

Synteny breaks in GS genome

GS Contig	Primers	Type of rearrangement	Genes involved	WB scaffold	Verified
3057	197-F1, 197-R1	Intrachromosomal translocation		CH991779	Yes, PCR and sequencing
	197-F1, 197-R2			CH991779	Yes, PCR
387	135-F1, 135-R1	Insertion of ORF in GS/M (GSMH7-1637) or deletion in WB/C6		CH991814	Yes, by PCR
3089	80-F1, 80-R1	Cluster of genes absent in GSM	GL50803_137608 VSP with INR GL50803_39305 Hypothetical protein GL50803_92835 VSP, putative GL50803_113491 VSP GL50803_41476 VSP GL50803_125106 Hypothetical protein GL50803_96055 VSP, putative	CH991779	Yes, PCR and sequencing
3091	249-F1, 249-R1	Inversion		CH991768	Yes, PCR and sequencing
3082	288-F1, 288-R1	Cluster of genes absent in GSM	GL50803_106010 Hypothetical protein GL50803_137742 Kinase, NEK GL50803_118483 Hypothetical protein GL50803_114470 High cysteine membrane protein Group 6 GL50803_29575 Hypothetical protein GL50803_118482 Kinase, NEK GL50803_137743 Hypothetical protein GL50803_137744 VSP	CH991782	Yes, PCR and sequencing
111	11-F1, 11-R1	Cluster of genes absent in GS/M	GL50803_93742 Variant-specific surface protein GL50803_104193 Hypothetical protein GL50803_31839 Hypothetical protein GL50803_7629 Hypothetical protein GL50803_93743 Hypothetical protein GL50803_7632 Hypothetical protein	CH991801	Yes, PCR and sequencing
1168	211-F1, 211-R1	Partial deletion of gene	GL50803_16318 High cysteine membrane protein Group 1	CH991767	Yes, PCR and sequencing
419	138-F1, 138-R1	Intrachromosomal translocation		CH991767	Yes, PCR and sequencing

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112	110-F1, 110-R1	Cluster of genes absent in GS/M	GL50803_32958 Protein kinase GL50803_4033 Protein kinase GL50803_92983 Protein 21.1 GL50803_13520 VSP GL50803_92985 Hypothetical protein GL50803_20912 Hypothetical protein	CH991779	Yes, PCR and sequencing
3092	556-F1, 556-R1	Inversion and cluster of genes absent in GS/M (other edge in contig244)	GL50803_103540 Hypothetical protein GL50803_27813 Protein 21.1 GL50803_Hypothetical protein GL50803_Hypothetical protein	CH991763	Yes, PCR and sequencing
3092	244-F1, 244-R1	Inversion and cluster of genes absent in GS/M (other edge in contig556)		CH991763	Yes, PCR and sequencing
647	159-F1, 159-R1	Two genes absent in GS/M	GL50803_31542 Hypothetical protein GL50803_14324 High cysteine protein	CH991782	Yes, PCR and sequencing
1538	245-F1, 245-R1	Interchromosomal translocation		CH991768 CH991767	Yes, PCR and sequencing
3093	118-F1, 118-R1	Gene absent in WB/C6	M-GL_GSMH7-2323 Hypothetical protein (Unique protein distantly related to Kinase, NEK)	CH991814	Yes, PCR and sequencing
3081	113-F1, 113-R1	Cluster of genes missing in GS/M	GL50803_1713 Protein 21.1 GL50803_24701 Hypothetical protein GL50803_115673 Hypothetical protein GL50803_117312 Hypothetical protein GL50803_11521 VSP GL50803_115439 Hypothetical protein GL50803_106057 Hypothetical protein GL50803_118786 VSP, putative GL50803_115438 Hypothetical protein GL50803_117311 Hypothetical protein GL50803_115672 Hypothetical protein	CH991768	Yes, PCR and sequencing
2481	467-F1, 467-R1	Cluster of genes missing in GS/M	GL50803_102841 Hypothetical protein GL50803_31911 Hypothetical protein GL50803_42698 Kinase, NEK GL50803_95847 Protein 21.1 GL50803_113433 Hypothetical protein GL50803_8595 VSP	CH991763	Yes, PCR and sequencing

