Supplemental Material

Supplementary Table 1 Genetic instruments of plasma and CSF proteins for MR analysis

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Supplementary Fig. 1 Bidirectional MR analysis for multiple sclerosis on levels of six potential causal proteins

OR stood for the odds ratios for per standard deviation (SD) increase in plasma protein levels and per 10-fold increase in CSF protein levels as MS risk increased.

Supplementary Fig. 2 Bayesian colocalization analysis of six potential causal proteins and multiple sclerosis

Colocalization analysis of plasma proteins for FCRL3 **(A)**, TYMP **(B)** and AHSG **(C)**, and CSF proteins for MMEL1 **(D)**, SLAMF7 **(E)**, and CD5L **(F)**, respectively. Diamond purple points represented the SNP that with the minimal sum of *P* value in corresponded protein GWAS and multiple sclerosis GWAS.

Supplementary Fig. 3 Comparison analysis of MR estimates between plasma proteome and CSF proteome

(A) All 66 overlapping proteins in plasma and CSF were used to perform correlation analysis. The horizontal and vertical gray line represented the 95% confidence interval of MR estimates in main analysis. The Spearman correlation coefficient was -0.037 (95% CI: -0.305, 0.234); **(B)** With different cutoff for *P* value to include MR estimates, Spearman correlation coefficient was calculated. The numbers on the left side of the black point represented the numbers of overlapping proteins correspondingly.

Supplementary Fig. 4 Protein-protein interaction network among the suggestive causal proteins ($P < 0.05$) and current multiple sclerosis medications targets

Red solid circles represented plasma proteins, blue solid circles represented represented CSF proteins, while green solid circles represented current MS medication targets. The largest solid circiles highlighted six potential causal proteins, including FCRL3, TYMP, AHSG, MMEL1, SLAMF7, and CD5L.

Supplementary Fig. 5 Protein-protein causal relationship among six potential causal proteins

Red solid circles represented plasma proteins, while blue solid circles represented represented CSF proteins**.** Unit for plasma and CSF proteins were per standard deviation (SD) increase and per 10-fold increase.

Supplementary Fig. 6 Protein-protein colocalization among six potential causal proteins

Numbers in figure represented posterior proability of two proteins colocalized (PPH_4). PPH_4 greater than 0.8 strongly indicated colocalization. Red solid circles represented plasma proteins, while blue solid circles represented represented CSF proteins

Supplementary Table 1 Genetic instruments of plasma and CSF proteins for MR analysis

tissue	protein	UniProt ID	SNP	chr	pos	effect allele	other allele	eaf	beta	se	pval	author
Plasma	ACP1	A0A140VK37;P24666;Q59EH3	rs11553746	2	272203	T	C	0.325	1.237	0.026	1E-200	Suhre
Plasma	ACP5	A0A024R7F8;P13686	rs79061565	19	11698659	G	C	0.123	-0.485	0.036	1.6E-40	Sun
Plasma	ADA2	Q9NZK5;B4E3Q4;A0A087X0I3	rs2231495	22	17669306	C	T	0.333	-0.879	0.021	1E-200	Sun
Plasma	ADAM23	A0A024R3W8;O75077;E7EWD3	rs1921673	2	207324282	G	A	0.685	0.432	0.026	3.2E-64	Sun
Plasma	ADAMTS13	Q76LX8	rs71503194	9	136298131	G	T	0.091	-0.872	0.040	4.4E-103	Sun
Plasma	ADGRE2	A0JNV7;Q9UHX3	rs7260110	19	14501544	G	A	0.360	0.297	0.045	5.169E-11	Suhre
Plasma	ADM	P35318	rs2923091	11	10358145	A	G	0.662	-0.204	0.025	2.28E-16	Yao
Plasma	AFM	P43652	rs41265665	4	74361142	A	G	0.032	-0.862	0.122	3.033E-12	Suhre
Plasma	AGT	B0ZBE2;B2R5S1;P01019	rs2493151	1	230878561	A	G	0.235	0.335	0.049	2.223E-11	Suhre
Plasma	AHSG	P02765	rs35094235	3	186328951	G	T	0.731	0.625	0.026	2E-132	Sun
Plasma	AKR1A1	P14550;V9HWI0	rs72688441	1	46051053	A	G	0.059	-1.180	0.049	1.2E-126	Sun
Plasma	AKR1B1	A0A024R7A8;P15121	rs2229542	7	134135621	C	T	0.014	-0.819	0.105	4.7E-15	Sun
Plasma	AKR1C1	Q04828	rs145648894	10	5009739	G	T	0.111	0.389	0.039	3.8E-23	Sun
Plasma	ALCAM	Q13740;B3KNN9	rs9830049	3	105284045	C	T	0.120	-0.306	0.037	2.8E-16	Sun
Plasma	ALDH3A1	P30838;Q6PKA6;I3L3I9	rs887241	17	19645938	C	A	0.662	0.242	0.026	7.8E-21	Sun
Plasma	AMY1A	P04745;Q6NSB3	rs7538379	1	104067356	T	C	0.040	-1.040	0.062	4.9E-63	Sun
Plasma	ANG	P03950;W0UV28	rs17114671	14	21155270	C	T	0.119	0.806	0.060	1.918E-38	Suhre
Plasma	ANGPTL1	A0A024R908;O95841	rs16853043	1	178545926	G	A	0.352	0.431	0.025	5.4E-68	Sun

Plasma	APCS	P02743;V9HWP0	rs71632673	1	159536213	A	C	0.023	-0.837	0.082	1.9E-24	Sun
Plasma	APMAP	Q9HDC9	rs8125909	20	24975835	C	A	0.132	0.297	0.036	2.8E-16	Sun
Plasma	APOA5	A0A0B4RUS7;Q6Q788	rs964184	11	116648917	C	G	0.869	0.263	0.036	4.9E-13	Sun
Plasma	APOB	P04114;Q59HB3;Q7Z7Q0	rs520354	2	21259612	G	A	0.473	0.303	0.042	6.929E-13	Suhre
Plasma	APOL1	O14791;Q2KHQ6;B1AH95	rs71314970	22	36638705	T	C	0.106	-0.366	0.041	3.5E-19	Sun
Plasma	ARFIP1	B4E273;P53367;Q8N8M9;B7ZA10	rs4619875	4	153701130	T	C	0.404	0.239	0.025	6.6E-22	Sun
Plasma	ARSB	A0A024RAJ9;P15848;A8K4A0	rs13159135	5	78196689	C	G	0.434	-0.214	0.025	5.9E-18	Sun
Plasma	ART3	Q13508	rs4859610	4	77000441	G	A	0.774	-0.338	0.029	3E-32	Sun
Plasma	ART4	Q93070	rs1001096	12	14988455	A	G	0.397	0.740	0.022	1E-200	Sun
Plasma	ASAH2;ASAH2B	Q9NR71;P0C7U1	rs10740617	10	52027609	C	A	0.794	0.667	0.028	2E-124	Sun
Plasma	ASPH	Q12797;B7ZM96;A0A0A0MSK8;B4DQ07	rs112760834	8	62540134	T	G	0.033	-0.578	0.069	4.1E-17	Sun
Plasma	ASPN	Q9BXN1;Q6P528	rs2516568	9	95187380	T	A	0.323	-0.472	0.025	2.3E-79	Sun
Plasma	ATP1B2	P14415	rs1642762	17	7554772	T	C	0.587	-0.288	0.026	1.5E-29	Sun
Plasma	B3GAT3	Q5U676;G3V150;O94766	rs12794886	11	62383715	C	G	0.707	0.442	0.026	8.3E-63	Sun
Plasma	B4GALT1	P15291;W6MEN3	rs7019909	9	33113322	T	C	0.103	0.448	0.040	7.9E-29	Sun
Plasma	B4GALT2	O60909	rs2286241	1	44440769	C	G	0.056	-0.673	0.052	3E-38	Sun
Plasma	BPI	P17213	rs1780617	20	36974157	G	A	0.122	-0.644	0.037	1.1E-67	Sun
Plasma	BPIFB1	Q8TDL5	rs2424961	20	31694060	T	C	0.579	-0.437	0.025	3.9E-71	Sun
Plasma	BST1	Q10588	rs73224660	4	15714762	A	G	0.159	-1.397	0.024	1E-200	Sun
Plasma	C1QC	A0A024RAA7;P02747	rs78865058	1	22944209	A	G	0.042	1.075	0.060	4.3E-71	Sun

Plasma	C1QTNF5	A0A024R3F8; Q9BXJ0	rs2248863	11	119207341	A	G	0.142	0.326	0.035	3.5E-21	Sun
Plasma	C7	P10643;Q05CI3	rs429017	5	41263091	A	G	0.253	0.433	0.050	9.039E-18	Suhre
Plasma	CA10	Q9NS85	rs117399000	17	50213731	A	G	0.037	-0.594	0.066	3E-19	Sun
Plasma	CA13	Q8N1Q1	rs17741049	8	86198253	T	C	0.068	-0.744	0.080	7.915E-20	Suhre
Plasma	CA3	P07451;V9HWA3	rs2072696	8	86351051	C	G	0.238	-0.217	0.029	6.8E-14	Sun
Plasma	CA6	B4DUH8;P23280	rs3765963	1	9034598	G	A	0.402	0.677	0.023	4.1E-185	Sun
Plasma	CACNA2D3	Q8IZS8	rs34084772	3	54153517	A	G	0.184	-0.233	0.032	5.1E-13	Sun
Plasma	CAPN1;CAPNS1	B2RDI5;P07384;B4DWH5;P04632;A0A0C4DGQ5	rs10895987	11	64904908	T	C	0.226	-0.459	0.051	1.007E-18	Suhre
Plasma	CASP3	P42574	rs870825	4	185588045	G	A	0.157	-0.396	0.058	1.8E-11	Suhre
Plasma	CBLN1	P23435	rs10852587	16	49006458	A	T	0.144	-1.081	0.033	1E-200	Sun
Plasma	CBLN4	Q9NTU7	rs74447607	20	54447947	T	C	0.192	-0.218	0.031	3E-12	Sun
Plasma	CBR1	P16152	rs16993864	21	37446599	A	C	0.022	-1.215	0.083	6.6E-49	Sun
Plasma	CBR3	O75828;V9HW40	rs1028997	21	37532222	A	G	0.376	-0.764	0.022	1E-200	Sun
Plasma	CCDC126	A0A024RA08; Q96EE4	rs227934	7	23627287	T	C	0.479	-0.275	0.025	6.9E-29	Sun
Plasma	CCL14	Q16627	rs9903158	17	34312337	C	T	0.056	-1.081	0.050	3.5E-104	Sun
Plasma	CCL15	A0A0B4J2E2; Q16663	rs854624	17	34327923	T	G	0.931	-1.691	0.039	1E-200	Sun
Plasma	CCL16	O15467	rs112689088	17	34307457	C	T	0.098	-1.525	0.034	1E-200	Sun
Plasma	CCL18	P55774	rs9904601	17	34372006	A	G	0.117	0.863	0.060	2.482E-43	Suhre
Plasma	CCL23	P55773	rs712048	17	34326215	C	A	0.874	0.729	0.035	1.6E-94	Sun
Plasma	CCL25	O15444	rs74959615	19	8121096	A	G	0.078	-0.972	0.043	5.2E-114	Sun
Plasma	CCL3L1	P16619	rs2015086	17	34391617	G	A	0.131	0.496	0.036	3.1E-42	Sun

Plasma	CCL4	P13236	rs6607368	17	34819136	A	C	0.800	0.510	0.044	6.3E-31	Folkersen
Plasma	CCL5	D0EI67;P13501	rs4239252	17	34163565	A	G	0.211	-0.346	0.053	7.825E-11	Suhre
Plasma	CCL8	P80075	rs3138036	17	32647544	G	A	0.145	-0.470	0.060	1.326E-14	Suhre
Plasma	CCNH	P51946	rs2230641	5	86695274	G	A	0.205	-0.239	0.031	1.2E-14	Sun
Plasma	CD14	P08571	rs3138074	5	140015932	A	T	0.777	0.332	0.022	9.22E-53	Yao
Plasma	CD177	A0A087WVM2;Q8N6Q3	rs73554000	19	43825494	C	G	0.024	1.803	0.079	4.4E-116	Sun
Plasma	CD200R1	Q8TD46	rs6791672	3	112591392	A	G	0.591	-0.176	0.025	2.8E-12	Sun
Plasma	CD300C	Q08708	rs62087214	17	72467626	G	A	0.039	-0.679	0.064	1.7E-26	Sun
Plasma	CD33	P20138;Q546G0	rs12459419	19	51728477	T	C	0.329	-0.944	0.021	1E-200	Sun
Plasma	CD48	A0A087X1S7;P09326	rs12124234	1	160675269	C	G	0.405	0.264	0.025	1.1E-25	Sun
Plasma	CD55	P08174;B1AP13	rs11580387	1	207418408	G	A	0.234	-0.521	0.028	4.7E-78	Sun
Plasma	CD59	P13987;Q6FHM9	rs2273121	11	33757770	A	G	0.252	-0.362	0.027	4.7E-41	Sun
Plasma	CD5L	O43866	rs2765501	1	157804648	G	A	0.608	-0.285	0.018	4.76E-54	Yao
Plasma	CDNF	Q49AH0	rs61738953	10	14862082	G	C	0.042	-0.629	0.068	2.5E-20	Sun
Plasma	CDON	Q4KMG0	rs3740909	11	125889526	T	C	0.073	-0.829	0.078	4.415E-25	Suhre
Plasma	CEL	B4DSX9;O75612;Q86SR3;X6R868	rs8193016	9	135917744	T	C	0.035	0.685	0.068	8.3E-24	Sun
Plasma	CFH	A0A024R962;P08603;A0A0D9SG88	rs2274700	1	196682947	A	G	0.399	0.367	0.024	1.6E-51	Sun
Plasma	CFHR5	Q9BXR6	rs35662416	1	196967354	A	G	0.030	-1.200	0.068	3E-69	Sun
Plasma	CFI	A8K3L0;P05156;B4DRF2;Q8WW88;G3XAM2	rs7439493	4	110656730	A	G	0.416	0.312	0.025	8.9E-37	Sun

Plasma	CHIT1	Q13231	rs872583	1	203184766	C	T	0.202	-1.098	0.025	1E-200	Sun
Plasma	CHL1	O00533;A0A087X0M8	rs1015456	3	107776	C	T	0.392	-0.208	0.026	3.2E-16	Sun
Plasma	CHRDL2	Q6WN34	rs11607100	11	74414919	T	C	0.042	-0.642	0.061	5.8E-26	Sun
Plasma	CHST9	Q7L1S5;A0A024RC28	rs9952639	18	24709604	C	G	0.318	0.333	0.026	7.2E-37	Sun
Plasma	CKM	B2R892;P06732	rs11559024	19	45821183	C	T	0.022	-0.679	0.084	9.1E-16	Sun
Plasma	CLEC12A	Q5QGZ9	rs2961544	12	10136672	A	G	0.639	-1.254	0.013	1E-200	Sun
Plasma	CLEC3B	E9PHK0;A0A024R2Q7;P05452	rs2056320	3	45092415	G	A	0.763	0.213	0.209	1.38E-23	Yao
Plasma	CLIC5	Q53G01;Q9NZA1;Q49AE1	rs35822882	6	45916999	T	G	0.034	-0.734	0.068	7.4E-27	Sun
Plasma	CLMP	B4E3S3;Q9H6B4	rs35483681	11	123045730	T	C	0.554	0.249	0.025	4.5E-24	Sun
Plasma	CLPS	A0A087WZW1;A0A087X0Q7;P04118	rs9380534	6	35751572	A	G	0.602	0.448	0.025	3.5E-71	Sun
Plasma	CNDP1	Q96KN2	rs17817077	18	72209543	A	G	0.406	0.350	0.044	4.72E-15	Suhre
Plasma	CNTFR	P26992	rs10972159	9	34593086	A	G	0.018	-0.700	0.094	1E-13	Sun
Plasma	CNTN1	Q12860;A0A024R104	rs1838343	12	41196230	C	T	0.580	0.207	0.021	6.45E-24	Yao
Plasma	CNTN2	A0A024R9B4;Q02246;A1L3A3	rs2071533	1	205012198	G	T	0.865	-0.771	0.035	6.9E-108	Sun
Plasma	CNTN4	A0A024R2E5;Q8IWV2	rs163352	3	3098041	C	G	0.813	-0.325	0.032	2.7E-24	Sun
Plasma	CNTN5	O94779	rs1461672	11	99175378	T	C	0.061	0.734	0.082	2.241E-18	Suhre
Plasma	CNTNAP2	A0A090N7T7;B2RCH4;Q9UHC6	rs10274393	7	145378588	C	G	0.711	-0.433	0.026	1.1E-60	Sun
Plasma	COCH	O43405	rs34907608	14	31330413	A	G	0.119	0.476	0.037	1E-38	Sun
Plasma	COL15A1	B3KTP7;P39059	rs41305481	9	101767385	G	A	0.302	0.244	0.027	1.9E-19	Sun

Plasma	COL18A1	D3DSM5;P39060;D3DSM4	rs2274809	21	46906711	G	A	0.645	0.166	0.022	1.97E-14	Yao
Plasma	COL6A1	P12109	rs434206	21	47366802	T	G	0.594	-0.212	0.025	5.2E-17	Sun
Plasma	COLEC12	Q5KU26	rs2846667	18	466810	G	T	0.745	0.202	0.030	9.3E-12	Sun
Plasma	CP	A5PL27;P00450	rs34004251	3	148929951	T	A	0.812	-0.263	0.025	4.91E-25	Yao
Plasma	CPA4	Q9UI42;A4D1M3	rs34587586	7	129938598	T	G	0.393	-1.166	0.015	1E-200	Sun
Plasma	CPB1	P15086	rs13318853	3	148562399	A	G	0.232	0.256	0.029	2E-18	Sun
Plasma	CPB2	A0A087WSY5;Q96IY4	rs3742264	13	46648094	T	C	0.321	0.849	0.040	2.806E-83	Suhre
Plasma	CPM	P14384	rs1908671	12	69433404	C	G	0.292	-0.186	0.027	8.1E-12	Sun
Plasma	CPNE1	B0QZ18;Q99829	rs12481228	20	34218673	C	G	0.098	-0.977	0.038	1.8E-146	Sun
Plasma	CPXM1	Q96SM3	rs67159741	20	2780762	G	GCGCGCGCGTGCACTGTGTGTGCGCGCA	0.100	-0.643	0.040	1E-57	Sun
Plasma	CPZ	Q66K79	rs2631738	4	8479754	G	A	0.519	0.195	0.024	1E-15	Sun
Plasma	CREB3L4	Q8TEY5	rs4845586	1	153942597	G	T	0.470	0.256	0.025	7.1E-25	Sun
Plasma	CREG1	O75629	rs7513428	1	167515272	C	T	0.836	-0.311	0.033	1.4E-20	Sun
Plasma	CRELD1	Q96HD1;A0A024R2G1	rs7627326	3	9981734	T	G	0.240	-1.094	0.022	1E-200	Sun
Plasma	CRISP2	A0A024RD74;P16562	rs478328	6	49720877	G	A	0.454	0.570	0.023	4.2E-139	Sun
Plasma	CRISPLD2	A0A140VK80;Q9H0B8	rs12921670	16	84838761	A	G	0.257	0.262	0.029	5.4E-19	Sun
Plasma	CRP	P02741	rs2211320	1	159693605	G	A	0.677	0.149	0.020	4.77E-14	Yao
Plasma	CSF1	A0A024R0A1;P09603	rs17610659	1	110503296	T	C	0.480	0.150	0.024	6.5E-10	Folkersen
Plasma	CSF2RB	P32927;Q6NSJ8	rs1534881	22	37329448	A	G	0.446	-0.316	0.024	2.6E-38	Sun

Plasma	CSGALNACT2	A0A0S2Z5K4;Q8N6G5;A0A0S2Z5F9;A0A0S2Z5F5	rs2435349	10	43643466	G	A	0.273	-0.196	0.028	1.6E-12	Sun
Plasma	CST1	P01037	rs6114248	20	23711882	A	G	0.315	0.564	0.043	5.048E-37	Suhre
Plasma	CST2	P09228	rs6114248	20	23711882	A	G	0.315	0.515	0.043	4.39E-31	Suhre
Plasma	CST3	A0A0K0K1J1;P01034	rs911119	20	23612737	T	C	0.779	0.393	0.022	6.66E-73	Yao
Plasma	CST5	P28325	rs6138152	20	23850130	G	A	0.196	0.718	0.050	1.76E-42	Suhre
Plasma	CST6	Q15828	rs3825068	11	65768093	G	A	0.028	0.597	0.076	3.2E-15	Sun
Plasma	CST7	O76096	rs6138458	20	24973769	A	G	0.227	-0.763	0.047	7.603E-53	Suhre
Plasma	CTRB1	P17538	rs8051363	16	75255217	G	A	0.704	0.647	0.024	1.6E-157	Sun
Plasma	CTSB	Q5HYG5;A0A024R374;P07858;B4DMY4	rs1692819	8	11705448	A	G	0.292	0.425	0.027	5.2E-54	Sun
Plasma	CTSD	P07339;V9HWI3	rs111693235	11	1770224	C	G	0.710	0.350	0.033	2E-26	Folkersen
Plasma	CTSF	Q9UBX1	rs1791679	11	66337874	A	C	0.289	0.235	0.027	2.5E-18	Sun
Plasma	CTSH	P09668	rs34593439	15	79234957	A	G	0.111	-1.147	0.035	1E-200	Sun
Plasma	CTSS	P25774	rs41271951	1	150737220	G	A	0.083	-0.861	0.042	7.1E-94	Sun
Plasma	CXCL11	O14625	rs10031452	4	76924933	C	T	0.529	-0.233	0.025	2.4E-21	Sun
Plasma	CXCL16	Q9H2A7	rs144830084	17	4618101	T	A	0.256	-0.225	0.028	1.4E-15	Sun
Plasma	CXCL6	P80162	rs16850073	4	74703999	T	C	0.377	0.888	0.038	9.66E-98	Suhre
Plasma	DCBLD2	Q96PD2	rs9864010	3	98678173	A	G	0.055	-0.620	0.054	6.6E-31	Sun
Plasma	DEFB1	P60022	rs2738176	8	6738228	A	T	0.365	-0.389	0.025	5.6E-55	Sun
Plasma	DEFB104A	Q8WTQ1	rs183772362	8	7243016	T	C	0.033	0.504	0.072	2.1E-12	Sun
Plasma	DKK 1	I1W660;O94907	rs1194673	10	54141652	A	G	0.632	0.182	0.026	2.8E-12	Sun

