	G	A	C	G	A
656115	C	C	T	A	G	A	C	A	A
656116	T	C	N	A	G	A	C	A	A
656117	C	C	T	N	G	A	C	A	A
656118	C	C	T	A	G	A	N	G	A

DEL: deletion; N: missing data

Physical position of SNPs was determined using Phytozome v1.4.

Supplemental Table S3. Analysis of variance for all traits.

Trait	Source	DF	F Value	P > F
Internode Number	Loc	2	365.69	<.0001
	rep(Loc)	3	5.75	0.0007
	Genotype	314	47.3	<.0001
	Loc*Genotype [†]	598	3.85	<.0001
Seed Number	Loc	2	13.53	<.0001
	rep(Loc)	3	3.12	0.0255
	Genotype	312	19.57	<.0001
	Loc*Genotype [†]	599	2.45	<.0001
Tiller Number	Loc	2	61.88	<.0001
	rep(Loc)	3	2.26	0.0797
	Genotype	314	7.79	<.0001
	Loc*Genotype [†]	592	2	<.0001
Plant Height	Loc	2	368.11	<.0001
	rep(Loc)	3	1.56	0.1969
	Genotype	314	307.33	<.0001
	Loc*Genotype [†]	599	3.38	<.0001
Panicle Exsertion	Loc	2	33.16	<.0001
	rep(Loc)	3	0.79	0.4974
	Genotype	314	41.79	<.0001
	Loc*Genotype [†]	593	2.4	<.0001
Panicle Length	Loc	2	54.1	<.0001
	rep(Loc)	3	1.89	0.1299
	Genotype	314	99.21	<.0001
	Loc*Genotype [†]	599	2.16	<.0001
Stem Circumference	Loc	2	48.27	<.0001
	rep(Loc)	3	4.19	0.0059
	Genotype	314	15.77	<.0001
	Loc*Genotype [†]	598	2.06	<.0001
Flowering Time	Loc	2	458.57	<.0001
	rep(Loc)	3	0.89	0.4481
	Genotype	271	25.37	<.0001
	Loc*Genotype [†]	528	1.81	<.0001
Leaf Angle	Loc	2	5.96	0.0027
	rep(Loc)	3	1.64	0.1786
	Genotype	307	22.47	<.0001
	Loc*Genotype [†]	601	1.14	0.041

[†] Percentage of the variance explained by Loc*Genotype effect: 6% for flowering time, 1% for leaf angle, 3% for panicle length, 8% for panicle exsertion, 2% for plant height, 15% for seed number, 14% for internode number, 13% for stem circumference and 19% for tiller number.

Supplemental Table S4. Summary of GWAS results for all traits (obtained using MLM).

Trait	Chr	Marker	R ²	q value	P value	Previously identified QTL Region		Reference	
						Begin	End		
Plant Height	6	S6_39106643	0.203	1.26×10 ⁻⁸	7.71×10 ⁻¹²	3173639	44975172	Brown et al., 2006 Nagaraja Reddy et al., 2013	
		S6_31120662	0.117	4.88×10 ⁻⁵	2.67×10 ⁻⁷				
	9	S9_14291470	0.139	2.57×10 ⁻⁶	6.51×10 ⁻⁹	NR		Brown et al., 2008 Nagaraja Reddy et al., 2013	
		S9_57175732	0.225	8.25×10 ⁻¹⁰	2.09×10 ⁻¹³	57140000	57210000		
		S9_57236778	0.290	4.64×10 ⁻¹⁴	3.79×10 ⁻¹⁹	57219361	57656063		
		S9_57836978	0.161	4.94×10 ⁻⁸	4.2×10 ⁻¹¹	NR			
		S9_58005176	0.192	2.84×10 ⁻⁹	9.98×10 ⁻¹³	NR			
Leaf Angle	1	S1_48277144	0.111	3.09×10 ⁻³	4.73×10 ⁻⁷	NR		Hart et al., 2001	
	3	S3_4342278	0.108	3.09×10 ⁻³	3.23×10 ⁻⁷	NR			
	6	S6_15123197	0.092	3.09×10 ⁻³	4.76×10 ⁻⁷	NR			
		S6_31100085	0.106	3.09×10 ⁻³	4.48×10 ⁻⁷	NR			
		S6_54776546	0.100	3.09×10 ⁻³	3.29×10 ⁻⁷	NR			
	7	S7_58181673	0.099	3.09×10 ⁻³	3.93×10 ⁻⁷	56624926	61171968		
		S7_58576095	0.081	3.98×10 ⁻³	6.4×10 ⁻⁷				
		S7_59818811	0.152	2.98×10 ⁻⁴	5.72×10 ⁻⁹				
	9	S9_864973	0.110	3.09×10 ⁻³	3.92×10 ⁻⁷	NR			
	Panicle Length	3	S3_788281	0.125	2.43×10 ⁻³	4.85×10 ⁻⁸	NR		
			S3_9911168	0.109	2.43×10 ⁻³	2.95×10 ⁻⁸	NR		
5		S5_55647865	0.120	6.62×10 ⁻³	3.12×10 ⁻⁷	NR			
7		S7_58395536	0.117	8.73×10 ⁻³	8.72×10 ⁻⁷	58285987	61171968	Brown et al., 2006 Hart et al., 2001 Srinivas et al., 2009 Nagaraja Reddy et al., 2013	
		S7_59261924	0.091	9.95×10 ⁻³	1.69×10 ⁻⁶				
		S7_59503360	0.139	6.99×10 ⁻³	4.19×10 ⁻⁷				
		S7_60382080	0.110	6.61×10 ⁻³	3.30×10 ⁻⁷				
10		S10_6013765	0.094	7.04×10 ⁻³	4.92×10 ⁻⁷	NR			
	S10_57621898	0.093	8.17×10 ⁻³	6.53×10 ⁻⁷	NR				

