

Table E1. Thirteen studies that contributed to the GWAS of allergic disease reported by Ferreira et al. 2017.

Study	Study-type	Original case ascertainment	N total	N controls	Number of cases									N cases with co-morbidity	Age (mean, range)	% Females	Mean age-of-onset (range)				
					Total	With only a single disease			With two diseases			With all three diseases					Unclassifiable#	Asthma	Hay fever	Eczema	
						A+H+E-	A-H+E-	A-H+E+	A+H+E-	A+H+E+	A-H+E+	A+H+E+	A+H+E+								
UKBiobank	Population-based	NA	138354	96108	42246	8769	4838	1538	1661	596	439	364	24041	3060	56.7 (39-73)	53	30.3 (1-73)	24.4 (1-70)	25.6 (1-69)		
23andMe	Population-based	NA	118269	34934	83335	2048	26125	3648	8574	365	4193	3610	34772	16742	49.5 (1-114)	48	20.8 (0-93)	NA	23.6 (0-96)		
GERA	Population-based	NA	51218	15999	35219	4439	17401	2297	7836	416	1839	991	0	11082	62.3 (18-90)	59	NA	NA	NA		
CATSS	Population-based	NA	11068	7488	3580	1600	380	681	387	240	98	194	0	919	9.8 (9-23)	49	4.2 (0-23)	5.0 (0-11)	1.5 (0-11)		
NTR	Population-based	NA	10242	7919	2323	685	837	219	421	64	48	49	0	582	40.1 (4-94)	64	NA	NA	NA		
LifeLines	Population-based	NA	8560	4837	3723	190	1718	897	245	58	468	113	34	884	46.2 (18-88)	58	17.8 (0-66)	23.4 (0-88)	NA		
TWINGENE	Population-based	NA	5517	3762	1755	1007	418	79	219	21	5	6	0	251	58.3 (41-93)	51	54.1 (0-93)	24.9 (0-72)	1.5 (0-45)		
ALSPAC§	Population-based	NA	4964	2330	2634	373	620	374	224	139	187	187	530	737	A/E: 10.8 (10-13); H: 13.9 (13-16)	49	NA	NA	NA		
SALTY	Population-based	NA	4062	2761	1301	583	365	79	226	27	14	7	0	274	49.8 (41-72)	49	41.6 (0-72)	20.3 (0-52)	8.9 (0-46)		
AAGC	Selected case-control	Asthma	2435	460	1975	393	124	32	701	156	14	555	0	1426	35.1 (3-89)	56	15.5 (0-75)	NA	6.7 (0-40)		
GENEVA	Selected case-control	Eczema	2633	1274	1359	41	154	383	29	65	309	289	89	692	43.9 (0-85)	56	NA	NA	11.7 (0-85)		
GENUFAD-SHIP-1	Selected case-control	Eczema	1781	1364	417	0	0	323	0	46	26	22	0	94	Cases: 3.9 (1-34); Controls: 50.0 (20-81)	Cases: 39; Controls: 50	7 (1-31)	8 (2-31)	1 (0-2)		
GENUFAD-SHIP-2	Selected case-control	Eczema	1735	1473	262	0	0	169	0	35	27	31	0	93	Cases: 8.3 (1-26); Controls: 50.0 (20-81)	Cases: 54; Controls: 50	11 (2-24)	13 (1-26)	1 (0-2)		
Total			360838	180709	180129	20128	52980	10719	20523	2228	7667	6418	59466	36836							

# Individuals with missing information for at least one disease could not be classified into one of the seven three-disease groups.

§ For ALSPAC, information from different surveys was used to define asthma (A) and eczema (E) when compared to those used to define hay fever. For this reason, age of participants is reported separately for A/E and H.

**Table E2. Genome-wide association studies of gene expression levels queried to identify expression quantitative trait loci (i.e. eQTL)**

First author	PMID	Tissue/cell type	Sample size	cis effects	
				N genes	N associations $P < 2.3 \times 10^{-9}$
Andiappan	26259071	NEUTROPHILS	114	310	3776
Barreiro	22233810	DENDRITIC-NotInfected	65	36	36
		DENDRITIC-TBInfected	65	216	216
Battle	24092820	WHOLE-BLOOD	922	7792	7793
		WHOLE-BLOOD-ase	922	310	537
		WHOLE-BLOOD-splice	922	532	818
Brumpton	27155841	LCLS	356	27	2139
Caliskan	25874939	PBMCS-baseline	98	173	173
		PBMCS-rhinovirus	98	169	169
		PBMCS-rhinovirus-reQTL	98	12	12
Davenport	26917434	LEUCOCYTES	265	879	7699
Dimas	19644074	LCLS	75	97	121
		TCELLS	75	85	107
		FIBROBLASTS	75	102	136
		WHOLE-BLOOD	149	1195	2220
Di Narzo	27336838	WHOLE-BLOOD	149	1195	2220
		LESIONAL-SKIN	57	15	295
		NORMAL-SKIN	53	19	350
Dixon	17873877	UNINVOLVED-SKIN	53	12	160
		LCLS	400	634	6735
Fairfax 2012	22446964	LCLS	400	634	6735
		BCELLS	283	236	1723
Fairfax 2014	24604202	MONOCYTES	283	549	4051
		MONOCYTES-IFN	367	2048	21366
		MONOCYTES-LPS2	261	686	4658
		MONOCYTES-LPS24	322	1412	10740
		MONOCYTES-NAIVE	414	2024	24676
Fehrmann	21829388	WHOLE-BLOOD	1469	2944	23614
Ferraro	24610777	Tconv	65	26	118
		Tregs	65	24	105
Franco	23878721	WHOLE-BLOOD-Influenza	247	65	329
Lappalainen	24037378	LCLS	373	3525	1397237
Grundberg	22941192	LCLS	856	1550	68025
		SKIN	856	879	31390
		FIBROBLASTS	272	3910	368252
GTEx	25954001	LCLS	114	1062	88242
		LUNG	278	3148	335019

		SKIN	302	Table E2	4026	613093
		SPLEEN	89		926	74864
		WHOLE-BLOOD	338		3331	343913
Hao	23209423	LUNG	1111		4177	6339
Huang	25951796	LCLs	368		2196	3091
		PBMCs	240		1939	2617
		SKIN	110		384	453
Jansen	Under Review	WHOLE-BLOOD	4896		4377	7460
Kasela	28248954	CD4TCELLS	293		1256	121508
		CD8TCELLS	293		947	83337
Kim	25327457	MONOCYTES-Baseline	137		681	5669
		MONOCYTES-Differential	137		62	377
		MONOCYTES-LPS	137		554	4802
Kukurba	27197214	WHOLE-BLOOD	922		90	8333
Lee	24604203	DENDRITIC-Baseline	528		82	82
		DENDRITIC-Flu	342		105	105
		DENDRITIC-Flu-delta	342		44	44
		DENDRITIC-IFN $\beta$	284		86	86
		DENDRITIC-IFN $\beta$ -delta	284		23	24
		DENDRITIC-LPS	356		96	96
		DENDRITIC-LPS-delta	356		31	31
LloydJones	28065468	WHOLE-BLOOD	2765		5669	1373201
Luo	26102239	SMALL-AIRWAYS	105		152	174
Murphy	20833654	CD4-TCELLS	200		294	986
Naranbhai	26151758	NEUTROPHILS	101		493	547
Nedelec	27768889	MACROPHAGES-baseline	95		451	451
		MACROPHAGES-baseline-asQTL	95		634	951
		MACROPHAGES-listeria	95		422	422
		MACROPHAGES-listeria-asQTL	95		557	827
		MACROPHAGES-listeria-reQTL	95		93	93
		MACROPHAGES-salmonella	95		433	434
		MACROPHAGES-salmonella-asQTL	95		487	741
		MACROPHAGES-salmonella-reQTL	95		199	199
Peters	27015630	BCELLS	80		66	318
		CD4-TCELLS	121		396	2187
		CD8-TCELLS	108		277	1484
		MONOCYTES	124		564	3254
		NEUTROPHILS	121		341	1766

Quach	27768888	MONOCYTES-baseline	100	Table E2	467	469
		MONOCYTES-IAV	100		366	366
		MONOCYTES-LPS	100		464	465
		MONOCYTES-Pam3CSK4	100		536	537
		MONOCYTES-R848	100		478	479
Raj	24786080	CD4-TCELLS	407	1898	150019	
		MONOCYTES	401	2494	196870	
Walsh	27140173	WHOLE-BLOOD	377	3777	546913	
Westra	24013639	WHOLE-BLOOD	5311	4285	343167	
Yao	28285768	WHOLEBLOOD	5257	1681	93834	
Ye	25214635	CD4-TCELLS-48h328	348	51	51	
		CD4-TCELLS-48hTh17	348	45	45	
		CD4-TCELLS-4h328	348	24	24	
		CD4-TCELLS-4hIFNb	348	27	27	
		CD4-TCELLS-UNST	348	19	19	
		MONOCYTES	1490	2322	31353	
Zeller	20502693	MONOCYTES	1490	2322	31353	
Zhernakova	27918533	WHOLEBLOOD-exon-primary	2116	15028	88928	
		WHOLEBLOOD-exonratio-primary	2116	6064	20222	
		WHOLEBLOOD-gene-contextspecific	2116	14670	27186	
		WHOLEBLOOD-gene-primary	2116	15158	3669632	
		WHOLEBLOOD-polyAratio-primary	2116	1286	1843	

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**Table E3. eQTL included in the gene based test for each of the 30 genes identified in the discovery study.**

Table E3

Locus	Gene	eQTLs included in gene-based test
1	<i>CASZ1</i>	rs12045923 rs284296
2	<i>OR10J5</i>	rs2427837 rs2494260 rs6699459
3	<i>RP11-534L20.5</i>	rs1117858 rs17433909 rs2297546 rs2336941 rs2987936 rs35785716 rs41299005 rs61816859 rs6666087 rs74882519 rs7538261 rs874718
4	<i>FOSL2</i>	rs7562
5	<i>RBM15B</i>	rs73078636
5	<i>VPRBP</i>	rs73078636
6	<i>TICAM2</i>	rs17137937 rs2546480 rs256938
7	<i>NUP43</i>	rs112165893 rs117067995 rs12523685 rs13205080 rs139394852 rs17733403 rs60328093 rs2151910 rs2281436 rs237004 rs2789503 rs4870058 rs4870139 rs62439806 rs
8	<i>IPCEF1</i>	rs12528985 rs1406055 rs7759388 rs9397706
9	<i>AC004893.11</i>	rs4236540
10	<i>ABO</i>	rs10901244 rs12379977 rs12683493 rs176694 rs28645493 rs3094377 rs35664240 rs4962050 rs550057 rs623361 rs62576042 rs626035 rs9411463 rs9411490
11	<i>PTPLA</i>	rs17141430 rs7092926 rs7094705 rs78704091
11	<i>TMEM236</i>	rs45607131 rs55999004 rs7092926
12	<i>PRR5L</i>	rs10836545 rs1123347 rs12270539 rs12785381 rs429034 rs7925585
13	<i>NSMCE1</i>	rs4523932 rs9788909
14	<i>SPNS1</i>	rs112918513 rs11569775 rs11643913 rs12448482 rs139456978 rs151230 rs2726040 rs62035317 rs67479058 rs7201546 rs7498329 rs7499778 rs75556002 rs8045689 rs8
14	<i>APOBR</i>	rs151233 rs27741
14	<i>IL27</i>	rs231970 rs7191548
14	<i>SULT1A1</i>	rs11540497 rs12935321 rs79476281 rs231970 rs4788115 rs4788119 rs75227850 rs75539558
14	<i>RP11-264B17.4</i>	rs12448482 rs67479058 rs8045689
14	<i>LAT</i>	rs4788115 rs6565261 rs8045689
14	<i>ATXN2L</i>	rs8056890
14	<i>RP11-24N18.1</i>	rs8056890
15	<i>MYO1C</i>	rs147003567 rs4790152 rs56157500 rs59343110
16	<i>CTD-2369P2.8</i>	rs10411056 rs1799969 rs2017213 rs2358581 rs2633973 rs281437 rs28378712 rs3177696 rs62130661 rs77123125 rs78064630 rs79337061
16	<i>ICAM1</i>	rs10411056 rs1799969 rs2017213 rs2358581 rs2633973 rs281437 rs28378712 rs3177696 rs62130661 rs77123125 rs78064630 rs79337061
16	<i>ICAM4</i>	rs10411056 rs1799969 rs2017213 rs2358581 rs2633973 rs281437 rs28378712 rs3177696 rs62130661 rs7252450 rs77123125 rs78064630
17	<i>FPR1</i>	rs117223215 rs12461801 rs16983230 rs17661285 rs17803207 rs1868943 rs62106945 rs6509571 rs7253284 rs7254019 rs73056872 rs79956121 rs8104640 rs8110040
18	<i>NCF4</i>	rs2072710 rs4821544 rs4821549 rs5756363 rs5756391
18	<i>PVALB</i>	rs1015775 rs4820250 rs4821544 rs730483 rs74971025

Table E3

.6918774|rs6922028|rs7762285|rs78765468|rs79782857|rs9379347|rs6909158|rs9942443

.056259

**Table E4. Association results for each eQTL included in the gene-based test of each of the 30 genes identified in the discovery analysis.**

