Supplementary Table 1. Primer sequences used for PCR amplifications, sequencing reactions and promoter cloning. Underlined nucleotide sequences represent restriction site for cloning. Primers labeled with "seq" represent internal sequencing primers.

Gene	PCR reaction	forward	reverse	sequence covered
SHMT1	1	AGG GAC CTG CAG AAC TGA C	AGT ACA GAG GCA AGA TCA TTG	5' flanking
SHMT1	2	AAG TGT TCA GTG GAG AGC TAC	GTA GTC TTC CTG GAA ATC TTG	exon 1
SHMT1	3	CCT GTG AAC TGT CAG GAA AG	TTT AAT TCT GGA AGC TAC ACA TG	exon 2
SHMT1	4	CTT CAG TGT TAT CAC ATG CTG	TAC TAA AAC CTT TGA GGA GGA	exon 3
SHMT1	5	CAA GGA AAT AAA AGC TAG GAG	TGA GTG GAT CTA AGT CTC CTG	exons 4 & 5
SHMT1	5-seqF	GAG ATG GAG TTT CGC TCT T		exons 4 & 5
SHMT1	5-seqR		ATA AAA GAT AAG TCA CGC ATC	exons 4 & 5
SHMT1	6	CTC CCT CAA CTG AAT CTG AAC	TAG GAC ATC ATT CCT CTT GTC	exons 6 & 7
SHMT1	7	CCT ACT CTG TGT TAG CAT CTC	GTT ACA AAT CAG TTC TCC ATG	exon 8
SHMT1	8	CTG TTC TGA GGA CAA GCA GTC	TGA CAT TGA AAA GCA AGG AAG	exon 9
SHMT1	9	TGC AGA TGG GAG AGG AGT G	CCA AAG TAA ATT GAA CTG CTG	exon 10
SHMT1	9-seqR		GAG CCT TTA CCA TCA ATG T	exon 10
SHMT1	10	AGG CAC AAA TGT CAG AAT GTC	GCA TTT CTC TGT GGG TTG TTA	exon 11
SHMT1	11	TAC TGG GTG CAT CTT GTT TAC	AGT AAT TGA GGT AAG CAT GGA	exon 12
SHMT1	12	ATT GTC TGC CAC TAA ATA GCT	TTC TGC TGT AAA TCA GAA GTG	exon 12 and 3' flanking
SHMT1	13	ATA GTG GGC AGT CTC CTT TAC	GGT GGC ATT TAT CTC AAT CTG	3' flanking
SHMT1	Promoter reporter assay	AGG ACA ACG CGT CTC TGC CTC CCA GGC TCA AG	AGG ACA CTC GAG CCC CCG GAG GCG CCC AAT C	5' flanking
SHMT1	rs669340 reporter assay	AGG ACA GGT ACC TCA CAC TTT CTC CTT TGT CTG	AGG ACA ACG CGT AAG AGA ACA AGA CCC TGT CTC	intron 1
SHMT1	rs7207306 reporter assay	AGG ACA GGT ACC TAT TTG GAA AGA GTG ACC ACC	AGG ACA ACG CGT CAT AAC CAG CAG AGC ATA GAG	intron 5
SHMT2	1	ACA TAC CAC CAT GCC TAG GT	CTC AAA CTT GTG CTT CTA GG	5' flanking, exon1, and exon 2
SHMT2	1seqF	CTTGGCTTATCAGAATCACTG		5' flanking, exon1, and exon 2
SHMT2	1seqR1		TAGGGTGCCTACTGAATATC	5' flanking, exon1, and exon 2
SHMT2	1seqF1	CACAAGCTAATGCACTAGTC		5' flanking, exon1, and exon 2
SHMT2	1seqR2		AAAGGCTCAGCTTGTGAGAC	5' flanking, exon1, and exon 2
SHMT2	1seqF2	CCATTTCACGTGGCATTAG		5' flanking, exon1, and exon 2
SHMT2	1seqR3		CACATCTCAGGATCACTGTC	5' flanking, exon1, and exon 2
SHMT2	1seqF3	GATTTGTCTGGACTGTTGTG		5' flanking, exon1, and exon 2
SHMT2	2	TTC CTT TCT TAT CTC CCT CAA	CTT GTT GGC AGT GAT GGA TAC	exons 3-10
SHMT2	2seqR1		GTGAGAGGAAGTAAGAAGGC	exons 3-10
SHMT2	2seqF1	ACTGTGGACCATACAGATGG		exons 3-10
SHMT2	2seqR2		CTTGGTACACTGGATTCCAG	exons 3-10
SHMT2	2seqF2	GACCTGAGAGGAATTCATTC		exons 3-10
SHMT2	3	GGC TAC TCA CTG GTA TCA GGT	CTT GGG ATC TGT GTC TGA TTC	exons 10-12 and 3' flanking
SHMT2	3seqR1		TAAGTGAGAGGTCTTCCCTC	exons 10-12 and 3' flanking
SHMT2	3seqF1	CTCAAAGTTACTCTCCTTCC		exons 10-12 and 3' flanking
SHMT2	3seqR2		ATCCACTTCTTCCACTCCTC	exons 10-12 and 3' flanking
SHMT2	3seqF2	CTTCTTGTTGGCTCACGTAG		exons 10-12 and 3' flanking

Supplementary Table 2. *SHMT1* and *SHMT2* polymorphisms. The table lists variant sequence locations, DNA sequence alterations, amino acid sequence alterations, rs numbers (when available) and MAF values for both the "Human Variation Panel" and "1000 Genomes" data.

								MAF			1000 Genomes MAF		
Gene	**Chr**	**Location (build36)**	**Location**	**Nucleotide**	***RefSNP ID***	**Sequence Change**	**Amino Acid**	***AA***	***EA***	***HCA***	***AA***	***EA***	***HCA***
SHMT1	17	18208440	5'FR	-1049		A→G		0.000	0.000	0.005	NA	NA	NA
SHMT1	17	18208394	5'FR	-1003	rs57739150	C→G		0.021	0.000	0.000	0.037	NA	NA
SHMT1	17	18208380	5'FR	-989		C→G		0.016	0.000	0.000	0.011	NA	NA
SHMT1	17	18208289	5'FR	-898	rs60510653	A→G		0.135	0.005	0.000	0.190	0.004	0.003
SHMT1	17	18208216	5'FR	-825	rs62072547	T→C		0.031	0.141	0.000	0.006	0.092	NA
SHMT1	17	18208109	5'FR	-718	rs9303145	C→G		0.120	0.000	0.000	0.132	NA	NA
SHMT1	17	18208106	5'FR	-715		C→T		0.010	0.000	0.198	NA	0.004	0.129
SHMT1	17	18208095	5'FR	-704		C→T		0.000	0.005	0.000	NA	NA	NA
SHMT1	17	18208046	5'FR	-655		C→T		0.005	0.000	0.000	NA	NA	NA
SHMT1	17	18208030	5'FR	-639		G→A		0.005	0.000	0.000	NA	NA	NA
SHMT1	17	18207934	5'FR	-543	rs7213472	A→G		0.135	0.005	0.000	0.190	NA	NA
SHMT1	17	18207887	5'FR	-496		A→G		0.000	0.005	0.000	NA	NA	NA
SHMT1	17	18207764	5'FR	-373	rs643333	C→A		0.089	0.242	0.036	0.011	0.277	0.090
SHMT1	17	18207738	5'FR	-347	rs9907337	C→T		0.083	0.000	0.000	0.083	0.005	NA
SHMT1	17	18207700	5'FR	-309	rs638416	C→G		0.260	0.404	0.448	0.253	0.385	0.454
SHMT1	17	18207655	5'FR	-264		G→A		0.036	0.000	0.000	0.052	NA	NA
SHMT1	17	18207634	5'FR	-243		A→G		0.000	0.011	0.000	NA	NA	NA
SHMT1	17	18207619	5'FR	-228		C→T		0.000	0.000	0.005	NA	NA	NA
SHMT1	17	18207573	5'UTR	-182		C→T		0.016	0.011	0.000	NA	0.018	NA
SHMT1	17	18207549	5'UTR	-158		G→C/A		0.016/0	0.005/0	0/.005	NA	NA	NA
SHMT1	17	18207511	5'UTR	-120		C→T		0.047	0.000	0.000	0.040	0.002	NA
SHMT1	17	18207468	5'UTR	-77		G→A		0.000	0.000	0.005	NA	NA	NA
SHMT1	17	18207341	intron 1	70	rs35311598	G(6)→G(7)		0.208	0.250	0.036	NA	NA	NA
SHMT1	17	18207315	intron 1	76		C→T		0.022	0.000	0.000	NA	NA	NA
SHMT1	17	18207292	intron 1	119	rs672356	C→T		0.187	0.255	0.036	0.155	0.284	0.077
SHMT1	17	18207257	intron 1	154	rs9900382	G→A		0.110	0.005	0.000	0.135	0.004	NA
SHMT1	17	18207220	intron 1	191		G(4)→G(3)		0.089	0.000	0.000	NA	NA	NA
SHMT1	17	18207184	intron 1	227		G→A		0.000	0.005	0.000	NA	NA	NA
SHMT1	17	18199816	intron 2	109		G→A		0.047	0.000	0.000	0.049	0.002	NA
SHMT1	17	18197704	intron 3	7	rs2273026	G→A		0.104	0.125	0.182	0.072	0.092	0.201
SHMT1	17	18197701	intron 3	10		T→C		0.094	0.005	0.000	0.103	NA	NA
SHMT1	17	18192106	intron 4	258		C→T		0.000	0.000	0.005	NA	NA	NA
SHMT1	17	18192034	intron 4	330		T→C		0.000	0.000	0.016	NA	NA	NA
SHMT1	17	18191987	intron 4	377		C→T		0.000	0.000	0.020	NA	NA	NA
SHMT1	17	18191961	intron 4	403	rs12451807	A→C		0.109	0.240	0.333	NA	NA	NA
SHMT1	17	18191957	intron 4	407	rs4924850	A→C		0.130	0.000	0.000	NA	NA	NA

