

**Supplementary Table 5:** *In silico* pleiotropy analysis findings that show traits significantly associated with SNPs linked ( $r^2 > 0.50$ ) to the 13 gSNPs

gSNP	Linked-SNP	CHR	BP	A1	A2	LD ( $r^2$ )	Type	Nearby gene	Pleiotropic effect
<b>rs2422320</b>	rs35998080	1	73278615	G	T	1	intergenic	<i>NEGR1, LINC01360</i>	SCZ, ASD
<b>rs7597593</b>	rs7597593	2	185533580	T	C	1	intronic	<i>ZNF804A</i>	ASD, ADHD, BPD, MDD, and SCZ
	rs2535629	3	52833219	G	A	1	intronic	<i>ITIH3</i>	ASD, ADHD, BPD, MDD, and SCZ
	rs2240920	3	52831009	C	T	0.92	intronic	<i>ITIH3</i>	BMI
	rs736408	3	52835354	C	T	0.89	intronic	<i>ITIH3</i>	BPD
	rs4687552	3	52838402	T	C	0.89	intronic	<i>ITIH3</i>	SCZ
	rs1042779 <sup>¥</sup>	3	52821011	A	G	0.84	exonic	<i>ITIH1</i>	BPD
<b>rs2535629</b>	rs2300149	3	52822921	C	T	0.8	intronic	<i>ITIH1</i>	WCadjBMI
	rs2251219*	3	52584787	T	C	0.76	exonic	<i>PBRM1</i>	MDD, BPD
	rs11177 <sup>¥</sup>	3	52721305	G	A	0.75	exonic	<i>GNL3</i>	Osteoarthritis
	rs11130319	3	52755592	A	T	0.75	intronic	<i>NEK4</i>	BMI
	rs10865974	3	52718280	G	T	0.73	intronic	<i>PBRM1</i>	BPD
	rs2240919	3	52831701	C	G	0.72	intronic	<i>ITIH3</i>	Height
	rs3617 <sup>¥</sup>	3	52833805	C	A	0.64	exonic	<i>ITIH3</i>	ASD, SCZ, RBC count

	rs2535627	3	52845105	T	C	0.62	intergenic	<i>ITIH3,ITIH4</i>	SCZ
	rs2710323	3	52815905	T	C	0.58	intronic	<i>ITIH1</i>	BMI, Glaucoma, SCZ, schizoaffective or BPD
	rs2577831	3	52628056	C	A	0.57	intronic	<i>PBRM1</i>	SCZ
	rs2302417	3	52814256	T	A	0.56	intronic	<i>ITIH1</i>	BPD
	rs2590838	3	52622086	G	A	0.55	intronic	<i>PBRM1</i>	Adiponectin levels
	rs7618915	3	52279594	G	A	0.54	upstream	<i>PPM1M</i>	BPD
	rs13083798	3	52649748	A	G	0.54	intronic	<i>PBRM1</i>	WHR
	rs1108842	3	52720080	A	C	0.54	UTR5	<i>GNL3</i>	Adiponectin levels
	rs2239547	3	52855229	T	C	0.54	intronic	<i>ITIH4</i>	SCZ
<b>rs1966136</b>	rs2365389	3	61236462	C	T	0.66	intronic	<i>FHIT</i>	BMI
	rs911186	6	27150599	A	G	1	intergenic	<i>MIR3143</i>	ASD,SCZ
	rs2393911	6	27057079	C	T	0.72	intergenic	<i>LINC00240, HIST1H2BJ</i>	Neuroticism
<b>rs911186</b>	rs6904071	6	27047256	G	A	0.7	intergenic	<i>HIST1H2BJ</i>	Neuroticism
	rs13194053	6	27143883	T	C	0.7	intergenic	<i>MIR3143, PRSS16</i>	SCZ
	rs6932590	6	27248931	T	C	0.52	intergenic	<i>PRSS16, POM121L2</i>	SCZ
<b>rs9368649</b>	rs9368649	6	30938883	A	G	1	intergenic	<i>DPCRI, MUC21</i>	Pulmonary function

<b>rs389883</b>	rs622871	6	31878495	A	G	0.81	intronic	<i>C2</i>	SIA, IMBadjBS, UTI
	rs521977	6	31836827	T	G	0.6	intronic	<i>SLC44A4</i>	IMBadjBS, PUM
	rs644045	6	31883957	A	G	0.58	intronic	<i>C2</i>	Endometriosis
	rs589428	6	31848220	T	G	0.57	intronic	<i>EHMT2</i>	WHRadjBMIns
	rs1313996	6	31876042	T	A	0.57	intronic	<i>C2</i>	Shingles
	rs2763981	6	31840021	T	A	0.54	intronic	<i>SLC44A4</i>	TIBC
<b>rs2182139</b>	rs12431410	14	60166022	C	T	0.6	intronic	<i>RTN1</i>	SCZ
<b>rs915057</b>	rs1152591	14	64680848	A	G	0.7	intronic	<i>SYNE2</i>	Atrial fibrillation
	rs1256061	14	64703593	G	T	0.59	intronic	<i>ESR2</i>	Hb concentration,RBC count,Hematocrit
<b>rs4906335</b>	rs12887734	14	104046834	G	T	0.92	intronic	<i>APOPT1</i>	SCZ
	rs12893668	14	104017793	G	A	0.78	intergenic	<i>BAG5</i>	Reticulocyte count
	rs2765041	14	103991478	T	A	0.61	intergenic	<i>CKB</i>	High light scatter reticulocyte count
<b>rs9951150</b>	rs9951150	18	52821124	A	G	1	intergenic	<i>LOC101927229,TCF4</i>	ASD,ADHD, BPD, MDD, and SCZ

¥ Nonsynonymous SNP, \*synonymous SNP, gSNPs; genome-wide significant lead SNPs identified in our analyses. Abbreviations: SNP: single nucleotide polymorphism, LD: linkage disequilibrium, MDD: major depressive disorder, BPD: bipolar disorder, SCZ: schizophrenia, ASD: autism spectrum disorder, ADHD: attention deficit hyperactivity disorder, BMI: body mass index, WCadjBMI(ns): Waist circumference adjusted for body mass index (in non-smokers), RBC: red blood cell, Hb: Hemoglobin, SIA: Sulfasalazine-induced agranulocytosis, IMBadjBS: Itch intensity from mosquito bite adjusted by bite size, UTI: Urinary tract infection frequency, PUM: Perceived unattractiveness to mosquitoes, TIBC: total iron binding capacity.