

**Supplementary Table.** Primer sequences of all STS markers used

STS marker	Forward primer sequence (5'-3')	Reverse primer sequence (5'-3')	T <sub>M</sub> (°C)	PCR product
714_A01_212_T7	CTC TTG TTC AGG CAG AAG	GAG TCT CCT CTC TAA AGG	54	199 bp
714_A03_39_T7	TAG AGC ACC AAC CAT GTG	GTT CTA TTG GCA CCA TGG	54	462 bp
714_A05_46_T7	ACA AGC CCC TAG GTC AAC	GTA TTT GGG GCC TAC CTG	56	292 bp
714_B16_155_Sp6	AAG AAA AGG AAA AGG TTT GG	TGT TCT CGC AAA CAG TGA G	54	304 bp
714_B16_155_T7	CAT CAC AAC CCT CCT TTG	TGA GTC AGT GGG GTT AGC	54	259 bp
714_C02_171_SP6	GGT GGC ATG TGG CTT TGC	GGG TCA CAG TGT GGT CTG	58	418 bp
714_C05_183_T7	CGG GTG GAC TGA TTA TTT C	CAC CTG AAT TCA TGG ACA G	56	123 bp
714_C08_70_Sp6	ATG GTA CCC GAG CCA CAG	CTT GCT GCT TCT TCA CAT ATC	58	172 bp
714_C18_130_Sp6 (ITZ005)	TCC AGA CAA GTG AGA AAC AA	TTA ATT TAT AAT GCC TGG TCA	56	320 bp
714_C18_130_T7 (ITZ006)	ATC TGC GGA GAG GAA AAG	TCG TGT TTG TTG GAA TGT C	54	201 bp
714_D22_199_T7	TGG GGA CAA ACG CTT AGG	CCG ATT AAG AAG CCA CTC	56	514 bp
714_E17_112_Sp6 (ITZ007)	GTG ACT TGT AGA CCA CAG	CCT ACA GAG GGA GAA TCC	54	346 bp
714_E17_112_T7	GGC AGA TGA AAA GCA AGG	TCA TGA AGA CCT CCA TGC	54	517 bp
714_F04_202_T7	CCC CTT TCA CTG GCT CTG	GCC CAG GAG CTC AAG TAC	58	513 bp
714_F14_101_T7	ACT GGA TCC CTC GGT TAG	CCC GAG AGA GAC AAA AGG	56	207 bp
714_F14_138_Sp6	AGC TGA GTG GAC AGT TGG	TCC AGC TGT GTG GAG AAG	56	304 bp
714_F14_138_T7	GTG GAA ATG GAA GTG CAG	CCA AGA CAG CTC AGA TGC	54	315 bp
714_G05_113_Sp6 (ITZ012)	GTG GGG CCC TAT AAA GAC	CCG AGG GTC AAA TGT CTG	56	223 bp
714_G13_89_Sp6	GTT GGC AGG ACT GCT CTG	AAA GCC CTG TGC AGA AGG	58	128 bp
714_G13_89_T7	GGC CAG GGG AAT CAA GTG	GAG AAC CTC CAG CCT GTG	58	466 bp
714_G22_50_T7	TAA CCC CAA AGC GTA ACC	CTT TTG TGT CCC AGT TGC	54	154 bp
714_G22_81_Sp6	ATC TTC TGG GCC TCT CTG	GGG ACA GGA ATG AGG AAG	56	446 bp
714_G22_81_T7	ACT GTC CTT CTT GCT CC	GTC CAA AAA ACC AAG AGG	52	98 bp
714_H06_151_Sp6	CCT GAC AGC TGT GTC CTC	TCT GTT CCC CAG ACA CAC	58	214 bp
714_H06_151_T7 (ITZ010)	CAG ATT GGG ATG AAG CTC	TTA TCA ATC CCA ACA CAC C	54	114 bp
714_H06_5_T7	GTA ACC CTC ATG GGG GAG AC	CCT GGT CCA GGT GGC ACC T	64	131 bp
