

Table 6. Genes ($n = 154$) showing significant signal of positive selection in human before correction for multiple testing

Ensembl gene ID	Gene name	Gene description *	Mean ω †	P value ‡
ENSG00000165659	DACH1	Dachshund homolog 1 (Dach1).	0.205	0.0000
ENSG00000188153	COL4A5	Collagen alpha-5(IV) chain precursor.	0.205	0.0000
ENSG00000186395	KRT10	Keratin, type I cytoskeletal 10 (Cytokeratin-10) (CK-10) (Keratin-10) (K10).	0.154	0.0001
ENSG00000188712	Q8NHB3_HUMAN	Seven transmembrane helix receptor.	0.342	0.0001
ENSG00000186683			0.615	0.0001
ENSG00000147889	CDKN2A	Cyclin-dependent kinase inhibitor 2A, isoform 4 (p14ARF) (p19ARF).	1.230	0.0001
ENSG00000118298	CA14	Carbonic anhydrase 14 precursor (EC 4.2.1.1) (Carbonic anhydrase XIV) (Carbonate dehydratase XIV) (CA-XIV).	0.820	0.0002
ENSG00000180509	KCNE1	Potassium voltage-gated channel subfamily E member 1 (IKs producing slow voltage-gated potassium channel beta subunit Mink) (Minimal potassium channel) (Delayed rectifier potassium channel subunit Isk).	0.410	0.0002
ENSG00000149054	ZNF215	Zinc finger protein 215 (BWSCR2- associated zinc-finger protein 2) (BAZ 2).	1.230	0.0003
ENSG00000136003	NIFUN	NifU-like N-terminal domain-containing protein, mitochondrial precursor (NifU- like protein) (Iron-sulfur cluster assembly enzyme ISCU).	0.410	0.0003
ENSG00000164626	KCNK5	Potassium channel subfamily K member 5 (Acid-sensitive potassium channel protein TASK-2) (TWIK-related acid-sensitive K(+) channel 2).	0.051	0.0003
ENSG00000171522	PTGER4	Prostaglandin E2 receptor, EP4 subtype (Prostanoid EP4 receptor) (PGE receptor, EP4 subtype).	0.820	0.0003
ENSG00000174948	GPR149	Probable G-protein coupled receptor 149 (G-protein coupled receptor PGR10).	0.205	0.0005
ENSG00000163069	SGCB	Beta-sarcoglycan (Beta-SG) (43 kDa dystrophin-associated glycoprotein) (43DAG) (A3b).	0.137	0.0005
ENSG00000169738	DCXR	L-xylulose reductase (EC 1.1.1.10) (XR) (Dicarbonyl/L-xylulose reductase) (Kidney dicarbonyl reductase) (kiDCR) (Carbonyl reductase II) (Sperm surface protein P34H).	0.205	0.0005
ENSG00000164935	TM7SF4	Transmembrane 7 superfamily member 4 (Dendritic cell-specific transmembrane protein) (DC-STAMP) (IL-4-induced protein) (FIND).	0.820	0.0005
ENSG00000164977			0.246	0.0006

