

Supp. Table S1:DEGs in the comparison of pFBs of hIGFBP5 HOMO mice vs. WT mice. The q-value cut off is 0.05, upregulated genes have a log2FC above 0.6 (red), and downregulated genes have a log2FC below -0.6 (blue).

ENTREZID	SYMBOL	GENENAME	log2FC	q-value
69327	1700007K13Rik	RIKEN cDNA 1700007K13 gene	-3.21503	1.00E-06
69771	1810019D21Rik	RIKEN cDNA 1810019D21 gene	1.729901	1.00E-06
100503178	2810013P06Rik	RIKEN cDNA 2810013P06 gene	1.130656	1.00E-06
212448	9330159F19Rik	RIKEN cDNA 9330159F19 gene	4.97115	1.00E-06
105518	A630023A22Rik	RIKEN cDNA A630023A22 gene	4.57982	1.00E-06
217262	Abca9	ATP-binding cassette, sub-family A (ABC1), member 9	2.480624	1.00E-06
26874	Abcd2	ATP-binding cassette, sub-family D (ALD), member 2	1.627179	1.00E-06
26897	Acot1	acyl-CoA thioesterase 1	4.087376	1.00E-06
75572	Acyp2	acylphosphatase 2, muscle type	-2.24159	1.00E-06
101401	Adamts9	a disintegrin-like and metallopeptidase (reprolysin type) with thrombospondin type 1 motifs	2.187029	1.00E-06
11517	Adcyap1r1	adenylate cyclase activating polypeptide 1 receptor 1	-4.98107	1.00E-06
11535	Adm	adrenomedullin	-2.92002	1.00E-06
11541	Adora2b	adenosine A2b receptor	-1.14349	1.00E-06
347722	Agap1	ArfGAP with GTPase domain, ankyrin repeat and PH domain 1	1.218362	1.00E-06
216439	Agap2	ArfGAP with GTPase domain, ankyrin repeat and PH domain 2	2.018622	1.00E-06
99542	Al115009	expressed sequence Al115009	2.230915	1.00E-06
104103	Airn	antisense Igf2r RNA	2.841077	1.00E-06
19378	Aldh1a2	aldehyde dehydrogenase family 1, subfamily A2	-7.93283	1.00E-06
67689	Aldh3b1	aldehyde dehydrogenase 3 family, member B1	-1.26799	1.00E-06
11647	Alpl	alkaline phosphatase, liver/bone/kidney	6.010524	1.00E-06
216285	Alx1	ALX homeobox 1	10	1.00E-06
11694	Alx3	aristaless-like homeobox 3	6.88089	1.00E-06
72125	Amer2	APC membrane recruitment 2	7.478975	1.00E-06
56332	Amotl2	angiomotin-like 2	1.164482	1.00E-06
11601	Angpt2	angiopoietin 2	-4.79579	1.00E-06
11735	Ank3	ankyrin 3, epithelial	2.243212	1.00E-06
239029	Antxr1	anthrax toxin receptor-like	4.553982	1.00E-06
71724	Aox3	aldehyde oxidase 3	4.077598	1.00E-06
11767	Ap1m1	adaptor-related protein complex AP-1, mu subunit 1	0.762951	1.00E-06
23805	Apc2	APC regulator of WNT signaling pathway 2	1.240659	1.00E-06
11810	Apobec1	apolipoprotein B mRNA editing enzyme, catalytic polypeptide 1	-1.93455	1.00E-06
71939	Apol6	apolipoprotein L 6	-2.82524	1.00E-06
231532	Arhgap24	Rho GTPase activating protein 24	-1.92818	1.00E-06
65255	Asb4	ankyrin repeat and SOCS box-containing 4	3.420319	1.00E-06
171209	Asic3	acid-sensing (proton-gated) ion channel 3	7.19144	1.00E-06
11980	Atp8a1	ATPase, aminophospholipid transporter (APLT), class I, type 8A, n	2.658955	1.00E-06
97440	B3gnt9	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 9	1.427867	1.00E-06
407788	BC051142	cDNA sequence BC051142	2.450536	1.00E-06
666938	Bend4	BEN domain containing 4	1.453006	1.00E-06
209645	Bend7	BEN domain containing 7	4.379363	1.00E-06
171543	Bmf	BCL2 modifying factor	3.020578	1.00E-06
606736	C920009B18Rik	RIKEN cDNA C920009B18 gene	-4.644	1.00E-06
94332	Cadm3	cell adhesion molecule 3	4.540186	1.00E-06
71962	Castor1	cytosolic arginine sensor for mTORC1 subunit 1	-1.5538	1.00E-06
69743	Cas21	castor zinc finger 1	3.531966	1.00E-06
12391	Cav3	caveolin 3	-7.1638	1.00E-06
208650	Cblb	Casitas B-lineage lymphoma b	1.624852	1.00E-06
211535	Ccdc114	coiled-coil domain containing 114	2.934604	1.00E-06
68339	Ccdc88c	coiled-coil domain containing 88C	4.401195	1.00E-06
12476	Cd151	CD151 antigen	-1.32233	1.00E-06
12490	Cd34	CD34 antigen	3.293119	1.00E-06
12519	Cd80	CD80 antigen	-2.43319	1.00E-06
12560	Cdh3	cadherin 3	3.902583	1.00E-06
68567	Cgref1	cell growth regulator with EF hand domain 1	-2.61237	1.00E-06
73368	Col20a1	collagen, type XX, alpha 1	3.216978	1.00E-06
373864	Col27a1	collagen, type XXVII, alpha 1	3.200703	1.00E-06
71883	Coq2	coenzyme Q2 4-hydroxybenzoate polyprenyltransferase	-0.96403	1.00E-06
12873	Cpa3	carboxypeptidase A3, mast cell	-4.11462	1.00E-06
231207	Cpeb2	cytoplasmic polyadenylation element binding protein 2	-1.45612	1.00E-06
68337	Crip2	cysteine rich protein 2	-3.25918	1.00E-06
11630	Crybg1	crystallin beta-gamma domain containing 1	5.198011	1.00E-06
12977	Csf1	colony stimulating factor 1 (macrophage)	-1.39783	1.00E-06
13052	Cxadr	coxsackie virus and adenovirus receptor	3.058938	1.00E-06
225912	Cyb561a3	cytochrome b561 family, member A3	1.891033	1.00E-06
76884	Cyfp2	cytoplasmic FMR1 interacting protein 2	-2.3634	1.00E-06
76441	Daam2	dishevelled associated activator of morphogenesis 2	3.319541	1.00E-06
13175	Dclk1	doublecortin-like kinase 1	-2.55876	1.00E-06
23853	Def6	differentially expressed in FDCP 6	1.260418	1.00E-06
13380	Dkk1	dickkopf WNT signaling pathway inhibitor 1	6.280353	1.00E-06
13394	Dlx4	distal-less homeobox 4	4.051417	1.00E-06
320453	Dlx4os	distal-less homeobox 4, opposite strand	4.879153	1.00E-06

226049	Dmrt2	doublesex and mab-3 related transcription factor 2	5.635167	1.00E-06
65254	Dpysl5	dihydropyrimidinase-like 5	3.741822	1.00E-06
70433	Draxin	dorsal inhibitory axon guidance protein	6.080463	1.00E-06
252864	Dusp15	dual specificity phosphatase-like 15	-3.64229	1.00E-06
18218	Dusp8	dual specificity phosphatase 8	-1.54965	1.00E-06
13593	Ebf3	early B cell factor 3	7.349607	1.00E-06
13638	Efna3	ephrin A3	-2.51485	1.00E-06
68519	Eml1	echinoderm microtubule associated protein like 1	-1.14436	1.00E-06
319670	Eml5	echinoderm microtubule associated protein like 5	3.726453	1.00E-06
13824	Epb41l4a	erythrocyte membrane protein band 4.1 like 4a	3.134186	1.00E-06
13835	Epha1	Eph receptor A1	1.431394	1.00E-06
208618	Etl4	enhancer trap locus 4	-2.74878	1.00E-06
74190	Exoc3l4	exocyst complex component 3-like 4	2.817812	1.00E-06
320051	Exph5	exophilin 5	4.282103	1.00E-06
104943	Fam110c	family with sequence similarity 110, member C	2.366946	1.00E-06
629059	Fam124a	family with sequence similarity 124, member A	-3.51256	1.00E-06
224093	Fam43a	family with sequence similarity 43, member A	-1.3445	1.00E-06
14102	Fas	Fas (TNF receptor superfamily member 6)	-1.61862	1.00E-06
329628	Fat4	FAT atypical cadherin 4	-1.12073	1.00E-06