714_H08_5_Sp6	AGA CAG GCT CCG ATG AAG	AGA AAG GCT TCC CTG CTG	56	209 bp
714_H13_41_Sp6	CAC CTG ACC CCA CAA ATG AAC	TTT TCT TCG GAC GCT CCA GAG	64	334 bp
714_H13_41_T7	TGA GCG CCC AGA TCC ATG	GCA GGG GAT GCA GAG ATG	58	506 bp
714_H16_159_T7	AAG TGA TTC CAG CCA CTG	ATT GAT GGG TGG ATA GAG	54	127 bp
714_I05_215_SP6	GGA AAC TCC CTG TAA AGG	CCT CCA GCT ATT TCT AGG	54	150 bp
714_I11_51_Sp6	ATT GCT TGC CAG GCA GAG	CCC CCT TAT TGG GAC TTC	56	119 bp
714_I16_225_T7	GCC ATC AAC TTC CAA ATG	AAT TTG ACC GAG GAA AGG	52	278 bp
714_I17_138_T7	AAC AAA CAA CCT AGG GCC	CTC CCA CTT CCA ATC CTC	55	110 bp
714_I17_37_T7	AGG CTG AGC ACA CCC ATC	ACC AGA CCC CTG CAC TTG	58	412 bp

714_J03_209_Sp6	GCC CCT GAG GAC ATT ACC	ACC TAG GGC CCC TAA GTC	58	473 bp
714_J03_209_T7	ACT GCC TTT TAA CAT TGG	GAC AGC AAA CAA AAT GAG	50	364 bp
714_J09_28_T7	TAT TGC CAC CAT CCA ATG	TCA GGA TTG GCT TCT TTG	52	137 bp
714_K08_206_Sp6	CCA GGG CTT TGC TTC TAG	CGG GGG AAC ATT TGT GAC	56	222 bp
714_K08_206_T7	ACC CCA GAA TCC TCG TAC	AGA GCA GGA CAT AGC ATC	56	395 bp
714_K12_160_T7	TGG TGA CCA TTT CTC TGC	TGA ACA GGG CTG TTG AAG	54	291 bp
714_K13_61_Sp6 (ITZ001)	TAG CCT TTC CTG TGG AGG	ACA CAA AAG CAC ACA CCG	56	423 bp
714_L08_78_T7 (ITZ011)	AGA CGG GAA ATT GAG ACC	TCC CTG TGG CAG TAA ATG	54	345 bp
714_L20_221_Sp6	TGG AAG TCT TGA GCA CAG	AGA ACA CAG CCT GAT GTG	54	218 bp
714_L20_221_T7	CCA AAA TCC ACC CAG AAG C	TGC TTC CTG TGG GGA CAG	58	113 bp
714_M08_41_Sp6	TCC AAG ACA GAG CTT GAG	GGC AGT GAA TCA TGA GTC	54	135 bp
714_M08_41_T7	ATC TAG TCT GAA GAG CTC CC	GTT CGC AGA CGG GAC CTC	60	125 bp
714_M08_6_Sp6	GGA TTG TGT ACC TGG TAC	GAC CAC CAG GAA TAC TTC	54	496 bp
714_M08_6_T7	CGG GGT CCC TAT TTG TAT	TCT AGT TCC TTT CCC CTG	54	126 bp
714_M17_141_T7	AGA CTC TGC TGA GTG TTG	CCT CTC TGA AGC CTC AAG	54	458 bp
714_N01_50_Sp6	ACT GAT CTT CGG CCC TTG	CAA GGA TGC ACC CAA TCG	56	517 bp
714_N01_50_T7	GAG TTT CTG CAT CTG TTC	TCA ACG TTT TAT ATA ACC ATG	52	333 bp
714_N21_131_Sp6	GCA TGA GGT ATG GTT TAT CC	CCA TAT TCT GTG GGT AGG G	58	236 bp
714_N21_131_T7	AAC CTC AAA CTC CCA GTC C	GCT GCA GTT TGC GGA TTG T	58	80 bp
714_N23_35_Sp6	CGG CAT TGA GAT AAC GTC	ATC CTA GAA CCC CAG ACC	54	414 bp
