Novel insights into causal effects of lipid and lipid-lowering targets with autoimmune thyroid disease: A Mendelian randomization study

Supplementary Tables

Supplementary Table 1. Instrumental variables for lipid traits

SNP	Effect allele	Other allele	BETA	SE	*F*-statistics	*p*-value
ApoB						
rs10096633	T	C	-0.040	0.007	31.584	1.92E-08
rs102275	C	T	-0.042	0.005	71.248	3.20E-17
rs10774624	G	A	-0.026	0.005	30.346	3.62E-08
rs11206517	G	T	0.091	0.013	47.181	6.51E-12
rs112875651	A	G	-0.069	0.005	195.908	1.82E-44
rs115478735	T	A	0.060	0.006	95.690	1.38E-22
rs11591147	T	G	-0.323	0.018	318.405	4.30E-71
rs11671606	T	C	0.035	0.005	51.974	5.67E-13
rs117310449	T	C	0.220	0.022	101.970	5.81E-24
rs11755689	G	A	0.045	0.005	70.928	3.76E-17
rs118147862	A	G	-0.400	0.012	1187.540	1.00E-200
rs12151108	A	G	-0.162	0.007	492.834	6.85E-109
rs12740374	T	G	-0.113	0.006	395.952	6.54E-88
rs12916	C	T	0.059	0.005	150.898	1.18E-34
rs147711004	A	G	0.125	0.013	93.808	3.57E-22
rs1611747	C	T	0.030	0.005	34.915	3.46E-09
rs1883711	C	G	0.122	0.014	77.002	1.74E-18
rs1973174	T	C	0.030	0.005	30.025	4.28E-08
rs2264778	A	C	0.028	0.005	29.963	4.41E-08
rs261290	T	C	0.054	0.005	118.807	1.20E-27
rs2721961	G	T	-0.032	0.005	37.527	9.05E-10
rs28550459	A	T	-0.099	0.014	51.148	8.63E-13

rs34042070	G	C	0.049	0.006	65.432	6.09E-16
rs3798167	T	G	-0.045	0.006	56.083	7.01E-14
rs4299376	G	T	0.049	0.005	92.338	7.49E-22
rs4307732	A	G	0.055	0.008	51.315	7.93E-13
rs4665972	T	C	0.040	0.005	66.331	3.86E-16
rs4704834	A	G	-0.047	0.005	92.008	8.85E-22
rs472495	G	T	-0.033	0.005	45.368	1.64E-11
rs55714927	T	C	-0.033	0.006	29.926	4.50E-08
rs56325564	A	G	0.032	0.005	45.343	1.66E-11
rs58542926	T	C	-0.113	0.009	156.718	6.33E-36
rs61679753	A	T	-0.408	0.014	878.755	3.59E-192
rs633695	G	A	0.042	0.005	63.566	1.57E-15
rs693	G	A	-0.091	0.005	367.810	8.24E-82
rs72631343	G	C	-0.046	0.007	42.400	7.48E-11
rs72694391	C	T	0.026	0.005	30.440	3.45E-08
rs73013176	C	T	-0.167	0.023	54.021	2.00E-13
rs7323938	C	T	0.027	0.005	30.250	3.81E-08
rs7534572	C	G	-0.038	0.005	60.185	8.73E-15
rs77542162	G	A	0.145	0.016	82.910	8.76E-20
rs79915079	A	G	-0.091	0.015	36.586	1.47E-09
rs822928	A	C	-0.032	0.005	45.536	1.51E-11
rs964184	G	C	0.078	0.007	124.023	8.70E-29
LDL-C						
rs10096633	T	C	-0.042	0.007	34.731	3.80E-09

rs10774624	G	A	-0.026	0.005	30.346	3.62E-08
rs11206517	G	T	0.092	0.013	47.944	4.42E-12
rs112875651	A	G	-0.066	0.005	180.240	4.71E-41
rs115478735	T	A	0.057	0.006	86.971	1.13E-20
rs11591147	T	G	-0.319	0.018	310.829	1.90E-69
rs11671606	T	C	0.035	0.005	51.565	6.98E-13
rs117310449	T	C	0.224	0.022	105.063	1.22E-24
rs11755689	G	A	0.044	0.005	70.715	4.19E-17
rs118147862	A	G	-0.405	0.012	1215.392	1.00E-200
rs12151108	A	G	-0.161	0.007	488.935	4.77E-108
rs12740374	T	G	-0.119	0.006	438.485	3.98E-97
rs12916	C	T	0.060	0.005	151.639	8.11E-35
rs147711004	A	G	0.132	0.013	104.638	1.51E-24
rs1499279	G	T	-0.065	0.012	30.112	4.09E-08
rs1611747	C	T	0.031	0.005	36.370	1.64E-09
rs174541	C	T	-0.043	0.005	77.412	1.41E-18
rs1883711	C	G	0.117	0.014	70.153	5.57E-17
rs1973174	T	C	0.030	0.005	29.845	4.69E-08
rs247616	T	C	-0.045	0.005	78.025	1.04E-18
rs261290	T	C	0.041	0.005	68.823	1.09E-16
rs2721961	G	T	-0.031	0.005	35.024	3.27E-09
rs28550459	A	T	-0.101	0.014	52.935	3.48E-13
rs34042070	G	C	0.051	0.006	69.082	9.58E-17
rs3798167	T	G	-0.043	0.006	52.035	5.50E-13

rs4299376	G	T	0.049	0.005	93.472	4.22E-22
rs4307732	A	G	0.055	0.008	51.369	7.71E-13
rs4665972	T	C	0.040	0.005	67.296	2.37E-16
rs4704834	A	G	-0.048	0.005	96.012	1.17E-22
rs472495	G	T	-0.035	0.005	48.899	2.71E-12
rs4846922	T	C	0.028	0.005	31.377	2.13E-08
rs55714927	T	C	-0.033	0.006	30.468	3.40E-08
rs56325564	A	G	0.032	0.005	45.610	1.45E-11
rs58542926	T	C	-0.111	0.009	151.729	7.75E-35
rs61679753	A	T	-0.415	0.014	905.013	8.02E-198
rs633695	G	A	0.033	0.005	40.347	2.14E-10
rs693	G	A	-0.094	0.005	396.844	4.19E-88
rs72631343	G	C	-0.046	0.007	41.384	1.26E-10
rs72694391	C	T	0.027	0.005	31.433	2.07E-08
rs73013176	C	T	-0.166	0.023	53.093	3.21E-13
rs7323938	C	T	0.027	0.005	31.316	2.20E-08
rs7534572	C	G	-0.034	0.005	46.672	8.45E-12
rs77542162	G	A	0.137	0.016	74.191	7.21E-18
rs79915079	A	G	-0.090	0.015	36.469	1.56E-09
rs822928	A	C	-0.034	0.005	49.464	2.04E-12
rs964184	G	C	0.077	0.007	122.337	2.03E-28
TC						
rs102275	C	T	-0.069	0.005	208.068	4.10E-47
rs11065358	T	C	0.031	0.005	39.364	3.53E-10

rs111278137	A	G	-0.097	0.016	34.915	3.46E-09
rs11206517	G	T	0.079	0.013	37.812	7.82E-10
rs112875651	A	G	-0.050	0.005	109.234	1.49E-25
rs114863007	A	G	-0.046	0.008	33.619	6.73E-09
rs115478735	T	A	0.060	0.006	101.747	6.50E-24
rs115740542	C	T	-0.059	0.009	43.001	5.50E-11
rs11591147	T	G	-0.281	0.018	256.571	1.16E-57
rs117310449	T	C	0.166	0.021	61.056	5.61E-15
rs11749783	C	T	0.053	0.005	127.042	1.90E-29
rs11789603	T	C	0.044	0.007	34.702	3.86E-09
rs118147862	A	G	-0.357	0.011	1001.209	1.00E-200
rs11854242	T	C	-0.032	0.005	37.125	1.11E-09
rs12151108	A	G	-0.133	0.007	353.466	1.06E-78
rs12701220	C	T	-0.031	0.006	30.792	2.88E-08
rs12740374	T	G	-0.093	0.006	284.375	1.05E-63
rs1461729	A	G	-0.083	0.008	102.218	5.13E-24
rs1800961	T	C	-0.078	0.013	34.018	5.48E-09
rs1883711	C	G	0.095	0.014	49.498	2.00E-12
rs261290	T	C	0.079	0.005	267.413	5.09E-60
rs2642438	A	G	-0.032	0.005	41.125	1.44E-10
rs2740488	C	A	-0.044	0.005	70.628	4.38E-17
rs2792735	G	A	0.031	0.005	37.415	9.59E-10
rs34042070	G	C	0.040	0.006	45.463	1.57E-11
rs35135293	C	T	0.027	0.005	35.044	3.24E-09

