Supplementary Information

Common variants at 6q22 and 17q21 are associated with intracranial volume.

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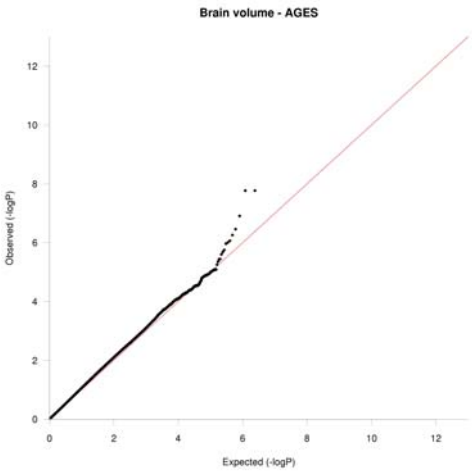
Supplementary Figure 1. Quantile-quantile plots for brain volume and intracranial volume for each cohort separately.



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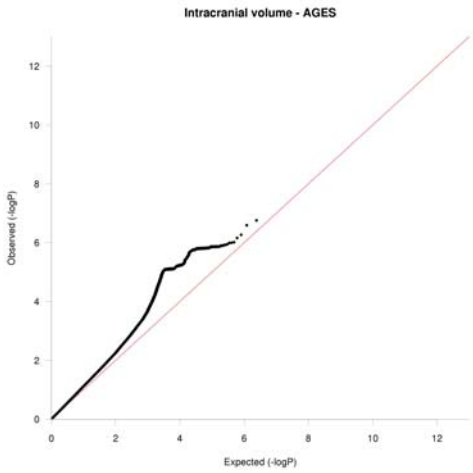

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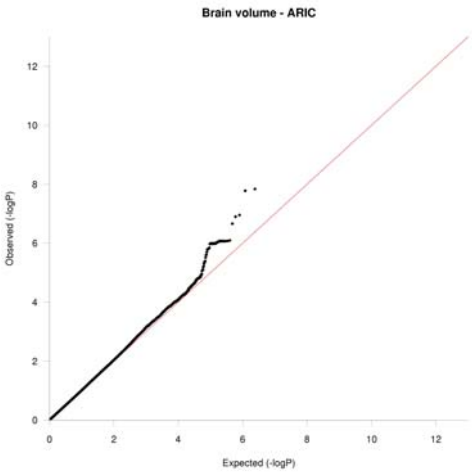

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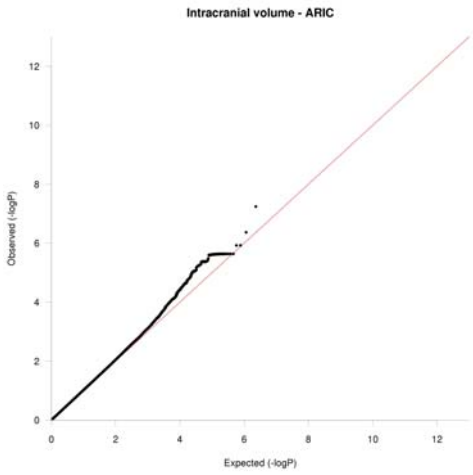

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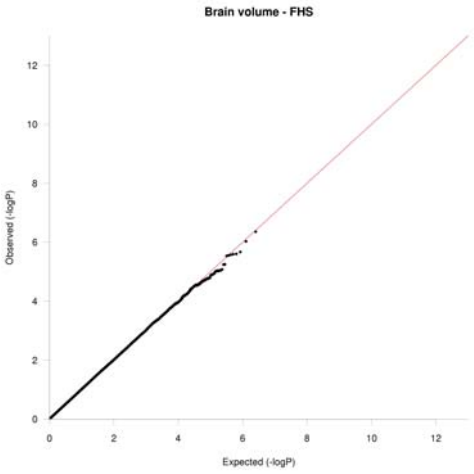

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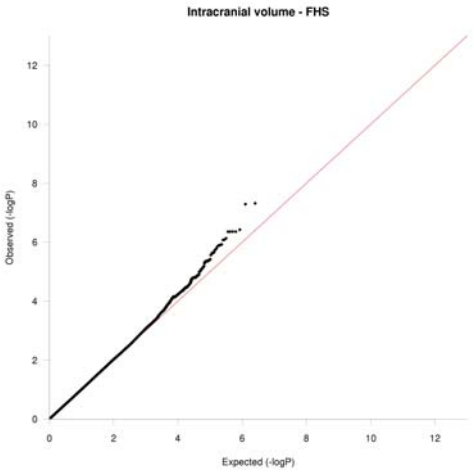

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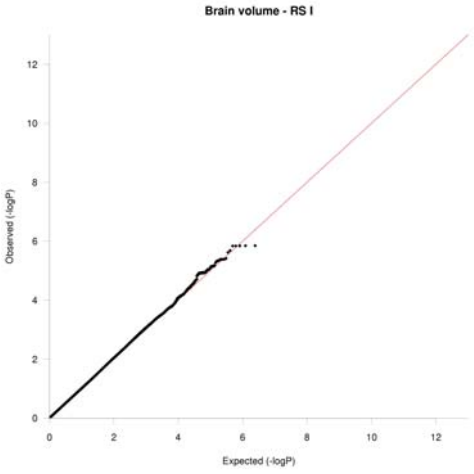

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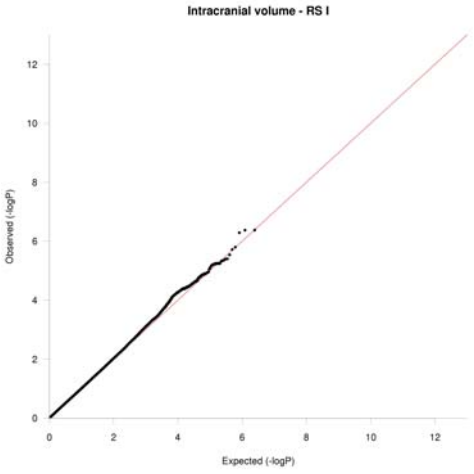

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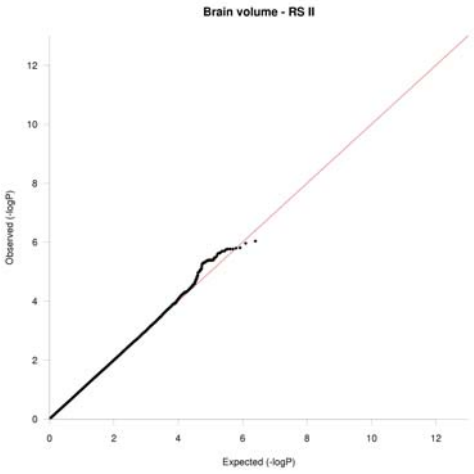

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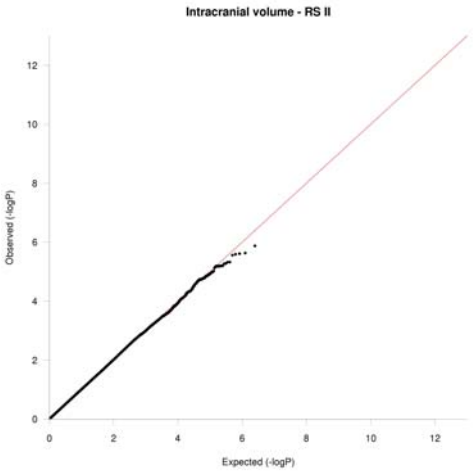

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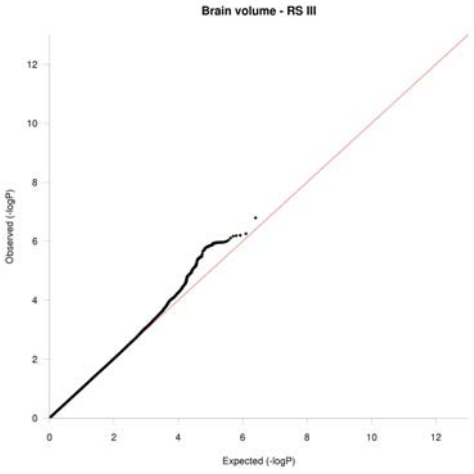

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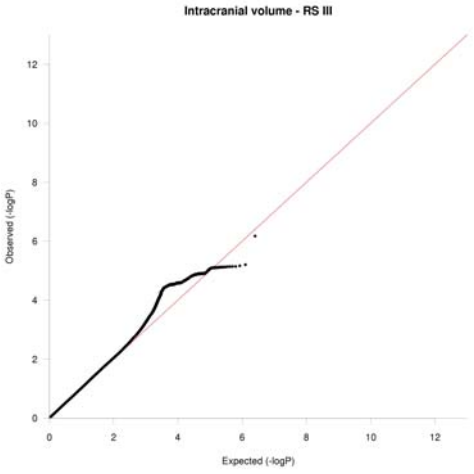

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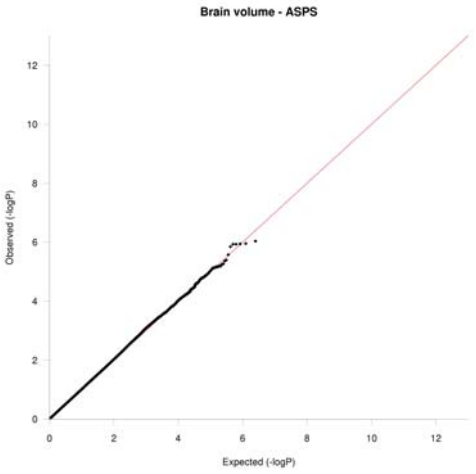

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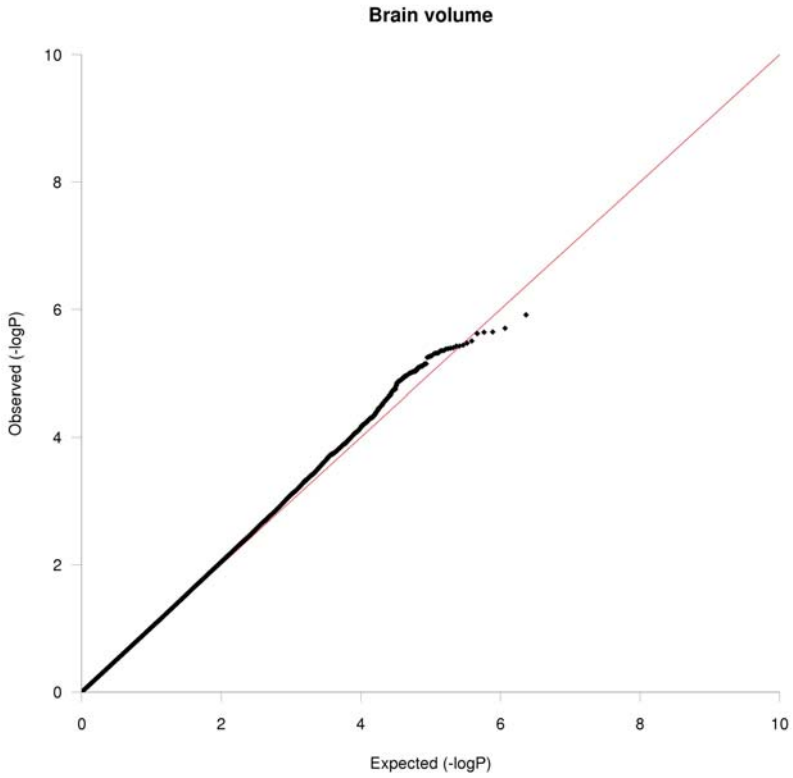
Supplementary Figure 2. Quantile-quantile plots for brain volume and intracranial volume for the discovery meta-analysis.



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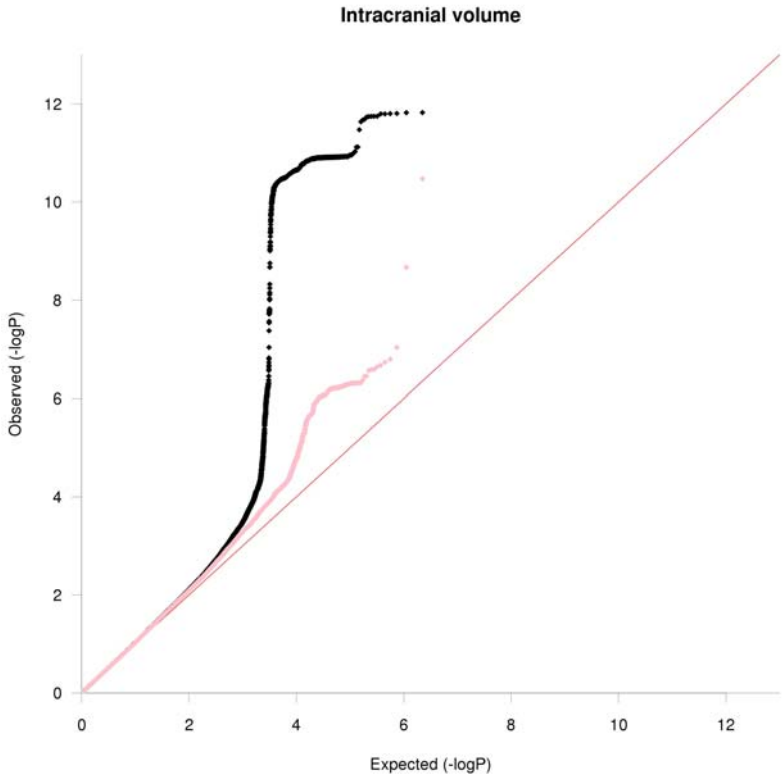
Q-Q plot for the GWAS meta-analysis on brain volume.



λ=1.04 (black curve)

Q-Q plot for the GWAS meta-analysis on intracranial volume. Black dots represent the plot for the entire GWAS; pink dots represent the plot after exclusion of the chromosome 17 inversion

Supplementary Table 1. SNPs with $p<10^{-5}$ in the GWAS on brain volume.

name	chr	position	strand	allele1	allele2	coded allele	frequency coded allele	beta	sebeta	chi^2	p
rs11142352	9	72095742	+	T	G	G	0.08	-0.47	0.10	23.5	$1.2*10^{-6}$
rs4569183	14	83972025	+	T	C	C	0.40	-0.22	0.05	22.6	$2.0*10^{-6}$
rs1981270	1	56540679	+	T	C	C	0.40	0.22	0.05	22.4	$2.3*10^{-6}$
rs2582801	8	97680069	+	A	G	G	0.46	0.22	0.05	22.3	$2.3*10^{-6}$
rs10138991	14	83969190	+	A	G	G	0.40	-0.22	0.05	22.2	$2.4*10^{-6}$
rs2455051	8	97746258	+	A	G	G	0.26	-0.24	0.05	21.7	$3.1*10^{-6}$
rs11785322	8	97796192	+	T	G	G	0.27	-0.25	0.05	21.6	$3.4*10^{-6}$
rs10504966	8	97786653	+	T	G	G	0.27	-0.24	0.05	21.4	$3.7*10^{-6}$
rs7017167	8	97780435	+	T	C	C	0.73	0.24	0.05	21.4	$3.8*10^{-6}$
rs10504965	8	97782942	+	T	G	G	0.73	0.24	0.05	21.4	$3.8*10^{-6}$
rs2464477	8	97771795	+	A	T	T	0.27	-0.24	0.05	21.3	$4.0*10^{-6}$
rs2464480	8	97747832	+	T	C	C	0.26	-0.24	0.05	21.2	$4.1*10^{-6}$
rs2455046	8	97767040	+	T	C	C	0.26	-0.24	0.05	21.2	$4.1*10^{-6}$
rs2455053	8	97764494	+	T	G	G	0.26	-0.24	0.05	21.2	$4.2*10^{-6}$
rs8006640	14	83979059	+	A	G	G	0.39	-0.22	0.05	21.1	$4.4*10^{-6}$
rs12883344	14	83981301	+	A	C	C	0.61	0.22	0.05	21.1	$4.4*10^{-6}$
rs8022233	14	83978679	+	T	C	C	0.61	0.22	0.05	21.0	$4.5*10^{-6}$
rs8091622	18	38881684	+	T	C	C	0.07	0.41	0.09	20.9	$4.8*10^{-6}$
rs9945309	18	38883414	+	T	C	C	0.07	0.41	0.09	20.9	$4.8*10^{-6}$
rs12451772	17	60897752	+	T	C	C	0.96	-0.70	0.15	20.9	$4.9*10^{-6}$
rs4341830	18	38873704	+	A	G	G	0.07	0.41	0.09	20.8	$5.0*10^{-6}$
rs1272255	3	106480980	+	G	C	C	0.24	0.26	0.06	20.7	$5.3*10^{-6}$
rs1267692	3	106481385	+	A	G	G	0.24	0.26	0.06	20.7	$5.4*10^{-6}$
rs1259446	3	106481446	+	T	C	C	0.24	0.26	0.06	20.7	$5.4*10^{-6}$
rs1795302	3	106481458	+	T	C	C	0.76	-0.26	0.06	20.6	$5.6*10^{-6}$
rs1272776	3	106481481	+	A	G	G	0.76	-0.26	0.06	20.6	$5.7*10^{-6}$
rs4625859	2	29661678	+	A	G	G	0.98	-1.08	0.24	20.2	$7.2*10^{-6}$

rs17113726	1	56552211	+	A	G	G	0.96	-0.54	0.12	20.1	$7.2*10^{-6}$
rs12759658	1	56553695	+	T	C	C	0.04	0.54	0.12	20.1	$7.3*10^{-6}$
rs3929899	1	56568007	+	A	C	C	0.96	-0.54	0.12	20.0	$7.7*10^{-6}$
rs17113749	1	56559319	+	T	G	G	0.96	-0.54	0.12	20.0	$7.8*10^{-6}$
rs12739422	1	56553751	+	T	C	C	0.96	-0.54	0.12	20.0	$7.8*10^{-6}$
rs10493203	1	56555167	+	A	G	G	0.96	-0.54	0.12	20.0	$7.9*10^{-6}$
rs12756361	1	56557150	+	T	C	C	0.96	-0.54	0.12	19.9	$8.2*10^{-6}$
rs2447835	5	103940347	+	G	C	C	0.96	0.53	0.12	19.9	$8.2*10^{-6}$
rs10493204	1	56556533	+	A	G	G	0.96	-0.54	0.12	19.9	$8.3*10^{-6}$
rs2455044	8	97767418	+	A	G	G	0.26	-0.24	0.05	19.7	$9.1*10^{-6}$
rs4635264	14	83938984	+	A	C	C	0.42	-0.21	0.05	19.6	$9.3*10^{-6}$
rs8017429	14	83955805	+	T	G	G	0.42	-0.21	0.05	19.6	$9.4*10^{-6}$
rs12891609	14	83942643	+	A	G	G	0.58	0.21	0.05	19.6	$9.4*10^{-6}$
rs12895750	14	83942754	+	G	C	C	0.42	-0.21	0.05	19.6	$9.4*10^{-6}$
rs625525	1	91770181	+	T	C	C	0.51	0.20	0.05	19.6	$9.6*10^{-6}$
rs6688261	1	91759622	+	T	C	C	0.51	0.20	0.05	19.6	$9.6*10^{-6}$
rs12125947	1	91763075	+	T	C	C	0.49	-0.20	0.05	19.5	$9.8*10^{-6}$
rs1574781	1	179801094	+	A	G	G	0.84	-0.28	0.06	19.5	$9.9*10^{-6}$
rs9787125	1	56569003	+	A	G	G	0.04	0.53	0.12	19.5	$1.0*10^{-5}$

Supplementary Table 2. SNPs with $p<10^{-5}$ in the GWAS on intracranial volume.