ENSG00000119596	YLPM1	YLP motif-containing protein 1 (Nuclear protein ZAP3) (ZAP113).	0.308	0.0008
ENSG00000166004	KIAA1731	CDNA FLJ37899 fis, clone CD34C3000314.	1.025	0.0008
ENSG00000119431	HDHD3	haloacid dehalogenase-like hydrolase domain containing 3	0.410	0.0008
ENSG00000185409	Q8IYB0_HUMAN		0.410	0.0009
ENSG00000165632	TAF3	TAFII140 protein (Fragment).	0.410	0.0009
ENSG00000136805	NP_055149.1		0.205	0.0010
ENSG00000165325	CCDC67		0.410	0.0012
ENSG00000177138	FAM9B	Protein FAM9B.	0.410	0.0013
ENSG00000150347	ARID5B	AT-rich interactive domain-containing protein 5B (ARID domain- containing protein 5B) (Mrf1-like) (Modulator recognition factor 2) (MRF-2).	0.137	0.0015
ENSG00000092470	WDR76	WD repeat domain 76	0.410	0.0015
ENSG00000160051	IQCC	IQ motif containing C	1.640	0.0016
ENSG00000100889	PCK2	Phosphoenolpyruvate carboxykinase [GTP], mitochondrial precursor (EC 4.1.1.32) (Phosphoenolpyruvate carboxylase) (PEPCK-M).	0.308	0.0017
ENSG00000171227	TMEM37	Voltage-dependent calcium channel gamma-like subunit (Neuronal voltage-gated calcium channel gamma-like subunit) (Transmembrane protein 37).	0.205	0.0017
ENSG00000198935			0.410	0.0018
ENSG00000090339	ICAM1	Intercellular adhesion molecule 1 precursor (ICAM-1) (Major group rhinovirus receptor) (CD54 antigen).	0.342	0.0019
ENSG00000152939	MARVELD2	MARVEL domain containing 2 isoform 1	0.615	0.0021
ENSG00000186074	CD300LF	NK inhibitory receptor precursor	0.547	0.0022
ENSG00000164393	GPR111	Probable G-protein coupled receptor 111 (G-protein coupled receptor PGR20).	1.230	0.0023
ENSG00000138029	HADHB	Trifunctional enzyme beta subunit, mitochondrial precursor (TP-beta) [Includes: 3-ketoacyl-CoA thiolase (EC 2.3.1.16) (Acetyl-CoA acyltransferase) (Beta-ketothiolase)].	0.410	0.0024
ENSG00000181908	XR_000554.1		0.410	0.0027
ENSG00000133101	CCNA1	Cyclin-A1.	0.410	0.0027
ENSG00000187475	HIST1H1T	Histone H1t (Testicular H1 histone).	2.460	0.0031
ENSG00000164944	KIAA1429		0.308	0.0032
ENSG00000131018	SYNE1	Nesprin-1 (Nuclear envelope spectrin repeat protein 1) (Synaptic nuclear envelope protein 1) (Syne-1) (Myocyte nuclear envelope protein 1) (Myne-1) (Enaptin).	0.376	0.0033

ENSG00000116141	MARK1	Serine/threonine-protein kinase MARK1 (EC 2.7.1.37) (MAP/microtubule affinity-regulating kinase 1).	0.410	0.0034
ENSG00000143851	PTPN7	Tyrosine-protein phosphatase non-receptor type 7 (EC 3.1.3.48) (Protein-tyrosine phosphatase LC-PTP) (Hematopoietic protein-tyrosine phosphatase) (HEPTP).	0.273	0.0036
ENSG00000138658	NP_060862.2		0.513	0.0039
ENSG00000163500			0.228	0.0040
ENSG00000132677	RHBG	Rhesus blood group, B glycoprotein	0.410	0.0041
ENSG00000123901	GPR83	Probable G-protein coupled receptor 83 precursor (G-protein coupled receptor 72).	0.205	0.0042
ENSG00000184574	GPR92	Probable G-protein coupled receptor 92.	0.410	0.0044
ENSG00000104804	TULP2	Tubby-related protein 2 (Tubby-like protein 2).	0.410	0.0044
ENSG00000196893	Q8N2W8_HUMAN		1.640	0.0047
ENSG00000170891	CYTL1	Cytokine-like protein 1 precursor (Protein C17).	0.205	0.0047
ENSG00000158292	GPR153	Probable G-protein coupled receptor 153 (G-protein coupled receptor PGR1).	0.308	0.0049
ENSG00000158553	POM121L2		0.923	0.0050
ENSG00000130508	PXDN	PXDN protein (Fragment).	0.082	0.0050
ENSG00000087301	KIAA1344		0.410	0.0052
ENSG00000129696	NP_079391.1		0.513	0.0053
ENSG00000130818	ZNF426	Zinc finger protein 426.	0.615	0.0054
ENSG00000182551	ADI1	1,2-dihydroxy-3-keto-5-methylthiopentene dioxygenase (EC 1.13.-.-) (Aci-reductone dioxygenase) (ARD) (Membrane-type 1 matrix metalloproteinase cytoplasmic tail-binding protein 1) (MTCBP-1) (Submergence-induced protein 2 homolog) (SIPL).	0.410	0.0055
ENSG00000135931	ARMC9		0.820	0.0056
ENSG00000033867	SLC4A7	Sodium bicarbonate cotransporter 3 (Sodium bicarbonate cotransporter 2) (Sodium bicarbonate cotransporter 2b) (Bicarbonate transporter) (Solute carrier familv 4 member 7).	0.164	0.0057
ENSG00000011028	MRC2	Macrophage mannose receptor 2 precursor (Urokinase receptor-associated protein) (Endocytic receptor 180) (CD280 antigen).	0.176	0.0059
ENSG00000178977	Q8NAT9_HUMAN		2.050	0.0059
ENSG00000183005			0.957	0.0061
ENSG00000147223	Q5JRB8_HUMAN	Novel protein (Fragment).	0.410	0.0061
ENSG00000139182	CLSTN3	Calsyntenin-3 precursor.	0.103	0.0064