Plasma	DKK 3	Q9UBP4;F6SYF8	rs11022114	11	12038874	A	G	0.328	0.336	0.027	6.5E-36	Sun
Plasma	DLK1	A8K019;P80370;A0A024R6L1	rs12881760	14	101176335	C	G	0.676	0.536	0.025	3.5E-101	Sun
Plasma	DLL1	O00548	rs959025	6	170588654	T	C	0.416	0.191	0.025	1.3E-14	Sun
Plasma	DNAJC30	B3KSU4;Q96LL9	rs73702564	7	73084816	T	C	0.039	0.718	0.062	6.9E-31	Sun
Plasma	DPP7	Q9UHL4	rs10747049	9	140008750	C	G	0.750	0.364	0.028	2.3E-39	Sun
Plasma	DPT	Q07507	rs1018454	1	168697761	C	A	0.586	0.416	0.024	7.8E-67	Sun
Plasma	DSC2	Q02487	rs1789063	18	28673913	A	T	0.769	-0.216	0.029	1.8E-13	Sun
Plasma	DSG2	Q14126	rs2704050	18	29095888	G	A	0.493	-0.169	0.025	9.3E-12	Sun
Plasma	DUSP13	Q6B8I1;A0A024QZR6;Q9UII6;U3KQ82	rs6480771	10	76861680	C	T	0.415	-0.299	0.025	8.3E-34	Sun
Plasma	ECM1	Q16610;A0A140VJI7	rs13294	1	150484987	A	G	0.398	-0.849	0.035	7.727E-102	Suhre
Plasma	EDAR	Q9UNE0	rs6750059	2	109611097	C	T	0.249	-0.440	0.049	1.343E-18	Suhre
Plasma	EFEMP1	A0A0S2Z4F1;B2R6M6;Q12805;A0A0S2Z3V1	rs3791679	2	56096892	A	G	0.761	-0.226	0.021	2.49E-26	Yao
Plasma	EGF	P01133	rs11568972	4	110889007	C	A	0.337	0.265	0.026	3.1E-25	Sun
Plasma	EMILIN3	Q9NT22	rs61739314	20	39990377	C	G	0.033	-0.686	0.069	3.6E-23	Sun
Plasma	ENPP5	Q9UJA9;B4DHN2	rs1047153	6	46128745	T	C	0.646	-0.789	0.021	1E-200	Sun
Plasma	ENPP7	Q6UWV6	rs11871061	17	77706544	C	T	0.359	0.987	0.020	1E-200	Sun
Plasma	ENTPD1	P49961	rs11188501	10	97600919	A	G	0.340	0.215	0.026	2.2E-16	Sun
Plasma	ENTPD5	A0A024R6D3;O75356;A0A024R6B4;G3V4I0	rs57731447	14	74487521	A	G	0.059	-0.967	0.049	7.8E-87	Sun

Plasma	EPHB2	B4DSE0;Q4LE53;Q6NVW1;P29323	rs6687487	1	23061551	A	G	0.080	-0.612	0.045	1.3E-42	Sun
Plasma	ERAP1	Q9NZ08	rs17482078	5	96118866	T	C	0.216	-0.962	0.025	1E-200	Sun
Plasma	ERAP2	B2R769;Q6P179	rs2927608	5	96252432	A	G	0.437	1.052	0.017	1E-200	Sun
Plasma	ERLEC1	Q96DZ1;V9HWD3	rs58359565	2	53958919	A	C	0.219	-0.208	0.030	2.1E-12	Sun
Plasma	ERO1B	Q86YB8	rs1254194	1	236399442	T	G	0.596	-0.382	0.024	1.9E-56	Sun
Plasma	ESAM	Q96AP7	rs11219769	11	124620147	T	G	0.264	-0.235	0.028	3.6E-17	Sun
Plasma	ESD	A0A140VJJ2;P10768	rs8192888	13	47362384	C	G	0.094	-0.806	0.040	9.8E-89	Sun
Plasma	EVA1C	P58658;B3KWG0	rs6517101	21	33868483	G	T	0.331	0.179	0.026	5.9E-12	Sun
Plasma	F10	P00742;Q5JVE7;Q5JVE8	rs547138	13	113792170	A	T	0.615	0.258	0.027	5.8E-22	Sun
Plasma	F11	P03951	rs2289252	4	187207381	T	C	0.413	0.442	0.042	4.6E-25	Suhre
Plasma	F7	P08709;B4DPM2;F5H8B0	rs776905	13	113781942	C	A	0.113	-1.104	0.060	9.164E-65	Suhre
Plasma	FABP1	P07148;Q05CP7;Q6FGL7	rs2241883	2	88424066	C	T	0.303	-0.191	0.027	2.4E-12	Sun
Plasma	FAH	P16930	rs11555096	15	80472526	T	C	0.021	-1.882	0.080	1.9E-121	Sun
Plasma	FAM151A	Q8WW52	rs11206397	1	55097068	T	A	0.327	0.265	0.026	2.6E-24	Sun
Plasma	FAM171B	Q6P995	rs10931256	2	187685195	C	T	0.216	-0.334	0.030	1.1E-29	Sun
Plasma	FAM20A	B7Z4Y3;Q8IYA5;Q96MK3;L8B8N7	rs929477	17	66655816	A	G	0.094	-0.372	0.042	5.1E-19	Sun
Plasma	FAM213A	Q9BRX8	rs10887868	10	82194264	A	G	0.412	-0.188	0.025	5.5E-14	Sun
Plasma	FAM3B	P58499	rs73226194	21	42721869	T	C	0.040	-1.150	0.061	3.9E-78	Sun
Plasma	FAM3D	A0A0A8K9B4;Q96BQ1	rs3749290	3	58652292	T	G	0.096	-0.481	0.041	2E-31	Sun
Plasma	FCER2	K3W4U1;P06734	rs12973524	19	7758263	A	G	0.484	-0.306	0.025	5.8E-36	Sun

Plasma	FCGR2B	P31994;P31995	rs6665610	1	161641384	A	G	0.205	1.331	0.022	1E-200	Sun
Plasma	FCGR3B	O75015;M9MML6;A0A087WZR4;A0A087WU90	rs10919543	1	161508617	G	A	0.324	0.435	0.025	3.2E-67	Sun
Plasma	FCN1	O00602	rs11103602	9	137854872	A	G	0.258	0.583	0.027	1.5E-106	Sun
Plasma	FCN2	Q15485	rs57136797	9	137752540	T	A	0.164	-0.635	0.035	3.7E-72	Sun
Plasma	FCRL1	Q96LA6	rs4971155	1	157779182	A	T	0.506	-0.256	0.024	6.3E-26	Sun
Plasma	FCRL3	Q96P31	rs7528684	1	157670816	G	A	0.465	0.525	0.023	1.4E-112	Sun
Plasma	FCRL4	Q96PJ5	rs11582663	1	157559122	T	C	0.144	-1.133	0.030	1E-200	Sun
Plasma	FCRL6	Q6DN72	rs58240276	1	159783559	T	C	0.190	-0.609	0.030	3.1E-92	Sun
Plasma	FETUB	Q9UGM5;E9PG08;Q5J875;B7Z8T3	rs3733159	3	186360409	G	T	0.312	0.266	0.044	1.433E-09	Suhre
Plasma	FGF2	P09038	rs308403	4	123757748	T	C	0.319	-0.590	0.043	5.796E-39	Suhre
Plasma	FLRT2	O43155	rs17796777	14	85806774	C	A	0.286	-0.235	0.028	1.5E-17	Sun
Plasma	FLRT3	Q9NZU0	rs11908097	20	14689146	C	T	0.251	0.444	0.028	2.5E-57	Sun
Plasma	FLT4	P35916	rs34221241	5	180057293	C	T	0.104	-0.363	0.040	1.5E-19	Sun
Plasma	FN1	B7ZLE5;P02751;Q6MZM7;Q9UQS6;Q6MZF4;Q6N084	rs1250258	2	216300185	C	T	0.255	-0.711	0.045	1.282E-49	Suhre
Plasma	FRZB	D9ZGF6;Q92765	rs288326	2	183703336	A	G	0.126	0.566	0.036	3.7E-55	Sun
Plasma	FSTL1	Q12841	rs1147707	3	120169248	T	C	0.389	-0.211	0.026	1.1E-16	Sun
Plasma	FUT10	Q6P4F1	rs2732317	8	33330687	C	A	0.612	-0.450	0.024	2.5E-77	Sun
Plasma	FUT3	A8K737;P21217	rs708686	19	5840619	T	C	0.274	-0.853	0.024	1E-200	Sun
Plasma	FUT5	K7ENC0;Q11128	rs778809	19	5830302	A	G	0.301	-0.580	0.025	1.3E-118	Sun

Plasma	FUT8	Q546E0;Q9BYC5;A8K8P8	rs2127870	14	65796846	C	G	0.785	-1.049	0.025	1E-200	Sun
Plasma	GALP	Q9UBC7	rs111265125	19	56688781	C	G	0.022	0.647	0.091	1E-12	Sun
Plasma	GFRA1	P56159;B7Z856	rs10885877	10	117966090	G	C	0.295	0.265	0.027	2E-22	Sun
Plasma	GFRA2	O00451	rs15881	8	21550768	C	A	0.456	0.295	0.025	4.1E-33	Sun
Plasma	GFRAL	Q6UXV0	rs72975088	6	55535375	T	A	0.148	0.247	0.035	1.3E-12	Sun
Plasma	GGH	Q92820	rs10957266	8	63923764	C	T	0.071	0.799	0.046	1.2E-68	Sun
Plasma	GHR	P10912;A0A087X0H5;A0A087X162	rs150036324	5	42738222	C	A	0.594	0.179	0.026	1E-11	Sun
Plasma	GLCE	O94923	rs11854180	15	69559340	T	G	0.769	0.829	0.025	1E-200	Sun
Plasma	GLRX2	Q9NS18	rs148212596	1	193074511	G	A	0.020	1.184	0.088	3.5E-41	Sun
Plasma	GLTPD2	A6NH11	rs34460487	17	4685228	A	G	0.346	0.267	0.026	6.8E-25	Sun
Plasma	GNLY	B4E3H9;P22749	rs12151621	2	85934499	A	C	0.227	0.774	0.026	7.4E-189	Sun
Plasma	GNRH2	O43555	rs3787480	20	3016895	A	G	0.149	-0.240	0.034	2.3E-12	Sun
Plasma	GP1BA	L7UYB8;P07359	rs72835078	17	4826592	T	G	0.072	0.328	0.048	9.1E-12	Sun
Plasma	GP5	P40197	rs1466733	3	194120998	A	G	0.737	0.171	0.021	8.6E-17	Yao
Plasma	GP6	Q9HCN6	rs1654439	19	55553647	T	G	0.170	-0.657	0.055	6.59E-31	Suhre
Plasma	GPC1	P35052;H7C410	rs4074478	2	241446340	T	C	0.106	0.424	0.041	4.3E-25	Sun
Plasma	GPC5	P78333	rs2147190	13	92058888	T	C	0.336	0.334	0.045	2.267E-13	Suhre
Plasma	GPC5	P78333	rs342702	13	92422946	T	G	0.274	-0.804	0.025	1E-200	Sun
Plasma	GPNMB	Q14956;A0A024RA55;Q96F58	rs2268748	7	23313171	C	T	0.041	0.687	0.062	1.2E-28	Sun
Plasma	GPX7	Q96SL4	rs1097234	1	53063559	A	C	0.175	0.563	0.031	1.6E-73	Sun
Plasma	GRAMD1C	Q8IYS0;B3KUR5	rs61077924	3	113625933	G	C	0.324	0.620	0.024	3.4E-148	Sun

Plasma	GRN	P28799	rs5848	17	42430244	T	C	0.287	-0.276	0.028	8.1E-23	Sun
Plasma	GSTA1	A0A140VJK4; P08263;B7Z1F9	rs2290758	6	52662153	A	G	0.570	0.416	0.024	7.2E-69	Sun
Plasma	GSTO1	P78417;V9HWG9	rs2282326	10	106020398	C	A	0.354	-0.911	0.020	1E-200	Sun
Plasma	GSTP1	P09211;V9HWE9	rs1695	11	67352689	G	A	0.345	-0.178	0.025	2.3E-12	Sun
Plasma	GZMM	P51124	rs16989724	19	531115	T	C	0.935	0.430	0.053	3.9E-16	Sun
Plasma	H6PD	R4GMU1;O95479	rs34603401	1	9305445	C	A	0.150	0.759	0.032	1E-126	Sun
Plasma	HAVCR2	Q8TDQ0	rs6874178	5	156530149	T	A	0.817	-0.734	0.029	1E-145	Sun
Plasma	HBZ	P02008	rs2461286	16	203254	G	A	0.647	-0.885	0.021	1E-200	Sun
Plasma	HDHD2	Q9H0R4;V9HW73	rs75228657	18	44741063	G	A	0.052	0.702	0.054	4.7E-38	Sun
Plasma	HGFAC	D6RAR4;Q04756	rs1203119	4	3406952	A	G	0.082	-0.985	0.076	1.095E-35	Suhre
Plasma	HP	P00738;Q6PEJ8;A0A0C4DGL8	rs217184	16	72105965	C	T	0.196	0.869	0.028	1E-200	Sun
Plasma	HPGDS	O60760	rs1965049	4	95266204	G	A	0.621	0.440	0.025	1.3E-71	Sun
Plasma	HPX	P02790;Q9BS19	rs7935957	11	6450200	A	T	0.788	-0.252	0.022	5.06E-30	Yao
Plasma	HS6ST1	O60243	rs34827544	2	129084425	T	C	0.157	-0.305	0.035	1.9E-18	Sun
Plasma	HSP90B1	P14625;V9HWP2	rs1165693	12	104340204	A	G	0.321	1.097	0.018	1E-200	Sun
Plasma	HSPB1	P04792;V9HW43	rs13236526	7	75913642	A	G	0.700	0.360	0.042	1.1E-17	Folkersen
Plasma	ICAM1	P05362	rs5498	19	10395683	G	A	0.431	-1.199	0.014	1E-200	Sun
Plasma	ICAM5	Q8N6I2;Q9UMF0	rs281439	19	10400110	C	G	0.780	0.892	0.026	1E-200	Sun
Plasma	ICOSLG	O75144;B7Z1W8;A0N0L8	rs11558819	21	45656774	T	C	0.269	-0.576	0.026	3.5E-108	Sun
Plasma	IDO1	P14902	rs7010461	8	39781444	T	C	0.334	0.250	0.027	2.5E-20	Sun

Plasma	IDUA	P35475	rs3822020	4	985727	G	A	0.637	0.608	0.024	7.2E-148	Sun
Plasma	IFI16	Q16666	rs72709516	1	159004851	T	C	0.044	0.852	0.058	2.6E-49	Sun
Plasma	IFNAR1	P17181	rs2257167	21	34715699	C	G	0.134	-0.290	0.036	1.4E-15	Sun
Plasma	IGF2R	P11717	rs629849	6	160494409	G	A	0.871	0.899	0.033	9.5E-163	Sun
Plasma	IGFBP7	Q16270	rs1718849	4	57942323	C	T	0.766	-0.363	0.028	5.2E-38	Sun
Plasma	IGFLR1	K7EL86;Q9H665	rs12459634	19	36230174	C	T	0.145	-0.701	0.033	5.8E-100	Sun
Plasma	IGLL1	P15814	rs139571703	22	23915620	T	C	0.037	-0.726	0.069	9.8E-26	Sun
Plasma	IL11RA	Q14626;Q5VZ79	rs11575578	9	34656479	A	G	0.068	0.507	0.048	4.4E-26	Sun
Plasma	IL12B	P29460	rs4921484	5	158769753	C	T	0.678	0.312	0.026	7.2E-33	Sun
Plasma	IL12RB2	B4DGA4;Q99665;A0A0A0MTN7;B7ZB60	rs12566098	1	67889571	G	C	0.688	0.257	0.027	6E-22	Sun
Plasma	IL15RA	Q13261;A0A0A0MS77;G8CVM3	rs8177641	10	6016892	G	A	0.318	0.509	0.025	1.7E-91	Sun
Plasma	IL16	Q14005;Q9UME6	rs4778639	15	81600451	G	T	0.091	-0.681	0.042	4.5E-59	Sun
Plasma	IL17RA	Q96F46	rs3827278	22	17595915	A	C	0.232	0.975	0.043	1.969E-93	Suhre
Plasma	IL17RB	Q9NRM6	rs2232346	3	53892830	C	T	0.037	1.182	0.064	3.5E-77	Sun
Plasma	IL17RD	Q8NFM7;B4DXM5	rs6776722	3	57142659	A	G	0.695	-0.462	0.025	3.4E-74	Sun
Plasma	IL18	A0A024R3E0;Q14116	rs75649625	11	112052194	G	A	0.760	0.290	0.030	1.4E-21	Folkersen
Plasma	IL18R1	Q13478;B7ZKV7	rs1420106	2	103035044	G	A	0.776	-0.909	0.026	1E-200	Sun
Plasma	IL18RAP	O95256	rs6543140	2	103074274	T	G	0.301	0.485	0.046	1.013E-24	Suhre
Plasma	IL1R2	P27930	rs7561460	2	102617204	C	T	0.396	-0.403	0.024	6.2E-62	Sun
Plasma	IL1RAP	A8K6K4;Q9NPH3	rs6444442	3	190346060	G	A	0.841	-1.352	0.025	1E-200	Sun
Plasma	IL1RL2	Q9HB29	rs2228139	2	102781649	G	C	0.069	-0.425	0.048	1.6E-18	Sun

Plasma	IL1RN	P18510;A0A024R528	rs6761276	2	113832312	C	T	0.578	-0.191	0.025	1.5E-14	Sun
Plasma	IL23R	Q5VWK5	rs11581607	1	67707690	A	G	0.067	-0.420	0.049	1.2E-17	Sun
Plasma	IL27RA	Q6UWB1	rs35026308	19	14153293	C	T	0.176	-0.946	0.029	1E-200	Sun
Plasma	IL5RA	A0A024R2C8;Q01344;Q8NHV7	rs77400868	3	3150964	G	A	0.139	0.510	0.036	6.8E-45	Sun
Plasma	IL6ST	A0A0A0N0L2;P40189;Q17RA0	rs11574765	5	55278967	G	A	0.116	0.381	0.039	1E-22	Sun
Plasma	IL7R	P16871	rs11957503	5	35883176	G	T	0.437	0.425	0.044	1.922E-21	Suhre
Plasma	ISG15	P05161	rs1891906	1	950243	C	A	0.386	0.259	0.025	1.4E-24	Sun
Plasma	ISLR2	Q6UXK2	rs2959011	15	74611781	T	A	0.342	0.198	0.026	3.2E-14	Sun
Plasma	ITIH5	G5E9D8;Q86UX2;Q96JW9;C9J2H1;A0A096LP62	rs7909223	10	7700709	G	A	0.748	0.322	0.029	2E-29	Sun
Plasma	KDELC2	A0A024R3C4;Q7Z4H8	rs74911261	11	108357137	A	G	0.027	-1.314	0.075	1.1E-69	Sun
Plasma	KDR	A0A024RD88;P35968	rs34231037	4	55972946	G	A	0.034	-1.153	0.065	1E-70	Sun
Plasma	KIAA1161	Q6NSJ0	rs10972076	9	34356359	T	C	0.625	0.308	0.025	2.2E-34	Sun
Plasma	KLK7	P49862;B4DHX9;A0A024R4H6	rs2739419	19	51484562	G	A	0.908	0.703	0.041	1.1E-66	Sun
Plasma	KLK8	A0A0A0MQY9;O60259	rs74705037	19	51504808	A	G	0.045	0.929	0.058	6.3E-58	Sun
Plasma	KNG1	P01042	rs2304456	3	186445052	G	T	0.103	-1.366	0.058	2.888E-97	Suhre
Plasma	KYAT3	B4DW13;Q6YP21	rs9787133	1	89382664	G	C	0.494	-0.172	0.025	2.9E-12	Sun
Plasma	LAMC2	Q13753	rs2276543	1	183155305	A	G	0.279	0.616	0.025	4.4E-133	Sun
Plasma	LCT	P09848	rs4988235	2	136608646	A	G	0.711	0.776	0.024	1E-200	Sun
Plasma	LEPR	P48357;Q4G138	rs3790438	1	66085525	A	T	0.175	-1.375	0.022	1E-200	Sun