name	chr	position	strand	allele1	allele2	coded allele	frequency coded allele	beta	sebeta	chi^2	p
rs9915547	17	41568559	+	T	C	C	0.22	-14.7	2.1	50.0	$1.5*10^{-12}$
rs10221243	17	41568087	+	A	G	G	0.78	14.7	2.1	50.0	$1.5*10^{-12}$
rs7207582	17	41566710	+	A	G	G	0.22	-14.7	2.1	50.0	$1.6*10^{-12}$
rs9303525	17	41543040	+	A	G	G	0.22	-14.7	2.1	49.9	$1.6*10^{-12}$
rs6503457	17	41564089	+	T	G	G	0.78	14.7	2.1	49.9	$1.6*10^{-12}$
rs8070942	17	41564451	+	T	G	G	0.78	14.7	2.1	49.9	$1.6*10^{-12}$
rs7350980	17	41466118	+	A	G	G	0.78	14.6	2.1	49.7	$1.8*10^{-12}$
rs4597358	17	41466517	+	G	C	C	0.78	14.6	2.1	49.7	$1.8*10^{-12}$
rs8077487	17	41471287	+	T	C	C	0.22	-14.6	2.1	49.7	$1.8*10^{-12}$
rs7221390	17	41472797	+	T	G	G	0.22	-14.6	2.1	49.7	$1.8*10^{-12}$
rs7218319	17	41482217	+	T	C	C	0.78	14.6	2.1	49.6	$1.9*10^{-12}$
rs2066899	17	41511550	+	T	C	C	0.78	14.6	2.1	49.4	$2.1*10^{-12}$
rs8080583	17	41518415	+	A	C	C	0.78	14.6	2.1	49.4	$2.1*10^{-12}$
rs1918793	17	41583946	+	T	C	C	0.78	14.7	2.1	49.2	$2.3*10^{-12}$
rs2532274	17	41602941	+	A	G	G	0.22	-14.7	2.1	48.5	$3.4*10^{-12}$
rs2696590	17	41577379	+	G	C	C	0.21	-14.7	2.2	46.9	$7.6*10^{-12}$
rs17660847	17	41545156	+	T	C	C	0.79	14.7	2.2	46.9	$7.6*10^{-12}$
rs1991556	17	41439239	+	A	G	G	0.78	14.4	2.1	46.4	$9.4*10^{-12}$
rs12185243	17	41471198	+	T	C	C	0.21	-14.6	2.1	46.4	$9.9*10^{-12}$
rs2077551	17	41570665	+	T	C	C	0.21	-14.6	2.1	46.2	$1.1*10^{-11}$
rs1406069	17	41581663	+	A	G	G	0.79	14.6	2.1	46.1	$1.1*10^{-11}$
rs2696577	17	41583659	+	G	C	C	0.79	14.6	2.1	46.1	$1.1*10^{-11}$
rs17653193	17	41468288	+	A	G	G	0.79	14.9	2.2	46.1	$1.1*10^{-11}$
rs12150320	17	41568981	+	T	C	C	0.79	14.2	2.1	46.0	$1.2*10^{-11}$
rs2532316	17	41569489	+	A	G	G	0.79	14.2	2.1	46.0	$1.2*10^{-11}$
rs2696605	17	41569698	+	A	C	C	0.21	-14.2	2.1	46.0	$1.2*10^{-11}$
rs2532315	17	41569711	+	A	G	G	0.79	14.2	2.1	46.0	$1.2*10^{-11}$

rs2696604	17	41569871	+	A	G	G	0.21	-14.2	2.1	46.0	$1.2*10^{-11}$
rs2696602	17	41571673	+	T	C	C	0.79	14.2	2.1	46.0	$1.2*10^{-11}$
rs2696601	17	41571935	+	T	C	C	0.21	-14.2	2.1	46.0	$1.2*10^{-11}$
rs2696600	17	41572003	+	A	G	G	0.21	-14.2	2.1	46.0	$1.2*10^{-11}$
rs2532314	17	41572889	+	T	G	G	0.79	14.2	2.1	46.0	$1.2*10^{-11}$
rs2532313	17	41573070	+	A	G	G	0.79	14.2	2.1	46.0	$1.2*10^{-11}$
rs1918801	17	41573821	+	A	T	T	0.21	-14.2	2.1	46.0	$1.2*10^{-11}$
rs1918800	17	41573915	+	T	C	C	0.79	14.2	2.1	46.0	$1.2*10^{-11}$
rs1918799	17	41574019	+	T	C	C	0.79	14.2	2.1	46.0	$1.2*10^{-11}$
rs1528075	17	41576231	+	T	G	G	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs12150087	17	41566765	+	G	C	C	0.79	14.2	2.1	45.9	$1.2*10^{-11}$
rs2532307	17	41577127	+	A	G	G	0.79	14.2	2.1	45.9	$1.2*10^{-11}$
rs1406074	17	41577844	+	T	G	G	0.21	-14.3	2.1	45.9	$1.2*10^{-11}$
rs2696592	17	41577253	+	A	T	T	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs12150048	17	41183242	+	G	C	C	0.22	-14.5	2.1	45.9	$1.2*10^{-11}$
rs2222746	17	41577796	+	T	G	G	0.79	14.2	2.1	45.9	$1.2*10^{-11}$
rs1918798	17	41578112	+	A	G	G	0.79	14.3	2.1	45.9	$1.2*10^{-11}$
rs17577094	17	41543275	+	A	G	G	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs17577159	17	41544260	+	T	G	G	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs17576954	17	41537745	+	T	C	C	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs17576989	17	41539399	+	A	C	C	0.79	14.2	2.1	45.9	$1.2*10^{-11}$
rs17577052	17	41542084	+	T	C	C	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs17577024	17	41542035	+	A	G	G	0.79	14.2	2.1	45.9	$1.2*10^{-11}$
rs2696587	17	41578237	+	T	G	G	0.21	-14.3	2.1	45.9	$1.2*10^{-11}$
rs17660865	17	41545191	+	T	C	C	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs17576842	17	41535804	+	A	G	G	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs17660907	17	41546868	+	A	G	G	0.79	14.2	2.1	45.9	$1.2*10^{-11}$
rs2532305	17	41578837	+	A	G	G	0.79	14.3	2.1	45.9	$1.2*10^{-11}$
rs1918797	17	41579020	+	A	G	G	0.79	14.3	2.1	45.9	$1.2*10^{-11}$
rs17660936	17	41546942	+	T	C	C	0.79	14.2	2.1	45.9	$1.2*10^{-11}$
rs17585012	17	41583287	+	A	T	T	0.21	-14.3	2.1	45.9	$1.2*10^{-11}$

rs17576870	17	41536254	+	A	G	G	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs17660488	17	41534150	+	T	C	C	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs17662115	17	41583308	+	T	C	C	0.21	-14.3	2.1	45.9	$1.2*10^{-11}$
rs2696581	17	41582963	+	A	G	G	0.79	14.3	2.1	45.9	$1.2*10^{-11}$
rs17576779	17	41534085	+	T	C	C	0.79	14.2	2.1	45.9	$1.2*10^{-11}$
rs17577313	17	41547612	+	A	G	G	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs4630591	17	41548345	+	T	C	C	0.79	14.4	2.1	45.9	$1.2*10^{-11}$
rs4548919	17	41548172	+	T	G	G	0.79	14.2	2.1	45.9	$1.2*10^{-11}$
rs17660595	17	41536766	+	A	G	G	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs17577975	17	41566219	+	T	C	C	0.79	14.2	2.1	45.9	$1.2*10^{-11}$
rs17577369	17	41548702	+	A	G	G	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs17661015	17	41548736	+	T	C	C	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs17661027	17	41548876	+	A	C	C	0.79	14.2	2.1	45.9	$1.2*10^{-11}$
rs17660464	17	41533806	+	A	C	C	0.79	14.2	2.1	45.9	$1.2*10^{-11}$
rs17661348	17	41562844	+	A	G	G	0.21	-14.2	2.1	45.9	$1.2*10^{-11}$
rs17661385	17	41563555	+	A	G	G	0.21	-14.2	2.1	45.9	$1.3*10^{-11}$
rs17576709	17	41529173	+	G	C	C	0.79	14.2	2.1	45.9	$1.3*10^{-11}$
rs17577954	17	41565405	+	T	C	C	0.21	-14.2	2.1	45.9	$1.3*10^{-11}$
rs10514904	17	41563664	+	T	C	C	0.79	14.2	2.1	45.9	$1.3*10^{-11}$
rs17661045	17	41549931	+	A	T	T	0.79	14.2	2.1	45.9	$1.3*10^{-11}$
rs17577447	17	41550160	+	A	T	T	0.79	14.2	2.1	45.9	$1.3*10^{-11}$
rs1122381	17	41561617	+	A	G	G	0.21	-14.2	2.1	45.9	$1.3*10^{-11}$
rs17661428	17	41563921	+	G	C	C	0.79	14.2	2.1	45.9	$1.3*10^{-11}$
rs1122380	17	41561857	+	T	C	C	0.79	14.2	2.1	45.9	$1.3*10^{-11}$
rs17576695	17	41528144	+	A	T	T	0.79	14.2	2.1	45.9	$1.3*10^{-11}$
rs4471723	17	41561468	+	T	C	C	0.79	14.2	2.1	45.9	$1.3*10^{-11}$
rs17577877	17	41563995	+	A	G	G	0.21	-14.2	2.1	45.9	$1.3*10^{-11}$
rs10514901	17	41550514	+	T	G	G	0.79	14.2	2.1	45.9	$1.3*10^{-11}$
rs17577496	17	41550614	+	T	C	C	0.21	-14.2	2.1	45.9	$1.3*10^{-11}$
rs17660398	17	41526429	+	T	C	C	0.79	14.2	2.1	45.9	$1.3*10^{-11}$
rs1468241	17	41551932	+	A	G	G	0.21	-14.2	2.1	45.9	$1.3*10^{-11}$

rs17661141	17	41551794	+	G	C	C	0.79	14.2	2.1	45.9	$1.3*10^{-11}$
rs17577650	17	41561278	+	A	G	G	0.21	-14.2	2.1	45.9	$1.3*10^{-11}$
rs4383188	17	41553381	+	T	C	C	0.21	-14.2	2.1	45.9	$1.3*10^{-11}$
rs17576631	17	41525836	+	G	C	C	0.21	-14.2	2.1	45.9	$1.3*10^{-11}$
rs17660337	17	41525423	+	T	C	C	0.21	-14.2	2.1	45.9	$1.3*10^{-11}$
rs17660294	17	41522919	+	T	C	C	0.21	-14.2	2.1	45.9	$1.3*10^{-11}$
rs17660251	17	41522464	+	T	C	C	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs17660228	17	41522318	+	A	G	G	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs17660167	17	41522129	+	T	C	C	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs17660132	17	41521621	+	T	C	C	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$
rs1076222	17	41465616	+	G	C	C	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs17574425	17	41465035	+	G	C	C	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs17652961	17	41464202	+	A	G	G	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs17574361	17	41464049	+	A	G	G	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$
rs17574604	17	41467460	+	A	G	G	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$
rs17653162	17	41467674	+	A	C	C	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs17653211	17	41468485	+	T	C	C	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$
rs7350928	17	41463947	+	T	C	C	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs11079729	17	41471416	+	A	C	C	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs17574824	17	41470954	+	T	C	C	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs12150542	17	41471577	+	A	G	G	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs17574796	17	41470921	+	T	C	C	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$
rs17574228	17	41460355	+	T	C	C	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$
rs12150090	17	41471733	+	T	C	C	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs17652748	17	41459462	+	T	C	C	0.79	14.2	2.1	45.8	$1.3*10^{-11}$
rs7687	17	41459142	+	T	C	C	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$
rs10514897	17	41473244	+	A	G	G	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$
rs16940799	17	41458779	+	T	C	C	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$
rs17574040	17	41458711	+	A	C	C	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$
rs1052594	17	41458535	+	G	C	C	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$
rs10514898	17	41475485	+	A	C	C	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$

rs1052587	17	41458449	+	T	C	C	0.21	-14.2	2.1	45.8	$1.3*10^{-11}$
rs9468	17	41457408	+	T	C	C	0.21	-14.2	2.1	45.7	$1.4*10^{-11}$
rs12150447	17	41483977	+	A	C	C	0.21	-14.2	2.1	45.7	$1.4*10^{-11}$
rs3912061	17	41520916	+	T	C	C	0.79	14.2	2.1	45.7	$1.4*10^{-11}$
rs12150064	17	41484259	+	A	C	C	0.79	14.2	2.1	45.7	$1.4*10^{-11}$
rs17653836	17	41484728	+	A	T	T	0.79	14.2	2.1	45.7	$1.4*10^{-11}$
rs17575423	17	41485105	+	T	C	C	0.21	-14.2	2.1	45.7	$1.4*10^{-11}$
rs17652502	17	41450308	+	A	G	G	0.79	14.2	2.1	45.7	$1.4*10^{-11}$
rs17575437	17	41488867	+	A	T	T	0.79	14.2	2.1	45.6	$1.4*10^{-11}$
rs17653889	17	41488906	+	A	T	T	0.21	-14.2	2.1	45.6	$1.4*10^{-11}$
rs17573858	17	41446633	+	T	C	C	0.21	-14.2	2.1	45.6	$1.4*10^{-11}$
rs17653906	17	41488978	+	A	G	G	0.79	14.2	2.1	45.6	$1.4*10^{-11}$
rs12150170	17	41446483	+	A	G	G	0.21	-14.2	2.1	45.6	$1.4*10^{-11}$
rs17575507	17	41489931	+	A	G	G	0.21	-14.2	2.1	45.6	$1.4*10^{-11}$
rs876944	17	41490227	+	T	G	G	0.79	14.2	2.1	45.6	$1.4*10^{-11}$
rs1117253	17	41505119	+	A	C	C	0.21	-14.2	2.1	45.6	$1.4*10^{-11}$
rs974293	17	41506055	+	A	G	G	0.79	14.2	2.1	45.6	$1.4*10^{-11}$
rs733966	17	41445400	+	T	C	C	0.79	14.2	2.1	45.6	$1.4*10^{-11}$
rs1107820	17	41491195	+	T	C	C	0.21	-14.2	2.1	45.6	$1.5*10^{-11}$
rs17575556	17	41491663	+	A	G	G	0.79	14.2	2.1	45.6	$1.5*10^{-11}$
rs17659731	17	41500456	+	A	G	G	0.79	14.2	2.1	45.6	$1.5*10^{-11}$
rs17575850	17	41500209	+	A	C	C	0.79	14.2	2.1	45.6	$1.5*10^{-11}$
rs17653998	17	41491821	+	A	G	G	0.21	-14.2	2.1	45.6	$1.5*10^{-11}$
rs17652449	17	41444774	+	G	C	C	0.21	-14.2	2.1	45.6	$1.5*10^{-11}$
rs2316951	17	41494901	+	G	C	C	0.21	-14.2	2.1	45.6	$1.5*10^{-11}$
rs17575683	17	41495480	+	T	C	C	0.79	14.2	2.1	45.6	$1.5*10^{-11}$
rs2838	17	41497167	+	A	G	G	0.21	-14.2	2.1	45.5	$1.5*10^{-11}$
rs2696565	17	41700857	+	T	C	C	0.79	14.8	2.2	45.5	$1.5*10^{-11}$
rs2732653	17	41701296	+	A	G	G	0.79	14.8	2.2	45.5	$1.5*10^{-11}$
rs2532338	17	41701816	+	A	G	G	0.21	-14.8	2.2	45.5	$1.5*10^{-11}$
rs17653255	17	41468590	+	A	C	C	0.79	14.5	2.1	45.5	$1.5*10^{-11}$

rs2696574	17	41585874	+	T	C	C	0.79	14.6	2.2	45.5	$1.5*10^{-11}$
rs2696561	17	41702170	+	G	C	C	0.79	14.8	2.2	45.5	$1.5*10^{-11}$
rs2732656	17	41702942	+	T	C	C	0.21	-14.8	2.2	45.4	$1.6*10^{-11}$
rs2532331	17	41704103	+	A	G	G	0.79	14.8	2.2	45.4	$1.6*10^{-11}$
rs17660065	17	41518102	+	T	C	C	0.21	-14.1	2.1	45.4	$1.6*10^{-11}$
rs17659953	17	41515544	+	T	C	C	0.79	14.1	2.1	45.4	$1.6*10^{-11}$
rs1476554	17	41514921	+	T	C	C	0.79	14.1	2.1	45.4	$1.6*10^{-11}$
rs2316954	17	41511986	+	A	G	G	0.79	14.1	2.1	45.3	$1.7*10^{-11}$
rs17659881	17	41513416	+	A	G	G	0.21	-14.1	2.1	45.3	$1.7*10^{-11}$
rs2696575	17	41584601	+	A	G	G	0.21	-14.3	2.1	45.3	$1.7*10^{-11}$
rs1918790	17	41584396	+	T	C	C	0.79	14.3	2.1	45.3	$1.7*10^{-11}$
rs1918792	17	41584306	+	A	G	G	0.79	14.3	2.1	45.3	$1.7*10^{-11}$
rs2696576	17	41584547	+	A	G	G	0.21	-14.3	2.1	45.3	$1.7*10^{-11}$
rs2532303	17	41585141	+	T	C	C	0.21	-14.3	2.1	45.3	$1.7*10^{-11}$
rs1918791	17	41584386	+	G	C	C	0.79	14.3	2.1	45.3	$1.7*10^{-11}$
rs2532302	17	41585192	+	T	C	C	0.21	-14.3	2.1	45.3	$1.7*10^{-11}$
rs17660017	17	41516493	+	G	C	C	0.21	-14.3	2.1	45.3	$1.7*10^{-11}$
rs2696573	17	41586424	+	T	C	C	0.79	14.3	2.1	45.3	$1.7*10^{-11}$
rs2532297	17	41587103	+	A	G	G	0.79	14.3	2.1	45.3	$1.7*10^{-11}$
rs2696572	17	41587394	+	A	T	T	0.21	-14.3	2.1	45.3	$1.7*10^{-11}$
rs2532298	17	41587072	+	A	G	G	0.79	14.3	2.1	45.3	$1.7*10^{-11}$
rs2532296	17	41587604	+	T	C	C	0.21	-14.3	2.1	45.3	$1.7*10^{-11}$
rs2109092	17	41588736	+	A	G	G	0.79	14.3	2.1	45.3	$1.7*10^{-11}$
rs17662235	17	41589553	+	T	C	C	0.21	-14.3	2.1	45.3	$1.7*10^{-11}$
rs17585214	17	41589588	+	T	C	C	0.79	14.3	2.1	45.3	$1.7*10^{-11}$
rs1406068	17	41590303	+	T	C	C	0.79	14.3	2.1	45.3	$1.7*10^{-11}$
rs1528072	17	41592502	+	A	C	C	0.79	14.3	2.1	45.3	$1.7*10^{-11}$
rs2532292	17	41592845	+	A	T	T	0.21	-14.3	2.1	45.3	$1.7*10^{-11}$
rs2696571	17	41593149	+	G	C	C	0.21	-14.3	2.1	45.3	$1.7*10^{-11}$
rs2532291	17	41594201	+	A	G	G	0.79	14.3	2.1	45.2	$1.8*10^{-11}$
rs2532290	17	41594267	+	A	G	G	0.79	14.3	2.1	45.1	$1.8*10^{-11}$

rs2696557	17	41702995	+	A	C	C	0.79	14.5	2.2	45.1	$1.8*10^{-11}$
rs17573593	17	41438440	+	A	C	C	0.21	-14.1	2.1	45.1	$1.9*10^{-11}$
rs17662403	17	41594715	+	T	C	C	0.21	-14.3	2.1	45.1	$1.9*10^{-11}$
rs8070723	17	41436901	+	A	G	G	0.21	-14.1	2.1	45.1	$1.9*10^{-11}$
rs17654016	17	41493743	+	T	C	C	0.23	-14.2	2.1	45.1	$1.9*10^{-11}$
rs1078268	17	41431738	+	A	G	G	0.21	-14.1	2.1	45.1	$1.9*10^{-11}$
rs17585426	17	41594743	+	T	C	C	0.21	-14.3	2.1	45.1	$1.9*10^{-11}$
rs3946526	17	40897439	+	T	C	C	0.83	15.2	2.3	45.0	$1.9*10^{-11}$
rs2532288	17	41595735	+	T	C	C	0.79	14.3	2.1	45.0	$2.0*10^{-11}$
rs2532282	17	41600673	+	G	C	C	0.79	14.6	2.2	45.0	$2.0*10^{-11}$
rs2532281	17	41600948	+	T	G	G	0.79	14.6	2.2	45.0	$2.0*10^{-11}$
rs2532280	17	41601136	+	A	G	G	0.79	14.6	2.2	45.0	$2.0*10^{-11}$
rs2532277	17	41602304	+	T	C	C	0.21	-14.6	2.2	45.0	$2.0*10^{-11}$
rs17652337	17	41439160	+	T	C	C	0.77	14.2	2.1	44.9	$2.0*10^{-11}$
rs2532269	17	41605885	+	T	C	C	0.21	-14.6	2.2	44.9	$2.0*10^{-11}$
rs1918789	17	41595884	+	T	C	C	0.21	-14.3	2.1	44.9	$2.0*10^{-11}$
rs2532268	17	41606250	+	G	C	C	0.21	-14.6	2.2	44.9	$2.0*10^{-11}$
rs1052553	17	41429726	+	A	G	G	0.21	-14.1	2.1	44.9	$2.1*10^{-11}$
rs2532253	17	41612073	+	A	G	G	0.79	14.6	2.2	44.9	$2.1*10^{-11}$
rs2732585	17	41615316	+	A	C	C	0.21	-14.6	2.2	44.8	$2.1*10^{-11}$
rs2696689	17	41652925	+	A	G	G	0.79	14.2	2.1	44.8	$2.1*10^{-11}$
rs1534456	17	41588767	+	T	C	C	0.21	-14.5	2.2	44.8	$2.2*10^{-11}$
rs1528074	17	41589837	+	A	G	G	0.21	-14.5	2.2	44.8	$2.2*10^{-11}$
rs2141299	17	41596763	+	A	C	C	0.79	14.2	2.1	44.8	$2.2*10^{-11}$
rs2696567	17	41597081	+	G	C	C	0.79	14.2	2.1	44.8	$2.2*10^{-11}$
rs2532286	17	41597441	+	T	C	C	0.21	-14.2	2.1	44.8	$2.2*10^{-11}$
rs4792843	17	41598956	+	A	G	G	0.21	-14.2	2.1	44.8	$2.2*10^{-11}$
rs17585608	17	41599756	+	T	C	C	0.79	14.2	2.1	44.8	$2.2*10^{-11}$
rs4608377	17	41469206	+	T	C	C	0.22	-14.1	2.1	44.8	$2.2*10^{-11}$
rs2696684	17	41600174	+	A	G	G	0.79	14.2	2.1	44.8	$2.2*10^{-11}$
rs17585644	17	41600358	+	T	C	C	0.21	-14.2	2.1	44.8	$2.2*10^{-11}$