ENSG00000162723	SLAMF9	SLAM family member 9 precursor (CD2 family member 10) (CD2F-10) (CD84 homolog 1) (CD84-H1).	0.820	0.0065
ENSG00000185087	NP_872368.1		1.230	0.0068
ENSG00000133805	AMPD3	AMP deaminase 3 (EC 3.5.4.6) (AMP deaminase isoform E) (Erythrocyte AMP deaminase).	0.410	0.0068
ENSG00000164440	TXLNB	Beta-taxilin (Muscle-derived protein 77) (hMDP77).	0.328	0.0070
ENSG00000177553	Q8NDA9_HUMAN	Novel protein (Fragment).	1.435	0.0070
ENSG00000172769	OR5B3	Olfactory receptor 5B3 (Olfactory receptor OR11-239).	3.690	0.0072
ENSG00000167987	VPS37C	vacuolar protein sorting 37C	0.547	0.0072
ENSG00000165409	TSHR	Thyrotropin receptor precursor (TSH-R) (Thyroid-stimulating hormone receptor).	0.547	0.0074
ENSG00000118600	TMEM5	Transmembrane protein 5.		0.0074
ENSG00000160781	PAQR6	Progesterone and adiponectin receptor family member VI.	0.410	0.0076
ENSG00000036672	USP2	Ubiquitin carboxyl-terminal hydrolase 2 (EC 3.1.2.15) (Ubiquitin thiolesterase 2) (Ubiquitin-specific-processing protease 2) (Deubiquitinating enzyme 2) (41 kDa ubiquitin-specific protease).	0.615	0.0076
ENSG00000196476	CT096_HUMAN		1.435	0.0079
ENSG00000197128	NP_001019767.1		0.615	0.0082
ENSG00000100141	PISD	Phosphatidylserine decarboxylase proenzyme (EC 4.1.1.65) [Contains: Phosphatidylserine decarboxylase alpha chain; Phosphatidylserine decarboxylase beta chain].	0.205	0.0085
ENSG00000196242	OR2C3	Olfactory receptor 2C3.		0.0094
ENSG00000137727	ARHGAP20	Rho GTPase activating protein 20	1.025	0.0103
ENSG00000170264	NP_115556.1		0.547	0.0103
ENSG00000197586	ENTPD6	Ectonucleoside triphosphate diphosphohydrolase 6 (EC 3.6.1.6) (NTPDase6) (CD39 antigen-like 2).	0.410	0.0104
ENSG00000188996	HUS1B	Checkpoint protein HUS1B (hHUS1B).	0.683	0.0115
ENSG00000188039	NP_001007526.1		0.718	0.0117
ENSG0000018607	ZNF221	Zinc finger protein 221.	1.025	0.0119
ENSG00000198169	ZNF251	Zinc finger protein 251 (Fragment).	1.230	0.0119
ENSG00000186530	XKR5	XK-related protein 5.	3.280	0.0121
ENSG00000188683			1.640	0.0127
ENSG00000137507	LRRC32	Leucine-rich repeat-containing protein 32 precursor (GARP protein) (Garpin) (Glycoprotein A repetitions predominant).	0.820	0.0136