14119	Fbn2	fibrillin 2	7.341607	1.00E-06
72179	Fbxl2	F-box and leucine-rich repeat protein 2	-1.46074	1.00E-06
69754	Fbxo7	F-box protein 7	0.988006	1.00E-06
225020	Fez2	fasciculation and elongation protein zeta 2 (zyglin II)	-1.07537	1.00E-06
14200	Fhl2	four and a half LIM domains 2	-2.41517	1.00E-06
67606	Fibin	fin bud initiation factor homolog (zebrafish)	-3.02103	1.00E-06
217721	Flvcr2	feline leukemia virus subgroup C cellular receptor 2	2.739376	1.00E-06
14241	Foxl1	forkhead box L1	-5.43142	1.00E-06
114142	Foxp2	forkhead box P2	2.252153	1.00E-06
209630	Frm4a	FERM domain containing 4A	-1.77417	1.00E-06
232288	Frm4b	FERM domain containing 4B	3.4949	1.00E-06
228564	Frm5	FERM domain containing 5	-3.64772	1.00E-06
320027	Fstl4	folliculin-like 4	3.498285	1.00E-06
14368	Fzd6	frizzled class receptor 6	1.32009	1.00E-06
14388	Gab1	growth factor receptor bound protein 2-associated protein 1	1.6039	1.00E-06
69976	Galk2	galactokinase 2	-0.76715	1.00E-06
14463	Gata4	GATA binding protein 4	4.688043	1.00E-06
67092	Gatm	glycine amidinotransferase (L-arginine:glycine amidinotransferase)	5.337731	1.00E-06
71584	Gdpd2	glycerophosphodiester phosphodiesterase domain containing 2	4.811738	1.00E-06
317758	Gimap9	GTPase, IMAP family member 9	2.52043	1.00E-06
14633	Gli2	GLI-Kruppel family member GLI2	1.332855	1.00E-06
73690	Glipr1	GLI pathogenesis-related 1 (glioma)	-5.69418	1.00E-06
30926	Glrx3	glutaredoxin 3	-1.17296	1.00E-06
100041694	Gm10451	predicted gene 10451	6.232733	1.00E-06
433801	Gm13212	predicted gene 13212	-2.78796	1.00E-06
100642166	Gm15446	predicted gene 15446	-8.63024	1.00E-06
100862072	Gm21451	predicted gene, 21451	-8.07047	1.00E-06
102636330	Gm26878	predicted gene, 26878	6.932998	1.00E-06
102631856	Gm30083	predicted gene, 30083	4.426302	1.00E-06
115487375	Gm48826	sentrin-specific protease 2 pseudogene	4.534674	1.00E-06
384808	Gm5345	glyceraldehyde-3-phosphate dehydrogenase pseudogene	2.625313	1.00E-06
432839	Gprin2	G protein regulated inducer of neurite outgrowth 2	3.559547	1.00E-06
108682	Gpt2	glutamic pyruvate transaminase (alanine aminotransferase) 2	1.206239	1.00E-06
235283	Gramd1b	GRAM domain containing 1B	0.915144	1.00E-06
74053	Grip1	glutamate receptor interacting protein 1	6.172341	1.00E-06
14773	Grk5	G protein-coupled receptor kinase 5	-1.42196	1.00E-06
68312	Gstm7	glutathione S-transferase, mu 7	-3.12499	1.00E-06
14910	Gt(ROSA)26Sor	gene trap ROSA 26, Philippe Soriano	-2.60766	1.00E-06
27357	Gyg	glycogenin	-3.11916	1.00E-06
15117	Has2	hyaluronan synthase 2	4.336998	1.00E-06
74318	Hopx	HOP homeobox	3.097405	1.00E-06
15413	Hoxb5	homeobox B5	-3.10543	1.00E-06
75395	Hoxb5os	homeobox B5 and homeobox B6, opposite strand	-2.89694	1.00E-06
15414	Hoxb6	homeobox B6	-3.46616	1.00E-06
15415	Hoxb7	homeobox B7	-3.12592	1.00E-06
15416	Hoxb8	homeobox B8	-2.67267	1.00E-06
15417	Hoxb9	homeobox B9	-2.18476	1.00E-06
15423	Hoxc4	homeobox C4	3.765692	1.00E-06
15439	Hp	haptoglobin	3.350652	1.00E-06
15452	Hprt	hypoxanthine guanine phosphoribosyl transferase	-0.98479	1.00E-06
29818	Hspb7	heat shock protein family, member 7 (cardiovascular)	-3.38303	1.00E-06
330723	Htra4	Htra serine peptidase 4	-4.3817	1.00E-06
15894	Icam1	intercellular adhesion molecule 1	-2.99443	1.00E-06
15951	Ifi204	interferon activated gene 204	2.353406	1.00E-06
15957	Ifi1	interferon-induced protein with tetratricopeptide repeats 1	-2.06765	1.00E-06
16010	Igfbp4	insulin-like growth factor binding protein 4	-3.53895	1.00E-06

29817	Igfbp7	insulin-like growth factor binding protein 7	-2.69352	1.00E-06
77125	Il33	interleukin 33	2.856904	1.00E-06
16193	Il6	interleukin 6	-3.02126	1.00E-06
16373	Inx3	Iroquois related homeobox 3	3.831876	1.00E-06
100038882	Isg15	ISG15 ubiquitin-like modifier	-4.42175	1.00E-06
16453	Jak3	Janus kinase 3	1.18966	1.00E-06
17311	Kitl	kit ligand	2.348019	1.00E-06
16598	Klf2	Kruppel-like factor 2 (lung)	2.036462	1.00E-06
213417	Klhdc8a	kelch domain containing 8A	3.60753	1.00E-06
67455	Klhl13	kelch-like 13	-2.92899	1.00E-06
75785	Klhl24	kelch-like 24	2.360493	1.00E-06
16803	Lbp	lipopolysaccharide binding protein	2.818916	1.00E-06
630994	Lce3d	late cornified envelope 3D	6.248267	1.00E-06
16859	Lgals9	lectin, galactose binding, soluble 9	-1.03793	1.00E-06
235402	Lingo1	leucine rich repeat and Ig domain containing 1	-3.31032	1.00E-06
30937	Lmcd1	LIM and cysteine-rich domains 1	-2.30687	1.00E-06
64899	Lpin3	lipin 3	-2.73015	1.00E-06
16956	Lpl	lipoprotein lipase	4.148286	1.00E-06
105005	Lratd1	LRAT domain containing 1	4.760055	1.00E-06
399603	Lratd2	LRAT domain containing 1	2.294514	1.00E-06
192976	Lrrc75a	leucine rich repeat containing 75A	-0.98225	1.00E-06
108075	Ltbp4	latent transforming growth factor beta binding protein 4	2.623699	1.00E-06
17085	Ly9	lymphocyte antigen 9	-2.9918	1.00E-06
23936	Lynx1	Ly6/neurotoxin 1	-1.828	1.00E-06
109731	Maob	monoamine oxidase B	-2.70682	1.00E-06
224419	Map3k7cl	Map3k7 C-terminal like	-2.03823	1.00E-06
338372	Map3k9	mitogen-activated protein kinase kinase kinase 9	4.078646	1.00E-06
29857	Mapk12	mitogen-activated protein kinase 12	1.225163	1.00E-06
103537	Mbtd1	mbt domain containing 1	1.104418	1.00E-06
72039	Mccc1	methylcrotonoyl-Coenzyme A carboxylase 1 (alpha)	2.269862	1.00E-06
654424	Mccc1os	methylcrotonoyl-Coenzyme A carboxylase 1 (alpha), opposite str	4.105825	1.00E-06
207911	Mchr1	melanin-concentrating hormone receptor 1	3.739768	1.00E-06
75146	Mfsd13a	major facilitator superfamily domain containing 13a	1.759383	1.00E-06
98682	Mfsd6	major facilitator superfamily domain containing 6	0.968472	1.00E-06
17313	Mgp	matrix Gla protein	-3.96695	1.00E-06
211666	Mgst2	microsomal glutathione S-transferase 2	2.468429	1.00E-06
215708	Miga1	mitoguardin 1	1.279454	1.00E-06
77037	Mrap	melanocortin 2 receptor accessory protein	2.32464	1.00E-06
100040766	Mroh2a	maestro heat-like repeat family member 2A	3.797998	1.00E-06
17701	Msx1	msh homeobox 1	1.442794	1.00E-06
17919	Myo5b	myosin VB	2.30853	1.00E-06
67111	Naaa	N-acylthanolamine acid amidase	-1.45148	1.00E-06
635702	Naaladl2	N-acetylated alpha-linked acidic dipeptidase-like 2	-3.28784	1.00E-06
18025	Nfe2l3	nuclear factor, erythroid derived 2, like 3	1.792998	1.00E-06