rs2696657	17	41600703	+	T	G	G	0.21	-14.2	2.1	44.8	$2.2*10^{-11}$
rs2696660	17	41601988	+	A	G	G	0.21	-14.2	2.1	44.8	$2.2*10^{-11}$
rs2532278	17	41602182	+	A	C	C	0.79	14.2	2.1	44.8	$2.2*10^{-11}$
rs2532276	17	41602401	+	A	C	C	0.79	14.2	2.1	44.8	$2.2*10^{-11}$
rs2532275	17	41602774	+	A	G	G	0.79	14.2	2.1	44.8	$2.2*10^{-11}$
rs2532273	17	41603091	+	T	C	C	0.79	14.2	2.1	44.8	$2.2*10^{-11}$
rs2696709	17	41621254	+	G	C	C	0.21	-14.5	2.2	44.8	$2.2*10^{-11}$
rs2532271	17	41603819	+	A	G	G	0.79	14.2	2.1	44.8	$2.2*10^{-11}$
rs1881194	17	41604591	+	A	G	G	0.79	14.2	2.1	44.8	$2.2*10^{-11}$
rs1881193	17	41604546	+	T	C	C	0.21	-14.2	2.1	44.8	$2.2*10^{-11}$
rs2696662	17	41605398	+	A	G	G	0.21	-14.2	2.1	44.8	$2.2*10^{-11}$
rs2532270	17	41605577	+	A	G	G	0.79	14.2	2.1	44.8	$2.2*10^{-11}$
rs17573175	17	41426926	+	G	C	C	0.79	14.0	2.1	44.7	$2.3*10^{-11}$
rs2532267	17	41606393	+	A	G	G	0.79	14.2	2.1	44.7	$2.3*10^{-11}$
rs10445338	17	41423519	+	A	G	G	0.79	14.0	2.1	44.7	$2.3*10^{-11}$
rs956329	17	41607007	+	T	C	C	0.21	-14.2	2.1	44.7	$2.3*10^{-11}$
rs2732643	17	41607684	+	T	C	C	0.79	14.2	2.1	44.7	$2.3*10^{-11}$
rs2696666	17	41607749	+	A	G	G	0.79	14.2	2.1	44.7	$2.3*10^{-11}$
rs2532259	17	41609141	+	A	G	G	0.79	14.2	2.1	44.7	$2.3*10^{-11}$
rs2532264	17	41608193	+	G	C	C	0.21	-14.2	2.1	44.7	$2.3*10^{-11}$
rs17651754	17	41423383	+	T	C	C	0.21	-14.0	2.1	44.7	$2.3*10^{-11}$
rs2732646	17	41610156	+	T	C	C	0.79	14.2	2.1	44.7	$2.3*10^{-11}$
rs2732645	17	41610068	+	T	C	C	0.79	14.2	2.1	44.7	$2.3*10^{-11}$
rs2732647	17	41610190	+	A	G	G	0.21	-14.2	2.1	44.7	$2.3*10^{-11}$
rs2077606	17	40885076	+	A	G	G	0.83	15.0	2.3	44.7	$2.3*10^{-11}$
rs2532256	17	41610794	+	T	C	C	0.21	-14.2	2.1	44.7	$2.3*10^{-11}$
rs2532257	17	41610271	+	T	C	C	0.21	-14.2	2.1	44.7	$2.3*10^{-11}$
rs2532255	17	41611309	+	T	C	C	0.21	-14.2	2.1	44.7	$2.3*10^{-11}$
rs2696696	17	41611554	+	A	G	G	0.79	14.2	2.1	44.7	$2.3*10^{-11}$
rs740708	17	41612432	+	A	G	G	0.79	14.2	2.1	44.7	$2.3*10^{-11}$
rs1881195	17	41613250	+	T	C	C	0.21	-14.2	2.1	44.7	$2.3*10^{-11}$

rs740706	17	41614131	+	G	C	C	0.21	-14.2	2.1	44.7	$2.3*10^{-11}$
rs2732712	17	41704709	+	T	G	G	0.21	-14.4	2.2	44.7	$2.3*10^{-11}$
rs758523	17	41614199	+	T	G	G	0.79	14.2	2.1	44.7	$2.3*10^{-11}$
rs12150012	17	41615296	+	A	G	G	0.21	-14.2	2.1	44.7	$2.3*10^{-11}$
rs2696541	17	41707520	+	A	G	G	0.79	14.4	2.1	44.7	$2.4*10^{-11}$
rs2696446	17	41634438	+	A	G	G	0.79	14.5	2.2	44.6	$2.4*10^{-11}$
rs2696545	17	41706864	+	T	C	C	0.21	-14.4	2.1	44.6	$2.4*10^{-11}$
rs10445337	17	41423237	+	T	C	C	0.21	-14.0	2.1	44.6	$2.4*10^{-11}$
rs2696701	17	41615696	+	A	G	G	0.21	-14.2	2.1	44.6	$2.4*10^{-11}$
rs17631303	17	40872185	+	A	G	G	0.17	-15.0	2.2	44.6	$2.4*10^{-11}$
rs2696702	17	41616193	+	T	C	C	0.21	-14.2	2.1	44.6	$2.4*10^{-11}$
rs2696704	17	41617530	+	T	C	C	0.21	-14.2	2.1	44.6	$2.4*10^{-11}$
rs2532246	17	41618195	+	A	G	G	0.79	14.2	2.1	44.6	$2.4*10^{-11}$
rs11012	17	40869224	+	T	C	C	0.83	15.0	2.2	44.6	$2.4*10^{-11}$
rs9730	17	40869334	+	G	C	C	0.83	15.0	2.2	44.6	$2.4*10^{-11}$
rs2158257	17	41460189	+	A	C	C	0.20	-14.7	2.2	44.6	$2.4*10^{-11}$
rs2696555	17	41704147	+	A	G	G	0.21	-14.4	2.2	44.6	$2.4*10^{-11}$
rs17651700	17	41422471	+	G	C	C	0.79	14.0	2.1	44.6	$2.4*10^{-11}$
rs17663351	17	41619700	+	T	C	C	0.21	-14.2	2.1	44.6	$2.4*10^{-11}$
rs2696706	17	41619822	+	T	C	C	0.21	-14.2	2.1	44.6	$2.5*10^{-11}$
rs2668617	17	41707062	+	A	G	G	0.21	-14.4	2.1	44.6	$2.5*10^{-11}$
rs919464	17	41421738	+	T	C	C	0.79	14.0	2.1	44.6	$2.5*10^{-11}$
rs2696707	17	41620494	+	A	C	C	0.21	-14.2	2.1	44.6	$2.5*10^{-11}$
rs2732707	17	41707377	+	T	C	C	0.79	14.3	2.1	44.6	$2.5*10^{-11}$
rs2696708	17	41620720	+	T	C	C	0.21	-14.2	2.1	44.6	$2.5*10^{-11}$
rs2732589	17	41621799	+	A	G	G	0.21	-14.2	2.1	44.5	$2.5*10^{-11}$
rs2732706	17	41707463	+	T	C	C	0.79	14.3	2.1	44.5	$2.5*10^{-11}$
rs2696526	17	41623640	+	A	G	G	0.79	14.2	2.1	44.5	$2.5*10^{-11}$
rs10445371	17	41421247	+	A	G	G	0.79	14.0	2.1	44.5	$2.5*10^{-11}$
rs2732596	17	41625323	+	T	C	C	0.79	14.2	2.1	44.5	$2.5*10^{-11}$
rs2532234	17	41628043	+	A	G	G	0.21	-14.2	2.1	44.5	$2.5*10^{-11}$

rs17663792	17	41628329	+	T	C	C	0.79	14.2	2.1	44.5	$2.5*10^{-11}$
rs2732660	17	41628456	+	G	C	C	0.21	-14.2	2.1	44.5	$2.5*10^{-11}$
rs1529535	17	41420596	+	A	C	C	0.21	-14.0	2.1	44.5	$2.6*10^{-11}$
rs11079718	17	41195723	+	A	T	T	0.23	-13.9	2.1	44.5	$2.6*10^{-11}$
rs2696438	17	41628705	+	A	C	C	0.79	14.2	2.1	44.5	$2.6*10^{-11}$
rs11079719	17	41195778	+	T	G	G	0.23	-13.9	2.1	44.5	$2.6*10^{-11}$
rs2696440	17	41630337	+	T	C	C	0.21	-14.2	2.1	44.5	$2.6*10^{-11}$
rs17572893	17	41420045	+	A	G	G	0.79	14.0	2.1	44.5	$2.6*10^{-11}$
rs1815	17	41632355	+	T	C	C	0.21	-14.2	2.1	44.5	$2.6*10^{-11}$
rs1816	17	41632395	+	A	G	G	0.21	-14.2	2.1	44.5	$2.6*10^{-11}$
rs2696443	17	41632598	+	A	G	G	0.79	14.2	2.1	44.5	$2.6*10^{-11}$
rs17572851	17	41419603	+	A	G	G	0.21	-14.0	2.1	44.5	$2.6*10^{-11}$
rs2532229	17	41633042	+	A	C	C	0.21	-14.2	2.1	44.5	$2.6*10^{-11}$
rs2732651	17	41700840	+	T	C	C	0.80	14.8	2.2	44.4	$2.6*10^{-11}$
rs2668719	17	41700867	+	A	C	C	0.80	14.8	2.2	44.4	$2.6*10^{-11}$
rs2732665	17	41633468	+	T	C	C	0.21	-14.2	2.1	44.4	$2.6*10^{-11}$
rs17572823	17	41419400	+	T	C	C	0.21	-14.0	2.1	44.4	$2.6*10^{-11}$
rs17664048	17	41634519	+	A	G	G	0.21	-14.2	2.1	44.4	$2.7*10^{-11}$
rs1358438	17	41635537	+	A	G	G	0.79	14.2	2.1	44.4	$2.7*10^{-11}$
rs17572795	17	41419230	+	A	G	G	0.79	14.0	2.1	44.4	$2.7*10^{-11}$
rs1358437	17	41635580	+	T	G	G	0.21	-14.2	2.1	44.4	$2.7*10^{-11}$
rs2732675	17	41635965	+	A	T	T	0.79	14.2	2.1	44.4	$2.7*10^{-11}$
rs2668659	17	41637229	+	A	G	G	0.21	-14.2	2.1	44.4	$2.7*10^{-11}$
rs2732674	17	41636474	+	T	C	C	0.21	-14.2	2.1	44.4	$2.7*10^{-11}$
rs2696455	17	41639348	+	T	C	C	0.79	14.2	2.1	44.4	$2.7*10^{-11}$
rs2668653	17	41643933	+	T	C	C	0.21	-14.2	2.1	44.4	$2.7*10^{-11}$
rs2732628	17	41644061	+	A	G	G	0.79	14.2	2.1	44.4	$2.7*10^{-11}$
rs1529534	17	41418977	+	A	G	G	0.21	-14.0	2.1	44.3	$2.7*10^{-11}$
rs2532418	17	41644356	+	T	C	C	0.21	-14.2	2.1	44.3	$2.7*10^{-11}$
rs2732630	17	41644927	+	A	C	C	0.21	-14.2	2.1	44.3	$2.8*10^{-11}$
rs2668645	17	41644417	+	A	G	G	0.21	-14.2	2.1	44.3	$2.8*10^{-11}$

rs2532417	17	41644997	+	T	C	C	0.79	14.2	2.1	44.3	$2.8*10^{-11}$
rs2732631	17	41645009	+	T	G	G	0.79	14.2	2.1	44.3	$2.8*10^{-11}$
rs2732629	17	41644878	+	A	G	G	0.21	-14.2	2.1	44.3	$2.8*10^{-11}$
rs2532416	17	41645068	+	A	C	C	0.21	-14.2	2.1	44.3	$2.8*10^{-11}$
rs2668665	17	41645824	+	A	G	G	0.79	14.2	2.1	44.3	$2.8*10^{-11}$
rs17651549	17	41417115	+	T	C	C	0.79	14.0	2.1	44.3	$2.8*10^{-11}$
rs2732606	17	41647142	+	T	C	C	0.79	14.2	2.1	44.3	$2.8*10^{-11}$
rs2732605	17	41647158	+	A	G	G	0.21	-14.2	2.1	44.3	$2.8*10^{-11}$
rs2668692	17	41648797	+	A	G	G	0.79	14.2	2.1	44.3	$2.8*10^{-11}$
rs17760631	17	41098828	+	T	C	C	0.22	-14.0	2.1	44.3	$2.8*10^{-11}$
rs241041	17	41069708	+	A	G	G	0.21	-13.9	2.1	44.3	$2.8*10^{-11}$
rs17652121	17	41429810	+	T	C	C	0.16	-17.5	2.6	44.3	$2.9*10^{-11}$
rs418891	17	41049321	+	T	G	G	0.79	14.0	2.1	44.3	$2.9*10^{-11}$
rs2458216	17	41702739	+	T	C	C	0.80	14.8	2.2	44.3	$2.9*10^{-11}$
rs383241	17	41061139	+	A	G	G	0.79	14.0	2.1	44.2	$2.9*10^{-11}$
rs7222389	17	40857225	+	T	C	C	0.17	-14.9	2.2	44.2	$2.9*10^{-11}$
rs17662889	17	41604873	+	A	C	C	0.21	-14.4	2.2	44.2	$2.9*10^{-11}$
rs12942666	17	40855622	+	A	G	G	0.17	-14.9	2.2	44.2	$2.9*10^{-11}$
rs436667	17	41065198	+	T	C	C	0.79	14.0	2.1	44.2	$2.9*10^{-11}$
rs2942169	17	41067322	+	G	C	C	0.21	-14.0	2.1	44.2	$2.9*10^{-11}$
rs2950693	17	41704133	+	A	T	T	0.80	14.8	2.2	44.2	$2.9*10^{-11}$
rs17651483	17	41414698	+	A	C	C	0.79	13.9	2.1	44.2	$3.0*10^{-11}$
rs17687534	17	41105362	+	T	C	C	0.22	-13.9	2.1	44.2	$3.0*10^{-11}$
rs12150515	17	41446522	+	T	G	G	0.81	15.9	2.4	44.2	$3.0*10^{-11}$
rs2532335	17	41702874	+	A	G	G	0.20	-14.8	2.2	44.2	$3.0*10^{-11}$
rs17687571	17	41105793	+	A	G	G	0.78	13.9	2.1	44.2	$3.0*10^{-11}$
rs17687625	17	41106021	+	A	G	G	0.22	-13.9	2.1	44.2	$3.0*10^{-11}$
rs17687667	17	41109882	+	A	G	G	0.78	13.9	2.1	44.2	$3.0*10^{-11}$
rs17760577	17	41097235	+	T	C	C	0.78	13.9	2.1	44.1	$3.1*10^{-11}$
rs241021	17	41094410	+	T	G	G	0.21	-13.9	2.1	44.1	$3.1*10^{-11}$
rs241020	17	41094459	+	A	C	C	0.79	13.9	2.1	44.1	$3.1*10^{-11}$

rs2950694	17	41704075	+	A	G	G	0.20	-14.8	2.2	44.1	$3.1*10^{-11}$
rs2532332	17	41703504	+	A	T	T	0.20	-14.8	2.2	44.1	$3.1*10^{-11}$
rs17572627	17	41414466	+	A	T	T	0.79	13.9	2.1	44.1	$3.1*10^{-11}$
rs740705	17	41614223	+	A	G	G	0.21	-14.4	2.2	44.1	$3.1*10^{-11}$
rs241022	17	41093513	+	T	C	C	0.21	-13.9	2.1	44.1	$3.1*10^{-11}$
rs241039	17	41070456	+	A	T	T	0.21	-13.9	2.1	44.1	$3.1*10^{-11}$
rs3418	17	41079245	+	T	C	C	0.79	13.9	2.1	44.1	$3.1*10^{-11}$
rs12947718	17	40848884	+	A	G	G	0.83	14.9	2.2	44.1	$3.1*10^{-11}$
rs413917	17	41078972	+	A	G	G	0.79	13.9	2.1	44.1	$3.1*10^{-11}$
rs455028	17	41082357	+	T	C	C	0.21	-13.9	2.1	44.1	$3.1*10^{-11}$
rs2942168	17	41070633	+	A	G	G	0.79	13.9	2.1	44.1	$3.1*10^{-11}$
rs366858	17	41082371	+	T	C	C	0.79	13.9	2.1	44.1	$3.1*10^{-11}$
rs17687740	17	41112159	+	G	C	C	0.22	-13.9	2.1	44.1	$3.2*10^{-11}$
rs757502	17	41112289	+	T	C	C	0.78	13.9	2.1	44.1	$3.2*10^{-11}$
rs2942167	17	41070801	+	T	C	C	0.21	-13.9	2.1	44.1	$3.2*10^{-11}$
rs757501	17	41112468	+	A	G	G	0.22	-13.9	2.1	44.1	$3.2*10^{-11}$
rs757500	17	41112616	+	A	C	C	0.78	13.9	2.1	44.1	$3.2*10^{-11}$
rs448830	17	41080995	+	A	G	G	0.79	13.9	2.1	44.1	$3.2*10^{-11}$
rs393152	17	41074926	+	A	G	G	0.21	-13.9	2.1	44.1	$3.2*10^{-11}$
rs413778	17	41072668	+	A	G	G	0.21	-13.9	2.1	44.1	$3.2*10^{-11}$
rs389217	17	41072914	+	T	C	C	0.79	13.9	2.1	44.1	$3.2*10^{-11}$
rs17761046	17	41114165	+	T	C	C	0.22	-13.9	2.1	44.1	$3.2*10^{-11}$
rs17760733	17	41102059	+	T	G	G	0.78	13.9	2.1	44.1	$3.2*10^{-11}$
rs2696531	17	41711411	+	G	C	C	0.79	14.3	2.1	44.1	$3.2*10^{-11}$
rs17687504	17	41102504	+	A	G	G	0.22	-13.9	2.1	44.1	$3.2*10^{-11}$
rs439558	17	41073586	+	T	C	C	0.21	-13.9	2.1	44.1	$3.2*10^{-11}$
rs17687462	17	41100773	+	T	C	C	0.78	13.9	2.1	44.1	$3.2*10^{-11}$
rs434428	17	41081467	+	A	G	G	0.79	13.9	2.1	44.1	$3.2*10^{-11}$
rs385691	17	41081908	+	A	C	C	0.21	-13.9	2.1	44.0	$3.2*10^{-11}$
rs17687838	17	41114831	+	T	C	C	0.22	-13.9	2.1	44.0	$3.2*10^{-11}$
rs17687849	17	41115502	+	A	G	G	0.22	-13.9	2.1	44.0	$3.2*10^{-11}$