Tiller Number	1	S1_17311466	0.090	7.77×10 ⁻³	1.55×10 ⁻⁶	NR			
		S1_51507363	0.090	7.77×10 ⁻³	1.30×10 ⁻⁶	46755967	53605463	Adam et al., 2014 Feltus et al., 2006	
			S1_71203776	0.107	7.77×10 ⁻³	5.87×10 ⁻⁷	NR		
	3		S3_3639209	0.098	7.77×10 ⁻³	9.61×10 ⁻⁷	NR		
			S3_3096177	0.091	7.77×10 ⁻³	9.63×10 ⁻⁷	NR		
			S3_13487377	0.095	7.77×10 ⁻³	1.12×10 ⁻⁶	NR		
			S3_60076113	0.139	7.77×10 ⁻³	1.42×10 ⁻⁶	NR		
	4	S4_52740396	0.112	7.77×10 ⁻³	1.77×10 ⁻⁶	48576873	58285987	Adam et al., 2014	
	8		S8_4234625	0.116	7.62×10 ⁻³	2.12×10 ⁻⁷	NR		
			S8_5681713	0.091	7.77×10 ⁻³	1.02×10 ⁻⁶	NR		
			S8_46335653	0.089	7.77×10 ⁻³	1.28×10 ⁻⁶	NR		
			S8_47476046	0.118	7.04×10 ⁻³	6.68×10 ⁻⁸	NR		
			S8_51386455	0.130	7.77×10 ⁻³	1.61×10 ⁻⁶	NR		
	9		S9_6448226	0.092	7.77×10 ⁻³	1.60×10 ⁻⁶	NR		
			S9_15312879	0.139	7.77×10 ⁻³	1.34×10 ⁻⁶	NR		
	10		S10_51271757	0.142	7.77×10 ⁻³	1.67×10 ⁻⁶	NR		
			S10_51495808	0.144	7.62×10 ⁻³	2.17×10 ⁻⁷	NR		
Flowering Time	5	S5_51577750	0.157	2.54×10 ⁻²	1.01×10 ⁻⁶	18472314	55039064	Nagaraja Reddy et al., 2013	
	8		S8_6907738	0.123	2.54×10 ⁻²	5.92×10 ⁻⁷	NR		
			S8_49721204	0.123	2.54×10 ⁻²	6.76×10 ⁻⁷	NR		
	9	S9_52325578	0.126	2.54×10 ⁻²	4.20×10 ⁻⁷	NR			
	10	S10_54425412	0.130	2.54×10 ⁻²	8.94×10 ⁻⁷	54507175	60949262	LD with [Hart et al., 2001]	
Seed Number	6		S6_57048727	0.091	3.80×10 ⁻²	1.32×10 ⁻⁶	NR		
			S6_57049108	0.081	3.80×10 ⁻²	1.45×10 ⁻⁶			
			S6_57049169	0.078	4.60×10 ⁻²	6.82×10 ⁻⁶			
			S6_57049184	0.080	4.60×10 ⁻²	6.17×10 ⁻⁶			
			S6_57049320	0.080	2.70×10 ⁻²	5.95×10 ⁻⁷			

Seed Number	10	<i>S10_51660432</i>	0.096	3.80×10^{-2}	1.67×10^{-6}	NR		
Internode Number	1	<i>S1_6300266</i>	0.099	6.29×10^{-2}	4.46×10^{-6}	NR		
	2	<i>S2_36682369</i>	0.121	6.29×10^{-2}	7.76×10^{-7}	NR		
	5	<i>S5_51577750</i>	0.134	6.29×10^{-2}	3.10×10^{-6}	NR	-	
	6	<i>S6_42703814</i>	0.091	6.29×10^{-2}	5.98×10^{-6}			
		<i>S6_42726564</i>	0.096	6.29×10^{-2}	6.47×10^{-6}	NR		
		<i>S6_42764790</i>	0.102	6.29×10^{-2}	1.69×10^{-6}			
		<i>S6_45929612</i>	0.143	6.29×10^{-2}	7.08×10^{-6}	NR		
	8	<i>S8_49721204</i>	0.102	6.29×10^{-2}	5.27×10^{-6}	NR		
	9	<i>S9_5964485</i>	0.104	6.29×10^{-2}	4.69×10^{-6}	NR		
		<i>S9_52325578</i>	0.100	6.29×10^{-2}	4.94×10^{-6}	NR		
Panicle Exsertion	1	<i>S1_54743734</i>	0.100	3.11×10^{-2}	3.26×10^{-6}	NR		
		<i>S1_64973389</i>	0.089	3.50×10^{-2}	6.62×10^{-6}	55123963	66750018	Klein et al., 2001
	2	<i>S2_59616119</i>	0.106	1.59×10^{-2}	5.05×10^{-7}	NR		
	3	<i>S3_3578141</i>	0.076	3.22×10^{-2}	4.57×10^{-6}	NR		
		<i>S3_59444402</i>	0.103	3.57×10^{-2}	7.27×10^{-6}	57927181	60207298	Feltus et al., 2006
	6	<i>S6_51565039</i>	0.086	3.13×10^{-2}	4.15×10^{-6}	NR		
		<i>S6_52243597</i>	0.116	1.13×10^{-2}	2.13×10^{-7}	NR		
		<i>S6_60117699</i>	0.090	3.11×10^{-2}	3.21×10^{-6}	NR		
	7	<i>S7_55229509</i>	0.094	2.93×10^{-2}	2.22×10^{-6}	NR		
		<i>S7_58733063</i>	0.118	1.13×10^{-2}	1.49×10^{-7}	NR		
	9	<i>S9_57836978</i>	0.084	3.11×10^{-2}	3.53×10^{-6}	NR		
		<i>S9_58005176</i>	0.097	1.59×10^{-2}	9.81×10^{-7}	NR		
	10	<i>S10_35739185</i>	0.099	3.29×10^{-2}	4.98×10^{-6}	NR		
		<i>S10_55333956</i>	0.089	3.11×10^{-2}	3.17×10^{-6}	NR		
Stem Circumference	1	<i>S1_4086776</i>	0.080	1.13×10^{-1}	1.06×10^{-5}	NR		
		<i>S1_4119134</i>	0.065	1.13×10^{-1}	3.23×10^{-5}	NR		
		<i>S1_7130136</i>	0.082	1.13×10^{-1}	1.91×10^{-5}	NR		

Stem Circumference	1	<i>S1_58977109</i>	0.065	1.13×10^{-1}	4.19×10^{-5}	NR	
	2	<i>S2_739664</i>	0.082	1.13×10^{-1}	3.00×10^{-5}	NR	
		<i>S2_3757857</i>	0.073	1.13×10^{-1}	1.58×10^{-5}	NR	
	3	<i>S3_2451843</i>	0.070	1.13×10^{-1}	1.45×10^{-5}	NR	
		<i>S3_2472883</i>	0.067	1.13×10^{-1}	2.27×10^{-5}	NR	
		<i>S3_4294991</i>	0.058	1.13×10^{-1}	4.17×10^{-5}	NR	
		<i>S3_4390904</i>	0.055	1.13×10^{-1}	4.59×10^{-5}	NR	
		<i>S3_4969227</i>	0.072	1.13×10^{-1}	2.46×10^{-5}	NR	
		<i>S3_10032457</i>	0.082	1.13×10^{-1}	4.70×10^{-5}	NR	
		<i>S3_10079727</i>	0.062	1.13×10^{-1}	4.16×10^{-5}	NR	
		<i>S3_10210662</i>	0.073	1.13×10^{-1}	4.86×10^{-5}	NR	
		<i>S3_10238627</i>	0.081	1.13×10^{-1}	8.11×10^{-6}	NR	
		<i>S3_10263132</i>	0.071	1.13×10^{-1}	3.87×10^{-5}	NR	
		<i>S3_53254054</i>	0.069	1.13×10^{-1}	4.22×10^{-5}	NR	
		<i>S3_57496346</i>	0.091	1.13×10^{-1}	1.85×10^{-5}	NR	
		<i>S3_62746406</i>	0.064	1.13×10^{-1}	4.84×10^{-5}	NR	
		<i>S3_64700033</i>	0.079	1.13×10^{-1}	2.59×10^{-5}	NR	
	3	<i>S3_71474582</i>	0.076	1.13×10^{-1}	1.02×10^{-5}	NR	
		<i>S3_71533774</i>	0.092	1.13×10^{-1}	1.76×10^{-5}	NR	
		<i>S3_71864054</i>	0.071	1.13×10^{-1}	1.51×10^{-5}	NR	
	4	<i>S4_1497814</i>	0.102	1.13×10^{-1}	4.27×10^{-5}	NR	
		<i>S4_11552920</i>	0.122	1.13×10^{-1}	1.94×10^{-5}	NR	
		<i>S4_55448299</i>	0.065	1.13×10^{-1}	2.96×10^{-5}	55850000	55950000 LD with [Zou et al., 2012]
	5	<i>S5_53680290</i>	0.100	1.13×10^{-1}	4.49×10^{-5}	NR	
	7	<i>S7_2948882</i>	0.087	1.13×10^{-1}	3.28×10^{-5}	NR	
		<i>S7_44723826</i>	0.079	1.13×10^{-1}	3.01×10^{-5}	NR	
		<i>S7_59261924</i>	0.067	1.13×10^{-1}	4.06×10^{-5}	59450000	59550000 LD with [Zou et al., 2012]
	8	<i>S8_5330018</i>	0.080	1.13×10^{-1}	1.84×10^{-5}	NR	
	8	<i>S8_6637105</i>	0.079	1.13×10^{-1}	1.50×10^{-5}	NR	