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3067	C202F, C202R1	Interchromosomal translocation		CH991768 CH991767	Yes, PCR and sequencing
1431	235-F1, 235-R1	Interchromosomal translocation		CH991762 CH991771	Yes, PCR and sequencing
3095	326-F1, 326-R1	Cluster of genes missing in GS/M	GL50803_102444 Protein 21.1 GL50803_35621 Hypothetical protein GL50803_112518 Kinase, NEK GL50803_112519 Hypothetical protein	CH991767	Yes, PCR and sequencing
3065	237-F1, 237-R1	Insertion of three ORFs in GS/M (GSMH7-2671, -6128 and 1584 (Cathepsin B) or deletion in WB/C6		CH991782	Yes, PCR product (mixed)
3091	249-F3, 249-R3	Inversion		CH991768	Yes, PCR product (mixed)
3050	83-F1, 83-R1	Insertion of VSP in GS/M (GSMH7-4823) or deletion in WB/C6		CH991763	Yes, PCR product (mixed)
1987	286-F1, 286-R1	Cluster of genes missing in GS/M	GL50803_112693 VSP GL50803_112695 Hypothetical protein GL50803_112696 Hypothetical protein GL50803_98653 Hypothetical protein	CH991768	Yes, PCR product (mixed)

Putative misassembled regions

3046, 3047	474-F1, 474-R1	Synteny break in highly similar genes Protein disulfide isomerase	Miassembly between PDI-3, GL50803_14670 and PDI-5, GL50803_8064		Verified and corrected
3044, 3045	455-F1, 455-R1				
1036	PeroxiF, C196R	Synteny break in highly similar genes Peroxiredoxin 1	Putative missassembly between GL50803_14521 and GL50803_16076	CH991782 CH991776	Not verified
2609	PeroxiF, C592F				
1055	2-F1, 2-R1	Synteny break in highly similar genes Hypothetical protein	Putative missassembly between GL50803_115478 and GL50803_115479	CH991793	Not verified
2731	71-F1, 71-R1	Synteny break in highly similar genes Topoisomerase II - like	Putative missassembly between GL50803_16795 Topoisomerase II and GL50803_101906 SDK1		Not verified

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2460	445-F1, 445-R1	Synteny break in similar genes ABC transporter family proteins	Putative missassembly between GL50803_92223 and GL50803_8227		Not verified
2493		Synteny break in highly similar genes Acyl-CoA synthetase	Putative missassembly between GL50803_16667 and GL50803_86511		Not verified
3060, 3076	191-F1, 191-R1	Synteny break in highly similar genes, Histone H2A			Not verified

Regions that have not been verified

3079		Insertion of ORF in GS/M (GSMH7-5233) Na ⁺ driven multidrug efflux pump or deletion in WB/C6		CH991762	Not verified
2358		Insertion of ORF in GS/M (GSMH7-2895) Protein 21.1 or deletion in WB/C6		CH991782	Not verified
757	169-F1, 169-R1	Inversion		CH991779	Not verified
3091	249-F2, 249-R2	Inversion		CH991768	Not verified
1055	2-F2, 2-R2	Synteny break			Not verified
485	144-F1, 144-R1	Intrachromosomal translocation		CH991768	Not verified
2435	42-F1, 42-R1	Problematic region		CH991782	Not verified
2435	42-F2, 42-R2	Problematic region		CH991782	Not verified
3048, 3049	621-F1, 621-R1	Synteny break			Not verified
3054	69-F1, 69-R1	Deletion of GL50803_119672 in GS/M			Not verified
1420, 3063	F10217-F, 234Link1866	Should be paired			Not verified