rs2696530	17	41711491	+	A	G	G	0.21	-14.3	2.1	44.0	$3.2*10^{-11}$
rs449501	17	41080338	+	A	G	G	0.79	13.9	2.1	44.0	$3.2*10^{-11}$
rs241023	17	41092823	+	A	G	G	0.79	13.9	2.1	44.0	$3.2*10^{-11}$
rs453997	17	41082844	+	T	C	C	0.79	13.9	2.1	44.0	$3.2*10^{-11}$
rs424243	17	41083670	+	A	T	T	0.21	-13.9	2.1	44.0	$3.2*10^{-11}$
rs17761100	17	41116172	+	A	G	G	0.22	-13.9	2.1	44.0	$3.2*10^{-11}$
rs422112	17	41083920	+	A	G	G	0.79	13.9	2.1	44.0	$3.3*10^{-11}$
rs2696525	17	41712414	+	T	C	C	0.79	14.3	2.1	44.0	$3.3*10^{-11}$
rs2158474	17	41117722	+	G	C	C	0.22	-13.9	2.1	44.0	$3.3*10^{-11}$
rs2049515	17	41117639	+	T	C	C	0.78	13.9	2.1	44.0	$3.3*10^{-11}$
rs1526129	17	41135440	+	T	C	C	0.21	-13.9	2.1	44.0	$3.3*10^{-11}$
rs17761207	17	41118038	+	T	C	C	0.22	-13.9	2.1	44.0	$3.3*10^{-11}$
rs17689104	17	41138275	+	A	G	G	0.21	-13.9	2.1	44.0	$3.3*10^{-11}$
rs968028	17	41136888	+	A	G	G	0.21	-13.9	2.1	44.0	$3.3*10^{-11}$
rs17688922	17	41135134	+	A	G	G	0.79	13.9	2.1	44.0	$3.3*10^{-11}$
rs968027	17	41137033	+	T	C	C	0.79	13.9	2.1	44.0	$3.3*10^{-11}$
rs241031	17	41090087	+	T	C	C	0.21	-13.9	2.1	44.0	$3.3*10^{-11}$
rs17688944	17	41135202	+	A	T	T	0.79	13.9	2.1	44.0	$3.3*10^{-11}$
rs17688002	17	41118377	+	A	T	T	0.22	-13.9	2.1	44.0	$3.3*10^{-11}$
rs17572613	17	41413841	+	A	G	G	0.21	-13.9	2.1	44.0	$3.3*10^{-11}$
rs241035	17	41087679	+	T	C	C	0.79	13.9	2.1	44.0	$3.3*10^{-11}$
rs17762308	17	41136731	+	T	C	C	0.21	-13.9	2.1	44.0	$3.3*10^{-11}$
rs241036	17	41087502	+	A	C	C	0.21	-13.9	2.1	44.0	$3.3*10^{-11}$
rs647483	17	41085215	+	T	C	C	0.79	13.9	2.1	44.0	$3.3*10^{-11}$
rs241027	17	41091261	+	A	G	G	0.21	-13.9	2.1	44.0	$3.3*10^{-11}$
rs241026	17	41091338	+	A	G	G	0.79	13.9	2.1	44.0	$3.3*10^{-11}$
rs241033	17	41089766	+	A	G	G	0.79	13.9	2.1	44.0	$3.3*10^{-11}$
rs2040846	17	41118629	+	A	G	G	0.22	-13.9	2.1	44.0	$3.3*10^{-11}$
rs17588637	17	41713074	+	T	G	G	0.79	14.3	2.1	44.0	$3.3*10^{-11}$
rs17762361	17	41137561	+	A	G	G	0.21	-13.9	2.1	44.0	$3.3*10^{-11}$
rs4486953	17	41118790	+	T	C	C	0.22	-13.9	2.1	44.0	$3.3*10^{-11}$

rs17665188	17	41713128	+	T	C	C	0.21	-14.2	2.1	44.0	$3.3*10^{-11}$
rs17688032	17	41118985	+	A	G	G	0.78	13.9	2.1	44.0	$3.3*10^{-11}$
rs2942164	17	41077066	+	G	C	C	0.21	-13.9	2.1	44.0	$3.3*10^{-11}$
rs17688056	17	41119024	+	T	C	C	0.78	13.9	2.1	44.0	$3.3*10^{-11}$
rs17688068	17	41119718	+	A	G	G	0.22	-13.9	2.1	44.0	$3.3*10^{-11}$
rs17689116	17	41138341	+	T	C	C	0.21	-13.9	2.1	44.0	$3.3*10^{-11}$
rs2696425	17	41022689	+	G	C	C	0.22	-14.0	2.1	44.0	$3.4*10^{-11}$
rs17689182	17	41139356	+	T	C	C	0.79	13.9	2.1	44.0	$3.4*10^{-11}$
rs1918788	17	41623394	+	A	G	G	0.21	-14.4	2.2	44.0	$3.4*10^{-11}$
rs17688090	17	41120770	+	A	G	G	0.78	13.9	2.1	44.0	$3.4*10^{-11}$
rs1981998	17	41412669	+	A	G	G	0.79	13.9	2.1	44.0	$3.4*10^{-11}$
rs17761387	17	41121233	+	A	G	G	0.78	13.9	2.1	43.9	$3.4*10^{-11}$
rs4273712	6	127006203	+	A	G	G	0.27	12.2	1.8	43.9	$3.4*10^{-11}$
rs1981997	17	41412603	+	A	G	G	0.79	13.9	2.1	43.9	$3.4*10^{-11}$
rs2532235	17	41627777	+	A	G	G	0.79	14.4	2.2	43.9	$3.4*10^{-11}$
rs17688205	17	41122135	+	G	C	C	0.22	-13.9	2.1	43.9	$3.4*10^{-11}$
rs17761985	17	41132570	+	T	C	C	0.78	13.9	2.1	43.9	$3.4*10^{-11}$
rs17691610	17	41326456	+	T	G	G	0.79	13.9	2.1	43.9	$3.4*10^{-11}$
rs17770343	17	41325948	+	T	C	C	0.21	-13.9	2.1	43.9	$3.5*10^{-11}$
rs17688452	17	41128868	+	A	G	G	0.78	13.9	2.1	43.9	$3.5*10^{-11}$
rs1048343	17	41629666	+	T	C	C	0.79	14.4	2.2	43.9	$3.5*10^{-11}$
rs12150464	17	41132154	+	T	C	C	0.78	13.9	2.1	43.9	$3.5*10^{-11}$
rs2082068	17	41335767	+	T	C	C	0.79	13.9	2.1	43.9	$3.5*10^{-11}$
rs1984937	17	41336326	+	A	C	C	0.21	-13.9	2.1	43.9	$3.5*10^{-11}$
rs17691508	17	41324257	+	G	C	C	0.79	13.9	2.1	43.9	$3.5*10^{-11}$
rs17688434	17	41128323	+	A	G	G	0.78	13.9	2.1	43.9	$3.5*10^{-11}$
rs2099151	17	41335618	+	A	T	T	0.21	-13.9	2.1	43.9	$3.5*10^{-11}$
rs17688410	17	41128034	+	T	C	C	0.78	13.9	2.1	43.9	$3.5*10^{-11}$
rs1560310	17	41334330	+	A	G	G	0.79	13.9	2.1	43.9	$3.5*10^{-11}$
rs17770296	17	41324930	+	T	C	C	0.79	13.9	2.1	43.9	$3.5*10^{-11}$
rs1048333	17	41629696	+	A	G	G	0.21	-14.4	2.2	43.9	$3.5*10^{-11}$

rs17770337	17	41325573	+	T	G	G	0.79	13.9	2.1	43.9	$3.5*10^{-11}$
rs17691556	17	41324962	+	A	T	T	0.79	13.9	2.1	43.9	$3.5*10^{-11}$
rs2040845	17	41122971	+	G	C	C	0.22	-13.9	2.1	43.9	$3.5*10^{-11}$
rs17688296	17	41123598	+	T	C	C	0.78	13.9	2.1	43.9	$3.5*10^{-11}$
rs17691449	17	41320074	+	G	C	C	0.21	-13.9	2.1	43.9	$3.5*10^{-11}$
rs17688391	17	41127892	+	A	C	C	0.78	13.9	2.1	43.9	$3.5*10^{-11}$
rs17691466	17	41324013	+	A	G	G	0.21	-13.9	2.1	43.9	$3.5*10^{-11}$
rs17770150	17	41319954	+	A	G	G	0.79	13.9	2.1	43.9	$3.5*10^{-11}$
rs12150610	17	41131262	+	T	C	C	0.22	-13.9	2.1	43.9	$3.5*10^{-11}$
rs17770186	17	41319982	+	A	C	C	0.79	13.9	2.1	43.9	$3.5*10^{-11}$
rs12150454	17	41131844	+	T	C	C	0.78	13.9	2.1	43.9	$3.5*10^{-11}$
rs17761838	17	41130742	+	T	C	C	0.22	-13.9	2.1	43.9	$3.5*10^{-11}$
rs12150141	17	41130928	+	A	G	G	0.78	13.9	2.1	43.9	$3.5*10^{-11}$
rs10491143	17	41129031	+	A	T	T	0.22	-13.9	2.1	43.9	$3.5*10^{-11}$
rs10491144	17	41128907	+	A	C	C	0.22	-13.9	2.1	43.9	$3.5*10^{-11}$
rs17688534	17	41129660	+	A	T	T	0.22	-13.9	2.1	43.9	$3.5*10^{-11}$
rs17688682	17	41131712	+	G	C	C	0.78	13.9	2.1	43.9	$3.5*10^{-11}$
rs12150547	17	41131329	+	A	G	G	0.22	-13.9	2.1	43.9	$3.5*10^{-11}$
rs12150229	17	41371275	+	A	G	G	0.22	-13.9	2.1	43.9	$3.5*10^{-11}$
rs12150230	17	41371293	+	A	G	G	0.22	-13.9	2.1	43.8	$3.5*10^{-11}$
rs2019822	17	41315709	+	A	T	T	0.79	13.9	2.1	43.8	$3.6*10^{-11}$
rs2532228	17	41633595	+	A	G	G	0.21	-14.4	2.2	43.8	$3.6*10^{-11}$
rs17688767	17	41133325	+	A	G	G	0.22	-13.9	2.1	43.8	$3.6*10^{-11}$
rs17688773	17	41133493	+	T	C	C	0.22	-13.9	2.1	43.8	$3.6*10^{-11}$
rs17762073	17	41133528	+	A	C	C	0.78	13.9	2.1	43.8	$3.6*10^{-11}$
rs17688875	17	41134189	+	A	G	G	0.22	-13.9	2.1	43.8	$3.6*10^{-11}$
rs17691328	17	41311278	+	T	C	C	0.78	13.9	2.1	43.8	$3.6*10^{-11}$
rs4441322	17	41310821	+	A	G	G	0.22	-13.9	2.1	43.8	$3.6*10^{-11}$
rs17572495	17	41410432	+	T	G	G	0.21	-13.9	2.1	43.8	$3.6*10^{-11}$
rs17572467	17	41410224	+	T	C	C	0.21	-13.9	2.1	43.8	$3.7*10^{-11}$
rs17564020	17	41347609	+	T	G	G	0.79	13.9	2.1	43.8	$3.7*10^{-11}$

rs17770120	17	41319734	+	A	C	C	0.79	13.9	2.1	43.8	$3.7*10^{-11}$
rs17649518	17	41350214	+	A	C	C	0.79	13.9	2.1	43.8	$3.7*10^{-11}$
rs17770108	17	41317083	+	T	G	G	0.79	13.9	2.1	43.8	$3.7*10^{-11}$
rs916793	17	41310477	+	A	G	G	0.78	13.9	2.1	43.8	$3.7*10^{-11}$
rs2217394	17	41409284	+	A	G	G	0.21	-13.9	2.1	43.8	$3.7*10^{-11}$
rs754512	17	41411483	+	A	T	T	0.21	-13.9	2.1	43.8	$3.7*10^{-11}$
rs17563965	17	41346747	+	A	G	G	0.21	-13.9	2.1	43.8	$3.7*10^{-11}$
rs17649571	17	41350780	+	A	G	G	0.21	-13.9	2.1	43.8	$3.7*10^{-11}$
rs17572361	17	41407845	+	T	C	C	0.21	-13.9	2.1	43.8	$3.7*10^{-11}$
rs17651285	17	41410073	+	A	G	G	0.79	13.9	2.1	43.8	$3.7*10^{-11}$
rs17651243	17	41408120	+	A	G	G	0.79	13.9	2.1	43.8	$3.7*10^{-11}$
rs2532419	17	41644058	+	T	C	C	0.79	14.4	2.2	43.8	$3.7*10^{-11}$
rs17652036	17	41428864	+	A	G	G	0.79	14.2	2.1	43.7	$3.7*10^{-11}$
rs17762165	17	41134385	+	T	C	C	0.78	13.9	2.1	43.7	$3.7*10^{-11}$
rs17651213	17	41407760	+	A	G	G	0.79	13.9	2.1	43.7	$3.7*10^{-11}$
rs10491140	17	41306766	+	T	G	G	0.78	13.9	2.1	43.7	$3.7*10^{-11}$
rs1800547	17	41407682	+	A	G	G	0.21	-13.9	2.1	43.7	$3.7*10^{-11}$
rs17572248	17	41405703	+	A	G	G	0.21	-13.9	2.1	43.7	$3.8*10^{-11}$
rs17572169	17	41401810	+	T	C	C	0.79	13.9	2.1	43.7	$3.8*10^{-11}$
rs17651134	17	41406176	+	A	G	G	0.79	13.9	2.1	43.7	$3.8*10^{-11}$
rs17572147	17	41400821	+	A	G	G	0.21	-13.9	2.1	43.7	$3.8*10^{-11}$
rs17651093	17	41405386	+	A	G	G	0.79	13.9	2.1	43.7	$3.8*10^{-11}$
rs17650973	17	41400056	+	A	T	T	0.21	-13.9	2.1	43.7	$3.8*10^{-11}$
rs12150683	17	41180619	+	A	G	G	0.22	-13.9	2.1	43.7	$3.8*10^{-11}$
rs2158072	17	41305985	+	T	C	C	0.22	-13.9	2.1	43.7	$3.8*10^{-11}$
rs2106784	17	41305682	+	T	C	C	0.78	13.9	2.1	43.7	$3.8*10^{-11}$
rs17564153	17	41350926	+	A	G	G	0.79	13.9	2.1	43.7	$3.8*10^{-11}$
rs2668691	17	41649323	+	T	C	C	0.79	14.4	2.2	43.7	$3.8*10^{-11}$
rs1078830	17	41301901	+	T	C	C	0.22	-13.9	2.1	43.7	$3.8*10^{-11}$
rs17650901	17	41395527	+	A	G	G	0.22	-13.9	2.1	43.7	$3.9*10^{-11}$
rs12150672	17	41182408	+	A	G	G	0.79	13.9	2.1	43.7	$3.9*10^{-11}$

rs17334894	17	41182980	+	A	G	G	0.79	13.9	2.1	43.7	$3.9*10^{-11}$
rs12150455	17	41183279	+	A	G	G	0.21	-13.9	2.1	43.7	$3.9*10^{-11}$
rs12150451	17	41183202	+	A	G	G	0.21	-13.9	2.1	43.7	$3.9*10^{-11}$
rs12150195	17	41370092	+	T	C	C	0.22	-13.9	2.1	43.7	$3.9*10^{-11}$
rs11079717	17	41191123	+	T	C	C	0.21	-13.9	2.1	43.7	$3.9*10^{-11}$
rs17426195	17	41188138	+	A	G	G	0.79	13.9	2.1	43.7	$3.9*10^{-11}$
rs11079716	17	41190645	+	A	G	G	0.79	13.9	2.1	43.7	$3.9*10^{-11}$
rs17762535	17	41142913	+	T	C	C	0.22	-13.9	2.1	43.7	$3.9*10^{-11}$
rs17563433	17	41156134	+	A	C	C	0.22	-13.9	2.1	43.6	$3.9*10^{-11}$
rs17649019	17	41157376	+	A	G	G	0.78	13.9	2.1	43.6	$3.9*10^{-11}$
rs1105571	17	41148983	+	A	T	T	0.22	-13.9	2.1	43.6	$3.9*10^{-11}$
rs1880750	17	41152324	+	A	T	T	0.78	13.9	2.1	43.6	$3.9*10^{-11}$
rs17563501	17	41157478	+	T	C	C	0.78	13.9	2.1	43.6	$3.9*10^{-11}$
rs12150576	17	41371453	+	A	G	G	0.78	13.9	2.1	43.6	$4.1*10^{-11}$
rs11079721	17	41195879	+	A	C	C	0.79	13.9	2.1	43.6	$4.1*10^{-11}$
rs11079723	17	41197497	+	T	C	C	0.21	-13.9	2.1	43.6	$4.1*10^{-11}$
rs17689218	17	41141591	+	T	C	C	0.22	-13.9	2.1	43.6	$4.1*10^{-11}$
rs17650063	17	41358383	+	A	G	G	0.22	-13.8	2.1	43.5	$4.1*10^{-11}$
rs12150604	17	41183992	+	A	T	T	0.79	13.9	2.1	43.5	$4.2*10^{-11}$
rs17564223	17	41353348	+	T	C	C	0.78	13.8	2.1	43.5	$4.2*10^{-11}$
rs17649641	17	41353200	+	T	C	C	0.22	-13.8	2.1	43.5	$4.2*10^{-11}$
rs2732711	17	41706070	+	A	G	G	0.20	-14.7	2.2	43.5	$4.2*10^{-11}$
rs8078495	17	41356438	+	A	G	G	0.78	13.8	2.1	43.5	$4.2*10^{-11}$
rs17649700	17	41353729	+	G	C	C	0.22	-13.8	2.1	43.5	$4.2*10^{-11}$
rs767057	17	41354650	+	A	G	G	0.22	-13.8	2.1	43.5	$4.2*10^{-11}$
rs17649866	17	41356742	+	T	C	C	0.22	-13.8	2.1	43.5	$4.2*10^{-11}$
rs767056	17	41354738	+	T	C	C	0.78	13.8	2.1	43.5	$4.2*10^{-11}$
rs1467969	17	41354156	+	T	C	C	0.78	13.8	2.1	43.5	$4.2*10^{-11}$
rs1467970	17	41354402	+	T	G	G	0.22	-13.8	2.1	43.5	$4.2*10^{-11}$
rs7501759	17	41365749	+	A	G	G	0.22	-13.8	2.1	43.5	$4.2*10^{-11}$
rs767059	17	41354928	+	G	C	C	0.22	-13.8	2.1	43.5	$4.2*10^{-11}$

rs17564493	17	41357207	+	T	C	C	0.78	13.8	2.1	43.5	$4.2*10^{-11}$
rs17334944	17	41184388	+	A	G	G	0.79	13.8	2.1	43.5	$4.2*10^{-11}$
rs17564780	17	41361241	+	A	G	G	0.22	-13.8	2.1	43.5	$4.2*10^{-11}$
rs2316782	17	41365868	+	A	G	G	0.22	-13.8	2.1	43.5	$4.2*10^{-11}$
rs17649954	17	41357489	+	A	G	G	0.22	-13.8	2.1	43.5	$4.2*10^{-11}$
rs17649918	17	41357449	+	A	G	G	0.22	-13.8	2.1	43.5	$4.2*10^{-11}$
rs17564619	17	41357966	+	A	G	G	0.22	-13.8	2.1	43.5	$4.2*10^{-11}$
rs17426064	17	41184469	+	T	C	C	0.79	13.8	2.1	43.5	$4.2*10^{-11}$
rs17650381	17	41368853	+	T	C	C	0.22	-13.8	2.1	43.5	$4.3*10^{-11}$
rs2316783	17	41365946	+	G	C	C	0.22	-13.8	2.1	43.5	$4.3*10^{-11}$
rs8079501	17	41356062	+	A	T	T	0.22	-13.8	2.1	43.5	$4.3*10^{-11}$
rs17650417	17	41368932	+	T	G	G	0.78	13.8	2.1	43.5	$4.3*10^{-11}$
rs17564871	17	41366846	+	A	G	G	0.22	-13.8	2.1	43.5	$4.3*10^{-11}$
rs767058	17	41354595	+	T	C	C	0.22	-13.8	2.1	43.5	$4.3*10^{-11}$
rs17564983	17	41367654	+	A	C	C	0.22	-13.8	2.1	43.5	$4.3*10^{-11}$
rs17426174	17	41186709	+	G	C	C	0.21	-13.8	2.1	43.5	$4.3*10^{-11}$
rs17565025	17	41368292	+	T	C	C	0.22	-13.8	2.1	43.5	$4.3*10^{-11}$
rs17650335	17	41368172	+	A	G	G	0.78	13.8	2.1	43.5	$4.3*10^{-11}$
rs1864325	17	41333623	+	T	C	C	0.79	14.0	2.1	43.5	$4.3*10^{-11}$
rs12150111	17	41369767	+	A	G	G	0.22	-13.8	2.1	43.5	$4.3*10^{-11}$
rs12150235	17	41371574	+	A	G	G	0.22	-13.9	2.1	43.5	$4.3*10^{-11}$
rs12150460	17	41369966	+	T	G	G	0.78	13.8	2.1	43.5	$4.3*10^{-11}$
rs2959945	17	40931011	+	T	C	C	0.21	-14.1	2.1	43.4	$4.5*10^{-11}$
rs11079724	17	41197680	+	T	C	C	0.79	13.8	2.1	43.4	$4.5*10^{-11}$
rs12150104	17	41371758	+	A	G	G	0.78	13.9	2.1	43.4	$4.5*10^{-11}$
rs12150242	17	41371645	+	A	G	G	0.22	-13.9	2.1	43.4	$4.5*10^{-11}$
rs17650872	17	41395352	+	T	G	G	0.78	13.9	2.1	43.4	$4.5*10^{-11}$
rs2463519	17	41012678	+	A	G	G	0.80	14.8	2.2	43.3	$4.6*10^{-11}$
rs17650860	17	41394844	+	A	G	G	0.78	14.0	2.1	43.3	$4.6*10^{-11}$
rs17650842	17	41393329	+	A	G	G	0.22	-14.0	2.1	43.3	$4.7*10^{-11}$
rs1724411	17	41025714	+	T	C	C	0.22	-13.9	2.1	43.3	$4.7*10^{-11}$