Stem Circumference	8	<i>S8_51210480</i>	0.098	1.13×10^{-1}	1.68×10^{-5}	NR
		<i>S10_3692625</i>	0.082	1.13×10^{-1}	3.29×10^{-6}	NR
	10	<i>S10_4557334</i>	0.079	1.13×10^{-1}	1.61×10^{-5}	NR
		<i>S10_60905954</i>	0.064	1.13×10^{-1}	4.71×10^{-5}	NR

Markers/regions overlapping with previously identified QTL are highlighted in yellow.

Markers/regions outside of known QTL regions but in LD with them are indicated in purple.

NR indicates newly identified SNP/region.

Physical position of SNPs was determined using Phytozome v1.4.

Supplemental Table S5. Summary of GWAS results uniquely identified using GLM.

Trait	Chr	Marker	R^2	q value	p value	Previously identified QTL Region		Reference
						Begin	End	
Panicle Exsertion	6	<i>S6_50076783</i>	0.096	1.13×10^{-3}	1.96×10^{-07}			NR
	7	<i>S7_55192577</i>	0.113	5.07×10^{-4}	1.75×10^{-08}			NR
		<i>S7_55484074</i>	0.100	1.1×10^{-3}	1.79×10^{-07}			NR
	8	<i>S8_44384377</i>	0.094	1.1×10^{-3}	1.33×10^{-07}			NR
	9	<i>S9_57957443</i>	0.105	1.1×10^{-3}	1.21×10^{-07}			NR
	10	<i>S10_1409344</i>	0.135	1.1×10^{-3}	1.01×10^{-07}			NR
Flowering time	1	<i>S1_6693744</i>	0.142	1.82×10^{-4}	7.58×10^{-09}			NR
	3	<i>S3_4495200</i>	0.169	4.04×10^{-5}	4.29×10^{-10}			NR
Internode number	3	<i>S3_10820974</i>	0.157	4.09×10^{-3}	3.62×10^{-07}			NR
	4	<i>S4_66398511</i>	0.105	2.59×10^{-3}	1.69×10^{-07}			NR
	8	<i>S8_47566683</i>	0.138	2.59×10^{-3}	5.67×10^{-08}			NR
	9	<i>S9_5579398</i>	0.098	5.9×10^{-3}	9.18×10^{-07}			NR
Leaf angle	6	<i>S6_14800774</i>	0.148	1.42×10^{-7}	1.50×10^{-11}			NR
		<i>S6_15946838</i>	0.159	1.39×10^{-7}	1.13×10^{-11}			NR
		<i>S6_27031083</i>	0.143	1.39×10^{-7}	8.0×10^{-12}			NR
		<i>S6_28672419</i>	0.167	5.05×10^{-8}	1.19×10^{-12}			NR
		<i>S6_34331229</i>	0.156	1.39×10^{-7}	1.30×10^{-11}			NR
Panicle length	2	<i>S2_12075851</i>	0.213	4.19×10^{-7}	3.09×10^{-11}			NR
	5	<i>S5_53850782</i>	0.369	1.26×10^{-9}	1.55×10^{-14}			NR
	7	<i>S7_61928412</i>	0.134	1.37×10^{-6}	1.78×10^{-10}	56624926	63754887	Hart et al., 2001
		<i>S7_62484190</i>	0.137	1.76×10^{-6}	3.03×10^{-10}			
Stem circumference	1	<i>S1_72437626</i>	0.120	3.5×10^{-6}	5.39×10^{-10}			NR
		<i>S1_72569239</i>	0.136	1.98×10^{-6}	5.09×10^{-11}			NR

Tiller Number	2	<i>S2_71792891</i>	0.127	2.01×10^{-6}	1.03×10^{-10}	NR
	3	<i>S3_5779933</i>	0.194	1.52×10^{-6}	1.96×10^{-11}	NR
	6	<i>S6_59370519</i>	0.117	3.1×10^{-6}	3.98×10^{-10}	NR
	8	<i>S8_37735289</i>	0.113	2.55×10^{-6}	2.29×10^{-10}	NR
	1	<i>S1_13349644</i>	0.158	4.67×10^{-5}	3.34×10^{-9}	NR
		<i>S1_13831837</i>	0.110	4.88×10^{-5}	4.08×10^{-9}	NR
	8	<i>S8_47476046</i>	0.127	4.56×10^{-5}	1.09×10^{-9}	NR
	1	<i>S1_50283671</i>	0.085	2.25×10^{-4}	3.39×10^{-8}	NR
		<i>S1_50747127</i>	0.154	5.68×10^{-5}	4.01×10^{-9}	NR
	2	<i>S2_70404546</i>	0.099	2.25×10^{-4}	3.39×10^{-8}	NR
Seed Number	3	<i>S3_58386533</i>	0.094	1.31×10^{-4}	1.1×10^{-8}	NR
		<i>S3_58594366</i>	0.108	1.31×10^{-4}	1.39×10^{-8}	NR
	4	<i>S4_6945677</i>	0.116	1.95×10^{-5}	9.16×10^{-10}	NR
	6	<i>S6_54397150</i>	0.111	7.47×10^{-6}	1.04×10^{-10}	53666870
						54514114

Nagaraja Reddy et al., 2013

Markers/regions overlapping with previously identified QTL are highlighted in yellow.

NR indicates newly identified SNP/region.

Physical position of SNPs was determined using Phytozome v1.4.

Supplemental Table S6. Association analysis results for all Gibberellin (GA) biosynthesis and signaling candidate genes. One marker with the lowest *P* and *q* value for each GA gene is listed for all traits.