Plasma	LGALS2	P05162	rs5756729	22	37961353	T	C	0.593	-0.275	0.026	2.2E-26	Sun
Plasma	LGALS3	A0A024R693;P17931	rs9323280	14	55801687	A	C	0.870	0.770	0.046	5.6E-62	Folkersen
Plasma	LHB	A0A0F7RQE6;P01229	rs75287599	19	49517140	T	C	0.078	-0.434	0.046	2.4E-21	Sun
Plasma	LILRA4	P59901	rs2241384	19	54849942	A	G	0.170	-0.309	0.033	3.4E-21	Sun
Plasma	LILRA5	A6NI73	rs759819	19	54815577	C	T	0.330	-0.543	0.024	2.5E-111	Sun
Plasma	LILRA6	Q6PI73	rs35361042	19	54748737	G	C	0.091	1.340	0.038	1E-200	Sun
Plasma	LILRB1	A0A087WSV6;Q8NHL6;A0A087WSX8;D9IDM5;A8MVE2;A0A0B4J1W1	rs2114511	19	55145093	C	G	0.051	-1.806	0.046	1E-200	Sun
Plasma	LILRB2	Q8N423	rs386056	19	54782919	T	C	0.201	-1.150	0.023	1E-200	Sun
Plasma	LILRB5	O75023	rs12975366	19	54759361	C	T	0.405	-1.161	0.015	1E-200	Sun
Plasma	LIPN	Q5VXI9	rs10509554	10	90525792	T	C	0.307	1.017	0.021	1E-200	Sun
Plasma	LMAN2L	Q9H0V9;B4DI83;B4E308;B4DVH1	rs2271893	2	97405440	A	G	0.323	0.263	0.026	4.4E-24	Sun
Plasma	LMNB1	B4DZT3;P20700	rs36105360	5	126161690	T	C	0.025	0.804	0.079	2.2E-24	Sun
Plasma	LPA	P08519	rs55730499	6	161005610	C	T	0.939	-1.255	0.046	3.77E-167	Yao
Plasma	LRIG3	Q6UXM1;C9K080	rs11172791	12	59272973	C	T	0.045	-0.462	0.061	4.8E-14	Sun
Plasma	LRPAP1	P30533	rs78770234	4	3496683	A	G	0.033	-0.682	0.069	3.6E-23	Sun
Plasma	LRRC15	Q8TF66;B3KWI4	rs57514363	3	194087927	G	T	0.113	0.593	0.038	5.9E-54	Sun
Plasma	LRRN1	Q6UXK5;A8K6Q2	rs6801789	3	3807592	C	T	0.354	0.246	0.025	2.3E-22	Sun
Plasma	LY9	A0A0C4DFU4;Q9HBG7;Q05CA2;Q0VAI0;Q5VYH9	rs540254	1	160767737	C	T	0.353	0.417	0.045	7.783E-20	Suhre

Plasma	MAN2B2	B7Z754;E9PCD7;Q9Y2E5	rs2301790	4	6600012	G	A	0.484	0.334	0.024	1E-44	Sun
Plasma	MANBA	O00462	rs227370	4	103612043	C	T	0.675	-0.560	0.025	7.8E-113	Sun
Plasma	MANEA	Q5SRI9	rs80268500	6	96009498	C	T	0.082	-1.681	0.035	1E-200	Sun
Plasma	MANSC1	Q9H8J5	rs2160588	12	12487447	A	G	0.120	0.502	0.037	8.7E-42	Sun
Plasma	MANSC4	A6NHS7	rs36138811	12	27927881	C	T	0.232	0.637	0.028	7.4E-117	Sun
Plasma	MAPK13	A0A024RD04;O15264	rs12210904	6	36098191	A	C	0.289	0.254	0.027	1.5E-21	Sun
Plasma	MAPKAPK2	P49137	rs6669284	1	206890435	A	G	0.349	0.326	0.044	3.902E-13	Suhre
Plasma	MATN4	A2RRP8;B3KQB2;A5D8U1;O95460;A6NNA4	rs11697677	20	43925554	G	A	0.254	-0.230	0.028	2.5E-16	Sun
Plasma	MBL2	P11226	rs7899547	10	54536839	G	T	0.653	0.948	0.020	1E-200	Sun
Plasma	MCAM	A0A024R3I5;P43121	rs11217234	11	119177938	A	G	0.718	-0.144	0.026	4.32E-08	Yao
Plasma	MFAP2	P55001;A0A024RA94	rs4920605	1	17315425	A	G	0.554	0.207	0.024	1.3E-17	Sun
Plasma	MFGE8	Q08431;X6R3G6;B4E396;F5GZN3;B3KTQ2	rs1961839	15	89467454	A	G	0.397	-0.225	0.025	3.4E-19	Sun
Plasma	MGAT2	Q10469	rs28396798	14	50075319	T	C	0.547	0.195	0.024	1.3E-15	Sun
Plasma	MGAT4B	Q9UQ53	rs73351608	5	179232064	T	A	0.022	-0.959	0.085	2.2E-29	Sun
Plasma	MGP	A0A024RAX0;P08493	rs7135211	12	15052758	G	A	0.622	0.265	0.019	3.62E-44	Yao
Plasma	MIA	A0A024R0P1;Q16674	rs2604877	19	41275048	C	T	0.068	1.442	0.042	1E-200	Sun
Plasma	MMP1	B4DN15;P03956;Q53G95	rs471994	11	102697731	G	A	0.650	0.320	0.026	2.3E-35	Folkersen
Plasma	MMP10	P09238	rs17860955	11	102649482	C	T	0.022	-0.869	0.087	1.4E-23	Sun
Plasma	MMP12	P39900	rs28381684	11	102737192	T	A	0.125	-0.779	0.035	5.1E-111	Sun
Plasma	MMP7	P09237	rs11568819	11	102401633	A	G	0.067	0.668	0.088	5.837E-14	Suhre

Plasma	MMP8	B4E0I2;P22894	rs35231465	11	102584135	A	G	0.023	-0.583	0.061	2.26E-21	Yao
Plasma	MMP9	P14780	rs2250889	20	44642406	C	G	0.953	-0.622	0.059	2.1E-26	Sun
Plasma	MPO	P05164	rs34097845	17	56358429	T	C	0.067	-0.574	0.050	8.5E-31	Sun
Plasma	MRC2	Q9UBG0	rs146385050	17	60637258	A	C	0.195	-0.219	0.032	1.3E-11	Sun
Plasma	MSMB	P08118	rs10993994	10	51549496	C	T	0.596	0.982	0.019	1E-200	Sun
Plasma	MTHFS	P49914	rs7173566	15	80211691	C	T	0.343	-0.213	0.026	6E-16	Sun
Plasma	MTRF1L	Q9UGC7;B4DMX1	rs503366	6	153333550	C	T	0.497	0.165	0.024	1.1E-11	Sun
Plasma	MXRA7	P84157;Q6ZR64	rs9900613	17	74674857	T	C	0.431	-0.229	0.025	1.9E-20	Sun
Plasma	NAAA	Q02083	rs9996608	4	76848231	T	C	0.300	-0.549	0.026	3.9E-101	Sun
Plasma	NAGK	C9JEV6;Q9UJ70	rs7606102	2	71276399	G	A	0.170	-0.432	0.033	6E-39	Sun
Plasma	NAGPA	Q9UK23	rs12599777	16	5079466	G	A	0.204	-0.418	0.032	1.4E-39	Sun
Plasma	NCAM1	P13591;A0A087WWD4	rs11214489	11	112975934	C	T	0.818	0.368	0.024	3.01E-54	Yao
Plasma	NELL1	B3KXR2;J3KNC5;K9UUD5;Q92832;F5H6I3	rs61652119	11	20955270	A	G	0.049	1.110	0.055	1.3E-89	Sun
Plasma	NEO1	Q59FP8;Q92859	rs12903656	15	73326961	C	G	0.101	0.286	0.042	5.5E-12	Sun
Plasma	NFASC	O94856;B4DRH7	rs6667532	1	204948659	G	A	0.105	0.823	0.039	4.1E-100	Sun
Plasma	NID2	Q14112	rs1151582	14	52482768	T	C	0.457	-0.394	0.023	2.6E-64	Sun
Plasma	NMRAL1	Q9HBL8	rs11557236	16	4519439	A	G	0.082	-0.491	0.044	1.5E-28	Sun
Plasma	NOG	Q13253	rs79084672	17	54856140	G	A	0.012	1.237	0.115	8.7E-27	Sun
Plasma	NOV	A0A024R9J4;P48745	rs58936256	8	120422799	C	T	0.215	0.209	0.030	4.2E-12	Sun
Plasma	NPPB	P16860	rs198379	1	11915467	T	C	0.608	-0.266	0.024	1.58E-41	Yao
Plasma	NPTX1	Q15818	rs62069681	17	78624702	C	T	0.093	0.514	0.042	7.6E-35	Sun

Plasma	NPW	Q8N729	rs35327014	16	2076202	G	A	0.231	-0.427	0.029	1.6E-49	Sun
Plasma	NQO1	P15559;B4DLR8	rs77944668	16	69718112	A	G	0.193	-0.750	0.028	1.6E-154	Sun
Plasma	NRP1	O14786;Q68DN3;A8K9V7;Q59F20;Q6X907;Q6AWA9	rs2506149	10	33480713	T	C	0.358	-0.281	0.026	6.9E-28	Sun
Plasma	NRP2	O60462;Q7LBX6;Q7Z3T9;X5D2Q8;A0A024R412;A0A024R3W6	rs16837641	2	206634869	A	G	0.322	0.209	0.027	1.1E-14	Sun
Plasma	NT5C	Q8TCD5;V9HWF3	rs78625720	17	73140941	A	G	0.030	-0.753	0.072	1.2E-25	Sun
Plasma	NTN1	O95631	rs72809988	17	8986397	A	G	0.110	-0.579	0.038	1.6E-52	Sun
Plasma	NTN4	A8K3H6;B2RE43;Q9HB63	rs17288108	12	96131895	G	A	0.182	-0.278	0.032	7.2E-18	Sun
Plasma	NTNG1	Q5IEC3;Q5IEC8;Q9Y2I2;X5DNW2;B4DKF0	rs115668827	1	107678268	C	G	0.049	1.004	0.057	1.1E-70	Sun
Plasma	NUDT12	B4E1W3;E7EM93;Q9BQG2	rs74692061	5	102903643	G	A	0.157	-0.376	0.034	2.8E-28	Sun
Plasma	NUDT9	Q96KB3;Q9BW91;A0A024RDI6;Q8NG26	rs28696943	4	88310135	G	A	0.167	-0.357	0.032	2.3E-28	Sun
Plasma	OAF	Q86UD1	rs117554512	11	120098329	T	C	0.086	0.682	0.043	2.1E-56	Sun
Plasma	OAS1	P00973;F8VXY3	rs4767027	12	113359157	C	T	0.654	-0.270	0.026	6.2E-26	Sun
Plasma	OBP2B	Q9NPH6	rs4454354	9	136089529	C	T	0.786	0.358	0.030	2.7E-33	Sun
Plasma	ORM1	P02763	rs116994374	9	117084672	G	A	0.940	-0.409	0.054	2.55E-14	Yao
Plasma	OSMR	Q99650	rs357253	5	38907422	T	C	0.232	0.209	0.029	8.3E-13	Sun
Plasma	PAM	P19021;O43832	rs257309	5	102418604	G	A	0.352	-0.466	0.025	3.8E-79	Sun
Plasma	PATE4	P0C8F1	rs875500	11	125698654	A	T	0.720	-0.482	0.026	1E-75	Sun

Plasma	PCOLCE	Q15113	rs9801017	7	100236202	A	G	0.636	0.211	0.025	1E-16	Sun
Plasma	PCOLCE2	Q9UKZ9	rs34516933	3	142603861	A	T	0.356	0.422	0.025	5.4E-66	Sun
Plasma	PCSK1	P29120	rs6234	5	95728974	C	G	0.260	-1.098	0.021	1E-200	Sun
Plasma	PDCD1LG2	Q9BQ51	rs16923189	9	5510644	G	A	0.298	0.388	0.026	7.9E-51	Sun
Plasma	PDCD5	O14737	rs4499344	19	33073431	A	G	0.291	0.354	0.027	1.2E-39	Sun
Plasma	PDE5A	O76074;G5E9C5	rs4834770	4	120241849	A	G	0.434	-0.314	0.045	3.633E-12	Suhre
Plasma	PDGFD	Q9GZP0	rs7950273	11	104031598	G	C	0.288	-0.275	0.027	1.4E-24	Sun
Plasma	PDGFRB	P09619;Q59F04	rs2304058	5	149508544	G	C	0.557	0.931	0.020	1E-200	Sun
Plasma	PDIA5	Q14554	rs2278668	3	122835232	C	T	0.593	-0.522	0.023	4E-110	Sun
Plasma	PEAR1	Q5VY43	rs12137505	1	156883546	G	A	0.406	-0.223	0.025	8.1E-19	Sun
Plasma	PENK	A0A024R7V4;P01210	rs2670014	8	57376781	T	C	0.474	-0.465	0.023	1.3E-87	Sun
Plasma	PF4V1	P10720	rs941758	4	74718941	A	C	0.708	-0.494	0.025	6.6E-85	Sun
Plasma	PGLYRP1	O75594	rs8102493	19	46530389	C	T	0.333	-0.217	0.026	5.1E-17	Sun
Plasma	PGM1	B7Z6C2;P36871;B4DDQ8	rs1126728	1	64097432	T	C	0.228	0.287	0.029	2.8E-23	Sun
Plasma	PI3	P19957	rs16989763	20	43779963	C	T	0.195	0.376	0.030	1.6E-35	Sun
Plasma	PIANP	Q8IYJ0	rs11064321	12	6809896	C	G	0.397	0.226	0.027	5E-17	Sun
Plasma	PIGR	P01833	rs2007272	1	207113755	C	G	0.426	-0.205	0.025	1.4E-16	Sun
Plasma	PLA2G2A	A0A024RA96;P14555	rs11573156	1	20306146	C	G	0.232	1.021	0.024	1E-200	Sun
Plasma	PLA2R1	Q13018;B7ZML4	rs3749117	2	160885442	C	T	0.501	-0.902	0.019	1E-200	Sun
Plasma	PLAU	P00749;Q59GZ8;B4DNJ4;A0A024QZM9	rs2227551	10	75669190	T	G	0.716	-0.244	0.027	5.4E-20	Sun
Plasma	PLEKHA7	E9PKC0;Q6IQ23	rs382280	11	16857799	T	C	0.121	0.277	0.040	4.8E-12	Sun

Plasma	PLG	P00747;Q5TEH5	rs783150	6	161226939	T	C	0.114	-0.517	0.066	8.7E-15	Suhre
Plasma	PLXNB2	O15031	rs28573806	22	50727792	C	T	0.400	0.532	0.023	3.5E-116	Sun
Plasma	PLXNC1	O60486	rs115651556	12	94613898	A	G	0.014	-2.145	0.101	2.1E-100	Sun
Plasma	PLXNC1	O60486	rs7972001	12	94623502	T	C	0.034	-1.005	0.123	7.773E-16	Suhre
Plasma	POFUT1	Q9H488	rs76143353	20	30815755	T	C	0.060	-0.800	0.050	9.3E-58	Sun
Plasma	POGLUT1	Q8NBL1;B4DJ97	rs75203710	3	119121679	C	T	0.070	0.394	0.048	3.8E-16	Sun
Plasma	POMGNT2	A0A024R2P4;Q8NAT1	rs729654	3	43147652	T	C	0.473	-0.256	0.024	9.3E-27	Sun
Plasma	PPA1	Q15181;V9HWB5	rs10823500	10	72005190	G	A	0.371	0.401	0.045	1.525E-18	Suhre
Plasma	PPID	E5KN55;Q08752	rs8396	4	159630817	C	T	0.286	0.501	0.046	3.395E-26	Suhre
Plasma	PPIE	Q9UNP9;B3KSZ1	rs12086750	1	40210468	C	G	0.371	-0.383	0.025	4.8E-53	Sun
Plasma	PPIL1	A0A024RCX8;Q9Y3C6	rs12194408	6	36839598	G	C	0.030	-1.106	0.071	1.9E-55	Sun
Plasma	PPP3CA;PPP3R1	A0A0S2Z4C6;Q08209;A0A0S2Z4B5;P63098	rs17266357	4	102721809	C	T	0.310	0.368	0.045	8.67E-16	Suhre
Plasma	PPT1	P50897	rs7533094	1	40559686	A	G	0.042	-0.862	0.060	2.3E-46	Sun
Plasma	PRCP	B7Z7Q6;P42785;A0A024R5L0	rs2229437	11	82564294	G	T	0.181	0.291	0.032	2.8E-20	Sun
Plasma	PRSS22	Q9GZN4	rs3810801	16	2892370	A	C	0.333	0.307	0.026	3.7E-33	Sun
Plasma	PRTN3	P24158	rs10425544	19	836043	C	T	0.713	0.599	0.027	8.3E-110	Sun
Plasma	PSAPL1	Q6NUJ1	rs10023470	4	7434456	G	A	0.184	0.548	0.031	2.6E-71	Sun
Plasma	PSG3	Q16557	rs2355433	19	43679088	G	A	0.548	-0.652	0.024	1.6E-163	Sun
Plasma	PSG4	B3KQL2;Q96QL5;Q6P520;Q00888	rs1138888	19	43696022	A	T	0.624	-0.666	0.025	5.4E-163	Sun

Plasma	PTGDS	A0A024R8G3;P41222	rs7019538	9	139861470	C	T	0.524	0.198	0.025	7.8E-16	Sun
Plasma	PTGFRN	Q9P2B2	rs4233450	1	117490261	T	G	0.829	1.001	0.028	1E-200	Sun
Plasma	PTHLH	P12272;Q53XY9;A0A024RB29	rs10843115	12	28307717	T	C	0.271	0.186	0.028	1.4E-11	Sun
Plasma	PTN	A0A024R778;P21246	rs1431093	7	137016297	A	C	0.419	0.220	0.025	7.9E-19	Sun
Plasma	QDPR	A0A140VKA9;P09417	rs28719835	4	17520066	T	C	0.243	-0.567	0.028	1E-94	Sun
Plasma	QPCTL	Q9NXS2	rs17850756	19	46206262	A	G	0.328	-0.288	0.026	1.6E-28	Sun
Plasma	QSOX1	A0A140VKE5;O00391;Q13876	rs12371	1	180163390	G	A	0.089	0.700	0.043	1.3E-60	Sun
Plasma	QSOX2	Q6ZRP7	rs10858248	9	139108324	G	A	0.502	-0.357	0.024	1.5E-50	Sun
Plasma	RARRES1	P49788	rs61696028	3	158455703	C	A	0.146	1.337	0.027	1E-200	Sun
Plasma	RARRES2	A0A090N7U9;Q99969	rs9640161	7	150045910	A	C	0.371	0.347	0.042	3.049E-16	Suhre
Plasma	REG1A	A8K7G6;P05451	rs11126696	2	79323888	G	A	0.612	0.265	0.021	2.18E-40	Yao
Plasma	REG4	A0A024R0M1;Q9BYZ8	rs79795228	1	120359286	A	C	0.015	0.794	0.100	1.4E-15	Sun
Plasma	RELT	A0A024R5N3;Q969Z4	rs7952686	11	73128503	T	C	0.204	0.413	0.029	3.1E-45	Sun
Plasma	RET	P07949;Q9BTX6;A0A024R7T2	rs2795507	10	43352894	C	T	0.796	-0.277	0.031	1.1E-19	Sun
Plasma	RETN	Q9HD89	rs34124816	19	7733676	C	A	0.038	-0.608	0.065	4.4E-21	Sun
Plasma	RFESD	Q8TAC1;A0A024RAR3	rs77881626	5	95017852	G	T	0.048	-0.597	0.057	2.1E-25	Sun
Plasma	RGMA	A0A0A0MTQ4;Q96B86	rs3752102	15	93616014	A	C	0.473	-0.201	0.025	2.5E-16	Sun
Plasma	RGMB	J3KNF6;Q6NW40	rs1563317	5	97768486	G	A	0.553	0.216	0.025	1.2E-18	Sun
Plasma	RIDA	A0A024R9H2;P52758	rs1462977	8	99115359	G	A	0.323	-0.339	0.026	2.2E-39	Sun

Plasma	RMDN1	Q6N086;Q96DB5;E5RH53	rs11781016	8	87529297	C	A	0.489	0.317	0.024	8.3E-39	Sun
Plasma	RNASE1	P07998;W0UV93	rs17254387	14	21280678	A	G	0.688	0.230	0.027	3E-17	Sun
Plasma	RNASE2	P10153;W0UV60	rs56204594	14	21433367	C	A	0.464	0.237	0.024	3.2E-22	Sun
Plasma	RNASE4	P34096;Q53XB4	rs12588573	14	21146584	T	C	0.224	-0.449	0.029	8.9E-54	Sun
Plasma	RNASE6	Q6IB39;Q93091	rs11622942	14	21250846	T	G	0.233	0.997	0.024	1E-200	Sun
Plasma	ROR1	Q01973	rs1408416	1	64614495	T	G	0.162	-0.440	0.033	1.8E-40	Sun
Plasma	RPN1	P04843	rs2712417	3	128345179	G	A	0.618	-0.345	0.025	3.1E-44	Sun
Plasma	RRM2B	Q7LG56	rs74589258	8	103215228	G	A	0.070	0.325	0.048	1.1E-11	Sun
Plasma	RSPO3	Q9BXY4	rs2489623	6	127455821	C	A	0.535	0.270	0.025	3.6E-28	Sun
Plasma	RTN4R	Q9BZR6	rs75766	22	20174853	A	C	0.748	-0.350	0.028	4.8E-35	Sun
Plasma	S100A4	P26447	rs58056804	1	153524706	A	G	0.050	0.505	0.057	4.5E-19	Sun
Plasma	SCARF1	A8K6Z5;Q14162	rs8071756	17	1574342	G	A	0.224	0.590	0.049	9.358E-31	Suhre
Plasma	SCARF2	A0A096LNX8;Q96GP6	rs738086	22	20775556	T	G	0.811	0.300	0.032	4.8E-21	Sun
Plasma	SCG3	Q8WXD2	rs1378892	15	51964865	C	T	0.764	0.486	0.028	1E-68	Sun
Plasma	SECTM1	Q8WVN6	rs4789763	17	80289284	G	A	0.493	0.281	0.025	3.8E-30	Sun
Plasma	SELL	A0A024R8Z0;P14151	rs4987358	1	169665551	T	G	0.274	-0.517	0.026	6.8E-87	Sun
Plasma	SELP	A0A024R8Y9;P16109;Q6NUL9;Q5R341	rs6136	1	169563951	G	T	0.108	-0.807	0.037	3E-105	Sun
Plasma	SEMA3C	B4E2I9;Q99985	rs1019016	7	80570562	T	G	0.581	0.175	0.025	1.6E-12	Sun
Plasma	SEMA3E	O15041	rs3757607	7	83034362	C	G	0.122	-1.120	0.032	1E-200	Sun
Plasma	SEMA3G	Q9NS98	rs2016575	3	52477080	C	T	0.816	-0.269	0.032	1.9E-17	Sun
Plasma	SEMA5A	Q13591;X5DR95	rs17329170	5	9547242	A	G	0.101	1.432	0.032	1E-200	Sun

