

Table S2: Epistatic genes in the replicated GO terms shared by the MICROS and CROATIAN populations

Symbol	Region	Gene Name	GWA information and disease associated*
<i>PLXNA2</i>	1q32.2	plexin a2	Cardiac hypertrophy
<i>RGS7</i>	1q23.1	regulator of g-protein signaling 7	Multiple sclerosis
<i>UBR4</i>	1p36.13	ubiquitin protein ligase e3 component n-recognin 4	(-)
<i>EPHA4</i>	2q36.1	eph receptor a4	Alzheimer's Disease, mild cognitive impairment
<i>GLI2</i>	2q14.2	gli family zinc finger 2	Erectile dysfunction and prostate cancer treatment
<i>PAR3B</i>	2q33.3	par-3 partitioning defective 3 homolog b (c. elegans)	Knee osteoarthritis
<i>SLC8A1</i>	2p23-p22	solute carrier family 8 (sodium/calcium exchanger), member 1	(-)
<i>CHL1</i>	3p26.3	cell adhesion molecule with homology to l1cam (close homolog of l1)	Scoliosis; lipid-lowering response to statins
<i>CNTN4</i>	3p26.3	contactin 4	Alzheimer's disease; Amyotrophic lateral sclerosis; Blood pressure; Acenocoumarol maintenance dosage
<i>ERC2</i>	3p14.3	elks/rab6-interacting/cast family member 2	Bipolar disorder and schizophrenia; Hip geometry
<i>GRM7</i>	3p26.1	glutamate receptor, metabotropic 7	Neuroticism Anxiety; Bipolar disorder; Major depressive disorder; Panic disorder
<i>HRH1</i>	3p25	histamine receptor h1	(-)
<i>PLCH1</i>	3q25.31	phospholipase c, eta 1	(-)
<i>ROBO1</i>	3p12.3	roundabout, axon guidance receptor, homolog 1 (drosophila)	Brain imaging in Schizophrenia
<i>ROBO2</i>	3p12.3	roundabout, axon guidance receptor, homolog 2 (drosophila)	Brain imaging in Schizophrenia
<i>SRGAP3</i>	3p25.3	slit-robo rho gtpase activating protein 3	(-)
<i>ARHGAP24</i>	4q21.23	rho gtpase activating protein 24	Electrocardiographic traits
<i>DCHS2</i>	4q31.3	dachsous 2 (drosophila)	(-)
<i>KCNIP4</i>	4p15.2	kv channel interacting protein 4	Suicidal ideation
<i>SLC2A9</i>	4p16.1	solute carrier family 2 (facilitated glucose transporter), member 9	Serum urate; Serum uric acid
<i>CAMK4</i>	5q22.1	calcium/calmodulin-dependent protein kinase iv	blood pressure and arterial stiffness
<i>CDH12</i>	5p14.3	cadherin 12, type 2 (n-cadherin 2)	Waist circumference
<i>CTNND2</i>	5p15.2	catenin (cadherin-associated protein), delta 2 (neural plakophilin-related arm-repeat protein)	Myopia
<i>ENC1</i>	5q13	ectodermal-neural cortex 1 (with btb-like domain)	(-)
<i>ODZ2</i>	5q34	odz, odd oz/ten-m homolog 2 (drosophila)	(-)
<i>BAI3</i>	6q13	brain-specific angiogenesis inhibitor 3	Lipid-lowering response to statins
<i>GRIK2</i>	6q16.3	glutamate receptor, ionotropic, kainate 2	Cardiac hypertrophy; Biochemical measures
<i>IGF2R</i>	6q25.3	insulin-like growth factor 2 receptor	Multiple sclerosis
<i>NEDD9</i>	6p25-p24	neural precursor cell expressed, developmentally down-regulated 9	(-)
<i>NKAIN2</i>	6q22.31	na+/k+ transporting atpase interacting 2	Neuroticism
<i>RPS6KA2</i>	6q27	ribosomal protein s6 kinase, 90kda, polypeptide 2	(-)
<i>SYNE1</i>	6q25.2	spectrin repeat containing, nuclear envelope 1	Bipolar disorder and major depressive disorder; blood pressure and arterial stiffness
<i>UNC93A</i>	6q27	unc-93 homolog a (c. elegans)	(-)
<i>CHRM2</i>	7q31-q35	cholinergic receptor, muscarinic 2	(-)
<i>CNTNAP2</i>	7q35	contactin associated protein-like 2	Bipolar disorder and schizophrenia; Bone mineral density; Autism
<i>POU6F2</i>	7p14.1	pou class 6 homeobox 2	Autism
<i>ADCY8</i>	8q24.22	adenylate cyclase 8 (brain)	Alzheimer's disease