Trait	Chr	Marker	R ²	P value	q value	Gene	Marker Technology
SN	1	<i>S1_462670</i>	0.033	0.015	0.419	<i>Gibberellin 20-oxidase</i>	GBS
SN	1	<i>S1_584187</i>	0.033	0.038	0.500	<i>Gibberellin 3-oxidase</i>	GBS
SN	1	<i>S1_9420573</i>	0.003	0.626	0.802	<i>DELLA protein</i>	GBS
SN	1	<i>S1_12952253</i>	0.017	0.107	0.599	<i>Phytochrome-associated protein 4</i>	GBS
SN	1	<i>S1_26914874</i>	0.023	0.026	0.465	<i>Ent-copalyl diphosphate synthase</i>	SQNM
SN	2	<i>S2_420288</i>	0.006	0.255	0.683	<i>Gibberellin 2-oxidase</i>	GBS
SN	2	<i>S2_4376818</i>	0.018	0.035	0.494	<i>Gibberellin 20-oxidase</i>	GBS
SN	3	<i>S3_4286019</i>	0.021	0.041	0.507	<i>Gibberellin 3-oxidase</i>	GBS
SN	3	<i>S3_9288785</i>	0.002	0.470	0.758	<i>RING-box protein</i>	SQNM
SN	3	<i>S3_16765764</i>	0.020	0.106	0.599	<i>Gibberellin 2-oxidase</i>	GBS
SN	3	<i>S3_60650660</i>	0.011	0.287	0.692	<i>Gibberellic acid methyltransferase 1</i>	GBS
SN	3	<i>S3_69378415</i>	0.025	0.027	0.471	<i>Gibberellin 20-oxidase</i>	SQNM
SN	4	<i>S4_53752188</i>	0.036	0.006	0.352	<i>F-box protein GID2</i>	SQNM
SN	4	<i>S4_57923252</i>	0.054	0.004	0.323	<i>Cullin-1</i>	SQNM
SN	6	<i>S6_52092501</i>	0.017	0.086	0.579	<i>Gibberellin 2-oxidase</i>	GBS
SN	6	<i>S6_57049320</i>	0.087	5.95×10 ⁻⁷	0.027	<i>Ent-kaurene synthase</i>	SQNM
SN	6	<i>S6_57056736</i>	0.046	1.24×10 ⁻⁴	0.187	<i>Ent-kaurene synthase</i>	SQNM
SN	7	<i>S7_55486754</i>	0.015	0.087	0.580	<i>UFO-binding protein 1</i>	SQNM
SN	9	<i>S9_3387990</i>	0.000	0.969	0.858	<i>Phytochrome-associated protein 3</i>	GBS
SN	9	<i>S9_5489164</i>	0.002	0.488	0.764	<i>Gibberellin 2-oxidase</i>	SQNM
SN	9	<i>S9_53324845</i>	0.000	0.945	0.857	<i>Cytochrome P450 714D1</i>	GBS
SN	9	<i>S9_54884991</i>	0.008	0.332	0.712	<i>Gibberellin 2-oxidase</i>	GBS
SN	9	<i>S9_57266896</i>	0.003	0.639	0.804	<i>Gibberellin 2-oxidase</i>	GBS
SN	10	<i>S10_615886</i>	0.014	0.131	0.621	<i>Ent-kaurenoic acid oxidase</i>	GBS
SN	10	<i>S10_50453939</i>	0.008	0.408	0.739	<i>Ent-kaurene oxidase</i>	SQNM
Ht	1	<i>S1_462224</i>	0.001	0.598	0.717	<i>Gibberellin 20-oxidase</i>	GBS
Ht	1	<i>S1_577229</i>	0.011	0.166	0.470	<i>Gibberellin 3-oxidase</i>	GBS

Ht	1	<i>S1_9422612</i>	0.033	0.027	0.206	<i>DELLA protein</i>	GBS
Ht	1	<i>S1_12950371</i>	0.017	0.077	0.343	<i>Phytochrome-associated protein 4</i>	GBS
Ht	1	<i>S1_26916453</i>	0.002	0.787	0.768	<i>Ent-copalyl diphosphate synthase</i>	SQNM
Ht	2	<i>S2_420288</i>	0.001	0.598	0.717	<i>Gibberellin 2-oxidase</i>	GBS
Ht	2	<i>S2_4376643</i>	0.016	0.108	0.398	<i>Gibberellin 20-oxidase</i>	GBS
Ht	3	<i>S3_4290756</i>	0.043	0.001	0.029	<i>Gibberellin 3-oxidase</i>	GBS
Ht	3	<i>S3_9288955</i>	0.015	0.040	0.251	<i>RING-box protein</i>	SQNM
Ht	3	<i>S3_16765764</i>	0.028	0.055	0.292	<i>Gibberellin 2-oxidase</i>	GBS
Ht	3	<i>S3_60650660</i>	0.028	0.039	0.247	<i>Gibberellic acid methyltransferase 1</i>	GBS
Ht	3	<i>S3_69378263</i>	0.007	0.161	0.465	<i>Gibberellin 20-oxidase</i>	SQNM
Ht	4	<i>S4_53756499</i>	0.003	0.672	0.738	<i>F-box protein GID2</i>	SQNM
Ht	4	<i>S4_57923252</i>	0.005	0.642	0.730	<i>Cullin-1</i>	SQNM
Ht	6	<i>S6_52092827</i>	0.001	0.895	0.792	<i>Gibberellin 2-oxidase</i>	GBS
Ht	6	<i>S6_57048766</i>	0.008	0.128	0.426	<i>Ent-kaurene synthase</i>	SQNM
Ht	6	<i>S6_57056736</i>	0.010	0.092	0.373	<i>Ent-kaurene synthase</i>	SQNM
Ht	7	<i>S7_55484074</i>	0.017	0.025	0.199	<i>UFO-binding protein 1</i>	SQNM
Ht	9	<i>S9_3387212</i>	0.000	0.941	0.800	<i>Phytochrome-associated protein 3</i>	GBS
Ht	9	<i>S9_5482094</i>	0.002	0.514	0.689	<i>Gibberellin 2-oxidase</i>	SQNM
Ht	9	<i>S9_53326431</i>	0.025	0.058	0.299	<i>Cytochrome P450 714D1</i>	GBS
Ht	9	<i>S9_54884991</i>	0.058	0.001	0.022	<i>Gibberellin 2-oxidase</i>	GBS
Ht	9	<i>S9_57266896</i>	0.147	9.1×10^{-10}	0.000	<i>Gibberellin 2-oxidase</i>	GBS
Ht	10	<i>S10_615886</i>	0.005	0.495	0.682	<i>Ent-kaurenoic acid oxidase</i>	GBS
Ht	10	<i>S10_50449032</i>	0.013	0.143	0.445	<i>Ent-kaurene oxidase</i>	SQNM
TN	1	<i>S1_462209</i>	0.007	0.342	0.508	<i>Gibberellin 20-oxidase</i>	GBS
TN	1	<i>S1_584187</i>	0.039	0.040	0.273	<i>Gibberellin 3-oxidase</i>	GBS
TN	1	<i>S1_9420573</i>	0.009	0.334	0.505	<i>DELLA protein</i>	GBS
TN	1	<i>S1_12952253</i>	0.048	0.002	0.078	<i>Phytochrome-associated protein 4</i>	GBS
TN	1	<i>S1_26914874</i>	0.013	0.127	0.348	<i>Ent-copalyl diphosphate synthase</i>	SQNM
TN	2	<i>S2_420288</i>	0.001	0.745	0.637	<i>Gibberellin 2-oxidase</i>	GBS
TN	2	<i>S2_4376643</i>	0.008	0.331	0.503	<i>Gibberellin 20-oxidase</i>	GBS