rs17650818	17	41392625	+	T	C	C	0.22	-14.0	2.1	43.3	$4.7*10^{-11}$
rs17571857	17	41391544	+	A	G	G	0.22	-14.0	2.1	43.3	$4.7*10^{-11}$
rs17571809	17	41390697	+	A	G	G	0.22	-14.0	2.1	43.3	$4.8*10^{-11}$
rs17571718	17	41388634	+	T	C	C	0.22	-14.0	2.1	43.2	$4.8*10^{-11}$
rs17571781	17	41389668	+	T	C	C	0.22	-14.0	2.1	43.2	$4.8*10^{-11}$
rs17571739	17	41388781	+	T	C	C	0.22	-14.0	2.1	43.2	$4.9*10^{-11}$
rs12150516	17	41300308	+	T	C	C	0.78	13.8	2.1	43.2	$4.9*10^{-11}$
rs17563800	17	41173230	+	T	C	C	0.78	13.8	2.1	43.2	$4.9*10^{-11}$
rs17563787	17	41169023	+	G	C	C	0.78	13.8	2.1	43.2	$4.9*10^{-11}$
rs1526126	17	41167989	+	T	C	C	0.78	13.8	2.1	43.2	$4.9*10^{-11}$
rs17563827	17	41173993	+	A	C	C	0.78	13.8	2.1	43.2	$4.9*10^{-11}$
rs4617909	17	41162234	+	T	C	C	0.78	13.8	2.1	43.2	$4.9*10^{-11}$
rs4471726	17	41162917	+	T	C	C	0.22	-13.8	2.1	43.2	$4.9*10^{-11}$
rs4401083	17	41161798	+	A	G	G	0.78	13.8	2.1	43.2	$4.9*10^{-11}$
rs1880752	17	41162047	+	T	C	C	0.78	13.8	2.1	43.2	$4.9*10^{-11}$
rs2902662	17	41162708	+	A	G	G	0.78	13.8	2.1	43.2	$4.9*10^{-11}$
rs1526125	17	41167948	+	T	C	C	0.78	13.8	2.1	43.2	$4.9*10^{-11}$
rs2864087	17	41162846	+	T	C	C	0.78	13.8	2.1	43.2	$4.9*10^{-11}$
rs17563599	17	41163726	+	A	C	C	0.22	-13.8	2.1	43.2	$4.9*10^{-11}$
rs17563718	17	41167444	+	T	C	C	0.78	13.8	2.1	43.2	$4.9*10^{-11}$
rs17563861	17	41174677	+	A	G	G	0.22	-13.8	2.1	43.2	$4.9*10^{-11}$
rs17563889	17	41174717	+	A	T	T	0.22	-13.8	2.1	43.2	$5.0*10^{-11}$
rs17649138	17	41163838	+	A	G	G	0.78	13.8	2.1	43.2	$5.0*10^{-11}$
rs17649162	17	41166142	+	G	C	C	0.22	-13.8	2.1	43.2	$5.0*10^{-11}$
rs4390635	17	41164787	+	T	C	C	0.78	13.8	2.1	43.2	$5.0*10^{-11}$
rs17563683	17	41166843	+	A	G	G	0.22	-13.8	2.1	43.2	$5.0*10^{-11}$
rs17563923	17	41175221	+	A	G	G	0.78	13.8	2.1	43.2	$5.0*10^{-11}$
rs17334797	17	41181683	+	A	G	G	0.22	-13.8	2.1	43.2	$5.0*10^{-11}$
rs12150658	17	41182076	+	A	G	G	0.78	13.8	2.1	43.2	$5.0*10^{-11}$
rs2532324	17	41713538	+	A	C	C	0.80	14.6	2.2	43.2	$5.1*10^{-11}$
rs17650651	17	41386171	+	T	G	G	0.22	-13.9	2.1	43.1	$5.2*10^{-11}$

rs10445370	17	41290907	+	A	G	G	0.78	13.8	2.1	43.1	$5.3*10^{-11}$
rs10445335	17	41290685	+	A	T	T	0.78	13.8	2.1	43.1	$5.3*10^{-11}$
rs242559	17	41381748	+	A	C	C	0.23	-13.9	2.1	43.0	$5.4*10^{-11}$
rs10445368	17	41288959	+	T	C	C	0.78	13.9	2.1	43.0	$5.5*10^{-11}$
rs2950692	17	41704164	+	A	G	G	0.20	-14.3	2.2	43.0	$5.6*10^{-11}$
rs17650633	17	41386091	+	T	C	C	0.22	-13.9	2.1	42.9	$5.7*10^{-11}$
rs2696537	17	41708398	+	A	G	G	0.20	-14.6	2.2	42.9	$5.8*10^{-11}$
rs17650579	17	41385975	+	T	C	C	0.78	13.9	2.1	42.9	$5.9*10^{-11}$
rs2316784	17	41377560	+	T	G	G	0.78	13.9	2.1	42.8	$5.9*10^{-11}$
rs4327091	17	41377578	+	A	G	G	0.78	13.9	2.1	42.8	$5.9*10^{-11}$
rs17650597	17	41386055	+	A	T	T	0.22	-13.9	2.1	42.8	$6.0*10^{-11}$
rs4074462	17	41210994	+	T	G	G	0.79	13.7	2.1	42.8	$6.1*10^{-11}$
rs241030	17	41090286	+	A	G	G	0.22	-13.7	2.1	42.8	$6.2*10^{-11}$
rs8072451	17	41249496	+	T	C	C	0.79	13.7	2.1	42.8	$6.2*10^{-11}$
rs17762769	17	41249183	+	A	G	G	0.79	13.7	2.1	42.8	$6.2*10^{-11}$
rs17689471	17	41248753	+	T	C	C	0.21	-13.7	2.1	42.8	$6.2*10^{-11}$
rs413844	17	41085167	+	A	G	G	0.78	13.7	2.1	42.8	$6.2*10^{-11}$
rs1526128	17	41135407	+	T	C	C	0.79	13.8	2.1	42.7	$6.2*10^{-11}$
rs17761124	17	41116299	+	A	T	T	0.21	-14.3	2.2	42.7	$6.2*10^{-11}$
rs17563986	17	41347100	+	A	G	G	0.21	-13.9	2.1	42.6	$6.7*10^{-11}$
rs2668624	17	41708649	+	A	G	G	0.20	-14.1	2.2	42.5	$7.1*10^{-11}$
rs17689824	17	41260178	+	T	C	C	0.79	13.7	2.1	42.5	$7.1*10^{-11}$
rs17763086	17	41261262	+	T	G	G	0.21	-13.7	2.1	42.5	$7.1*10^{-11}$
rs1396862	17	41258778	+	A	G	G	0.79	13.7	2.1	42.5	$7.1*10^{-11}$
rs17689882	17	41262609	+	A	G	G	0.79	13.7	2.1	42.5	$7.1*10^{-11}$
rs1912151	17	41258725	+	T	C	C	0.79	13.7	2.1	42.5	$7.2*10^{-11}$
rs2668626	17	41708952	+	T	C	C	0.20	-14.4	2.2	42.5	$7.2*10^{-11}$
rs1876831	17	41263526	+	T	C	C	0.79	13.7	2.1	42.5	$7.2*10^{-11}$
rs17689653	17	41254744	+	A	T	T	0.21	-13.7	2.1	42.4	$7.3*10^{-11}$
rs2668625	17	41708747	+	A	C	C	0.80	14.1	2.2	42.4	$7.3*10^{-11}$
rs16940665	17	41263677	+	T	C	C	0.21	-13.7	2.1	42.4	$7.3*10^{-11}$

rs2732702	17	41709505	+	T	G	G	0.20	-14.1	2.2	42.4	$7.3*10^{-11}$
rs2668628	17	41709662	+	A	G	G	0.80	14.1	2.2	42.4	$7.4*10^{-11}$
rs2732701	17	41709880	+	A	G	G	0.20	-14.1	2.2	42.4	$7.4*10^{-11}$
rs2668627	17	41709470	+	T	C	C	0.20	-14.1	2.2	42.4	$7.4*10^{-11}$
rs17689918	17	41265869	+	A	G	G	0.79	13.7	2.1	42.4	$7.4*10^{-11}$
rs2261201	17	41710326	+	G	C	C	0.80	14.1	2.2	42.4	$7.5*10^{-11}$
rs17650771	17	41391205	+	A	G	G	0.21	-14.3	2.2	42.4	$7.6*10^{-11}$
rs16940674	17	41266288	+	T	C	C	0.79	13.7	2.1	42.4	$7.6*10^{-11}$
rs4277389	17	41251434	+	A	G	G	0.21	-13.7	2.1	42.3	$7.7*10^{-11}$
rs1876829	17	41267224	+	T	C	C	0.21	-13.7	2.1	42.3	$7.7*10^{-11}$
rs878886	17	41268271	+	G	C	C	0.79	13.7	2.1	42.3	$7.8*10^{-11}$
rs2873269	17	41286902	+	T	C	C	0.78	13.7	2.1	42.2	$8.2*10^{-11}$
rs4640231	17	41268567	+	G	C	C	0.21	-13.6	2.1	42.2	$8.3*10^{-11}$
rs10445364	17	41272136	+	A	G	G	0.79	13.6	2.1	42.2	$8.3*10^{-11}$
rs17763533	17	41273970	+	T	C	C	0.21	-13.6	2.1	42.2	$8.4*10^{-11}$
rs17690314	17	41275664	+	T	G	G	0.21	-13.6	2.1	42.2	$8.4*10^{-11}$
rs17690326	17	41276754	+	T	C	C	0.21	-13.6	2.1	42.1	$8.6*10^{-11}$
rs241044	17	41068247	+	A	G	G	0.80	14.6	2.2	42.1	$8.7*10^{-11}$
rs885639	17	41284394	+	T	G	G	0.21	-13.6	2.1	42.0	$9.3*10^{-11}$
rs17769490	17	41281385	+	A	G	G	0.79	13.5	2.1	42.0	$9.3*10^{-11}$
rs17690679	17	41280583	+	A	G	G	0.21	-13.5	2.1	41.9	$9.5*10^{-11}$
rs17690661	17	41280301	+	A	G	G	0.79	13.5	2.1	41.9	$9.7*10^{-11}$
rs17763596	17	41276990	+	T	G	G	0.79	13.6	2.1	41.8	$1.0*10^{-10}$
rs17763634	17	41277534	+	T	C	C	0.21	-13.6	2.1	41.8	$1.0*10^{-10}$
rs12373168	17	41280117	+	A	C	C	0.21	-13.5	2.1	41.8	$1.0*10^{-10}$
rs12185233	17	41279434	+	G	C	C	0.21	-13.5	2.1	41.8	$1.0*10^{-10}$
rs12185235	17	41279483	+	T	C	C	0.79	13.5	2.1	41.8	$1.0*10^{-10}$
rs12373142	17	41279980	+	G	C	C	0.79	13.5	2.1	41.7	$1.0*10^{-10}$
rs11079725	17	41279714	+	T	C	C	0.21	-13.5	2.1	41.7	$1.1*10^{-10}$
rs12373123	17	41279853	+	T	C	C	0.21	-13.5	2.1	41.7	$1.1*10^{-10}$
rs2696700	17	41615569	+	A	G	G	0.80	14.9	2.3	41.7	$1.1*10^{-10}$

rs10514879	17	41158754	+	T	C	C	0.78	13.6	2.1	41.6	$1.1*10^{-10}$
rs10514903	17	41562424	+	G	C	C	0.81	15.3	2.4	41.4	$1.2*10^{-10}$
rs916888	17	42218292	+	T	C	C	0.23	-13.9	2.2	41.4	$1.3*10^{-10}$
rs199504	17	42216164	+	T	C	C	0.20	-13.9	2.2	41.2	$1.4*10^{-10}$
rs70602	17	42214876	+	T	C	C	0.80	13.9	2.2	41.2	$1.4*10^{-10}$
rs199505	17	42214571	+	A	G	G	0.80	13.9	2.2	41.1	$1.4*10^{-10}$
rs415430	17	42214305	+	T	C	C	0.20	-13.9	2.2	41.1	$1.4*10^{-10}$
rs199506	17	42214192	+	A	G	G	0.80	13.9	2.2	41.1	$1.4*10^{-10}$
rs199507	17	42214016	+	A	G	G	0.80	13.9	2.2	41.1	$1.5*10^{-10}$
rs17769552	17	41283070	+	A	G	G	0.79	13.6	2.1	41.1	$1.5*10^{-10}$
rs878887	17	41268363	+	T	C	C	0.79	13.7	2.1	41.0	$1.5*10^{-10}$
rs199509	17	42213889	+	A	G	G	0.20	-13.8	2.2	40.8	$1.6*10^{-10}$
rs199528	17	42198305	+	T	C	C	0.80	13.7	2.2	40.8	$1.7*10^{-10}$
rs2055794	17	41307507	+	A	G	G	0.81	14.9	2.3	40.8	$1.7*10^{-10}$
rs199513	17	42212095	+	A	G	G	0.80	13.7	2.2	40.8	$1.7*10^{-10}$
rs199514	17	42212044	+	A	G	G	0.20	-13.7	2.2	40.7	$1.7*10^{-10}$
rs199516	17	42211648	+	T	C	C	0.20	-13.7	2.2	40.7	$1.7*10^{-10}$
rs199515	17	42211804	+	G	C	C	0.80	13.7	2.1	40.7	$1.8*10^{-10}$
rs2696501	17	41719662	+	T	G	G	0.80	13.6	2.1	40.6	$1.8*10^{-10}$
rs2732615	17	41719833	+	T	C	C	0.20	-13.6	2.1	40.6	$1.8*10^{-10}$
rs2732613	17	41720606	+	A	C	C	0.20	-13.6	2.1	40.6	$1.9*10^{-10}$
rs2532426	17	41724181	+	T	C	C	0.80	13.6	2.1	40.5	$1.9*10^{-10}$
rs538628	17	42142496	+	G	C	C	0.20	-13.5	2.1	40.3	$2.2*10^{-10}$
rs199439	17	42148686	+	A	G	G	0.20	-13.5	2.1	40.2	$2.3*10^{-10}$
rs17688916	17	41134463	+	A	T	T	0.81	14.4	2.3	40.1	$2.4*10^{-10}$
rs199456	17	42153103	+	T	C	C	0.80	13.5	2.1	40.0	$2.5*10^{-10}$
rs17650991	17	41400344	+	A	C	C	0.23	-13.3	2.1	39.7	$2.9*10^{-10}$
rs199534	17	42179380	+	T	G	G	0.20	-13.4	2.1	39.4	$3.4*10^{-10}$
rs199533	17	42184098	+	A	G	G	0.80	13.4	2.1	39.3	$3.7*10^{-10}$
rs11079720	17	41195788	+	A	G	G	0.81	14.9	2.4	39.1	$4.0*10^{-10}$
rs199448	17	42164185	+	A	G	G	0.20	-13.3	2.1	39.1	$4.1*10^{-10}$

rs199445	17	42172573	+	T	C	C	0.80	13.3	2.1	39.0	$4.2*10^{-10}$
rs199443	17	42174733	+	T	C	C	0.80	13.3	2.1	39.0	$4.3*10^{-10}$
rs17573607	17	41438918	+	A	G	G	0.83	16.1	2.6	39.0	$4.3*10^{-10}$
rs199535	17	42177829	+	A	G	G	0.20	-13.3	2.1	38.6	$5.1*10^{-10}$
rs17762954	17	41255567	+	T	C	C	0.81	14.7	2.4	38.2	$6.5*10^{-10}$
rs2668711	17	41697404	+	T	G	G	0.91	24.8	4.0	38.1	$6.7*10^{-10}$
rs7207373	17	41126495	+	T	C	C	0.77	12.5	2.0	37.8	$7.8*10^{-10}$
rs6503443	17	41121664	+	T	C	C	0.23	-12.5	2.0	37.8	$8.0*10^{-10}$
rs16941038	17	41117348	+	T	C	C	0.23	-12.5	2.0	37.7	$8.1*10^{-10}$
rs16941035	17	41117302	+	T	G	G	0.23	-12.5	2.0	37.7	$8.1*10^{-10}$
rs7215239	17	41123556	+	T	C	C	0.23	-12.5	2.0	37.7	$8.2*10^{-10}$
rs1724401	17	41111640	+	A	C	C	0.23	-12.4	2.0	37.5	$9.0*10^{-10}$
rs1635291	17	41107696	+	A	G	G	0.23	-12.4	2.0	37.5	$9.1*10^{-10}$
rs1724400	17	41111654	+	A	C	C	0.77	12.4	2.0	37.4	$9.4*10^{-10}$
rs1630095	17	41105955	+	A	G	G	0.23	-12.4	2.0	37.3	$9.9*10^{-10}$
rs2532329	17	41705867	+	A	G	G	0.81	15.0	2.5	37.3	$9.9*10^{-10}$
rs1635298	17	41100127	+	A	T	T	0.23	-12.4	2.1	36.2	$1.8*10^{-9}$
rs2074404	17	42220599	+	T	G	G	0.23	-12.6	2.1	35.9	$2.1*10^{-9}$
rs9388490	6	126746488	+	T	C	C	0.59	-10.0	1.7	35.8	$2.2*10^{-9}$
rs12373124	17	41279999	+	T	C	C	0.24	-12.0	2.0	34.3	$4.8*10^{-9}$
rs919461	17	41421506	+	A	T	T	0.19	-14.7	2.5	33.9	$5.7*10^{-9}$
rs440778	17	41042203	+	A	G	G	0.19	-14.1	2.4	33.5	$7.0*10^{-9}$
rs199501	17	42217772	+	A	G	G	0.78	12.1	2.1	33.3	$7.7*10^{-9}$
rs7224296	17	42155230	+	A	G	G	0.26	-11.4	2.0	33.0	$9.4*10^{-9}$
rs199524	17	42203606	+	T	G	G	0.22	-11.9	2.1	32.9	$9.9*10^{-9}$
rs199520	17	42209035	+	A	G	G	0.22	-11.9	2.1	32.8	$1.0*10^{-8}$
rs439945	17	41082442	+	A	C	C	0.74	11.3	2.0	32.0	$1.5*10^{-8}$
rs1724409	17	41096348	+	T	G	G	0.26	-11.2	2.0	31.9	$1.6*10^{-8}$
rs417968	17	41084159	+	A	G	G	0.26	-11.2	2.0	31.9	$1.6*10^{-8}$
rs199438	17	42146826	+	A	G	G	0.78	11.5	2.0	31.9	$1.6*10^{-8}$
rs183211	17	42143493	+	A	G	G	0.78	11.5	2.0	31.8	$1.7*10^{-8}$