18032	Nfix	nuclear factor I/X	0.945088	1.00E-06
215819	Nhs1	NHS-like 1	1.723847	1.00E-06
70701	Nipa1	NIPA-like domain containing 1	-4.69417	1.00E-06
268857	Nlrc3	NLR family, CARD domain containing 3	2.247379	1.00E-06
434341	Nlrc5	NLR family, CARD domain containing 5	1.785464	1.00E-06
74091	Npl	N-acetylneuraminate pyruvate lyase	3.886489	1.00E-06
18162	Npr3	natriuretic peptide receptor 3	-2.32993	1.00E-06
23959	Nt5e	5' nucleotidase, ecto	2.667821	1.00E-06
277154	Nynrin	NYN domain and retroviral integrase containing	1.384469	1.00E-06
246730	Oas1a	2'-5' oligoadenylate synthetase 1A	-3.88346	1.00E-06
241327	Olfml2a	olfactomedin-like 2A	4.46896	1.00E-06
320078	Olfml2b	olfactomedin-like 2B	2.711587	1.00E-06
257871	Olfrl372-ps1	olfactory receptor 1372, pseudogene 1	2.657295	1.00E-06
71839	Osgin1	oxidative stress induced growth inhibitor 1	1.763516	1.00E-06
93711	Pcdhga3	protocadherin gamma subfamily A, 3	-2.94578	1.00E-06
93713	Pcdhga5	protocadherin gamma subfamily A, 5	3.679903	1.00E-06
93700	Pcdhgb2	protocadherin gamma subfamily B, 2	-3.47823	1.00E-06
93702	Pcdhgb5	protocadherin gamma subfamily B, 5	-3.71672	1.00E-06
76073	Pcgf5	polycomb group ring finger 5	-1.60452	1.00E-06
27273	Pdk4	pyruvate dehydrogenase kinase, isoenzyme 4	-1.83368	1.00E-06
54132	Pdlim1	PDZ and LIM domain 1 (elfin)	-2.32931	1.00E-06
18631	Pex11a	peroxisomal biogenesis factor 11 alpha	1.109615	1.00E-06
18645	Pfn2	profilin 2	-1.22006	1.00E-06
226041	Pgm5	phosphoglucomutase 5	2.603919	1.00E-06
69656	Pir	pirin	-1.04913	1.00E-06
18767	Pkia	protein kinase inhibitor, alpha	-2.42482	1.00E-06
74055	Plice1	phospholipase C, epsilon 1	3.2374	1.00E-06
240753	Plekha6	pleckstrin homology domain containing, family A member 6	4.204742	1.00E-06
211945	Plekhh1	pleckstrin homology domain containing, family H (with MyTH4 dr	2.346548	1.00E-06
57435	Plin4	perilipin 4	-4.10899	1.00E-06
67784	Plxnd1	plexin D1	1.262167	1.00E-06

239157	Pnma2	paraneoplastic antigen MA2	2.537076	1.00E-06
53627	Porcn	porcupine O-acyltransferase	2.463476	1.00E-06
243725	Ppp1r9a	protein phosphatase 1, regulatory subunit 9A	3.038106	1.00E-06
225518	Prdm6	PR domain containing 6	-2.79271	1.00E-06
381148	Probl1	proline rich basic protein 1	2.275406	1.00E-06
19218	Ptger3	prostaglandin E receptor 3 (subtype EP3)	3.903749	1.00E-06
218232	Ptpdc1	protein tyrosine phosphatase domain containing 1	-1.13949	1.00E-06
19273	Ptpu	protein tyrosine phosphatase, receptor type, U	4.4728	1.00E-06
101631	Pwmp2b	PWWP domain containing 2B	-1.76303	1.00E-06
67375	Qprt	quinolinate phosphoribosyltransferase	7.468681	1.00E-06
67295	Rab3c	RAB3C, member RAS oncogene family	4.805604	1.00E-06
217371	Rab40b	Rab40B, member RAS oncogene family	1.684642	1.00E-06
19400	Rapsn	receptor-associated protein of the synapse	-3.79886	1.00E-06
246104	Rhbdl3	rhomboid like 3	1.83092	1.00E-06
218215	Rnf144b	ring finger protein 144B	1.904146	1.00E-06
66922	Rras2	related RAS viral (r-ras) oncogene 2	-1.88309	1.00E-06
68585	Rtn4	reticulon 4	-0.85078	1.00E-06
269295	Rtn4rl2	reticulon 4 receptor-like 2	1.622597	1.00E-06
20192	Ryr3	ryanodine receptor 3	4.1222	1.00E-06
20230	Satb1	special AT-rich sequence binding protein 1	-3.89246	1.00E-06
20266	Scn1b	sodium channel, voltage-gated, type I, beta	-2.87929	1.00E-06
257635	Sdsl	serine dehydratase-like	-2.61978	1.00E-06
20341	Selenbp1	selenium binding protein 1	-2.0943	1.00E-06
20346	Sema3a	sema domain, immunoglobulin domain (Ig), short basic domain, s	1.867666	1.00E-06
20356	Sema5a	sema domain, seven thrombospondin repeats (type 1 and type 1	1.659545	1.00E-06
56526	Septin6	septin 6	2.405361	1.00E-06
218442	Serinc5	serine incorporator 5	1.524778	1.00E-06
20716	Serpina3n	serine (or cysteine) peptidase inhibitor, clade A, member 3N	-2.40308	1.00E-06
20719	Serpinb6a	serine (or cysteine) peptidase inhibitor, clade B, member 6a	-1.28792	1.00E-06
20708	Serpinb6b	serine (or cysteine) peptidase inhibitor, clade B, member 6b	-3.96703	1.00E-06
20706	Serpinb9b	serine (or cysteine) peptidase inhibitor, clade B, member 9b	-4.03899	1.00E-06
18787	Serpine1	serine (or cysteine) peptidase inhibitor, clade E, member 1	-2.51526	1.00E-06
56747	Sez6l	seizure related 6 homolog like	3.917174	1.00E-06
353282	Sfmbt2	Scm-like with four mbt domains 2	2.438633	1.00E-06
20377	Sfrp1	secreted frizzled-related protein 1	2.940278	1.00E-06
20319	Sfrp2	secreted frizzled-related protein 2	6.558425	1.00E-06
74442	Sgms2	sphingomyelin synthase 2	-3.0012	1.00E-06
433323	Sgpp2	sphingosine-1-phosphate phosphatase 2	6.477333	1.00E-06
27059	Sh3d19	SH3 domain protein D19	0.78386	1.00E-06
319278	Shfl	shiftless antiviral inhibitor of ribosomal frameshifting	2.452924	1.00E-06
330096	Shisa3	shisa family member 3	6.453001	1.00E-06
77552	Shisa4	shisa family member 4	-1.35086	1.00E-06
110380	Shroom2	shroom family member 2	2.251542	1.00E-06
20465	Sim2	single-minded family bHLH transcription factor 2	7.17005	1.00E-06
20501	Slc16a1	solute carrier family 16 (monocarboxylic acid transporters), mem	2.540733	1.00E-06
20502	Slc16a2	solute carrier family 16 (monocarboxylic acid transporters), mem	1.707299	1.00E-06
268512	Slc26a11	solute carrier family 26, member 11	2.02778	1.00E-06
106957	Slc39a6	solute carrier family 39 (metal ion transporter), member 6	-1.25727	1.00E-06
26941	Slc9a3r1	solute carrier family 9 (sodium/hydrogen exchanger), member 3	1.370874	1.00E-06
276829	Smtnl2	smoothelin-like 2	2.015587	1.00E-06
67847	Snaip	synuclein, alpha interacting protein (synphilin)	3.340079	1.00E-06
268534	Sntg2	syntrophin, gamma 2	4.295191	1.00E-06
20657	Sod3	superoxide dismutase 3, extracellular	-3.91749	1.00E-06
20660	Sorl1	sortilin-related receptor, LDLR class A repeats-containing	3.15436	1.00E-06
245381	Sowahd	soosondawah ankyrin repeat domain family member D	4.075163	1.00E-06
219140	Spta13	spermatogenesis associated 13	4.071132	1.00E-06
217517	Stxbp6	syntaxin binding protein 6 (amisyn)	3.827819	1.00E-06
68666	Svop	SV2 related protein	-3.09749	1.00E-06
110058	Syt17	synaptotagmin XVII	-1.3669	1.00E-06
54524	Syt6	synaptotagmin VI	5.311007	1.00E-06
381605	Tbc1d2	TBC1 domain family, member 2	-2.12425	1.00E-06
67016	Tbc1d2b	TBC1 domain family, member 2B	1.051717	1.00E-06