TN	3	S3_4286019	0.045	0.002	0.074	<i>Gibberellin 3-oxidase</i>	GBS
TN	3	S3_9288785	0.004	0.254	0.456	<i>RING-box protein</i>	SQNM
TN	3	S3_16765768	0.015	0.227	0.438	<i>Gibberellin 2-oxidase</i>	GBS
TN	3	S3_60650660	0.036	0.017	0.209	<i>Gibberellic acid methyltransferase 1</i>	GBS
TN	3	S3_69378415	0.051	0.001	0.058	<i>Gibberellin 20-oxidase</i>	SQNM
TN	4	S4_53752188	0.011	0.134	0.354	<i>F-box protein GID2</i>	SQNM
TN	4	S4_57923252	0.012	0.277	0.471	<i>Cullin-1</i>	SQNM
TN	6	S6_52092501	0.001	0.851	0.662	<i>Gibberellin 2-oxidase</i>	GBS
TN	6	S6_57049108	0.001	0.525	0.577	<i>Ent-kaurene synthase</i>	SQNM
TN	6	S6_57054908	0.001	0.674	0.621	<i>Ent-kaurene synthase</i>	SQNM
TN	7	S7_55486754	0.022	0.035	0.264	<i>UFO-binding protein 1</i>	SQNM
TN	9	S9_3387990	0.019	0.066	0.304	<i>Phytochrome-associated protein 3</i>	GBS
TN	9	S9_5489164	0.008	0.111	0.331	<i>Gibberellin 2-oxidase</i>	SQNM
TN	9	S9_53324845	0.054	0.000	0.042	<i>Cytochrome P450 714D1</i>	GBS
TN	9	S9_54884991	0.029	0.022	0.226	<i>Gibberellin 2-oxidase</i>	GBS
TN	9	S9_57266896	0.013	0.133	0.354	<i>Gibberellin 2-oxidase</i>	GBS
TN	10	S10_615886	0.017	0.107	0.329	<i>Ent-kaurenoic acid oxidase</i>	GBS
TN	10	S10_50453939	0.028	0.062	0.301	<i>Ent-kaurene oxidase</i>	SQNM
SC	1	S1_462241	0.058	0.001	0.174	<i>Gibberellin 20-oxidase</i>	GBS
SC	1	S1_577229	0.001	0.885	0.726	<i>Gibberellin 3-oxidase</i>	GBS
SC	1	S1_9422619	0.018	0.096	0.427	<i>DELLA protein</i>	GBS
SC	1	S1_12950758	0.065	0.001	0.170	<i>Phytochrome-associated protein 4</i>	GBS
SC	1	S1_26921352	0.028	0.014	0.288	<i>Ent-copalyl diphosphate synthase</i>	SQNM
SC	2	S2_420288	0.002	0.598	0.667	<i>Gibberellin 2-oxidase</i>	GBS
SC	2	S2_4376643	0.004	0.466	0.626	<i>Gibberellin 20-oxidase</i>	GBS
SC	3	S3_4290718	0.048	0.000	0.163	<i>Gibberellin 3-oxidase</i>	GBS
SC	3	S3_9288823	0.034	0.014	0.286	<i>RING-box protein</i>	SQNM
SC	3	S3_16765768	0.012	0.261	0.533	<i>Gibberellin 2-oxidase</i>	GBS
SC	3	S3_60650661	0.042	0.011	0.274	<i>Gibberellic acid methyltransferase 1</i>	GBS
SC	3	S3_69378415	0.032	0.007	0.247	<i>Gibberellin 20-oxidase</i>	SQNM

SC	4	<i>S4_53752188</i>	0.035	0.007	0.249	<i>F-box protein GID2</i>	SQNM
SC	4	<i>S4_57923252</i>	0.033	0.036	0.348	<i>Cullin-1</i>	SQNM
SC	6	<i>S6_52092501</i>	0.008	0.324	0.564	<i>Gibberellin 2-oxidase</i>	GBS
SC	6	<i>S6_57048727</i>	0.021	0.032	0.341	<i>Ent-kaurene synthase</i>	SQNM
SC	6	<i>S6_57054656</i>	0.000	0.825	0.714	<i>Ent-kaurene synthase</i>	SQNM
SC	7	<i>S7_55486754</i>	0.034	0.005	0.228	<i>UFO-binding protein 1</i>	SQNM
SC	9	<i>S9_3387412</i>	0.036	0.004	0.206	<i>Phytochrome-associated protein 3</i>	GBS
SC	9	<i>S9_5485728</i>	0.015	0.188	0.494	<i>Gibberellin 2-oxidase</i>	SQNM
SC	9	<i>S9_53332208</i>	0.021	0.032	0.340	<i>Cytochrome P450 714D1</i>	GBS
SC	9	<i>S9_54884991</i>	0.006	0.455	0.622	<i>Gibberellin 2-oxidase</i>	GBS
SC	9	<i>S9_57261485</i>	0.003	0.344	0.574	<i>Gibberellin 2-oxidase</i>	GBS
SC	10	<i>S10_615935</i>	0.033	0.008	0.251	<i>Ent-kaurenoic acid oxidase</i>	GBS
SC	10	<i>S10_50454613</i>	0.022	0.024	0.322	<i>Ent-kaurene oxidase</i>	SQNM
PE	1	<i>S1_462224</i>	0.005	0.311	0.515	<i>Gibberellin 20-oxidase</i>	GBS
PE	1	<i>S1_577229</i>	0.009	0.277	0.500	<i>Gibberellin 3-oxidase</i>	GBS
PE	1	<i>S1_9422612</i>	0.019	0.109	0.382	<i>DELLA protein</i>	GBS
PE	1	<i>S1_12950371</i>	0.028	0.018	0.210	<i>Phytochrome-associated protein 4</i>	GBS
PE	1	<i>S1_26916453</i>	0.026	0.025	0.231	<i>Ent-copalyl diphosphate synthase</i>	SQNM
PE	2	<i>S2_420288</i>	0.006	0.300	0.510	<i>Gibberellin 2-oxidase</i>	GBS
PE	2	<i>S2_4376818</i>	0.015	0.063	0.320	<i>Gibberellin 20-oxidase</i>	GBS
PE	3	<i>S3_4290756</i>	0.022	0.036	0.262	<i>Gibberellin 3-oxidase</i>	GBS
PE	3	<i>S3_9288955</i>	0.018	0.020	0.218	<i>RING-box protein</i>	SQNM
PE	3	<i>S3_16765764</i>	0.009	0.431	0.556	<i>Gibberellin 2-oxidase</i>	GBS
PE	3	<i>S3_60650660</i>	0.034	0.030	0.248	<i>Gibberellic acid methyltransferase 1</i>	GBS
PE	3	<i>S3_69378263</i>	0.017	0.028	0.243	<i>Gibberellin 20-oxidase</i>	SQNM
PE	4	<i>S4_53756499</i>	0.017	0.118	0.391	<i>F-box protein GID2</i>	SQNM
PE	4	<i>S4_57923252</i>	0.001	0.893	0.674	<i>Cullin-1</i>	SQNM
PE	6	<i>S6_52092827</i>	0.007	0.393	0.544	<i>Gibberellin 2-oxidase</i>	GBS
PE	6	<i>S6_57048766</i>	0.011	0.076	0.340	<i>Ent-kaurene synthase</i>	SQNM
PE	6	<i>S6_57054908</i>	0.012	0.054	0.303	<i>Ent-kaurene synthase</i>	SQNM