rs142167	17	42150418	+	A	G	G	0.22	-11.5	2.0	31.8	$1.7*10^{-8}$
rs199436	17	42144468	+	A	G	G	0.22	-11.4	2.0	31.7	$1.8*10^{-8}$
rs199455	17	42154400	+	T	C	C	0.22	-11.5	2.0	31.7	$1.8*10^{-8}$
rs199529	17	42192384	+	A	C	C	0.22	-11.5	2.0	31.7	$1.8*10^{-8}$
rs199530	17	42191820	+	A	G	G	0.22	-11.5	2.0	31.6	$1.9*10^{-8}$
rs199454	17	42155294	+	A	G	G	0.22	-11.4	2.0	31.6	$1.9*10^{-8}$
rs199452	17	42156524	+	T	C	C	0.78	11.4	2.0	31.6	$1.9*10^{-8}$
rs199449	17	42164086	+	A	G	G	0.78	11.3	2.0	30.9	$2.7*10^{-8}$
rs199442	17	42175290	+	A	G	G	0.78	11.3	2.0	30.8	$2.9*10^{-8}$
rs199536	17	42175593	+	T	C	C	0.78	11.3	2.0	30.8	$2.9*10^{-8}$
rs199500	17	42218572	+	T	C	C	0.73	11.7	2.1	30.0	$4.2*10^{-8}$
rs1575676	6	108967957	+	T	C	C	0.64	9.6	1.8	28.5	$9.3*10^{-8}$
rs2696558	17	41702728	+	A	T	T	0.68	10.4	2.0	27.6	$1.5*10^{-7}$
rs2022464	6	109052063	+	A	C	C	0.70	9.5	1.8	27.5	$1.6*10^{-7}$
rs10457180	6	109071732	+	A	G	G	0.29	-9.4	1.8	27.2	$1.9*10^{-7}$
rs13217795	6	109080791	+	T	C	C	0.29	-9.4	1.8	26.9	$2.1*10^{-7}$
rs1490384	6	126892853	+	T	C	C	0.50	-8.5	1.6	26.8	$2.3*10^{-7}$
rs1155939	6	126907826	+	A	C	C	0.50	-8.4	1.6	26.5	$2.6*10^{-7}$
rs1155938	6	126908165	+	A	C	C	0.50	-8.4	1.6	26.5	$2.6*10^{-7}$
rs9400239	6	109084356	+	T	C	C	0.71	9.3	1.8	26.4	$2.7*10^{-7}$
rs692942	10	89807916	+	A	C	C	0.83	11.2	2.2	25.9	$3.6*10^{-7}$
rs1538170	6	126794567	+	T	C	C	0.57	-8.7	1.7	25.9	$3.6*10^{-7}$
rs664317	10	89802210	+	A	C	C	0.83	11.1	2.2	25.6	$4.3*10^{-7}$
rs1358071	17	41158972	+	A	C	C	0.27	-9.8	1.9	25.5	$4.3*10^{-7}$
rs4565329	6	126794491	+	T	C	C	0.55	-8.2	1.6	25.3	$4.9*10^{-7}$
rs1538172	6	126790186	+	A	G	G	0.45	8.2	1.6	25.3	$4.9*10^{-7}$
rs17690703	17	41281077	+	T	C	C	0.75	9.9	2.0	25.3	$4.9*10^{-7}$
rs1538171	6	126794577	+	G	C	C	0.55	-8.2	1.6	25.3	$4.9*10^{-7}$
rs4897181	6	126795257	+	T	C	C	0.55	-8.2	1.6	25.3	$4.9*10^{-7}$
rs9321065	6	126785780	+	A	G	G	0.55	-8.2	1.6	25.3	$4.9*10^{-7}$
rs9401882	6	126796748	+	A	G	G	0.45	8.2	1.6	25.3	$5.0*10^{-7}$

rs1361108	6	126809293	+	T	C	C	0.55	-8.4	1.7	25.3	$5.0*10^{-7}$
rs4897182	6	126797335	+	T	G	G	0.45	8.2	1.6	25.3	$5.0*10^{-7}$
rs9398808	6	126800484	+	T	G	G	0.55	-8.2	1.6	25.2	$5.1*10^{-7}$
rs9375439	6	126800233	+	G	C	C	0.55	-8.2	1.6	25.2	$5.2*10^{-7}$
rs9385399	6	126800726	+	T	G	G	0.55	-8.2	1.6	25.2	$5.2*10^{-7}$
rs1415671	6	126801280	+	T	G	G	0.45	8.2	1.6	25.2	$5.3*10^{-7}$
rs9384679	6	108971112	+	T	C	C	0.63	8.5	1.7	25.1	$5.3*10^{-7}$
rs2184968	6	126802687	+	T	C	C	0.45	8.2	1.6	25.1	$5.4*10^{-7}$
rs2152876	6	126802921	+	A	G	G	0.55	-8.2	1.6	25.1	$5.5*10^{-7}$
rs9385400	6	126805883	+	T	G	G	0.45	8.2	1.6	25.0	$5.7*10^{-7}$
rs1361107	6	126809204	+	A	C	C	0.45	8.2	1.6	25.0	$5.7*10^{-7}$
rs32579	5	149191041	+	T	C	C	0.71	-9.0	1.8	25.0	$5.8*10^{-7}$
rs1337735	6	126812717	+	A	T	T	0.55	-8.2	1.6	25.0	$5.8*10^{-7}$
rs1361109	6	126812836	+	T	C	C	0.55	-8.2	1.6	25.0	$5.9*10^{-7}$
rs2326451	6	126853621	+	A	T	T	0.45	8.2	1.6	25.0	$5.9*10^{-7}$
rs1572569	6	126813380	+	A	G	G	0.55	-8.2	1.6	24.9	$6.0*10^{-7}$
rs1120786	6	126850330	+	T	G	G	0.45	8.2	1.6	24.9	$6.1*10^{-7}$
rs2184967	6	126815180	+	T	C	C	0.55	-8.2	1.6	24.9	$6.1*10^{-7}$
rs4559102	6	126815273	+	A	G	G	0.55	-8.2	1.6	24.9	$6.1*10^{-7}$
rs9375441	6	126820293	+	A	G	G	0.55	-8.2	1.6	24.9	$6.1*10^{-7}$
rs4895808	6	126823127	+	T	C	C	0.55	-8.2	1.6	24.9	$6.1*10^{-7}$
rs9388496	6	126826755	+	A	G	G	0.45	8.2	1.6	24.9	$6.1*10^{-7}$
rs6911407	6	108973724	+	A	C	C	0.63	8.5	1.7	24.9	$6.2*10^{-7}$
rs9398809	6	126830837	+	T	C	C	0.55	-8.2	1.6	24.9	$6.2*10^{-7}$
rs16904016	8	91246803	+	A	G	G	0.97	23.1	4.6	24.8	$6.3*10^{-7}$
rs9372840	6	126864328	+	A	C	C	0.45	8.1	1.6	24.8	$6.3*10^{-7}$
rs1159619	6	126842837	+	A	C	C	0.55	-8.2	1.6	24.8	$6.4*10^{-7}$
rs7738135	6	126871674	+	A	G	G	0.55	-8.1	1.6	24.8	$6.4*10^{-7}$
rs4418209	6	126861392	+	T	G	G	0.45	8.1	1.6	24.8	$6.5*10^{-7}$
rs9375446	6	126876708	+	A	G	G	0.55	-8.1	1.6	24.8	$6.5*10^{-7}$
rs9401883	6	126838804	+	A	G	G	0.45	8.1	1.6	24.8	$6.5*10^{-7}$

rs9375442	6	126844830	+	A	C	C	0.45	8.1	1.6	24.7	$6.5*10^{-7}$
rs9398810	6	126857297	+	A	C	C	0.55	-8.1	1.6	24.7	$6.6*10^{-7}$
rs2050644	6	126846948	+	A	G	G	0.45	8.1	1.6	24.7	$6.6*10^{-7}$
rs1490388	6	126877348	+	T	C	C	0.55	-8.1	1.6	24.7	$6.6*10^{-7}$
rs1907067	6	126879356	+	A	C	C	0.45	8.1	1.6	24.7	$6.9*10^{-7}$
rs7001425	8	91244283	+	A	G	G	0.03	-22.4	4.5	24.6	$7.1*10^{-7}$
rs4380768	6	126909044	+	G	C	C	0.49	8.1	1.6	24.6	$7.1*10^{-7}$
rs1591805	6	126758757	+	A	G	G	0.49	8.4	1.7	24.5	$7.4*10^{-7}$
rs756466	6	127464266	+	T	C	C	0.66	-8.9	1.8	24.4	$7.6*10^{-7}$
rs6921183	6	126910722	+	A	T	T	0.49	8.0	1.6	24.4	$7.8*10^{-7}$
rs1844593	6	126939520	+	A	G	G	0.51	-8.0	1.6	24.4	$7.9*10^{-7}$
rs2802288	6	109002908	+	A	G	G	0.63	8.3	1.7	24.3	$8.2*10^{-7}$
rs9388489	6	126740412	+	A	G	G	0.44	8.1	1.6	24.3	$8.3*10^{-7}$
rs9375447	6	126915784	+	A	G	G	0.49	8.0	1.6	24.3	$8.3*10^{-7}$
rs9375435	6	126703551	+	T	C	C	0.55	-8.3	1.7	24.3	$8.5*10^{-7}$
rs9388500	6	126918273	+	G	C	C	0.51	-8.0	1.6	24.2	$8.5*10^{-7}$
rs9401888	6	126919216	+	A	G	G	0.49	8.0	1.6	24.2	$8.6*10^{-7}$
rs9398171	6	109090220	+	T	C	C	0.29	-8.9	1.8	24.2	$8.6*10^{-7}$
rs6907898	6	126708109	+	T	C	C	0.56	-8.2	1.7	24.2	$8.6*10^{-7}$
rs572474	10	89781634	+	A	G	G	0.17	-10.6	2.2	24.2	$8.7*10^{-7}$
rs2490272	6	109002079	+	T	C	C	0.37	-8.3	1.7	24.2	$8.7*10^{-7}$
rs17754780	6	126706026	+	T	C	C	0.56	-8.2	1.7	24.2	$8.7*10^{-7}$
rs2802292	6	109015211	+	T	G	G	0.37	-8.3	1.7	24.2	$8.7*10^{-7}$
rs1387916	6	126928424	+	G	C	C	0.49	8.0	1.6	24.2	$8.9*10^{-7}$
rs4629706	6	126930024	+	A	T	T	0.49	8.0	1.6	24.1	$9.0*10^{-7}$
rs2802290	6	109012373	+	A	G	G	0.37	-8.3	1.7	24.1	$9.1*10^{-7}$
rs10504891	8	91240392	+	A	G	G	0.97	21.9	4.5	24.1	$9.3*10^{-7}$
rs768023	6	108982695	+	A	G	G	0.37	-8.3	1.7	24.1	$9.3*10^{-7}$
rs9401892	6	126937061	+	A	G	G	0.51	-7.9	1.6	24.1	$9.3*10^{-7}$
rs4621657	6	126937920	+	A	G	G	0.51	-7.9	1.6	24.1	$9.3*10^{-7}$
rs2153960	6	109094877	+	A	G	G	0.29	-8.8	1.8	24.0	$9.4*10^{-7}$

rs3861455	6	126939662	+	A	C	C	0.49	7.9	1.6	24.0	$9.5*10^{-7}$
rs1936791	6	127463878	+	T	C	C	0.69	-8.6	1.7	24.0	$9.6*10^{-7}$
rs575957	10	89781958	+	T	C	C	0.83	10.5	2.2	24.0	$9.6*10^{-7}$
rs3861456	6	126940353	+	A	G	G	0.49	7.9	1.6	24.0	$9.7*10^{-7}$
rs2253310	6	108995286	+	G	C	C	0.37	-8.3	1.7	24.0	$9.7*10^{-7}$
rs4895811	6	126941546	+	A	T	T	0.51	-7.9	1.6	24.0	$9.8*10^{-7}$
rs9388501	6	126944704	+	T	C	C	0.49	7.9	1.6	23.9	$9.9*10^{-7}$
rs11154383	6	127467150	+	A	G	G	0.31	8.5	1.7	23.9	$1.0*10^{-6}$
rs4946935	6	109107435	+	A	G	G	0.71	8.8	1.8	23.8	$1.1*10^{-6}$
rs134097	22	26400326	+	A	G	G	0.51	-8.2	1.7	23.8	$1.1*10^{-6}$
rs564443	10	89797897	+	A	G	G	0.83	10.6	2.2	23.7	$1.1*10^{-6}$
rs7818433	8	91215901	+	A	G	G	0.97	22.1	4.5	23.7	$1.1*10^{-6}$
rs9398172	6	109101519	+	A	G	G	0.29	-8.7	1.8	23.6	$1.2*10^{-6}$
rs13296683	9	11690487	+	A	G	G	0.69	8.6	1.8	23.6	$1.2*10^{-6}$
rs6997558	8	91238297	+	A	G	G	0.03	-21.7	4.5	23.6	$1.2*10^{-6}$
rs16903634	8	91205649	+	T	C	C	0.03	-22.4	4.6	23.6	$1.2*10^{-6}$
rs16904011	8	91236826	+	G	C	C	0.97	21.6	4.5	23.6	$1.2*10^{-6}$
rs12675530	8	91224276	+	T	C	C	0.97	21.6	4.4	23.5	$1.2*10^{-6}$
rs1936794	6	127469773	+	T	C	C	0.31	8.5	1.8	23.5	$1.2*10^{-6}$
rs3800229	6	109103656	+	T	G	G	0.29	-8.7	1.8	23.5	$1.2*10^{-6}$
rs9491693	6	127470933	+	A	G	G	0.69	-8.5	1.8	23.5	$1.3*10^{-6}$
rs1935952	6	109105598	+	G	C	C	0.71	8.7	1.8	23.5	$1.3*10^{-6}$
rs8067056	17	41439785	+	T	C	C	0.37	-8.5	1.8	23.4	$1.3*10^{-6}$
rs1935949	6	109105980	+	A	G	G	0.71	8.7	1.8	23.4	$1.3*10^{-6}$
rs1936796	6	127471420	+	A	G	G	0.69	-8.5	1.8	23.4	$1.3*10^{-6}$
rs2435200	17	41427688	+	A	G	G	0.60	8.2	1.7	23.3	$1.4*10^{-6}$
rs1936797	6	127474350	+	A	G	G	0.31	8.4	1.7	23.2	$1.5*10^{-6}$
rs1936799	6	127475831	+	T	C	C	0.69	-8.4	1.8	23.1	$1.5*10^{-6}$
rs1826189	6	126963907	+	T	C	C	0.51	-7.8	1.6	23.0	$1.6*10^{-6}$
rs4946936	6	109110014	+	T	C	C	0.71	8.6	1.8	22.9	$1.7*10^{-6}$
rs13346801	19	58318439	+	G	C	C	0.07	16.0	3.3	22.8	$1.8*10^{-6}$

rs2745347	6	127463213	+	A	C	C	0.32	8.3	1.7	22.7	$1.9*10^{-6}$
rs2074405	17	42221161	+	A	C	C	0.80	16.6	3.5	22.7	$1.9*10^{-6}$
rs1936790	6	127463426	+	T	C	C	0.68	-8.3	1.7	22.6	$1.9*10^{-6}$
rs853961	6	127045157	+	T	G	G	0.50	7.8	1.6	22.6	$1.9*10^{-6}$
rs7743860	6	126969410	+	T	G	G	0.49	7.7	1.6	22.6	$2.0*10^{-6}$
rs9401897	6	126982334	+	A	G	G	0.49	7.7	1.6	22.5	$2.1*10^{-6}$
rs9491653	6	126985323	+	A	G	G	0.49	7.7	1.6	22.5	$2.1*10^{-6}$
rs4243491	6	126980229	+	T	C	C	0.49	7.7	1.6	22.5	$2.1*10^{-6}$
rs1936793	6	127466535	+	T	C	C	0.32	8.2	1.7	22.5	$2.1*10^{-6}$
rs16984492	19	58315808	+	T	G	G	0.93	-15.8	3.3	22.5	$2.1*10^{-6}$
rs7259824	19	58315595	+	A	G	G	0.07	15.8	3.3	22.5	$2.1*10^{-6}$
rs9491652	6	126985313	+	G	C	C	0.49	7.7	1.6	22.5	$2.1*10^{-6}$
rs7259819	19	58315583	+	A	C	C	0.07	15.8	3.3	22.5	$2.1*10^{-6}$
rs2745349	6	127461527	+	A	C	C	0.32	8.2	1.7	22.5	$2.2*10^{-6}$
rs4629707	6	126979583	+	T	C	C	0.49	7.7	1.6	22.5	$2.2*10^{-6}$
rs4339479	6	126978646	+	A	G	G	0.51	-7.7	1.6	22.4	$2.2*10^{-6}$
rs7738836	6	126977928	+	A	G	G	0.49	7.7	1.6	22.4	$2.2*10^{-6}$
rs1340953	6	126993441	+	A	G	G	0.49	7.7	1.6	22.4	$2.2*10^{-6}$
rs1340952	6	126993203	+	T	C	C	0.51	-7.7	1.6	22.4	$2.2*10^{-6}$
rs1262476	6	127028689	+	A	G	G	0.75	9.0	1.9	22.3	$2.3*10^{-6}$
rs495149	10	89785503	+	T	C	C	0.83	10.2	2.2	22.3	$2.3*10^{-6}$
rs1417572	6	127000420	+	T	C	C	0.49	7.6	1.6	22.3	$2.4*10^{-6}$
rs4549631	6	127008001	+	T	C	C	0.49	7.6	1.6	22.2	$2.4*10^{-6}$
rs1538956	6	127005719	+	T	G	G	0.51	-7.6	1.6	22.2	$2.5*10^{-6}$
rs9388507	6	127012588	+	A	C	C	0.51	-7.6	1.6	22.2	$2.5*10^{-6}$
rs3905044	6	127014576	+	A	G	G	0.49	7.6	1.6	22.2	$2.5*10^{-6}$
rs6911485	6	127016808	+	A	G	G	0.49	7.6	1.6	22.2	$2.5*10^{-6}$
rs9375450	6	127027044	+	A	G	G	0.51	-7.6	1.6	22.2	$2.5*10^{-6}$
rs1936795	6	127469811	+	T	C	C	0.32	8.2	1.7	22.1	$2.6*10^{-6}$
rs9388509	6	127031670	+	A	G	G	0.51	-7.6	1.6	22.1	$2.6*10^{-6}$
rs621891	10	89787604	+	T	C	C	0.83	10.1	2.2	22.0	$2.7*10^{-6}$

rs692788	10	89789593	+	A	G	G	0.17	-10.1	2.2	22.0	$2.7*10^{-6}$
rs507795	10	89789803	+	T	C	C	0.83	10.1	2.2	21.9	$2.9*10^{-6}$
rs2800704	6	127473181	+	A	G	G	0.32	8.1	1.7	21.9	$2.9*10^{-6}$
rs9388487	6	126719961	+	T	G	G	0.55	-7.8	1.7	21.8	$3.1*10^{-6}$
rs9398803	6	126725287	+	A	G	G	0.45	7.8	1.7	21.8	$3.1*10^{-6}$
rs7740134	6	127051362	+	A	T	T	0.49	7.6	1.6	21.7	$3.1*10^{-6}$
rs9349264	6	43927236	+	T	G	G	0.15	11.5	2.5	21.7	$3.1*10^{-6}$
rs864937	6	127056776	+	A	G	G	0.49	7.6	1.6	21.7	$3.2*10^{-6}$
rs2800703	6	127468491	+	T	G	G	0.35	8.2	1.8	21.6	$3.4*10^{-6}$
rs853985	6	127061866	+	T	C	C	0.49	7.5	1.6	21.5	$3.5*10^{-6}$
rs864938	6	127064497	+	A	T	T	0.51	-7.5	1.6	21.5	$3.6*10^{-6}$
rs853986	6	127065029	+	G	C	C	0.49	7.5	1.6	21.5	$3.6*10^{-6}$
rs9369429	6	43925104	+	T	C	C	0.84	-11.3	2.5	21.2	$4.1*10^{-6}$
rs17110447	5	149173039	+	A	G	G	0.29	8.3	1.8	21.2	$4.1*10^{-6}$
rs109075	5	149175116	+	T	C	C	0.29	8.3	1.8	21.2	$4.2*10^{-6}$
rs109077	5	149176875	+	T	G	G	0.29	8.3	1.8	21.0	$4.5*10^{-6}$
rs1351394	12	64638093	+	T	C	C	0.50	-7.5	1.6	21.0	$4.7*10^{-6}$
rs12202204	6	126728100	+	A	G	G	0.31	-8.3	1.8	20.8	$5.0*10^{-6}$
rs10457478	6	126746627	+	G	C	C	0.69	8.2	1.8	20.8	$5.1*10^{-6}$
rs853962	6	127069343	+	T	G	G	0.49	7.4	1.6	20.8	$5.1*10^{-6}$
rs1038196	12	64629667	+	G	C	C	0.50	-7.4	1.6	20.8	$5.2*10^{-6}$
rs10784502	12	64630077	+	T	C	C	0.50	7.4	1.6	20.8	$5.2*10^{-6}$
rs4460221	6	127072914	+	A	G	G	0.49	7.4	1.6	20.7	$5.3*10^{-6}$
rs12738007	1	29394292	+	T	C	C	0.54	7.5	1.7	20.7	$5.3*10^{-6}$
rs1269195	6	127073243	+	T	C	C	0.49	7.4	1.6	20.7	$5.3*10^{-6}$
rs1262543	6	127074192	+	A	G	G	0.49	7.4	1.6	20.7	$5.4*10^{-6}$
rs4654393	1	29407024	+	A	G	G	0.54	7.5	1.7	20.7	$5.4*10^{-6}$
rs853965	6	127077867	+	T	C	C	0.49	7.4	1.6	20.7	$5.4*10^{-6}$
rs13212044	6	127067354	+	T	G	G	0.75	8.7	1.9	20.6	$5.8*10^{-6}$
rs6426352	1	29343430	+	G	C	C	0.46	-7.5	1.7	20.5	$5.9*10^{-6}$
rs12032470	1	29337541	+	A	C	C	0.54	7.5	1.7	20.5	$6.0*10^{-6}$

