

Table S3: Top 100 signals in the CEU population using the  $T_2$  test statistic.

Rank	Gene name	Chromosome	$T_2$	Rank	Gene name	Chromosome	$T_2$
1	<b>HLA-DPB1</b> <sup>14</sup>	6	405.3	51	<b>WFDC8</b> <sup>83</sup>	20	204.2
2	<b>HLA-DPA1</b> <sup>76</sup>	6	363.5	52	<b>USP20</b>	9	203.7
3	<b>SLC2A9</b> <sup>15</sup>	4	350.0	53	<b>CCDC146</b>	7	201.5
4	FANK1	10	330.0	54	<b>HLA-DRB1</b> <sup>14,75</sup>	6	197.9
5	CPE	4	317.9	55	POLR1E	9	197.1
6	<b>HLA-C</b> <sup>75</sup>	6	317.7	56	ADH4	4	196.5
7	DMBT1	10	312.2	57	OR5W2	11	195.8
8	<b>HLA-A</b> <sup>74,75</sup>	6	309.6	58	ASB18	2	195.0
9	ARPC5	1	297.8	59	BICC1	10	194.3
10	CCDC169	13	286.0	60	SH3RF3	2	192.6
11	CCDC169-SOHLH2	13	286.0	61	BMPR1B	4	192.1
12	<b>LGALS8</b> <sup>15</sup>	1	277.0	62	NUP88	17	190.9
13	APBB1IP	10	274.0	63	ADAMTS12	5	190.1
14	RGL1	1	268.4	64	ADH1C	4	188.7
15	TEKT4	2	261.8	65	APOBEC4	1	187.8
16	STK32A	5	259.2	66	SNX31	8	187.5
17	CEP112	17	257.7	67	SGCZ	8	187.1
18	CPNE4	3	253.0	68	PANK1	10	187.0
19	RNF144B	6	252.0	69	ANK3	10	186.9
20	C4orf37	4	245.2	70	PKD1L1	7	186.8
21	MLF1IP	4	244.1	71	ZNF717	3	186.5
22	<b>HLA-B</b> <sup>15,74,75</sup>	6	237.0	72	KLHL14	18	184.2
23	RGS6	14	236.1	73	FXN	9	184.0
24	ARHGAP42	11	234.8	74	MAPT	17	182.6
25	POLN	4	233.4	75	TYW1	7	182.0
26	SLC15A2	3	232.8	76	BCAS1	20	180.4
27	KALRN	3	227.2	77	NTN4	12	179.8
28	FOPNL	16	227.1	78	THSD7B	2	177.7
29	KIAA1267	17	226.7	79	COL5A2	2	177.6
30	ZNF568	19	226.4	80	LRP1B	2	175.6
31	HEATR1	1	225.7	81	SNX19	11	175.4
32	KIAA1324L	7	223.4	82	OR4C3	11	174.7
33	MSH3	5	222.5	83	KRT83	12	173.5
34	FRAS1	4	221.2	84	LRRC16A	6	171.5
35	EMR1	19	221.1	85	C18orf1	18	170.3
36	GRIN2A	16	220.1	86	HLA-DRA	6	169.8
37	BNC2	9	220.1	87	PTPN14	1	169.5
38	<b>HLA-DQA1</b> <sup>14,75</sup>	6	220.1	88	CNBD1	8	167.1
39	KDM4C	9	217.8	89	GPC5	13	166.6
40	AXDND1	1	217.1	90	MAP2K3	17	164.6
41	MYRIP	3	215.8	91	CSMD1	8	164.5
42	SPEF2	5	214.2	92	CADM2	3	162.8
43	PLCB4	20	212.3	93	MYO1B	2	162.6
44	SLC38A9	5	210.2	94	MYLK4	6	162.0
45	ART3	4	209.3	95	<b>OR5I1</b> <sup>55</sup>	11	162.0
46	CTNNA3	10	208.3	96	<b>FHIT</b> <sup>77</sup>	3	161.9
47	<b>ERAP1</b> <sup>81</sup>	5	207.6	97	CUBN	10	161.8
48	<b>HLA-DQB1</b> <sup>14,75</sup>	6	206.8	98	ULK4	3	161.8
49	EMID2	7	206.1	99	ASTN2	9	161.6
50	ADCY5	3	205.4	100	PGLYRP4	1	161.3

Previously-hypothesized genes are indicated in bold. Genes overlapping with Table S4 are highlighted in gray.

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