PE	7	<i>S7_55484074</i>	0.079	0.000	0.044	<i>UFO-binding protein 1</i>	SQNM
PE	9	<i>S9_3387212</i>	0.049	0.004	0.136	<i>Phytochrome-associated protein 3</i>	GBS
PE	9	<i>S9_5482094</i>	0.005	0.351	0.530	<i>Gibberellin 2-oxidase</i>	SQNM
PE	9	<i>S9_53326431</i>	0.075	0.000	0.076	<i>Cytochrome P450 714D1</i>	GBS
PE	9	<i>S9_54884991</i>	0.026	0.033	0.257	<i>Gibberellin 2-oxidase</i>	GBS
PE	9	<i>S9_57261485</i>	0.013	0.067	0.326	<i>Gibberellin 2-oxidase</i>	GBS
PE	10	<i>S10_615886</i>	0.043	0.005	0.142	<i>Ent-kaurenoic acid oxidase</i>	GBS
PE	10	<i>S10_50449032</i>	0.011	0.184	0.446	<i>Ent-kaurene oxidase</i>	SQNM
FT	1	<i>S1_462102</i>	0.008	0.493	0.711	<i>Gibberellin 20-oxidase</i>	GBS
FT	1	<i>S1_584187</i>	0.012	0.424	0.686	<i>Gibberellin 3-oxidase</i>	GBS
FT	1	<i>S1_9422612</i>	0.019	0.158	0.603	<i>DELLA protein</i>	GBS
FT	1	<i>S1_12950758</i>	0.073	0.003	0.215	<i>Phytochrome-associated protein 4</i>	GBS
FT	1	<i>S1_26914874</i>	0.038	0.008	0.320	<i>Ent-copalyl diphosphate synthase</i>	SQNM
FT	2	<i>S2_420288</i>	0.011	0.222	0.630	<i>Gibberellin 2-oxidase</i>	GBS
FT	2	<i>S2_4377486</i>	0.021	0.218	0.628	<i>Gibberellin 20-oxidase</i>	GBS
FT	3	<i>S3_4286019</i>	0.061	0.001	0.204	<i>Gibberellin 3-oxidase</i>	GBS
FT	3	<i>S3_9288955</i>	0.024	0.019	0.395	<i>RING-box protein</i>	SQNM
FT	3	<i>S3_16765768</i>	0.025	0.060	0.497	<i>Gibberellin 2-oxidase</i>	GBS
FT	3	<i>S3_60650660</i>	0.037	0.055	0.489	<i>Gibberellic acid methyltransferase 1</i>	GBS
FT	3	<i>S3_69377305</i>	0.007	0.428	0.688	<i>Gibberellin 20-oxidase</i>	SQNM
FT	4	<i>S4_53752145</i>	0.013	0.358	0.658	<i>F-box protein GID2</i>	SQNM
FT	4	<i>S4_57923252</i>	0.052	0.022	0.407	<i>Cullin-1</i>	SQNM
FT	6	<i>S6_52092501</i>	0.030	0.047	0.476	<i>Gibberellin 2-oxidase</i>	GBS
FT	6	<i>S6_57044261</i>	0.035	0.010	0.341	<i>Ent-kaurene synthase</i>	SQNM
FT	6	<i>S6_57054656</i>	0.007	0.209	0.625	<i>Ent-kaurene synthase</i>	SQNM
FT	7	<i>S7_55486754</i>	0.055	0.002	0.207	<i>UFO-binding protein 1</i>	SQNM
FT	9	<i>S9_3387990</i>	0.047	0.007	0.305	<i>Phytochrome-associated protein 3</i>	GBS
FT	9	<i>S9_5485729</i>	0.058	0.014	0.365	<i>Gibberellin 2-oxidase</i>	SQNM
FT	9	<i>S9_53324845</i>	0.016	0.140	0.589	<i>Cytochrome P450 714D1</i>	GBS
FT	9	<i>S9_54885754</i>	0.023	0.125	0.578	<i>Gibberellin 2-oxidase</i>	GBS

FT	9	<i>S9_57260889</i>	0.024	0.058	0.494	<i>Gibberellin 2-oxidase</i>	GBS
FT	10	<i>S10_615858</i>	0.013	0.122	0.576	<i>Ent-kaurenoic acid oxidase</i>	GBS
FT	10	<i>S10_50454613</i>	0.017	0.103	0.556	<i>Ent-kaurene oxidase</i>	SQNM
IN	1	<i>S1_462670</i>	0.033	0.031	0.528	<i>Gibberellin 20-oxidase</i>	GBS
IN	1	<i>S1_584187</i>	0.019	0.242	0.685	<i>Gibberellin 3-oxidase</i>	GBS
IN	1	<i>S1_9422612</i>	0.010	0.354	0.722	<i>DELLA protein</i>	GBS
IN	1	<i>S1_12952253</i>	0.032	0.040	0.540	<i>Phytochrome-associated protein 4</i>	GBS
IN	1	<i>S1_26914874</i>	0.018	0.094	0.611	<i>Ent-copalyl diphosphate synthase</i>	SQNM
IN	2	<i>S2_420288</i>	0.003	0.502	0.759	<i>Gibberellin 2-oxidase</i>	GBS
IN	2	<i>S2_4376643</i>	0.024	0.150	0.650	<i>Gibberellin 20-oxidase</i>	GBS
IN	3	<i>S3_4286019</i>	0.033	0.020	0.496	<i>Gibberellin 3-oxidase</i>	GBS
IN	3	<i>S3_9292355</i>	0.023	0.122	0.635	<i>RING-box protein</i>	SQNM
IN	3	<i>S3_16765768</i>	0.007	0.329	0.714	<i>Gibberellin 2-oxidase</i>	GBS
IN	3	<i>S3_60650660</i>	0.031	0.107	0.625	<i>Gibberellic acid methyltransferase 1</i>	GBS
IN	3	<i>S3_69377305</i>	0.006	0.438	0.745	<i>Gibberellin 20-oxidase</i>	SQNM
IN	4	<i>S4_53756922</i>	0.006	0.584	0.772	<i>F-box protein GID2</i>	SQNM
IN	4	<i>S4_57923252</i>	0.075	0.004	0.350	<i>Cullin-1</i>	SQNM
IN	6	<i>S6_52092501</i>	0.051	0.004	0.348	<i>Gibberellin 2-oxidase</i>	GBS
IN	6	<i>S6_57044227</i>	0.024	0.040	0.542	<i>Ent-kaurene synthase</i>	SQNM
IN	6	<i>S6_57056736</i>	0.002	0.533	0.766	<i>Ent-kaurene synthase</i>	SQNM
IN	7	<i>S7_55486754</i>	0.049	0.004	0.348	<i>UFO-binding protein 1</i>	SQNM
IN	9	<i>S9_3387990</i>	0.009	0.219	0.677	<i>Phytochrome-associated protein 3</i>	GBS
IN	9	<i>S9_5488006</i>	0.012	0.280	0.696	<i>Gibberellin 2-oxidase</i>	SQNM
IN	9	<i>S9_53332879</i>	0.011	0.396	0.733	<i>Cytochrome P450 714D1</i>	GBS
IN	9	<i>S9_54884991</i>	0.023	0.090	0.606	<i>Gibberellin 2-oxidase</i>	GBS
IN	9	<i>S9_57260889</i>	0.011	0.256	0.688	<i>Gibberellin 2-oxidase</i>	GBS
IN	10	<i>S10_615826</i>	0.015	0.113	0.629	<i>Ent-kaurenoic acid oxidase</i>	GBS
IN	10	<i>S10_50452521</i>	0.020	0.112	0.628	<i>Ent-kaurene oxidase</i>	SQNM
PL	1	<i>S1_462483</i>	0.005	0.621	0.559	<i>Gibberellin 20-oxidase</i>	GBS
PL	1	<i>S1_577229</i>	0.021	0.045	0.214	<i>Gibberellin 3-oxidase</i>	GBS