rs35237252	A	C	0.035	0.005	43.732	3.79E-11
rs3816117	C	T	0.039	0.005	70.415	4.87E-17
rs41289512	G	C	0.089	0.011	61.133	5.39E-15
rs4299376	G	T	0.044	0.005	80.909	2.41E-19
rs472495	G	T	-0.029	0.005	36.842	1.29E-09
rs4766578	T	A	-0.030	0.005	43.770	3.71E-11
rs514230	A	T	-0.031	0.005	46.608	8.73E-12
rs562338	A	G	-0.099	0.006	276.507	5.39E-62
rs56325564	A	G	0.028	0.005	35.886	2.10E-09
rs58542926	T	C	-0.097	0.009	122.342	2.03E-28
rs61679753	A	T	-0.373	0.013	779.795	7.42E-171
rs633695	G	A	0.061	0.005	144.213	3.39E-33
rs6882345	G	A	-0.038	0.005	62.448	2.77E-15
rs688456	T	G	0.044	0.006	55.761	8.26E-14
rs72631343	G	C	-0.039	0.007	31.973	1.57E-08
rs72836561	T	C	-0.075	0.013	33.062	8.96E-09
rs73013176	C	T	-0.137	0.022	38.272	6.18E-10
rs7534572	C	G	-0.038	0.005	62.434	2.79E-15
rs77542162	G	A	0.121	0.015	61.455	4.58E-15
rs77960347	G	A	0.187	0.020	86.596	1.36E-20
rs780094	T	C	0.038	0.005	65.159	7.00E-16
rs8191852	G	A	-0.032	0.005	43.988	3.32E-11
rs9304381	C	T	-0.048	0.006	66.216	4.09E-16

TG

rs10455872	G	A	-0.177	0.008	438.787	3.43E-97
rs11057397	T	C	-0.029	0.005	35.536	2.51E-09
rs11122450	T	G	0.040	0.005	71.811	2.40E-17
rs11207997	T	C	-0.080	0.005	280.756	6.43E-63
rs1128249	T	G	-0.047	0.005	100.195	1.42E-23
rs114165349	C	G	0.109	0.015	49.748	1.76E-12
rs116843064	A	G	-0.240	0.016	214.308	1.80E-48
rs117733303	G	A	-0.302	0.017	314.833	2.56E-70
rs11976955	G	C	0.028	0.005	32.065	1.50E-08
rs12263369	C	T	-0.028	0.005	37.101	1.13E-09
rs12601919	G	A	0.037	0.006	38.765	4.80E-10
rs1260326	T	C	0.103	0.005	485.095	3.25E-107
rs13108218	A	G	0.038	0.005	63.474	1.64E-15
rs13423088	A	T	-0.038	0.005	59.287	1.38E-14
rs141469619	G	A	0.271	0.024	127.241	1.72E-29
rs144503444	C	T	0.162	0.017	86.594	1.36E-20
rs1471251	T	A	0.034	0.005	53.429	2.70E-13
rs150844304	C	A	0.154	0.015	111.949	3.80E-26
rs174560	C	T	0.046	0.005	85.247	2.69E-20
rs17585915	T	G	0.041	0.005	76.965	1.77E-18
rs187429064	G	A	-0.131	0.021	39.543	3.22E-10
rs1993453	A	G	0.027	0.005	29.940	4.47E-08
rs2122982	A	G	-0.029	0.005	29.946	4.45E-08
rs2800709	T	G	-0.035	0.005	58.789	1.77E-14

rs28383314	T	C	-0.047	0.005	85.567	2.29E-20
rs28601761	G	C	-0.091	0.005	376.294	1.19E-83
rs28752924	C	T	0.029	0.005	32.733	1.06E-08
rs2925979	T	C	0.032	0.005	40.069	2.46E-10
rs328	G	C	-0.194	0.008	652.599	2.03E-143
rs34060476	G	A	-0.123	0.007	338.753	1.65E-75
rs34682685	A	G	0.044	0.008	34.445	4.40E-09
rs3860846	T	C	0.036	0.005	49.237	2.28E-12
rs3936511	G	A	0.056	0.006	93.828	3.53E-22
rs4665710	A	C	-0.103	0.006	332.799	3.24E-74
rs4704834	A	G	-0.036	0.005	56.262	6.40E-14
rs5112	C	G	-0.078	0.005	253.431	5.57E-57
rs5117	C	T	0.062	0.005	133.250	8.39E-31
rs59347135	G	C	0.079	0.011	48.286	3.71E-12
rs6073958	C	T	0.044	0.006	58.475	2.08E-14
rs60960031	A	G	-0.027	0.005	32.476	1.21E-08
rs6602911	T	C	0.028	0.005	35.365	2.74E-09
rs684773	A	C	-0.040	0.005	53.895	2.13E-13
rs7177289	T	C	0.041	0.005	74.065	7.68E-18
rs7205804	A	G	-0.032	0.005	48.394	3.51E-12
rs72555385	G	A	0.068	0.011	40.606	1.87E-10
rs72836561	T	C	0.111	0.013	71.741	2.49E-17
rs73596816	A	G	-0.094	0.013	54.231	1.80E-13
rs74434374	A	C	0.064	0.011	33.316	7.86E-09

rs7924036	G	T	0.035	0.005	58.622	1.93E-14
rs79293855	A	G	-0.080	0.013	36.595	1.46E-09
rs8107974	T	A	-0.104	0.009	142.866	6.67E-33
rs883863	A	G	0.029	0.005	34.684	3.89E-09
rs964184	G	C	0.224	0.007	1102.884	1.00E-200
rs9968117	T	C	-0.040	0.007	32.790	1.03E-08
rs998584	A	C	0.032	0.005	48.969	2.62E-12

Abbreviations: ApoB, Apolipoprotein B; LDL-C, Low-Density Lipoprotein Cholesterol; TC, Total cholesterol; TG, Total triglyceride.

Supplementary Table 2. Instrumental variables for lipid-lowering drug targets

SNP	Effect Allele	Other Allele	EAF	BETA	SE	*p*-value	Samplesize	R^2	*F*-statistics
APOB									
rs1801701	T	C	0.097	0.039	2.34E-03	1.23E-60	1231262	2.61E-04	321.080
rs1042023	C	G	0.012	0.136	6.75E-03	3.56E-90	1225443	4.24E-04	519.370
rs693	G	A	0.492	-0.080	1.38E-03	1.00E-200	1231262	3.18E-03	3928.943
rs533617	C	T	0.041	-0.126	3.48E-03	1.00E-200	1231260	1.25E-03	1540.954
rs11680233	A	C	0.290	-0.032	1.54E-03	4.29E-94	1228640	4.11E-04	505.615
rs72653066	G	C	0.010	-0.077	6.86E-03	1.78E-29	1226671	1.19E-04	146.556
rs12720838	T	C	0.163	-0.052	1.88E-03	1.37E-169	1231188	7.40E-04	911.654
rs12720807	T	A	0.111	0.071	2.40E-03	1.81E-190	1098185	9.89E-04	1087.347
rs184507838	T	C	0.010	-0.126	6.87E-03	5.84E-75	1224315	3.22E-04	394.926
rs12720793	T	C	0.021	0.063	5.15E-03	2.81E-34	1227836	1.60E-04	195.957
rs579826	T	C	0.083	-0.083	2.51E-03	1.00E-200	1231261	1.05E-03	1293.548
rs12714264	T	A	0.128	-0.113	2.09E-03	1.00E-200	1231203	2.88E-03	3550.249
CETP									
rs708272	A	G	0.435	-0.030	1.40E-03	2.21E-100	1219914	4.36E-04	532.704
rs7499892	T	C	0.178	0.029	1.81E-03	1.19E-59	1230294	2.54E-04	312.561
rs289717	A	G	0.342	0.016	1.46E-03	2.21E-28	1230435	1.18E-04	145.049
rs736274	A	T	0.112	-0.017	2.22E-03	1.28E-14	1230334	5.84E-05	71.907
rs56208677	T	C	0.068	-0.024	2.79E-03	3.98E-18	1222976	7.39E-05	90.360
rs5880	C	G	0.052	0.021	3.14E-03	1.72E-11	1230345	4.37E-05	53.787