Gene	EUGENE gene-based P-value	Single-SNP association results with allergic disease in the adjusted GWAS						Single-SNP association results with gene expression in the respective published eQTL study *					
		Proxy tested	P-value	Effect allele	Other allele	Effect allele frequency	Beta	eQTL	eQTL study and tissue	P-value	Effect allele	Effect	
ABO	1.74E-07	rs550057	2.77E-07	T	C	0.2806	0.0294	rs550057	Zhernakova_WHOLEBLOOD-gene-primary	6.05E-142	T	-25.3655	
ABO	1.74E-07	rs550057	2.77E-07	T	C	0.2806	0.0294	rs550057	Zhernakova_WHOLEBLOOD-gene-contextspecific	6.05E-142	T	-25.3655	
ABO	1.74E-07	rs550057	2.77E-07	T	C	0.2806	0.0294	rs550057	Zhernakova_WHOLEBLOOD-exon-primary	6.54E-133	T	-24.5331	
ABO	1.74E-07	rs550057	2.77E-07	T	C	0.2806	0.0294	rs550057	Zhernakova_WHOLEBLOOD-exonratio-primary	1.53E-29	T	-11.2868	
ABO	1.74E-07	rs550057	2.77E-07	T	C	0.2806	0.0294	rs550057	Zhernakova_WHOLEBLOOD-exon-primary	1.04E-27	T	-10.9092	
ABO	1.74E-07	rs550057	2.77E-07	T	C	0.2806	0.0294	rs550057	Zhernakova_WHOLEBLOOD-exon-primary	8.92E-27	T	-10.712	
ABO	1.74E-07	rs550057	2.77E-07	T	C	0.2806	0.0294	rs550057	Zhernakova_WHOLEBLOOD-exon-primary	4.48E-26	T	-10.5617	
ABO	1.74E-07	rs550057	2.77E-07	T	C	0.2806	0.0294	rs550057	Zhernakova_WHOLEBLOOD-exonratio-primary	8.08E-24	T	-10.0626	
ABO	1.74E-07	rs550057	2.77E-07	T	C	0.2806	0.0294	rs550057	Zhernakova_WHOLEBLOOD-exonratio-primary	1.85E-23	T	-9.98077	
ABO	1.74E-07	rs550057	2.77E-07	T	C	0.2806	0.0294	rs550057	Yao_WHOLEBLOOD	1.28E-11	C	0.0253396	
ABO	1.74E-07	rs550057	2.77E-07	T	C	0.2806	0.0294	rs550057	GTE_WHOLEBLOOD	3.45E-10	T	-0.53797	
ABO	1.74E-07	rs176694	1.15E-05	T	G	0.8895	-0.0376	rs176694	Zhernakova_WHOLEBLOOD-gene-primary	8.37E-25	G	-10.2834	
ABO	1.74E-07	rs28645493	0.000417512	C	G	0.9031	-0.0328	rs28645493	Zhernakova_WHOLEBLOOD-gene-primary	8.86E-32	G	-11.7307	
ABO	1.74E-07	rs4962050	0.00159826	C	G	0.3078	-0.0180	rs4962050	Zhernakova_WHOLEBLOOD-gene-primary	4.50E-25	C	10.343	
ABO	1.74E-07	rs12683493	0.00756848	T	C	0.1990	-0.0166	rs12683493	Zhernakova_WHOLEBLOOD-gene-primary	1.39E-11	T	6.75868	
ABO	1.74E-07	rs9411490	0.0892349	A	G	0.8214	0.0109	rs9411490	Zhernakova_WHOLEBLOOD-gene-contextspecific	2.57E-16	G	-8.19194	
ABO	1.74E-07	rs12379977	0.265942	T	C	0.3299	-0.0061	rs12379977	Zhernakova_WHOLEBLOOD-gene-primary	2.72E-18	T	8.72254	
ABO	1.74E-07	rs10901244	0.364805	T	C	0.4184	-0.0046	rs10901244	Hao_LUNG	0	T	-8.47	
ABO	1.74E-07	rs626035	0.443795	T	G	0.8027	0.0048	rs626035	Zhernakova_WHOLEBLOOD-gene-primary	1.91E-17	G	8.49909	
ABO	1.74E-07	rs9411463	0.492101	T	C	0.0867	-0.0069	rs9411463	Hao_LUNG	0	C	-11.7	
ABO	1.74E-07	rs9411463	0.492101	T	C	0.0867	-0.0069	rs9411463	Zhernakova_WHOLEBLOOD-gene-primary	2.39E-73	T	18.1159	
ABO	1.74E-07	rs9411463	0.492101	T	C	0.0867	-0.0069	rs9411463	GTE_SKIN	6.54E-20	T	1.12925	
ABO	1.74E-07	rs9411463	0.492101	T	C	0.0867	-0.0069	rs9411463	GTE_SKIN	1.00E-17	T	1.38294	
ABO	1.74E-07	rs9411463	0.492101	T	C	0.0867	-0.0069	rs9411463	GTE_LUNG	7.67E-12	T	0.626984	
ABO	1.74E-07	rs35664240	0.592636	T	C	0.1105	0.0052	rs35664240	Zhernakova_WHOLEBLOOD-gene-primary	2.39E-12	T	-7.00975	
ABO	1.74E-07	rs62576042	0.625485	T	C	0.1701	0.0037	rs62576042	Zhernakova_WHOLEBLOOD-gene-primary	2.18E-21	T	9.49601	
ABO	1.74E-07	rs623361	0.635394	A	G	0.3350	0.0028	rs623361	Zhernakova_WHOLEBLOOD-gene-primary	4.77E-11	A	6.57812	
ABO	1.74E-07	rs3094377	0.875632	T	C	0.0340	-0.0021	rs3094377	Zhernakova_WHOLEBLOOD-gene-primary	1.39E-18	T	-8.7985	
AC004893.11	8.10E-07	rs4236540	8.10E-07	T	G	0.7143	-0.0282	rs4236540	Zhernakova_WHOLEBLOOD-exon-primary	3.67E-15	G	7.86572	
AC004893.11	8.10E-07	rs4236540	8.10E-07	T	G	0.7143	-0.0282	rs4236540	Zhernakova_WHOLEBLOOD-gene-primary	1.16E-13	G	7.42145	
AC004893.11	8.10E-07	rs4236540	8.10E-07	T	G	0.7143	-0.0282	rs4236540	Zhernakova_WHOLEBLOOD-gene-contextspecific	1.16E-13	G	7.42145	
APOBR	1.58E-08	rs151233	3.22E-06	T	C	0.1327	0.0385	rs151233	Zhernakova_WHOLEBLOOD-exon-primary	2.31E-12	T	-7.0144	
APOBR	1.58E-08	rs151233	3.22E-06	T	C	0.1327	0.0385	rs151233	Zhernakova_WHOLEBLOOD-exon-primary	1.47E-11	T	-6.75084	
APOBR	1.58E-08	rs151233	3.22E-06	T	C	0.1327	0.0385	rs151233	Zhernakova_WHOLEBLOOD-gene-contextspecific	9.17E-10	T	-6.12304	
APOBR	1.58E-08	rs151233	3.22E-06	T	C	0.1327	0.0385	rs151233	Zhernakova_WHOLEBLOOD-gene-primary	9.17E-10	T	-6.12304	
APOBR	1.58E-08	rs27741	4.42E-06	A	G	0.3622	-0.0239	rs27741	LloydJones_WHOLEBLOOD	9.90E-30	A	0.313874	
ATXN2L	1.71E-06	rs8056890	1.71E-06	A	G	0.2959	-0.0254	rs8056890	Zhernakova_WHOLEBLOOD-gene-contextspecific	2.10E-23	A	-9.96813	
ATXN2L	1.71E-06	rs8056890	1.71E-06	A	G	0.2959	-0.0254	rs8056890	Zhernakova_WHOLEBLOOD-gene-primary	2.10E-23	A	-9.96813	
ATXN2L	1.71E-06	rs8056890	1.71E-06	A	G	0.2959	-0.0254	rs8056890	Zhernakova_WHOLEBLOOD-exon-primary	3.78E-22	A	-9.67673	
ATXN2L	1.71E-06	rs8056890	1.71E-06	A	G	0.2959	-0.0254	rs8056890	Zhernakova_WHOLEBLOOD-gene-primary	1.27E-20	A	-9.31092	
ATXN2L	1.71E-06	rs8056890	1.71E-06	A	G	0.2959	-0.0254	rs8056890	Zhernakova_WHOLEBLOOD-gene-contextspecific	1.27E-20	A	-9.31092	
ATXN2L	1.71E-06	rs8056890	1.71E-06	A	G	0.2959	-0.0254	rs8056890	Zhernakova_WHOLEBLOOD-exon-primary	4.79E-14	A	-7.53739	
CASZ1	1.93E-06	rs12045923	4.87E-07	T	C	0.6497	0.0288	rs12045923	Kim_MONOCYTES-LPS	7.63E-12	NA	-9	
CASZ1	1.93E-06	rs12045923	4.87E-07	T	C	0.6497	0.0288	rs12045923	Kim_MONOCYTES-Baseline	3.72E-11	NA	-9	
CASZ1	1.93E-06	rs284296	0.29118	A	G	0.7823	-0.0070	rs284296	LloydJones_WHOLEBLOOD	7.10E-18	G	-0.282965	
CASZ1	1.93E-06	rs284296	0.29118	A	G	0.7823	-0.0070	rs284296	Zhernakova_WHOLEBLOOD-exonratio-primary	3.41E-10	G	6.27892	
CTD-2369P2.8	5.10E-07	rs1799969	1.76E-05	A	G	0.1480	0.0355	rs1799969	Zhernakova_WHOLEBLOOD-gene-primary	2.10E-14	A	-7.64456	
CTD-2369P2.8	5.10E-07	rs78064630	0.00135441	A	G	0.0765	Page010314	rs78064630	Zhernakova_WHOLEBLOOD-gene-primary	2.46E-12	A	7.00583	

CTD-2369P2.8	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-exon-primary	2.96E-190	T	29.421
CTD-2369P2.8	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-gene-contextspecific	1.17E-181	T	28.7411
CTD-2369P2.8	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-gene-primary	1.17E-181	T	28.7411
CTD-2369P2.8	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	GTE_WHOLEBLOOD	4.51E-21	T	0.410584
CTD-2369P2.8	5.10E-07	rs2633973	0.00276867	T	C	0.6599	-0.0168	rs2633973	Zhernakova_WHOLEBLOOD-gene-primary	8.83E-10	C	-6.12904
CTD-2369P2.8	5.10E-07	rs28378712	0.00678241	T	G	0.6803	-0.0152	rs28378712	Zhernakova_WHOLEBLOOD-gene-primary	3.55E-19	G	-8.94992
CTD-2369P2.8	5.10E-07	rs2017213	0.0075857	A	T	0.3810	-0.0139	rs2017213	Zhernakova_WHOLEBLOOD-gene-primary	6.90E-12	A	6.85981
CTD-2369P2.8	5.10E-07	rs10411056	0.0197799	A	C	0.9354	0.0226	rs10411056	Zhernakova_WHOLEBLOOD-gene-primary	2.83E-15	C	7.89849
CTD-2369P2.8	5.10E-07	rs79337061	0.348043	T	C	0.0765	-0.0091	rs79337061	Zhernakova_WHOLEBLOOD-gene-primary	3.58E-15	T	7.86884
CTD-2369P2.8	5.10E-07	rs2358581	0.352461	T	G	0.2483	-0.0056	rs2358581	Zhernakova_WHOLEBLOOD-gene-primary	1.63E-27	T	-10.8681
CTD-2369P2.8	5.10E-07	rs62130661	0.464875	C	G	0.8010	0.0047	rs62130661	Zhernakova_WHOLEBLOOD-gene-primary	6.30E-30	G	11.3644
CTD-2369P2.8	5.10E-07	rs77123125	0.758586	A	G	0.1003	-0.0032	rs77123125	Zhernakova_WHOLEBLOOD-gene-primary	7.17E-10	A	-6.16239
CTD-2369P2.8	5.10E-07	rs3177696	0.908246	T	C	0.9201	-0.0010	rs3177696	Zhernakova_WHOLEBLOOD-gene-primary	3.44E-15	C	7.874
FOSL2	8.76E-07	rs7562	8.76E-07	T	C	0.5306	0.0251	rs7562	Zhernakova_WHOLEBLOOD-exonratio-primary	2.60E-29	C	-11.2398
FOSL2	8.76E-07	rs7562	8.76E-07	T	C	0.5306	0.0251	rs7562	Zhernakova_WHOLEBLOOD-exonratio-primary	6.14E-26	C	10.5324
FOSL2	8.76E-07	rs7562	8.76E-07	T	C	0.5306	0.0251	rs7562	Walsh_WHOLEBLOOD	1.89E-11	T	-0.47246
FOSL2	8.76E-07	rs7562	8.76E-07	T	C	0.5306	0.0251	rs7562	Zhernakova_WHOLEBLOOD-exonratio-primary	1.41E-09	C	6.05473
FPR1	1.49E-08	rs7254019	1.79E-05	A	G	0.1395	0.0381	rs7254019	Zhernakova_WHOLEBLOOD-gene-primary	1.45E-10	A	-6.41041
FPR1	1.49E-08	rs12461801	9.65E-05	A	G	0.5969	-0.0203	rs12461801	Zhernakova_WHOLEBLOOD-exon-primary	1.83E-150	G	-26.1263
FPR1	1.49E-08	rs12461801	9.65E-05	A	G	0.5969	-0.0203	rs12461801	Zhernakova_WHOLEBLOOD-gene-primary	4.30E-132	G	-24.4563
FPR1	1.49E-08	rs12461801	9.65E-05	A	G	0.5969	-0.0203	rs12461801	Zhernakova_WHOLEBLOOD-exon-primary	6.10E-121	G	-23.3847
FPR1	1.49E-08	rs12461801	9.65E-05	A	G	0.5969	-0.0203	rs12461801	LloydJones_WHOLEBLOOD	7.10E-80	G	-0.532809
FPR1	1.49E-08	rs12461801	9.65E-05	A	G	0.5969	-0.0203	rs12461801	Zhernakova_WHOLEBLOOD-exon-primary	4.02E-45	G	-14.096
FPR1	1.49E-08	rs12461801	9.65E-05	A	G	0.5969	-0.0203	rs12461801	Zhernakova_WHOLEBLOOD-exon-primary	3.32E-20	G	-9.20782
FPR1	1.49E-08	rs12461801	9.65E-05	A	G	0.5969	-0.0203	rs12461801	Walsh_WHOLEBLOOD	5.91E-14	G	-0.538086
FPR1	1.49E-08	rs6509571	0.000191405	T	C	0.3520	-0.0198	rs6509571	Westra_WHOLEBLOOD	7.86E-73	T	18.0502
FPR1	1.49E-08	rs6509571	0.000191405	T	C	0.3520	-0.0198	rs6509571	LloydJones_WHOLEBLOOD	1.60E-38	T	0.373842
FPR1	1.49E-08	rs6509571	0.000191405	T	C	0.3520	-0.0198	rs6509571	Zhernakova_WHOLEBLOOD-gene-primary	3.51E-34	T	12.1901
FPR1	1.49E-08	rs7253284	0.000877773	A	G	0.3282	0.0180	rs7253284	Hao_LUNG	0	G	10.3
FPR1	1.49E-08	rs7253284	0.000877773	A	G	0.3282	0.0180	rs7253284	Zhernakova_WHOLEBLOOD-gene-primary	5.36E-93	A	-20.4556
FPR1	1.49E-08	rs7253284	0.000877773	A	G	0.3282	0.0180	rs7253284	Zeller_MONOCYTES	6.54E-92	NA	-9
FPR1	1.49E-08	rs7253284	0.000877773	A	G	0.3282	0.0180	rs7253284	Westra_WHOLEBLOOD	6.06E-90	A	-20.11
FPR1	1.49E-08	rs7253284	0.000877773	A	G	0.3282	0.0180	rs7253284	LloydJones_WHOLEBLOOD	3.50E-48	A	-0.441034
FPR1	1.49E-08	rs7253284	0.000877773	A	G	0.3282	0.0180	rs7253284	GTE_WHOLEBLOOD	1.35E-09	G	0.1661
FPR1	1.49E-08	rs62106945	0.00554085	T	C	0.0884	0.0252	rs62106945	Zhernakova_WHOLEBLOOD-gene-primary	1.73E-11	T	-6.7268
FPR1	1.49E-08	rs16983230	0.0164076	T	G	0.9558	-0.0316	rs16983230	Westra_WHOLEBLOOD	3.93E-10	G	-6.25665
FPR1	1.49E-08	rs79956121	0.0172967	T	C	0.0714	0.0277	rs79956121	Zhernakova_WHOLEBLOOD-gene-primary	2.37E-10	T	-6.33492
FPR1	1.49E-08	rs1868943	0.0584274	A	G	0.0986	0.0170	rs1868943	Zhernakova_WHOLEBLOOD-gene-primary	8.29E-31	A	-11.54
FPR1	1.49E-08	rs1868943	0.0584274	A	G	0.0986	0.0170	rs1868943	Zhernakova_WHOLEBLOOD-exon-primary	1.29E-19	A	-9.06152
FPR1	1.49E-08	rs17661285	0.0848097	A	G	0.3163	-0.0095	rs17661285	Westra_WHOLEBLOOD	3.20E-25	A	10.376
FPR1	1.49E-08	rs17661285	0.0848097	A	G	0.3163	-0.0095	rs17661285	LloydJones_WHOLEBLOOD	9.60E-13	A	0.211433
FPR1	1.49E-08	rs8110040	0.568977	A	G	0.0884	0.0050	rs8110040	Westra_WHOLEBLOOD	5.78E-17	A	-8.36968
FPR1	1.49E-08	rs8104640	0.573427	T	C	0.1207	0.0050	rs8104640	Westra_WHOLEBLOOD	4.18E-108	T	22.0876
FPR1	1.49E-08	rs8104640	0.573427	T	C	0.1207	0.0050	rs8104640	LloydJones_WHOLEBLOOD	1.00E-61	T	0.795929
FPR1	1.49E-08	rs8104640	0.573427	T	C	0.1207	0.0050	rs8104640	Walsh_WHOLEBLOOD	4.66E-28	C	1.2629
FPR1	1.49E-08	rs8104640	0.573427	T	C	0.1207	0.0050	rs8104640	GTE_FIBROBLASTS	7.55E-18	T	0.748262
FPR1	1.49E-08	rs17803207	0.624261	A	G	0.1122	-0.0037	rs17803207	Zhernakova_WHOLEBLOOD-exon-primary	2.36E-191	A	29.5069
FPR1	1.49E-08	rs17803207	0.624261	A	G	0.1122	-0.0037	rs17803207	Zhernakova_WHOLEBLOOD-exonratio-primary	2.23E-61	A	16.5302
FPR1	1.49E-08	rs17803207	0.624261	A	G	0.1122	-0.0037	rs17803207	Battle_WHOLEBLOOD-ase	4.72E-53	NA	-9
FPR1	1.49E-08	rs17803207	0.624261	A	G	0.1122	-0.0037	rs17803207	Zhernakova_WHOLEBLOOD-exon-primary	1.54E-12	A	7.07069
FPR1	1.49E-08	rs117223215	0.721224	T	C	0.0153	0.0055	rs117223215	LloydJones_WHOLEBLOOD	3.90E-20	T	-0.776936
FPR1	1.49E-08	rs73056872	0.919279	T	G	0.9133	-0.0009	rs73056872	LloydJones_WHOLEBLOOD	1.20E-15	G	-0.406202
ICAM1	5.10E-07	rs1799969	1.76E-05	A	G	0.1480	0.0355	rs1799969	Zhernakova_WHOLEBLOOD-gene-primary	2.10E-14	A	-7.64456
ICAM1	5.10E-07	rs78064630	0.00135441	A	G	0.0765	-0.0314	rs78064630	Zhernakova_WHOLEBLOOD-gene-primary	2.46E-12	A	7.00583
ICAM1	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-exon-primary	2.96E-190	T	29.421
ICAM1	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-gene-contextspecific	1.17E-181	T	28.7411
ICAM1	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-gene-primary	1.17E-181	T	28.7411