Plasma	SERPINA1	E9KL23;P01009	rs2749534	14	94809760	G	A	0.201	0.427	0.054	5.551E-15	Suhre
Plasma	SERPINA3	A0A024R6P0;P01011	rs6575449	14	95097303	T	C	0.186	-0.432	0.054	1.903E-15	Suhre
Plasma	SERPINA4	P29622;A0A024R6I9	rs10135681	14	95007744	C	T	0.395	0.277	0.042	8.416E-11	Suhre
Plasma	SERPINA4	P29622;A0A024R6I9	rs10139745	14	95035374	A	G	0.221	0.617	0.028	4.9E-110	Sun
Plasma	SERPINE2	A0A024R498;P07093;A0A024R451	rs68066031	2	224880498	C	T	0.258	-0.426	0.030	1.1E-46	Sun
Plasma	SERPINF1	A0A140VKF3;P36955	rs62088172	17	1666253	T	C	0.345	-0.445	0.025	1.8E-70	Sun
Plasma	SERPINF2	P08697	rs11657394	17	1636950	A	C	0.077	-0.346	0.048	5.4E-13	Sun
Plasma	SIGLEC12	Q96PQ1	rs3826667	19	52004074	T	C	0.835	-1.127	0.028	1E-200	Sun
Plasma	SIGLEC14	Q08ET2	rs1106476	19	52130637	A	T	0.117	-1.192	0.032	1E-200	Sun
Plasma	SIGLEC6	O43699;A0A024R4K4	rs2124910	19	52025247	T	C	0.407	0.653	0.043	2.748E-46	Suhre
Plasma	SIGLEC7	Q9Y286	rs140185670	19	51646140	C	G	0.080	-0.609	0.048	1.7E-36	Sun
Plasma	SIGLEC9	Q9Y336	rs2075803	19	51628529	G	A	0.551	-1.226	0.012	1E-200	Sun
Plasma	SIRPA	P78324	rs6136377	20	1896288	G	A	0.369	-1.211	0.015	1E-200	Sun
Plasma	SIRPB1	O00241;Q5TFQ8;H9KV29	rs3848788	20	1543066	A	G	0.305	0.745	0.024	1E-200	Sun
Plasma	SIRPG	Q9P1W8	rs6043409	20	1616206	G	A	0.652	0.263	0.026	8.1E-24	Sun
Plasma	SLAMF7	Q9NQ25;B4DVL7;B4DW98	rs11581248	1	160720074	T	C	0.142	-1.260	0.030	1E-200	Sun
Plasma	SMOC1	Q9H4F8;A0A024R6E0	rs1958078	14	70354858	C	A	0.834	0.377	0.033	1.8E-30	Sun
Plasma	SNCA	P37840;H6UYS5	rs2245801	4	90757840	C	T	0.788	-0.251	0.030	1.2E-16	Sun
Plasma	SPARCL1	A0A024RDE1;Q14515;B7ZB68;Q8N4S1	rs7681694	4	88462729	A	G	0.337	0.532	0.024	2.7E-105	Sun

Plasma	SPARCL1	A0A024RDE1;Q14515;B7ZB68;Q8N4S1	rs1462372	4	88478750	C	T	0.327	0.321	0.046	6.309E-12	Suhre
Plasma	SPATA20	Q8TB22	rs9890200	17	48624523	C	A	0.376	-0.253	0.025	8.7E-24	Sun
Plasma	SPINK2	D6RI10;D6RC51;P20155;A0A087WTA9;A0A024RD95	rs11941335	4	57689460	T	C	0.021	1.000	0.083	2.2E-33	Sun
Plasma	SPINK6	Q6UWN8	rs1432688	5	147603178	G	A	0.924	1.058	0.043	7.6E-135	Sun
Plasma	SPINT2	A0A140VJV6;O43291	rs71354995	19	38791841	G	A	0.243	-0.991	0.023	1E-200	Sun
Plasma	SPINT3	P49223	rs6017591	20	44141041	C	T	0.541	0.543	0.023	6E-127	Sun
Plasma	SPOCK2	Q92563;A0A024QZQ5	rs1245540	10	73849752	T	C	0.449	0.218	0.024	3.3E-19	Sun
Plasma	SPOCK3	Q9BQ16;A0A0A0MTJ2;B4DI52	rs17599599	4	167961738	A	G	0.028	0.848	0.077	1.5E-28	Sun
Plasma	SPON1	Q9HCB6	rs10832169	11	14066486	A	G	0.491	0.375	0.024	1.3E-55	Sun
Plasma	ST3GAL1	A0A024R9L6;Q11201	rs9643300	8	134503148	T	C	0.563	-0.257	0.025	1.4E-25	Sun
Plasma	ST3GAL6	A0A087WXB8;Q9Y274	rs72934623	3	98509705	A	G	0.053	-1.878	0.045	1E-200	Sun
Plasma	SVEP1	B3KQM1;Q4LDE5;Q5JB40	rs61751937	9	113312231	C	G	0.030	1.185	0.070	5.2E-64	Sun
Plasma	SWAP70	B3KUB9;E7EMB1;Q9UH65	rs415895	11	9769562	G	C	0.650	-0.266	0.026	3.5E-25	Sun
Plasma	TAPBPL	Q9BX59	rs2532497	12	6564210	A	G	0.274	1.258	0.016	1E-200	Sun
Plasma	TCN1	P20061	rs34528912	11	59631535	T	C	0.042	-0.711	0.062	4.6E-30	Sun
Plasma	TCN2	P20062	rs4820885	22	31012756	C	T	0.549	-0.725	0.021	1E-200	Sun
Plasma	TEK	Q02763;Q59HG2	rs35030851	9	27197486	T	G	0.047	0.557	0.057	1.4E-22	Sun
Plasma	TEPSIN	Q96N21;A0A1B0GV70	rs61745945	17	79205421	A	G	0.016	-0.877	0.099	5.9E-19	Sun
Plasma	TFF1	P04155	rs3761376	21	43787038	A	G	0.242	-0.220	0.029	3.9E-14	Sun

Plasma	TGFBI	A0A0S2Z4Q2; Q15582	rs13159365	5	135389433	T	C	0.507	-0.446	0.024	5E-78	Sun
Plasma	THBS2	P35442	rs73043857	6	169624900	G	A	0.102	0.808	0.038	6.9E-99	Sun
Plasma	THSD1	A0A024R064;B3KTY7;Q9NS62	rs41292808	13	52971517	T	C	0.027	0.906	0.076	5.5E-33	Sun
Plasma	TIE1	B4DTW8;P35590	rs2275180	1	43773033	G	A	0.623	0.254	0.025	4.8E-24	Sun
Plasma	TIMP3	P35625	rs2097326	22	33165020	G	A	0.279	0.931	0.040	4.424E-97	Suhre
Plasma	TIMP4	Q99727	rs454615	3	12077010	C	T	0.831	0.490	0.032	1.7E-53	Sun
Plasma	TIRAP	A0A024R3M4; P58753	rs111577916	11	126071349	T	G	0.025	-0.571	0.077	1.6E-13	Sun
Plasma	TLR4;LY96	O00206;Q9Y6Y9	rs4986790	9	120475302	G	A	0.056	-0.902	0.051	2.8E-70	Sun
Plasma	TMEM132A	Q24JP5	rs11230521	11	60698732	A	G	0.231	0.618	0.027	2E-112	Sun
Plasma	TMEM132C	Q8N3T6	rs11059617	12	128757909	T	A	0.335	-0.225	0.026	2.2E-18	Sun
Plasma	TMEM190	Q8WZ59	rs4806666	19	55888095	T	C	0.438	-0.997	0.018	1E-200	Sun
Plasma	TNFAIP6	P98066	rs289828	2	152137181	T	C	0.622	-0.548	0.024	5.5E-118	Sun
Plasma	TNFRSF11A	Q9Y6Q6	rs884205	18	60054857	C	A	0.756	-0.224	0.029	2E-14	Sun
Plasma	TNFRSF6B	O95407	rs62217798	20	62347189	T	G	0.784	-0.224	0.032	1.4E-12	Sun
Plasma	TNFSF12;TNFSF12-TNFSF13	O43508;Q4ACW9;A0A0A6YY99	rs12941509	17	7448288	G	C	0.279	0.393	0.027	2.2E-49	Sun
Plasma	TPSAB1;TPSB2	P20231;Q15661;A0A140VJT7	rs4984778	16	1297516	C	G	0.285	0.517	0.046	2.678E-27	Suhre
Plasma	TPST1	A0A024RDK9; O60507	rs313829	7	65552497	G	A	0.689	0.231	0.026	1.1E-18	Sun
Plasma	TPST2	A0A024R1G9; O60704	rs2283824	22	26924456	A	G	0.417	0.243	0.025	6E-23	Sun
Plasma	TREML2	Q5T2D2	rs61998254	6	41166151	G	A	0.127	0.693	0.035	5E-86	Sun

Plasma	UCMA	A0A067XJP8; Q8WVF2;A0A 067XKV3;A0A 067XJX6	rs2093847	10	13276534	T	C	0.107	-0.586	0.038	3.1E-53	Sun
Plasma	UNC5C	A8K385;O9518 5	rs57091121	4	96444053	T	A	0.337	0.269	0.026	1.9E-25	Sun
Plasma	UROS	A0A0S2Z4T8;P 10746;A0A0S2 Z5C5;Q5T3L8	rs10794029	10	127561568	G	A	0.794	-0.233	0.031	7.6E-14	Sun
Plasma	VEGFA	P15692;A0A02 4RD33;A0A02 4RD37;A0A0Y 0IMM4;A2A2V 4	rs6921438	6	43925607	A	G	0.497	-0.702	0.022	1E-200	Sun
Plasma	VEGFC	P49767	rs41278571	4	177650866	T	C	0.010	1.742	0.122	1.3E-46	Sun
Plasma	VIT	Q6UXI7	rs10490666	2	36932493	T	A	0.304	0.347	0.026	1.9E-39	Sun
Plasma	VSIR	Q9H7M9	rs10762477	10	73531069	G	A	0.148	0.271	0.035	1.7E-14	Sun
Plasma	WFIKKN2	C9J6G4;Q8TE U8	rs7225465	17	48916159	A	G	0.682	-0.653	0.024	9.3E-166	Sun
Plasma	WISP1	O95388	rs35472615	8	134197537	A	G	0.274	0.511	0.026	1.7E-84	Sun
Plasma	XCL1	P47992	rs4656599	1	168503386	T	C	0.190	0.430	0.031	2E-43	Sun
Plasma	ACE	P12821	rs4344	17	61566724	A	G	0.499	-0.583	0.022	8.5E-136	Emilsson
Plasma	ACHE	P22303	rs4727469	7	100509163	C	T	0.524	-0.297	0.023	7.5E-37	Emilsson
Plasma	ACP6	Q9NPH0	rs2153463	1	147124310	G	T	0.739	0.944	0.022	1E-200	Emilsson
Plasma	ADAM12	O43184	rs10794057	10	127729734	T	C	0.398	-0.209	0.025	1.2E-16	Emilsson
Plasma	ADAM19	Q9H013	rs7728609	5	156935524	C	T	0.675	0.246	0.026	1.2E-21	Emilsson
Plasma	ADAM22	Q9P0K1	rs6966166	7	87455155	T	C	0.478	-0.177	0.026	9.8E-12	Emilsson
Plasma	ADH4	P08319	rs1800759	4	100065509	G	T	0.622	0.157	0.025	4.1E-10	Emilsson
Plasma	ADH5	P11766	rs1453873	4	100022571	C	T	0.742	-0.284	0.027	2.5E-25	Emilsson

Plasma	ADH7	P40394	rs17529509	4	100351436	C	A	0.927	0.401	0.048	8E-17	Emilsson
Plasma	ADIPOQ	Q15848	rs143257534	3	186551888	C	T	0.974	0.425	0.072	3.3E-09	Emilsson
Plasma	AFP	P02771	rs6829551	4	74173715	T	C	0.812	0.187	0.031	2.4E-09	Emilsson
Plasma	AKR7A2	O43488	rs144376466	1	19600538	C	T	0.912	0.436	0.042	1.9E-24	Emilsson
Plasma	ALPG	P10696	rs10933394	2	233249080	T	C	0.642	-0.192	0.026	1E-13	Emilsson
Plasma	ALPP	NA	rs12478529	2	233286654	C	T	0.778	-0.354	0.028	2.5E-35	Emilsson
Plasma	AMY2B	P19961	rs17014913	1	104105635	A	G	0.839	0.433	0.034	3.2E-36	Emilsson
Plasma	AOC1	P19801	rs10452848	7	150523544	A	G	0.498	-0.765	0.021	1E-200	Emilsson
Plasma	AP1G2	O75843	rs12897422	14	24033027	G	A	0.858	0.268	0.035	1.3E-14	Emilsson
Plasma	APOA1	P02647	rs75507001	11	116577694	C	A	0.957	0.550	0.061	1.7E-19	Emilsson
Plasma	APOBEC3G	Q9HC16	rs738469	22	39510995	A	G	0.903	0.245	0.042	4.5E-09	Emilsson
Plasma	APOF	Q13790	rs808919	12	56647911	C	G	0.903	0.321	0.040	6.9E-16	Emilsson
Plasma	APOH	P02749	rs1801690	17	64208285	C	G	0.943	0.552	0.053	6.5E-25	Emilsson
Plasma	ARHGAP1	Q07960	rs5899	11	46747662	C	T	0.989	0.835	0.111	8.4E-14	Emilsson
Plasma	ASIP	P42127	rs62212171	20	32987687	T	C	0.890	-0.814	0.037	9.6E-98	Emilsson
Plasma	AZU1	P20160	rs351976	19	806673	T	C	0.709	0.216	0.027	1.5E-15	Emilsson
Plasma	B3GALT6	Q96L58	rs3766186	1	1162435	C	A	0.899	0.271	0.041	6.5E-11	Emilsson
Plasma	B3GLCT	Q6Y288	rs9544399	13	31885907	A	G	0.791	0.278	0.031	1.6E-19	Emilsson
Plasma	B3GNT8	Q7Z7M8	rs284663	19	41932612	T	C	0.560	0.744	0.021	1E-200	Emilsson
Plasma	B4GALT6	Q9UBX8	rs113222817	18	29216314	T	G	0.965	1.143	0.063	8.1E-71	Emilsson
Plasma	BCAN	Q96GW7	rs7541549	1	156588439	T	C	0.767	0.201	0.029	5.6E-12	Emilsson

Plasma	BOC	Q9BWV1	rs73235147	3	112973955	A	T	0.833	-0.241	0.032	1.1E-13	Emilsson
Plasma	BPIFA2	Q96DR5	rs141715080	20	31742114	C	T	0.973	0.429	0.076	0.00000002	Emilsson
Plasma	BTD	P43251	rs13100619	3	15549967	A	C	0.962	1.431	0.058	4.4E-122	Emilsson
Plasma	BTNL8	Q6UX41	rs7721375	5	180439650	C	T	0.507	0.273	0.024	1.4E-28	Emilsson
Plasma	C1QL1	O75973	rs9915692	17	43034207	A	G	0.463	-0.279	0.023	3.4E-32	Emilsson
Plasma	C1QTNF3	Q9BXJ4	rs840390	5	34018623	G	A	0.868	0.203	0.037	0.000000028	Emilsson
Plasma	C1RL	Q9NZP8	rs6488561	12	7246894	G	A	0.695	0.270	0.027	5.6E-24	Emilsson
Plasma	C3	P01024	rs163494	19	6724340	C	T	0.805	0.264	0.031	3.4E-17	Emilsson
Plasma	C4BPA	P04003	rs11120218	1	207278451	G	A	0.889	-0.429	0.038	1.5E-28	Emilsson
Plasma	C5	P01031	rs1035029	9	123742818	A	G	0.611	0.182	0.025	2.1E-13	Emilsson
Plasma	C9	P02748	rs265721	5	39354069	G	A	0.959	-0.375	0.060	5.9E-10	Emilsson
Plasma	CA1	P00915	rs2453868	8	86302696	T	C	0.582	-0.147	0.025	2.2E-09	Emilsson
Plasma	CA8	P35219	rs7009482	8	61195053	G	A	0.589	-0.188	0.025	5.9E-14	Emilsson
Plasma	CALCOCO2	Q13137	rs550510	17	46926615	G	A	0.843	0.190	0.033	0.00000001	Emilsson
Plasma	CAPG	P40121	rs143448563	2	85610023	A	G	0.983	1.400	0.094	1E-48	Emilsson
Plasma	CCL27	Q9Y4X3	rs2070074	9	34649442	A	G	0.907	0.321	0.041	1E-14	Emilsson
Plasma	CCL4L1	Q8NHW4	rs2687507	17	34433964	C	T	0.747	-0.239	0.029	1.5E-16	Emilsson
Plasma	CD274	Q9NZQ7	rs1411262	9	5459419	C	T	0.736	0.310	0.027	1.7E-29	Emilsson
Plasma	CD300A	Q9UGN4	rs2272111	17	72469966	G	A	0.788	0.435	0.028	1.2E-52	Emilsson
Plasma	CD300E	Q496F6	rs8081669	17	72614611	G	A	0.551	0.270	0.025	4.2E-27	Emilsson
Plasma	CD7	P09564	rs116473040	17	80291652	A	G	0.955	0.962	0.057	1.3E-61	Emilsson

Plasma	CD8A	P01732	rs111976570	2	87014112	A	C	0.810	-0.567	0.031	7.3E-73	Emilsson
Plasma	CDCP1	Q9H5V8	rs7621542	3	45206484	C	T	0.800	0.180	0.031	5.9E-09	Emilsson
Plasma	CDH11	P55287	rs59614634	16	65029943	A	T	0.890	0.803	0.036	3.4E-101	Emilsson
Plasma	CFHR1	Q03591	rs57809726	1	196841377	A	G	0.862	1.295	0.027	1E-200	Emilsson
Plasma	CFHR4	Q92496	rs4915559	1	196886770	T	C	0.753	0.655	0.026	1.7E-131	Emilsson
Plasma	CHST12	Q9NRB3	rs2969076	7	2473747	A	G	0.872	-0.235	0.036	7.3E-11	Emilsson
Plasma	CLEC11A	Q9Y240	rs13866	19	51228746	C	T	0.691	0.154	0.026	0.000000004	Emilsson
Plasma	CLEC1B	Q9P126	rs544605	12	10146707	T	C	0.781	-0.504	0.028	4.8E-70	Emilsson
Plasma	CLEC4C	Q8WTT0	rs11055602	12	7904111	T	G	0.567	-0.950	0.019	1E-200	Emilsson
Plasma	CLN5	O75503	rs7996555	13	77562492	C	T	0.946	0.350	0.055	1.5E-10	Emilsson
Plasma	CNP	P09543	rs12602950	17	40123829	A	G	0.704	0.187	0.027	3.8E-12	Emilsson
Plasma	CPQ	Q9Y646	rs145746079	8	97832518	T	C	0.972	1.192	0.073	7.1E-58	Emilsson
Plasma	CRHBP	P24387	rs6414971	5	76170674	T	A	0.741	-0.511	0.026	2.9E-79	Emilsson
Plasma	CRLF1	O75462	rs2238647	19	18710535	G	A	0.778	-0.286	0.029	1.4E-22	Emilsson
Plasma	CROT	Q9UKG9	rs77463367	7	87006034	C	G	0.930	0.348	0.047	1.6E-13	Emilsson
Plasma	CRTAC1	Q9NQ79	rs588061	10	99642731	C	T	0.529	0.346	0.024	8.6E-47	Emilsson
Plasma	CRTAM	O95727	rs2370794	11	122714782	A	G	0.668	-0.236	0.026	5.8E-20	Emilsson
Plasma	CRYZ	Q08257	rs3819946	1	75175886	T	C	0.861	-1.175	0.029	1E-200	Emilsson
Plasma	CST4	P01036	rs7270028	20	23681073	C	A	0.896	0.465	0.039	1.8E-31	Emilsson
Plasma	CTGF	P29279	rs9388953	6	132297509	G	A	0.789	0.353	0.030	8.7E-32	Emilsson
Plasma	CTSC	P53634	rs55897509	11	88066714	A	C	0.918	-0.926	0.041	2.3E-107	Emilsson

Plasma	CXCL10	P02778	rs4859589	4	76948299	G	A	0.505	0.133	0.024	0.00000005	Emilsson
Plasma	CYB5D2	Q8WUJ1	rs77246175	17	4072761	G	C	0.921	-0.342	0.046	2E-13	Emilsson
Plasma	CYTL1	Q9NRR1	rs62291616	4	5052063	T	C	0.814	-0.354	0.029	1.2E-32	Emilsson
Plasma	DEFA1	P59665	rs4284061	8	6878257	A	T	0.431	0.171	0.024	3.3E-12	Emilsson
Plasma	DKK 2	Q9UBU2	rs77571736	4	107864984	G	C	0.954	0.945	0.047	2.2E-83	Emilsson
Plasma	DNER	Q8NFT8	rs35032874	2	230309360	T	G	0.741	0.162	0.029	0.000000017	Emilsson
Plasma	DPEP1	P16444	rs423135	16	89740873	G	A	0.429	-0.313	0.024	5.5E-39	Emilsson
Plasma	DUT	P33316	rs117540572	15	48670241	G	A	0.939	-0.339	0.050	2.1E-11	Emilsson
Plasma	DYNLL2	Q96FJ2	rs35729384	17	56178900	C	T	0.698	0.161	0.025	2.9E-10	Emilsson
Plasma	EBI3	Q14213	rs10409421	19	4254752	A	G	0.716	1.049	0.019	1E-200	Emilsson
Plasma	ECH1	Q13011	rs4802890	19	39304402	G	A	0.920	-0.533	0.044	2.2E-33	Emilsson
Plasma	ENDOU	P21128	rs2072117	12	48131728	G	A	0.711	-0.163	0.026	3.8E-10	Emilsson
Plasma	EPHA2	P29317	rs28629977	1	16497272	C	G	0.564	-0.148	0.023	2E-10	Emilsson
Plasma	EPHB6	O15197	rs7789303	7	142552547	A	G	0.725	0.239	0.026	6.3E-20	Emilsson
Plasma	F13B	P05160	rs12116643	1	196973183	T	C	0.863	0.547	0.033	1.2E-60	Emilsson
Plasma	FBLN1	P23142	rs67136035	22	45813433	T	D	0.541	0.132	0.024	0.00000005	Emilsson
Plasma	FCN3	O75636	rs2474283	1	27716213	T	C	0.933	0.716	0.048	1.1E-48	Emilsson
Plasma	FGFBP3	Q8TAT2	rs11186737	10	93666349	C	T	0.746	0.302	0.027	5.9E-28	Emilsson
Plasma	FGFR3	P22607	rs2403274	4	1754515	C	G	0.752	0.177	0.029	6.7E-10	Emilsson
Plasma	FGL1	Q08830	rs7815429	8	17737357	T	C	0.313	-0.446	0.025	3.3E-70	Emilsson
Plasma	FKBP7	Q9Y680	rs10930831	2	179303976	G	C	0.768	-0.365	0.027	2E-39	Emilsson