SHMT1	17	18191819	intron 4	-124	rs28479066	G→A		0.130	0.005	0.000	0.152	NA	NA
SHMT1	17	18191694	exon 5	360		C→T	Gly(120)Gly	0.000	0.005	0.000	NA	NA	NA
SHMT1	17	18184858	intron 5	-6		C→G		0.010	0.000	0.000	NA	NA	NA
SHMT1	17	18184598	intron 6	173	rs62072544	G→A		0.109	0.234	0.333	0.170	0.198	0.214
SHMT1	17	18184597	intron 6	174	rs62072543	C→T		0.109	0.234	0.333	0.170	0.198	0.214
SHMT1	17	18184523	intron 6	248		G→A		0.000	0.000	0.005	NA	NA	NA
SHMT1	17	18184522	intron 6	349		C→T		0.000	0.000	0.005	NA	NA	NA
SHMT1	17	18184363	intron 6	-69	rs9897954	C→T		0.109	0.000	0.000	0.089	0.011	NA
SHMT1	17	18184249	exon 7	647		A→G	Lys(216)Arg	0.031	0.000	0.000	0.009	0.004	NA
SHMT1	17	18184178	exon 7	718		G→A	Val(240)Met	0.005	0.000	0.000	NA	NA	NA
SHMT1	17	18179737	intron 7	-23	rs2273028	C→T		0.500	0.260	0.036	0.494	0.313	0.093
SHMT1	17	18179717	intron7	-3		C→T		0.016	0.000	0.000	0.011	0.002	NA
SHMT1	17	18177381	intron 8	-54		C→G		0.005	0.000	0.000	NA	NA	NA
SHMT1	17	18177241	exon 9	1018	rs7215148	G→C	Glu(340)Gln	0.016	0.000	0.000	NA	NA	NA
SHMT1	17	18177199	intron 9	6		G→A		0.010	0.000	0.000	0.006	NA	NA
SHMT1	17	18177104	intron 9	101		C→T		0.000	0.000	0.005	NA	NA	NA
SHMT1	17	18177064	intron 9	141	rs2273029	C→T		0.115	0.234	0.333	0.172	0.249	0.260
SHMT1	17	18177063	intron 9	142		G→A		0.000	0.005	0.000	NA	NA	NA
SHMT1	17	18174896	intron 9	-186		C→T		0.000	0.005	0.000	NA	NA	NA
SHMT1	17	18174873	intron 9	-163		C→T		0.036	0.000	0.000	0.049	NA	NA
SHMT1	17	18174753	intron 9	-43	rs8080285	A→C		0.260	0.005	0.000	0.259	0.018	NA
SHMT1	17	18174745	intron 9	-35		C→T		0.000	0.005	0.000	NA	NA	NA
SHMT1	17	18173683	intron 10	-26	rs2125154	A→C		0.193	0.000	0.000	0.172	0.016	NA
SHMT1	17	18173453	intron 10	-256		G→A		0.000	0.005	0.000	NA	NA	NA
SHMT1	17	18173296	intron 11	21	rs6502648	G→T		0.188	0.000	0.000	0.167	0.016	NA
SHMT1	17	18173243	intron 11	74	rs17806333	A→G		0.000	0.005	0.000	NA	NA	NA
SHMT1	17	18173113	intron 11	-155		G→A		0.000	0.005	0.000	NA	NA	NA
SHMT1	17	18172861	exon 12	1380		C→T	Ala(460)Ala	0.037	0.000	0.000	0.049	NA	NA
SHMT1	17	18172828	exon 12	1413		C→T	Phe(471)Phe	0.005	0.000	0.000	NA	NA	NA
SHMT1	17	18172821	exon 12	1420	rs1979277	C→T	Leu(474)Phe	0.337	0.266	0.036	0.356	0.299	0.095
SHMT1	17	18172742	3'UTR	1499	rs1979276	C→G		0.200	0.260	0.036	0.155	0.302	0.090
SHMT1	17	18172737	3'UTR	1504		C→T		0.011	0.026	0.000	0.009	0.021	0.005
SHMT1	17	18172723	3'UTR	1518		C→T		0.379	0.729	0.964	0.376	0.318	0.093
SHMT1	17	18172522	3'UTR	1719	rs12952556	A→G		0.347	0.266	0.036	0.362	0.304	0.093

SHMT1	17	18172457	3'UTR	1784		T→C		0.100	0.005	0.000	0.106	NA	NA
SHMT1	17	18172377	3'UTR	1864	rs9902011	A→G		0.174	0.000	0.000	0.155	0.007	NA
SHMT1	17	18172336	3'UTR	1905		G→A		0.005	0.000	0.000	NA	0.016	NA
SHMT1	17	18172248	3'UTR	1993		G→A		0.000	0.000	0.005	NA	NA	NA
SHMT1	17	18172139	3'UTR	2102		C→T		0.000	0.016	0.000	NA	0.011	NA
SHMT1	17	18172016	3'UTR	2225		T(5)→T(6)		0.000	0.000	0.005	NA	NA	NA
SHMT1	17	18171936	3'UTR	2305		deletion of AAAT		0.000	0.000	0.005	NA	NA	NA
SHMT1	17	18171851	3'FR	2390		G→A		0.000	0.005	0.000	NA	NA	NA
SHMT1	17	18171788	3'FR	2453		C→T		0.010	0.000	0.000	NA	NA	NA
SHMT1	17	18171442	3'FR	2799		C→T		0.005	0.000	0.000	0.020	NA	NA
SHMT1	17	18171413	3'FR	2828		C→T		0.010	0.000	0.000	0.020	NA	NA
SHMT1	17	18171388	3'FR	2853		C→A		0.099	0.005	0.000	0.106	NA	NA
SHMT1	17	18171385	3'FR	2856		T→C		0.198	0.263	0.036	0.155	0.302	0.093
SHMT1	17	18171215	3'FR	3026		A→G		0.000	0.005	0.000	NA	NA	NA
SHMT1	17	18171134	3'FR	3107		G→A		0.000	0.011	0.000	NA	NA	NA
SHMT1	17	18171105	3'FR	3136	rs941454	G→A/C		0.17/0.12	0.37/0.23	0.44/0.34	NA	NA	NA
SHMT1	17	18171062	3'FR	3179		G→A		0.005	0.000	0.000	NA	NA	NA