99681	Tchh	trichohyalin	-3.19093	1.00E-06
23965	Tenm3	teneurin transmembrane protein 3	3.115043	1.00E-06
74645	Tent5c	terminal nucleotidyltransferase 5C	3.430098	1.00E-06
21808	Tgfb2	transforming growth factor, beta 2	-1.17791	1.00E-06
21824	Thbd	thrombomodulin	-3.54953	1.00E-06
21825	Thbs1	thrombospondin 1	-2.83627	1.00E-06
21826	Thbs2	thrombospondin 2	-1.39608	1.00E-06
94242	Tinagl1	tubulointerstitial nephritis antigen-like 1	-2.01079	1.00E-06
353499	Tmc4	transmembrane channel-like gene family 4	1.713695	1.00E-06
73130	Tmed5	transmembrane p24 trafficking protein 5	-1.22401	1.00E-06
226040	Tmem252	transmembrane protein 252	3.103363	1.00E-06
633640	Tmem267	transmembrane protein 267	-2.49087	1.00E-06
74122	Tmem43	transmembrane protein 43	-0.80547	1.00E-06

319939	Tns3	tensin 3	-1.5035	1.00E-06
217169	Tns4	tensin 4	-5.45295	1.00E-06
252838	Tox	thymocyte selection-associated high mobility group box	4.217884	1.00E-06
29807	Tpk1	thiamine pyrophosphokinase	2.422403	1.00E-06
100125263	Trbc2	T cell receptor beta, constant 2	4.143253	1.00E-06
209387	Trim30d	tripartite motif-containing 30D	-1.55538	1.00E-06
56224	Tspan5	tetraspanin 5	-1.49047	1.00E-06
56844	Tssc4	tumor-suppressing subchromosomal transferable fragment 4	-1.56591	1.00E-06
230603	Ttc39a	tetratricopeptide repeat domain 39A	3.234926	1.00E-06
105245	Txndc5	thioredoxin domain containing 5	-1.28588	1.00E-06
226122	Ubtd1	ubiquitin domain containing 1	-0.97272	1.00E-06
232334	Vgll4	vestigial like family member 4	1.279795	1.00E-06
22361	Vnn1	vanin 1	-2.17193	1.00E-06
232023	Vopp1	vesicular, overexpressed in cancer, prosurvival protein 1	-1.50872	1.00E-06
72325	Vps9d1	VPS9 domain containing 1	0.85412	1.00E-06
245880	Wasf3	WASP family, member 3	2.04895	1.00E-06
22431	Wt1	Wilms tumor 1 homolog	3.368156	1.00E-06
22445	Xlr3a	X-linked lymphocyte-regulated 3A	6.823901	1.00E-06
230119	Zbtb5	zinc finger and BTB domain containing 5	0.898018	1.00E-06
22640	Zfp1	zinc finger protein 1	1.606756	1.00E-06
22673	Zfp185	zinc finger protein 185	2.79647	1.00E-06
226442	Zfp281	zinc finger protein 281	1.117961	1.00E-06
545471	Zfp345	zinc finger protein 345	4.346177	1.00E-06
380912	Zfp395	zinc finger protein 395	1.919782	1.00E-06
382867	Zfp488	zinc finger protein 488	7.751988	1.00E-06
269023	Zfp608	zinc finger protein 608	1.335348	1.00E-06
622675	Zfp827	zinc finger protein 827	1.837058	1.00E-06
58894	Zfp862-ps	zinc finger protein 862, pseudogene	1.71846	1.00E-06
433791	Zfp992	zinc finger protein 992	2.130927	1.00E-06
74246	Gale	galactose-4-epimerase, UDP	-1.58165	1.01E-06
12822	Col18a1	collagen, type XVIII, alpha 1	-1.58437	1.02E-06
216395	Rxylt1	ribitol xylosyltransferase 1	-0.90937	1.03E-06
26432	Plod2	procollagen lysine, 2-oxoglutarate 5-dioxygenase 2	-1.73861	1.06E-06
26386	Hsf4	heat shock transcription factor 4	2.653719	1.07E-06
21928	Tnfaip2	tumor necrosis factor, alpha-induced protein 2	-2.66137	1.09E-06
19707	Reps1	RaiBP1 associated Eps domain containing protein	0.742893	1.10E-06
239102	Zfhx2	zinc finger homeobox 2	1.325965	1.12E-06
13496	Arid3a	AT rich interactive domain 3A (BRIGHT-like)	1.268265	1.15E-06
13483	Dpp6	dipeptidylpeptidase 6	3.672993	1.15E-06
18408	Slc25a15	solute carrier family 25 (mitochondrial carrier ornithine transport)	1.135298	1.15E-06
15438	Hoxd9	homeobox D9	6.703816	1.17E-06
231507	Plac8	placenta-specific 8	-2.84004	1.19E-06
667370	Ifit3b	interferon-induced protein with tetratricopeptide repeats 3B	-2.26763	1.28E-06
213980	Fbxw10	F-box and WD-40 domain protein 10	-1.73566	1.29E-06
20324	Cavin2	caveolae associated 2	-1.86976	1.33E-06
102866	Pls3	plastin 3 (T-isoform)	-1.89117	1.33E-06
15461	Hras	Harvey rat sarcoma virus oncogene	-1.38553	1.34E-06
232441	Rerg	RAS-like, estrogen-regulated, growth-inhibitor	2.869381	1.39E-06
17174	Masp1	mannan-binding lectin serine peptidase 1	-3.20019	1.47E-06
66491	Polr2l	polymerase (RNA) II (DNA directed) polypeptide L	-1.62274	1.47E-06
11801	Cd5l	CD5 antigen-like	-5.6997	1.48E-06
102634994	Gm32443	predicted gene, 32443	3.603821	1.48E-06
66972	Slc25a23	solute carrier family 25 (mitochondrial carrier; phosphate carrier)	1.922564	1.48E-06
67412	Soga3	SOGA family member 3	3.851555	1.48E-06
380785	Begain	brain-enriched guanylate kinase-associated	2.441843	1.50E-06
59036	Dact1	dishevelled-binding antagonist of beta-catenin 1	4.296411	1.51E-06
50768	Dlc1	deleted in liver cancer 1	-1.65794	1.52E-06
14234	Foxc2	forkhead box C2	-2.59736	1.53E-06
13595	Ebp	phenylalkylamine Ca2+ antagonist (emopamil) binding protein	1.07113	1.56E-06
17260	Mef2c	myocyte enhancer factor 2C	-3.6815	1.59E-06
67099	Mettl21a	methyltransferase like 21A	-0.96682	1.59E-06
20649	Sntb1	syntrophin, basic 1	1.683365	1.59E-06
239405	Rspo2	R-spondin 2	-3.97527	1.61E-06
16560	Kif1a	kinesin family member 1A	-2.49145	1.63E-06
98496	Pid1	phosphotyrosine interaction domain containing 1	-1.03057	1.65E-06
72780	Rspo3	R-spondin 3	-1.74489	1.66E-06
74325	Cltb	clathrin, light polypeptide (Lcb)	-1.04471	1.67E-06
109319	8430422M14Rik	RIKEN cDNA 8430422M14 gene	3.060918	1.72E-06
18081	Ninj1	ninjurin 1	-0.66786	1.74E-06
329384	Pthr1	peptidyl-tRNA hydrolase 1 homolog	-1.21708	1.93E-06
56220	Zfp386	zinc finger protein 386 (Kruppel-like)	1.021194	2.02E-06
56216	Stx1b	syntaxin 1B	2.4446	2.05E-06
71934	Car13	carbonic anhydrase 13	-1.62044	2.32E-06
224024	Scarf2	scavenger receptor class F, member 2	1.347157	2.33E-06
232748	Tcaf2	TRPM8 channel-associated factor 2	1.236437	2.38E-06

15114	Hap1	huntingtin-associated protein 1	2.781631	2.50E-06
56811	Dkk2	dickkopf WNT signaling pathway inhibitor 2	-4.80313	2.51E-06
235627	Nbeal2	neurobeachin-like 2	1.629081	2.54E-06
194401	Mical3	microtubule associated monooxygenase, calponin and LIM doma	1.369536	2.55E-06
231861	Tnrc18	trinucleotide repeat containing 18	1.474078	2.59E-06
11931	Atp1b1	ATPase, Na+/K+ transporting, beta 1 polypeptide	1.948521	2.62E-06
217588	Mbip	MAP3K12 binding inhibitory protein 1	1.540187	2.68E-06
112407	Egln3	egl-9 family hypoxia-inducible factor 3	-3.11691	2.77E-06
66931	170001014Rik	RIKEN cDNA 170001014 gene	-2.24234	2.79E-06
53321	Cntnap1	contactin associated protein-like 1	1.843168	2.83E-06