<i>DLC1</i>	8p22	deleted in liver cancer 1	(-)
<i>NRG1</i>	8p12	neuregulin 1	Hirschsprung's disease; Hip geometry
<i>DIRAS2</i>	9q22.2	diras family, gtp-binding ras-like 2	Cognitive test performance; Protein quantitative trait loci
<i>GNA14</i>	9q21	guanine nucleotide binding protein (g protein), alpha 14	(-)
<i>LPPR1</i>	9q31.1	lipid phosphate phosphatase-related protein type 1	(-)
<i>NTRK2</i>	9q22.1	neurotrophic tyrosine kinase, receptor, type 2	(-)
<i>PCSK5</i>	9q21.13	proprotein convertase subtilisin/kexin type 5	Alzheimer's disease
<i>PTPRD</i>	9p24.1	protein tyrosine phosphatase, receptor type, d	Type 2 diabetes; Platelet aggregation; Partial epilepsies; Restless legs syndrome
<i>SH3GL2</i>	9p22.2	sh3-domain grb2-like 2	Cognitive performance; Heart failure; Multiple sclerosis
<i>COL13A1</i>	10q22.1	collagen, type xiii, alpha 1	Non-alcoholic fatty liver disease
<i>CUBN</i>	10p13	cubilin (intrinsic factor-cobalamin receptor)	Urinary albumin excretion; Alzheimer's disease; Folate pathway vitamin levels
<i>DNMBP</i>	10q24.2	dynamamin binding protein	(-)
<i>DOCK1</i>	10q26.13	dedicator of cytokinesis 1	(-)
<i>GRID1</i>	10q23.1	glutamate receptor, ionotropic, delta 1	Cardiac structure and function
<i>PRKG1</i>	10q11.2	protein kinase, cgmp-dependent, type i	(-)
<i>SORCS1</i>	10q23-q25	sortilin-related vps10 domain containing receptor 1	Diabetes; Alzheimer's disease;
<i>CNTN5</i>	11q22.1	contactin 5	Bipolar disorder and schizophrenia; Atrial fibrillation; brain aging
<i>DLG2</i>	11q14.1	discs, large homolog 2 (drosophila)	Parkinson's disease; Protein quantitative trait loci
<i>KCNJ5</i>	11q24	potassium inwardly-rectifying channel, subfamily j, member 5	(-)
<i>KIRREL3</i>	11q24.2	kin of irre like 3 (drosophila)	Response to antipsychotic treatment; Attention deficit hyperactivity disorder and conduct disorder;
<i>OPCML</i>	11q25	opioid binding protein/cell adhesion molecule-like	(-)
<i>ZBTB16</i>	11q23.2	zinc finger and btb domain containing 16	Conduct disorder
<i>ANKS1B</i>	12q23.1	ankyrin repeat and sterile alpha motif domain containing 1b	Schizophrenia; body mass index; waist circumference
<i>CD69</i>	12p13.31	cd69 molecule	Type 1 diabetes
<i>NINJ2</i>	12p13.33	ninjurin 2	Stroke
<i>PDE3A</i>	12p12.2	phosphodiesterase 3a, cgmp-inhibited	Cardiovascular disease; Male infertility; Height
<i>GPC5</i>	13q31.3	glypican 5	Multiple sclerosis; Serum metabolites; Height; Lung cancer;
<i>GPC6</i>	13q31.3	glypican 6	Neuroticism; Attention deficit hyperactivity disorder; Tonometry; Kidney aging
<i>MCF2L</i>	13q34	mcf.2 cell line derived transforming sequence-like	Hemostatic factors for cardiovascular disease
<i>PCDH9</i>	13q21.32	protocadherin 9	(-)
<i>PTGER2</i>	14q22	prostaglandin e receptor 2 (subtype ep2), 53kda	(-)
<i>RORA</i>	15q22.2	rar-related orphan receptor a	Cardiovascular disease; Alzheimer's disease; Age at menarche; Asthma; Depression
<i>GRIN2A</i>	16p13.2	glutamate receptor, ionotropic, n-methyl d-aspartate 2a	Smoking; Alzheimer's disease; Amyotrophic lateral sclerosis
<i>MYO1D</i>	17q11.2	myosin id	Pancreatic cancer; Autism
<i>PRKCA</i>	17q24.2	protein kinase c, alpha	Cardiac ventricular conduction
<i>MBP</i>	18q23	myelin basic protein	(-)
<i>RNF138</i>	18q12.1	ring finger protein 138	(-)
<i>CACNA1A</i>	19p13	calcium channel, voltage-dependent, p/q type, alpha 1a subunit	(-)
<i>MED16</i>	19p13.3	mediator complex subunit 16	(-)
<i>PLCB1</i>	20p12.3	phospholipase c, beta 1 (phosphoinositide-specific)	Cognitive test performance
<i>PREX1</i>	20q13.13	phosphatidylinositol-3,4,5-trisphosphate-dependent rac exchange factor 1	Blood pressure and arterial stiffness; Type 2 diabetes

<i>RSPO4</i>	20p13	r-spondin family, member 4	(-)
<i>AGPAT3</i>	21q22.3	1-acylglycerol-3-phosphate o-acyltransferase 3	(-)
<i>GRIK1</i>	21q21.3	glutamate receptor, ionotropic, kainate 1	Lipid-lowering response to statins; Hyperactive-impulsive symptoms; Breast cancer
<i>MYH9</i>	22q12.3	myosin, heavy chain 9, non-muscle	Glomerulosclerosis; End-stage renal disease; Optic disc size

(-): no information

*: GWA information extracted from the NHGRI GWAS Catalog (<http://www.genome.gov/gwastudies/>)