								MAF			**1000 Genomes MAF**		
Gene	**Chr**	**Location (build36)**	**Location**	**Nucleotide**	***RefSNP ID***	**Sequence Change**	**Amino Acid Change**	***AA***	***EA***	***HCA***	***AA***	***EA***	***HCA***
SHMT2	12	55909088	5'FR	-741	rs7301155	A→G		0.203	0.303	0.416	0.287	0.329	0.369
SHMT2	12	55909184	5'FR	-645		G→A		0.000	0.000	0.005	NA	NA	NA
SHMT2	12	55909227	5'FR	-602		C→T		0.000	0.000	0.005	NA	NA	NA
SHMT2	12	55909282	5'FR	-547		G→A		0.005	0.000	0.000	NA	NA	NA
SHMT2	12	55909359	5'FR	-470	rs10717122	deletion of T		0.182	0.307	0.417	NA	NA	NA
SHMT2	12	55909571	5'FR	-258		deletion of T		0.000	0.010	0.000	NA	NA	NA
SHMT2	12	55909582	5'FR	-247		C→G		0.000	0.000	0.005	NA	NA	NA
SHMT2	12	55909629	5'FR	-200		insertion of A		0.010	0.026	0.000	NA	NA	NA
SHMT2	12	55909630	5'FR	-199	rs28365862	A→G		0.031	0.063	0.193	0.037	0.064	0.126
SHMT2	12	55909780	5'FR	-49		G→A		0.000	0.010	0.000	NA	NA	NA
SHMT2	12	55909786	5'FR	-43	rs28365863	G→A		0.000	0.000	0.068	0.060	0.002	0.103
SHMT2	12	55909980	intron1	119		C→T		0.000	0.005	0.000	NA	NA	NA
SHMT2	12	55910524	intron1	663		G→A		0.005	0.000	0.000	NA	NA	NA
SHMT2	12	55910555	intron1	694		T→C		0.005	0.000	0.000	NA	NA	NA
SHMT2	12	55910559	intron1	698		G→A		0.000	0.005	0.000	NA	NA	NA
SHMT2	12	55910647	intron1	786		G→C		0.010	0.000	0.000	0.017	NA	NA
SHMT2	12	55910910	exon2	91		G→A	Ala(31)Thr	0.000	0.000	0.010	NA	NA	NA
SHMT2	12	55910963	exon2	145		C→G	Ser(48)Arg	0.000	0.000	0.010	NA	NA	NA
SHMT2	12	55910968	exon2	149		C→T	Ser(50)Leu	0.052	0.000	0.000	0.092	0.007	NA
SHMT2	12	55911002	exon2	183		G→C	Gln(61)His	0.000	0.000	0.005	NA	NA	NA

SHMT2	12	55911274	intron2	224		deletion of TCCT		0.396	0.313	0.411	NA	NA	NA
SHMT2	12	55911343	intron2	293		G→A		0.000	0.000	0.036	NA	NA	0.026
SHMT2	12	55911812	exon4	361		C→T	Arg(121)Cys	0.000	0.000	0.005	NA	NA	NA
SHMT2	12	55912217	intron4	244		G→A		0.057	0.000	0.083	0.078	NA	0.124
SHMT2	12	55912285	exon5	537	rs11557166	C→T	Asp(179)Asp	0.026	0.000	0.083	0.037	NA	0.124
SHMT2	12	55912632	intron6	7		deletion of G		0.000	0.000	0.005	NA	NA	NA
SHMT2	12	55912711	intron6	89		C→T		0.021	0.000	0.000	0.046	0.002	0.003
SHMT2	12	55912834	exon7	798	rs2229715	G→A	Ser(266)Ser	0.005	0.000	0.000	NA	NA	NA
SHMT2	12	55912849	exon7	812	rs2229716	G→A	Ala(271)Ala	0.000	0.026	0.000	0.003	0.037	0.003
SHMT2	12	55913109	intron7	216		deletion of T		0.005	0.000	0.000	NA	NA	NA
SHMT2	12	55913128	intron7	235		G→A		0.026	0.000	0.000	0.029	NA	NA
SHMT2	12	55913277	exon8	905		A→C	Lys(302)Thr	0.005	0.000	0.000	NA	NA	NA
SHMT2	12	55913341	exon8	969	rs2229717	G→T	Leu(323)Leu	0.026	0.042	0.193	0.026	0.046	0.124
SHMT2	12	55913423	intron8	28		G→T		0.005	0.000	0.005	NA	NA	NA
SHMT2	12	55913454	intron8	59		G→A		0.005	0.000	0.000	NA	NA	NA
SHMT2	12	55913472	intron8	77		C→A		0.005	0.000	0.000	NA	NA	NA
SHMT2	12	55913792	intron9	80		A→G		0.011	0.021	0.000	NA	0.018	NA
SHMT2	12	55913858	exon10	1183		C→T	Arg(395)Trp	0.000	0.005	0.000	NA	NA	NA
SHMT2	12	55913984	intron10	30	rs34095989	G→A		0.203	0.432	0.224	0.138	0.431	0.387
SHMT2	12	55914055	exon11	1282		G→A	Ala(428)Thr	0.010	0.000	0.000	0.014	0.002	NA
SHMT2	12	55914083	exon11	1310		G→A	Arg(437)His	0.000	0.000	0.031	NA	NA	NA
SHMT2	12	55914129	exon11	1356	rs2229718	C→T	Val(452)Val	0.005	0.000	0.000	NA	NA	NA
SHMT2	12	55914504	3'UTR	1608		C→T		0.000	0.000	0.005	NA	NA	NA
SHMT2	12	55914680	3'UTR	1784		deletion of TCTT		0.000	0.026	0.000	NA	NA	NA
SHMT2	12	55914854	3'UTR	1958		deletion of GCTCCCA		0.016	0.000	0.000	NA	NA	NA
SHMT2	12	55914866	3'UTR	1970		G→A		0.005	0.000	0.000	NA	NA	NA
SHMT2	12	55915071	3'FR	2175		G→T		0.005	0.000	0.000	NA	NA	NA
SHMT2	12	55915080	3'FR	2184		G→T		0.000	0.000	0.057	NA	NA	0.031
SHMT2	12	55915118	3'FR	2222		G→A		0.016	0.000	0.000	NA	NA	NA
SHMT2	12	55915184	3'FR	2288		G→A		0.005	0.005	0.000	NA	NA	NA
SHMT2	12	55915234	3'FR	2338		G→A		0.000	0.005	0.000	NA	NA	NA

SHMT2		12		55915285	3'FR		2389				C→G				0.000		0.005		0.000		NA	NA		NA
SHMT2		12		55915536	3'FR		2640				G→C				0.000		0.005		0.000		NA	NA		NA
SHMT2		12		55915550	3'FR		2654				insertion of GAGTGGAAG				0.005		0.000		0.000		NA	NA		NA
SHMT2		12		55915582	3'FR		2686				G→A				0.000		0.005		0.000		NA	NA		NA
SHMT2		12		55915773	3'FR		2877				G→A				0.000		0.000		0.005		NA	NA		NA
SHMT2		12		55915793	3'FR		2897		rs58212469		A→C				0.016		0.000		0.000		0.049	NA		NA
SHMT2		12		55915875	3'FR		2979				G→A				0.010		0.047		0.005		NA	0.039		NA
SHMT2		12		55916005	3'FR		3109				A→G				0.010		0.000		0.000		0.003	NA		NA
SHMT2		12		55916048	3'FR		3152				A→G				0.010		0.000		0.000		0.014	NA		NA