HMGCR

rs4704209	G	A	0.054	0.018	3.03E-03	4.91E-09	1231254	3.22E-05	39.622
rs17244792	A	G	0.017	-0.036	5.99E-03	1.24E-09	1224791	4.38E-05	53.618
rs2303152	A	G	0.097	0.036	2.33E-03	3.73E-55	1231250	2.33E-04	287.317
rs17244855	G	A	0.097	0.053	2.33E-03	1.37E-116	1231264	5.01E-04	616.833
rs17238596	T	C	0.034	-0.040	4.26E-03	2.22E-21	1216997	1.07E-04	129.780
rs10474435	C	T	0.014	0.046	6.02E-03	3.62E-14	1230275	5.54E-05	68.151

LDLR

rs146335137	T	C	0.009	0.062	7.74E-03	1.41E-15	1216239	7.09E-05	86.205
rs17242353	T	C	0.032	0.109	4.26E-03	2.49E-144	1225193	7.46E-04	914.571
rs17242367	T	C	0.069	0.028	2.90E-03	1.78E-22	1223783	1.02E-04	124.679
rs17248748	T	C	0.018	-0.075	5.59E-03	4.91E-41	1218883	1.95E-04	238.114
rs73015030	A	G	0.032	-0.133	4.03E-03	1.00E-200	1228641	1.10E-03	1348.637
rs10423288	C	T	0.013	0.076	6.12E-03	3.69E-35	1222406	1.47E-04	179.904
rs41301949	G	A	0.036	0.039	4.04E-03	3.38E-22	1220092	1.07E-04	130.775
rs147223423	T	A	0.010	0.100	7.10E-03	4.93E-45	1220852	2.00E-04	243.730
rs7247905	A	G	0.026	-0.090	4.33E-03	1.30E-96	1231131	4.11E-04	505.756
rs117955899	T	C	0.012	-0.059	6.69E-03	1.61E-18	1226972	7.85E-05	96.334
rs2569540	C	G	0.234	-0.012	1.64E-03	4.22E-14	1226709	5.50E-05	67.472
rs3826810	A	G	0.043	0.038	3.43E-03	5.32E-28	1231261	1.15E-04	141.498
rs143587805	T	A	0.012	0.063	6.69E-03	4.04E-21	1221439	9.05E-05	110.569

NPC1L1

rs217412	T	C	0.248	0.017	1.62E-03	1.65E-24	1225535	1.02E-04	125.419
rs77826622	C	T	0.022	0.031	4.94E-03	2.26E-10	1227078	4.22E-05	51.743
rs7808003	T	C	0.287	-0.019	1.61E-03	3.71E-31	1186130	1.42E-04	168.656
rs7808295	T	C	0.041	-0.023	3.72E-03	5.33E-10	1224449	4.20E-05	51.414
rs2072183	C	G	0.229	0.033	1.69E-03	1.81E-83	1190814	3.76E-04	448.475
PCSK9									
rs2479410	A	G	0.338	-0.041	1.53E-03	1.90E-161	1189801	7.63E-04	908.927
rs41294821	T	C	0.021	-0.043	5.02E-03	1.65E-17	1227301	7.37E-05	90.401
rs7546522	T	C	0.150	-0.022	2.02E-03	1.93E-28	1223783	1.27E-04	155.216
rs7552350	A	C	0.144	0.016	2.27E-03	3.45E-12	1074405	6.12E-05	65.793
rs45613943	C	T	0.047	-0.040	3.33E-03	1.89E-33	1223128	1.43E-04	175.469
rs45508296	G	A	0.018	-0.065	5.36E-03	2.03E-33	1223941	1.48E-04	181.137
rs693668	G	A	0.359	-0.056	1.46E-03	1.00E-200	1210683	1.47E-03	1778.705
rs12136600	T	C	0.078	-0.042	2.65E-03	5.02E-56	1223129	2.50E-04	306.173
rs7525503	T	G	0.023	0.071	4.99E-03	2.51E-46	1221608	2.27E-04	277.862
rs137886411	A	G	0.010	0.052	7.46E-03	2.53E-12	1224261	5.41E-05	66.214
rs11206517	G	T	0.037	0.089	3.71E-03	1.00E-126	1231228	5.64E-04	694.976
PPARα									
rs7364220	G	A	0.187	0.011	1.79E-03	2.55E-09	1251820	3.47E-05	43.480
rs62225958	A	G	0.089	0.014	2.45E-03	2.54E-08	1252332	3.02E-05	37.860
rs6007662	G	A	0.248	0.013	1.69E-03	1.25E-14	1236283	6.36E-05	78.677

Abbreviations: *ApoB*, Apoprotein B; *CETP*, Cholesteryl Ester Transfer Protein; *HMGCR*, 3-hydroxy-3-methylglutaryl coenzyme A reductase; *LDLR*, Low-Density Lipoprotein Receptor; *NPC1L1*, Niemann-Pick C1-like 1; *PCKS9*, Proprotein Convertase Subtilisin/Kexin Type 9; *PPARα*, Peroxisome ProliferatorActivated Receptor-alpha.

Supplementary Table 3. Results of two-sample MR analysis of lipid traits and AITD

Outcome	Method	nSNP	BETA	SE	*p*-value	OR_95%CI	Egger_intercept	*p*-heterogeneity	Q statistic	Q_*pval*
ApoB										
AIH	MR Egger	34	0.050	0.050	0.323	1.052(0.953-1.161)			59.710	0.002
AIH	IVW	34	-0.010	0.033	0.764	0.99(0.929-1.056)	-5.38E-03	0.129	64.242	0.001
AT	MR Egger	36	0.271	0.426	0.529	1.311(0.569-3.020)			70.770	2.18E-04
AT	IVW	36	-0.107	0.273	0.695	0.898(0.526-1.534)	-3.30E-02	0.256	73.546	1.49E-04
GD	MR Egger	34	-0.079	0.130	0.546	0.924(0.716-1.192)			35.285	0.316
GD	IVW	34	-0.038	0.082	0.646	0.963(0.819-1.131)	3.71E-03	0.681	35.475	0.352
GO	MR Egger	36	0.080	0.418	0.849	1.084(0.478-2.456)			74.459	7.51E-05
GO	IVW	36	-0.153	0.264	0.563	0.858(0.512-1.440)	-2.01E-02	0.474	75.605	8.21E-05
LDL										
AIH	MR Egger	36	0.039	0.050	0.441	1.039(0.943-1.145)			63.435	0.002
AIH	IVW	36	-0.003	0.032	0.928	0.997(0.937-1.061)	-3.67E-03	0.284	65.648	0.001
AT	MR Egger	38	0.310	0.410	0.454	1.364(0.610-3.048)			71.603	3.79E-04
AT	IVW	38	-0.105	0.265	0.693	0.901(0.536-1.514)	-3.59E-02	0.197	75.047	2.16E-04