714_N23_35_T7	AAA GCT CCA CCT GGC TAC	CCT CCC ATT GAT GAG TTG	56	290 bp
714_P22_214_Sp6	GAA TCT GAC TGC CTT AGC	AGT TGA GAC ACA GCC TAG	54	218 bp
ACTN4	GAT GCC GAG TTC AAC CGC ATC	TTG TCA CCT GCC AGG ACC TTG	66	155 bp
APLP1	GTG GAC CCC ATG CTG ACC	TTC CAG ACC CCC TCC CTC	60	194 bp
ARHGEF1	CAG AGG AGC AAA GCA ACC	AAC TGC ATG GCC ACA TAC	56	94 bp
ATP4A	AGG CAC ATA GGC CAC CAC	GGG GTG GAA AAC GAG AAG	57	174 bp
AXL	TGG ACG CTA TGT CCT CTG	TAG GAA GAG GGG GCT ATG	56	209 bp
BCKDHA	AGC AGC CCT GGA CAA CAC	GTA GTG GAC GGG CAT CTG	58	151 bp
BLVRB	GGT TAT GAG GTG ACA GTG	CCA AGA GCA CGA TGA TGG	54	148 bp
CAPN4_1	TGT ATT CCT GAA CGG GAG	TGC AAG AGA GGG CTA ATG	54	272 bp
CD79A_MS	CAG ATG GAG GTG CTG CTA TG	CCC AAA GGC ACC TCA AAA TC	62	130 bp
COX6B	GCA CGT TTC CTG GGA AGA	TCA GGA TCT CAG GGT GGG	57	116 bp
COX7A1	AAC AGA AGC TCT TCC AGG	TCG GTA CAG GAT GTT GTC	54	199 bp
CYP2B??	CAT TTG TCT TGG GGA AGG	CTT CCC TCA GCC TCT TTG	56	191 bp
DKFZp434H247	TTC TGC AGC TTC TTC TGC	ATC GAA GTC CTG TTG CTG	54	145 bp
DYRK1B	CCA ACC TAG CCA CCA ACC	CAG AGT GGC AGG GTC ATC	58	174 bp
ECH1	ACC AGG AGG TCC TGC TTG	ATG TAG TTG AGG CCC TCT G	58	136 bp
EGLN2	GCC TGC TGC AGA TAT TCC	GTG GCA TAG GCT GGT TTC	56	141 bp
ERF	GGT ACC GTT TCA TGT CCT C	CTG TGT CGC CTC TAG CTG	58	195 bp

FBL	CTG GAA CCC CTT CCG TTC	GTC AGA GAC GTG GGA GAC	58	130 bp
GPI_7/8	ATT GAT TAG CGT TCC CTG	AGT GAT TCT TAT GCC TCC	52	295 bp
GPI_9/10	CAT AAA GGA GGA TGT AGG	AGT GTG GAT GGA GAA AAG	52	226 bp
GRIK5	CAA CTT CCA GGC CCT GTC	TTG ATG AGC TCG CCA ACC	58	174 bp
HAL	GGG CAG CTA AGG TGA GGA G	CTT GCG GAA GAA GTT GAA GG	55	270 bp
L105_MS	TCT GTT TTG ATC CGA AGA AGC	AGC AGG TTT GGC ACA GGA G	60	112 bp
LGALS4	GAT GTC GCC TTC CAC TTC	TGA TGA CCA GCT CGA AGG	56	142 bp
LIPE	CTG GAC CCC ATG CTG GAC	CCG CTA GGG TCA GGA AGC	60	115 bp
LOC163128	TCC AAA GAG AAG GTG GTG	ATG AGG GCA TAG GAG AGC	54	170 bp
MAP4K1	CCT ACC CAC GCC TAT GC	CCA GCC AGC AGG AAA GC	56	136 bp
MLL4	ACT TTG ACG TGG TGG ATG	TCC TCA ATG GGG AAC TTG	54	184 bp
NEUD4_MS	CAG CAT GGC TGT TGG AAA G	GCC ATG ACT TAC ACA GTG C	58	127 bp
NFKBIB	CTG CAC CTG GCA GCC ATC	GCT GGA GCA GCA CGC AAG	60	154 bp
PAFAH1B3	GGC TTC TTA GTT CCA CCA C	GTT CTC CTC TTC GCT CAT C	58	230 bp