Plasma	FMOD	Q06828	rs4971253	1	203321414	G	A	0.921	0.250	0.045	0.000000027	Emilsson
Plasma	FTCD	O95954	rs149024257	21	47686213	G	A	0.938	-0.287	0.051	0.000000019	Emilsson
Plasma	GAA	P10253	rs12450199	17	78076592	A	C	0.647	0.369	0.025	1.4E-48	Emilsson
Plasma	GALNT16	Q8N428	rs12100668	14	69793475	G	A	0.408	-0.194	0.025	4.4E-15	Emilsson
Plasma	GDI2	P50395	rs2890364	10	5833748	G	A	0.774	0.219	0.029	9.1E-14	Emilsson
Plasma	GKN2	Q86XP6	rs13008230	2	69154583	T	G	0.973	0.942	0.076	2.7E-34	Emilsson
Plasma	GLO1	Q04760	rs12209477	6	38669799	C	G	0.660	0.168	0.026	7.1E-11	Emilsson
Plasma	GNMT	Q14749	rs9471987	6	42944140	A	G	0.402	0.400	0.024	2.4E-61	Emilsson
Plasma	GNPTG	Q9UJJ9	rs4984820	16	1407809	C	T	0.923	-0.344	0.046	8E-14	Emilsson
Plasma	GSN	P06396	rs76331566	9	124009014	C	T	0.969	0.398	0.068	0.000000005	Emilsson
Plasma	GSTM3	P21266	rs115929572	1	110246053	G	A	0.935	-0.249	0.032	3.4E-15	Emilsson
Plasma	HDGF	P51858	rs4399146	1	156713558	G	A	0.717	0.269	0.027	3.2E-23	Emilsson
Plasma	HIBCH	Q6NVY1	rs291447	2	191177005	A	C	0.393	-0.631	0.023	2.9E-152	Emilsson
Plasma	HPSE	Q9Y251	rs11732810	4	84230878	G	T	0.773	0.541	0.028	7.7E-78	Emilsson
Plasma	HSD17B14	Q9BPX1	rs473464	19	49334248	T	C	0.498	0.145	0.026	0.000000027	Emilsson
Plasma	IFNLR1	Q8IU57	rs12046369	1	24526135	G	T	0.853	0.244	0.035	3.3E-12	Emilsson
Plasma	IGDCC4	Q8TDY8	rs8034057	15	65789430	G	A	0.905	0.344	0.042	3.5E-16	Emilsson
Plasma	IGFBP5	P24593	rs139739387	2	217402489	A	G	0.984	0.608	0.098	7E-10	Emilsson
Plasma	IL10RB	Q08334	rs2834167	21	34640788	A	G	0.732	0.160	0.028	0.000000011	Emilsson
Plasma	IL1R1	P14778	rs7588201	2	102746276	A	C	0.722	0.163	0.026	2.6E-10	Emilsson
Plasma	IL7	P13232	rs72666886	8	79728782	C	T	0.903	0.340	0.042	5.3E-16	Emilsson

Plasma	IMPAD1	Q9NX62	rs112433249	8	57876576	T	C	0.992	1.685	0.136	1.7E-34	Emilsson
Plasma	INPP5B	P32019	rs61778082	1	38306356	T	C	0.865	0.547	0.034	2.1E-55	Emilsson
Plasma	ITIH2	P19823	rs73621225	10	7740905	T	A	0.933	-1.181	0.044	1.4E-142	Emilsson
Plasma	JAM3	Q9BX67	rs655627	11	134021859	A	G	0.566	0.184	0.024	4.1E-14	Emilsson
Plasma	KIAA1549L	Q6ZVL6	rs12792396	11	33417110	G	A	0.381	0.439	0.025	7.1E-68	Emilsson
Plasma	KIAA2013	Q8IYS2	rs11588551	1	11941936	T	C	0.418	0.178	0.025	2E-12	Emilsson
Plasma	KLK10	O43240	rs2569454	19	51523203	C	T	0.641	0.405	0.026	4.5E-54	Emilsson
Plasma	KLK13	Q9UKR3	rs3760739	19	51538561	G	T	0.659	0.388	0.025	3.9E-54	Emilsson
Plasma	KLRB1	Q12918	rs3933456	12	9753788	C	A	0.625	0.213	0.026	2.1E-16	Emilsson
Plasma	LAG3	P18627	rs3782735	12	6885076	A	G	0.607	0.154	0.025	4.3E-10	Emilsson
Plasma	LANCL1	O43813	rs187097936	2	211362949	C	G	0.985	0.781	0.103	3.7E-14	Emilsson
Plasma	LBP	P18428	rs73112473	20	37006729	C	T	0.922	1.009	0.043	2.4E-112	Emilsson
Plasma	LEAP2	Q969E1	rs57880964	5	132210674	G	C	0.838	-0.300	0.033	4.1E-19	Emilsson
Plasma	LECT2	O14960	rs248160	5	135293512	T	C	0.670	-0.312	0.026	3.7E-33	Emilsson
Plasma	LGALS3BP	Q08380	rs4789847	17	77004644	A	G	0.829	-0.196	0.033	3.9E-09	Emilsson
Plasma	LGALS4	P56470	rs55945853	19	39230046	G	A	0.510	0.181	0.024	7.7E-14	Emilsson
Plasma	LGALS9	O00182	rs62055780	17	25971795	T	C	0.753	0.203	0.030	7.9E-12	Emilsson
Plasma	LGMN	Q99538	rs7140705	14	93224207	T	G	0.913	-0.268	0.045	3.6E-09	Emilsson
Plasma	LILRA3	Q8N6C8	rs398217	19	54793038	A	G	0.773	1.243	0.020	1E-200	Emilsson
Plasma	LRP11	Q86VZ4	rs9371533	6	150210681	A	G	0.376	0.825	0.021	1E-200	Emilsson
Plasma	LRP12	Q9Y561	rs72679151	8	105627117	C	T	0.796	-0.211	0.030	2.6E-12	Emilsson

Plasma	LRP8	Q14114	rs10218811	1	53805882	A	G	0.725	0.166	0.027	9.8E-10	Emilsson
Plasma	LRRC4C	Q9HCJ2	rs998447	11	40310789	A	C	0.538	-0.137	0.024	0.000000022	Emilsson
Plasma	LSAMP	Q13449	rs17646258	3	116038249	C	T	0.829	0.222	0.031	1.5E-12	Emilsson
Plasma	LYVE1	Q9Y5Y7	rs114527818	11	10619041	T	A	0.951	-0.369	0.055	3.3E-11	Emilsson
Plasma	MAN1A2	O60476	rs1289863	1	117854689	C	T	0.692	0.210	0.026	1.5E-15	Emilsson
Plasma	MAN1C1	Q9NR34	rs3767879	1	26070909	C	T	0.465	0.172	0.023	9.3E-14	Emilsson
Plasma	MANF	P55145	rs1552074	3	51408051	T	C	0.859	0.391	0.035	2.6E-28	Emilsson
Plasma	MENT	Q9BUN1	rs12759273	1	151045024	C	A	0.988	0.669	0.116	8.6E-09	Emilsson
Plasma	METTL24	Q5JXM2	rs12189608	6	110573292	A	T	0.956	0.378	0.061	7.4E-10	Emilsson
Plasma	NCAM2	O15394	rs2826851	21	22835946	A	G	0.733	-0.370	0.027	1.7E-42	Emilsson
Plasma	NCR1	O76036	rs143981324	19	55419632	T	C	0.904	0.362	0.042	1.3E-17	Emilsson
Plasma	NEGR1	Q7Z3B1	rs2220253	1	72565460	T	C	0.545	0.148	0.024	1.2E-09	Emilsson
Plasma	NLGN2	Q8NFZ4	rs150452493	17	7303808	C	T	0.900	0.252	0.040	4.9E-10	Emilsson
Plasma	NMB	P08949	rs12912342	15	85248216	T	C	0.661	0.164	0.025	7.6E-11	Emilsson
Plasma	NPNT	Q6UXI9	rs78213340	4	106819613	T	C	0.930	0.314	0.049	1.7E-10	Emilsson
Plasma	NPTXR	O95502	rs12628473	22	39240717	A	G	0.987	-1.013	0.107	4.6E-21	Emilsson
Plasma	NQO2	P16083	rs138616686	6	3003970	A	G	0.626	0.435	0.025	3.8E-64	Emilsson
Plasma	NTM	Q9P121	rs2511504	11	131196396	T	C	0.588	-0.381	0.023	1.7E-58	Emilsson
Plasma	NTRK3	Q16288	rs9944243	15	88514162	T	G	0.879	-0.221	0.035	5.2E-10	Emilsson
Plasma	OLFM1	Q99784	rs11103667	9	137978360	C	T	0.815	-0.193	0.032	2.6E-09	Emilsson
Plasma	OLFM2	O95897	rs56243392	19	10061960	A	T	0.651	-0.673	0.024	6E-157	Emilsson

Plasma	OSCAR	Q8IYS5	rs4442925	19	54554950	T	C	0.455	0.138	0.024	0.000000013	Emilsson
Plasma	OXT	P01178	rs877172	20	3049890	T	G	0.660	-0.669	0.024	5.6E-156	Emilsson
Plasma	PCBD1	P61457	rs72818110	10	72614896	A	C	0.951	0.374	0.057	7.6E-11	Emilsson
Plasma	PCDH9	Q9HC56	rs1927820	13	67774646	G	C	0.846	-0.266	0.033	2.2E-15	Emilsson
Plasma	PCSK9	Q8NBP7	rs191448950	1	55584844	G	A	0.989	1.069	0.113	8.4E-21	Emilsson
Plasma	PCYOX1	Q9UHG3	rs2706762	2	70488470	C	T	0.860	0.790	0.032	1.4E-121	Emilsson
Plasma	PDIA3	P30101	rs3110081	15	43995786	C	T	0.821	0.194	0.032	1.5E-09	Emilsson
Plasma	PDLIM4	P50479	rs6864922	5	131616290	C	T	0.937	0.676	0.048	1.5E-44	Emilsson
Plasma	PEBP1	P30086	rs76597567	12	118584885	A	G	0.982	1.971	0.085	4E-111	Emilsson
Plasma	PGLYRP2	Q96PD5	rs55866012	19	15578008	T	G	0.842	0.486	0.033	1.8E-47	Emilsson
Plasma	PIP	P12273	rs4726600	7	142881540	G	A	0.741	-0.188	0.027	7.8E-12	Emilsson
Plasma	PKDCC	Q504Y2	rs893812	2	42303114	C	T	0.731	-0.236	0.027	5.6E-18	Emilsson
Plasma	PLAT	P00750	rs77346091	8	42020158	T	C	0.973	0.549	0.077	1.2E-12	Emilsson
Plasma	PLAUR	Q03405	rs2302524	19	44156472	T	C	0.820	0.220	0.031	7.9E-13	Emilsson
Plasma	PLXNA1	Q9UIW2	rs891762	3	126739012	G	T	0.318	-0.182	0.027	9.6E-12	Emilsson
Plasma	PNLIPRP2	P54317	rs7910135	10	118398046	C	A	0.493	-0.969	0.018	1E-200	Emilsson
Plasma	POSTN	Q15063	rs962462	13	38089171	A	G	0.714	0.244	0.025	8.6E-23	Emilsson
Plasma	PRDX6	P30041	rs6671141	1	173446934	T	G	0.850	-0.413	0.034	8.8E-33	Emilsson
Plasma	PREP	P48147	rs1051484	6	105726036	C	T	0.835	-0.453	0.032	7E-44	Emilsson
Plasma	PROK2	Q9HC23	rs7644362	3	71829242	A	G	0.798	-1.001	0.025	1E-200	Emilsson
Plasma	PRSS57	Q6UWY2	rs9304936	19	689590	G	C	0.715	0.599	0.026	7.5E-107	Emilsson

Plasma	PSAP	P07602	rs7086891	10	73655350	G	A	0.709	0.619	0.025	3.6E-122	Emilsson
Plasma	PSMB1	P20618	rs756519	6	170850862	G	A	0.531	0.412	0.023	8.1E-67	Emilsson
Plasma	PTGR1	Q14914	rs112140014	9	114325849	G	C	0.952	-0.726	0.055	2.1E-38	Emilsson
Plasma	PTPRU	Q92729	rs2179795	1	29642318	G	T	0.725	0.154	0.028	0.000000038	Emilsson
Plasma	PXDN	Q92626	rs34008669	2	1709779	G	A	0.502	0.158	0.023	1.8E-11	Emilsson
Plasma	PYY	P10082	rs8074783	17	42028989	C	A	0.641	0.157	0.026	1.2E-09	Emilsson
Plasma	PZP	P20742	rs7311982	12	9314857	C	T	0.698	0.500	0.019	2.7E-135	Emilsson
Plasma	QPCT	Q16769	rs13027919	2	37567636	C	T	0.538	0.271	0.024	3.5E-28	Emilsson
Plasma	RAB6B	Q9NRW1	rs9813363	3	133604743	G	A	0.825	0.278	0.032	1.2E-17	Emilsson
Plasma	RBP4	P02753	rs36014035	10	95360027	A	C	0.643	0.147	0.025	7.2E-09	Emilsson
Plasma	RECQL	P46063	rs144436375	12	21515500	A	C	0.980	-0.935	0.086	9E-27	Emilsson
Plasma	REG3G	Q6UW15	rs429694	2	79244586	A	C	0.794	-0.487	0.028	9.5E-63	Emilsson
Plasma	RNASE3	P12724	rs2771316	14	21430474	C	T	0.723	0.214	0.028	1.2E-14	Emilsson
Plasma	RNPEP	Q9H4A4	rs59698324	1	201965855	C	T	0.725	0.371	0.027	3.8E-42	Emilsson
Plasma	RSPO4	Q2I0M5	rs6056847	20	1028346	G	A	0.575	-0.172	0.023	9E-14	Emilsson
Plasma	S100A7	P31151	rs3014860	1	153314782	A	G	0.948	-1.208	0.051	1.8E-114	Emilsson
Plasma	SCUBE1	Q8IWY4	rs2744874	22	43715862	T	C	0.866	-0.270	0.036	3.8E-14	Emilsson
Plasma	SELPLG	Q14242	rs73191242	12	109013956	G	A	0.795	0.209	0.030	2.1E-12	Emilsson
Plasma	SEMA4C	Q9C0C4	rs112826173	2	97489654	A	G	0.981	0.713	0.090	4E-15	Emilsson
Plasma	SEMA4D	Q92854	rs45464494	9	91994433	C	T	0.929	1.278	0.041	1.5E-187	Emilsson
Plasma	SERPINA11	Q86U17	rs17090881	14	94913209	C	A	0.835	0.288	0.031	1.8E-20	Emilsson

Plasma	SFRP4	Q6FHJ7	rs75474297	7	37973124	T	A	0.855	-0.302	0.034	2.1E-18	Emilsson
Plasma	SFTPB	P07988	rs1130866	2	85893741	A	G	0.466	-0.686	0.022	3.5E-189	Emilsson
Plasma	SHANK3	Q9BYB0	rs6010042	22	51098764	G	A	0.748	-0.327	0.027	6.6E-33	Emilsson
Plasma	SHBG	P04278	rs858519	17	7531965	T	C	0.474	-0.214	0.024	2.3E-18	Emilsson
Plasma	SHMT1	P34896	rs8067462	17	18263571	C	A	0.607	-0.300	0.025	1E-31	Emilsson
Plasma	SLITRK3	O94933	rs62282371	3	164911694	T	G	0.887	0.345	0.038	3.7E-19	Emilsson
Plasma	SMPD1	P17405	rs1050239	11	6415463	G	A	0.715	0.310	0.026	1.8E-31	Emilsson
Plasma	SOD3	P08294	rs2695234	4	24804238	G	A	0.919	-0.736	0.042	1.1E-64	Emilsson
Plasma	SPINK1	P00995	rs4705205	5	147218813	T	C	0.573	-0.212	0.025	1.5E-17	Emilsson
Plasma	SPINK5	Q9NQ38	rs2052536	5	147504557	T	G	0.349	-0.152	0.026	3.3E-09	Emilsson
Plasma	SPON2	Q9BUD6	rs878323	4	1169813	T	G	0.687	-0.213	0.026	1.8E-16	Emilsson
Plasma	SRL	Q86TD4	rs8046884	16	4269558	C	G	0.495	0.150	0.024	6.3E-10	Emilsson
Plasma	ST6GALNAC6	Q969X2	rs183995738	9	130542640	C	A	0.987	-0.715	0.107	3.1E-11	Emilsson
Plasma	SULT2A1	Q06520	rs296369	19	48371853	C	T	0.843	0.360	0.033	1.7E-27	Emilsson
Plasma	TF	P02787	rs4854760	3	133498741	A	G	0.735	-0.227	0.028	6.1E-16	Emilsson
Plasma	TGFB1	P01137	rs1800470	19	41858921	A	G	0.621	0.259	0.024	4.5E-26	Emilsson
Plasma	THBS4	P35443	rs35351529	5	79390222	T	C	0.923	-0.298	0.044	2.3E-11	Emilsson
Plasma	TIMP2	P16035	rs2376999	17	76890864	A	G	0.884	0.418	0.037	3.3E-29	Emilsson
Plasma	TMEM106B	Q9NUM4	rs10950398	7	12264871	A	G	0.393	-0.272	0.025	6.1E-27	Emilsson
Plasma	TMEM132D	Q14C87	rs61943549	12	130092229	T	C	0.948	-0.486	0.055	1E-18	Emilsson
Plasma	TNFRSF10B	O14763	rs4871844	8	22879734	T	C	0.658	-0.143	0.026	0.000000043	Emilsson

Plasma	TNFRSF19	Q9NS68	rs3814787	13	24152370	G	C	0.714	-0.166	0.026	2.1E-10	Emilsson
Plasma	TREM1	Q9NP99	rs3789204	6	41254741	G	T	0.693	-0.374	0.024	1.4E-54	Emilsson
Plasma	TREM2	Q9NZC2	rs114812713	6	41034000	G	C	0.955	0.360	0.057	3.1E-10	Emilsson
Plasma	TREML1	Q86YW5	rs62396317	6	41095817	A	G	0.878	0.211	0.038	0.000000029	Emilsson
Plasma	TXNDC15	Q96J42	rs78165052	5	134250596	C	T	0.875	-0.307	0.036	3.6E-17	Emilsson
Plasma	TYMP	P19971	rs131798	22	50971509	G	T	0.773	0.204	0.030	1.8E-11	Emilsson
Plasma	TYRO3	Q06418	rs2289743	15	41860698	C	G	0.691	-0.161	0.027	2.1E-09	Emilsson
Plasma	UBASH3B	Q8TF42	rs10502249	11	122504251	G	T	0.712	0.187	0.027	1.1E-11	Emilsson
Plasma	UGT1A6	P19224	rs111741722	2	234665983	A	G	0.681	0.265	0.027	1.8E-22	Emilsson
Plasma	ULBP3	Q9BZM4	rs17054300	6	150370552	G	A	0.762	0.171	0.028	1.7E-09	Emilsson
Plasma	UNC5D	Q6UXZ4	rs6468316	8	35237788	T	C	0.417	0.141	0.024	9.5E-09	Emilsson
Plasma	UST	Q9Y2C2	rs11155591	6	149064986	C	T	0.685	0.149	0.026	0.000000012	Emilsson
Plasma	UXS1	Q8NBZ7	rs12617748	2	106836042	G	A	0.870	-0.219	0.036	1.7E-09	Emilsson
Plasma	VAV1	P15498	rs56100731	19	6857245	C	T	0.930	0.363	0.048	5.6E-14	Emilsson
Plasma	VWA2	Q5GFL6	rs11595697	10	115905775	C	T	0.903	-0.431	0.042	7.8E-25	Emilsson
Plasma	VWC2	Q2TAL6	rs79259707	7	49812564	C	A	0.868	0.340	0.035	1.3E-22	Emilsson
Plasma	WARS	P23381	rs941923	14	100813077	C	T	0.766	0.255	0.029	6.6E-18	Emilsson
Plasma	WFDC1	Q9HC57	rs400345	16	84328494	C	T	0.791	0.451	0.029	5.5E-54	Emilsson
Plasma	WFDC5	Q8TCV5	rs35017113	20	43692684	C	T	0.843	0.229	0.033	4.7E-12	Emilsson
Plasma	WFIKKN1	Q96NZ8	rs11248941	16	658271	G	T	0.732	-0.203	0.028	2.3E-13	Emilsson
Plasma	WISP2	O76076	rs1061098	20	43356156	C	T	0.663	0.213	0.022	4.8E-21	Emilsson