PL	1	<i>S1_9422612</i>	0.029	0.025	0.185	<i>DELLA protein</i>	GBS
PL	1	<i>S1_12952253</i>	0.053	0.001	0.063	<i>Phytochrome-associated protein 4</i>	GBS
PL	1	<i>S1_26927740</i>	0.030	0.015	0.160	<i>Ent-copalyl diphosphate synthase</i>	SQNM
PL	2	<i>S2_420288</i>	0.000	0.993	0.660	<i>Gibberellin 2-oxidase</i>	GBS
PL	2	<i>S2_4377486</i>	0.078	0.001	0.049	<i>Gibberellin 20-oxidase</i>	GBS
PL	3	<i>S3_4290718</i>	0.020	0.044	0.212	<i>Gibberellin 3-oxidase</i>	GBS
PL	3	<i>S3_9292303</i>	0.018	0.118	0.280	<i>RING-box protein</i>	SQNM
PL	3	<i>S3_16765764</i>	0.012	0.279	0.405	<i>Gibberellin 2-oxidase</i>	GBS
PL	3	<i>S3_60651796</i>	0.025	0.042	0.210	<i>Gibberellic acid methyltransferase 1</i>	GBS
PL	3	<i>S3_69377305</i>	0.010	0.221	0.367	<i>Gibberellin 20-oxidase</i>	SQNM
PL	4	<i>S4_53756922</i>	0.025	0.035	0.201	<i>F-box protein GID2</i>	SQNM
PL	4	<i>S4_57923252</i>	0.009	0.459	0.497	<i>Cullin-1</i>	SQNM
PL	6	<i>S6_52092827</i>	0.031	0.012	0.148	<i>Gibberellin 2-oxidase</i>	GBS
PL	6	<i>S6_57048727</i>	0.035	0.006	0.121	<i>Ent-kaurene synthase</i>	SQNM
PL	6	<i>S6_57056736</i>	0.013	0.049	0.219	<i>Ent-kaurene synthase</i>	SQNM
PL	7	<i>S7_55484074</i>	0.050	0.000	0.044	<i>UFO-binding protein 1</i>	SQNM
PL	9	<i>S9_3387869</i>	0.081	0.001	0.062	<i>Phytochrome-associated protein 3</i>	GBS
PL	9	<i>S9_5485728</i>	0.027	0.077	0.240	<i>Gibberellin 2-oxidase</i>	SQNM
PL	9	<i>S9_53332220</i>	0.027	0.024	0.183	<i>Cytochrome P450 714D1</i>	GBS
PL	9	<i>S9_54884988</i>	0.026	0.033	0.197	<i>Gibberellin 2-oxidase</i>	GBS
PL	9	<i>S9_57266896</i>	0.003	0.625	0.560	<i>Gibberellin 2-oxidase</i>	GBS
PL	10	<i>S10_615971</i>	0.049	0.001	0.064	<i>Ent-kaurenoic acid oxidase</i>	GBS
PL	10	<i>S10_50452521</i>	0.023	0.031	0.194	<i>Ent-kaurene oxidase</i>	SQNM
LA	1	<i>S1_462670</i>	0.029	0.034	0.204	<i>Gibberellin 20-oxidase</i>	GBS
LA	1	<i>S1_584187</i>	0.025	0.087	0.294	<i>Gibberellin 3-oxidase</i>	GBS
LA	1	<i>S1_9422612</i>	0.029	0.037	0.209	<i>DELLA protein</i>	GBS
LA	1	<i>S1_12950975</i>	0.031	0.015	0.151	<i>Phytochrome-associated protein 4</i>	GBS
LA	1	<i>S1_26914874</i>	0.034	0.005	0.092	<i>Ent-copalyl diphosphate synthase</i>	SQNM
LA	2	<i>S2_420288</i>	0.001	0.690	0.606	<i>Gibberellin 2-oxidase</i>	GBS
LA	2	<i>S2_4376818</i>	0.015	0.066	0.265	<i>Gibberellin 20-oxidase</i>	GBS

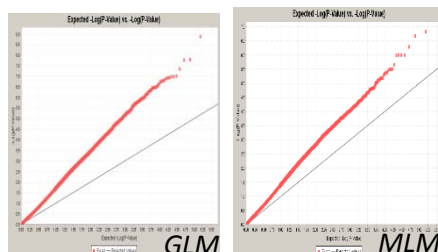
LA	3	S3_4287451	0.031	0.008	0.115	<i>Gibberellin 3-oxidase</i>	GBS
LA	3	S3_9288785	0.010	0.081	0.287	<i>RING-box protein</i>	SQNM
LA	3	S3_16765764	0.015	0.222	0.394	<i>Gibberellin 2-oxidase</i>	GBS
LA	3	S3_60650660	0.060	0.002	0.065	<i>Gibberellic acid methyltransferase 1</i>	GBS
LA	3	S3_69378415	0.010	0.243	0.408	<i>Gibberellin 20-oxidase</i>	SQNM
LA	4	S4_53752188	0.017	0.088	0.296	<i>F-box protein GID2</i>	SQNM
LA	4	S4_57923252	0.008	0.479	0.532	<i>Cullin-1</i>	SQNM
LA	6	S6_52092501	0.004	0.574	0.569	<i>Gibberellin 2-oxidase</i>	GBS
LA	6	S6_57041349	0.026	0.021	0.169	<i>Ent-kaurene synthase</i>	SQNM
LA	6	S6_57054908	0.001	0.509	0.544	<i>Ent-kaurene synthase</i>	SQNM
LA	7	S7_55486754	0.009	0.272	0.427	<i>UFO-binding protein 1</i>	SQNM
LA	9	S9_3386381	0.048	0.008	0.115	<i>Phytochrome-associated protein 3</i>	GBS
LA	9	S9_5484119	0.038	0.018	0.158	<i>Gibberellin 2-oxidase</i>	SQNM
LA	9	S9_53324845	0.032	0.011	0.132	<i>Cytochrome P450 714D1</i>	GBS
LA	9	S9_54884991	0.028	0.034	0.203	<i>Gibberellin 2-oxidase</i>	GBS
LA	9	S9_57266896	0.052	0.001	0.037	<i>Gibberellin 2-oxidase</i>	GBS
LA	10	S10_615886	0.030	0.021	0.168	<i>Ent-kaurenoic acid oxidase</i>	GBS
LA	10	S10_50454613	0.023	0.029	0.191	<i>Ent-kaurene oxidase</i>	SQNM

PE, panicle exertion; FT, flowering time; LA, leaf angle; SC, stem circumference; PH, plant height; SN, seed number; IN, internode number; TN, tiller number; PL, panicle length. Physical position of SNPs was determined using Phytozome v1.4.