29859	Sult4a1	sulfotransferase family 4A, member 1	1.733173	2.96E-06
13885	Esd	esterase D/formylglutathione hydrolase	-1.14511	2.98E-06
52858	Cdipt	CDP-diacylglycerol--inositol 3-phosphatidyltransferase (phosphat	-1.22798	2.99E-06
218476	Gcnt4	glucosaminyl (N-acetyl) transferase 4, core 2 (beta-1,6-N-acetylgl	-3.57584	3.06E-06
319765	Igf2bp2	insulin-like growth factor 2 mRNA binding protein 2	0.981949	3.06E-06
68617	Mtcl1	microtubule crosslinking factor 1	1.811676	3.06E-06
108946	Zzz3	zinc finger, ZZ domain containing 3	0.919234	3.13E-06
24012	Rgs7	regulator of G protein signaling 7	6.442612	3.27E-06
20449	St8sia1	ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 1	6.167158	3.29E-06
170736	Parvb	parvin, beta	-3.73485	3.34E-06
77411	Esrp2	epithelial splicing regulatory protein 2	1.293644	3.41E-06
64340	Dhx38	DEAH (Asp-Glu-Ala-His) box polypeptide 38	0.725092	3.42E-06
94284	Ugt1a6a	UDP glucuronosyltransferase 1 family, polypeptide A6A	3.337717	3.43E-06
11677	Akr1b3	aldo-keto reductase family 1, member B3 (aldose reductase)	-1.24262	3.49E-06
234214	Sorbs2	sorbin and SH3 domain containing 2	-2.28762	3.56E-06
68162	A930003A15Rik	RIKEN cDNA A930003A15 gene	5.822754	3.60E-06
547127	Tmem181b-ps	transmembrane protein 181B, pseudogene	1.089464	3.65E-06
407790	Ndufa4l2	Ndufa4, mitochondrial complex associated like 2	-7.38083	3.77E-06
67988	Tmx3	thioredoxin-related transmembrane protein 3	-0.68979	3.82E-06
231470	Fras1	Fraser extracellular matrix complex subunit 1	2.232832	3.87E-06
12494	Cd38	CD38 antigen	2.99963	4.41E-06
74178	Stk40	serine/threonine kinase 40	-1.23508	4.42E-06
22403	Ccn5	cellular communication network factor 5	-3.01365	4.44E-06
69219	Ddah1	dimethylarginine dimethylaminohydrolase 1	-2.02633	4.44E-06
26424	Nr5a2	nuclear receptor subfamily 5, group A, member 2	4.349593	4.44E-06
76156	Fam131b	family with sequence similarity 131, member B	1.725579	4.56E-06
237353	Sh3rf3	SH3 domain containing ring finger 3	1.419143	4.56E-06
11555	Adrb2	adrenergic receptor, beta 2	-1.41209	4.60E-06
13345	Twist2	twist basic helix-loop-helix transcription factor 2	-1.71619	4.69E-06
228432	Ano3	anoctamin 3	-2.46832	4.76E-06
100503074	2610016A17Rik	RIKEN cDNA 2610016A17 gene	5.825367	4.93E-06
193813	Mcfd2	multiple coagulation factor deficiency 2	-1.04671	4.94E-06
353310	Zfp703	zinc finger protein 703	1.021686	4.94E-06
16554	Kif13b	kinesin family member 13B	1.575195	5.13E-06
213556	Plekhh2	pleckstrin homology domain containing, family H (with MyTH4 dr	1.937026	5.13E-06
93892	Pcdhb21	protocadherin beta 21	2.218592	5.15E-06
20715	Serpina3g	serine (or cysteine) peptidase inhibitor, clade A, member 3G	-2.65065	5.19E-06
18983	Cnot7	CCR4-NOT transcription complex, subunit 7	0.73896	5.25E-06
170833	Hook2	hook microtubule tethering protein 2	1.179109	5.36E-06
80287	Apobec3	apolipoprotein B mRNA editing enzyme, catalytic polypeptide 3	0.956756	5.66E-06
67073	Pi4k2b	phosphatidylinositol 4-kinase type 2 beta	-1.40049	5.82E-06
99929	Tiparp	TCDD-inducible poly(ADP-ribose) polymerase	1.484335	5.82E-06
52906	Ahi1	Abelson helper integration site 1	-1.31946	6.09E-06
30948	Bin1	bridging integrator 1	-0.93342	6.12E-06
58235	Nectin1	nectin cell adhesion molecule 1	-1.54875	6.12E-06
22350	Ezr	ezrin	1.675694	6.15E-06
66889	Rnf128	ring finger protein 128	-1.40637	6.15E-06
14836	Gsc	goosecoid homeobox	5.923785	6.19E-06
100037258	Dnajc3	DnaJ heat shock protein family (Hsp40) member C3	-0.83179	6.24E-06
17135	Mafk	v-maf musculoaponeurotic fibrosarcoma oncogene family, protei	-1.19214	6.25E-06
24113	Vax2	ventral anterior homeobox 2	-2.63618	6.74E-06
26417	Mapk3	mitogen-activated protein kinase 3	-0.78691	6.85E-06
68910	Zfp467	zinc finger protein 467	1.205277	6.85E-06
18575	Pde1c	phosphodiesterase 1C	3.91167	6.92E-06
20306	Ccl7	chemokine (C-C motif) ligand 7	-2.41216	6.94E-06
64450	Gpr85	G protein-coupled receptor 85	-2.29835	7.01E-06
60322	Chst7	carbohydrate (N-acetylglucosamino) sulfotransferase 7	-2.79298	7.05E-06
229801	Tram111	translocation associated membrane protein 1-like 1	-3.96877	7.20E-06
13032	Ctsc	cathepsin C	-3.24187	7.26E-06
14562	Gdf3	growth differentiation factor 3	-7.62917	7.47E-06
71837	1700003E16Rik	RIKEN cDNA 1700003E16 gene	-2.31783	7.60E-06
12520	Cd81	CD81 antigen	-1.26863	7.62E-06
104360	Isl2	insulin related protein 2 (islet 2)	3.937014	7.79E-06
381812	Cracr2a	calcium release activated channel regulator 2A	2.0204	7.86E-06
68087	Dcakd	dephospho-CoA kinase domain containing	0.683507	7.90E-06

13859	Eps15l1	epidermal growth factor receptor pathway substrate 15-like 1	0.88153	7.90E-06
109135	Plekha5	pleckstrin homology domain containing, family A member 5	0.904297	7.92E-06
15118	Has3	hyaluronan synthase 3	2.174249	7.96E-06
11988	Slc7a2	solute carrier family 7 (cationic amino acid transporter, y+ system)	2.887405	8.22E-06
63828	Fn3k	fructosamine 3 kinase	3.372556	8.27E-06
246710	Rhobtb2	Rho-related BTB domain containing 2	0.982013	8.37E-06
545260	Arsi	arylsulfatase i	2.64693	8.50E-06
27279	Tnfrsf12a	tumor necrosis factor receptor superfamily, member 12a	-1.10766	8.74E-06
18670	Abcb4	ATP-binding cassette, sub-family B (MDR/TAP), member 4	2.36081	8.80E-06
382056	Crtc1	CREB regulated transcription coactivator 1	1.435901	8.95E-06
117160	Ttyh2	tweety family member 2	-0.82234	8.95E-06
67035	Dnajb4	DnaJ heat shock protein family (Hsp40) member B4	-1.27022	9.02E-06
13830	Stom	stomatin	-1.44849	9.05E-06
381175	Ccdc68	coiled-coil domain containing 68	-3.38833	9.27E-06
83669	Wdr6	WD repeat domain 6	0.988248	9.62E-06
56843	Trpm5	transient receptor potential cation channel, subfamily M, member 5	-3.13152	9.66E-06
13855	Epn2	epsin 2	-0.71549	9.88E-06
102636264	Gm33378	predicted gene, 33378	2.676489	1.00E-05
214345	Lrrc1	leucine rich repeat containing 1	1.389484	1.00E-05
100515	Zfp518b	zinc finger protein 518B	1.058293	1.01E-05
76561	Snx7	sorting nexin 7	-1.55847	1.03E-05
218335	Clptm1l	CLPTM1-like	-0.81507	1.05E-05
16400	Itga3	integrin alpha 3	1.703551	1.07E-05
59091	Jph2	junctophilin 2	-2.7678	1.11E-05
319481	Wdr59	WD repeat domain 59	0.860191	1.15E-05
279653	Pcdh19	protocadherin 19	-3.17719	1.19E-05
53376	Usp2	ubiquitin specific peptidase 2	-2.01424	1.20E-05