Plasma	XXYLT1	Q8NBI6	rs55947051	3	194783033	T	C	0.841	-0.248	0.033	8.6E-14	Emilsson
Plasma	ZG16B	Q96DA0	rs2190809	16	2880614	C	T	0.725	0.156	0.027	0.000000015	Emilsson
CSF	6-Phosphogluconate dehydrogenase	P52209	rs141107515	1	10461933	G	A	0.977	-0.185	0.020	9.82213E-20	Yang
CSF	AK1A1	P14550	rs2229540	1	46032311	G	A	0.046	-0.191	0.012	6.12071E-57	Yang
CSF	Apo E2	P02649	rs71352238	19	45394336	G	A	0.191	0.023	0.004	6.67415E-09	Yang
CSF	Apo L1	O14791	rs10854688	22	36653854	T	C	0.699	-0.059	0.011	2.02783E-08	Yang
CSF	ARMEL	Q49AH0	rs72772417	10	14873794	T	C	0.044	0.088	0.010	2.06173E-17	Yang
CSF	ART	O00253	rs9928014	16	67991427	T	C	0.939	0.084	0.014	6.18128E-10	Yang
CSF	ARTS1	Q9NZ08	rs17482078	5	96118866	T	C	0.189	-0.246	0.012	8.64477E-95	Yang
CSF	Arylsulfatase A	P15289	rs6151419	22	51064915	G	A	0.840	-0.067	0.007	3.93584E-20	Yang
CSF	ASAH2	Q9NR71	rs2813302	10	52012044	G	A	0.267	-0.060	0.006	5.46766E-24	Yang
CSF	ASAHL	Q02083	rs66498356	4	76857064	G	C	0.719	-0.134	0.007	2.1747E-72	Yang
CSF	ATS 13	Q76LX8	rs34265876	9	136287207	G	A	0.080	-0.081	0.012	3.98158E-11	Yang
CSF	B7-H1	Q9NZQ7	rs7048841	9	5460801	T	C	0.472	0.048	0.004	1.77584E-26	Yang
CSF	B7-H2	O75144	rs56124762	21	45658474	G	A	0.238	-0.103	0.006	1.67221E-59	Yang
CSF	BSP	P21815	rs6855426	4	88646335	G	A	0.720	0.136	0.024	1.21624E-08	Yang
CSF	BST1	Q10588	rs7683000	4	15647074	G	A	0.162	-0.179	0.009	3.33719E-81	Yang
CSF	C1-Esterase Inhibitor	P05155	rs11603020	11	57374332	G	A	0.259	-0.055	0.006	1.55823E-21	Yang
CSF	CAPG	P40121	rs3770102	2	85637837	A	C	0.394	0.033	0.005	9.54331E-11	Yang

CSF	Carbonic Anhydrase IV	P22748	rs62083731	17	58262406	T	C	0.961	-0.103	0.014	3.75156E-13	Yang
CSF	CATF	Q9UBX1	rs572846	11	66331458	G	A	0.564	-0.025	0.005	4.71065E-08	Yang
CSF	Cathepsin B	P07858	rs1736065	8	11685453	G	A	0.251	0.055	0.005	2.66173E-26	Yang
CSF	Cathepsin H	P09668	rs2869887	15	79155033	A	C	0.236	-0.074	0.008	1.53308E-18	Yang
CSF	Cathepsin S	P25774	rs41271951	1	150737220	G	A	0.071	-0.125	0.009	1.00134E-45	Yang
CSF	CBPE	P16870	rs11736871	4	166336382	T	C	0.690	0.028	0.005	3.36615E-10	Yang
CSF	CD30 Ligand	P32971	rs3181370	9	117665752	G	A	0.400	-0.030	0.004	3.81563E-12	Yang
CSF	CD5L	O43866	rs6427401	1	157748564	G	A	0.496	0.059	0.011	1.79071E-08	Yang
CSF	CDON	Q4KMG0	rs76617496	11	125870397	G	A	0.037	0.136	0.012	4.63026E-28	Yang
CSF	Chitotriosidase-1	Q13231	rs2244385	1	203191262	G	C	0.177	-0.282	0.023	2.91887E-34	Yang
CSF	CLC7A	Q9BXN2	rs16909966	12	10224430	C	A	0.074	-0.118	0.009	4.46303E-39	Yang
CSF	CNTN2	Q02246	rs2242001	1	205031744	G	A	0.842	-0.088	0.006	1.29802E-47	Yang
CSF	Coagulation Factor V	P12259	rs966751	1	169486141	G	C	0.050	-0.106	0.012	1.28811E-18	Yang
CSF	Coagulation Factor VII	P08709	rs488703	13	113770876	G	A	0.877	-0.165	0.011	7.34078E-53	Yang
CSF	Collectin Kidney 1	Q9BWP8	rs10206003	2	3672670	G	A	0.122	0.205	0.014	2.85473E-48	Yang
CSF	complement factor H-related 5	Q9BXR6	rs35662416	1	196967354	G	A	0.978	-0.163	0.023	8.709E-13	Yang
CSF	CREL1	Q96HD1	rs58020561	3	10054682	G	A	0.283	-0.058	0.007	1.26873E-17	Yang
CSF	Cripto	P13385	rs11713041	3	46770034	T	C	0.941	0.176	0.022	4.75168E-16	Yang
CSF	Cyclophilin F	P30405	rs11002931	10	81094251	C	A	0.265	-0.034	0.004	1.03476E-17	Yang
CSF	Cystatin M	Q15828	rs610497	11	65765551	G	A	0.230	0.132	0.007	3.31356E-76	Yang
CSF	DC-SIGN	Q9NNX6	rs1010047	19	7793502	G	A	0.542	-0.034	0.005	2.0753E-10	Yang

CSF	DERM	Q07507	rs545833	1	168689940	T	C	0.270	0.065	0.006	9.1418E-25	Yang
CSF	DLL1	O00548	rs9348260	6	170516123	G	A	0.315	0.028	0.005	2.7945E-08	Yang
CSF	DPP2	Q9UHL4	rs6420280	9	140002501	T	C	0.219	-0.057	0.004	2.27412E-48	Yang
CSF	ECM1	Q16610	rs7002	1	150445819	G	A	0.369	-0.023	0.004	3.53042E-11	Yang
CSF	EGF	P01133	rs10488881	4	110877416	T	A	0.330	0.035	0.006	1.5343E-08	Yang
CSF	EMR2	Q9UHX3	rs11880837	19	14808453	G	A	0.705	0.054	0.005	1.6266E-25	Yang
CSF	Endocan	Q9NQ30	rs4865911	5	54324920	G	A	0.387	0.035	0.006	7.17211E-10	Yang
CSF	EphA1	P21709	rs7792781	7	143107026	T	C	0.072	-0.126	0.009	1.79201E-42	Yang
CSF	ERBB1	P00533	rs6957408	7	54923277	T	C	0.160	-0.040	0.007	2.17726E-09	Yang
CSF	Esterase D	P10768	rs8192887	13	47362478	T	C	0.097	-0.204	0.012	7.58325E-63	Yang
CSF	FAM3B	P58499	rs2838014	21	42697714	G	C	0.192	0.246	0.009	1.0179E-159	Yang
CSF	FAM3D	Q96BQ1	rs4020782	3	58648031	T	C	0.120	-0.076	0.011	3.08024E-12	Yang
CSF	Fas, soluble	P25445	rs4406737	10	90759724	G	A	0.537	0.060	0.005	4.1082E-36	Yang
CSF	FCG2B	P31994	rs4657041	1	161478859	T	C	0.496	0.327	0.012	8.3853E-167	Yang
CSF	FGF-19	O95750	rs4980680	11	69523592	G	A	0.850	-0.085	0.009	4.37845E-22	Yang
CSF	FGF-19	O95750	rs7480286	11	69664318	T	A	0.644	0.037	0.007	3.15365E-08	Yang
CSF	FSTL3	O95633	rs2301742	19	675513	C	A	0.446	-0.026	0.004	2.36203E-11	Yang
CSF	FUT5	Q11128	rs78114888	19	5947688	G	A	0.845	0.127	0.008	1.20101E-54	Yang
CSF	Galectin-3	P17931	rs76426991	14	55600939	G	A	0.919	-0.088	0.007	2.67696E-41	Yang
CSF	Galectin-8	O00214	rs16833818	1	236701459	G	C	0.672	-0.033	0.004	2.93884E-19	Yang
CSF	Gelsolin	P06396	rs76098787	9	124047836	T	C	0.961	0.057	0.008	3.05423E-12	Yang
CSF	Glutathione S-transferase Pi	P09211	rs4891	11	67353970	G	A	0.352	-0.101	0.006	4.44227E-68	Yang

CSF	GPC5	P78333	rs9523318	13	92035073	G	A	0.600	0.036	0.005	3.09009E-11	Yang
CSF	GPC5	P78333	rs4331227	13	92485166	T	C	0.643	0.031	0.006	1.83195E-08	Yang
CSF	GPNMB	Q14956	rs858274	7	23294668	T	C	0.544	-0.114	0.006	1.10666E-81	Yang
CSF	GPVI	Q9HCN6	rs1613662	19	55536595	G	A	0.173	-0.096	0.009	4.58798E-26	Yang
CSF	Granulysin	P22749	rs12151621	2	85934499	C	A	0.760	0.212	0.014	1.59359E-48	Yang
CSF	Growth hormone receptor	P10912	rs58934290	5	42640886	G	A	0.269	0.045	0.007	2.09223E-10	Yang
CSF	Haptoglobin, Mixed Type	P00738	rs77303550	16	72079657	T	C	0.193	0.712	0.067	1.59833E-26	Yang
CSF	HCC-4	O15467	rs74842203	17	34304680	T	C	0.022	-0.216	0.033	4.75642E-11	Yang
CSF	Heparin cofactor II	P05546	rs165818	22	21122412	T	C	0.415	0.035	0.005	5.30848E-12	Yang
CSF	HGF	P14210	rs10248271	7	81417306	T	G	0.770	-0.043	0.006	2.07507E-13	Yang
CSF	HGFA	Q04756	rs1203107	4	3459849	T	C	0.105	-0.232	0.017	1.57507E-44	Yang
CSF	HPLN1	P10915	rs4274957	5	83207463	G	A	0.324	0.194	0.008	2.5164E-121	Yang
CSF	IDUA	P35475	rs35220088	4	1010251	G	C	0.635	0.071	0.005	3.41122E-41	Yang
CSF	IFN-a/b R1	P17181	rs12483293	21	34716789	C	A	0.272	0.024	0.004	2.84952E-08	Yang
CSF	IGF-II receptor	P11717	rs628031	6	160560845	G	A	0.625	-0.035	0.004	1.68143E-16	Yang
CSF	IL-1 R AcP	Q9NPH3	rs9813227	3	190340177	C	A	0.848	0.162	0.009	2.20016E-75	Yang
CSF	IL-1 R4	Q01638	rs10178436	2	102926511	G	A	0.464	0.311	0.011	1.7054E-190	Yang
CSF	IL-1 sRI	P14778	rs6722640	2	102661613	T	A	0.421	0.036	0.004	3.2193E-19	Yang
CSF	IL-1 sRII	P27930	rs7561460	2	102617204	G	A	0.395	-0.037	0.007	1.22646E-08	Yang
CSF	IL-16	Q14005	rs17875509	15	81590775	G	C	0.903	-0.070	0.006	1.14699E-27	Yang
CSF	IL-17 sR	Q96F46	rs2286951	22	17612744	G	A	0.794	0.063	0.008	1.5343E-16	Yang

CSF	IL-18 Ra	Q13478	rs1362350	2	102951798	G	C	0.510	0.144	0.005	1.3252E-165	Yang
CSF	IL-22	Q9GZX6	rs11177138	12	68652776	G	A	0.806	-0.071	0.005	4.94314E-47	Yang
CSF	IL-34	Q6ZMJ4	rs36097154	16	70662816	G	A	0.662	-0.048	0.004	1.51473E-38	Yang
CSF	IL-6 sRa	P08887	rs4129267	1	154426264	T	C	0.410	0.112	0.005	1.1384E-105	Yang
CSF	IL-9	P15248	rs2069885	5	135228165	G	A	0.877	-0.115	0.010	1.1559E-31	Yang
CSF	IL-9	P15248	rs7711775	5	135270062	A	C	0.034	0.141	0.025	1.52753E-08	Yang
CSF	ILT-2	Q8NHL6	rs2114511	19	55145093	G	C	0.933	-0.230	0.015	6.70529E-52	Yang
CSF	Kallikrein 11	Q9UBX7	rs2691258	19	51517286	G	A	0.417	0.083	0.007	2.77051E-35	Yang
CSF	kallikrein 8	O60259	rs2659091	19	51446530	G	A	0.625	-0.047	0.005	5.73384E-19	Yang
CSF	Layilin	Q6UX15	rs674230	11	111437887	G	A	0.648	-0.077	0.007	7.58509E-32	Yang
CSF	LEG9	O00182	rs3794195	17	25959355	G	A	0.217	-0.026	0.004	1.61025E-11	Yang
CSF	LRP8	Q14114	rs12031155	1	53714139	T	C	0.389	0.051	0.006	4.19692E-18	Yang
CSF	Luteinizing hormone	P01215, P01229	rs75287599	19	49517140	T	C	0.073	-0.190	0.019	2.11166E-22	Yang
CSF	LY86	O95711	rs7757934	6	6578927	G	A	0.272	-0.037	0.004	5.33322E-20	Yang
CSF	Lysozyme	P61626	rs57954211	12	69748397	C	A	0.568	-0.081	0.005	5.39433E-62	Yang
CSF	MIA	Q16674	rs13108	19	41271104	G	A	0.084	0.080	0.013	3.96223E-10	Yang
CSF	MIC-1	Q99988	rs7251610	19	18489734	T	C	0.317	-0.047	0.006	3.86889E-13	Yang
CSF	MIP-5	Q16663	rs7208990	17	34329475	G	C	0.063	0.145	0.011	2.48112E-42	Yang
CSF	MMEL2	Q495T6	rs10909839	1	2708430	G	A	0.672	0.091	0.005	3.98332E-77	Yang
CSF	MMP-2	P08253	rs1347653	16	55505040	A	C	0.181	-0.032	0.004	2.15074E-14	Yang
CSF	MMP-8	P22894	rs1939020	11	102590717	T	G	0.918	0.172	0.011	2.68598E-56	Yang
CSF	MPIF-1	P55773	rs76480185	17	34350933	T	G	0.024	-0.088	0.013	2.00324E-11	Yang
CSF	MSP	P26927	rs2172252	3	49678307	T	A	0.307	-0.268	0.013	1.57305E-91	Yang

CSF	N-terminal pro-BNP	P16860	rs12406383	1	11921993	C	A	0.727	0.052	0.006	4.92499E-19	Yang
CSF	NADPH-P450 Oxidoreductase	P16435	rs1057868	7	75615006	T	C	0.260	-0.032	0.004	1.56335E-12	Yang
CSF	NAGK	Q9UJ70	rs9636398	2	71288817	G	A	0.824	-0.031	0.005	4.85537E-10	Yang
CSF	NET4	Q9HB63	rs17287608	12	96119016	C	A	0.160	-0.063	0.006	5.32466E-25	Yang
CSF	NID2	Q14112	rs6572807	14	52480621	G	A	0.273	-0.035	0.004	4.17974E-21	Yang
CSF	Nidogen	P14543	rs2031487	1	236175339	G	A	0.534	0.021	0.004	1.40343E-09	Yang
CSF	NRP1	O14786	rs10827216	10	33509513	G	A	0.528	-0.022	0.004	7.38944E-09	Yang
CSF	OLR1	P78380	rs11611438	12	10318409	G	C	0.922	-0.072	0.010	1.87507E-12	Yang
CSF	Osteocalcin	P02818	rs9943105	1	156245245	T	C	0.502	-0.025	0.005	4.59302E-08	Yang
CSF	Osteopontin	P10451	rs36018630	4	88774669	T	C	0.203	0.039	0.007	2.70028E-09	Yang
CSF	P-Selectin	P16109	rs6678795	1	169533266	G	A	0.504	0.073	0.008	6.52672E-21	Yang
CSF	PAFAH	Q13093	rs6907892	6	46625886	T	C	0.362	0.100	0.006	1.60517E-62	Yang
CSF	PCSK7	Q16549	rs8521	11	117067699	G	A	0.267	-0.089	0.005	3.13028E-73	Yang
CSF	PCSK9	Q8NBP7	rs499718	1	55512549	T	C	0.214	-0.090	0.008	4.26829E-33	Yang
CSF	PDGF Rb	P09619	rs3776081	5	149532107	G	A	0.299	-0.167	0.008	3.27283E-86	Yang
CSF	Periostin	Q15063	rs9547908	13	38069809	T	C	0.674	-0.076	0.008	6.37731E-23	Yang
CSF	PIGR	P01833	rs2275529	1	207119853	C	A	0.706	0.108	0.014	4.70234E-14	Yang
CSF	PLXC1	O60486	rs2361355	12	94630029	G	A	0.437	-0.036	0.006	2.33603E-09	Yang
CSF	PPAC	P24666	rs57542652	2	228088	G	A	0.677	0.237	0.008	6.0172E-180	Yang
CSF	Prekallikrein	P03952	rs2304595	4	187172280	G	A	0.607	0.039	0.007	2.23303E-09	Yang
CSF	PSMA	Q04609	rs138800869	11	49038966	G	A	0.959	0.122	0.014	1.67422E-19	Yang
CSF	REG4	Q9BYZ8	rs2994816	1	120371217	G	A	0.246	0.049	0.007	2.49171E-11	Yang

CSF	Semaphorin 3E	O15041	rs2535371	7	83147251	C	A	0.820	-0.177	0.014	3.77207E-35	Yang
CSF	sFRP-3	Q92765	rs78177114	2	183730429	G	A	0.071	0.073	0.010	5.67295E-14	Yang
CSF	sICAM-1	P05362	rs5498	19	10395683	G	A	0.425	-0.170	0.005	1E-200	Yang
CSF	SIG14	Q08ET2	rs7250849	19	52158316	A	C	0.119	-0.214	0.014	3.00554E-51	Yang
CSF	Siglec-3	P20138	rs3865444	19	51727962	C	A	0.702	-0.160	0.007	7.3738E-111	Yang
CSF	Siglec-7	Q9Y286	rs2075803	19	51628529	G	A	0.562	0.041	0.007	4.71885E-10	Yang
CSF	Siglec-9	Q9Y336	rs2673908	19	51627766	A	C	0.395	1.127	0.032	1E-200	Yang
CSF	sL-Selectin	P14151	rs72712053	1	169640642	T	G	0.760	-0.059	0.005	2.86436E-32	Yang
CSF	SLAF7	Q9NQ25	rs3766374	1	160720554	G	A	0.717	-0.097	0.008	5.28357E-37	Yang
CSF	sLeptin R	P48357	rs6665672	1	66069020	G	A	0.815	-0.235	0.007	1E-200	Yang
CSF	Spondin-1	Q9HCB6	rs7935294	11	13963974	C	A	0.430	0.027	0.004	2.31107E-10	Yang
CSF	SREC-I	Q14162	rs62088045	17	1545333	T	C	0.034	0.155	0.014	5.32428E-27	Yang
CSF	sTie-1	P35590	rs3768046	1	43766426	G	A	0.635	-0.029	0.005	2.1058E-08	Yang
CSF	Tenascin	P24821	rs72758637	9	117805201	G	C	0.158	0.211	0.009	9.982E-120	Yang
CSF	Testican-2	Q92563	rs1245546	10	73846826	T	C	0.485	-0.050	0.005	3.62659E-24	Yang
CSF	TFPI	P10646	rs13035938	2	188390112	G	A	0.263	0.029	0.005	2.11369E-08	Yang
CSF	TIG2	Q99969	rs10282458	7	150045302	G	A	0.729	0.019	0.003	1.22615E-08	Yang
CSF	TIMD3	Q8TDQ0	rs6874178	5	156530149	T	A	0.817	0.091	0.007	1.79198E-38	Yang
CSF	TNFSF15	O95150	rs6478109	9	117568766	G	A	0.715	0.058	0.005	6.18792E-29	Yang
CSF	TPSB2	P20231	rs1054648	16	1271471	T	C	0.104	0.458	0.023	4.70998E-88	Yang
CSF	TrATPase	P13686	rs8112083	19	11707266	G	A	0.285	0.046	0.005	1.04548E-18	Yang
CSF	TSG-6	P98066	rs6433375	2	152208657	G	A	0.522	0.052	0.007	2.44076E-12	Yang
CSF	TSP4	P35443	rs2438638	5	79390200	G	A	0.650	0.040	0.005	4.79607E-15	Yang

CSF	ULBP-3	Q9BZM4	rs12661513	6	150373839	C	A	0.866	-0.068	0.005	9.35689E-36	Yang
CSF	Vitronectin	P04004	rs708100	17	26688663	G	A	0.525	-0.418	0.014	1.5115E-198	Yang
CSF	vWF	P04275	rs1558325	12	6289108	G	A	0.559	0.037	0.006	5.92648E-09	Yang
CSF	WFKN2	Q8TEU8	rs11868519	17	48920101	T	C	0.655	0.130	0.008	1.36159E-66	Yang
CSF	YKL-40	P36222	rs880633	1	203152801	G	A	0.501	0.196	0.007	1.4139E-185	Yang

Supplementary Table 2 Genetic instruments of multiple sclerosis for bidirectional MR