rs16984484	19	58311532	+	A	G	G	0.08	14.4	3.2	20.5	$6.1*10^{-6}$
rs10484759	6	127078735	+	T	C	C	0.75	8.6	1.9	20.3	$6.5*10^{-6}$
rs1268175	6	109125015	+	A	G	G	0.34	-7.8	1.7	20.3	$6.8*10^{-6}$
rs199497	17	42221762	+	T	C	C	0.19	-12.5	2.8	20.2	$7.1*10^{-6}$
rs7225002	17	41544850	+	A	G	G	0.40	-7.6	1.7	20.1	$7.2*10^{-6}$
rs1268177	6	109124015	+	A	G	G	0.34	-7.8	1.7	20.1	$7.2*10^{-6}$
rs1268178	6	109123977	+	T	G	G	0.34	-7.8	1.7	20.1	$7.4*10^{-6}$
rs2836950	21	39526299	+	G	C	C	0.65	8.0	1.8	20.0	$7.5*10^{-6}$
rs1268179	6	109123930	+	G	C	C	0.34	-7.8	1.7	20.0	$7.6*10^{-6}$
rs7540557	1	24250531	+	T	C	C	0.20	-9.4	2.1	20.0	$7.8*10^{-6}$
rs9472134	6	43917645	+	A	T	T	0.54	8.7	1.9	19.9	$8.0*10^{-6}$
rs13201802	6	43914712	+	T	C	C	0.85	-13.0	2.9	19.9	$8.2*10^{-6}$
rs4654391	1	29366453	+	T	C	C	0.47	-7.5	1.7	19.9	$8.2*10^{-6}$
rs7951820	11	1531644	+	T	C	C	0.79	-9.0	2.0	19.9	$8.3*10^{-6}$
rs12801744	11	1449708	+	T	C	C	0.93	-16.5	3.7	19.9	$8.3*10^{-6}$
rs8756	12	64646019	+	A	C	C	0.49	7.2	1.6	19.8	$8.6*10^{-6}$
rs4235745	5	149171304	+	T	C	C	0.67	-7.9	1.8	19.8	$8.7*10^{-6}$
rs1042725	12	64644614	+	T	C	C	0.51	7.2	1.6	19.8	$8.8*10^{-6}$
rs10835257	11	1457787	+	T	C	C	0.80	-9.2	2.1	19.7	$8.8*10^{-6}$
rs10457480	6	126854302	+	G	C	C	0.69	7.9	1.8	19.7	$9.2*10^{-6}$
rs853981	6	127087153	+	T	C	C	0.49	7.2	1.6	19.7	$9.2*10^{-6}$
rs2506085	1	24214998	+	A	C	C	0.21	-9.8	2.2	19.6	$9.5*10^{-6}$
rs853980	6	127086462	+	A	T	T	0.49	7.2	1.6	19.6	$9.7*10^{-6}$
rs13311608	7	32966126	+	A	G	G	0.47	-7.1	1.6	19.5	$1.0*10^{-5}$

Supplementary Table 3. Association of reported height loci with intracranial volume.

name	chr	position	strand	allele 1	alle1e 2	coded allelle	frequency coded allele	beta	standard error	p
rs425277	1	2059032	+	T	C	C	0.72	0.14	1.85	$9.4*10^{-1}$
rs2284746	1	17179262	+	G	C	C	0.46	3.28	1.66	$4.8*10^{-2}$
rs1738475	1	23409478	+	G	C	C	0.60	2.52	1.67	$1.3*10^{-1}$
rs4601530	1	24916698	+	T	C	C	0.75	-0.59	1.85	$7.5*10^{-1}$
rs7532866	1	26614131	+	A	G	G	0.34	-0.26	1.75	$8.8*10^{-1}$
rs2154319	1	41518357	+	T	C	C	0.24	-0.27	2.02	$8.9*10^{-1}$
rs17391694	1	78396214	+	T	C	C	0.88	-3.08	2.92	$2.9*10^{-1}$
rs6699417	1	88896031	+	T	C	C	0.39	-2.42	1.68	$1.5*10^{-1}$
rs10874746	1	93096559	+	T	C	C	0.61	1.77	1.67	$2.9*10^{-1}$
rs9428104	1	118657110	+	A	G	G	0.75	-3.29	1.91	$8.4*10^{-2}$
rs11205277	1	148159496	+	A	G	G	0.43	-1.35	1.75	$4.4*10^{-1}$
rs17346452	1	170319910	+	T	C	C	0.28	1.19	1.82	$5.1*10^{-1}$
rs1325598	1	175058872	+	A	G	G	0.57	0.99	1.65	$5.5*10^{-1}$
rs1046934	1	182290152	+	A	C	C	0.36	-0.64	1.70	$7.1*10^{-1}$
rs10863936	1	210304421	+	A	G	G	0.47	1.79	1.62	$2.7*10^{-1}$
rs6684205	1	216676325	+	A	G	G	0.27	1.27	1.82	$4.9*10^{-1}$
rs11118346	1	217810342	+	T	C	C	0.54	1.33	1.64	$4.2*10^{-1}$
rs10799445	1	225978506	+	A	C	C	0.23	-2.91	1.98	$1.4*10^{-1}$
rs4665736	2	25041103	+	T	C	C	0.47	-3.36	1.66	$4.3*10^{-2}$
rs6714546	2	33214929	+	A	G	G	0.73	-2.11	1.85	$2.5*10^{-1}$
rs17511102	2	37814117	+	A	T	T	0.09	1.40	3.06	$6.5*10^{-1}$
rs2341459	2	44621706	+	T	C	C	0.74	0.81	1.85	$6.6*10^{-1}$
rs12474201	2	46774789	+	A	G	G	0.65	-1.27	1.73	$4.6*10^{-1}$
rs3791675	2	55964813	+	T	C	C	0.78	1.61	1.96	$4.1*10^{-1}$
rs11684404	2	88705737	+	T	C	C	0.33	0.90	1.74	$6.0*10^{-1}$
rs7567288	2	134151294	+	T	C	C	0.19	5.36	2.10	$1.1*10^{-2}$
rs7567851	2	178392966	+	G	C	C	0.07	-1.72	3.10	$5.8*10^{-1}$
rs1351164	2	217980143	+	T	C	C	0.20	-1.15	2.07	$5.8*10^{-1}$

rs12470505	2	219616613	+	T	G	G	0.10	5.55	2.79	$4.6*10^{-2}$
rs2629046	2	224755988	+	T	C	C	0.45	-0.11	1.63	$9.4*10^{-1}$
rs2580816	2	232506210	+	T	C	C	0.81	-1.34	2.13	$5.3*10^{-1}$
rs12694997	2	241911659	+	A	G	G	0.78	0.04	1.95	$9.8*10^{-1}$
rs2597513	3	13530836	+	T	C	C	0.10	1.97	2.70	$4.7*10^{-1}$
rs13088462	3	51046753	+	T	C	C	0.06	1.19	3.71	$7.5*10^{-1}$
rs2336725	3	53093779	+	T	C	C	0.46	1.07	1.70	$5.3*10^{-1}$
rs9835332	3	56642722	+	G	C	C	0.47	0.94	1.63	$5.7*10^{-1}$
rs17806888	3	67499012	+	T	C	C	0.11	0.67	2.61	$8.0*10^{-1}$
rs9863706	3	72520103	+	T	C	C	0.78	-0.59	1.96	$7.6*10^{-1}$
rs6439167	3	130533446	+	T	C	C	0.78	0.74	1.96	$7.1*10^{-1}$
rs9844666	3	137456906	+	A	G	G	0.74	6.62	1.88	$4.3*10^{-4}$
rs724016	3	142588260	+	A	G	G	0.46	5.38	1.63	$9.9*10^{-4}$
rs572169	3	173648421	+	T	C	C	0.69	-4.46	1.75	$1.1*10^{-2}$
rs720390	3	187031377	+	A	G	G	0.62	-0.64	1.69	$7.1*10^{-1}$
rs2247341	4	1671115	+	A	G	G	0.65	2.35	1.72	$1.7*10^{-1}$
rs6449353	4	17642586	+	T	C	C	0.14	-5.27	2.34	$2.5*10^{-2}$
rs17081935	4	57518233	+	T	C	C	0.81	-4.59	2.10	$2.9*10^{-2}$
rs7697556	4	73734177	+	T	C	C	0.53	-1.04	1.68	$5.3*10^{-1}$
rs788867	4	82369030	+	T	G	G	0.32	2.62	1.78	$1.4*10^{-1}$
rs10010325	4	106325802	+	A	C	C	0.52	1.27	1.64	$4.4*10^{-1}$
rs7689420	4	145787802	+	T	C	C	0.84	-3.55	2.24	$1.1*10^{-1}$
rs955748	4	184452669	+	A	G	G	0.75	-1.70	1.90	$3.7*10^{-1}$
rs1173727	5	32866278	+	T	C	C	0.60	0.21	1.67	$9.0*10^{-1}$
rs11958779	5	55037656	+	A	G	G	0.31	0.86	1.76	$6.3*10^{-1}$
rs10037512	5	88390431	+	T	C	C	0.44	-2.25	1.68	$1.8*10^{-1}$
rs13177718	5	108141243	+	T	C	C	0.93	-4.70	3.23	$1.5*10^{-1}$
rs1582931	5	122685098	+	A	G	G	0.53	1.20	1.66	$4.7*10^{-1}$
rs274546	5	131727766	+	A	G	G	0.62	0.68	1.70	$6.9*10^{-1}$
rs526896	5	134384604	+	T	G	G	0.27	-0.93	1.91	$6.3*10^{-1}$
rs4282339	5	168188818	+	A	G	G	0.80	-0.17	2.04	$9.3*10^{-1}$

rs12153391	5	171136043	+	A	C	C	0.74	-0.80	1.98	$6.9*10^{-1}$
rs889014	5	172916720	+	T	C	C	0.65	-1.48	1.73	$3.9*10^{-1}$
rs422421	5	176449932	+	T	C	C	0.79	-0.57	1.98	$7.7*10^{-1}$
rs6879260	5	179663620	+	T	C	C	0.60	2.00	1.67	$2.3*10^{-1}$
rs3812163	6	7670759	+	A	T	T	0.46	-2.06	1.69	$2.2*10^{-1}$
rs1047014	6	19949472	+	T	C	C	0.25	2.44	1.97	$2.1*10^{-1}$
rs806794	6	26308656	+	A	G	G	0.28	-5.44	1.86	$3.3*10^{-3}$
rs3129109	6	29192211	+	T	C	C	0.61	0.03	1.71	$9.9*10^{-1}$
rs2256183	6	31488508	+	A	G	G	0.53	-0.86	1.65	$6.0*10^{-1}$
rs6457620	6	32771977	+	G	C	C	0.48	-2.36	1.63	$1.5*10^{-1}$
rs2780226	6	34307070	+	T	C	C	0.08	-0.38	3.03	$9.0*10^{-1}$
rs6457821	6	35510783	+	A	C	C	0.98	12.35	6.39	$5.3*10^{-2}$
rs9472414	6	45054484	+	A	T	T	0.80	1.98	2.04	$3.3*10^{-1}$
rs9360921	6	76322362	+	T	G	G	0.10	0.74	2.69	$7.8*10^{-1}$
rs310405	6	81857081	+	A	G	G	0.47	-0.80	1.66	$6.3*10^{-1}$
rs7759938	6	105485647	+	T	C	C	0.32	1.53	1.78	$3.9*10^{-1}$
rs1046943	6	109890634	+	A	G	G	0.41	-3.35	1.67	$4.5*10^{-2}$
rs961764	6	117628849	+	G	C	C	0.43	-0.60	1.66	$7.2*10^{-1}$
rs1490384	**6**	**126892853**	**+**	**T**	**C**	**C**	**0.50**	**-8.47**	**1.64**	$\mathbf{2.3*10^{-7}}$
rs6569648	6	130390812	+	T	C	C	0.24	3.14	1.92	$1.0*10^{-1}$
rs7763064	6	142838982	+	A	G	G	0.72	-0.46	1.81	$8.0*10^{-1}$
rs543650	6	152152636	+	T	G	G	0.61	0.61	1.82	$7.4*10^{-1}$
rs9456307	6	158849430	+	A	T	T	0.94	-1.37	3.48	$6.9*10^{-1}$
rs798489	7	2768329	+	T	C	C	0.73	1.61	1.87	$3.9*10^{-1}$
rs4470914	7	19583047	+	T	C	C	0.82	-5.39	2.28	$1.8*10^{-2}$
rs12534093	7	23469499	+	A	T	T	0.77	2.85	1.99	$1.5*10^{-1}$
rs1708299	7	28156471	+	A	G	G	0.69	0.53	1.76	$7.6*10^{-1}$
rs6959212	7	38094851	+	T	C	C	0.67	0.24	1.74	$8.9*10^{-1}$
rs42235	7	92086012	+	T	C	C	0.69	3.45	1.81	$5.7*10^{-2}$
rs822552	7	148281567	+	G	C	C	0.75	1.41	2.06	$5.0*10^{-1}$
rs2110001	7	150147955	+	G	C	C	0.71	0.54	1.92	$7.8*10^{-1}$

rs1013209	8	24172249	+	T	C	C	0.76	1.38	1.94	$4.8*10^{-1}$
rs7460090	8	57356717	+	T	C	C	0.11	-4.21	2.61	$1.1*10^{-1}$
rs6473015	8	78341040	+	A	C	C	0.29	0.15	1.80	$9.3*10^{-1}$
rs6470764	8	130794847	+	T	C	C	0.80	1.48	2.09	$4.8*10^{-1}$
rs12680655	8	135706519	+	G	C	C	0.62	0.34	1.69	$8.4*10^{-1}$
rs7864648	9	16358732	+	T	G	G	0.68	-2.57	1.84	$1.6*10^{-1}$
rs11144688	9	77732106	+	A	G	G	0.90	-1.00	4.04	$8.0*10^{-1}$
rs7853377	9	85742025	+	A	G	G	0.23	0.74	1.96	$7.0*10^{-1}$
rs8181166	9	88306448	+	G	C	C	0.52	0.08	1.68	$9.6*10^{-1}$
rs2778031	9	90025546	+	T	C	C	0.76	-1.29	1.88	$4.9*10^{-1}$
rs9969804	9	94468941	+	A	C	C	0.57	-3.29	1.66	$4.8*10^{-2}$
rs1257763	9	95933766	+	A	G	G	0.96	-4.03	5.08	$4.3*10^{-1}$
rs473902	9	97296056	+	T	G	G	0.07	-10.94	4.05	$6.9*10^{-3}$
rs7027110	9	108638867	+	A	G	G	0.77	-1.61	1.91	$4.0*10^{-1}$
rs1468758	9	112846903	+	T	C	C	0.75	-1.46	1.91	$4.4*10^{-1}$
rs751543	9	118162163	+	T	C	C	0.29	0.56	1.98	$7.8*10^{-1}$
rs7466269	9	132453905	+	A	G	G	0.35	-1.65	1.72	$3.4*10^{-1}$
rs7849585	9	138251691	+	T	G	G	0.68	2.01	1.83	$2.7*10^{-1}$
rs7909670	10	12958770	+	T	C	C	0.58	1.76	1.66	$2.9*10^{-1}$
rs2145998	10	80791702	+	A	T	T	0.54	0.88	1.64	$5.9*10^{-1}$
rs11599750	10	101795432	+	T	C	C	0.62	-0.46	1.71	$7.9*10^{-1}$
rs2237886	11	2767307	+	T	C	C	0.89	-6.12	2.78	$2.8*10^{-2}$
rs7926971	11	12654616	+	A	G	G	0.47	-0.87	1.63	$6.0*10^{-1}$
rs1330	11	17272605	+	T	C	C	0.65	0.04	1.73	$9.8*10^{-1}$
rs10838801	11	48054856	+	A	G	G	0.31	1.50	1.80	$4.0*10^{-1}$
rs1814175	11	49515748	+	T	C	C	0.64	-1.71	1.81	$3.4*10^{-1}$
rs5017948	11	51270794	+	A	T	T	0.81	-2.43	2.18	$2.7*10^{-1}$
rs3782089	11	65093395	+	T	C	C	0.93	1.83	3.50	$6.0*10^{-1}$
rs7112925	11	66582736	+	T	C	C	0.64	1.97	1.73	$2.5*10^{-1}$
rs634552	11	74959700	+	T	G	G	0.87	3.93	2.55	$1.2*10^{-1}$
rs494459	11	118079885	+	T	C	C	0.59	-1.70	1.65	$3.0*10^{-1}$

rs654723	11	128091365	+	A	C	C	0.38	3.05	1.71	$7.5*10^{-2}$
rs2856321	12	11747040	+	A	G	G	0.37	-2.50	1.74	$1.5*10^{-1}$
rs10770705	12	20748734	+	A	C	C	0.65	2.87	1.72	$9.6*10^{-2}$
rs2638953	12	28425682	+	G	C	C	0.67	3.19	1.74	$6.7*10^{-2}$
rs2066807	12	55026949	+	G	C	C	0.92	-2.60	3.13	$4.1*10^{-1}$
rs1351394	**12**	**64638093**	**+**	**T**	**C**	**C**	**0.50**	**-7.46**	**1.63**	$\mathbf{4.7*10^{-6}}$
rs10748128	12	68113925	+	T	G	G	0.64	0.99	1.85	$5.9*10^{-1}$
rs11107116	12	92502635	+	T	G	G	0.77	1.20	1.94	$5.4*10^{-1}$
rs7971536	12	100897919	+	A	T	T	0.52	-1.46	1.71	$3.9*10^{-1}$
rs11830103	12	122389499	+	A	G	G	0.23	1.35	1.99	$5.0*10^{-1}$
rs7332115	13	32045548	+	T	G	G	0.37	2.19	1.69	$1.9*10^{-1}$
rs3118905	13	50003335	+	A	G	G	0.74	-1.94	1.84	$2.9*10^{-1}$
rs7319045	13	90822575	+	A	G	G	0.61	-0.71	1.66	$6.7*10^{-1}$
rs1950500	14	23900690	+	T	C	C	0.70	-0.21	1.83	$9.1*10^{-1}$
rs2093210	14	60027032	+	T	C	C	0.43	2.45	1.70	$1.5*10^{-1}$
rs1570106	14	67882868	+	T	C	C	0.79	0.27	2.02	$8.9*10^{-1}$
rs862034	14	74060499	+	A	G	G	0.63	-1.28	1.70	$4.5*10^{-1}$
rs7155279	14	91555634	+	T	G	G	0.60	2.34	1.67	$1.6*10^{-1}$
rs16964211	15	49317787	+	A	G	G	0.96	3.31	3.97	$4.1*10^{-1}$
rs7178424	15	60167551	+	T	C	C	0.55	-1.81	1.64	$2.7*10^{-1}$
rs10152591	15	67835211	+	A	C	C	0.10	-3.28	2.90	$2.6*10^{-1}$
rs12902421	15	69948457	+	T	C	C	0.03	-0.26	4.93	$9.6*10^{-1}$
rs5742915	15	72123686	+	T	C	C	0.48	-0.01	1.80	$9.9*10^{-1}$
rs11259936	15	82371586	+	A	C	C	0.50	0.65	1.64	$6.9*10^{-1}$
rs16942341	15	87189909	+	T	C	C	0.97	4.18	5.34	$4.3*10^{-1}$
rs2871865	15	97012419	+	G	C	C	0.88	-2.46	2.78	$3.8*10^{-1}$
rs4965598	15	98577137	+	T	C	C	0.32	1.63	1.74	$3.5*10^{-1}$
rs11648796	16	732191	+	A	G	G	0.25	1.65	2.36	$4.8*10^{-1}$
rs26868	16	2189377	+	A	T	T	0.53	-0.69	1.87	$7.1*10^{-1}$
rs1659127	16	14295806	+	A	G	G	0.66	-4.41	1.83	$1.6*10^{-2}$
rs8052560	16	87304743	+	A	C	C	0.22	4.03	2.43	$9.8*10^{-2}$