GD	MR Egger	36	-0.077	0.127	0.549	0.926(0.723-1.187)			36.633	0.348
GD	IVW	36	-0.060	0.080	0.456	0.942(0.805-1.102)	1.48E-03	0.865	36.665	0.392
GO	MR Egger	38	0.043	0.403	0.916	1.043(0.474-2.298)			75.422	1.31E-04
GO	IVW	38	-0.147	0.255	0.565	0.864(0.524-1.423)	-1.62E-02	0.546	76.201	1.57E-04
TC										
AIH	MR Egger	35	0.086	0.049	0.092	1.089(0.989-1.200)			42.272	0.129
AIH	IVW	35	0.024	0.029	0.402	1.024(0.968-1.084)	-5.04E-03	0.138	45.233	0.094
AT	MR Egger	40	0.241	0.344	0.488	1.272(0.648-2.497)			32.959	0.701
AT	IVW	40	0.049	0.199	0.804	1.051(0.712-1.551)	-1.51E-02	0.500	33.423	0.722
GD	MR Egger	40	-0.105	0.159	0.513	0.900(0.660-1.229)			46.889	0.153
GD	IVW	40	0.099	0.093	0.288	1.104(0.920-1.326)	1.60E-02	0.124	49.946	0.112
GO	MR Egger	40	0.177	0.352	0.618	1.194(0.599-2.379)			43.666	0.243
GO	IVW	40	0.019	0.201	0.925	1.019(0.687-1.511)	-1.24E-02	0.586	44.013	0.268
TG										
AIH	MR Egger	43	0.064	0.071	0.377	1.066(0.927-1.226)			95.162	3.41E-06
AIH	IVW	43	-0.003	0.039	0.929	0.997(0.923-1.076)	-4.57E-03	0.267	98.097	2.20E-06

AT	MR Egger	44	0.070	0.485	0.886	1.072(0.414-2.777)			68.059	0.007
AT	IVW	44	-0.057	0.261	0.829	0.945(0.566-1.577)	-8.60E-03	0.758	68.215	0.008
GD	MR Egger	44	0.160	0.196	0.418	1.174(0.799-1.724)			64.809	0.013
GD	IVW	44	0.020	0.108	0.853	1.020(0.826-1.260)	-9.48E-03	0.396	65.944	0.014
GO	MR Egger	43	0.228	0.363	0.534	1.256(0.616-2.558)			33.841	0.778
GO	IVW	43	-0.004	0.200	0.984	0.996(0.673-1.474)	-1.59E-02	0.449	34.425	0.791

Abbreviations: GD, Graves’ disease; GO, Graves' ophthalmopathy; AT, Autoimmune thyroiditis; AIH, Autoimmune hypothyroidism.

Supplementary Table 4. MR analysis of the effect of lipid-lowering drug targets on inflammatory factors

Outcome	Method	nSNP	BETA	SE	*p*-value	OR_95%CI	Egger_intercept	*p* -heterogeneity	Q statistic	Q_*pval*
APOB										
GCST90274770	MR Egger	8	0.015	0.240	0.953	1.015(0.634-1.625)			1.640	0.950
GCST90274770	IVW	8	0.199	0.095	0.037	1.22(1.013-1.469)	1.35E-02	0.437	2.334	0.939
GCST90274774	MR Egger	8	-0.228	0.238	0.375	0.796(0.5-1.269)			2.350	0.885
GCST90274774	IVW	8	0.261	0.096	0.007	1.298(1.075-1.567)	3.59E-02	0.067	7.357	0.393
GCST90274775	MR Egger	8	0.147	0.285	0.625	1.158(0.662-2.026)			9.194	0.163
GCST90274775	IVW	8	0.229	0.105	0.029	1.258(1.023-1.546)	6.05E-03	0.764	9.345	0.229
GCST90274786	MR Egger	8	-0.145	0.288	0.633	0.865(0.491-1.522)			8.642	0.195
GCST90274786	IVW	8	-0.300	0.109	0.006	0.741(0.599-0.917)	-1.14E-02	0.580	9.134	0.243
GCST90274789	MR Egger	8	0.220	0.230	0.376	1.246(0.794-1.956)			1.907	0.928
GCST90274789	IVW	8	0.224	0.091	0.014	1.252(1.047-1.496)	3.39E-04	0.983	1.908	0.965
GCST90274790	MR Egger	8	0.256	0.253	0.351	1.291(0.786-2.121)			3.290	0.772
GCST90274790	IVW	8	-0.263	0.109	0.016	0.769(0.621-0.953)	-3.82E-02	0.067	8.264	0.310
GCST90274801	MR Egger	8	-0.230	0.264	0.417	0.794(0.473-1.333)			4.223	0.647

GCST90274801	IVW	8	-0.245	0.105	0.019	0.782(0.637-0.96)	-1.12E-03	0.952	4.227	0.753
GCST90274816	MR Egger	8	-0.141	0.239	0.578	0.869(0.544-1.389)			3.110	0.795
GCST90274816	IVW	8	0.205	0.094	0.030	1.227(1.02-1.477)	2.54E-02	0.167	5.576	0.590
GCST90274825	MR Egger	8	0.140	0.238	0.579	1.15(0.721-1.834)			3.267	0.775
GCST90274825	IVW	8	0.190	0.094	0.043	1.21(1.006-1.455)	3.74E-03	0.824	3.321	0.854
GCST90274838	MR Egger	8	0.076	0.238	0.761	1.079(0.676-1.72)			4.024	0.673
GCST90274838	IVW	8	-0.197	0.094	0.036	0.821(0.683-0.988)	-2.00E-02	0.259	5.579	0.590
GCST90274848	MR Egger	8	-0.018	0.238	0.943	0.982(0.616-1.566)			4.306	0.635
GCST90274848	IVW	8	0.206	0.094	0.029	1.229(1.022-1.478)	1.65E-02	0.345	5.355	0.617
NPC1L1										
GCST90274770	MR Egger	4	-3.725	3.023	0.343	0.024(0-9.03)			0.522	0.770
GCST90274770	IVW	4	-1.214	0.487	0.013	0.297(0.114-0.771)	4.78E-02	0.489	1.230	0.746
GCST90274797	MR Egger	4	-1.093	4.792	0.841	0.335(0-4015.954)			5.055	0.080
GCST90274797	IVW	4	-1.251	0.629	0.047	0.286(0.083-0.983)	-3.00E-03	0.976	5.058	0.168
GCST90274805	MR Egger	4	-4.193	3.324	0.334	0.015(0-10.186)			1.354	0.508
GCST90274805	IVW	4	-1.620	0.544	0.003	0.198(0.068-0.574)	4.91E-02	0.515	1.970	0.579

GCST90274807	MR Egger	4	-0.491	4.555	0.924	0.612(0-4616.332)			3.766	0.152
GCST90274807	IVW	4	-1.210	0.613	0.048	0.298(0.09-0.992)	-1.37E-02	0.888	3.814	0.282
GCST90274810	MR Egger	4	-0.517	3.320	0.891	0.596(0.001-399.349)			0.324	0.850
GCST90274810	IVW	4	-1.649	0.544	0.002	0.192(0.066-0.558)	-2.16E-02	0.762	0.444	0.931
GCST90274813	MR Egger	4	-1.758	3.320	0.649	0.172(0-115.474)			0.136	0.934
GCST90274813	IVW	4	-1.172	0.544	0.031	0.31(0.107-0.899)	1.12E-02	0.875	0.168	0.983
GCST90274817	MR Egger	4	-3.780	2.996	0.334	0.023(0-8.094)			0.126	0.939
GCST90274817	IVW	4	-1.128	0.481	0.019	0.324(0.126-0.83)	5.05E-02	0.464	0.931	0.818
GCST90274824	MR Egger	4	-1.920	3.014	0.589	0.147(0-53.898)			0.360	0.835
GCST90274824	IVW	4	-0.956	0.485	0.049	0.384(0.149-0.994)	1.84E-02	0.777	0.466	0.926
GCST90274825	MR Egger	4	1.307	3.522	0.746	3.694(0.004-3673.166)			2.761	0.251
GCST90274825	IVW	4	-1.025	0.511	0.045	0.359(0.132-0.976)	-4.44E-02	0.571	3.382	0.336
GCST90274828	MR Egger	4	-3.777	3.316	0.373	0.023(0-15.232)			1.626	0.443
GCST90274828	IVW	4	-1.286	0.543	0.018	0.276(0.095-0.802)	4.76E-02	0.526	2.206	0.531
GCST90274829	MR Egger	4	-4.941	3.028	0.244	0.007(0-2.701)			0.081	0.960
GCST90274829	IVW	4	-1.308	0.486	0.007	0.27(0.104-0.702)	6.92E-02	0.348	1.559	0.669