SNP	chr	pos	effect allele	other allele	beta	se	pval
rs10801908	1	117090493	C	T	0.261363764	0.014770144	4.549E-70
rs11256593	10	6117322	T	C	0.187474922	0.010989361	2.962E-65
rs438613	3	28072086	C	T	0.140109708	0.009486438	2.305E-49
rs1800693	12	6440009	T	C	-0.139262067	0.009632326	2.239E-47
rs6670198	1	2520527	C	T	-0.128174339	0.01015257	1.541E-36
rs62420820	6	137438057	A	G	0.134880482	0.010805233	9.257E-36
rs1738074	6	159465977	T	C	-0.124656605	0.010071612	3.48E-35
rs35540610	2	231121829	C	T	0.133043774	0.011073609	2.982E-33
rs1323292	1	192541021	A	G	0.150572858	0.012549928	3.644E-33
rs1077667	19	6668972	C	T	0.143753964	0.012045878	7.882E-33
rs35486093	1	85729820	A	G	-0.189829672	0.016293003	2.268E-31
rs2150879	17	57859210	G	A	0.110019645	0.00948324	4.05E-31
rs701006	12	58106836	G	A	0.116893751	0.010140719	9.626E-31
rs11809700	1	93152635	C	T	-0.122280635	0.010698023	2.954E-30
rs9843355	3	119228508	G	A	0.141933496	0.01244932	4.138E-30
rs4939490	11	60793651	G	C	0.116626812	0.010354806	1.997E-29
rs4896153	6	135833463	A	T	-0.109033921	0.009704064	2.717E-29
rs72928038	6	90976768	G	A	-0.14352401	0.012888292	8.38E-29
rs10063294	5	35877505	A	G	-0.11945944	0.010782107	1.579E-28
rs1026916	17	40529835	G	A	-0.108030744	0.009781043	2.32E-28
rs1014486	3	159691112	C	T	0.104360015	0.009471865	3.133E-28
rs6589706	11	118747813	A	G	0.104360015	0.009881889	4.531E-26

rs11749040	5	40396425	G	A	-0.139377016	0.013476646	4.544E-25
rs4808760	19	18301979	G	C	-0.113168698	0.010967862	5.83E-25
rs12478539	2	43355324	G	C	0.110198792	0.010784893	1.649E-24
rs1250551	10	81059335	G	T	-0.096180558	0.009627069	1.675E-23
rs28703878	8	79417222	A	G	-0.102475792	0.010627183	5.273E-22
rs3809627	16	30103160	A	C	-0.09014355	0.009433775	1.231E-21
rs140522	22	50971266	C	T	-0.109591677	0.011476433	1.306E-21
rs67111717	5	176790162	G	A	0.099030523	0.010472136	3.182E-21
rs12925972	16	79111297	C	T	0.101653654	0.011198181	1.109E-19
rs9610458	22	22205353	T	C	0.085535288	0.009427762	1.161E-19
rs9591325	13	50811220	T	C	0.205061044	0.022625079	1.264E-19
rs2248137	20	52789743	G	C	-0.087957279	0.009753861	1.921E-19
rs12365699	11	118743286	G	A	0.116626812	0.012947065	2.099E-19
rs1177228	2	61242410	G	A	0.091028298	0.010117271	2.313E-19
rs1076928	6	36348689	C	T	-0.122167634	0.013606757	2.746E-19
rs1087056	10	31395761	G	A	-0.084142768	0.009399492	3.496E-19
rs60600003	7	37382465	T	G	-0.136278018	0.015275065	4.596E-19
rs2546890	5	158759900	A	G	0.084157308	0.00944978	5.303E-19
rs10951042	7	3139417	C	T	0.097217451	0.011060327	1.499E-18
rs9878602	3	71535338	T	G	0.095491981	0.010898118	1.914E-18
rs1465697	19	49837246	C	T	-0.092883127	0.010663243	3.023E-18
rs1112718	10	94479107	A	G	0.082501222	0.009718205	2.078E-17
rs35703946	16	86021505	G	A	0.123544186	0.01461449	2.826E-17

rs12434551	14	69253364	A	T	0.078996006	0.009394246	4.136E-17
rs62013236	15	79247482	C	T	0.100749903	0.012104002	8.527E-17
rs9909593	17	37970149	A	G	-0.078069655	0.009379812	8.565E-17
rs2986736	1	6512547	T	C	-0.113392687	0.013631488	8.913E-17
rs13327021	3	27783015	C	T	-0.079909383	0.009682676	1.547E-16
rs61863928	10	64449549	G	T	0.085351667	0.010443426	3.014E-16
rs2317231	1	157686337	G	T	0.077331343	0.009472794	3.254E-16
rs12622670	2	68646536	T	C	0.086269435	0.010638044	5.082E-16
rs983494	1	160703965	G	A	0.083881484	0.010371894	6.096E-16
rs6533052	4	103911781	A	G	0.088651698	0.01098525	7.026E-16
rs72922276	1	65429319	G	A	0.152034156	0.01904055	1.408E-15
rs12147246	14	103265844	G	A	-0.09014355	0.011349566	1.982E-15
rs405343	16	1067832	G	T	-0.09629066	0.012205612	3.045E-15
rs7731626	5	55444683	G	A	0.090206268	0.011478928	3.89E-15
rs244656	5	133449827	A	T	0.105800419	0.013921323	2.964E-14
rs6564681	16	79652720	T	C	-0.077745349	0.010268424	3.695E-14
rs6742	20	62374441	C	T	0.139066048	0.018400841	4.106E-14
rs17724508	16	79350204	T	C	0.13374387	0.017816977	6.071E-14
rs9308424	1	212877776	A	G	-0.09036244	0.012127268	9.251E-14
rs2269434	11	47360412	T	C	-0.086756864	0.011739292	1.465E-13
rs719316	6	16672760	T	C	0.069805874	0.009462219	1.615E-13
rs6738544	2	191989356	C	A	0.071483102	0.009759756	2.402E-13
rs7975763	12	123604053	C	T	-0.081861026	0.011221762	2.99E-13

rs34695601	14	76014298	T	C	0.079919623	0.011083119	5.557E-13
rs735542	8	128175696	A	G	0.070272053	0.009748526	5.658E-13
rs249677	5	141539339	C	A	-0.071173819	0.009876082	5.733E-13
rs6496663	15	90887584	A	C	-0.085884739	0.012072373	1.126E-12
rs2289746	3	105455955	C	T	0.081211255	0.011739509	4.588E-12
rs12614091	2	204632861	A	T	0.073250462	0.010653756	6.175E-12
rs4409785	11	95311422	T	C	-0.083816486	0.012217664	6.873E-12
rs57116599	2	112770799	A	G	-0.090252989	0.013288923	1.109E-11
rs11231749	11	64095178	C	T	0.065881369	0.009702827	1.122E-11
rs2705616	4	87862396	G	C	-0.074400323	0.010963422	1.151E-11
rs10245867	7	28142186	G	T	-0.067315707	0.009931064	1.216E-11
rs6837324	4	48127262	A	G	-0.06443186	0.009525045	1.338E-11
rs34681760	5	6712834	C	T	0.078718755	0.011739663	2.009E-11
rs34536443	19	10463118	G	C	0.185649347	0.028007535	3.39E-11
rs3184504	12	111884608	T	C	0.062317306	0.009448345	4.236E-11
rs9955954	18	56348044	G	A	-0.085557888	0.013011496	4.847E-11
rs760517	22	37258986	C	T	0.067658648	0.010306624	5.218E-11
rs1399180	10	8098719	T	C	-0.096731189	0.014842103	7.156E-11
rs7855251	9	100868189	T	C	0.074550731	0.011584367	1.231E-10
rs6911131	6	143865221	A	G	-0.11440126	0.017802212	1.308E-10
rs17051321	4	122119449	C	T	-0.080993159	0.012624902	1.405E-10
rs2836438	21	39864727	G	A	-0.100925919	0.015970091	2.621E-10
rs10951154	7	27135314	T	C	-0.076881044	0.012210379	3.047E-10

rs10191360	2	136884679	T	C	0.080288831	0.012826042	3.854E-10
rs11125803	2	25052177	T	C	-0.068492996	0.01103709	5.445E-10
rs73414214	7	105706462	C	A	0.120623442	0.019513185	6.344E-10
rs11919880	3	32962051	A	G	0.058551887	0.009516953	7.633E-10
rs354033	7	149289464	G	A	0.078164021	0.012719595	7.988E-10
rs11852059	14	52306091	A	C	-0.090800364	0.014930377	1.19E-09
rs7260482	19	45143942	A	C	-0.074939087	0.012381475	1.426E-09
rs6672420	1	25291010	T	A	-0.061449962	0.01016285	1.48E-09
rs10271373	7	138729795	C	A	-0.055618424	0.009385992	3.11E-09
rs4728142	7	128573967	G	A	-0.056676177	0.009585939	3.371E-09
rs8062446	16	57077094	T	C	0.084157308	0.01433115	4.297E-09
rs2590438	3	187565968	T	G	-0.066460367	0.011342906	4.651E-09
rs9568402	13	50961957	A	T	-0.086102699	0.014708711	4.803E-09
rs72989863	4	164493807	G	A	0.063913326	0.010963189	5.549E-09
rs12971909	19	4466466	G	A	-0.069993372	0.012006855	5.561E-09
rs962052	2	151644203	C	T	0.060906935	0.010569208	8.279E-09
rs13066789	3	187987624	C	T	0.064476019	0.011387225	1.495E-08
rs11899404	2	12607893	T	C	-0.053189829	0.009423368	1.657E-08
rs3923387	8	144986793	T	C	0.061941402	0.010993684	1.758E-08
rs61708525	12	94661453	G	A	0.067845547	0.012050084	1.799E-08
rs12211604	6	7100029	A	G	-0.063365876	0.011315577	2.145E-08
rs11578655	1	101412902	T	G	-0.083055575	0.014969945	2.887E-08
rs2469434	18	67544046	T	C	-0.053189829	0.009590065	2.917E-08

rs55858457	7	2443302	G	T	-0.06443186	0.011620991	2.949E-08
rs32658	5	118703662	G	T	-0.061237309	0.011077767	3.24E-08
rs1365120	11	36438075	T	C	-0.09145761	0.016663946	4.057E-08
rs17741873	10	75653800	G	T	0.065413139	0.011974219	4.686E-08
rs9900529	17	73335776	C	G	0.062786988	0.0114995	4.762E-08
rs6020055	20	48422095	A	G	0.057417271	0.010540769	5.118E-08
rs9808753	21	34787312	G	A	0.07881118	0.013060198	1.595E-09
rs6072343	20	39968188	G	A	-0.078394067	0.0131769	2.692E-09
rs6498163	16	11213951	T	C	-0.178289696	0.00999597	3.703E-71
rs116899835	14	88523488	C	T	0.286381227	0.024946573	1.667E-30
rs7819665	8	129177769	T	C	-0.117545564	0.011308217	2.621E-25
rs111635774	6	14691215	C	T	0.105080476	0.012309492	1.383E-17
rs77654077	13	100026952	A	C	0.104360015	0.012547005	8.982E-17
rs116877451	7	50328339	A	G	0.087278008	0.010654831	2.582E-16
rs79979643	1	32738415	G	A	-0.123863987	0.015517278	1.436E-15
rs570429157	11	14868316	A	G	-0.252057561	0.036928366	8.757E-12
rs111430408	3	100848597	C	T	0.144706221	0.022147792	6.418E-11
rs78727559	8	95851818	T	G	-0.142255048	0.022624851	3.225E-10
rs11542663	6	119215402	A	C	0.074736346	0.011887932	3.242E-10
rs75937181	3	121783015	T	G	0.113239396	0.018446922	8.322E-10

Supplementary Table 3 Heterogeneity analysis on proteins with two or more instruments

Tissue	Protein	Number of SNPs used	Q statistics	P-value (heterogeneity)
Plasma	SPARCL1	2	0.020845305	0.885201173
Plasma	GPC5	2	0.383150854	0.535921758
Plasma	SERPINA4	2	0.295781135	0.586539439
CSF	IL-9	2	0.520012298	0.470836436
CSF	GPC5	2	0.701911038	0.402142302

Supplementary Table 4 Previously-reported genome-wide significant association of SNPs as genetic instruments of six potential causal proteins

tissue	protein	UniProt ID	SNP	traits	catalog	effect allele	proxy SNP	r2	proxy effect allele	beta	se	pval	ancestry	pmid
Plasma	FCRL3	Q96P31	rs7528684	Insulinoma associated antigen 2 positive IA 2A Type 1 diabetes	GWAS	G						8.3E-12	Mixed	21829393
Plasma	FCRL3	Q96P31	rs7528684	Type 1 diabetes autoantibodies	GWAS	G						1E-11	Mixed	21829393
Plasma	FCRL3	Q96P31	rs7528684	Diabetes mellitus type 1	GWAS	G						1E-11	Mixed	21829393
Plasma	FCRL3	Q96P31	rs7528684	Positivity for ZnT8A in Type 1 diabetes	GWAS	G	rs7522061	0.90	C			1.13E-16	European	22526605
Plasma	FCRL3	Q96P31	rs7528684	Positivity for ZnT8RA in Type 1 diabetes	GWAS	G	rs7522061	0.90	C			1.74E-11	European	22526605
Plasma	FCRL3	Q96P31	rs7528684	Positivity for ZnT8WA in Type 1 diabetes	GWAS	G	rs7522061	0.90	C			8.13E-12	European	22526605
Plasma	FCRL3	Q96P31	rs7528684	Fc receptor-like protein 4	pQTL	G	rs7522061	0.90	C	0.38	0.02	2E-55	European	29875488
Plasma	FCRL3	Q96P31	rs7528684	Immunoglobulin superfamily member 11	pQTL	G	rs3761959	0.997958	T	0.05	0.00748946	2.45E-11	European	34857953
Plasma	FCRL3	Q96P31	rs7528684	Killer cell immunoglobulin-like	pQTL	G	rs2317230	0.9324	T	0.05	0.0082996 95	1.70E-09	European	34857953

				receptor 3DL3										
Plasma	TYMP	P19971	rs131798	Mean corpuscular hemoglobin	GWAS	G				0.08	0.00	2.541E-68	European	27863252
Plasma	TYMP	P19971	rs131798	Mean corpuscular volume	GWAS	G				0.09	0.00	1.07E-94	European	27863252
Plasma	TYMP	P19971	rs131798	Red blood cell count	GWAS	G	rs131795	1.00	T	-0.05	0.00	6.455E-34	European	27863252
Plasma	TYMP	P19971	rs131798	Red cell distribution width	GWAS	G	rs131795	1.00	T	-0.03	0.00	5.725E-11	European	27863252
Plasma	TYMP	P19971	rs131798	Mean corpuscular hemoglobin concentration	GWAS	G	rs131794	1.00	C			1.81E-12	Mixed	23222517
Plasma	TYMP	P19971	rs131798	Mean corpuscular volume	GWAS	G	rs131794	1.00	C			1.85E-16	Mixed	23222517
Plasma	TYMP	P19971	rs131798	Mean corpuscular volume	GWAS	G	rs131794	1.00	C	0.00		1E-15	European	19862010
Plasma	TYMP	P19971	rs131798	Erythrocyte indices	GWAS	G	rs131794	1.00	C			1E-15	European	19862010
Plasma	TYMP	P19971	rs131798	Granulocyte percentage of myeloid white cells	GWAS	G	rs4824129	0.99	G	-0.03	0.00	6.723E-09	European	27863252
Plasma	TYMP	P19971	rs131798	Monocyte percentage of white cells	GWAS	G	rs4824129	0.99	G	0.03	0.00	1.002E-08	European	27863252
Plasma	TYMP	P19971	rs131798	Reticulocyte count	GWAS	G	rs4824129	0.99	G	-0.03	0.00	4.585E-12	European	27863252
Plasma	TYMP	P19971	rs131798	Uridine	mQTL	G	rs131794	1.00	C	-0.01	0.00	4.367E-16	European	24816252
Plasma	TYMP	P19971	rs131798	2-deoxyuridine	mQTL	G	rs131793	1.00	A			1.335E-18	European	28263315

Plasma	TYMP	P19971	rs131798	5-methyluridine	mQTL	G	rs131793	1.00	A	0.68	0.05	7.486E-60	European	28263315
Plasma	TYMP	P19971	rs131798	5-methyluridine (ribothymidine)	mQTL	G	rs131793	1.00	A	0.68	0.05	7.486E-60	European	28263315
Plasma	TYMP	P19971	rs131798	5,6-dihydrothymine	mQTL	G	rs4824129	0.99	G	-0.19	0.05	1.888E-08	European	28263315
Plasma	AHSG	P02765	rs35094235	Activated partial thromboplastin time	GWAS	G	rs10937255	1.00	G			4.335E-09	European	22703881
CSF	MMEL1	Q495T6	rs10909839	Primary sclerosing cholangitis	GWAS	G				0.19	0.03	3.164E-08	European	27992413
CSF	MMEL1	Q495T6	rs10909839	Multiple sclerosis	GWAS	G	rs4648356	1.00	C			1E-14	European	21833088
CSF	MMEL1	Q495T6	rs10909839	Rheumatoid arthritis and celiac disease	GWAS	G	rs4648356	1.00	C			4.28E-10	European	21383967
CSF	MMEL1	Q495T6	rs10909839	Rheumatoid arthritis	GWAS	G	rs41300092	1.00	C	0.09	0.01	3.7E-12	Mixed	24390342
CSF	CD5L	O43866	rs6427401	Fc receptor-like protein 1	pQTL	G	rs7546623	1.00	T	0.24	0.02	4.79E-23	European	29875488

Supplementary Table 5 Linkage disequilibrium r^2 among SNPs of six potential causal proteins

Tissue	Protein	UniProt	SNP	rs7528684	rs131798	rs35094235	rs6427401	rs10909839	rs3766374
Plasma	FCRL3	Q96P31	rs7528684	1	NA	NA	0.65011969	NA	NA
Plasma	TYMP	P19971	rs131798	NA	1	NA	NA	NA	NA
Plasma	AHSG	P02765	rs35094235	NA	NA	1	NA	NA	NA
CSF	CD5L	O43866	rs6427401	0.65011969	NA	NA	1	NA	NA
CSF	MMEL2	Q495T6	rs10909839	NA	NA	NA	NA	1	NA
CSF	SLAF7	Q9NQ25	rs3766374	NA	NA	NA	NA	NA	1

Supplementary Table 6 13 Medications for multiple sclerosis and the corresponding drug targets

Medication	Target	Gene Name	Uniprot ID	Pharmacological Action	Action
Interferons					
Interferon beta	Interferon alpha/beta receptor 1	IFNAR1	P17181	Yes	Binder
Amino acid copolymer					
Glatiramer acetate	HLA class II histocompatibility antigen, DRB1-1 beta chain	DRB1-1	Q31063	Unknown	Binder
S1P receptor modulators					
Fingolimod	Sphingosine 1-phosphate receptor 5	S1PR5	Q9H228	Yes	Modulator
	Sphingosine 1-phosphate receptor 1	S1PR1	P21453	Yes	Modulator
	Sphingosine 1-phosphate receptor 3	S1PR3	Q99500	Yes	Modulator
	Histone deacetylase 1	HDAC1	Q13547	Unknown	Inhibitor
	Sphingosine 1-phosphate receptor 4	S1PR4	O95977	Unknown	Modulator
Siponimod	Sphingosine 1-phosphate receptor 5	S1PR5	Q9H228	Unknown	Modulator
	Sphingosine 1-phosphate receptor 1	S1PR1	P21453	Unknown	Unknown
Ozanimod	Sphingosine 1-phosphate receptor 1	S1PR1	P21453	Yes	Agonist
	Sphingosine 1-phosphate receptor 5	S1PR5	Q9H228	Yes	Agonist
Fumarates					
Dimethyl fumarate	Kelch-like ECH-associated protein 1	KEAP1	Q14145	Yes	Binder
	Transcription factor p65	RELA	Q04206	Unknown	Unknown
Diroximel fumarate	Neuronal acetylcholine receptor subunit alpha-10	CHRNA10	Q9GZZ6	Unknown	Agonist
Pyrimidine synthesis inhibitor					
Teriflunomide	Dihydroorotate dehydrogenase (quinone), mitochondrial	DHODH	Q02127	Unknown	Inhibitor
Purine analogue					

Cladribine	Ribonucleoside-diphosphate reductase large subunit	RRM1	P23921	Yes	Inhibitor
	Ribonucleoside-diphosphate reductase subunit M2	RRM2	P31350	Yes	Inhibitor
	Ribonucleoside-diphosphate reductase subunit M2 B	RRM2B	Q7LG56	Yes	Inhibitor
	DNA polymerase alpha catalytic subunit	POLA1	P09884	Yes	Inhibitor
	DNA polymerase epsilon catalytic subunit A	POLE	Q07864	Yes	Inhibitor
	DNA polymerase epsilon subunit 2	POLE2	P56282	Yes	Inhibitor
	DNA polymerase epsilon subunit 3	POLE3	Q9NRF9	Yes	Inhibitor
	DNA polymerase epsilon subunit 4	POLE4	Q9NR33	Yes	Inhibitor
	Purine nucleoside phosphorylase	PNP	P00491	Yes	Inducer
Anti-α4 integrin receptor monoclonal antibody					
Natalizumab	Integrin alpha-4	ITGA4	P13612	Yes	Antibody
	Low affinity immunoglobulin gamma Fc region receptor III-B	FCGR3B	O75015	Unknown	Unknown
	Intercellular adhesion molecule 1	ICAM1	P05362	Unknown	Unknown
	High affinity immunoglobulin gamma Fc receptor I	FCGR1A	P12314	Unknown	Unknown
Anti-CD20 monoclonal antibodies					
Ocrelizumab	B-lymphocyte antigen CD20	MS4A1	P11836	Yes	Antibody
Ofatumumab	B-lymphocyte antigen CD20	MS4A1	P11836	Yes	Antibody
Anti-CD52 monoclonal antibody					
Alemtuzumab	CAMPATH-1 antigen	CD52	P31358	Yes	Antibody
	Low affinity immunoglobulin gamma Fc region receptor III-B	FCGR3B	O75015	Unknown	Unknown
	Low affinity immunoglobulin gamma Fc region receptor III-A	FCGR3A	P08637	Unknown	Unknown
	High affinity immunoglobulin gamma Fc receptor I	FCGR1A	P12314	Unknown	Unknown

	Low affinity immunoglobulin gamma Fc region receptor II-a	FCGR2A	P12318	Unknown	Unknown