ICAM1	5.10E-07	rs281437	0.00184684	T	C	0.2670	0.0178	rs281437	Raj_MONOCYTES	4.09E-94	NA	-9
ICAM1	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Battle_WHOLEBLOOD	3.16E-44	NA	-9
ICAM1	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-gene-primary	3.14E-30	T	11.4249
ICAM1	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-exon-primary	1.62E-28	T	11.0773
ICAM1	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-exon-primary	3.29E-26	T	10.5908
ICAM1	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-exon-primary	7.79E-26	T	10.5098
ICAM1	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-gene-primary	2.07E-21	T	9.50136
ICAM1	5.10E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-exon-primary	1.46E-13	T	7.39063
ICAM1	5.10E-07	rs2633973	0.00276867	T	C	0.6599	-0.0168	rs2633973	Zhernakova_WHOLEBLOOD-gene-primary	8.83E-10	C	-6.12904
ICAM1	5.10E-07	rs28378712	0.00678241	T	G	0.6803	-0.0152	rs28378712	Zhernakova_WHOLEBLOOD-gene-primary	3.55E-19	G	-8.94992
ICAM1	5.10E-07	rs2017213	0.0075857	A	T	0.3810	-0.0139	rs2017213	Zhernakova_WHOLEBLOOD-gene-primary	6.90E-12	A	6.85981
ICAM1	5.10E-07	rs10411056	0.0197799	A	C	0.9354	0.0226	rs10411056	Zhernakova_WHOLEBLOOD-gene-primary	2.83E-15	C	7.89849
ICAM1	5.10E-07	rs79337061	0.348043	T	C	0.0765	-0.0091	rs79337061	Zhernakova_WHOLEBLOOD-gene-primary	3.58E-15	T	7.86884
ICAM1	5.10E-07	rs2358581	0.352461	T	G	0.2483	-0.0056	rs2358581	Zhernakova_WHOLEBLOOD-gene-primary	1.63E-27	T	-10.8681
ICAM1	5.10E-07	rs62130661	0.464875	C	G	0.8010	0.0047	rs62130661	Zhernakova_WHOLEBLOOD-gene-primary	6.30E-30	G	11.3644
ICAM1	5.10E-07	rs77123125	0.758586	A	G	0.1003	-0.0032	rs77123125	Zhernakova_WHOLEBLOOD-gene-primary	7.17E-10	A	-6.16239
ICAM1	5.10E-07	rs3177696	0.908246	T	C	0.9201	-0.0010	rs3177696	Zhernakova_WHOLEBLOOD-gene-primary	3.44E-15	C	7.874
ICAM4	6.08E-07	rs1799969	1.76E-05	A	G	0.1480	0.0355	rs1799969	Zhernakova_WHOLEBLOOD-gene-primary	2.10E-14	A	-7.64456
ICAM4	6.08E-07	rs1799969	1.76E-05	A	G	0.1480	0.0355	rs1799969	Westra_WHOLEBLOOD	8.91E-11	A	-6.48453
ICAM4	6.08E-07	rs78064630	0.00135441	A	G	0.0765	-0.0314	rs78064630	Zhernakova_WHOLEBLOOD-gene-primary	2.46E-12	A	7.00583
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Battle_WHOLEBLOOD	1.06E-216	NA	-9
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-exon-primary	2.96E-190	T	29.421
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-gene-contextspecific	1.17E-181	T	28.7411
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Zhernakova_WHOLEBLOOD-gene-primary	1.17E-181	T	28.7411
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Fairfax_MONOCYTES-NAIVE	2.35E-129	NA	-9
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Westra_WHOLEBLOOD	2.04E-120	T	23.3333
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	LloydJones_WHOLEBLOOD	9.10E-100	T	0.663692
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Fairfax_MONOCYTES-NAIVE	5.49E-97	NA	-9
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Fairfax_MONOCYTES	2.77E-92	NA	-9
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Fairfax_MONOCYTES	7.46E-62	NA	-9
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Westra_WHOLEBLOOD	8.86E-54	T	15.4397
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	LloydJones_WHOLEBLOOD	6.30E-38	T	0.400262
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Walsh_WHOLEBLOOD	1.28E-37	C	-0.967882
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	GTE_WHOLEBLOOD	1.83E-34	T	0.619615
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Grundberg_LCLS	1.43E-16	T	-0.100867
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Davenport_LEUCOCYTES	4.91E-11	NA	-9
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Yao_WHOLEBLOOD	2.19E-10	C	-0.045635
ICAM4	6.08E-07	rs281437	0.00184684	T	C	0.2670	-0.0178	rs281437	Yao_WHOLEBLOOD	2.19E-10	C	-0.045635
ICAM4	6.08E-07	rs2633973	0.00276867	T	C	0.6599	-0.0168	rs2633973	Zhernakova_WHOLEBLOOD-gene-primary	8.83E-10	C	-6.12904
ICAM4	6.08E-07	rs28378712	0.00678241	T	G	0.6803	-0.0152	rs28378712	Zhernakova_WHOLEBLOOD-gene-primary	3.55E-19	G	-8.94992
ICAM4	6.08E-07	rs2017213	0.0075857	A	T	0.3810	-0.0139	rs2017213	Zhernakova_WHOLEBLOOD-gene-primary	6.90E-12	A	6.85981
ICAM4	6.08E-07	rs10411056	0.0197799	A	C	0.9354	0.0226	rs10411056	Zhernakova_WHOLEBLOOD-gene-primary	2.83E-15	C	7.89849
ICAM4	6.08E-07	rs10411056	0.0197799	A	C	0.9354	0.0226	rs10411056	LloydJones_WHOLEBLOOD	9.30E-12	C	0.359728
ICAM4	6.08E-07	rs2358581	0.352461	T	G	0.2483	-0.0056	rs2358581	Zhernakova_WHOLEBLOOD-gene-primary	1.63E-27	T	-10.8681
ICAM4	6.08E-07	rs2358581	0.352461	T	G	0.2483	-0.0056	rs2358581	LloydJones_WHOLEBLOOD	1.00E-13	T	-0.222958
ICAM4	6.08E-07	rs7252450	0.397785	A	C	0.0782	-0.0082	rs7252450	LloydJones_WHOLEBLOOD	3.40E-15	A	0.413387
ICAM4	6.08E-07	rs7252450	0.397785	A	C	0.0782	-0.0082	rs7252450	Zhernakova_WHOLEBLOOD-gene-primary	1.19E-11	A	6.78206
ICAM4	6.08E-07	rs62130661	0.464875	C	G	0.8010	0.0047	rs62130661	Zhernakova_WHOLEBLOOD-gene-primary	6.30E-30	G	11.3644
ICAM4	6.08E-07	rs62130661	0.464875	C	G	0.8010	0.0047	rs62130661	LloydJones_WHOLEBLOOD	1.90E-16	G	0.285605
ICAM4	6.08E-07	rs77123125	0.758586	A	G	0.1003	-0.0032	rs77123125	Zhernakova_WHOLEBLOOD-gene-primary	7.17E-10	A	-6.16239
ICAM4	6.08E-07	rs3177696	0.908246	T	C	0.9201	-0.0010	rs3177696	Zhernakova_WHOLEBLOOD-gene-primary	3.44E-15	C	7.874
ICAM4	6.08E-07	rs3177696	0.908246	T	C	0.9201	-0.0010	rs3177696	LloydJones_WHOLEBLOOD	1.10E-10	C	0.314191
IL27	2.60E-08	rs231970	4.84E-06	A	G	0.8827	-0.0350	rs231970	Zhernakova_WHOLEBLOOD-gene-primary	4.80E-21	G	-9.41324
IL27	2.60E-08	rs7191548	1.18E-05	T	C	0.6599	0.0237	rs7191548	Zhernakova_WHOLEBLOOD-gene-primary	4.30E-36	C	12.5439
IL27	2.60E-08	rs7191548	1.18E-05	T	C	0.6599	0.0237	rs7191548	Zhernakova_WHOLEBLOOD-gene-contextspecific	4.30E-36	C	12.5439
IL27	2.60E-08	rs7191548	1.18E-05	T	C	0.6599	0.0237	rs7191548	Zhernakova_WHOLEBLOOD-exon-primary	3.14E-20	C	9.21402
IPCEF1	4.33E-07	rs9397706	4.73E-07	A	G	0.5272	0.0257	rs9397706	Zhernakova_WHOLEBLOOD-gene-primary	2.74E-13	G	7.30675