GCST90274848	MR Egger	4	-2.088	3.003	0.559	0.124(0-44.597)			0.716	0.699
GCST90274848	IVW	4	-1.159	0.481	0.016	0.314(0.122-0.805)	1.77E-02	0.784	0.814	0.846
PCSK9										
GCST90274760	MR Egger	11	0.492	0.419	0.270	1.636(0.72-3.717)			5.546	0.784
GCST90274760	IVW	11	0.360	0.155	0.020	1.434(1.059-1.941)	-6.70E-03	0.742	5.661	0.843
GCST90274768	MR Egger	11	-0.546	0.454	0.260	0.579(0.238-1.412)			14.422	0.108
GCST90274768	IVW	11	-0.544	0.161	0.001	0.58(0.423-0.796)	6.66E-05	0.998	14.422	0.155
GCST90274777	MR Egger	11	-0.193	0.358	0.602	0.824(0.409-1.661)			8.913	0.445
GCST90274777	IVW	11	-0.301	0.134	0.025	0.74(0.569-0.962)	-5.48E-03	0.753	9.019	0.530
GCST90274787	MR Egger	11	-0.338	0.364	0.377	0.713(0.349-1.455)			6.060	0.734
GCST90274787	IVW	11	-0.310	0.136	0.022	0.733(0.562-0.957)	1.44E-03	0.935	6.067	0.810
GCST90274810	MR Egger	11	0.172	0.421	0.692	1.188(0.52-2.712)			9.082	0.430
GCST90274810	IVW	11	0.375	0.155	0.015	1.455(1.074-1.971)	1.03E-02	0.616	9.353	0.499
GCST90274811	MR Egger	11	0.021	0.439	0.963	1.021(0.432-2.414)			9.879	0.360
GCST90274811	IVW	11	0.483	0.164	0.003	1.62(1.175-2.235)	2.34E-02	0.287	11.283	0.336
GCST90274814	MR Egger	11	0.527	0.419	0.240	1.693(0.745-3.848)			5.890	0.751

GCST90274814	IVW	11	0.364	0.155	0.019	1.44(1.063-1.95)	-8.25E-03	0.686	6.064	0.810
GCST90274823	MR Egger	11	0.175	0.415	0.683	1.191(0.528-2.688)			7.930	0.541
GCST90274823	IVW	11	-0.339	0.153	0.027	0.712(0.528-0.962)	-2.62E-02	0.215	9.710	0.466
GCST90274830	MR Egger	11	-0.743	0.449	0.132	0.476(0.197-1.147)			14.924	0.093
GCST90274830	IVW	11	-0.376	0.165	0.023	0.686(0.496-0.949)	1.87E-02	0.402	16.207	0.094
GCST90274840	MR Egger	11	0.593	0.589	0.340	1.81(0.57-5.747)			17.829	0.037
GCST90274840	IVW	11	-0.435	0.208	0.036	0.647(0.431-0.972)	-8.03E-03	0.779	17.994	0.055
GCST90274845	MR Egger	11	0.224	0.420	0.607	1.251(0.549-2.847)			3.423	0.945
GCST90274845	IVW	11	0.504	0.155	0.001	1.656(1.222-2.244)	1.43E-02	0.490	3.940	0.950

Supplementary Table 5. MR analysis of the effect of inflammatory factors on AITD

Exposure	Method	nSNP	BETA	SE	*p*-value	OR_95%CI	Egger_intercept	*p*-heterogeneity	Q statistic	Q_*pval*
AIH										
GCST90274813	IVW	19	0.112	0.047	0.018	1.119(1.02-1.228)			52.408	<0.001
GCST90274813	MR Egger	19	-0.043	0.111	0.703	0.958(0.77-1.191)	1.51E-02	0.143	46.036	<0.001
GCST90274830	IVW	21	-0.079	0.036	0.029	0.924(0.862-0.992)			47.847	<0.001
GCST90274830	MR Egger	21	-0.058	0.078	0.468	0.944(0.811-1.099)	-2.41E-03	0.763	47.613	<0.001
GCST90274787	IVW	29	-0.068	0.025	0.006	0.934(0.89-0.98)			37.834	0.102
GCST90274787	MR Egger	29	-0.163	0.057	0.008	0.85(0.76-0.951)	1.13E-02	0.081	33.722	0.174
GD										
GCST90274840	IVW	35	0.133	0.053	0.012	1.142(1.029-1.268)			55.987	0.010
GCST90274840	MR Egger	35	0.246	0.079	0.004	1.278(1.095-1.492)	-2.89E-02	0.069	50.576	0.026

Supplementary Table 6. The specific information of the genetic variants for the 30 inflammatory factors

Inflammatory factors	SNP	Effect_allele	Other_allele	BETA	SE	*F*-statistics	*p*-value
GCST90274760	rs7546522	C	T	−0. 022	0. 002	122. 353	1.93E-28
GCST90274760	rs7552350	C	A	0. 016	0. 002	48. 414	3.45E-12
GCST90274760	rs693668	A	G	−0. 056	0. 001	1490. 587	0
GCST90274760	rs7525503	G	T	0. 071	0. 005	204. 214	2.51E-46
GCST90274760	rs11206517	T	G	0. 089	0. 004	573. 437	1.00E-126
GCST90274760	rs12136600	C	T	−0. 042	0. 003	248. 687	5.02E-56
GCST90274760	rs137886411	G	A	0. 052	0. 007	49. 020	2.53E-12
GCST90274760	rs2479410	G	A	−0. 041	0. 002	733. 100	1.90E-161
GCST90274760	rs41294821	C	T	−0. 043	0. 005	72. 524	1.65E-17
GCST90274760	rs45508296	A	G	−0. 065	0. 005	145. 113	2.03E-33
GCST90274760	rs45613943	T	C	−0. 040	0. 003	145. 250	1.89E-33
GCST90274768	rs12136600	C	T	−0. 042	0. 003	248. 687	5.02E-56
GCST90274768	rs2479410	G	A	−0. 041	0. 002	733. 100	1.90E-161

GCST90274768	rs41294821	C	T	−0.043	0.005	72.524	1.65E-17
GCST90274768	rs45508296	A	G	−0.065	0.005	145.113	2.03E-33
GCST90274768	rs137886411	G	A	0.052	0.007	49.020	2.53E-12
GCST90274768	rs7525503	G	T	0.071	0.005	204.214	2.51E-46
GCST90274768	rs7546522	C	T	−0.022	0.002	122.353	1.93E-28
GCST90274768	rs7552350	C	A	0.016	0.002	48.414	3.45E-12
GCST90274768	rs11206517	T	G	0.089	0.004	573.437	1.00E-126
GCST90274768	rs45613943	T	C	−0.040	0.003	145.250	1.89E-33
GCST90274768	rs693668	A	G	−0.056	0.001	1490.587	0
GCST90274770	rs579826	C	T	−0.083	0.003	1095.613	2.97E-240
GCST90274770	rs693	A	G	−0.080	0.001	3336.249	0
GCST90274770	rs72653066	C	G	−0.077	0.007	127.088	1.78E-29
GCST90274770	rs1042023	G	C	0.136	0.007	405.462	3.56E-90
GCST90274770	rs11680233	C	A	−0.032	0.002	423.469	4.29E-94

GCST90274770	rs12714264	A	T	-0.113	0.002	2947.936	0
GCST90274770	rs12720793	C	T	0.063	0.005	149.038	2.81E-34
GCST90274770	rs12720807	A	T	0.071	0.002	866.578	1.81E-190
GCST90274770	rs12720838	C	T	-0.052	0.002	770.547	1.37E-169
GCST90274770	rs1801701	C	T	0.039	0.002	269.844	1.23E-60
GCST90274770	rs184507838	C	T	-0.126	0.007	335.586	5.84E-75
GCST90274770	rs533617	T	C	-0.126	0.003	1315.786	4.19E-288
GCST90274770	rs2072183	G	C	0.033	0.002	374.665	1.81E-83
GCST90274770	rs7808295	C	T	-0.023	0.004	38.551	5.33E-10
GCST90274770	rs217412	C	T	0.017	0.002	104.403	1.65E-24
GCST90274770	rs77826622	T	C	0.031	0.005	40.230	2.26E-10
GCST90274770	rs7808003	C	T	-0.019	0.002	134.770	3.71E-31
GCST90274774	rs1801701	C	T	0.039	0.002	269.844	1.23E-60
GCST90274774	rs12720793	C	T	0.063	0.005	149.038	2.81E-34