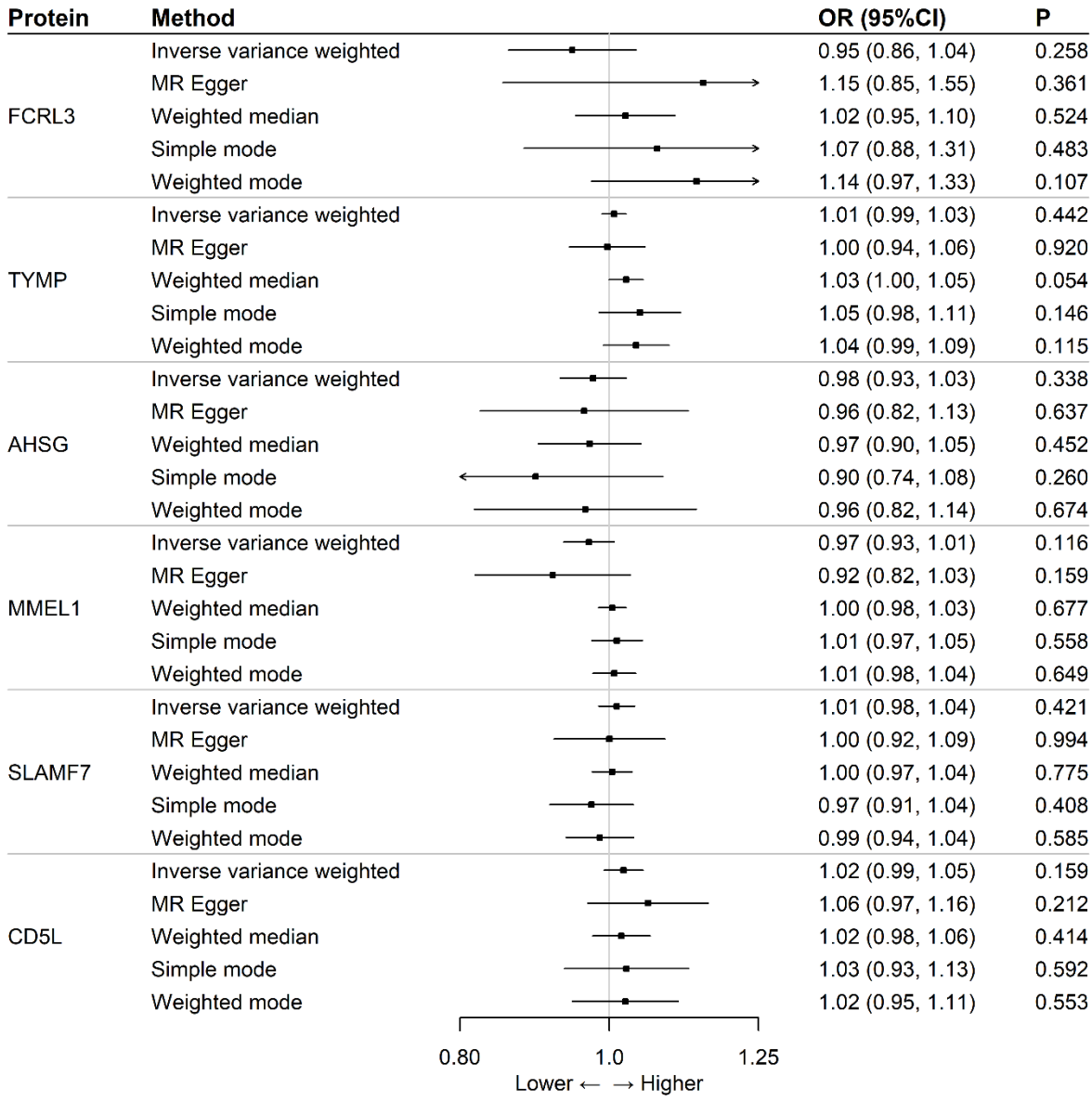
Supplementary Table 7 Current medications targeting six potential causal proteins

Target	Gene	Uniprot ID	Medication	Indication	Route	Actions
Fc receptor-like protein 3	FCRL3	Q96P31	N/A	N/A	N/A	N/A
Thymidine phosphorylase	TYMP	P19971	Capecitabine	For the treatment of patients with metastatic breast cancer resistant to both paclitaxel and an anthracycline-containing chemotherapy regimen.	Oral	Inhibitor
			Floxuridine	For palliative management of gastrointestinal adenocarcinoma metastatic to the liver.	Intra-arterial	Inducer
			Fluorouracil	For the topical treatment of multiple actinic or solar keratoses.	Intravenous & topical	Inhibitor
Alpha-2-HS-glycoprotein	AHSG	P02765	N/A	N/A	N/A	N/A
CD5 antigen-like	CD5L	O43866	N/A	N/A	N/A	N/A
Membrane metallo-endopeptidase-like 1	MMEL1	Q495T6	N/A	N/A	N/A	N/A
SLAM family member 7	SLAMF7	Q9NQ25	Elotuzumab	For the treatment of refractory multiple myeloma in combination with other antineoplastic agents.	Intravenous	Modulator

Supplementary Table 8 Genetic instruments of six potential causal proteins for external validation

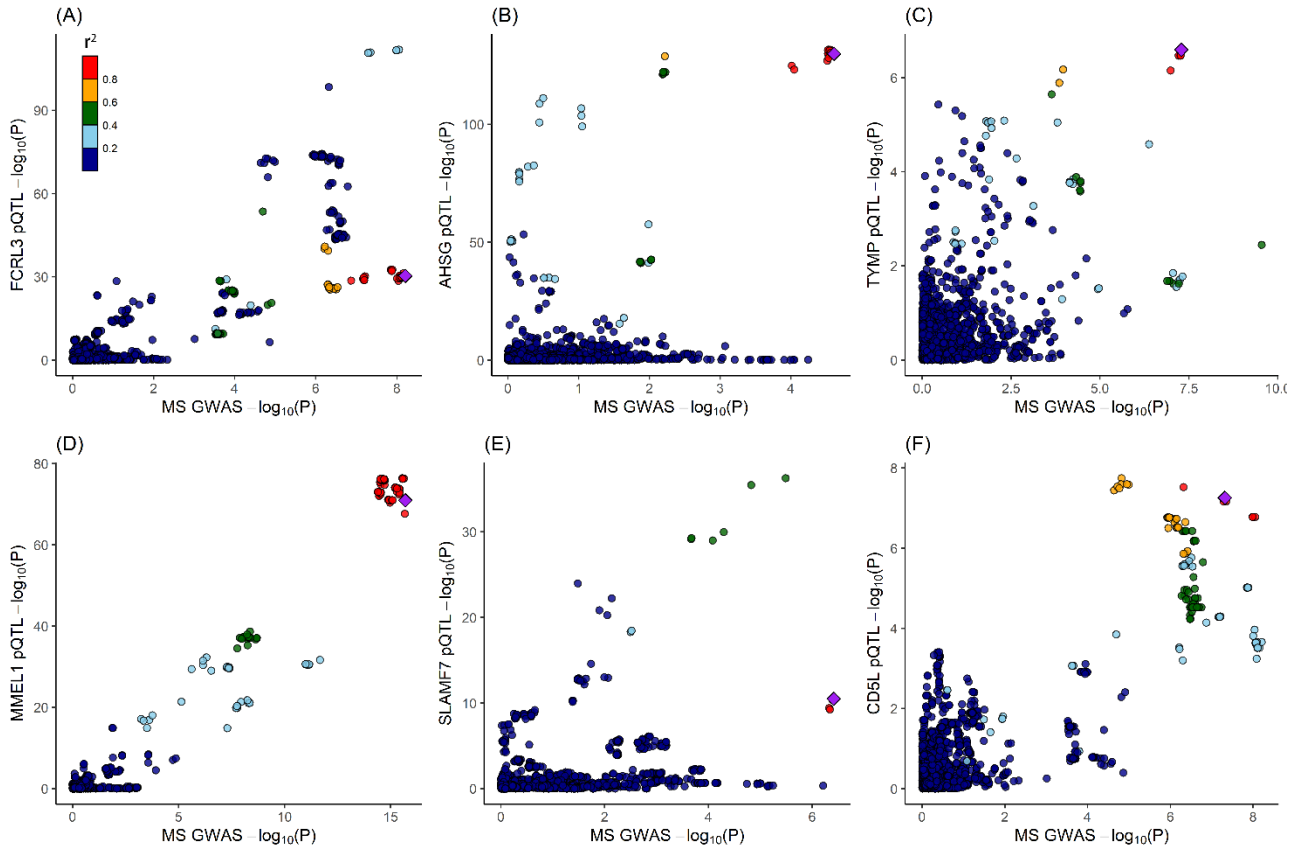
Tissue	Protein	SNP	Strategy	chr	pos	effect allele	other allele	beta	se	pval	Study
Plasma	FCRL3	rs7528684	same-variant	1	157670816	A	G	-0.8076	0.0114	1E-200	Pietzner
Plasma	TYMP	rs131798	same-variant	22	50971509	T	G	-0.0339	0.0155	0.02863	Pietzner
Plasma	AHSG	rs35094235	same-variant	3	186328951	T	G	-0.556	0.014	1E-200	Pietzner
Plasma	FCRL3	rs7528684	same-variant	1	157670816	G	A	0.5584	0.006222	1E-200	Ferkingstad
Plasma	TYMP	rs131798	same-variant	22	50971509	G	T	0.0488	0.009571	3.421E-07	Ferkingstad
Plasma	AHSG	rs35094235	same-variant	3	186328951	G	T	0.3566	0.007573	1E-200	Ferkingstad
Brain	MMEL1	rs10909839	same-variant	1	2708430	G	A	0.00642189	0.00323586	0.0479808	Yang
Brain	SLAMF7	rs3766374	same-variant	1	160720554	G	A	0.000951099	0.00367899	0.796161	Yang
Brain	CD5L	rs6427401	same-variant	1	157748564	G	A	0.0190219	0.0175076	0.278018	Yang
Plasma	FCRL3	rs7522061	significant-variant	1	157668390	T	C	-0.8073	0.0112	1E-200	Pietzner
Plasma	AHSG	rs10937258	significant-variant	3	186328342	T	G	0.5588	0.014	1E-200	Pietzner
Plasma	FCRL3	rs7528684	significant-variant	1	157701026	G	A	0.56	0.014557779	1E-200	Ferkingstad
Plasma	AHSG	rs4686790	significant-variant	3	186604193	G	T	-0.36	0.009358572	1E-200	Ferkingstad

Supplementary Fig. 1 Bidirectional MR analysis for multiple sclerosis on levels of six potential causal proteins



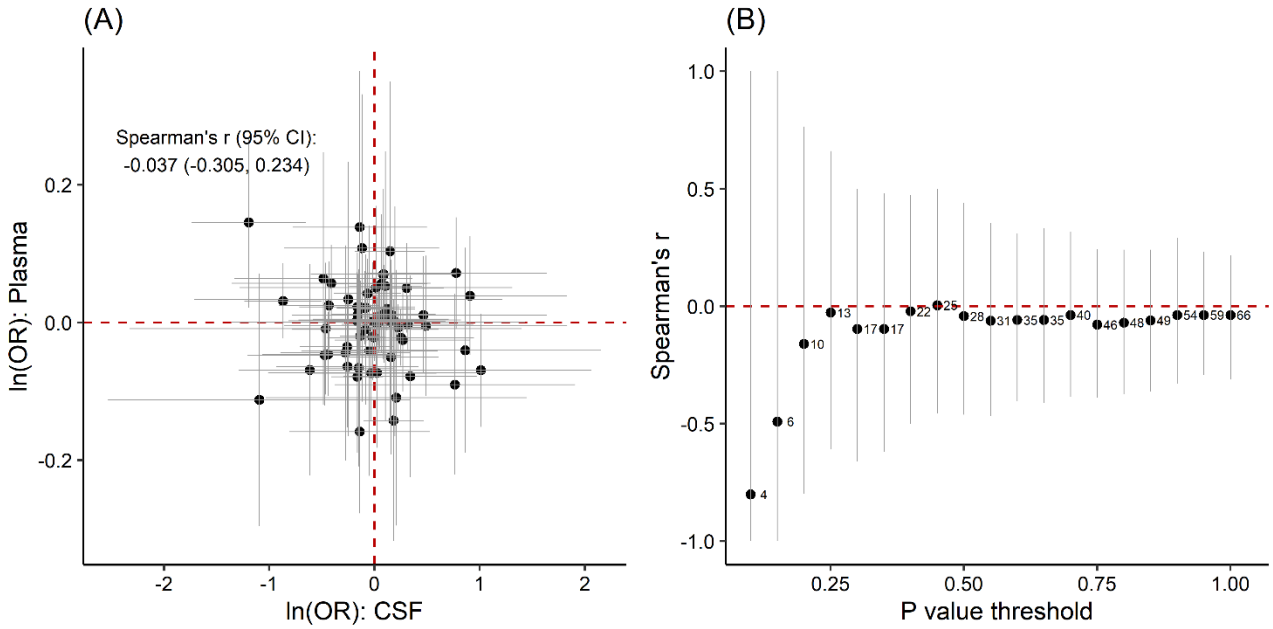
OR stood for the odds ratios for per standard deviation (SD) increase in plasma protein levels and per 10-fold increase in CSF protein levels as MS risk increased.

Supplementary Fig. 2 Bayesian colocalization analysis of six potential causal proteins and multiple sclerosis



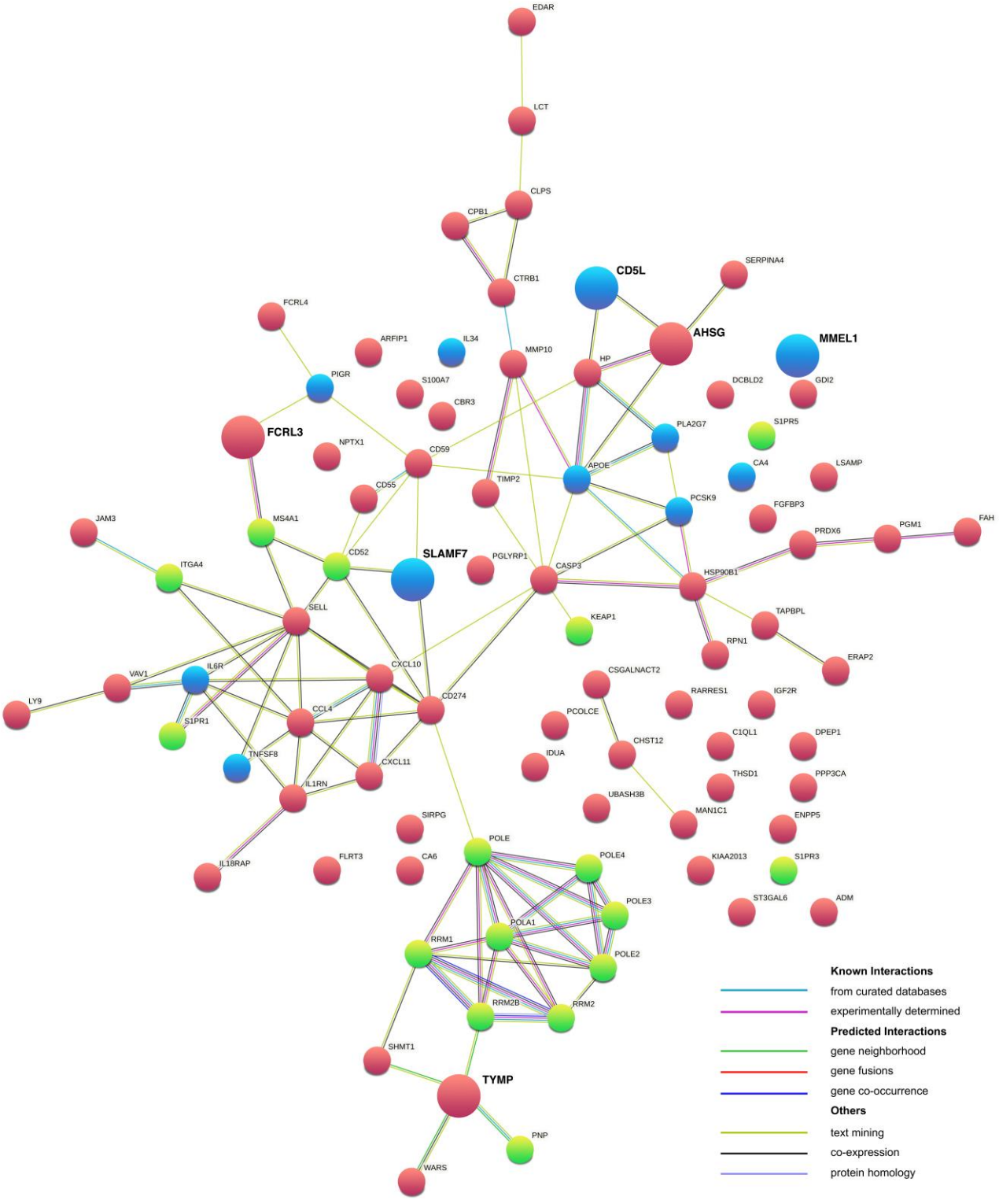
Colocalization analysis of plasma proteins for FCRL3 (A), TYMP (B) and AHSG (C), and CSF proteins for MMEL1 (D), SLAMF7 (E), and CD5L (F), respectively. Diamond purple points represented the SNP that with the minimal sum of *P* value in corresponded protein GWAS and multiple sclerosis GWAS.

Supplementary Fig. 3 Comparison analysis of MR estimates between plasma proteome and CSF proteome



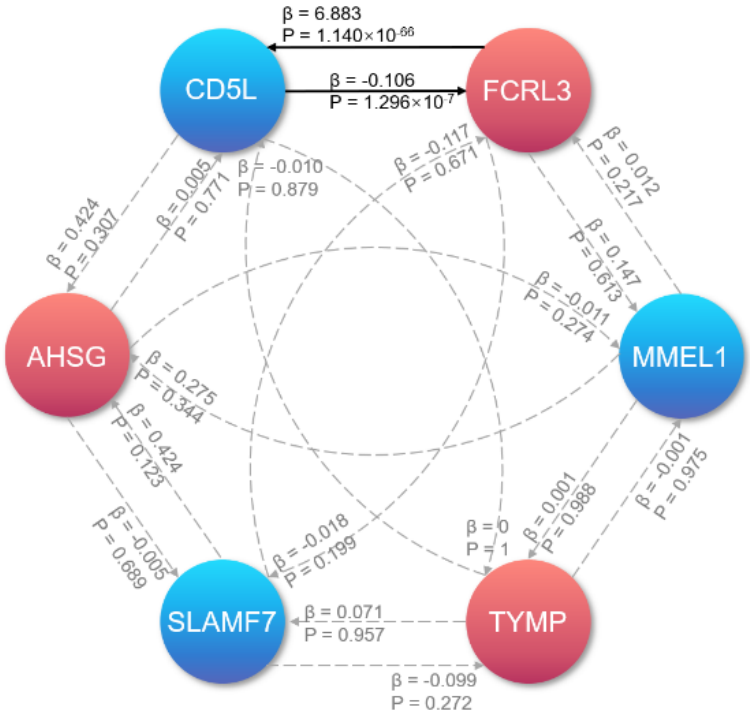
(A) All 66 overlapping proteins in plasma and CSF were used to perform correlation analysis. The horizontal and vertical gray line represented the 95% confidence interval of MR estimates in main analysis. The Spearman correlation coefficient was -0.037 (95% CI: -0.305, 0.234); (B) With different cutoff for *P* value to include MR estimates, Spearman correlation coefficient was calculated. The numbers on the left side of the black point represented the numbers of overlapping proteins correspondingly.

Supplementary Fig. 4 Protein-protein interaction network among the suggestive causal proteins (*P* < 0.05) and current multiple sclerosis medications targets



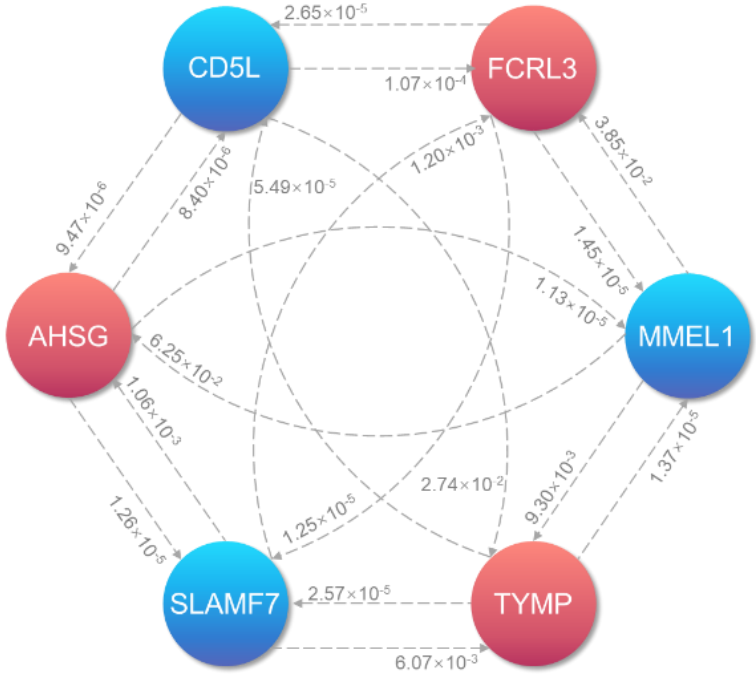
Red solid circles represented plasma proteins, blue solid circles represented represented CSF proteins, while green solid circles represented current MS medication targets. The largest solid circiles highlighted six potential causal proteins, including FCRL3, TYMP, AHSG, MMEL1, SLAMF7, and CD5L.

Supplementary Fig. 5 Protein-protein causal relationship among six potential causal proteins



Red solid circles represented plasma proteins, while blue solid circles represented represented CSF proteins. Unit for plasma and CSF proteins were per standard deviation (SD) increase and per 10-fold increase.

Supplementary Fig. 6 Protein-protein colocalization among six potential causal proteins



Numbers in figure represented posterior proability of two proteins colocalized (PPH_4). PPH_4 greater than 0.8 strongly indicated colocalization. Red solid circles represented plasma proteins, while blue solid circles represented represented CSF proteins