IPCEF1	4.33E-07	rs7759388	0.00300347	A	G	0.1599	0.0200	rs7759388	Zhernakova_WHOLEBLOOD-exon-primary	1.51E-23	A	-10.0008
IPCEF1	4.33E-07	rs7759388	0.00300347	A	G	0.1599	0.0200	rs7759388	Zhernakova_WHOLEBLOOD-gene-contextspecific	1.99E-19	A	-9.01372
IPCEF1	4.33E-07	rs7759388	0.00300347	A	G	0.1599	0.0200	rs7759388	Zhernakova_WHOLEBLOOD-gene-primary	1.99E-19	A	-9.01372
IPCEF1	4.33E-07	rs7759388	0.00300347	A	G	0.1599	0.0200	rs7759388	Battle_WHOLEBLOOD	2.78E-10	NA	-9
IPCEF1	4.33E-07	rs1406055	0.0498256	C	G	0.3214	0.0110	rs1406055	Zhernakova_WHOLEBLOOD-exon-primary	2.26E-153	C	26.3811
IPCEF1	4.33E-07	rs1406055	0.0498256	C	G	0.3214	0.0110	rs1406055	Zhernakova_WHOLEBLOOD-exonratio-primary	5.96E-128	C	24.0642
IPCEF1	4.33E-07	rs12528985	0.676521	T	C	0.3486	-0.0021	rs12528985	GTE_SKIN	1.39E-10	T	-0.363454
LAT	1.06E-06	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Fehrmann_WHOLEBLOOD	5.40E-177	G	28.37
LAT	1.06E-06	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-gene-primary	4.73E-19	C	8.91852
LAT	1.06E-06	rs6565261	0.000208433	A	C	0.2721	0.0212	rs6565261	Fehrmann_WHOLEBLOOD	2.40E-21	A	-9.48
LAT	1.06E-06	rs4788115	0.122264	A	T	0.2160	0.0112	rs4788115	Zhernakova_WHOLEBLOOD-exon-primary	3.58E-23	A	9.91507
LAT	1.06E-06	rs4788115	0.122264	A	T	0.2160	0.0112	rs4788115	Zhernakova_WHOLEBLOOD-exon-primary	1.57E-16	A	-8.25109
LAT	1.06E-06	rs4788115	0.122264	A	T	0.2160	0.0112	rs4788115	Zhernakova_WHOLEBLOOD-gene-primary	3.93E-10	A	-6.25655
MYO1C	1.52E-06	rs56157500	9.23E-05	A	C	0.7738	-0.0239	rs56157500	Zhernakova_WHOLEBLOOD-gene-primary	3.06E-12	C	6.97484
MYO1C	1.52E-06	rs59343110	9.79E-05	T	C	0.0748	-0.0338	rs59343110	Zhernakova_WHOLEBLOOD-gene-primary	1.82E-13	T	7.36164
MYO1C	1.52E-06	rs59343110	9.79E-05	T	C	0.0748	-0.0338	rs59343110	Zhernakova_WHOLEBLOOD-gene-contextspecific	1.84E-11	T	6.71784
MYO1C	1.52E-06	rs147003567	0.0395452	A	G	0.0595	0.0206	rs147003567	Zhernakova_WHOLEBLOOD-gene-contextspecific	2.26E-22	A	-9.72914
MYO1C	1.52E-06	rs147003567	0.0395452	A	G	0.0595	0.0206	rs147003567	Zhernakova_WHOLEBLOOD-gene-primary	2.26E-22	A	-9.72914
MYO1C	1.52E-06	rs147003567	0.0395452	A	G	0.0595	0.0206	rs147003567	Zhernakova_WHOLEBLOOD-exon-primary	1.42E-20	A	-9.29855
MYO1C	1.52E-06	rs4790152	0.386692	T	C	0.5527	-0.0045	rs4790152	Hao_LUNG	0	G	-8.3
NCF4	4.85E-08	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Fairfax_MONOCYTES-LPS24	6.05E-40	NA	-9
NCF4	4.85E-08	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Fairfax_MONOCYTES-LPS24	7.82E-35	NA	-9
NCF4	4.85E-08	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Zeller_MONOCYTES	2.25E-28	NA	-9
NCF4	4.85E-08	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Westra_WHOLEBLOOD	3.24E-28	C	-11.015
NCF4	4.85E-08	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Fairfax_MONOCYTES-LPS24	8.02E-15	NA	-9
NCF4	4.85E-08	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Westra_WHOLEBLOOD	6.52E-13	C	-7.18937
NCF4	4.85E-08	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Raj_MONOCYTES	1.76E-12	NA	-9
NCF4	4.85E-08	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Raj_CD4TCELLS	4.44E-12	NA	-9
NCF4	4.85E-08	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	LloydJones_WHOLEBLOOD	1.20E-11	C	-0.199056
NCF4	4.85E-08	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Quach_MONOCYTES-baseline	1.93E-11	NA	0.4
NCF4	4.85E-08	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Zhernakova_WHOLEBLOOD-gene-primary	1.85E-09	C	-6.01071
NCF4	4.85E-08	rs5756391	8.53E-06	A	G	0.3520	-0.0232	rs5756391	Westra_WHOLEBLOOD	3.81E-16	A	8.14455
NCF4	4.85E-08	rs4821549	0.0746725	A	G	0.0646	-0.0182	rs4821549	Raj_CD4TCELLS	8.38E-29	NA	-9
NCF4	4.85E-08	rs2072710	0.329012	A	G	0.2874	-0.0057	rs2072710	Raj_CD4TCELLS	3.43E-70	NA	-9
NCF4	4.85E-08	rs2072710	0.329012	A	G	0.2874	-0.0057	rs2072710	Westra_WHOLEBLOOD	3.55E-36	A	12.5591
NCF4	4.85E-08	rs2072710	0.329012	A	G	0.2874	-0.0057	rs2072710	Kasela_CD4TCELLS	1.34E-19	A	9.05737
NCF4	4.85E-08	rs2072710	0.329012	A	G	0.2874	-0.0057	rs2072710	Fairfax_MONOCYTES-LPS24	2.13E-13	NA	-9
NCF4	4.85E-08	rs2072710	0.329012	A	G	0.2874	-0.0057	rs2072710	Fairfax_MONOCYTES-LPS24	2.29E-11	NA	-9
NCF4	4.85E-08	rs2072710	0.329012	A	G	0.2874	-0.0057	rs2072710	Westra_WHOLEBLOOD	1.11E-09	A	-6.0922
NCF4	4.85E-08	rs5756363	0.353738	T	G	0.1276	-0.0067	rs5756363	Westra_WHOLEBLOOD	3.61E-10	T	-6.27023
NSMCE1	6.62E-07	rs4523932	5.15E-06	A	G	0.0119	-0.1047	rs4523932	Nedelec_MACROPHAGES-listeria-asQTL	1.40E-22	NA	0.130657
NSMCE1	6.62E-07	rs4523932	5.15E-06	A	G	0.0119	-0.1047	rs4523932	Nedelec_MACROPHAGES-baseline-asQTL	1.04E-17	NA	-0.11553
NSMCE1	6.62E-07	rs9788909	0.00370886	A	G	0.3452	0.0157	rs9788909	Zeller_MONOCYTES	1.72E-28	NA	-9
NSMCE1	6.62E-07	rs9788909	0.00370886	A	G	0.3452	0.0157	rs9788909	LloydJones_WHOLEBLOOD	2.00E-12	A	0.206931
NUP43	2.08E-06	rs6909158	7.46E-06	T	C	0.8078	-0.0297	rs9478311	Westra_WHOLEBLOOD	8.60E-11	G	-6.48984
NUP43	2.08E-06	rs4870139	1.29E-05	T	C	0.6412	-0.0236	rs4870139	Hao_LUNG	0	T	8.36
NUP43	2.08E-06	rs4870139	1.29E-05	T	C	0.6412	-0.0236	rs4870139	LloydJones_WHOLEBLOOD	1.70E-149	C	-0.738124
NUP43	2.08E-06	rs4870139	1.29E-05	T	C	0.6412	-0.0236	rs4870139	Zhernakova_WHOLEBLOOD-gene-primary	1.88E-97	C	-20.9498
NUP43	2.08E-06	rs4870139	1.29E-05	T	C	0.6412	-0.0236	rs4870139	Fairfax_MONOCYTES-NAIVE	4.66E-74	NA	-9
NUP43	2.08E-06	rs4870139	1.29E-05	T	C	0.6412	-0.0236	rs4870139	Raj_CD4TCELLS	4.00E-53	NA	-9
NUP43	2.08E-06	rs4870139	1.29E-05	T	C	0.6412	-0.0236	rs4870139	GTE_WHOLEBLOOD	8.91E-20	C	-0.422135
NUP43	2.08E-06	rs4870139	1.29E-05	T	C	0.6412	-0.0236	rs4870139	LloydJones_WHOLEBLOOD	3.10E-15	C	-0.223493
NUP43	2.08E-06	rs4870139	1.29E-05	T	C	0.6412	-0.0236	rs4870139	Davenport_LEUCOCYTES	2.18E-14	NA	-9
NUP43	2.08E-06	rs4870139	1.29E-05	T	C	0.6412	-0.0236	rs4870139	Kim_MONOCYTES-LPS	9.04E-11	NA	-9
NUP43	2.08E-06	rs4870139	1.29E-05	T	C	0.6412	-0.0236	rs4870139	Kasela_CD8TCELLS	1.89E-10	C	-6.37023
NUP43	2.08E-06	rs237004	0.000352558	A	C	0.3316	0.0190	rs237004	Fairfax_MONOCYTES-LPS24	1.01E-11	NA	-9
NUP43	2.08E-06	rs62439806	0.00671963	A	G	0.0408	0.0371	rs62439806	Raj_CD4TCELLS	6.89E-32	NA	-9

NUP43	2.08E-06	rs62439806	0.00671963	A	G	0.0408	Table E4	rs62439806	LloydJones_WHOLEBLOOD	1.90E-10	A	-0.545214
NUP43	2.08E-06	rs12523685	0.0240397	A	T	0.7942	-0.0136	rs12523685	LloydJones_WHOLEBLOOD	1.20E-09	T	-0.191625
NUP43	2.08E-06	rs2281436	0.0272181	T	C	0.2874	0.0128	rs2281436	LloydJones_WHOLEBLOOD	3.60E-10	T	-0.191296
NUP43	2.08E-06	rs9379347	0.102521	A	G	0.0204	-0.0297	rs9379347	Raj_CD4TCELLS	8.84E-10	NA	-9
NUP43	2.08E-06	rs78765468	0.117714	C	G	0.0969	-0.0152	rs78765468	LloydJones_WHOLEBLOOD	9.20E-14	C	0.350226
NUP43	2.08E-06	rs112165893	0.16007	C	G	0.9813	-0.0288	rs11263746	Raj_CD4TCELLS	2.49E-32	NA	-9
NUP43	2.08E-06	rs112165893	0.16007	C	G	0.9813	-0.0288	rs113263746	Raj_MONOCYTES	3.67E-26	NA	-9
NUP43	2.08E-06	rs117067995	0.161872	A	G	0.0510	-0.0181	rs117067995	Raj_MONOCYTES	3.61E-18	NA	-9
NUP43	2.08E-06	rs117067995	0.161872	A	G	0.0510	-0.0181	rs117067995	Raj_CD4TCELLS	1.95E-11	NA	-9
NUP43	2.08E-06	rs13205080	0.186375	T	C	0.0544	-0.0152	rs13205080	Raj_MONOCYTES	6.05E-13	NA	-9
NUP43	2.08E-06	rs13205080	0.186375	T	C	0.0544	-0.0152	rs13205080	Raj_CD4TCELLS	1.67E-10	NA	-9
NUP43	2.08E-06	rs2151910	0.2168	A	T	0.2500	-0.0074	rs2151910	Westra_WHOLEBLOOD	1.09E-41	A	13.5268
NUP43	2.08E-06	rs2151910	0.2168	A	T	0.2500	-0.0074	rs2151910	LloydJones_WHOLEBLOOD	3.50E-28	A	0.341155
NUP43	2.08E-06	rs2151910	0.2168	A	T	0.2500	-0.0074	rs2151910	Zhernakova_WHOLEBLOOD-gene-primary	9.44E-17	A	8.31178
NUP43	2.08E-06	rs7762285	0.266123	A	G	0.8622	0.0092	rs7762285	Westra_WHOLEBLOOD	3.41E-15	G	7.87491
NUP43	2.08E-06	rs4870058	0.315372	A	G	0.0544	-0.0145	rs4870058	Raj_CD4TCELLS	2.16E-29	NA	-9
NUP43	2.08E-06	rs4870058	0.315372	A	G	0.0544	-0.0145	rs4870058	LloydJones_WHOLEBLOOD	7.10E-16	A	-0.534455
NUP43	2.08E-06	rs17733403	0.358474	A	G	0.0646	-0.0093	rs17733403	Westra_WHOLEBLOOD	3.24E-10	A	6.28695
NUP43	2.08E-06	rs6922028	0.498364	T	G	0.4626	0.0035	rs6922028	LloydJones_WHOLEBLOOD	3.20E-10	T	0.169703
NUP43	2.08E-06	rs60328093	0.546268	T	C	0.0102	-0.0200	rs200592260	GTE_WHOLEBLOOD	7.31E-19	A	-0.39905
NUP43	2.08E-06	rs60328093	0.546268	T	C	0.0102	-0.0200	rs200592260	GTE_SKIN	2.75E-10	A	-0.323661
NUP43	2.08E-06	rs9942443	0.590615	A	C	0.2840	0.0031	rs9942443	LloydJones_WHOLEBLOOD	5.50E-13	A	-0.222816
NUP43	2.08E-06	rs139394852	0.652985	A	C	0.9235	-0.0051	rs139394852	Raj_CD4TCELLS	1.25E-16	NA	-9
NUP43	2.08E-06	rs139394852	0.652985	A	C	0.9235	-0.0051	rs139394852	Raj_MONOCYTES	5.90E-14	NA	-9
NUP43	2.08E-06	rs2789503	0.681245	A	G	0.4949	-0.0021	rs2789503	Westra_WHOLEBLOOD	3.28E-30	G	-11.4212
NUP43	2.08E-06	rs2789503	0.681245	A	G	0.4949	-0.0021	rs2789503	LloydJones_WHOLEBLOOD	5.60E-15	G	-0.211463
NUP43	2.08E-06	rs2789503	0.681245	A	G	0.4949	-0.0021	rs2789503	Fairfax_MONOCYTES-NAIVE	1.88E-10	NA	-9
NUP43	2.08E-06	rs79782857	0.727052	A	T	0.9864	-0.0070	rs79782857	Raj_CD4TCELLS	4.35E-13	NA	-9
NUP43	2.08E-06	rs6918774	0.935752	T	C	0.1327	-0.0007	rs6918774	LloydJones_WHOLEBLOOD	1.50E-11	T	-0.288587
OR10J5	2.26E-06	rs2427837	1.02E-05	A	G	0.2942	-0.0248	rs2427837	Westra_WHOLEBLOOD	6.38E-24	A	10.0858
OR10J5	2.26E-06	rs2494260	0.00142189	T	C	0.2211	0.0186	rs2494260	Westra_WHOLEBLOOD	4.32E-13	T	-7.24505
OR10J5	2.26E-06	rs6699459	0.00911848	A	G	0.2058	-0.0160	rs6699459	Westra_WHOLEBLOOD	8.31E-17	A	8.32692
PRR5L	9.72E-07	rs7925585	2.78E-06	A	G	0.6565	0.0244	rs7925585	Zhernakova_WHOLEBLOOD-gene-contextspecific	3.23E-12	G	6.96757
PRR5L	9.72E-07	rs7925585	2.78E-06	A	G	0.6565	0.0244	rs7925585	Zhernakova_WHOLEBLOOD-exon-primary	2.35E-11	G	6.68226
PRR5L	9.72E-07	rs7925585	2.78E-06	A	G	0.6565	0.0244	rs7925585	Zhernakova_WHOLEBLOOD-gene-primary	3.72E-11	G	6.6152
PRR5L	9.72E-07	rs12270539	0.000107622	T	C	0.0374	0.0593	rs12270539	LloydJones_WHOLEBLOOD	2.90E-27	T	-0.819609
PRR5L	9.72E-07	rs429034	0.117757	A	T	0.7721	0.0099	rs429034	Zhernakova_WHOLEBLOOD-gene-primary	4.15E-19	T	-8.93263
PRR5L	9.72E-07	rs429034	0.117757	A	T	0.7721	0.0099	rs429034	Zhernakova_WHOLEBLOOD-exon-primary	4.02E-17	T	-8.41232
PRR5L	9.72E-07	rs429034	0.117757	A	T	0.7721	0.0099	rs429034	Zhernakova_WHOLEBLOOD-gene-contextspecific	3.41E-16	T	-8.15788
PRR5L	9.72E-07	rs1123347	0.367446	T	G	0.4303	0.0046	rs1123347	Zhernakova_WHOLEBLOOD-exonratio-primary	1.96E-59	T	16.2581
PRR5L	9.72E-07	rs1123347	0.367446	T	G	0.4303	0.0046	rs1123347	Zhernakova_WHOLEBLOOD-exonratio-primary	3.01E-35	T	-12.3886
PRR5L	9.72E-07	rs1123347	0.367446	T	G	0.4303	0.0046	rs1123347	Zhernakova_WHOLEBLOOD-exonratio-primary	3.03E-34	T	-12.2021
PRR5L	9.72E-07	rs1123347	0.367446	T	G	0.4303	0.0046	rs1123347	Zhernakova_WHOLEBLOOD-exonratio-primary	1.99E-25	T	-10.421
PRR5L	9.72E-07	rs1123347	0.367446	T	G	0.4303	0.0046	rs1123347	Zhernakova_WHOLEBLOOD-gene-primary	2.37E-21	T	9.4876
PRR5L	9.72E-07	rs1123347	0.367446	T	G	0.4303	0.0046	rs1123347	Zhernakova_WHOLEBLOOD-exonratio-primary	3.77E-19	T	-8.94371
PRR5L	9.72E-07	rs1123347	0.367446	T	G	0.4303	0.0046	rs1123347	Zhernakova_WHOLEBLOOD-exon-primary	1.48E-14	T	7.68951
PRR5L	9.72E-07	rs1123347	0.367446	T	G	0.4303	0.0046	rs1123347	Zhernakova_WHOLEBLOOD-exonratio-primary	1.88E-13	T	-7.35723
PRR5L	9.72E-07	rs1123347	0.367446	T	G	0.4303	0.0046	rs1123347	Zhernakova_WHOLEBLOOD-exonratio-primary	5.43E-11	T	-6.55878
PRR5L	9.72E-07	rs12785381	0.492162	T	C	0.0986	0.0061	rs12785381	Zhernakova_WHOLEBLOOD-exonratio-primary	1.06E-28	T	-11.1153
PRR5L	9.72E-07	rs12785381	0.492162	T	C	0.0986	0.0061	rs12785381	Zhernakova_WHOLEBLOOD-exon-primary	1.95E-27	T	-10.8518
PRR5L	9.72E-07	rs10836545	0.82493	A	G	0.9082	0.0021	rs10836545	Zhernakova_WHOLEBLOOD-exon-primary	5.84E-10	G	6.19496
PTPLA	8.16E-07	rs7092926	6.75E-07	T	G	0.4320	0.0259	rs7092926	Zhernakova_WHOLEBLOOD-gene-primary	4.91E-12	T	-6.90808
PTPLA	8.16E-07	rs7092926	6.75E-07	T	G	0.4320	0.0259	rs7092926	Zhernakova_WHOLEBLOOD-gene-contextspecific	4.91E-12	T	-6.90808
PTPLA	8.16E-07	rs17141430	0.0127591	A	G	0.8759	-0.0203	rs17141430	Westra_WHOLEBLOOD	3.55E-10	G	-6.27279
PTPLA	8.16E-07	rs78704091	0.0276797	A	T	0.0680	-0.0184	rs78704091	Zhernakova_WHOLEBLOOD-gene-primary	1.05E-11	A	6.79888
PTPLA	8.16E-07	rs7094705	0.0361169	A	G	0.3844	0.0111	rs7094705	Westra_WHOLEBLOOD	6.95E-23	A	9.84877
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	LloydJones_WHOLEBLOOD	1.20E-243	C	-0.971171

PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Zhernakova_WHOLEBLOOD-gene-contextspecific	1.61E-202	C	-30.3645
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Zhernakova_WHOLEBLOOD-gene-primary	1.61E-202	C	-30.3645
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Zhernakova_WHOLEBLOOD-exon-primary	9.85E-174	C	-28.0997
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Zhernakova_WHOLEBLOOD-exon-primary	1.58E-168	C	-27.6705
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Zhernakova_WHOLEBLOOD-exon-primary	3.02E-154	C	-26.457
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Zeller_MONOCYTES	9.09E-150	NA	-9
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Battle_WHOLEBLOOD	7.06E-135	NA	-9
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Zhernakova_WHOLEBLOOD-exon-primary	6.01E-126	C	-23.8717
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Fehrmann_WHOLEBLOOD	8.30E-100	G	-21.21
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Jansen_WHOLEBLOOD	4.40E-93	C	-0.436
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Walsh_WHOLEBLOOD	1.45E-28	T	0.810608
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	GTE_WHOLEBLOOD	2.20E-27	C	-0.575968
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Battle_WHOLEBLOOD-ase	1.58E-21	NA	-9
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Zhernakova_WHOLEBLOOD-exonratio-primary	3.09E-18	C	-8.70802
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Fehrmann_WHOLEBLOOD	2.10E-17	C	-8.49
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Davenport_LEUCOCYTES	4.57E-15	NA	-9
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Dinarzo_WHOLEBLOOD	1.07E-11	T	0.993866
PVALB	1.27E-07	rs4821544	3.58E-07	T	C	0.6854	-0.0291	rs4821544	Zhernakova_WHOLEBLOOD-polyAratio-primary	2.07E-11	C	-6.70078
PVALB	1.27E-07	rs1015775	0.000118906	A	G	0.1769	-0.0263	rs1015775	LloydJones_WHOLEBLOOD	8.20E-69	A	0.625638
PVALB	1.27E-07	rs1015775	0.000118906	A	G	0.1769	-0.0263	rs1015775	Zhernakova_WHOLEBLOOD-gene-primary	2.79E-44	A	13.9587
PVALB	1.27E-07	rs1015775	0.000118906	A	G	0.1769	-0.0263	rs1015775	Walsh_WHOLEBLOOD	3.33E-14	A	0.711935
PVALB	1.27E-07	rs730483	0.0661628	A	C	0.0816	0.0163	rs730483	LloydJones_WHOLEBLOOD	5.00E-19	A	-0.397495
PVALB	1.27E-07	rs730483	0.0661628	A	C	0.0816	0.0163	rs730483	Zhernakova_WHOLEBLOOD-gene-primary	1.72E-18	A	-8.77384
PVALB	1.27E-07	rs74971025	0.0668636	A	G	0.8435	-0.0135	rs74971025	Zhernakova_WHOLEBLOOD-gene-contextspecific	1.37E-12	G	-7.08692
PVALB	1.27E-07	rs74971025	0.0668636	A	G	0.8435	-0.0135	rs74971025	LloydJones_WHOLEBLOOD	4.60E-11	G	-0.258926
PVALB	1.27E-07	rs74971025	0.0668636	A	G	0.8435	-0.0135	rs74971025	Zhernakova_WHOLEBLOOD-exon-primary	9.22E-11	G	-6.47915
PVALB	1.27E-07	rs74971025	0.0668636	A	G	0.8435	-0.0135	rs74971025	Zhernakova_WHOLEBLOOD-gene-primary	4.15E-10	G	-6.24834
PVALB	1.27E-07	rs4820250	0.342696	A	G	0.1344	-0.0068	rs4820250	Fairfax_MONOCYTES-LPS24	9.04E-15	NA	-9
RBM15B	1.41E-07	rs73078636	1.41E-07	A	G	0.1480	-0.0403	rs73078636	Zhernakova_WHOLEBLOOD-exon-primary	2.14E-52	A	15.233
RBM15B	1.41E-07	rs73078636	1.41E-07	A	G	0.1480	-0.0403	rs73078636	Zhernakova_WHOLEBLOOD-gene-contextspecific	2.08E-44	A	13.9794
RBM15B	1.41E-07	rs73078636	1.41E-07	A	G	0.1480	-0.0403	rs73078636	Zhernakova_WHOLEBLOOD-gene-primary	2.08E-44	A	13.9794
RBM15B	1.41E-07	rs73078636	1.41E-07	A	G	0.1480	-0.0403	rs73078636	Jansen_WHOLEBLOOD	8.50E-13	A	0.146
RP11-24N18.1	1.71E-06	rs8056890	1.71E-06	A	G	0.2959	-0.0254	rs8056890	Zhernakova_WHOLEBLOOD-exon-primary	3.78E-22	A	-9.67673
RP11-24N18.1	1.71E-06	rs8056890	1.71E-06	A	G	0.2959	-0.0254	rs8056890	Zhernakova_WHOLEBLOOD-gene-primary	1.27E-20	A	-9.31092
RP11-24N18.1	1.71E-06	rs8056890	1.71E-06	A	G	0.2959	-0.0254	rs8056890	Zhernakova_WHOLEBLOOD-gene-contextspecific	1.27E-20	A	-9.31092
RP11-264B17.4	1.05E-06	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-exon-primary	3.51E-130	C	24.276
RP11-264B17.4	1.05E-06	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-gene-primary	4.38E-116	C	22.9027
RP11-264B17.4	1.05E-06	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-gene-contextspecific	4.38E-116	C	22.9027
RP11-264B17.4	1.05E-06	rs67479058	0.000161762	T	C	0.8503	-0.0258	rs67479058	Zhernakova_WHOLEBLOOD-gene-primary	2.55E-13	C	-7.3162
RP11-264B17.4	1.05E-06	rs12448482	0.197731	A	G	0.3861	0.0071	rs12448482	Zhernakova_WHOLEBLOOD-gene-primary	2.51E-24	A	-10.1769
RP11-534L20.5	1.32E-06	rs11117858	8.09E-06	T	G	0.7840	-0.0287	rs11117858	Zhernakova_WHOLEBLOOD-gene-primary	4.88E-54	G	-15.4778
RP11-534L20.5	1.32E-06	rs11117858	8.09E-06	T	G	0.7840	-0.0287	rs11117858	Kasela_CD4TCELLS	7.94E-11	G	-6.5018
RP11-534L20.5	1.32E-06	rs11117858	8.09E-06	T	G	0.7840	-0.0287	rs11117858	Kasela_CD8TCELLS	1.12E-09	G	-6.09141
RP11-534L20.5	1.32E-06	rs874718	5.06E-05	A	C	0.4728	0.0211	rs874718	Zhernakova_WHOLEBLOOD-gene-primary	5.77E-288	C	36.2652
RP11-534L20.5	1.32E-06	rs874718	5.06E-05	A	C	0.4728	0.0211	rs874718	Walsh_WHOLEBLOOD	1.69E-62	A	-0.975764
RP11-534L20.5	1.32E-06	rs874718	5.06E-05	A	C	0.4728	0.0211	rs874718	Kasela_CD4TCELLS	3.09E-49	A	-14.7498
RP11-534L20.5	1.32E-06	rs874718	5.06E-05	A	C	0.4728	0.0211	rs874718	Kasela_CD8TCELLS	2.55E-43	A	-13.8
RP11-534L20.5	1.32E-06	rs874718	5.06E-05	A	C	0.4728	0.0211	rs874718	GTE_SKIN	1.09E-19	C	0.690688
RP11-534L20.5	1.32E-06	rs874718	5.06E-05	A	C	0.4728	0.0211	rs874718	GTE_WHOLEBLOOD	1.57E-17	C	0.600601
RP11-534L20.5	1.32E-06	rs874718	5.06E-05	A	C	0.4728	0.0211	rs874718	GTE_SKIN	7.58E-16	C	0.743489
RP11-534L20.5	1.32E-06	rs874718	5.06E-05	A	C	0.4728	0.0211	rs874718	GTE_FIBROBLASTS	1.21E-11	C	0.564444
RP11-534L20.5	1.32E-06	rs874718	5.06E-05	A	C	0.4728	0.0211	rs874718	GTE_LUNG	7.63E-10	C	0.545556
RP11-534L20.5	1.32E-06	rs2987936	0.000433746	C	G	0.5357	-0.0176	rs2987936	Zhernakova_WHOLEBLOOD-gene-primary	5.63E-70	G	-17.6833
RP11-534L20.5	1.32E-06	rs2987936	0.000433746	C	G	0.5357	-0.0176	rs2987936	Kasela_CD4TCELLS	5.97E-14	G	-7.5086
RP11-534L20.5	1.32E-06	rs2987936	0.000433746	C	G	0.5357	-0.0176	rs2987936	Kasela_CD8TCELLS	6.02E-12	G	-6.87903
RP11-534L20.5	1.32E-06	rs2297546	0.00571061	C	G	0.5901	-0.0158	rs2297546	Zhernakova_WHOLEBLOOD-gene-primary	1.52E-79	G	-18.8846
RP11-534L20.5	1.32E-06	rs41299005	0.0199849	T	C	0.0663	-0.0209	rs41299005	Zhernakova_WHOLEBLOOD-gene-primary	2.23E-39	T	13.1298