GCST90274774	rs12720807	A	T	0.071	0.002	866.578	1.81E-190
GCST90274774	rs12720838	C	T	-0.052	0.002	770.547	1.37E-169
GCST90274774	rs72653066	C	G	-0.077	0.007	127.088	1.78E-29
GCST90274774	rs533617	T	C	-0.126	0.003	1315.786	4.19E-288
GCST90274774	rs579826	C	T	-0.083	0.003	1095.613	2.97E-240
GCST90274774	rs693	A	G	-0.080	0.001	3336.249	0
GCST90274774	rs1042023	G	C	0.136	0.007	405.462	3.56E-90
GCST90274774	rs11680233	C	A	-0.032	0.002	423.469	4.29E-94
GCST90274774	rs12714264	A	T	-0.113	0.002	2947.936	0
GCST90274774	rs184507838	C	T	-0.126	0.007	335.586	5.84E-75
GCST90274775	rs11680233	C	A	-0.032	0.002	423.469	4.29E-94
GCST90274775	rs12714264	A	T	-0.113	0.002	2947.936	0
GCST90274775	rs12720793	C	T	0.063	0.005	149.038	2.81E-34
GCST90274775	rs12720807	A	T	0.071	0.002	866.578	1.81E-190

GCST90274775	rs12720838	C	T	−0.052	0.002	770.547	1.37E-169
GCST90274775	rs1801701	C	T	0.039	0.002	269.844	1.23E-60
GCST90274775	rs184507838	C	T	−0.126	0.007	335.586	5.84E-75
GCST90274775	rs533617	T	C	−0.126	0.003	1315.786	4.19E-288
GCST90274775	rs1042023	G	C	0.136	0.007	405.462	3.56E-90
GCST90274775	rs579826	C	T	−0.083	0.003	1095.613	2.97E-240
GCST90274775	rs693	A	G	−0.080	0.001	3336.249	0
GCST90274775	rs72653066	C	G	−0.077	0.007	127.088	1.78E-29
GCST90274777	rs45508296	A	G	−0.065	0.005	145.113	2.03E-33
GCST90274777	rs7546522	C	T	−0.022	0.002	122.353	1.93E-28
GCST90274777	rs45613943	T	C	−0.040	0.003	145.250	1.89E-33
GCST90274777	rs693668	A	G	−0.056	0.001	1490.587	0
GCST90274777	rs7525503	G	T	0.071	0.005	204.214	2.51E-46
GCST90274777	rs11206517	T	G	0.089	0.004	573.437	1.00E-126

GCST90274777	rs41294821	C	T	−0.043	0.005	72.524	1.65E-17
GCST90274777	rs7552350	C	A	0.016	0.002	48.414	3.45E-12
GCST90274777	rs137886411	G	A	0.052	0.007	49.020	2.53E-12
GCST90274777	rs2479410	G	A	−0.041	0.002	733.100	1.90E-161
GCST90274777	rs12136600	C	T	−0.042	0.003	248.687	5.02E-56
GCST90274786	rs12714264	A	T	−0.113	0.002	2947.936	0
GCST90274786	rs11680233	C	A	−0.032	0.002	423.469	4.29E-94
GCST90274786	rs12720838	C	T	−0.052	0.002	770.547	1.37E-169
GCST90274786	rs1042023	G	C	0.136	0.007	405.462	3.56E-90
GCST90274786	rs12720807	A	T	0.071	0.002	866.578	1.81E-190
GCST90274786	rs72653066	C	G	−0.077	0.007	127.088	1.78E-29
GCST90274786	rs1801701	C	T	0.039	0.002	269.844	1.23E-60
GCST90274786	rs12720793	C	T	0.063	0.005	149.038	2.81E-34
GCST90274786	rs184507838	C	T	−0.126	0.007	335.586	5.84E-75

GCST90274786	rs533617	T	C	−0.126	0.003	1315.786	4.19E-288
GCST90274786	rs579826	C	T	−0.083	0.003	1095.613	2.97E-240
GCST90274786	rs693	A	G	−0.080	0.001	3336.249	0
GCST90274787	rs7546522	C	T	−0.022	0.002	122.353	1.93E-28
GCST90274787	rs137886411	G	A	0.052	0.007	49.020	2.53E-12
GCST90274787	rs7552350	C	A	0.016	0.002	48.414	3.45E-12
GCST90274787	rs7525503	G	T	0.071	0.005	204.214	2.51E-46
GCST90274787	rs693668	A	G	−0.056	0.001	1490.587	0
GCST90274787	rs45613943	T	C	−0.040	0.003	145.250	1.89E-33
GCST90274787	rs11206517	T	G	0.089	0.004	573.437	1.00E-126
GCST90274787	rs12136600	C	T	−0.042	0.003	248.687	5.02E-56
GCST90274787	rs2479410	G	A	−0.041	0.002	733.100	1.90E-161
GCST90274787	rs41294821	C	T	−0.043	0.005	72.524	1.65E-17
GCST90274787	rs45508296	A	G	−0.065	0.005	145.113	2.03E-33

GCST90274789	rs533617	T	C	−0.126	0.003	1315.786	4.19E-288
GCST90274789	rs579826	C	T	−0.083	0.003	1095.613	2.97E-240
GCST90274789	rs184507838	C	T	−0.126	0.007	335.586	5.84E-75
GCST90274789	rs12720807	A	T	0.071	0.002	866.578	1.81E-190
GCST90274789	rs1042023	G	C	0.136	0.007	405.462	3.56E-90
GCST90274789	rs11680233	C	A	−0.032	0.002	423.469	4.29E-94
GCST90274789	rs72653066	C	G	−0.077	0.007	127.088	1.78E-29
GCST90274789	rs12714264	A	T	−0.113	0.002	2947.936	0
GCST90274789	rs12720793	C	T	0.063	0.005	149.038	2.81E-34
GCST90274789	rs693	A	G	−0.080	0.001	3336.249	0
GCST90274789	rs1801701	C	T	0.039	0.002	269.844	1.23E-60
GCST90274789	rs12720838	C	T	−0.052	0.002	770.547	1.37E-169
GCST90274790	rs533617	T	C	−0.126	0.003	1315.786	4.19E-288
GCST90274790	rs1042023	G	C	0.136	0.007	405.462	3.56E-90

GCST90274790	rs693	A	G	−0.080	0.001	3336.249	0
GCST90274790	rs12720793	C	T	0.063	0.005	149.038	2.81E-34
GCST90274790	rs11680233	C	A	−0.032	0.002	423.469	4.29E-94
GCST90274790	rs184507838	C	T	−0.126	0.007	335.586	5.84E-75
GCST90274790	rs12714264	A	T	−0.113	0.002	2947.936	0
GCST90274790	rs72653066	C	G	−0.077	0.007	127.088	1.78E-29
GCST90274790	rs12720807	A	T	0.071	0.002	866.578	1.81E-190
GCST90274790	rs579826	C	T	−0.083	0.003	1095.613	2.97E-240
GCST90274790	rs1801701	C	T	0.039	0.002	269.844	1.23E-60
GCST90274790	rs12720838	C	T	−0.052	0.002	770.547	1.37E-169
GCST90274797	rs77826622	T	C	0.031	0.005	40.230	2.26E-10
GCST90274797	rs217412	C	T	0.017	0.002	104.403	1.65E-24
GCST90274797	rs7808003	C	T	−0.019	0.002	134.770	3.71E-31
GCST90274797	rs7808295	C	T	−0.023	0.004	38.551	5.33E-10