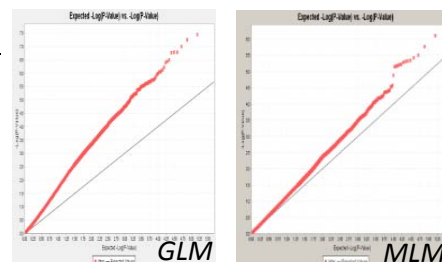
Supplemental Table S7. Candidate genes in the 1.67 Mb targeted interval on chromosome 7 associated with variation in leaf angle.

ID	Chr	Gene Begin	Gene End	Description	Reference
<i>Sb07g023360</i>	7	58294657	58295592	ZF-HD homeobox protein, putative, Response to abiotic stress, Response to ABA	Xu et al. 2014
<i>Sb07g023380</i>	7	58315159	58317795	CAMK_CAMK_like.38 - CAMK includes calcium/calmodulin depedent protein kinases, expressed	Yang and Komatsu 2000
<i>Sb07g023575</i>	7	58462919	58464082	AP2 domain containing protein, expressed	Jiang et al. 2012
<i>Sb07g023803</i>	7	58766072	58766443	AP2 domain containing protein, expressed	
<i>Sb07g024110</i>	7	59108697	59114721	UDP-N-acetylglucosamine--peptide N-acetylglucosaminyl transferase SPINDLY, putative, expressed	Shimada et al. 2006
<i>Sb07g024740</i>	7	59743463	59744100	OsSAUR36 - Auxin-responsive SAUR gene family member	Kant et al. 2009
<i>Sb07g024750</i>	7	59746707	59747144	OsSAUR36 - Auxin-responsive SAUR gene family member	

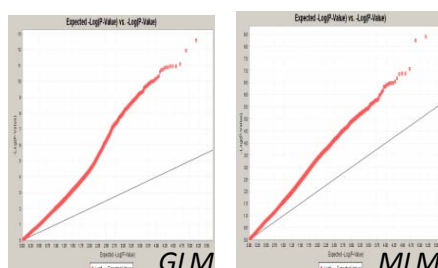
**Panicle
exsertion**



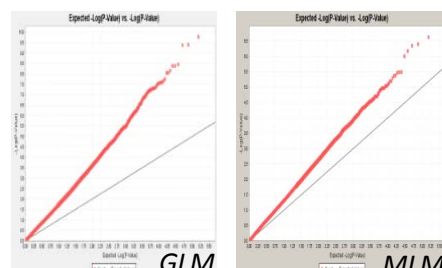
**Internode
Number**



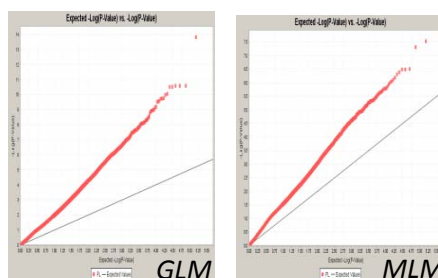
**Leaf
Angle**



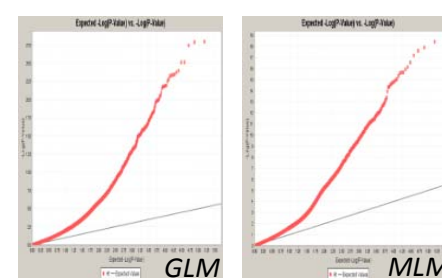
**Seed
Number**



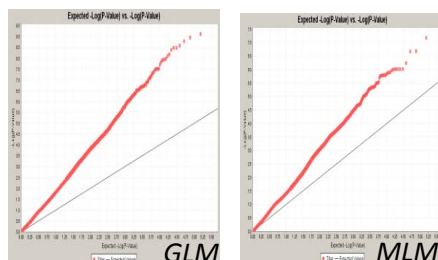
**Panicle
Length**



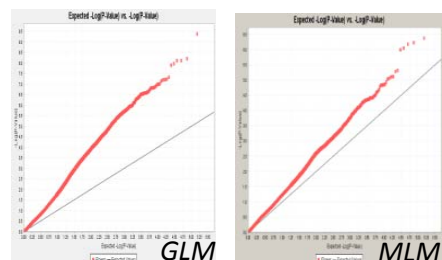
**Plant
Height**



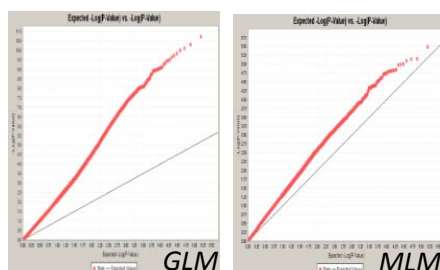
**Tiller
number**



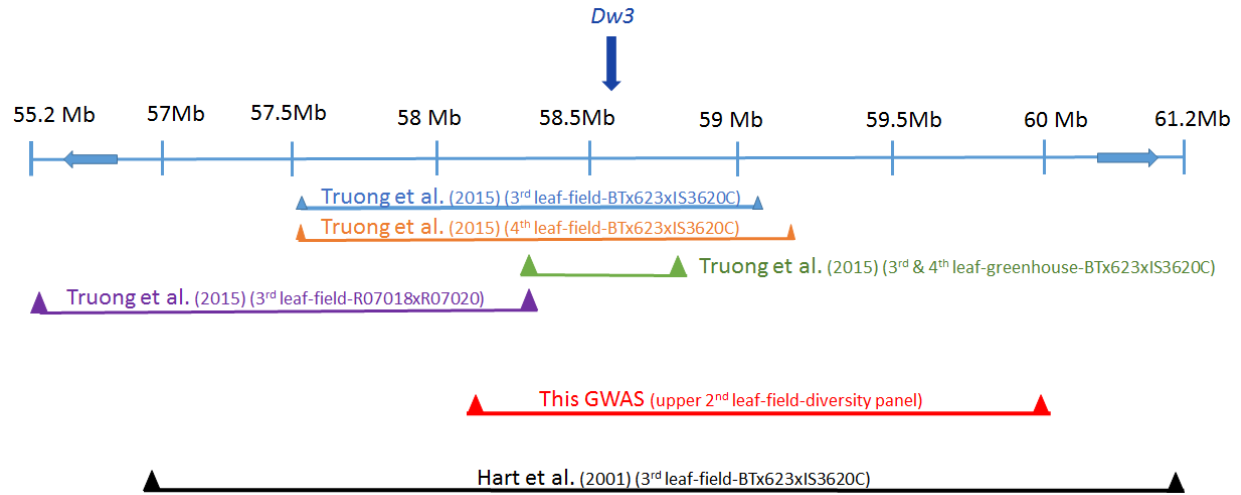
**Flowering
Time**



**Stem
Circumference**



Supplemental Figure S1. Comparison of QQ plots for general linear model (GLM) and mixed linear model (MLM) results for each trait.



Supplemental Figure S2. Comparative analysis of studies reporting QTL on chromosome 7 controlling variation in leaf angle. Detail information about population, leaf number and experimental conditions is indicated between brackets. Physical position of *Dw3* gene relative to QTL intervals is included.