434130	Ccdc8	coiled-coil domain containing 8	2.596512	1.22E-05
52466	Slc46a1	solute carrier family 46, member 1	-1.15938	1.28E-05
66174	Nudt14	nudix (nucleoside diphosphate linked moiety X)-type motif 14	1.248303	1.33E-05
14645	Glul	glutamate-ammonia ligase (glutamine synthetase)	-1.20531	1.34E-05
108167986	Gm46339	predicted gene, 46339	2.364573	1.41E-05
64656	Mrps23	mitochondrial ribosomal protein S23	-0.71587	1.41E-05
381232	Mirt1	myocardial infarction associated transcript 1	3.480681	1.46E-05
238023	Hexdc	hexosaminidase (glycosyl hydrolase family 20, catalytic domain) (EC 3.2.1.31)	1.347008	1.62E-05
24014	Rnasel	ribonuclease L (2', 5'-oligoadenylate synthetase-dependent)	1.759538	1.65E-05
12585	Cdr2	cerebellar degeneration-related 2	-1.59479	1.69E-05
52118	Pvr	poliovirus receptor	-0.98964	1.74E-05
12330	Canx	calnexin	-0.84129	1.81E-05
18769	Pkig	protein kinase inhibitor, gamma	-1.16364	1.81E-05
211914	Asap2	ArfGAP with SH3 domain, ankyrin repeat and PH domain 2	1.285569	1.86E-05
77590	Chst15	carbohydrate sulfotransferase 15	-1.09574	1.86E-05
15558	Htr2a	5-hydroxytryptamine (serotonin) receptor 2A	-2.00159	1.94E-05
666182	Gm7967	predicted gene 7967	4.913265	1.95E-05
245240	9930111J21Rik2	RIKEN cDNA 9930111J21 gene 2	-2.7987	2.02E-05
12014	Bach2	BTB and CNC homology, basic leucine zipper transcription factor 1	21.697213	2.08E-05
215653	Rassf2	Ras association (RalGDS/AF-6) domain family member 2	1.661585	2.08E-05
11438	Chrna4	cholinergic receptor, nicotinic, alpha polypeptide 4	2.719951	2.10E-05
56364	Zmym3	zinc finger, MYM-type 3	0.846778	2.10E-05
192656	Ripk2	receptor (TNFRSF)-interacting serine-threonine kinase 2	-1.49858	2.19E-05
107065	Lrrtm2	leucine rich repeat transmembrane neuronal 2	-3.91808	2.27E-05
13592	Ebf2	early B cell factor 2	4.171848	2.28E-05
29877	Hdgf3	HDGF like 3	1.87893	2.30E-05
12183	Bpgm	2,3-bisphosphoglycerate mutase	-1.65497	2.37E-05
76829	Dok5	docking protein 5	-2.09197	2.41E-05
14612	Gja4	gap junction protein, alpha 4	-5.50719	2.42E-05
241112	Catip	ciliogenesis associated TTC17 interacting protein	-3.08429	2.47E-05
26408	Map3k5	mitogen-activated protein kinase kinase kinase 5	1.890847	2.52E-05
66849	Ppp1r2	protein phosphatase 1, regulatory inhibitor subunit 2	-0.68747	2.52E-05
384087	Gm13146	carnitine deficiency-associated gene expressed in ventricle 3 protein	3.72876	2.57E-05
16529	Kcnk5	potassium channel, subfamily K, member 5	2.533488	2.60E-05
224019	Tmem191c	transmembrane protein 191C	1.949516	2.62E-05
70316	Ndufab1	NADH:ubiquinone oxidoreductase subunit AB1	-1.04842	2.68E-05
17183	Matn4	matrilin 4	-2.02332	2.88E-05
18741	Pitx2	paired-like homeodomain transcription factor 2	-3.50068	2.88E-05
12223	Btc	betacellulin, epidermal growth factor family member 3	-1.48305	2.92E-05
19285	Cavin1	caveolae associated 1	-1.23655	3.07E-05
69399	1700025G04Rik	RIKEN cDNA 1700025G04 gene	1.025461	3.22E-05
66510	Rnf181	ring finger protein 181	-0.8671	3.22E-05
72930	Ppp2r2b	protein phosphatase 2, regulatory subunit B, beta	2.039607	3.30E-05
66895	Pxdc1	PX domain containing 1	-2.02058	3.30E-05
13716	Eil	elongation factor RNA polymerase II	1.285281	3.32E-05
109032	Sp110	Sp110 nuclear body protein	1.830433	3.32E-05
13837	Epha3	Eph receptor A3	-6.40562	3.39E-05
547091	Gm6020	predicted gene 6020	3.080596	3.43E-05

27205	Podxl	podocalyxin-like	3.360628	3.44E-05
54208	Arl6ip1	ADP-ribosylation factor-like 6 interacting protein 1	-0.87354	3.59E-05
69590	Gpx8	glutathione peroxidase 8 (putative)	-1.05216	3.60E-05
56318	Acpp	acid phosphatase, prostate	3.917022	3.62E-05
13555	E2f1	E2F transcription factor 1	-1.19526	3.62E-05
245596	Hdx	highly divergent homeobox	-2.50855	3.66E-05
320558	Sycp2	synaptonemal complex protein 2	2.304786	3.68E-05
16398	Itga2	integrin alpha 2	-3.90303	3.70E-05
105171	Arrdc3	arrestin domain containing 3	-1.32682	3.75E-05
100504489	NA	NA	-6.18445	3.79E-05
270084	Lpcat2	lysophosphatidylcholine acyltransferase 2	-3.7763	3.94E-05
67071	Rps6ka6	ribosomal protein S6 kinase polypeptide 6	1.71061	4.01E-05
20128	Trim30a	tripartite motif-containing 30A	-1.72236	4.05E-05
16548	Khk	ketoheokinase	1.63035	4.14E-05
666468	Atg4a	autophagy related 4A, cysteine peptidase	-1.00078	4.15E-05
100417726	Gm18787	predicted gene, 18787	-4.50285	4.15E-05
71306	Mfap3l	microfibrillar-associated protein 3-like	-3.42399	4.15E-05
66869	Zfp869	zinc finger protein 869	0.966679	4.19E-05
268759	9930012K11Rik	RIKEN cDNA 9930012K11 gene	1.342628	4.36E-05
68038	Chid1	chitinase domain containing 1	-1.29016	4.47E-05
79233	Zfp319	zinc finger protein 319	0.824725	4.51E-05
278279	Tmtc2	transmembrane and tetratricopeptide repeat containing 2	-2.21482	4.65E-05
76687	Spcs3	signal peptidase complex subunit 3 homolog (S. cerevisiae)	1.174842	4.68E-05
67226	Tmem19	transmembrane protein 19	-0.73152	4.68E-05
94227	Pi15	peptidase inhibitor 15	-4.21479	4.76E-05
109222	Rarres1	retinoic acid receptor responder (tazarotene induced) 1	-2.86188	4.76E-05
66082	Abhd6	abhydrolase domain containing 6	0.89445	4.87E-05
64685	Nmi	N-myc (and STAT) interactor	1.291371	4.95E-05
21942	Tnfrsf9	tumor necrosis factor receptor superfamily, member 9	-6.6092	5.12E-05
381334	Gal3st2	galactose-3-O-sulfotransferase 2	-2.49739	5.43E-05
66176	Nat9	N-acetyltransferase 9 (GCN5-related, putative)	-1.05306	5.43E-05
29810	Bag3	BCL2-associated athanogene 3	-0.87495	5.46E-05
67102	D16Erd472e	DNA segment, Chr 16, ERATO Doi 472, expressed	1.370219	5.56E-05
67484	Eepd1	endonuclease/exonuclease/phosphatase family domain containi	3.08672	5.70E-05
16323	Inhba	inhibin beta-A	-2.45761	5.70E-05
219094	Khynyn	KH and NYN domain containing	0.992376	5.81E-05
20963	Syk	spleen tyrosine kinase	-3.51774	5.88E-05
627191	Syndig1l	synapse differentiation inducing 1 like	5.615277	5.89E-05
23997	Psmd13	proteasome (prosome, macropain) 26S subunit, non-ATPase, 13	-1.31659	5.91E-05
20668	Sox13	SRY (sex determining region Y)-box 13	-2.12339	5.92E-05
100210	Gpn2	GPN-loop GTPase 2	-1.13792	6.06E-05
13386	Dlk1	delta like non-canonical Notch ligand 1	1.696815	6.10E-05
51799	Rundc3a	RUN domain containing 3A	1.080643	6.26E-05