GCST90274797	rs2072183	G	C	0.033	0.002	374.665	1.81E-83
GCST90274801	rs12720793	C	T	0.063	0.005	149.038	2.81E-34
GCST90274801	rs12720807	A	T	0.071	0.002	866.578	1.81E-190
GCST90274801	rs579826	C	T	-0.083	0.003	1095.613	2.97E-240
GCST90274801	rs693	A	G	-0.080	0.001	3336.249	0
GCST90274801	rs72653066	C	G	-0.077	0.007	127.088	1.78E-29
GCST90274801	rs533617	T	C	-0.126	0.003	1315.786	4.19E-288
GCST90274801	rs12720838	C	T	-0.052	0.002	770.547	1.37E-169
GCST90274801	rs1801701	C	T	0.039	0.002	269.844	1.23E-60
GCST90274801	rs12714264	A	T	-0.113	0.002	2947.936	0
GCST90274801	rs1042023	G	C	0.136	0.007	405.462	3.56E-90
GCST90274801	rs184507838	C	T	-0.126	0.007	335.586	5.84E-75
GCST90274801	rs11680233	C	A	-0.032	0.002	423.469	4.29E-94
GCST90274805	rs7808003	C	T	-0.019	0.002	134.770	3.71E-31

GCST90274805	rs7808295	C	T	−0.023	0.004	38.551	5.33E-10
GCST90274805	rs77826622	T	C	0.031	0.005	40.230	2.26E-10
GCST90274805	rs2072183	G	C	0.033	0.002	374.665	1.81E-83
GCST90274805	rs217412	C	T	0.017	0.002	104.403	1.65E-24
GCST90274807	rs2072183	G	C	0.033	0.002	374.665	1.81E-83
GCST90274807	rs7808003	C	T	−0.019	0.002	134.770	3.71E-31
GCST90274807	rs7808295	C	T	−0.023	0.004	38.551	5.33E-10
GCST90274807	rs77826622	T	C	0.031	0.005	40.230	2.26E-10
GCST90274807	rs217412	C	T	0.017	0.002	104.403	1.65E-24
GCST90274810	rs217412	C	T	0.017	0.002	104.403	1.65E-24
GCST90274810	rs7808003	C	T	−0.019	0.002	134.770	3.71E-31
GCST90274810	rs2072183	G	C	0.033	0.002	374.665	1.81E-83
GCST90274810	rs77826622	T	C	0.031	0.005	40.230	2.26E-10
GCST90274810	rs7808295	C	T	−0.023	0.004	38.551	5.33E-10

GCST90274810	rs693668	A	G	−0.056	0.001	1490.587	0
GCST90274810	rs137886411	G	A	0.052	0.007	49.020	2.53E-12
GCST90274810	rs7552350	C	A	0.016	0.002	48.414	3.45E-12
GCST90274810	rs7525503	G	T	0.071	0.005	204.214	2.51E-46
GCST90274810	rs45613943	T	C	−0.040	0.003	145.250	1.89E-33
GCST90274810	rs11206517	T	G	0.089	0.004	573.437	1.00E-126
GCST90274810	rs2479410	G	A	−0.041	0.002	733.100	1.90E-161
GCST90274810	rs12136600	C	T	−0.042	0.003	248.687	5.02E-56
GCST90274810	rs45508296	A	G	−0.065	0.005	145.113	2.03E-33
GCST90274810	rs7546522	C	T	−0.022	0.002	122.353	1.93E-28
GCST90274810	rs41294821	C	T	−0.043	0.005	72.524	1.65E-17
GCST90274811	rs41294821	C	T	−0.043	0.005	72.524	1.65E-17
GCST90274811	rs693668	A	G	−0.056	0.001	1490.587	0
GCST90274811	rs45508296	A	G	−0.065	0.005	145.113	2.03E-33

GCST90274811	rs2479410	G	A	−0.041	0.002	733.100	1.90E-161
GCST90274811	rs137886411	G	A	0.052	0.007	49.020	2.53E-12
GCST90274811	rs45613943	T	C	−0.040	0.003	145.250	1.89E-33
GCST90274811	rs7546522	C	T	−0.022	0.002	122.353	1.93E-28
GCST90274811	rs11206517	T	G	0.089	0.004	573.437	1.00E-126
GCST90274811	rs7552350	C	A	0.016	0.002	48.414	3.45E-12
GCST90274811	rs7525503	G	T	0.071	0.005	204.214	2.51E-46
GCST90274811	rs12136600	C	T	−0.042	0.003	248.687	5.02E-56
GCST90274813	rs7808003	C	T	−0.019	0.002	134.770	3.71E-31
GCST90274813	rs7808295	C	T	−0.023	0.004	38.551	5.33E-10
GCST90274813	rs77826622	T	C	0.031	0.005	40.230	2.26E-10
GCST90274813	rs2072183	G	C	0.033	0.002	374.665	1.81E-83
GCST90274813	rs217412	C	T	0.017	0.002	104.403	1.65E-24
GCST90274814	rs7552350	C	A	0.016	0.002	48.414	3.45E-12

GCST90274814	rs7546522	C	T	−0.022	0.002	122.353	1.93E-28
GCST90274814	rs41294821	C	T	−0.043	0.005	72.524	1.65E-17
GCST90274814	rs45508296	A	G	−0.065	0.005	145.113	2.03E-33
GCST90274814	rs2479410	G	A	−0.041	0.002	733.100	1.90E-161
GCST90274814	rs7525503	G	T	0.071	0.005	204.214	2.51E-46
GCST90274814	rs45613943	T	C	−0.040	0.003	145.250	1.89E-33
GCST90274814	rs693668	A	G	−0.056	0.001	1490.587	0
GCST90274814	rs12136600	C	T	−0.042	0.003	248.687	5.02E-56
GCST90274814	rs137886411	G	A	0.052	0.007	49.020	2.53E-12
GCST90274814	rs11206517	T	G	0.089	0.004	573.437	1.00E-126
GCST90274816	rs693	A	G	−0.080	0.001	3336.249	0
GCST90274816	rs72653066	C	G	−0.077	0.007	127.088	1.78E-29
GCST90274816	rs12714264	A	T	−0.113	0.002	2947.936	0
GCST90274816	rs12720793	C	T	0.063	0.005	149.038	2.81E-34

GCST90274816	rs1042023	G	C	0.136	0.007	405.462	3.56E-90
GCST90274816	rs11680233	C	A	-0.032	0.002	423.469	4.29E-94
GCST90274816	rs12720838	C	T	-0.052	0.002	770.547	1.37E-169
GCST90274816	rs579826	C	T	-0.083	0.003	1095.613	2.97E-240
GCST90274816	rs1801701	C	T	0.039	0.002	269.844	1.23E-60
GCST90274816	rs12720807	A	T	0.071	0.002	866.578	1.81E-190
GCST90274816	rs533617	T	C	-0.126	0.003	1315.786	4.19E-288
GCST90274816	rs184507838	C	T	-0.126	0.007	335.586	5.84E-75
GCST90274817	rs7808295	C	T	-0.023	0.004	38.551	5.33E-10
GCST90274817	rs2072183	G	C	0.033	0.002	374.665	1.81E-83
GCST90274817	rs77826622	T	C	0.031	0.005	40.230	2.26E-10
GCST90274817	rs7808003	C	T	-0.019	0.002	134.770	3.71E-31
GCST90274817	rs217412	C	T	0.017	0.002	104.403	1.65E-24
GCST90274823	rs2479410	G	A	-0.041	0.002	733.100	1.90E-161

GCST90274823	rs41294821	C	T	−0.043	0.005	72.524	1.65E-17
GCST90274823	rs12136600	C	T	−0.042	0.003	248.687	5.02E-56
GCST90274823	rs11206517	T	G	0.089	0.004	573.437	1.00E-126
GCST90274823	rs45613943	T	C	−0.040	0.003	145.250	1.89E-33
GCST90274823	rs137886411	G	A	0.052	0.007	49.020	2.53E-12
GCST90274823	rs7552350	C	A	0.016	0.002	48.414	3.45E-12
GCST90274823	rs45508296	A	G	−0.065	0.005	145.113	2.03E-33
GCST90274823	rs7546522	C	T	−0.022	0.002	122.353	1.93E-28
GCST90274823	rs7525503	G	T	0.071	0.005	204.214	2.51E-46
GCST90274823	rs693668	A	G	−0.056	0.001	1490.587	0
GCST90274824	rs7808003	C	T	−0.019	0.002	134.770	3.71E-31
GCST90274824	rs77826622	T	C	0.031	0.005	40.230	2.26E-10
GCST90274824	rs217412	C	T	0.017	0.002	104.403	1.65E-24
GCST90274824	rs2072183	G	C	0.033	0.002	374.665	1.81E-83