PAK4	CAG CGA GTG TCC CAT GAG	CAT GGG TCA GCA GGA TGG	58	463 bp
PAK4_MS	TGG GAA CCT CCA TAT GAC AC	ACC ACA AGG GAA CTC CAA AG	60	199 bp
POL2RI_1	ACC ACC CGT GCC AAA AG	CCG CGC ACT GTG TGA CT	54	172 bp
PPP1R14A	GCT GAG CAA GCT GCA GTC	GGT ACA GCT CCT CCA AGC	58	164 bp
PRODH2	CAT TCC CTA TGG CTC CTT G	CTG AGC AGC TCC TGT TCC	58	105 bp
PRX	GCC TCA GGT GAC CTT GTC	CCC ACA TCC AGC TCA AGC	58	117 bp
PSMD8	CGG AGT CAG CCT ATA TGC	GAC ACC GGA TGC TTG ATG	56	145 bp
RBT1	CCA TGG ATG AGA CTG AGC	GGC ACA GAA GAG GTT GTG	56	218 bp
RP44_133_I22_Sp6	TAC CTC CGT GGC ATC CAG	ACC GGG ATC TCC ATC CTC	58	216 bp
RP44_162_H07_Sp6	ACA CCT TCT TGG CCA TGC	TGA GGA CGC CAC CAT CAC	56	116 bp
RP44_162_H07_T7	CTC CAC AGG CAG AAT GTG	AGA GAA GCC CTG CAA GAG	56	443 bp
RP44_166_D13_T7	GCA GAA GTT CCC AGG TTA G	TCT ATA CTT GGG GGT CTG G	58	183 bp
RP44_172_J01_Sp6	AAT TCG CCT ATC GGA GGT	TGC ACC TCC AAC AGG CAA	54	110 bp
RP44_172_J01_T7	ACA ATG AGC CTT GGA GTC	GAA GCC AGT GTC GTG TTG	54	318 bp
RP44_183_I6_Sp6	TGCTGGAGCATGGATTTG	TCCCTCCATTCTTTTGCTG	54	173 bp
RP44_184_B20_Sp6	TTT GCT CTC AGG GTG AAG	AGT GGG AGA GGG AAT CTG	54	198 bp
RP44_187_C16_Sp6	TCA CCC AAG ACC TGT TCC	TGC TGC AAA ATG CCT GTG	56	412 bp
RP44_187_M23_Sp6	TGG AGC TAC TCC CAA AAG	TTT GTG CCA GAT CTC CTC	54	217 bp
RP44_19_H1_Sp6	CTT ACC TTG GGG ACA ACG	CAT CGC ACT GAA GTA TTG G	59	113 bp
RP44_19_H1_T7	CGG GTT AAG GCT TCT GTG	CAC GCT GGA AAC ACA TGG	59	100 bp
RP44_192_K2_Sp6	CAAAAGGCTCTCCCCAGTC	CCGAACATTTGGCAGGAC	56	184 bp
RP44_201_I19_Sp6	CCT GGC CTG GGA ACT TCT	CCA CCT GCA GGA CTG ACC	60	250 bp
RP44_201_I19_T7	TTC CAG CCC AAA GCT CAC	AGC GTG AAT CAG GCG AAC	56	170 bp
RP44_202_N7_Sp6	AGG GCT CAC CCT GTT TCC	CCA TGG GCC TCA GTT GTC	60	161 bp
RP44_202_N7_T7	TCC TGA CCC AGG CAG TTC	CCC TAT CAC CCC CAG CTC	58	178 bp

RP44_204_H11_Sp6	CAC CAC CTC CGT GCC TAC	CAC CAG CCA GAG CAG AGG	60	209 bp
RP44_204_H11_T7	GTA AGG AAT GTG GCA AGG	AAT GAG CTG TGA GCC AAG	54	464 bp
RP44_211_B19_T7	GCA TTC AAA GGG CTT TTC	TGC CCA CAT TTC TTC AAC	52	242 bp
RP44_210_A15_T7	TTG GAG GCC TCT GCT CAC	AGG ACC TTG GGG ATC TCG	58	232 bp
RP44_216_K1_Sp6 (ITZ013)	TTG GAG GGT TCA ACT ACG	GTA AAC CCG TTC ACG TTG	54	197 bp