Supplementary Table 3: *SHMT1* haplotype table

			Amino Acid																				
			Chr17 (build36)	18208440	18208394	18208380	18208289	18208216	18208109	18208106	18208095	18208046	18208030	18207934	18207887	18207764	18207738	18207700	18207655	18207634	18207619	18207573	18207549
			rs#		rs57739150		rs60510653	rs62072547	rs9303145					rs7213472		rs643333	rs9907337	rs638416					
			gene location	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'UTR	5'UTR
Hapotype			nucleotide change	A → G	C → G	C → G	A → G	T → C	C → G	C → T	C → T	C → T	G → A	A → G	A → G	C → A	C → T	C → G	G → A	A → G	C → T	C → T	G → C/A
SHMT1*1A	0.11500	0.32000	0.21900	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1B	0.07810	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	T	C	G	A	C	C	G
SHMT1*1C	0.06720	0.09900	0.30700	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1D	0.04170	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1E	0.03650	0.08850	0.17200	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1F	0.03650	0.00000	0.00000	A	C	C	A	T	G	C	C	C	G	A	A	C	C	G	A	A	C	C	G
SHMT1*1G	0.03650	0.00000	0.00000	A	C	C	A	T	G	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1H	0.03120	0.10700	0.00000	A	C	C	A	C	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1I	0.01560	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1J	0.01560	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1K	0.01560	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1L	0.01560	0.00000	0.00000	A	C	C	A	T	G	C	C	C	G	A	A	C	C	G	G	A	C	C	C
SHMT1*1M	0.01110	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1N	0.01040	0.00000	0.16100	A	C	C	A	T	C	T	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1O	0.01040	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1P	0.01010	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1Q	0.00569	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1R	0.00521	0.00000	0.01050	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1S	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	C	G
SHMT1*1T	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	T	G
SHMT1*1U	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1V	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1W	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1X	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1Y	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1Z	0.00521	0.00000	0.00000	A	C	C	A	T	G	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1AA	0.00521	0.00000	0.00000	A	C	C	A	T	G	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1AB	0.00521	0.00000	0.00000	A	C	C	A	T	G	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1AC	0.00001	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	T	C	G	A	C	C	G
SHMT1*1AD	0.00000	0.02600	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1AE	0.00000	0.01560	0.00000	A	C	C	A	C	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1AF	0.00000	0.01560	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1AG	0.00000	0.00781	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	G	C	C	G
SHMT1*1AH	0.00000	0.00524	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	C	G
SHMT1*1AI	0.00000	0.00521	0.00000	A	C	C	A	C	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1AJ	0.00000	0.00521	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1AK	0.00000	0.00521	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1AL	0.00000	0.00521	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1AM	0.00000	0.00521	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1AN	0.00000	0.00521	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1AO	0.00000	0.00521	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1AP	0.00000	0.00521	0.00000	A	C	C	A	T	C	C	C	C	G	A	G	C	C	G	G	A	C	C	G
SHMT1*1AQ	0.00000	0.00293	0.00000	A	C	C	A	C	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1AR	0.00000	0.00260	0.00000	A	C	C	A	C	C	C	C	C	G	A	A	C	C	G	G	G	C	C	G
SHMT1*1AS	0.00000	0.00228	0.00000	A	C	C	A	C	C	C	C	C	G	A	A	C	C	G	G	G	C	C	G
SHMT1*1AT	0.00000	0.00000	0.01040	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1AU	0.00000	0.00000	0.01040	A	C	C	A	T	C	T	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1AV	0.00000	0.00000	0.00527	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1AW	0.00000	0.00000	0.00527	A	C	C	A	T	C	T	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1AX	0.00000	0.00000	0.00521	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1AY	0.00000	0.00000	0.00521	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1AZ	0.00000	0.00000	0.00521	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1BA	0.00000	0.00000	0.00521	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1BB	0.00000	0.00000	0.00521	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1BC	0.00000	0.00000	0.00521	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1BD	0.00000	0.00000	0.00521	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	T	C	G
SHMT1*1BE	0.00000	0.00000	0.00521	A	C	C	A	T	C	T	C	C	G	A	A	C	C	C	G	A	C	C	A
SHMT1*1BF	0.00000	0.00000	0.00521	A	C	C	A	T	C	T	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1BG	0.00000	0.00000	0.00521	A	C	C	A	T	C	T	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1BH	0.00000	0.00000	0.00521	A	C	C	A	T	C	T	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*1BI	0.00000	0.00000	0.00521	G	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1BJ	0.00000	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1BK	0.00000	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	A
SHMT1*1BL	0.00000	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*1BM	0.00000	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*2A	0.02080	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*2B	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*2C	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*3A	0.00135	0.00000	0.00000	A	C	C	A	T	G	C	C	T	A	A	A	A	C	G	G	A	C	T	G
SHMT1*3B	0.00115	0.00000	0.00000	A	C	C	A	T	G	C	C	T	A	A	A	A	C	G	G	A	C	T	G
SHMT1*3C	0.00108	0.00000	0.00000	A	C	C	A	T	G	C	C	T	A	A	A	A	C	G	G	A	C	T	G
SHMT1*3D	0.00052	0.00000	0.00000	A	C	C	A	T	G	C	C	T	A	A	A	A	C	G	G	A	C	T	G
SHMT1*3E	0.00049	0.00000	0.00000	A	C	C	A	T	G	C	C	T	A	A	A	A	C	G	G	A	C	T	G
SHMT1*3F	0.00041	0.00000	0.00000	A	C	C	A	T	G	C	C	T	A	A	A	A	C	G	G	A	C	T	G
SHMT1*3G	0.00018	0.00000	0.00000	A	C	C	A	T	G	C	C	T	A	A	A	A	C	G	G	A	C	T	G
SHMT1*3H	0.00004	0.00000	0.00000	A	C	C	A	T	G	C	C	T	A	A	A	A	C	G	G	A	C	T	G
SHMT1*4A	0.01040	0.00000	0.00000	A	C	C	A	T	G	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*4B	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*5A	0.10900	0.00520	0.00000	A	C	C	G	T	C	C	C	C	G	G	A	C	C	G	G	A	C	C	G
SHMT1*5B	0.07220	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*5C	0.05600	0.21300	0.03120	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	C	G
SHMT1*5D	0.01560	0.00000	0.00000	A	G	C	G	T	C	C	C	C	G	G	A	C	C	G	G	A	C	C	G
SHMT1*5E	0.01040	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*5F	0.00626	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	C	G
SHMT1*5G	0.00569	0.00000	0.00000	A	C	G	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*5H	0.00521	0.00533	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	T	G
SHMT1*5I	0.00521	0.00000	0.00000	A	G	C	G	T	C	C	C	C	G	G	A	C	C	G	G	A	C	C	G
SHMT1*5J	0.00521	0.00000	0.00000	A	C	G	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*5K	0.00521	0.00000	0.00000	A	C	C	G	T	C	C	C	C	G	G	A	C	C	G	G	A	C	C	G
SHMT1*5L	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	T	C	G	A	C	C	G
SHMT1*5M	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*5N	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*5O	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*5P	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*5Q	0.00521	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	C	G
SHMT1*5R	0.00520	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*5S	0.00473	0.00000	0.00000	A	C	G	A	T	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*5T	0.00028	0.00000	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	C	G
SHMT1*5U	0.00000	0.00533	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	C	C
SHMT1*5V	0.00000	0.00524	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*5W	0.00000	0.00521	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	C	G
SHMT1*5X	0.00000	0.00521	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	C	G
SHMT1*5Y	0.00000	0.00521	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	C	G
SHMT1*5Z	0.00000	0.00521	0.00000	A	C	C	A	C	C	C	C	C	G	A	A	C	C	G	G	A	C	C	G
SHMT1*5AA	0.00000	0.00521	0.00000	A	C	C	A	T	C	C	C	C	G	A	A	C	C	C	G	A	C	C	G
SHMT1*5BB	0.00000	0.00521	0.00000	A	C	C	A	T	C	C	T	C	G	A	A	A	C	G	G	A	C	C	G
SHMT1*5CC	0.00000	0.00001	0.00000	A	C	C	G	C	C	C	C	C	G	G	A	C	C	G	G	A	C	C	G
SHMT1*5DD	0.00000	0.00000	0.00521	A	C	C	A	T	C	C	C	C	G	A	A	A	C	G	G	A	C	C	G
	AA	EA	HC																				
	Haplotype frequency																						