RP11-534L20.5	1.32E-06	rs35785716	0.060621	T	C	0.2517	0.0113	rs35785716	Zhernakova_WHOLEBLOOD-gene-primary	6.88E-28	T	10.9469
RP11-534L20.5	1.32E-06	rs35785716	0.060621	T	C	0.2517	-0.0113	rs35785716	Kasela_CD8TCELLS	2.13E-10	T	6.35156
RP11-534L20.5	1.32E-06	rs2336941	0.0952277	T	C	0.1684	0.0109	rs2336941	Zhernakova_WHOLEBLOOD-gene-primary	2.35E-107	T	-22.0092
RP11-534L20.5	1.32E-06	rs2336941	0.0952277	T	C	0.1684	0.0109	rs2336941	Kasela_CD4TCELLS	1.45E-24	T	-10.2303
RP11-534L20.5	1.32E-06	rs2336941	0.0952277	T	C	0.1684	0.0109	rs2336941	Kasela_CD8TCELLS	2.63E-19	T	-8.98323
RP11-534L20.5	1.32E-06	rs2336941	0.0952277	T	C	0.1684	0.0109	rs2336941	Walsh_WHOLEBLOOD	1.23E-12	T	-0.621843
RP11-534L20.5	1.32E-06	rs7538261	0.112295	A	G	0.0629	0.0201	rs7538261	Zhernakova_WHOLEBLOOD-gene-primary	8.71E-17	A	-8.32111
RP11-534L20.5	1.32E-06	rs74882519	0.374648	A	G	0.0782	-0.0116	rs74882519	Zhernakova_WHOLEBLOOD-gene-primary	6.63E-51	A	15.0069
RP11-534L20.5	1.32E-06	rs6666087	0.376914	T	C	0.5748	-0.0046	rs6666087	Zhernakova_WHOLEBLOOD-gene-primary	2.96E-12	C	-6.97923
RP11-534L20.5	1.32E-06	rs61816859	0.415005	T	C	0.0578	0.0109	rs61816859	Zhernakova_WHOLEBLOOD-gene-primary	1.36E-14	T	-7.69955
RP11-534L20.5	1.32E-06	rs17433909	0.70506	T	C	0.0612	0.0051	rs17433909	Zhernakova_WHOLEBLOOD-gene-primary	1.11E-12	T	-7.11548
SPNS1	3.51E-09	rs2726040	4.84E-06	C	G	0.5748	-0.0238	rs2726040	LloydJones_WHOLEBLOOD	5.10E-40	G	-0.374583
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-gene-primary	7.23E-258	C	34.3026
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-gene-contextspecific	7.23E-258	C	34.3026
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-exon-primary	1.54E-237	C	32.9109
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	LloydJones_WHOLEBLOOD	9.20E-233	C	0.959846
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Battle_WHOLEBLOOD	9.62E-226	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Westra_WHOLEBLOOD	9.81E-198	C	50.796
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Fehrmann_WHOLEBLOOD	5.40E-177	G	28.37
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-exon-primary	8.15E-166	C	27.4443
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-exon-primary	6.31E-153	C	26.3424
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-exon-primary	7.74E-143	C	25.4465
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zeller_MONOCYTES	3.69E-133	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-exon-primary	3.51E-130	C	24.276
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-gene-primary	4.38E-116	C	22.9027
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-gene-contextspecific	4.38E-116	C	22.9027
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-exon-primary	5.38E-107	C	21.9716
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-exon-primary	3.90E-94	C	20.5831
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Fairfax_MONOCYTES-LPS24	1.23E-73	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Davenport_LEUCOCYTES	5.62E-30	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Grundberg_LCLS	2.72E-29	T	-0.153062
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	GTE_WHOLEBLOOD	1.93E-24	T	-0.284129
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Kim_MONOCYTES-LPS	2.25E-22	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Raj_MONOCYTES	2.62E-22	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Geuvaldis_LCLS	1.37E-21	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Geuvaldis_LCLS	1.91E-21	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Geuvaldis_LCLS	5.01E-21	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Geuvaldis_LCLS	1.50E-20	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Geuvaldis_LCLS	2.07E-20	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Geuvaldis_LCLS	1.41E-19	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Zhernakova_WHOLEBLOOD-gene-primary	4.73E-19	C	8.91852
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Kim_MONOCYTES-Baseline	8.22E-18	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Geuvaldis_LCLS	1.10E-16	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Geuvaldis_LCLS	6.93E-16	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Geuvaldis_LCLS	1.50E-14	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	GTE_LCLS	8.03E-14	T	-0.841903
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Geuvaldis_LCLS	1.04E-13	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Geuvaldis_LCLS	4.34E-13	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Raj_CD4TCELLS	3.76E-10	NA	-9
SPNS1	3.51E-09	rs8045689	6.27E-06	T	C	0.7466	0.0249	rs8045689	Dixon_LCLS	2.10E-09	C	-0.508
SPNS1	3.51E-09	rs151230	2.06E-05	A	G	0.1190	0.0326	rs151230	LloydJones_WHOLEBLOOD	1.00E-10	A	-0.276115
SPNS1	3.51E-09	rs67479058	0.000161762	T	C	0.8503	-0.0258	rs67479058	Zhernakova_WHOLEBLOOD-gene-primary	3.87E-21	C	-9.43608
SPNS1	3.51E-09	rs67479058	0.000161762	T	C	0.8503	-0.0258	rs67479058	LloydJones_WHOLEBLOOD	1.70E-18	C	-0.323235
SPNS1	3.51E-09	rs67479058	0.000161762	T	C	0.8503	-0.0258	rs67479058	Zhernakova_WHOLEBLOOD-gene-primary	2.55E-13	C	-7.3162
SPNS1	3.51E-09	rs7201546	0.00291959	T	C	0.1480	0.0240	rs7201546	Westra_WHOLEBLOOD	3.16E-16	T	-8.16732
SPNS1	3.51E-09	rs7201546	0.00291959	T	C	0.1480	0.0240	rs7201546	LloydJones_WHOLEBLOOD	7.10E-12	T	-0.279907
SPNS1	3.51E-09	rs7201546	0.00291959	T	C	0.1480	0.0240	rs7201546	Zhernakova_WHOLEBLOOD-gene-primary	1.48E-11	T	-6.75016

Gene	SNP	Lead SNP	Distance	Strand	Allele	Effect Size	SE	Table	SNP	Gene	Distance	Strand	Effect Size
SPNS1	3.51E-09	rs11643913	0.0032946	A	G	0.0629	0.0519	0.0519	rs11643913	LloydJones_WHOLEBLOOD	9.00E-14	A	-0.551074
SPNS1	3.51E-09	rs11569775	0.146547	C	G	0.9728	0.0206	0.0206	rs11569775	LloydJones_WHOLEBLOOD	3.80E-22	G	0.71576
SPNS1	3.51E-09	rs7499778	0.193516	A	G	0.5357	-0.0073	-0.0073	rs7499778	Zhernakova_WHOLEBLOOD-gene-primary	8.36E-22	G	9.59551
SPNS1	3.51E-09	rs7499778	0.193516	A	G	0.5357	-0.0073	-0.0073	rs7499778	LloydJones_WHOLEBLOOD	1.50E-12	A	-0.195003
SPNS1	3.51E-09	rs12448482	0.197731	A	G	0.3861	0.0071	0.0071	rs12448482	Westra_WHOLEBLOOD	4.65E-116	A	-22.9
SPNS1	3.51E-09	rs12448482	0.197731	A	G	0.3861	0.0071	0.0071	rs12448482	LloydJones_WHOLEBLOOD	1.10E-62	A	-0.479659
SPNS1	3.51E-09	rs12448482	0.197731	A	G	0.3861	0.0071	0.0071	rs12448482	Zhernakova_WHOLEBLOOD-gene-primary	5.75E-60	A	-16.3329
SPNS1	3.51E-09	rs12448482	0.197731	A	G	0.3861	0.0071	0.0071	rs12448482	Zeller_MONOCYTES	2.31E-27	NA	-9
SPNS1	3.51E-09	rs12448482	0.197731	A	G	0.3861	0.0071	0.0071	rs12448482	Zhernakova_WHOLEBLOOD-gene-primary	2.51E-24	A	-10.1769
SPNS1	3.51E-09	rs12448482	0.197731	A	G	0.3861	0.0071	0.0071	rs12448482	Grundberg_LCLS	2.76E-10	G	0.0862493
SPNS1	3.51E-09	rs139456978	0.461272	T	C	0.0493	-0.0091	-0.0091	rs139456978	Zhernakova_WHOLEBLOOD-gene-primary	2.80E-19	T	-8.97634
SPNS1	3.51E-09	rs75556002	0.675961	T	C	0.0102	-0.0096	-0.0096	rs75556002	LloydJones_WHOLEBLOOD	1.30E-14	T	0.72673
SPNS1	3.51E-09	rs62035317	0.700585	A	G	0.0663	0.0042	0.0042	rs62035317	Zhernakova_WHOLEBLOOD-gene-primary	1.12E-11	A	6.79046
SPNS1	3.51E-09	rs7498329	0.797214	A	C	0.7619	-0.0016	-0.0016	rs7498329	Westra_WHOLEBLOOD	1.53E-35	C	-12.443
SPNS1	3.51E-09	rs7498329	0.797214	A	C	0.7619	-0.0016	-0.0016	rs7498329	LloydJones_WHOLEBLOOD	4.60E-18	C	-0.286571
SPNS1	3.51E-09	rs7498329	0.797214	A	C	0.7619	-0.0016	-0.0016	rs7498329	Zhernakova_WHOLEBLOOD-gene-primary	2.26E-13	C	-7.33211
SPNS1	3.51E-09	rs7498329	0.797214	A	C	0.7619	-0.0016	-0.0016	rs7498329	Fehrmann_WHOLEBLOOD	3.10E-12	C	-6.97
SPNS1	3.51E-09	rs8056259	0.894326	T	C	0.2857	-0.0008	-0.0008	rs8056259	LloydJones_WHOLEBLOOD	2.50E-12	T	0.206418
SPNS1	3.51E-09	rs112918513	0.992411	A	G	0.9099	-0.0001	-0.0001	rs112918513	Zhernakova_WHOLEBLOOD-gene-primary	7.39E-15	G	7.77772
SULT1A1	1.96E-07	rs75539558	1.57E-06	C	G	0.6633	0.0250	0.0250	rs75539558	Zhernakova_WHOLEBLOOD-exonratio-primary	3.89E-160	G	26.9642
SULT1A1	1.96E-07	rs75539558	1.57E-06	C	G	0.6633	0.0250	0.0250	rs75539558	Zhernakova_WHOLEBLOOD-gene-primary	2.32E-16	G	-8.20409
SULT1A1	1.96E-07	rs75539558	1.57E-06	C	G	0.6633	0.0250	0.0250	rs75539558	GTE_WHOLEBLOOD	1.14E-12	G	-0.355971
SULT1A1	1.96E-07	rs75539558	1.57E-06	C	G	0.6633	0.0250	0.0250	rs75539558	GTE_SKIN	1.06E-10	G	-0.369911
SULT1A1	1.96E-07	rs231970	4.84E-06	A	G	0.8827	-0.0350	-0.0350	rs231970	LloydJones_WHOLEBLOOD	8.30E-25	G	-0.4597
SULT1A1	1.96E-07	rs231970	4.84E-06	A	G	0.8827	-0.0350	-0.0350	rs231970	Zhernakova_WHOLEBLOOD-gene-primary	3.38E-16	G	-8.15887
SULT1A1	1.96E-07	rs4788119	0.0205086	T	G	0.8112	0.0149	0.0149	rs4788119	LloydJones_WHOLEBLOOD	4.60E-18	G	-0.288976
SULT1A1	1.96E-07	rs79476281	0.0875464	T	C	0.0527	-0.0218	-0.0218	rs150089402	Zhernakova_WHOLEBLOOD-gene-contextspecific	6.54E-13	T	-7.18876
SULT1A1	1.96E-07	rs79476281	0.0875464	T	C	0.0527	-0.0218	-0.0218	rs150089402	Zhernakova_WHOLEBLOOD-exon-primary	7.26E-13	T	-7.17432
SULT1A1	1.96E-07	rs79476281	0.0875464	T	C	0.0527	-0.0218	-0.0218	rs150089402	Zhernakova_WHOLEBLOOD-exon-primary	9.51E-12	T	-6.81362
SULT1A1	1.96E-07	rs4788115	0.122264	A	T	0.2160	0.0112	0.0112	rs4788115	LloydJones_WHOLEBLOOD	4.10E-12	A	0.242542
SULT1A1	1.96E-07	rs75227850	0.159471	T	C	0.0238	-0.0191	-0.0191	rs75227850	LloydJones_WHOLEBLOOD	3.30E-16	T	-0.610833
SULT1A1	1.96E-07	rs11540497	0.161972	A	G	0.0493	-0.0197	-0.0197	rs11540497	LloydJones_WHOLEBLOOD	1.50E-10	A	-0.390543
SULT1A1	1.96E-07	rs12935321	0.533018	A	G	0.1224	0.0063	0.0063	rs12445519	Zhernakova_WHOLEBLOOD-gene-primary	1.65E-29	G	11.2798
SULT1A1	1.96E-07	rs12935321	0.533018	A	G	0.1224	0.0063	0.0063	rs12445519	LloydJones_WHOLEBLOOD	1.20E-10	G	0.318144
TICAM2	1.67E-06	rs17137937	2.93E-06	T	C	0.0748	0.0425	0.0425	rs17137937	Hao_LUNG	0	C	-8.88
TICAM2	1.67E-06	rs17137937	2.93E-06	T	C	0.0748	0.0425	0.0425	rs17137937	Westra_WHOLEBLOOD	3.67E-20	T	9.19745
TICAM2	1.67E-06	rs17137937	2.93E-06	T	C	0.0748	0.0425	0.0425	rs17137937	LloydJones_WHOLEBLOOD	5.70E-10	T	0.303195
TICAM2	1.67E-06	rs256938	0.00238245	A	C	0.5646	0.0152	0.0152	rs256938	Fairfax_MONOCYTES-NAIVE	2.06E-09	NA	-9
TICAM2	1.67E-06	rs2546480	0.223513	T	C	0.5527	-0.0061	-0.0061	rs2546480	Fairfax_MONOCYTES-IFN	3.12E-10	NA	-9
TMEM236	1.92E-06	rs7092926	6.75E-07	T	G	0.4320	0.0259	0.0259	rs7092926	Zhernakova_WHOLEBLOOD-gene-primary	1.51E-26	T	-10.6634
TMEM236	1.92E-06	rs7092926	6.75E-07	T	G	0.4320	0.0259	0.0259	rs7092926	Zhernakova_WHOLEBLOOD-gene-contextspecific	1.51E-26	T	-10.6634
TMEM236	1.92E-06	rs7092926	6.75E-07	T	G	0.4320	0.0259	0.0259	rs7092926	Zhernakova_WHOLEBLOOD-exon-primary	4.45E-25	T	-10.3442
TMEM236	1.92E-06	rs55999004	0.00597318	A	T	0.1378	-0.0174	-0.0174	rs55999004	Zhernakova_WHOLEBLOOD-gene-primary	2.17E-10	A	6.34864
TMEM236	1.92E-06	rs45607131	0.0445172	T	C	0.0697	0.0178	0.0178	rs45607131	Zhernakova_WHOLEBLOOD-gene-primary	2.40E-11	T	-6.67946
VPRBP	1.41E-07	rs73078636	1.41E-07	A	G	0.1480	-0.0403	-0.0403	rs73078636	Zhernakova_WHOLEBLOOD-exon-primary	2.14E-52	A	15.233
VPRBP	1.41E-07	rs73078636	1.41E-07	A	G	0.1480	-0.0403	-0.0403	rs73078636	Zhernakova_WHOLEBLOOD-gene-contextspecific	2.08E-44	A	13.9794
VPRBP	1.41E-07	rs73078636	1.41E-07	A	G	0.1480	-0.0403	-0.0403	rs73078636	Zhernakova_WHOLEBLOOD-gene-primary	2.08E-44	A	13.9794

\* If the same eQTL appears more than once for the same gene-study-tissue combination, it indicates that the SNP was tested for association with, for example, multiple exons (RNA-seq) or multiple probes (microarray data) of the same gene.