RP44_216_K1_T7	GCA GTA TCT AGG GCA TAA AAC	TTA CAT TCC ACC TCC ATA TTC	54	170 bp
RP44_231_J20_T7	TCT GCA TCT CAC CCT CAG	AGC ACA GCC TGC TTC TTC	56	177 bp
RP44_235_B21_Sp6	ACA GCA TGG TTG CGA CTC	GCC CGA GAC ATA GGT GAC	56	366 bp
RP44_263_A8_Sp6	TTG CCG CTT TGT CGG TTG	TGG CCC CTA ATA CGA AGC	56	324 bp
RP44_263_A8_T7	GCG TGT GCA TCT CTT ACC	CAT GGC AAA TGC ACG TTC	56	512 bp
RP44_280_J23_Sp6	TCT GTT GTG GAT CTC ACC TG	TCC TAG TGT AGG CAA GGA TG	60	115 bp
RP44_283_N2_T7 (ITZ014)	TGC CTG TTC ACG AAC CAC	TCC TTG TGT GGG CTA CAG	56	100 bp
RP44_292_D4_Sp6	CAC AAC CTC AGG CAT TTG	TTT GTG TTC CTG GGT GAG	54	232 bp
RP44_298_C10_Sp6	AAG GCT TGA GGA GAC AGC	CCT CTT TGC CCT AGT TGG	56	189 bp
RP44_299_D01_Sp6	GGG GAA AGA AAA GGC TTC	CCT CAC TCC TGG AAA TCC	54	156 bp
RP44_299_D01_T7	GAA TCA ACA ATA GTA GGT	AGA GCA AAT CTT TAT ACG	48	144 bp
RP44_311_B11_Sp6	TCC TTT CCA GCT CTG AAG	CAA CAG TGC TGG TGA GTC	54	381 bp
RP44_311_B11_T7	GTC TCC ATT ACA TTA AAA ATG	CTG GAA GAC CAC CAG AAA	54	124 bp
RP44_316_A16_Sp6	GTA AGG GCT ATG CGT CTG	ATG TGG GAA GGC CTT TAG	56	204 bp
RP44_316_A16_T7	TGG TCC CAA AAT TTC TCT C	CTC CAA AGA AAC CCC ATC	54	178 bp
RP44_32_N2_Sp6	TCA CAC CTA GAT CCA CAG TC	CCC TTT ATC ACA TTC TAC CAG	60	168 bp
RP44_338_B22_Sp6	AGT GGG GGG GTC TTC TAC	CTC TTC ACG ACC TCT CTG	58	254 bp
RP44_338_B22_T7 (ITZ008)	AGC TGA GAC CAA TGC CAT	ATA ATT GGG AGT TCT CGC	54	122 bp
RP44_373_B21_Sp6	TTG GTT ATT TTT CTG CAT TC	TCC TTT TCC ATA TTT TCT GC	52	95 bp
RP44_373_B21_T7	GCT GCT GGA ATC TTT TTG	AAC ACC AAG GCT AAT TGT G	52	134 bp
RP44_409_F21_Sp6	GAA TTC TGC GAT GCT GAG	ACA CCA GCG AAT TCA CAC	54	182 bp
RP44_409_F21_T7	CAT GTT TGT AAA AAT GCT CA	TTG CCC AAT TGT TCT CTC	52	126 bp
RP44_419_C3_T7 (ITZ002)	AGC CTT CAC CCA GAA GTC	GAT GCA CAA GGA GCT GAG	56	287 bp
RP44_437_P18_Sp6	GCA GGA AGG CCT TTA ATC	CCA AAA CTG AAT GTC ATG G	54	210 bp
RP44_437_P18_T7	TAA GGG CTG AGC TTT GAG	TGG GGA GAA ACC TTA TGC	54	230 bp
RP44_444_G5_Sp6 (ITZ004)	TTC ACT TTG GGT CTG CTG	ACC TAC CCA CTG CTA TGC	54	311 bp
RP44_444_G5_T7	CTT CGG TCA CAC AAG AGG	TGG GCA TCA CTG AGA GAC	56	324 bp
RP44_445_F24_T7	CAC TTT CCC TCA CCA AGG	TGA CTG GGT CAC TAT GCT G	56	189 bp