ENSG00000141837	CACNA1A	Voltage-dependent P/Q-type calcium channel alpha-1A subunit (Voltage-gated calcium channel alpha subunit Cav2.1) (Calcium channel, L type, alpha-1 polypeptide isoform 4) (Brain calcium channel I) (BI).	0.205	0.0140
ENSG00000163071	SPATA18	spermatogenesis associated 18 homolog	1.093	0.0143
ENSG00000178966	NP_079221.1		1.640	0.0149
ENSG00000132357	CARD6	Caspase recruitment domain-containing protein 6.	0.752	0.0150
ENSG00000198483	ANKRD35	ankyrin repeat domain 35	0.683	0.0151
ENSG00000146232	NFKBIE	NF-kappa-B inhibitor epsilon (NF-kappa-BIE) (I-kappa-B-epsilon) (IkappaBepsilon) (IKB-epsilon) (IKBE).	0.410	0.0153
ENSG00000158258	CLSTN2	Calsyntenin-2 precursor.	0.224	0.0154
ENSG00000102805	CLN5	Ceroid-lipofuscinosis neuronal protein 5 (Protein CLN5).	0.308	0.0158
ENSG00000176900	OR51T1	Olfactory receptor 51T1.	0.273	0.0159
ENSG00000129219	PLD2	Phospholipase D2 (EC 3.1.4.4) (PLD 2) (Choline phosphatase 2) (Phosphatidylcholine-hydrolyzing phospholipase D2) (PLD1C) (hPLD2).	0.205	0.0167
ENSG00000091157	WDR7	WD-repeat protein 7 (TGF-beta resistance-associated protein TRAG) (Rabconnectin-3 beta).	0.246	0.0168
ENSG00000101405	OXT	Oxytocin-neurophysin 1 precursor (OT-NPI) [Contains: Oxytocin (Ocytocin); Neurophysin 1].	0.205	0.0170
ENSG00000174038	NP_976044.1		3.690	0.0171
ENSG00000182372	CLN8	Protein CLN8.	0.137	0.0175
ENSG00000168575	SLC20A2	solute carrier family 20, member 2	0.164	0.0183
ENSG00000122971	ACADS	Acyl-CoA dehydrogenase, short-chain specific, mitochondrial precursor (EC 1.3.99.2) (SCAD) (Butyryl-CoA dehydrogenase).	0.137	0.0189
ENSG00000019169	MARCO	Macrophage receptor MARCO (Macrophage receptor with collagenous structure) (Scavenger receptor class A member 2).	0.615	0.0196
ENSG00000165238	WNK2	Serine/threonine-protein kinase WNK2 (EC 2.7.1.37) (Protein kinase with no lysine 2) (Protein kinase, lysine-deficient 2).	0.351	0.0198
ENSG00000182805	NP_001013756.1		1.025	0.0202
ENSG00000197674	Q8NH68_HUMAN	Seven transmembrane helix receptor.		0.0206
ENSG00000002726	NM_001091.2	amiloride binding protein 1 (amine oxidase (copper-containing)) (ABP1), mRNA	0.293	0.0207
ENSG00000139637	MYG1_HUMAN	MYG1 protein.	0.410	0.0208

ENSG00000105501	SIGLEC5	Sialic acid-binding Ig-like lectin 5 precursor (Siglec-5) (Obesity- binding protein 2) (OB-binding protein 2) (OB-BP2) (CD33 antigen-like 2) (CD170 antigen).		0.0214
ENSG00000095637	SORBS1	Sorbin and SH3 domain-containing protein 1 (Ponsin) (c-Cbl-associated protein) (CAP) (SH3 domain protein 5) (SH3P12).	0.234	0.0218
ENSG00000196118	NP_001014979.1		0.205	0.0222
ENSG00000141458	NPC1	Niemann-Pick C1 protein precursor.	0.469	0.0224
ENSG00000189348	XP_934528.1	PREDICTED: hypothetical protein XP 934528	0.547	0.0225
ENSG00000120875	DUSP4	Dual specificity protein phosphatase 4 (EC 3.1.3.48) (EC 3.1.3.16) (Mitogen-activated protein kinase phosphatase 2) (MAP kinase phosphatase 2) (MKP-2) (Dual specificity protein phosphatase hVH2).	0.103	0.0227
ENSG00000104635	SLC39A14	solute carrier family 39 (zinc transporter), member 14	0.205	0.0227
ENSG00000008438	PGLYRP1	Peptidoglycan recognition protein precursor (PGRP-S).	2.050	0.0245
ENSG00000086288	TXNDC3	Thioredoxin domain-containing protein 3 (Spermatid-specific thioredoxin-2) (Sptrx-2) (NM23-H8).	0.615	0.0245
ENSG00000164520	RAET1E	NKG2D ligand 4 precursor (NKG2D ligand 4) (NKG2DL4) (N2DL-4) (Retinoic acid early transcript 1E) (Lymphocyte effector toxicity activation ligand) (RAE-1-like transcript 4) (RL-4).	0.410	0.0249
ENSG00000064042	NP_055803.1		0.205	0.0257
ENSG00000165125	TRPV6	Transient receptor potential cation channel subfamily V member 6 (TrpV6) (Epithelial calcium channel 2) (ECaC2) (Calcium transport protein 1) (CaT1) (CaT-like) (CaT-L).	0.513	0.0269
ENSG00000125631			3.280	0.0275
ENSG00000140950	NP_065998.2		0.410	0.0283
ENSG00000109674	NEIL3	Endonuclease VIII-like 3 (Nei-like 3) (DNA glycosylase FPG2).		0.0293
ENSG00000174655			0.615	0.0294
ENSG00000154719	MRPL39	Mitochondrial 39S ribosomal protein L39 (L39mt) (MRP-L39) (MRP-L5).	0.513	0.0301
ENSG00000100376	CV008_HUMAN		0.820	0.0306
ENSG00000187705	Q6ZUC2_HUMAN	CDNA FLJ43826 fis, clone TESTI4002703.		0.0312
ENSG00000167945	NP_001013660.1		1.640	0.0314