Amino Acid																					
Chr17 (build36)	18207511	18207468	18207341	18207315	18207292	18207257	18207220	18207184	18199816	18197704	18197701	18192106	18192034	18191987	18191961	18191957	18191819	18191694	18184858	18184598	18184597
rs#			rs35311598		rs672356	rs9900382				rs2273026	rs8070162				rs12451807	rs4924850	rs28479066			rs62072544	rs62072543
gene location	5'UTR	5'UTR	intron 1	intron 1	intron 1	intron 1	intron 1	intron 1	intron 2	intron 3	intron 3	intron 4	intron 4	intron 4	intron 4	intron 4	intron 4	exon 5	intron 5	intron 6	intron 6
Hapotype / nucleotide change	C → T	G → A	G(6) → G(7)	C → T	C → T	G → A	G(4) → G(3)	G → A	G → A	G → A	T → C	C → T	T → C	C → T	A → C	A → C	G → A	C → T	C → G	G → A	C → T
SHMT1*1A	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1B	C	G	D	C	C	A	I	G	G	G	T	C	T	C	A	C	G	C	C	G	C
SHMT1*1C	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1D	T	G	D	C	C	G	I	G	G	A	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1E	C	G	D	C	C	G	I	G	G	A	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1F	C	G	D	C	C	G	I	G	A	G	T	C	T	C	A	A	A	C	C	G	C
SHMT1*1G	C	G	D	C	C	G	D	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*1H	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1I	C	G	D	C	C	A	I	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*1J	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1K	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	C	G	C	C	G	C
SHMT1*1L	C	G	D	C	C	G	D	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1M	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1N	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1O	C	G	D	C	C	G	I	G	A	A	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1P	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1Q	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1R	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1S	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1T	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1U	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1V	C	G	D	C	C	G	I	G	G	A	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1W	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1X	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	C	G	C	C	G	C
SHMT1*1Y	T	G	D	C	C	G	I	G	G	A	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1Z	C	G	D	C	C	G	D	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*1AA	C	G	D	C	C	G	D	G	G	G	C	C	T	C	A	A	G	C	C	G	C
SHMT1*1AB	C	G	D	C	C	G	I	G	G	G	C	C	T	C	C	A	A	C	C	A	T
SHMT1*1AC	C	G	D	C	C	A	I	G	G	G	T	C	T	C	A	C	G	C	C	G	C
SHMT1*1AD	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1AE	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1AF	C	G	D	C	C	G	I	G	G	A	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1AG	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1AH	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1AI	C	G	D	C	C	G	I	A	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1AJ	C	G	D	C	C	A	I	G	G	G	C	C	T	C	A	A	A	T	C	G	C
SHMT1*1AK	C	G	D	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1AL	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1AM	C	G	D	C	C	G	I	G	G	A	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1AN	C	G	D	C	C	G	I	G	G	A	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1AO	C	G	D	C	C	G	I	G	G	A	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1AP	C	G	D	C	C	G	I	G	G	A	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1AQ	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	G	C
SHMT1*1AR	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1AS	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	G	C
SHMT1*1AT	C	G	D	C	C	G	I	G	G	G	T	C	C	C	A	A	G	C	C	G	C
SHMT1*1AU	C	G	D	C	C	G	I	G	G	G	T	C	T	T	A	A	G	C	C	G	C
SHMT1*1AV	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1AW	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1AX	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1AY	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1AZ	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1BA	C	G	D	C	C	G	I	G	G	A	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1BB	C	G	D	C	C	G	I	G	G	A	T	T	T	C	A	A	G	C	C	G	C
SHMT1*1BC	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1BD	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1BE	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1BF	C	A	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1BG	C	G	D	C	C	G	I	G	G	G	T	C	C	C	A	A	G	C	C	G	C
SHMT1*1BH	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1BI	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1BJ	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1BK	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*1BL	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*1BM	C	G	D	C	C	G	I	G	G	G	T	T	T	C	A	A	G	C	C	G	C
SHMT1*2A	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	C	G	C	C	G	C
SHMT1*2B	C	G	D	C	C	A	D	G	G	G	C	C	T	C	A	C	A	C	C	G	C
SHMT1*2C	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	C	A	C	C	G	C
SHMT1*3A	C	G	I	C	C	A	D	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*3B	C	G	I	T	T	G	D	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*3C	C	G	I	T	C	A	D	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*3D	C	G	I	T	C	G	D	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*3E	C	G	I	C	T	G	D	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*3F	C	G	I	T	T	A	D	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*3G	C	G	I	C	C	G	D	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*3H	C	G	I	C	T	A	D	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*4A	C	G	D	C	C	G	D	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*4B	C	G	D	C	C	G	I	G	G	G	C	C	T	C	A	A	A	C	C	G	C
SHMT1*5A	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5B	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5C	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5D	C	G	D	T	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5E	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5F	C	G	I	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5G	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5H	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5I	C	G	D	T	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5J	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5K	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5L	C	G	D	C	C	A	I	G	G	A	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5M	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	G	G	C
SHMT1*5N	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5O	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5P	C	G	D	C	C	G	D	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5Q	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	G	G	C
SHMT1*5R	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5S	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5T	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5U	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5V	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5W	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5X	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5Y	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5Z	C	G	D	C	C	G	I	G	G	G	T	C	T	C	C	A	G	C	C	A	T
SHMT1*5AA	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5BB	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5CC	C	G	D	C	C	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C
SHMT1*5DD	C	G	I	C	T	G	I	G	G	G	T	C	T	C	A	A	G	C	C	G	C

Amino Acid				Lys(216)Arg	Val(240)Met				Glu(340)Gln												
Chr17 (build36)	18184523	18184522	18184363	18184249	18184178	18179737	18179717	18177381	18177241	18177199	18177104	18177064	18177063	18174896	18174873	18174753	18174745	18173683	18173453	18173296	18173243
rs#			rs9897954			rs2273028			rs7215148			rs2273029				rs8080285		rs2125154		rs6502648	rs17806333
gene location	intron 6	intron 6	intron 6	exon 7	exon 7	intron 7	intron7	intron 8	exon 9	intron 9	intron 9	intron 9	intron 9	intron 9	intron 9	intron 9	intron 9	intron 10	intron 10	intron 11	intron 11
Hapotype / nucleotide change	G → A	C → T	C → T	A → G	G → A	C → T	C → T	C → G	G → C	G → A	C → T	C → T	G → A	C → T	C → T	A → C	C → T	A → C	G → A	G → T	A → G
SHMT1*1A	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1B	G	C	T	A	G	T	C	C	G	G	C	C	G	C	C	C	C	C	G	T	A
SHMT1*1C	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1D	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1E	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1F	G	C	C	A	G	T	C	C	G	G	C	C	G	C	T	C	C	C	G	T	A
SHMT1*1G	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*1H	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1I	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*1J	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1K	G	C	T	A	G	T	C	C	G	G	C	C	G	C	C	C	C	C	G	T	A
SHMT1*1L	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1M	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1N	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1O	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1P	G	C	C	A	G	C	T	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1Q	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1R	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1S	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1T	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	C	G	T	A
SHMT1*1U	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	C	C	A	G	T	A
SHMT1*1V	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1W	G	C	C	A	G	C	T	C	G	G	C	C	G	C	C	A	C	C	G	G	A
SHMT1*1X	G	C	T	A	G	C	C	C	G	G	C	C	G	C	C	C	C	C	G	T	A
SHMT1*1Y	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1Z	G	C	T	A	G	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*1AA	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*1AB	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	C	C	A	G	G	A
SHMT1*1AC	G	C	T	A	G	T	C	C	G	A	C	C	G	C	C	C	C	C	G	T	A
SHMT1*1AD	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AE	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1AF	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AG	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AH	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AI	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1AJ	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*1AK	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AL	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AM	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	A	G	A
SHMT1*1AN	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AO	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AP	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AQ	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AR	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1AS	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AT	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AU	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AV	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1AW	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1AX	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AY	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1AZ	G	C	C	A	G	C	C	C	G	G	T	C	G	C	C	A	C	A	G	G	A
SHMT1*1BA	A	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1BB	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1BC	G	T	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1BD	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1BE	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1BF	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1BG	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1BH	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1BI	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1BJ	G	C	C	A	G	C	C	C	G	G	T	T	G	C	C	A	C	A	G	G	A
SHMT1*1BK	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*1BL	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*1BM	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*2A	G	C	C	G	G	T	C	C	G	G	C	C	G	C	C	C	C	C	G	T	A
SHMT1*2B	G	C	C	G	G	T	C	C	G	G	C	C	G	C	C	C	C	C	G	G	A
SHMT1*2C	G	C	C	G	G	T	C	C	G	A	C	C	G	C	C	C	C	C	G	T	A
SHMT1*3A	G	C	C	A	A	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*3B	G	C	C	A	A	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*3C	G	C	C	A	A	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*3D	G	C	C	A	A	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*3E	G	C	C	A	A	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*3F	G	C	C	A	A	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*3G	G	C	C	A	A	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*3H	G	C	C	A	A	C	C	C	G	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*4A	G	C	C	A	G	C	C	C	C	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*4B	G	C	C	A	G	C	C	C	C	G	C	C	G	C	C	C	C	A	G	G	A
SHMT1*5A	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5B	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5C	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5D	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5E	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5F	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5G	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	C	G	T	A
SHMT1*5H	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5I	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5J	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	C	G	T	A
SHMT1*5K	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5L	G	C	T	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5M	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5N	G	C	C	A	G	T	C	G	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5O	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5P	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5Q	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5R	G	C	C	A	G	T	C	C	G	A	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5S	G	C	C	A	G	C	C	C	G	G	C	C	G	C	C	A	C	C	G	T	A
SHMT1*5T	G	C	C	A	G	T	T	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5U	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5V	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5W	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5X	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	T	A	G	G	A
SHMT1*5Y	G	C	C	A	G	T	C	C	G	G	C	C	A	T	C	A	C	A	G	G	A
SHMT1*5Z	G	C	C	A	G	C	C	C	G	G	C	T	G	C	C	A	C	A	G	G	A
SHMT1*5AA	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5BB	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	G
SHMT1*5CC	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A
SHMT1*5DD	G	C	C	A	G	T	C	C	G	G	C	C	G	C	C	A	C	A	G	G	A

Supplementary Table 3:

Estimated *SHMT1* haplotypes and frequencies using EM algorithm implemented with Haplo.Stats.