77531	Anks1b	ankyrin repeat and sterile alpha motif domain containing 1B	-3.99429	6.35E-05
241943	Ccdc144b	coiled-coil domain containing 144B	4.940418	6.35E-05
105246453	Gm26507	predicted gene, 26507	6.277267	6.43E-05
78372	Snrnp25	small nuclear ribonucleoprotein 25 (U11/U12)	-1.37683	6.43E-05
104923	Adi1	acireductone dioxygenase 1	1.11597	6.44E-05
209200	Dtx3l	deltex 3-like, E3 ubiquitin ligase	0.825195	6.46E-05
109154	Mlec	malectin	-0.78216	6.57E-05
243219	2900026A02Rik	RIKEN cDNA 2900026A02 gene	1.529803	6.58E-05
93878	Pcdhb7	protocadherin beta 7	1.82762	6.62E-05
15437	Hoxd8	homeobox D8	3.79577	6.76E-05
19881	Rom1	rod outer segment membrane protein 1	-1.1388	6.77E-05
18027	Nfia	nuclear factor I/A	0.975256	6.83E-05
269959	Adamts13	ADAMTS-like 3	-3.18577	6.87E-05
14423	Galnt1	polypeptide N-acetylgalactosaminyltransferase 1	-0.77576	6.87E-05
497652	Acd	adrenocortical dysplasia	0.684065	6.90E-05
53883	Celsr2	cadherin, EGF LAG seven-pass G-type receptor 2	1.812102	6.90E-05
14461	Gata2	GATA binding protein 2	-0.72305	7.05E-05
216616	Efemp1	epidermal growth factor-containing fibulin-like extracellular matr	-1.90266	7.09E-05
53325	Banp	BTG3 associated nuclear protein	0.922763	7.40E-05
100041231	Gm3219	B-cell CLL/lymphoma 7C pseudogene	1.943174	7.40E-05
668924	NA	NA	5.536764	7.48E-05
66817	Tmem170	transmembrane protein 170	1.30016	7.55E-05
67844	Rab32	RAB32, member RAS oncogene family	-1.37529	7.81E-05
104383	Rcor2	REST corepressor 2	-1.41057	7.96E-05
53978	Lpar2	lysophosphatidic acid receptor 2	2.062966	8.29E-05
66011	Ranbp17	RAN binding protein 17	1.153926	8.31E-05
104776	Aldh6a1	aldehyde dehydrogenase family 6, subfamily A1	2.274167	8.37E-05
76332	Cog2	component of oligomeric golgi complex 2	0.642079	8.47E-05
69732	2410018L13Rik	RIKEN cDNA 2410018L13 gene	-5.88726	8.51E-05
18082	Nipsnap1	nipsnap homolog 1	0.803847	8.51E-05
208146	Yeats2	YEATS domain containing 2	1.838356	8.53E-05
68828	Sync	syncollin	-1.92322	8.61E-05

68659	Gask1b	golgi associated kinase 1B	-1.34239	8.63E-05
100503961	Gm19990	predicted gene, 19990	4.028317	8.63E-05
16186	Il2rg	interleukin 2 receptor, gamma chain	-3.27256	8.64E-05
234814	Mthfsd	methenyltetrahydrofolate synthetase domain containing	0.953887	8.64E-05
20195	S100a11	S100 calcium binding protein A11	-0.89637	8.68E-05
50530	Mfap5	microfibrillar associated protein 5	-2.3143	8.70E-05
118449	Synpo2	synaptopodin 2	-2.73084	8.70E-05
22339	Vegfa	vascular endothelial growth factor A	-1.18457	8.70E-05
102371	Myzap	myocardial zonula adherens protein	-3.12441	8.81E-05
12695	Patj	PATJ, crumbs cell polarity complex component	1.223147	8.83E-05
635617	Gm7162	RAN GTPase activating protein 1 pseudogene	2.970606	8.88E-05
72935	Ddx41	DEAD box helicase 41	0.867781	9.12E-05
14049	Eya2	EYA transcriptional coactivator and phosphatase 2	5.831551	9.12E-05
58182	Prokr1	prokineticin receptor 1	2.445102	9.12E-05
51801	Ramp1	receptor (calcitonin) activity modifying protein 1	3.095853	9.12E-05
226098	Hectd2	HECT domain E3 ubiquitin protein ligase 2	-2.37949	9.15E-05
231549	Lrrc8d	leucine rich repeat containing 8D	-1.92535	9.23E-05
57246	Tbx20	T-box 20	5.676581	9.32E-05
14017	Evi2a	ecotropic viral integration site 2a	-2.88935	9.59E-05
71207	Nudt4	nudix (nucleoside diphosphate linked moiety X)-type motif 4	-1.11101	9.59E-05
72948	Tppp	tubulin polymerization promoting protein	2.929076	9.65E-05
192193	Edem1	ER degradation enhancer, mannosidase alpha-like 1	-0.8677	9.68E-05
14042	Ext1	exostosin glycosyltransferase 1	-1.01864	9.74E-05
330119	Adamts3	a disintegrin-like and metallopeptidase (reprolysin type) with thr	2.798182	9.75E-05
12167	Bmpr1b	bone morphogenetic protein receptor, type 1B	-1.62242	9.85E-05
239559	A4galt	alpha 1,4-galactosyltransferase	-2.33777	9.96E-05
74430	Cfap20dc	CFAP20 domain containing	-3.55964	9.96E-05
665574	Gm7694	predicted gene 7694	1.674487	9.96E-05
70892	Ttli7	tubulin tyrosine ligase-like family, member 7	-2.01713	9.96E-05
260409	Cdc42ep3	CDC42 effector protein (Rho GTPase binding) 3	1.639115	0.000101
68808	1110046J04Rik	RIKEN cDNA 1110046J04 gene	-1.56991	0.000101
54354	Rassf5	Ras association (RalGDS/AF-6) domain family member 5	0.929815	0.000102
76630	Stambpl1	STAM binding protein like 1	-0.99106	0.000105
14537	Gcnt1	glucosaminyl (N-acetyl) transferase 1, core 2	2.042648	0.000105
619715	Gm6093	predicted gene 6093	-4.19275	0.000107
668139	Gm8995	predicted gene 8995	-1.78471	0.000107
110351	Rap1gap	Rap1 GTPase-activating protein	1.43479	0.000107
16196	Il7	interleukin 7	-2.55544	0.00011
17702	Msx2	msh homeobox 2	-4.5291	0.00011
11695	Alx4	aristaless-like homeobox 4	5.72085	0.000113
394432	Ugt1a7c	UDP glucuronosyltransferase 1 family, polypeptide A7C	1.901844	0.000116
230737	Gnl2	guanine nucleotide binding protein-like 2 (nucleolar)	0.742111	0.000116
23991	Cib1	calcium and integrin binding 1 (calmyrin)	-1.06401	0.000116
71898	Apol9b	apolipoprotein L 9b	-2.96765	0.000116
545276	Gal3st3	galactose-3-O-sulfotransferase 3	3.614349	0.000116
329093	Cpa6	carboxypeptidase A6	-2.1215	0.000116
219151	Scara3	scavenger receptor class A, member 3	-1.91015	0.000116
110208	Pgd	phosphogluconate dehydrogenase	-1.00998	0.000117
219134	Shisa2	shisa family member 2	3.099515	0.000118
13806	Eno1	enolase 1, alpha non-neuron	-1.32344	0.000118
13690	Eif4g2	eukaryotic translation initiation factor 4, gamma 2	-0.61925	0.000119
330790	Hapln4	hyaluronan and proteoglycan link protein 4	1.36949	0.000119
14149	Fdxr	ferredoxin reductase	1.428289	0.000119
208164	Fam180a	family with sequence similarity 180, member A	2.06172	0.000119
330788	Zfp866	zinc finger protein 866	1.23721	0.000125
12042	Bcl10	B cell leukemia/lymphoma 10	-0.65276	0.000127
329540	Nol4l	nucleolar protein 4-like	1.179874	0.000127
66165	Bccip	BRCA2 and CDKN1A interacting protein	-0.84178	0.000127
102635290	Ttc39aos1	Ttc39a opposite strand RNA 1	3.129185	0.000127
20732	Spint1	serine protease inhibitor, Kunitz type 1	2.250284	0.000128
14588	Gfra4	glial cell line derived neurotrophic factor family receptor alpha 4	-1.31282	0.000129
217066	Elobl	elongin B-like	-3.1449	0.00013
218271	B4galt7	xylosylprotein beta1,4-galactosyltransferase, polypeptide 7 (galac	-0.86431	0.00013