**Table E5. Summary of the directional effect of the allergy-protective allele on gene expression, across all disease-associated eQTL of a given gene.**

Gene	eQTL study		N eQTL tested	N eQTL with P<0.05 in adjusted allergic disease GWAS				
	First author	Tissue		Total	Effect of allergy-protective allele on gene expression:			
					Decreased	Increased	Not available	
<i>20 genes with replication gene-based P&lt;0.0016</i>								
<i>ABO</i>	GTE	LUNG	1	0	0	0	0	
<i>ABO</i>	GTE	SKIN	1	0	0	0	0	
<i>ABO</i>	GTE	WHOLEBLOOD	1	1	0	1	0	
<i>ABO</i>	Hao	LUNG	2	0	0	0	0	
<i>ABO</i>	Yao	WHOLEBLOOD	1	1	0	1	0	
<i>ABO</i>	Zhernakova	WHOLEBLOOD-exon-primary	1	1	0	1	0	
<i>ABO</i>	Zhernakova	WHOLEBLOOD-exonratio-primary	1	1	0	1	0	
<i>ABO</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	2	1	0	1	0	
<i>ABO</i>	Zhernakova	WHOLEBLOOD-gene-primary	12	5	0	5	0	
<i>AC004893.11</i>	Zhernakova	WHOLEBLOOD-exon-primary	1	1	1	0	0	
<i>AC004893.11</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	1	1	1	0	0	
<i>AC004893.11</i>	Zhernakova	WHOLEBLOOD-gene-primary	1	1	1	0	0	
<i>APOBR</i>	LloydJones	WHOLEBLOOD	1	1	0	1	0	
<i>APOBR</i>	Zhernakova	WHOLEBLOOD-exon-primary	1	1	0	1	0	
<i>APOBR</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	1	1	0	1	0	
<i>APOBR</i>	Zhernakova	WHOLEBLOOD-gene-primary	1	1	0	1	0	
<i>ATXN2L</i>	Zhernakova	WHOLEBLOOD-exon-primary	1	1	1	0	0	
<i>ATXN2L</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	1	1	1	0	0	
<i>ATXN2L</i>	Zhernakova	WHOLEBLOOD-gene-primary	1	1	1	0	0	
<i>FOSL2</i>	Walsh	WHOLEBLOOD	1	1	0	1	0	
<i>FOSL2</i>	Zhernakova	WHOLEBLOOD-exonratio-primary	1	1	0	1	0	
<i>IL27</i>	Zhernakova	WHOLEBLOOD-exon-primary	1	1	0	1	0	
<i>IL27</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	1	1	0	1	0	
<i>IL27</i>	Zhernakova	WHOLEBLOOD-gene-primary	2	2	0	2	0	
<i>IPCEF1</i>	Battle	WHOLEBLOOD	1	1	0	0	1	
<i>IPCEF1</i>	GTE	SKIN	1	0	0	0	0	
<i>IPCEF1</i>	Zhernakova	WHOLEBLOOD-exon-primary	2	2	1	1	0	
<i>IPCEF1</i>	Zhernakova	WHOLEBLOOD-exonratio-primary	1	1	1	0	0	
<i>IPCEF1</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	1	1	0	1	0	
<i>IPCEF1</i>	Zhernakova	WHOLEBLOOD-gene-primary	2	2	0	2	0	
<i>LAT</i>	Fehrmann	WHOLEBLOOD	2	2	0	1	1	
<i>LAT</i>	Zhernakova	WHOLEBLOOD-exon-primary	1	0	0	0	0	
<i>LAT</i>	Zhernakova	WHOLEBLOOD-gene-primary	2	1	0	1	0	

<i>NCF4</i>	Fairfax	MONOCYTES-LPS24	2	1	0	0	1
<i>NCF4</i>	Kasela	CD4TCELLS	1	0	0	0	0
<i>NCF4</i>	LloydJones	WHOLEBLOOD	1	1	0	1	0
<i>NCF4</i>	Quach	MONOCYTES-baseline	1	1	0	0	1
<i>NCF4</i>	Raj	CD4TCELLS	3	1	0	0	1
<i>NCF4</i>	Raj	MONOCYTES	1	1	0	0	1
<i>NCF4</i>	Westra	WHOLEBLOOD	4	2	0	2	0
<i>NCF4</i>	Zeller	MONOCYTES	1	1	0	0	1
<i>NCF4</i>	Zhernakova	WHOLEBLOOD-gene-primary	1	1	0	1	0
<i>NSMCE1</i>	LloydJones	WHOLEBLOOD	1	1	1	0	0
<i>NSMCE1</i>	Nedelec	MACROPHAGES-baseline-asQTL	1	1	0	0	1
<i>NSMCE1</i>	Nedelec	MACROPHAGES-listeria-asQTL	1	1	0	0	1
<i>NSMCE1</i>	Zeller	MONOCYTES	1	1	0	0	1
<i>OR10J5</i>	Westra	WHOLEBLOOD	3	3	0	3	0
<i>PRR5L</i>	LloydJones	WHOLEBLOOD	1	1	0	1	0
<i>PRR5L</i>	Zhernakova	WHOLEBLOOD-exon-primary	5	1	0	1	0
<i>PRR5L</i>	Zhernakova	WHOLEBLOOD-exonratio-primary	2	0	0	0	0
<i>PRR5L</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	2	1	0	1	0
<i>PRR5L</i>	Zhernakova	WHOLEBLOOD-gene-primary	3	1	0	1	0
<i>PVALB</i>	Battle	WHOLEBLOOD	1	1	0	0	1
<i>PVALB</i>	Battle	WHOLEBLOOD-ase	1	1	0	0	1
<i>PVALB</i>	Davenport	LEUCOCYTES	1	1	0	0	1
<i>PVALB</i>	Dinarzo	WHOLEBLOOD	1	1	0	1	0
<i>PVALB</i>	Fairfax	MONOCYTES-LPS24	1	0	0	0	0
<i>PVALB</i>	Fehrmann	WHOLEBLOOD	1	1	0	1	0
<i>PVALB</i>	GTE	WHOLEBLOOD	1	1	0	1	0
<i>PVALB</i>	Jansen	WHOLEBLOOD	1	1	0	1	0
<i>PVALB</i>	LloydJones	WHOLEBLOOD	4	2	0	2	0
<i>PVALB</i>	Walsh	WHOLEBLOOD	2	2	0	2	0
<i>PVALB</i>	Zeller	MONOCYTES	1	1	0	0	1
<i>PVALB</i>	Zhernakova	WHOLEBLOOD-exon-primary	2	1	0	1	0
<i>PVALB</i>	Zhernakova	WHOLEBLOOD-exonratio-primary	1	1	0	1	0
<i>PVALB</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	2	1	0	1	0
<i>PVALB</i>	Zhernakova	WHOLEBLOOD-gene-primary	4	2	0	2	0
<i>PVALB</i>	Zhernakova	WHOLEBLOOD-polyAratio-primary	1	1	0	1	0
<i>RBM15B</i>	Jansen	WHOLEBLOOD	1	1	0	1	0
<i>RBM15B</i>	Zhernakova	WHOLEBLOOD-exon-primary	1	1	0	1	0
<i>RBM15B</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	1	1	0	1	0
<i>RBM15B</i>	Zhernakova	WHOLEBLOOD-gene-primary	1	1	0	1	0