rs4640244	17	21224816	+	A	G	G	0.38	-0.72	1.91	$7.1*10^{-1}$
rs3110496	17	24941897	+	A	G	G	0.69	0.79	1.77	$6.6*10^{-1}$
rs3764419	17	26188149	+	A	C	C	0.63	-0.66	1.72	$7.0*10^{-1}$
rs17780086	17	27367395	+	A	G	G	0.84	-4.87	2.33	$3.7*10^{-2}$
rs1043515	17	34175722	+	A	G	G	0.54	0.84	1.64	$6.1*10^{-1}$
rs4986172	17	40571807	+	T	C	C	0.67	2.88	1.78	$1.1*10^{-1}$
rs2072153	17	44745013	+	G	C	C	0.32	-0.66	1.75	$7.1*10^{-1}$
rs4605213	17	46599746	+	G	C	C	0.34	-0.17	1.76	$9.2*10^{-1}$
rs227724	17	52133816	+	A	T	T	0.34	1.49	1.74	$3.9*10^{-1}$
rs2079795	17	56851431	+	T	C	C	0.65	-1.24	1.73	$4.7*10^{-1}$
rs2665838	17	59320197	+	G	C	C	0.71	0.45	1.82	$8.1*10^{-1}$
rs11867479	17	65601802	+	T	C	C	0.65	0.46	1.73	$7.9*10^{-1}$
rs4800452	18	18981609	+	T	C	C	0.20	1.12	2.08	$5.9*10^{-1}$
rs9967417	18	45213498	+	G	C	C	0.56	1.56	1.67	$3.5*10^{-1}$
rs17782313	18	56002077	+	T	C	C	0.24	-2.62	1.90	$1.7*10^{-1}$
rs12982744	19	2128193	+	G	C	C	0.60	2.25	1.67	$1.8*10^{-1}$
rs7507204	19	3379834	+	G	C	C	0.26	1.94	1.99	$3.3*10^{-1}$
rs891088	19	7135762	+	A	G	G	0.26	-1.00	1.85	$5.9*10^{-1}$
rs4072910	19	8550031	+	G	C	C	0.40	1.05	2.20	$6.3*10^{-1}$
rs2279008	19	17144303	+	T	C	C	0.23	0.83	2.15	$7.0*10^{-1}$
rs17318596	19	46628935	+	A	G	G	0.64	0.24	1.77	$8.9*10^{-1}$
rs1741344	20	4049800	+	T	C	C	0.37	0.82	1.74	$6.4*10^{-1}$
rs2145272	20	6574218	+	A	G	G	0.36	-0.46	1.72	$7.9*10^{-1}$
rs7274811	20	31796842	+	T	G	G	0.77	3.22	1.95	$1.0*10^{-1}$
rs143384	20	33489170	+	A	G	G	0.42	-3.88	1.79	$3.0*10^{-2}$
rs237743	20	47336426	+	A	G	G	0.79	0.31	2.01	$8.8*10^{-1}$
rs2834442	21	34612656	+	A	T	T	0.36	-4.49	1.70	$8.2*10^{-3}$
rs4821083	22	31386341	+	T	C	C	0.17	0.89	2.23	$6.9*10^{-1}$

SNPs in bold were significantly associated with intracranial volume (after Bonferoni correction). Rs1490384 with $p=2.3*10^{-7}$ lies in the same locus as rs4273712, which reached genome-wide significance in our meta-analysis ($r^2=0.4$ and D'=1 according to HapMap CEU). Rs1351394 resides in the same locus that was found to be associated with head circumference.[1]

Section 1: Description of discovery samples.
The CHARGE consortium includes large prospective community-based cohort studies that have genome-wide variation data coupled with extensive data on multiple phenotypes, as detailed previously.[2] What follows are some details about each study.

Aging Gene-Environment Susceptibility - Reykjavik Study (AGES-Reykjavik)
The AGES-Reykjavik Study is a single center prospective cohort study based on the Reykjavik Study. The Reykjavik Study was initiated in 1967 by the Icelandic Heart Association to study cardiovascular disease and risk factors. The cohort included men and women born between 1907 and 1935 who lived in Reykjavik at the 1967 baseline examination. Re-examination of surviving members of the cohort was initiated in 2002 as part of the AGES-Reykjavik Study. The AGES-Reykjavik Study is designed to investigate aging using a multifaceted comprehensive approach that includes detailed measures of brain function and structure. All cohort members were European Caucasians. The study design has been described previously.[3] Briefly, as part of a comprehensive examination, all participants answered a questionnaire, underwent a clinical examination and had blood drawn. All consenting participants without contraindications were offered a brain MRI on a dedicated machine in the study center: a total of 5003 participants had an MRI. Of these, 3664 were genotyped at the Laboratory of Neurogenetics, Intramural Research Program, NIA, Bethesda, Maryland, and 3219 participants passed QC criteria for genotyping. We further excluded 548 persons due to dementia, cortical infarcts or technical reasons. The remaining 2671 persons underwent MRI post-processing and were available for the GWAS on intracranial volume and brain volume.

The Atherosclerosis Risk in Communities Study (ARIC)
The ARIC study is a prospective population-based study of atherosclerosis and clinical atherosclerotic diseases in 15,792 men and women, including 11,478 white participants, drawn from 4 United States communities (Suburban Minneapolis, Minnesota; Washington County, Maryland; Forsyth County, North Carolina; and Jackson, Mississippi). In the first 3 communities, the sample reflects the demographic composition of the community. In Jackson, only black residents were enrolled. Participants were between age 45 and 64 years at their baseline examination in 1987-1989 when blood was drawn for DNA extraction and participants consented to genetic testing. Details of the ARIC Study sampling and study design were previously published.[4] Participants in the present study were a subset of the ARIC cohort who participated in brain MRI studies in 2004–2006.
Briefly, 1,920 participants aged 55 years and older from two ARIC field centers (Forsyth County, NC, and Jackson, MS) completed brain MR imaging at visit 3 (1993-1995).[5] In 2004-2006, as part of the ARIC Brain MRI ancillary study follow-up visit, 1134 participants underwent a second brain MRI. Scans from the second visit were rated using a semi-automated volumetric analysis. These data were used in the present analyses. Only white participants with genome-wide genotype data are included. A total of 359 persons were available for the intracranial volume analysis and 312 for the brain volume analysis.

The Austrian Stroke Prevention Study (ASPS)

The ASPS study is a single center prospective follow-up study on the effects of vascular risk factors on brain structure and function in the normal elderly population of the city of Graz, Austria. The procedure of recruitment and diagnostic work-up of study participants has been described previously.[6] A total of 2007 participants were randomly selected from the official community register stratified by gender and 5 year age groups. Individuals were excluded from the study if they had a history of neuropsychiatric disease, including previous stroke, transient ischemic attacks, and dementia, or an abnormal neurologic examination determined on the basis of a structured clinical interview and a physical and neurologic examination. During 2 study periods between September 1991 and March 1994 and between January 1999 and December 2003 an extended diagnostic work-up including MRI and neuropsychological testing was done in 1076 individuals aged 45 to 85 years randomly selected from the entire cohort: 509 from the first period and 567 from the second. In 1992, blood was drawn from all study participants for DNA extraction. They were all European Caucasians. Genotyping was performed in 945 participants, and there were 725 subjects who also underwent MRI scanning with assessment of brain volume. In the ASPS assessment of intracranial volume was not possible (see also section 2). Genotyping was done at the Human Genotyping Facility, Genetic Laboratory Department of Internal Medicine, Erasmus MC, Rotterdam, The Netherlands.

Framingham Heart Study (FHS)

The FHS is a three-generation, single-site, community-based, prospective cohort study that was initiated in 1948 to investigate risk factors for cardiovascular disease including stroke. It now comprises 3 generations of participants: the original cohort followed since 1948 (Original); their offspring and spouses of the offspring, followed since 1971 (Offspring); and children from the largest offspring families enrolled in 2000 (Gen 3). The Original cohort enrolled 5209 men and women who comprised two-thirds of the adult population then residing in Framingham, MA, USA. Survivors continue to receive biennial examinations. The Offspring cohort comprises 5,124 persons (including 3,514 biological offspring) who have been examined approximately once every 4 years. Participants in the first two generations were invited to undergo an initial brain MRI in 1999-2005. The population of Framingham was virtually entirely whites in 1948 when the Original cohort was recruited. Vascular risk factors and outcomes, including transient ischemic attack, stroke and dementia, were identified prospectively since 1948 through an ongoing system of FHS clinic and local hospital surveillance. Participants had DNA extracted and provided consent for genotyping in the 1990s. Genotyping was performed at Affymetrix (Santa Clara, CA) through an NHLBI funded SNP-Health Association Resource (SHARe) project. Genotyping was attempted in 5,293 participants, and 4,519 persons met QC criteria. Failures (call rate <97%, extreme heterozygosity or high Mendelian error rate) were largely restricted to persons with whole-genome amplified DNA and DNA extracted from stored serum samples. Of these 4,519 persons 4,116 were alive in 1999 when the MRI study began. Of these, 2320 participants from the Original and Offspring cohorts have undergone cranial MRI with measurement of intracranial volume; one was person excluded because of insufficient information for principal components 1, 5, 6 and 7 found to be associated with intracranial volume in this sample. Of the remaining 2319 participants, 77 participants were excluded for dementia, multiple sclerosis, cortical infarcts, or because of other neurological conditions such as brain

tumors or severe head injury that might confound the assessment of brain volume. The remaining 2242 participants constitute the FHS sample for the brain volume analysis.

Rotterdam Study

The Rotterdam Study is a population-based cohort study among inhabitants of a district of Rotterdam (Ommoord), The Netherlands, and aims to examine the determinants of disease and health in the elderly with a focus on neurogeriatric, cardiovascular, bone, and eye disease.[7-8] In 1990-1993, 7,983 persons participated and were re-examined every 3 to 4 years (Rotterdam Study I). In 2000-2001 the cohort was expanded by 3,011 persons who had not yet been part of the Rotterdam Study (Rotterdam Study II). Subsequently, in 2005-2008 a second expansion comprised 3932 persons 45 years and older, who had not yet participated in any of the previous rounds (Rotterdam Study III).[7]

All participants had DNA extracted at their first visit. Genotyping was attempted in participants with high-quality extracted DNA in 2007-2008. Genotyping was done at the Human Genotyping Facility, Genetic Laboratory Department of Internal Medicine, Erasmus MC, Rotterdam, The Netherlands. In 1995-1996, 563 of the 7983 participants from the Rotterdam Study I were randomly selected to undergo cranial MRI scanning. Of these, 421 had both genotype and MRI data available. Similarly, in 2005-2006, 895 non-demented persons of the 3011 participants from the Rotterdam Study II were randomly selected to undergo cranial MRI scanning. Both MRI data and genome-wide genotype data were available in 679 individuals. In the Rotterdam Study III cohort MRI was implemented in the core protocol of the study, and 1726 persons had genotype data as well as MRI data available.

Section 2: Description of replication and extension samples.

The replication sample consisted of a subset of white participants from the AGES-Reykjavik study who had not undergone genome-wide genotyping at the time of the study, but had MRI scans with measurement of intracranial volume available. Methods for measurement of intracranial volume are the same as for the rest of the AGES-Reykjavik study. Using TaqMan assays we genotyped rs4273712 and rs9303525 ($p_{discovery}=1.6*10^{-12}$) which tags the chromosome 17 inversion in perfect LD with rs9915547 ($r^2=1$ and D'=1 between these two SNPs). 1607 participants with genotype data were used in this analysis.

The genome-wide significant SNPs from the intracranial volume GWAS were examined *in silico* in an existing meta-analysis on head circumference during infancy from the EGG-consortium (n=10,768).[1] This meta-analysis consisted of seven studies with genome-wide data: the Northern Finnish Birth Cohort Study 1966,[9] the Generation R Study,[10-11] the Children's Hospital of Philadelphia,[12] the Raine Study,[13] the Lifestyle-Immune System-Allergy Study,[14] the Avon Longitudinal Study of Parents and Children,[15] and the Copenhagen Study on Asthma in Childhood.[16] Head circumference was measured at on average 14.5 months of age.

Section 3: Details of the various MRI protocols used in each sample.
In all of the studies, the MRI scans were performed in eligible participants in a standardized fashion and interpreted without knowledge of demographic or clinical information. The field strength of the scanners used ranged from 0.5T to 1.5 T. T1- and T2-weighted scans in the axial plane were obtained for all participants. Some studies had additional sequences available for use in their post-processing algorithm; these included fluid attenuation inversion recovery (FLAIR), or proton density, or inversion recovery sequences. Each study used its own custom-made or freely downloadable, fully automatic or semi-quantitative MRI post-processing software to measure intracranial volume and brain volume.
- AGES used the Montreal Neurological Institute Pipeline[17]
- ARIC used semi-automated tracings[18]
- ASPS used structural image evaluation, using normalisation of atrophy (SIENAX) (http://www.fmrib.ox.ac.uk/fsl)
- FHS used custom-built software[19-20]
- RS used Elastix and custom-built software[21-22]
More details and background of each software are detailed below; nevertheless, all software have been extensively validated against manual tracings, which are considered the golden standard. Any remaining heterogeneity across studies due to the different software would lead to lower power, and would not lead to false-positive findings. All software packages provide intracranial volume and brain volume in milliliters; only exception is SIENAX which does not provide intracranial volume. Brain volume was expressed as percentage of intracranial volume in order to correct for individual head-size differences; SIENAX only provides this estimate and no absolute volumes. The only point of consideration is that whereas ARIC, FHS, and RS studies excluded infratentorial tissues from their measurements, AGES, and ASPS did not. However, we do not feel that this would lead to differential effects between the studies; moreover given that infratentorial tissues accounts for only 10-15% of the total intracranial vault, any possible effect is probably very small.

AGES-Reykjavik
Images were acquired on a 1.5 T Signa TwinSpeed system (General Electric Medical Systems, Waukesha, Wisconsin, USA). The MRI protocol for segmentation of brain tissues and intra-cranial volume consisted of the following pulse sequences: a proton density/T2-weighted fast spin echo sequence; and a fluid attenuated inversion recovery (FLAIR) sequence. These sequences were acquired with 3 mm thick interleaved slices. Images were also acquired with a T1-weighted three-dimensional spoiled gradient echo sequence with slice thickness of 1.5 mm. Intracranial volume and brain volume was computed automatically with an algorithm based on the Montreal Neurological Institute pipeline.[17] The AGES-Reykjavik/Montreal Neurological Institute pipeline has been modified to accommodate full brain coverage including cerebellum and brainstem, multispectral images (T1-weighted three-dimensional spoiled gradient echo sequence, FLAIR, and proton density/T2-weighted fast spin echo sequences), high throughput, and minimal editing. All scans were evaluated visually and if needed, incorrectly labelled voxels were corrected manually.

ARIC

Magnetic resonance imaging of the brain was performed on 1.5-T MRI scanners (General Electric Medical Systems) under the supervision of neuroradiologists. MRI measurements of brain anatomy were performed using previously described semiautomated methods.[18] Total intracranial volume was measured from T1-weighted spin-echo sagittal images, each set consisting of 32 contiguous 5-mm-thick interleaved sections with no interslice gap, a field of view of 24 cm, and a matrix of 256 × 192, obtained with the following sequence: scan time, 2.5 minutes; echo time, 14 milliseconds; 2 repetitions; and repetition time, 500 milliseconds. Brain volume was determined from axial fluid-attenuated inversion recovery images, each set consisting of 48 contiguous 3-mm-thick interleaved sections with no interslice gap, a field of view of 22 cm, and a matrix of 256 × 160, obtained with the following sequence: scan time, 9 minutes; echo time, 144.8 milliseconds; inversion time, 2600 milliseconds; repetition time, 11 seconds; bandwidth, ±15.6 kHz. Interactive image-processing steps were performed at the Mayo Clinic by a research associate who had no knowledge of the subjects' personal or medical histories. A fully automated algorithm was used to segment each section of the edited multi-slice fluid-attenuated inversion recovery sequence into voxels assigned to one of the following 3 categories: brain, cerebrospinal fluid, or leukoaraiosis. The mean absolute error of this method of brain volume measurement is 1.4%, the mean test-retest coefficient of variation is 0.3%.[18]

ASPS

MRI was performed on 1.5-Tesla whole body imaging systems (Gyroscan S 15 and ACS, Philips Medical Systems, Eindhoven, The Netherlands) using an axial proton-density / T2-weighted dual spin echo sequence. Additionally, T1-weighted images were acquired in the sagittal plane. For all images, slice thickness was 5 mm with an interslice gap of 0.5mm. Brain percentage was calculated from the T2-weighted sequence using the fully automated structural image evaluation, using normalisation, of atrophy (SIENAX) method, which is part of the University of Oxford Functional MRI of the Brain (FMRIB) group's Software Library (FSL) (http://www.fmrib.ox.ac.uk/fsl). Brain percentage was estimated from the ratio of parenchymal volume (grey and white matter) to the total volume given by the outer surface of the brain.

FHS

Participants were evaluated with a 1 or 1.5-Tesla Siemens Magnetom scanner. 3D T1 and double echo proton density (PD) and T2 coronal images acquired in 4-mm contiguous slices were performed. All images were transferred to the centralized reading center at the University of California–Davis Medical Center and analyses were performed on QUANTA 6.2, a custom-designed image analysis package operating on a Sun Microsystems Ultra 5 workstation.[20] For the assessment of total intracranial volume coronal sections were used to manually outline the intracranial vault above the tentorium in each slice and these data were summed to determine the total intracranial volume. Semi-automated analysis of pixel distributions based on mathematical modeling of MRI pixel intensity histograms for cerebrospinal fluid (CSF) and brain matter (white matter and gray matter) were used to determine the optimal threshold of pixel intensity to best distinguish CSF from brain matter based on methods published previously.[19-20] This

yielded brain volume. The interrater reliability within the FHS study sample averaged 0.99 for both intracranial volume and brain volume.

Rotterdam Study

In 1995-1996 participants originating from the Rotterdam Study I underwent MRI of the brain on a 1.5-Tesla Siemens Vision scanner.[23] The protocol included axial T1-weighted, T2-weighted, and proton-density scans with slice thickness of 5mm and a high-resolution 3D inverstion recovery HASTE scan with slice thickness of 1.25 mm.[21] In 2005-2006, participants originating from the Rotterdam Study II and III underwent MRI of the brain including axial T1- weighted, proton-density, and FLAIR sequences on a 1.5-Tesla GE Healthcare scanner.[24] The slice thickness was 1.6 mm on the T1-weighted, and proton-density weighted sequences and 2.5 mm on the FLAIR sequence. All slices were contiguous.

Brain volume quantification was performed using a custom-designed multi-sequence manually trained k-nearest neighbor classification algorithm.[23,25] In scans from Rotterdam Study I the HASTE, T2, and Proton-density sequences were used; in scans from Rotterdam Study II and III the Proton-density, FLAIR, and T1 sequences were used. We removed non-brain tissue (skull, eyes, dura) – thereby obtaining intracranial volume – by non-linearly registering all brain scans to a manually created template in which non-brain tissues were masked. In all scans, visual checks were performed and if needed any segmentation errors manually corrected.[25]

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