GCST90274824	rs7808295	C	T	-0.023	0.004	38.551	5.33E-10
GCST90274825	rs693	A	G	-0.080	0.001	3336.249	0
GCST90274825	rs1042023	G	C	0.136	0.007	405.462	3.56E-90
GCST90274825	rs579826	C	T	-0.083	0.003	1095.613	2.97E-240
GCST90274825	rs72653066	C	G	-0.077	0.007	127.088	1.78E-29
GCST90274825	rs11680233	C	A	-0.032	0.002	423.469	4.29E-94
GCST90274825	rs12714264	A	T	-0.113	0.002	2947.936	0
GCST90274825	rs533617	T	C	-0.126	0.003	1315.786	4.19E-288
GCST90274825	rs12720793	C	T	0.063	0.005	149.038	2.81E-34
GCST90274825	rs1801701	C	T	0.039	0.002	269.844	1.23E-60
GCST90274825	rs184507838	C	T	-0.126	0.007	335.586	5.84E-75
GCST90274825	rs12720807	A	T	0.071	0.002	866.578	1.81E-190
GCST90274825	rs12720838	C	T	-0.052	0.002	770.547	1.37E-169
GCST90274825	rs2072183	G	C	0.033	0.002	374.665	1.81E-83

GCST90274825	rs217412	C	T	0.017	0.002	104.403	1.65E-24
GCST90274825	rs77826622	T	C	0.031	0.005	40.230	2.26E-10
GCST90274825	rs7808003	C	T	-0.019	0.002	134.770	3.71E-31
GCST90274825	rs7808295	C	T	-0.023	0.004	38.551	5.33E-10
GCST90274828	rs77826622	T	C	0.031	0.005	40.230	2.26E-10
GCST90274828	rs7808003	C	T	-0.019	0.002	134.770	3.71E-31
GCST90274828	rs217412	C	T	0.017	0.002	104.403	1.65E-24
GCST90274828	rs2072183	G	C	0.033	0.002	374.665	1.81E-83
GCST90274828	rs7808295	C	T	-0.023	0.004	38.551	5.33E-10
GCST90274829	rs77826622	T	C	0.031	0.005	40.230	2.26E-10
GCST90274829	rs7808003	C	T	-0.019	0.002	134.770	3.71E-31
GCST90274829	rs2072183	G	C	0.033	0.002	374.665	1.81E-83
GCST90274829	rs7808295	C	T	-0.023	0.004	38.551	5.33E-10
GCST90274829	rs217412	C	T	0.017	0.002	104.403	1.65E-24

GCST90274830	rs7552350	C	A	0.016	0.002	48.414	3.45E-12
GCST90274830	rs12136600	C	T	-0.042	0.003	248.687	5.02E-56
GCST90274830	rs137886411	G	A	0.052	0.007	49.020	2.53E-12
GCST90274830	rs45508296	A	G	-0.065	0.005	145.113	2.03E-33
GCST90274830	rs11206517	T	G	0.089	0.004	573.437	1.00E-126
GCST90274830	rs7546522	C	T	-0.022	0.002	122.353	1.93E-28
GCST90274830	rs45613943	T	C	-0.040	0.003	145.250	1.89E-33
GCST90274830	rs41294821	C	T	-0.043	0.005	72.524	1.65E-17
GCST90274830	rs7525503	G	T	0.071	0.005	204.214	2.51E-46
GCST90274830	rs693668	A	G	-0.056	0.001	1490.587	0
GCST90274830	rs2479410	G	A	-0.041	0.002	733.100	1.90E-161
GCST90274838	rs12720838	C	T	-0.052	0.002	770.547	1.37E-169
GCST90274838	rs579826	C	T	-0.083	0.003	1095.613	2.97E-240
GCST90274838	rs1801701	C	T	0.039	0.002	269.844	1.23E-60

GCST90274838	rs12720793	C	T	0.063	0.005	149.038	2.81E-34
GCST90274838	rs12720807	A	T	0.071	0.002	866.578	1.81E-190
GCST90274838	rs12714264	A	T	-0.113	0.002	2947.936	0
GCST90274838	rs184507838	C	T	-0.126	0.007	335.586	5.84E-75
GCST90274838	rs533617	T	C	-0.126	0.003	1315.786	4.19E-288
GCST90274838	rs693	A	G	-0.080	0.001	3336.249	0
GCST90274838	rs72653066	C	G	-0.077	0.007	127.088	1.78E-29
GCST90274838	rs11680233	C	A	-0.032	0.002	423.469	4.29E-94
GCST90274838	rs1042023	G	C	0.136	0.007	405.462	3.56E-90
GCST90274840	rs12136600	C	T	-0.042	0.003	248.687	5.02E-56
GCST90274840	rs45613943	T	C	-0.040	0.003	145.250	1.89E-33
GCST90274840	rs693668	A	G	-0.056	0.001	1490.587	0
GCST90274840	rs11206517	T	G	0.089	0.004	573.437	1.00E-126
GCST90274840	rs41294821	C	T	-0.043	0.005	72.524	1.65E-17

GCST90274840	rs45508296	A	G	−0.065	0.005	145.113	2.03E-33
GCST90274840	rs137886411	G	A	0.052	0.007	49.020	2.53E-12
GCST90274840	rs2479410	G	A	−0.041	0.002	733.100	1.90E-161
GCST90274840	rs7546522	C	T	−0.022	0.002	122.353	1.93E-28
GCST90274840	rs7552350	C	A	0.016	0.002	48.414	3.45E-12
GCST90274840	rs7525503	G	T	0.071	0.005	204.214	2.51E-46
GCST90274845	rs41294821	C	T	−0.043	0.005	72.524	1.65E-17
GCST90274845	rs45508296	A	G	−0.065	0.005	145.113	2.03E-33
GCST90274845	rs45613943	T	C	−0.040	0.003	145.250	1.89E-33
GCST90274845	rs2479410	G	A	−0.041	0.002	733.100	1.90E-161
GCST90274845	rs137886411	G	A	0.052	0.007	49.020	2.53E-12
GCST90274845	rs7552350	C	A	0.016	0.002	48.414	3.45E-12
GCST90274845	rs7546522	C	T	−0.022	0.002	122.353	1.93E-28
GCST90274845	rs693668	A	G	−0.056	0.001	1490.587	0

GCST90274845	rs7525503	G	T	0.071	0.005	204.214	2.51E-46
GCST90274845	rs11206517	T	G	0.089	0.004	573.437	1.00E-126
GCST90274845	rs12136600	C	T	-0.042	0.003	248.687	5.02E-56
GCST90274848	rs1801701	C	T	0.039	0.002	269.844	1.23E-60
GCST90274848	rs693	A	G	-0.080	0.001	3336.249	0
GCST90274848	rs12720807	A	T	0.071	0.002	866.578	1.81E-190
GCST90274848	rs12720838	C	T	-0.052	0.002	770.547	1.37E-169
GCST90274848	rs184507838	C	T	-0.126	0.007	335.586	5.84E-75
GCST90274848	rs12720793	C	T	0.063	0.005	149.038	2.81E-34
GCST90274848	rs533617	T	C	-0.126	0.003	1315.786	4.19E-288
GCST90274848	rs579826	C	T	-0.083	0.003	1095.613	2.97E-240
GCST90274848	rs11680233	C	A	-0.032	0.002	423.469	4.29E-94
GCST90274848	rs12714264	A	T	-0.113	0.002	2947.936	0
GCST90274848	rs1042023	G	C	0.136	0.007	405.462	3.56E-90

GCST90274848	rs72653066	C	G	−0.077	0.007	127.088	1.78E-29
GCST90274848	rs7808003	C	T	−0.019	0.002	134.770	3.71E-31
GCST90274848	rs77826622	T	C	0.031	0.005	40.230	2.26E-10
GCST90274848	rs2072183	G	C	0.033	0.002	374.665	1.81E-83
GCST90274848	rs217412	C	T	0.017	0.002	104.403	1.65E-24
GCST90274848	rs7808295	C	T	−0.023	0.004	38.551	5.33E-10