ENSG00000153201	RANBP2	Ran-binding protein 2 (RanBP2) (Nuclear pore complex protein Nup358) (Nucleoporin Nup358) (358 kDa nucleoporin) (P270).	0.351	0.0331
ENSG00000062370	ZNF228	Zinc finger protein 228.	0.478	0.0338
ENSG00000171936	OR10H3	Olfactory receptor 10H3.		0.0339
ENSG00000088836	SLC4A11	Sodium bicarbonate transporter-like protein 11 (Bicarbonate transporter-related protein 1) (Solute carrier family 4 member 11).	0.342	0.0342
ENSG00000162745	OLFML2B	olfactomedin-like 2B	0.319	0.0347
ENSG00000180116	NP_001026918.2			0.0371
ENSG00000182348	NP_857597.1		1.312	0.0373
ENSG00000147804	SLC39A4	Zinc transporter ZIP4 precursor (Solute carrier family 39 member 4).	2.050	0.0392
ENSG00000076382	SPAG5	Sperm-associated antigen 5 (Astrin) (Mitotic spindle-associated protein p126) (MAP126) (Deepest).		0.0397
ENSG00000124568	SLC17A1	Renal sodium-dependent phosphate transport protein 1 (Sodium/phosphate cotransporter 1) (Na(+)/PI cotransporter 1) (Renal sodium-phosphate transport protein 1) (Renal Na(+)-dependent phosphate cotransporter 1) (Solute carrier family 18 member 1) (NA/PI-4)		0.0402
ENSG00000082269	KIAA1411		0.273	0.0412
ENSG00000186453	Q86W67_HUMAN		2.050	0.0414
ENSG00000102794				0.0423
ENSG00000189424				0.0429
ENSG00000166801	FAM111A		2.870	0.0432
ENSG00000083622	NP_060296.1		3.280	0.0454
ENSG00000122490	PQLC1	PQ loop repeat containing 1	0.273	0.0463
ENSG00000164649	CDCA7L	transcription factor RAM2	0.273	0.0466
ENSG00000104974	LILRA1	Leukocyte immunoglobulin-like receptor subfamily A member 1 precursor (Leucocyte immunoglobulin-like receptor 6) (LIR-6) (CD85i antigen).	0.525	0.0486
ENSG00000184278				0.0491
ENSG00000162591	EGFL3	EGF-like domain-containing protein 3 precursor (Multiple EGF-like domain protein 3) (Multiple epidermal growth factor-like domains 6).	3.690	0.0498
ENSG00000179750	APOBEC3B	Probable DNA dC->dU-editing enzyme APOBEC-3B (EC 3.5.4.-) (Phorbolin- 1-related protein) (Phorbolin-2/3).	1.333	0.0498

* Gene descriptions downloaded from Ensembl. Blanks indicate information not available or unknown.

† Average nonsynonymous/synonymous substitution rate ratio for the human lineage, computed by 0.41 n/s . Blank indicates no synonymous changes.

‡ Uncorrected P value from likelihood ratio test.