RP44_475_K6_Sp6	TGA ATC TGC CCC ATA TCC	AGG GTC CAA AGA CCT GAC	54	108 bp
RP44_477_B07_T7	ACA TAC AAC CCC CAA CTC	TGG TTC AGG AGA AGA TGG	54	517 bp
RP44_490_D6_Sp6	CCT TGC CAC ATT CCC TAC	TGG GAA GGC TTT TAG TTT G	56	176 bp
RP44_490_D6_T7	AGG GAG CCA CGA TTA AAG	TGC AGC ATC AGA GGA TTC	54	247 bp
RP44_493_I4_Sp6	TGC AGG TGC AGC CCT AAG	TGG GCA AAG AAT CCA TCT G	58	147 bp
RP44_521_D11_Sp6	ATG TGG GAA GGC CTT TAG	AAC CCC GAG TCA ACA GAG	54	293 bp

RP44_521_D11_T7 (ITZ003)	CAT AGG GCT TTT CAC CAG	TTC TTG CCG AAT ATC AGA G	54	297 bp
RP44_521_D20_Sp6	AGG GCC TCT TAT CAG GTG	CTG AGA TTG TGG CTG AGG	56	208 bp
RP44_521_D20_T7	CTT GCA AAG CTG GGA TTG	TTC AGT TGG CAC CTC ATC	54	158 bp
RP44_528_O23_Sp6	GTA TCC TCC CTG AAA GTC	CCA GGA AGA ACC TGG AAC	54	148 bp
RP44_528_O23_T7 (ITZ009)	CTG CTC CTC ATT CCC ATG	CCG TCT TAT GCT TGA GTC	56	187 bp
RP44_58_D7_Sp6	ATC TGG GAA GGA AAG GAA C	ATG TCA CTT CCC AAA GAG G	56	100 bp
RP44_62_D12_Sp6	TGA GAA AGC CAT CTA CGT G	AGA GCT TCT TTC TGG GAT G	56	209 bp
RP44_62_D12_T7	TTT ACC AGC CAT CCC TAT C	CTC CTG CAA TCC TTT GTT C	56	193 bp
RP44_77_L18_Sp6	GGA GGT GAT AGG CCT GAG	AAG CCA GCC TGA GTT GAC	58	138 bp
RP44_84_K5_T7	AAC GTG AAG ATG CTC CTG	CGG AAA CTA CGC AAA GTC	54	187 bp
RP44_99_O22_Sp6	TCC CTC TGT TCC AAG TTC	GCC AGA GTA TGC AAG AGG	54	309 bp
RP44_99_O22_T7	CAT GAG CTT CAG GCT GTG	CCT CAT CTG CAC CTG AAC	56	300 bp
RPS16	CGC TGA TCA TCA CGA TGG	GCT TTT GGG CAA GGA ACG	56	294 bp
RYR101/102	CAG ACA GGG AAC ACA AC	TGG ATG TAT TCT GTG AGG	52	309 bp
RYR103/104 (RYR_Promoter)	TTC GTT TCT GCT TCG CC	CTC TCT CCT CCC ATT TC	48	162 bp
RYR111/112	AGG AGA AGG TAA GGG TG	GGA AGA GTC AGT TGG TC	52	235 bp
RYR115/116	GGT AAA AGG GTA TAT GG	GTG CAA AAT TTC AGA GG	48	164 bp
SEI1	GAG CTG GAT GAT GCT GAG	GCT GTG ATG GAG CTT GAG	56	184 bp
SNRPA	AAG TCC CTG TAC GCC ATC	GTC GTA GAA GGG GAA ACC	56	156 bp
SPTBN4	ATA TCC TGC CCC AAG AAG	GAG GAG GTC GAC GTT TTG	54	282 bp
SUPT5H	AGG AGC TTC CCC AGG AAG	TGG GTG AGG ATC GGG AAG	58	121 bp
SW193	TGC CAT CCT TTC TTT CAT TAC G	TCA CTC TGA GGG GTC CTG AC	62	101 bp
USF2	TGA CAT ACC GCG TAG TCC AG	CAC ACC CAC CTG GGT CAC	59	128 bp

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