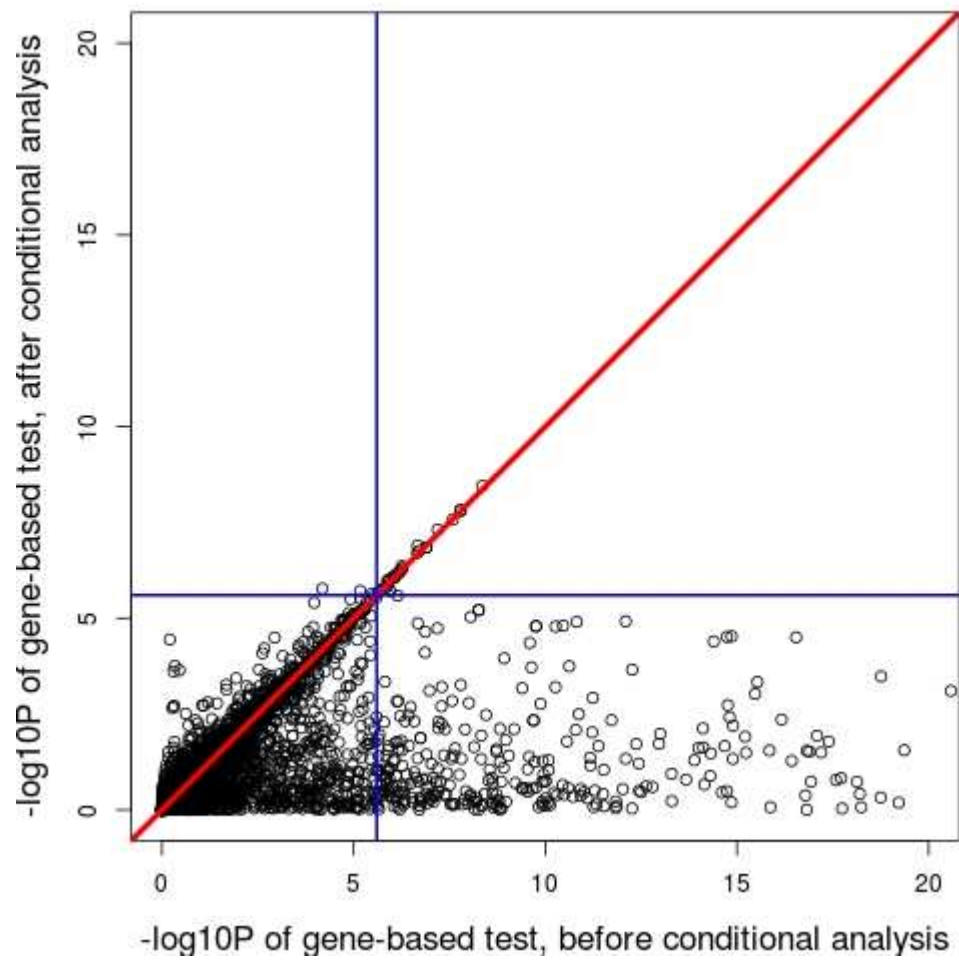


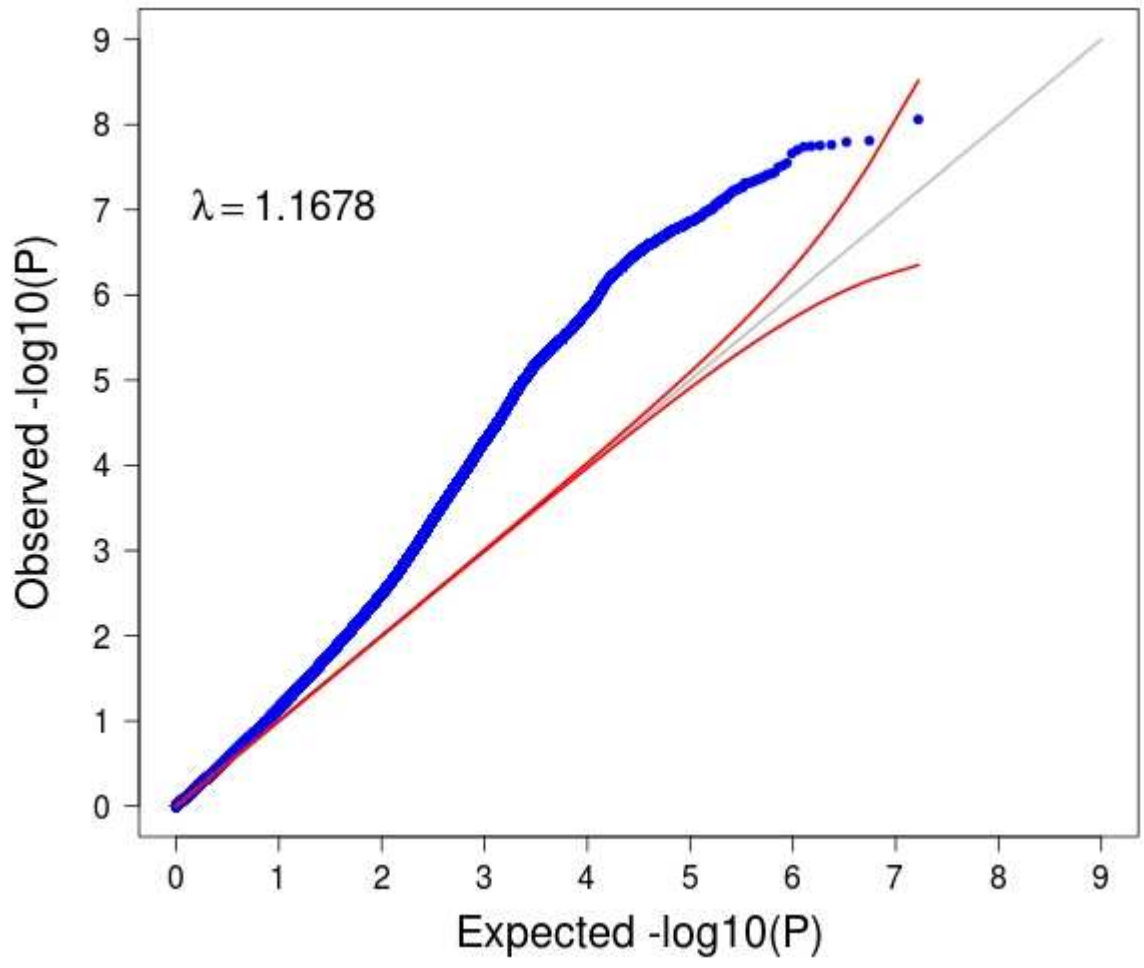
<i>RP11-24N18.1</i>	Zhernakova	WHOLEBLOOD-exon-primary	1	1	1	0	0
<i>RP11-24N18.1</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	1	1	1	0	0
<i>RP11-24N18.1</i>	Zhernakova	WHOLEBLOOD-gene-primary	1	1	1	0	0
<i>RP11-264B17.4</i>	Zhernakova	WHOLEBLOOD-exon-primary	1	1	0	1	0
<i>RP11-264B17.4</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	1	1	0	1	0
<i>RP11-264B17.4</i>	Zhernakova	WHOLEBLOOD-gene-primary	3	2	0	2	0
<i>RP11-534L20.5</i>	GTE	FIBROBLASTS	1	1	0	1	0
<i>RP11-534L20.5</i>	GTE	LUNG	1	1	0	1	0
<i>RP11-534L20.5</i>	GTE	SKIN	1	1	0	1	0
<i>RP11-534L20.5</i>	GTE	WHOLEBLOOD	1	1	0	1	0
<i>RP11-534L20.5</i>	Kasela	CD4TCELLS	4	3	0	3	0
<i>RP11-534L20.5</i>	Kasela	CD8TCELLS	5	3	0	3	0
<i>RP11-534L20.5</i>	Walsh	WHOLEBLOOD	2	1	0	1	0
<i>RP11-534L20.5</i>	Zhernakova	WHOLEBLOOD-gene-primary	12	5	0	5	0
<i>SPNS1</i>	Battle	WHOLEBLOOD	1	1	0	0	1
<i>SPNS1</i>	Davenport	LEUCOCYTES	1	1	0	0	1
<i>SPNS1</i>	Dixon	LCLS	1	1	1	0	0
<i>SPNS1</i>	Fairfax	MONOCYTES-LPS24	1	1	0	0	1
<i>SPNS1</i>	Fehrmann	WHOLEBLOOD	2	1	0	0	1
<i>SPNS1</i>	Geuvadis	LCLS	1	1	0	0	1
<i>SPNS1</i>	Grundberg	LCLS	2	1	0	1	0
<i>SPNS1</i>	GTE	LCLS	1	1	0	1	0
<i>SPNS1</i>	GTE	WHOLEBLOOD	1	1	0	1	0
<i>SPNS1</i>	Kim	MONOCYTES-Baseline	1	1	0	0	1
<i>SPNS1</i>	Kim	MONOCYTES-LPS	1	1	0	0	1
<i>SPNS1</i>	LloydJones	WHOLEBLOOD	12	6	0	6	0
<i>SPNS1</i>	Raj	CD4TCELLS	1	1	0	0	1
<i>SPNS1</i>	Raj	MONOCYTES	1	1	0	0	1
<i>SPNS1</i>	Westra	WHOLEBLOOD	4	2	0	2	0
<i>SPNS1</i>	Zeller	MONOCYTES	2	1	0	0	1
<i>SPNS1</i>	Zhernakova	WHOLEBLOOD-exon-primary	1	1	0	1	0
<i>SPNS1</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	1	1	0	1	0
<i>SPNS1</i>	Zhernakova	WHOLEBLOOD-gene-primary	9	3	0	3	0
<i>SULT1A1</i>	GTE	SKIN	1	1	1	0	0
<i>SULT1A1</i>	GTE	WHOLEBLOOD	1	1	1	0	0
<i>SULT1A1</i>	LloydJones	WHOLEBLOOD	6	2	1	1	0
<i>SULT1A1</i>	Zhernakova	WHOLEBLOOD-exon-primary	1	0	0	0	0
<i>SULT1A1</i>	Zhernakova	WHOLEBLOOD-exonratio-primary	1	1	0	1	0
<i>SULT1A1</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	1	0	0	0	0

<i>SULT1A1</i>	Zhernakova	WHOLEBLOOD-gene-primary	3	2	1	1	0
<i>VPRBP</i>	Zhernakova	WHOLEBLOOD-exon-primary	1	1	0	1	0
<i>VPRBP</i>	Zhernakova	WHOLEBLOOD-gene-contextspecific	1	1	0	1	0
<i>VPRBP</i>	Zhernakova	WHOLEBLOOD-gene-primary	1	1	0	1	0
<i>3 genes with replication gene-based 0.0016&lt;P&lt;0.05</i>							
CASZ1	Kim	MONOCYTES-Baseline	1	1	0	0	1
CASZ1	Kim	MONOCYTES-LPS	1	1	0	0	1
CASZ1	LloydJones	WHOLEBLOOD	1	0	0	0	0
CASZ1	Zhernakova	WHOLEBLOOD-exonratio-primary	1	0	0	0	0
FPR1	Battle	WHOLEBLOOD-ase	1	0	0	0	0
FPR1	GTE	FIBROBLASTS	1	0	0	0	0
FPR1	GTE	WHOLEBLOOD	1	1	0	1	0
FPR1	Hao	LUNG	1	1	0	1	0
FPR1	LloydJones	WHOLEBLOOD	7	3	0	3	0
FPR1	Walsh	WHOLEBLOOD	2	1	0	1	0
FPR1	Westra	WHOLEBLOOD	6	3	0	3	0
FPR1	Zeller	MONOCYTES	1	1	0	0	1
FPR1	Zhernakova	WHOLEBLOOD-exon-primary	3	1	0	1	0
FPR1	Zhernakova	WHOLEBLOOD-exonratio-primary	1	0	0	0	0
FPR1	Zhernakova	WHOLEBLOOD-gene-primary	7	6	0	6	0
TICAM2	Fairfax	MONOCYTES-IFN	1	0	0	0	0
TICAM2	Fairfax	MONOCYTES-NAIVE	1	1	0	0	1
TICAM2	Hao	LUNG	1	1	1	0	0
TICAM2	LloydJones	WHOLEBLOOD	1	1	1	0	0
TICAM2	Westra	WHOLEBLOOD	1	1	1	0	0

**Table E6. Results (i.e. EUGENE P-value) from gene-based association analyses of three case-only phenotypes comparing three non-overlapping groups of adults: (1) asthma only cases (n=12,268) versus hay fever only cases (n=33,305); (2) asthma only cases (n=12,268) versus eczema only cases (n=6,276); and (3) hay fever only cases (n=33,305) versus eczema only cases (n=6,276).**

Gene	Chr	BP (start)	(1) Asthma vs Hay fever	(2) Asthma vs Eczema	(3) Hay fever vs Eczema
<i>OR10J5</i>	1	159504793	0.0074	0.6664	0.3608
<i>RP11-534L20.5</i>	1	206677281	0.5574	0.2689	0.6935
<i>FOSL2</i>	2	28615315	0.2191	0.1755	0.1056
<i>RBM15B</i>	3	51428731	0.3264	0.9377	0.1260
<i>VPRBP</i>	3	51433298	0.3264	0.9377	0.1260
<i>IPCEF1</i>	6	154475631	0.2120	0.8854	0.6763
<i>AC004893.11</i>	7	98610788	0.9747	0.8107	0.8938
<i>ABO</i>	9	136125788	0.6017	0.2920	0.7406
<i>PRR5L</i>	11	36317838	0.0911	0.3894	0.8578
<i>NSMCE1</i>	16	27236312	0.6497	0.7415	0.2882
<i>APOBR</i>	16	28505970	0.2789	0.9077	0.4636
<i>IL27</i>	16	28510683	0.4716	0.9111	0.3380
<i>SULT1A1</i>	16	28616903	0.1836	0.9831	0.3116
<i>ATXN2L</i>	16	28834356	0.2188	0.9266	0.1121
<i>RP11-24N18.1</i>	16	28841933	0.2188	0.9266	0.1121
<i>SPNS1</i>	16	28985542	0.4876	0.5549	0.2796
<i>RP11-264B17.4</i>	16	28986294	0.5000	0.3676	0.0202
<i>LAT</i>	16	28996147	0.3288	0.5084	0.0163
<i>PVALB</i>	22	37196728	0.4415	0.2531	0.3182
<i>NCF4</i>	22	37257030	0.8812	0.8216	0.6894





1 **Eleven loci with new reproducible genetic associations with allergic disease risk**

2  
3 **ONLINE REPOSITORY**

4  
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13 **E Tables**

14 Tables E1 to E5 are provided in a separate Excel workbook.

15

16 **Rationale for performing the conditional analysis prior to the gene-based analysis**

17 The goal of our gene-based analysis was to identify genes with a significant association with allergic  
18 disease risk that was not driven by the 136 sentinel allergy risk SNPs reported by Ferreira et al. <sup>1</sup>. In  
19 practice, applying the gene-based test to the original results of Ferreira et al. <sup>1</sup> (i.e. before conditional  
20 analysis) would not be the best way to achieve that goal. Had we done so, there would be hundreds  
21 (exactly 362) of genes with a significant association at the genome-wide significance threshold of  
22  $P < 2.5 \times 10^{-6}$  (Figure E2). Most of the 362 genes are located in close proximity to (<1 Mb) the 136  
23 sentinel allergy risk SNPs that we reported by Ferreira et al. <sup>1</sup>, and so the observed gene-based  
24 associations are very likely to be driven by those known allergy risk SNPs. As indicated above, the goal  
25 of our analysis was not to identify such genes, but instead those with a gene-based association driven  
26 by potentially new allergy risk SNPs.

27

28 To do so, we could have simply filtered out genes that were located “close” to the 136 sentinel risk  
29 SNPs reported by Ferreira et al. <sup>1</sup>. But that is not an ideal approach, because LD patterns are not  
30 uniform throughout the genome, with substantial LD between variants found at distances of >1 Mb in  
31 some regions <sup>2</sup>. So if we had defined “close” as <1 Mb from a sentinel variant, then we could  
32 potentially fail to filter out genes located at a greater distance but still with an association driven by a  
33 known allergy risk SNP. Conversely, had we used a distance threshold that would ensure linkage  
34 equilibrium across the genome between the Ferreira et al. <sup>1</sup> sentinel risk SNPs and eQTL (e.g. >10 Mb),  
35 we would potentially encounter the opposite problem, and filter out genes with an association not  
36 driven by a known allergy risk SNP.

37

38 Another approach could have been to remove results for the 136 sentinel risk SNPs (and for any other  
39 variants in LD with those) from the Ferreira et al. <sup>1</sup> GWAS. Then apply the gene-based test after those



40 exclusions. In our view, this is more appropriate than the “distance-based” approach described above,  
41 but still not ideal, because it requires defining a threshold to identify variants in LD with the sentinel  
42 risk SNPs. Should this be an  $r^2$  of 0.10, 0.05, or 0.01? The threshold selected could in practice turn out  
43 to be too liberal or too conservative.

44

45 Instead of the distance- or LD-based filtering approaches described above, we argue that a more  
46 efficient (and still simple and robust) approach to identify genes with an association not driven by a  
47 sentinel risk SNP identified in Ferreira et al. <sup>1</sup>, is to first adjust the single-SNP results of that GWAS for  
48 the effects of the sentinel risk SNPs identified in that GWAS. Then apply the gene-based test to the  
49 adjusted GWAS results. Approximate conditional association analysis can be (and was in our study)  
50 performed with the GCTA tool <sup>2</sup>, requiring only summary statistics from the GWAS and genotype data  
51 from individuals with an ancestry that is representative of the studies that were included in the GWAS  
52 (we used 5,000 Europeans from the UK Biobank).

53

54 In practice, the  $P$ -value for any variant located  $>10$  Mb from a sentinel risk SNP is the same before and  
55 after the conditional analysis performed with GCTA, because both variants are considered to be in  
56 linkage equilibrium. For variants located  $<10$  Mb from a sentinel variant, the  $P$ -value after the  
57 conditional analysis in GCTA will be attenuated if in (and in proportion to the) LD with the nearby  
58 sentinel risk SNP(s). At one extreme (when  $r^2=0$ ), the  $P$ -value will be (almost if not) identical before  
59 and after conditional analysis. On the other hand, if the  $r^2$  between the test variant and the sentinel  
60 variant is 1, then the  $P$ -value after conditioning on the sentinel variant will be 1 (or very close to).

61

62 When we applied the gene-based test to the adjusted GWAS results, we identified 30 genes with a  
63  $P < 2.5 \times 10^{-6}$ . For most of these genes, the gene-based  $P$ -value obtained with the original GWAS results

64 (i.e. prior to the conditional analysis) was virtually unchanged (see Figure E2), confirming that the  
65 conditional analysis had not introduced biases that affected our results.

66

67 Regarding the observed inflation of test statistics after the conditional analysis (lambda of 1.17), it is  
68 important to note that lambda was greater (1.19) in our original GWAS<sup>1</sup> (i.e. prior to the conditional  
69 analysis). Therefore, the conditional analysis did not cause a systematic inflation of test statistics. We  
70 showed in Ferreira et al. <sup>1</sup> that most of this inflation is likely to reflect the polygenic nature of allergic  
71 disease risk and the large sample size used, which results in many thousands of SNPs being truly  
72 associated with disease risk (which increases lambda). This is likely to be the case because the inflation  
73 due to technical biases was only 1.04 (intercept from LD score regression analysis <sup>2</sup>). The Ferreira et al.  
74 GWAS results were adjusted by this inflation prior to the gene-based analysis reported in our current  
75 study.

76

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217 **Figure E1.** Distribution of the observed and expected single-SNP association P-values obtained after  
218 adjusting the results from Ferreira et al.<sup>1</sup> (which included a correction for an inflation factor of 1.04;  
219 see Methods for details) for the effects of the 136 independent associations identified in that study. The  
220 genomic inflation factor ( $\lambda$ , estimated as the median chi-square divided by 0.4549) of the single-SNP  
221 results after the conditional analysis is also shown ( $\lambda = 1.17$ ); before the conditional analysis,  $\lambda$  was  
222 1.19. The intercept of LD-score regression was 1.00, both before and after the conditional analysis.

223

224 **Figure E2.** Comparison of results from the EUGENE gene-based test obtained before (x-axis) and after  
225 (y-axis) adjusting the Ferreira et al.<sup>1</sup> GWAS results for the effects of the sentinel risk SNPs identified in  
226 that GWAS. The vertical and horizontal blue lines indicate the P-value threshold used to identify  
227 significant associations after accounting for multiple testing ( $P=2.5 \times 10^{-6}$ ).