Nucleotides highlighted in light grey represent variant nucleotides and dark grey if an additional variant allele exists as compared to those present in the most common haplotype in the AA population (the WT). Designations for haplotypes in (A) and (B) were made on the basis of alterations in the encoded amino acid sequence (number) and allele frequency (letters) – starting with the most common haplotype in the AA population. Numbers for variant allozymes were assigned from the N- to the C-terminus of the protein. Letters refer to haplotypes encoding the same amino acid sequence, from most to least common, beginning with the most common haplotype in the AA population. "D" = deletion and "I" = insertion.

18173113 intron 11 G→A	18172861 exon 12 C→T	18172828 exon 12 C→T	Leu(474)Phe 18172821 rs1979277 exon 12 C→T	18172742 rs3783/rs1979276 3'UTR C→G	18172737 3'UTR C→T	18172723 rs1979276 3'UTR C→T	18172522 rs12952556 3'UTR A→G	18172457 3'UTR T→C	18172377 rs9902011 3'UTR A→G	18172336 3'UTR G→A	18172248 3'UTR G→A	18172139 3'UTR C→T	18172016 3'UTR T(5)→T(6)	18171936 3'UTR Deletion of AAAT	18171851 3'FR G→A	18171788 3'FR C→T	18171442 3'FR C→T	18171413 3'FR C→T	18171388 3'FR C→A	18171385 3'FR T→C	18171215 3'FR A→G	18171134 3'FR G→A	18171105 rs941454 3'FR G→A/C	18171062 3'FR G→A
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	T	A	T	G	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	C	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	T	C	C	C	C	T	A	T	G	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	C	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	T	A	T	G	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	T	C	T	A	G	C	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	G	C	T	A	T	G	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	C	C	C	T	A	C	G	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	T	G	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	A	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	C	G
G	C	C	C	C	C	T	A	T	G	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	T	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	T	D	I	G	C	C	C	C	T	A	G	C	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	C	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	C	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	A	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	A	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	G	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	A	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	C	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	A	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	C	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	C	G
G	C	C	C	C	C	C	A	T	A	G	A	C	D	I	G	C	C	C	C	T	A	G	A	G
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G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
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G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	C	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	C	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	C	G
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G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	C	A	T	A	G	G	C	I	I	G	C	C	C	C	T	A	G	C	G
G	C	C	C	C	C	C	A	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	A	G
G	C	C	C	C	C	T	A	T	G	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	T	A	T	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	T	G	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	G
G	C	C	C	C	C	T	A	C	A	G	G	C	D	I	G	C	C	C	A	T	A	G	G	A
G	C	C	T	C	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	C	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	C	C	T	G	T	A	G	G	C	D	I	G	T	C	C	C	T	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	C	C	T	G	T	A	G	G	C	D	I	G	C	T	C	C	T	A	G	G	G
G	C	C	T	C	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	T	C	T	T	G	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	C	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	T	T	G	T	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	C	C	T	G	T	A	G	G	C	D	I	G	T	C	T	C	T	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
A	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	C	A	G	G	G
G	C	C	T	C	C	T	G	T	A	G	G	C	D	I	G	C	C	C	C	T	A	G	G	G
G	C	C	T	G	C	T	G	T	A	G	G	C	D	D	G	C	C	C	C	C	A	G	G	G

Supplementary Table 4: ***SHMT2*** **haplotype table**

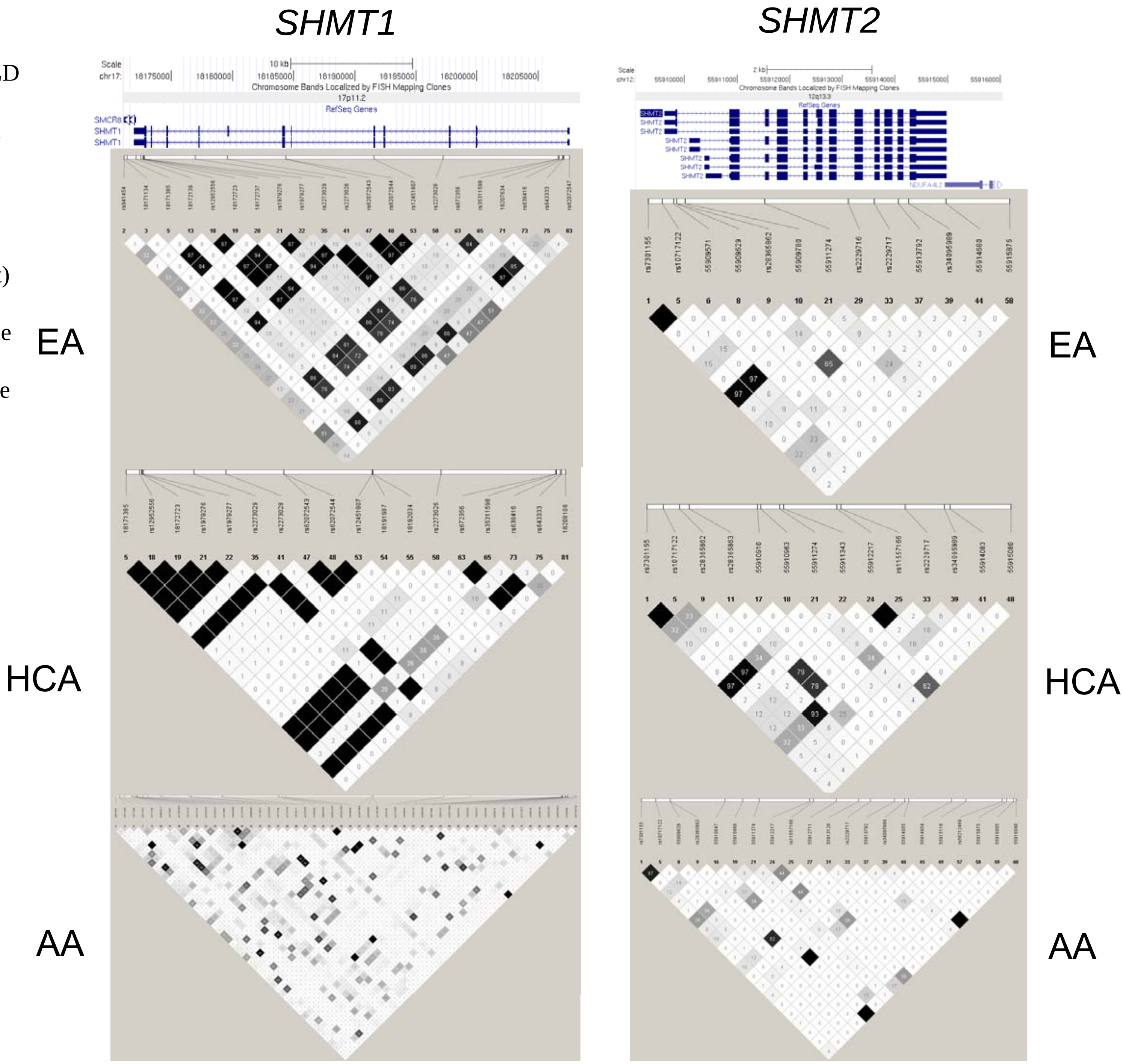
			Amino Acid																	Ala(31)Thr	Ser(48)Arg	Ser(50)Leu	Gln(61)His			Arg(121)Cys										Lys(302)Thr						Arg(395)Trp		Ala(428)Thr	Arg(437)His																		
			Chr12 (build36)	55909088	55909184	55909227	55909282	55909359	55909571	55909582	55909629	55909630	55909780	55909786	55909980	55910524	55910555	55910559	55910647	55910910	55910963	55910968	55911002	55911274	55911343	55911812	55912217	55912285	55912632	55912711	55912834	55912849	55913109	55913128	55913277	55913341	55913423	55913454	55913472	55913792	55913858	55913984	55914055	55914083	55914129	55914504	55914680	55914854	55914866	55915071	55915080	55915118	55915184	55915234	55915285	55915536	55915550	55915582	55915773	55915793	55915875	55916005	55916048
			rs#	rs7301155				rs10717122				rs28365862		rs28365863														rs11557166			rs2229715	rs2229716				rs2229717						rs34095989			rs2229718															rs58212469			
			gene location	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	5'FR	intron1	intron1	intron1	intron1	intron1	exon2	exon2	exon2	exon2	intron2	intron2	exon4	intron4	exon5	intron6	intron6	exon7	exon7	intron7	intron7	exon8	exon8	intron8	intron8	intron8	intron9	exon10	intron10	exon11	exon11	exon11	3'UtR	3'UTR	3'UTR	3'UTR	3'FR	3'FR	3'FR	3'FR	3'FR	3'FR	3'FR	3'FR	3'FR	3'FR	3'FR	3'FR	3'FR	3'FR
hapotype			nucleotide change	A→G	G→A	C→T	G→A	Del(T)	Del(T)	C→G	Ins(A)	A→G	G→A	G→A	C→T	G→A	T→C	G→A	G→C	G→A	C→G	C→T	G→C	Del (TCCT)	G→A	C→T	G→A	C→T	Del(G)	C→T	G→A	G→A	Del(T)	G→A	A→C	G→T	G→T	G→A	C→A	A→G	C→T	G→A	G→A	G→A	C→T	C→T	Del(TCTT)	Del(GCTCCCA)	G→A	G→T	G→T	G→A	G→A	G→A	C→G	G→C	Ins(GAGTGGAAG)	G→A	G→A	A→C	G→A	A→G	A→G
SHMT2*1A	0.44100	0.24300	0.39500	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1B	0.11900	0.19000	0.08080	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1C	0.11000	0.32000	0.11700	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1D	0.07930	0.00521	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1E	0.01680	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	A	C	I	C	G	G	I	A	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1F	0.01390	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1G	0.01040	0.00000	0.00000	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	A	T	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1H	0.00855	0.03550	0.16900	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1I	0.00829	0.00000	0.00000	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	T	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1J	0.00635	0.03870	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	A	A	A
SHMT2*1K	0.00521	0.02600	0.00000	A	G	C	G	D	I	C	I	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1L	0.00521	0.00521	0.00000	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	A	G	C	G	D	G	G	A	G	A	A
SHMT2*1M	0.00521	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	A	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1N	0.00521	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	D	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1O	0.00521	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	A	C	I	C	G	G	I	A	A	G	G	G	C	A	C	G	G	G	T	C	I	I	G	T	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1P	0.00521	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	A	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1Q	0.00521	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	A	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1R	0.00521	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	D	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1S	0.00521	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	C	G	A	A
SHMT2*1T2	0.00521	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	G	C	A	G	G	C	C	I	I	G	G	G	A	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1U	0.00521	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	G	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1V	0.00521	0.00000	0.00000	A	G	C	G	D	I	C	I	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	A	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1W	0.00521	0.00000	0.00000	G	G	C	A	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	C	G	A	A
SHMT2*1X	0.00521	0.00000	0.00000	G	G	C	G	D	I	C	D	A	G	G	C	G	C	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	C	G	A	A
SHMT2*1Y	0.00521	0.00000	0.00000	G	G	C	G	I	I	C	D	A	G	G	C	A	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1Z	0.00521	0.00000	0.00000	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	A	T	I	C	G	G	I	G	A	G	G	G	A	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AA	0.00521	0.00000	0.00000	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	D	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AB	0.00521	0.00000	0.00000	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	A	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AC	0.00521	0.00000	0.00000	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	I	G	G	A	G	A	A
SHMT2*1AD	0.00442	0.00000	0.00000	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	G	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AE	0.00407	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	A	A	A
SHMT2*1AF	0.00399	0.00000	0.00000	A	G	C	G	D	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	A	C	I	C	G	G	I	A	A	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AG	0.00176	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AH	0.00079	0.00000	0.00000	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AI	0.00017	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	G	G	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AJ	0.00017	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	T	G	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AK	0.00016	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	T	T	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AL	0.00015	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	T	G	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AM	0.00014	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AN	0.00013	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	T	T	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AO	0.00013	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	T	T	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AP	0.00013	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	G	G	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AQ	0.00012	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	G	G	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AR	0.00012	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	T	T	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AS	0.00012	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	G	T	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AT2	0.00011	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	G	G	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AU	0.00010	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	T	T	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AV	0.00009	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	T	G	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AW	0.00008	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	T	G	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AX	0.00006	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	G	T	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AY	0.00005	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	T	G	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1AZ	0.00005	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	T	G	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BA	0.00005	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	G	T	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BB	0.00004	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	G	T	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BC	0.00003	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	G	T	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BD	0.00003	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	G	T	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BE	0.00003	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	G	G	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BF	0.00003	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BG	0.00002	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	T	T	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BH	0.00002	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	T	T	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BI	0.00002	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BJ	0.00002	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BK	0.00001	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	G	G	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BL	0.00000	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	A	G	T	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BM	0.00000	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	T	T	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BN	0.00000	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	D	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BO	0.00000	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BP	0.00000	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	A	G	T	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BQ	0.00000	0.02250	0.00000	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	D	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BR	0.00000	0.01680	0.00000	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BS	0.00000	0.01370	0.00000	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	A	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BT2	0.00000	0.01110	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	G	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BU	0.00000	0.01040	0.00000	A	G	C	G	D	I	C	D	A	A	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BV	0.00000	0.00728	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	A	A	A
SHMT2*1BW	0.00000	0.00540	0.00000	A	G	C	G	D	D	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1BX	0.00000	0.00521	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	A	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	G	G	D	G	G	A	G	A	A
SHMT2*1BY	0.00000	0.00521	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	C	D	G	G	A	G	A	A
SHMT2*1BZ	0.00000	0.00521	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	A	G	A	G	A	A
SHMT2*1CA	0.00000	0.00521	0.00000	G	G	C	G	I	I	C	D	A	G	G	T	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CB	0.00000	0.00521	0.00000	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	A	C	G	D	G	G	A	G	A	A
SHMT2*1CC	0.00000	0.00502	0.00000	A	G	C	G	D	D	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	G	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CD	0.00000	0.00473	0.00000	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	A	I	G	A	G	G	G	C	G	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CE	0.00000	0.00399	0.00000	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	A	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CF	0.00000	0.00358	0.00000	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	A	I	G	A	G	G	G	C	A	C	G	G	G	C	C	D	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CG	0.00000	0.00091	0.00000	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	A	A	A
SHMT2*1CH	0.00000	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	C	D	G	G	A	G	A	A
SHMT2*1CI	0.00000	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	A	G	A	G	A	A
SHMT2*1CJ	0.00000	0.00000	0.00000	G	G	C	G	I	I	C	D	A	G	G	T	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CK	0.00000	0.00000	0.00000	A	G	C	G	D	D	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	G	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CL	0.00000	0.00000	0.00000	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	A	I	G	A	G	G	G	C	G	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CM	0.00000	0.00000	0.00000	A	G	C	G	D	D	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CN	0.00000	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	A	G	C	G	D	G	G	A	G	A	A
SHMT2*1CO	0.00000	0.00000	0.06770	G	G	C	G	I	I	C	D	A	G	A	C	G	T	G	G	G	C	C	G	I	G	C	A	T	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CP	0.00000	0.00000	0.02080	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	A	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	T	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CQ	0.00000	0.00000	0.01650	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	T	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CR	0.00000	0.00000	0.01040	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	A	T	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CS	0.00000	0.00000	0.00775	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CT2	0.00000	0.00000	0.00521	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	A	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	T	G	G	G	C	G	D	G	A	A	G	A	A
SHMT2*1CU	0.00000	0.00000	0.00521	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	T	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CV	0.00000	0.00000	0.00521	G	A	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CW	0.00000	0.00000	0.00521	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	A	T	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CX	0.00000	0.00000	0.00521	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	A	A	A
SHMT2*1CY	0.00000	0.00000	0.00521	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	T	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1CZ	0.00000	0.00000	0.00521	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	D	C	G	G	I	G	A	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1DA	0.00000	0.00000	0.00521	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	T	G	G	C	A	C	G	G	G	C	T	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1DB	0.00000	0.00000	0.00521	G	G	C	G	I	I	G	D	A	G	G	C	G	T	G	G	G	C	C	G	I	A	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	T	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1DC	0.00000	0.00000	0.00521	G	G	T	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1DD	0.00000	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	A	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	T	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*1DE	0.00000	0.00000	0.00000	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	T	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*2A	0.00000	0.00000	0.00912	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	A	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*2B	0.00000	0.00000	0.00130	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	A	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*3A	0.00000	0.00000	0.00913	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	G	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*3B	0.00000	0.00000	0.00128	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	G	C	G	I	G	C	G	C	I	C	G	G	I	G	A	T	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*4A	0.03650	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	T	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*4B	0.01040	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	T	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	G	A
SHMT2*4C	0.00521	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	T	G	I	G	C	G	C	I	C	G	G	I	G	A	G	T	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*5	0.00000	0.00000	0.00521	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	C	D	A	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	T	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*6	0.00000	0.00000	0.00521	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	T	G	C	I	C	G	G	I	G	A	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7A	0.00521	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	C	G	G	G	C	A	C	A	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7B	0.00016	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	T	G	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7C	0.00016	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	G	G	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7D	0.00016	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	T	T	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7E	0.00015	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	G	G	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7F	0.00015	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	T	T	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7G	0.00014	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	G	G	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7G	0.00000	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	T	T	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7H	0.00014	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7I	0.00013	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	T	G	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7J	0.00013	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	G	T	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7K	0.00013	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	T	T	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A

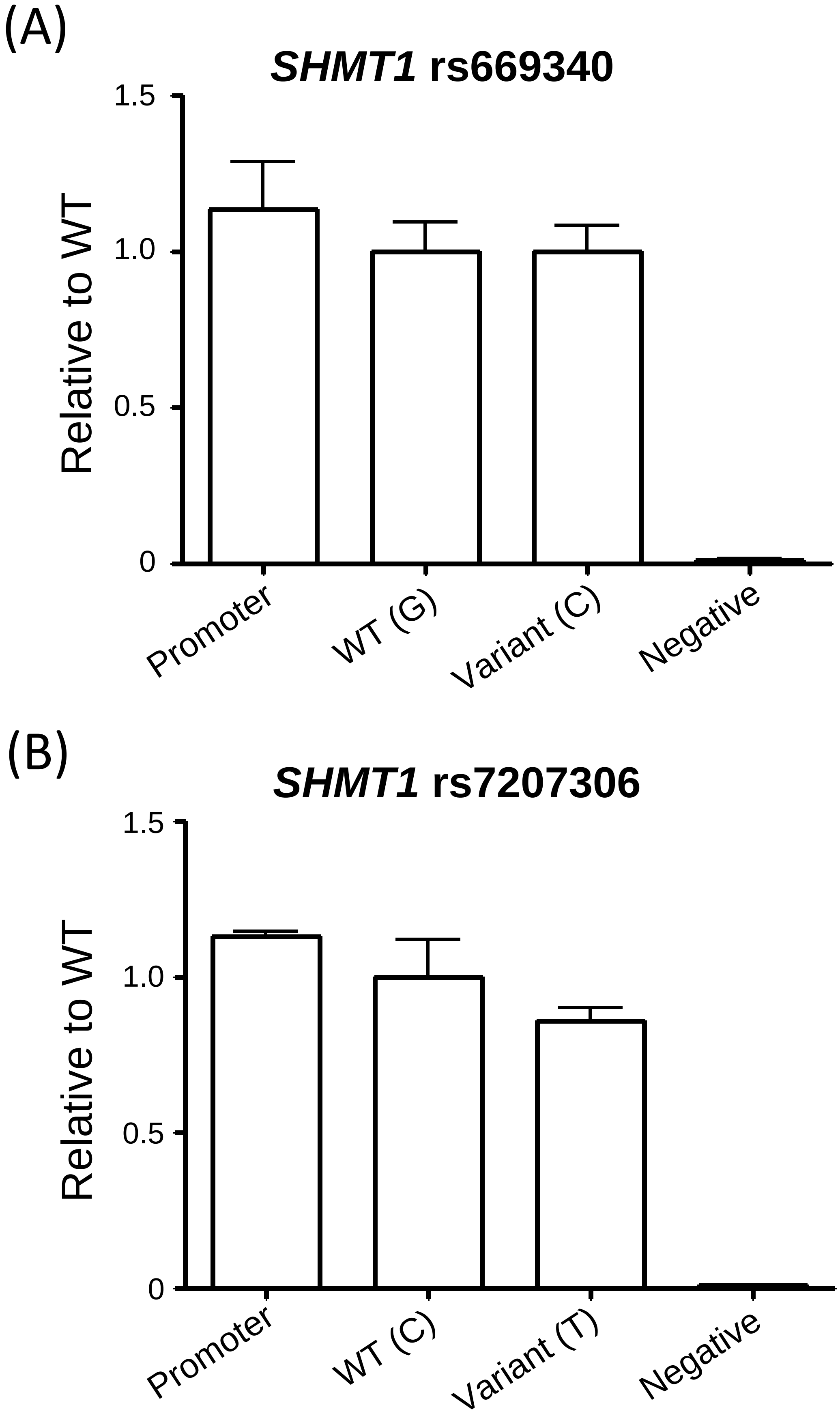
SHMT2*7L	0.00012	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	G	T	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7M	0.00012	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	G	T	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7N	0.00012	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	G	T	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7O	0.00012	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7P	0.00010	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	G	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7Q	0.00009	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	T	T	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7R	0.00008	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	T	G	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7S	0.00008	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	T	G	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7T	0.00007	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	G	G	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7U	0.00007	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	T	T	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7V	0.00007	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	T	G	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7W	0.00005	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	T	G	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7X	0.00005	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	G	T	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7Y	0.00005	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	T	T	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7Z	0.00004	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	G	C	G	G	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7AA	0.00004	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	G	G	A	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7AB	0.00003	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	T	T	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7AC	0.00003	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	G	T	G	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7AD	0.00003	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	G	T	G	C	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7AE	0.00001	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	G	T	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*7AF	0.00001	0.00000	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	T	G	G	D	A	C	T	G	A	A	A	C	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*8	0.00000	0.00521	0.00000	A	G	C	G	D	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	D	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	T	G	G	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*9	0.01040	0.00000	0.00000	G	G	C	G	D	I	C	D	A	G	G	C	G	T	G	C	G	C	C	G	I	G	C	A	T	I	C	G	G	I	G	A	G	G	G	C	A	C	A	A	G	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	G
SHMT2*10A	0.00000	0.00000	0.02170	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	A	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*10B	0.00000	0.00000	0.00521	G	G	C	G	I	I	C	D	G	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	A	G	A	C	C	I	I	G	G	G	G	G	G	C	G	D	G	G	A	G	A	A
SHMT2*10C	0.00000	0.00000	0.00430	G	G	C	G	I	I	C	D	A	G	G	C	G	T	G	G	G	C	C	G	I	G	C	G	C	I	C	G	G	I	G	A	G	G	G	C	A	C	G	G	A	C	C	I	I	G	G	T	G	G	G	C	G	D	G	G	A	G	A	A
	AA	**EA**	**HC**																																																											
	Haplotype frequency																																																												

Supplementary Table 4:

Estimated *SHMT2* haplotypes and frequencies using EM algorithm implemented with Haplo.Stats.
Nucleotides highlighted in light grey represent variant nucleotides as compared to those present in the most common haplotype in the AA population (the WT). Designations for haplotypes in (A) and (B) were made on the basis of alterations in the encoded amino acid sequence (number) and allele frequency (letters) – starting with the most common haplotype in the AA population. Numbers for variant allozymes were assigned from the N- to the C-terminus of the protein. Letters refer to haplotypes encoding the same amino acid sequence, from most to least common, beginning with the most common haplotype in the AA population. “D” = deletion and "I" = insertion.

Supplementary Figure 1: LD plots (r^2) , based on the gene resequencing, generated with Haploview. The variants graphed represent polymorphisms with ethnic specific MAFs ≥ 1% (EA, HCA, or AA) in *SHMT1* (left) and *SHMT2* (right). The figures at the top represent the genetic structures of *SHMT1* and *SHMT2*, as defined by the UCSC Genome Browser.





Supplemental Figure 2. Dual reporter assays for (A) rs669340 and (B) rs7207306. Error bars indicate SEM.