18037	Nfkbie	nuclear factor of kappa light polypeptide gene enhancer in B cells	-1.2235	0.00013
218454	Lhfp12	lipoma HMGIC fusion partner-like 2	-1.2703	0.000132
56384	Letm1	leucine zipper-EF-hand containing transmembrane protein 1	-0.60909	0.000132
230162	Zfp189	zinc finger protein 189	1.173595	0.000133
70233	Cd2bp2	CD2 cytoplasmic tail binding protein 2	-0.76572	0.000134
18196	Nsg1	neuron specific gene family member 1	1.474665	0.000134
19224	Ptgs1	prostaglandin-endoperoxide synthase 1	-1.51839	0.000134
14594	Ggta1	glycoprotein galactosyltransferase alpha 1, 3	-0.99091	0.000137
103012	Firre	functional intergenic repeating RNA element	1.268294	0.000137
66249	Pno1	partner of NOB1 homolog	-0.77435	0.000138
83554	Fstl3	folliculin-like 3	-1.36227	0.00014
16510	Kcnh1	potassium voltage-gated channel, subfamily H (eag-related), mer	2.919568	0.00014

381338	Lonrf2	LON peptidase N-terminal domain and ring finger 2	-3.58988	0.00014
72514	Fgfbp3	fibroblast growth factor binding protein 3	-1.43471	0.000141
216739	Acsf6	acyl-CoA synthetase long-chain family member 6	1.919841	0.000142
329056	A830019P07Rik	RIKEN cDNA A830019P07 gene	-2.38437	0.000142
73230	Bmper	BMP-binding endothelial regulator	1.237938	0.000143
20970	Sdc3	syndecan 3	-2.0453	0.000144
207592	Tbc1d16	TBC1 domain family, member 16	1.419708	0.000145
14853	Gspt2	G1 to S phase transition 2	-0.98163	0.000145
233744	Spon1	spondin 1, (f-spondin) extracellular matrix protein	-2.17417	0.000146
329584	Slc2a4rg-ps	Slc2a4 regulator, pseudogene	1.689829	0.000147
60527	Fads3	fatty acid desaturase 3	-0.81981	0.000149
108052	Slc14a1	solute carrier family 14 (urea transporter), member 1	-6.11334	0.00015
50782	Rgs11	regulator of G-protein signaling 11	1.769801	0.000152
68050	Akirin1	akirin 1	-1.06962	0.000157
217198	Plekhh3	pleckstrin homology domain containing, family H (with MyTH4 do	0.661807	0.000157
13036	Ctsh	cathepsin H	-1.61783	0.00016
229211	Acad9	acyl-Coenzyme A dehydrogenase family, member 9	0.775191	0.00016
234776	Atmin	ATM interactor	0.930941	0.00016
69698	Slc52a3	solute carrier protein family 52, member 3	2.562059	0.000161
234728	Cmtr2	cap methyltransferase 2	0.827869	0.000162
66054	Cndp2	CNDP dipeptidase 2 (metallopeptidase M20 family)	-1.0166	0.000164
17536	Meis2	Meis homeobox 2	1.312519	0.000165
109978	Art4	ADP-ribosyltransferase 4	-3.43392	0.000165
242860	Rsbnl1	round spermatid basic protein 1-like	0.742783	0.000171
27280	Phlda3	pleckstrin homology like domain, family A, member 3	-0.88383	0.000171
16950	Loxl3	lysyl oxidase-like 3	-1.24375	0.000171
66286	Sec11c	SEC11 homolog C, signal peptidase complex subunit	-1.25453	0.000172
19128	Prosl	protein S (alpha)	-1.01234	0.000177
20513	Slc1a6	solute carrier family 1 (high affinity aspartate/glutamate transpo	-0.86021	0.000185
11674	Aldoa	aldolase A, fructose-bisphosphate	-1.36861	0.000186
16468	Jarid2	jumonji, AT rich interactive domain 2	0.884247	0.000187
73442	Hspa12a	heat shock protein 12A	-1.42328	0.000187
19882	Mst1r	macrophage stimulating 1 receptor (c-met-related tyrosine kinas	1.703644	0.000191
109857	Cbr3	carbonyl reductase 3	-0.95455	0.000191
51875	Tmem141	transmembrane protein 141	-0.93319	0.000191
234362	Zfp868	zinc finger protein 868	0.750242	0.000191
330814	Adgrl1	adhesion G protein-coupled receptor L1	1.148051	0.000191
12121	Bicd1	BICD cargo adaptor 1	1.051542	0.000191
66162	Bola2	bolA-like 2 (E. coli)	-1.16988	0.000191
71520	Grap	GRB2-related adaptor protein	-3.15443	0.000193
15980	Ifngr2	interferon gamma receptor 2	-0.93755	0.000193
16635	Klra4	killer cell lectin-like receptor, subfamily A, member 4	-3.30393	0.000193
229694	AI504432	expressed sequence AI504432	-2.85583	0.000194
68790	Fendrr	Foxf1 adjacent non-coding developmental regulatory RNA	1.760505	0.000194
107895	Mgat5	mannoside acetylglucosaminyltransferase 5	-1.2345	0.000194
66407	Mrps15	mitochondrial ribosomal protein S15	-0.65698	0.000198
226849	Ppp2r5a	protein phosphatase 2, regulatory subunit B', alpha	0.74939	0.000198
27410	Abca3	ATP-binding cassette, sub-family A (ABC1), member 3	1.108523	0.000199
229600	BC028528	cDNA sequence BC028528	-1.78109	0.0002
65112	Pmepa1	prostate transmembrane protein, androgen induced 1	-1.55944	0.0002
11482	Acvrl1	activin A receptor, type II-like 1	-2.43825	0.000207
100039781	Hrct1	histidine rich carboxyl terminus 1	-2.45602	0.000209
19331	Rab19	RAB19, member RAS oncogene family	1.98337	0.000211
224129	Adcy5	adenylate cyclase 5	2.214973	0.000211
11605	Gla	galactosidase, alpha	-0.95324	0.000214
67573	Loxl4	lysyl oxidase-like 4	-1.30963	0.000214
110379	Sec13	SEC13 homolog, nuclear pore and COPII coat complex component	-0.78256	0.000217
13857	Epor	erythropoietin receptor	2.472379	0.00022
67217	L3h3pdx	L-3-hydroxyproline dehydratase (trans-)	-0.96696	0.00022
71746	Rgl3	ral guanine nucleotide dissociation stimulator-like 3	1.179861	0.000222
69574	Cmb1	carboxymethylenebutenolidase-like (Pseudomonas)	-2.0187	0.000226
107376	E330013P04Rik	RIKEN cDNA E330013P04 gene	1.822165	0.000228
213603	Slc44a3	solute carrier family 44, member 3	0.976632	0.000228
16600	Klf4	Kruppel-like factor 4 (gut)	-1.58059	0.00023
66855	Tcf25	transcription factor 25 (basic helix-loop-helix)	0.616013	0.000232
545370	Hmcn1	hemiscentin 1	-2.45738	0.000233
192651	Zfp286	zinc finger protein 286	-1.55143	0.000233
18439	P2rx7	purinergic receptor P2X, ligand-gated ion channel, 7	-3.38647	0.000235
66878	Riok3	RIO kinase 3	-0.66011	0.000235
102637087	Gm33989	predicted gene, 33989	0.98511	0.000236
100043911	Ppp4r1l-ps	protein phosphatase 4, regulatory subunit 1-like, pseudogene	0.957222	0.000236
22253	Unc5c	unc-5 netrin receptor C	-4.40856	0.000236
72154	Zfp157	zinc finger protein 157	0.798371	0.000236
16180	Il1rap	interleukin 1 receptor accessory protein	0.974564	0.000236
74782	Glt8d2	glycosyltransferase 8 domain containing 2	-1.00456	0.00024

13841	Epha7	Eph receptor A7	1.611523	0.000241
23971	Paps1	3'-phosphoadenosine 5'-phosphosulfate synthase 1	-1.01943	0.000242
11548	Adra1b	adrenergic receptor, alpha 1b	-1.66521	0.000242
68734	PPP4r3a	protein phosphatase 4 regulatory subunit 3A	0.797327	0.000242
18811	Prl2c2	prolactin family 2, subfamily c, member 2	-5.93363	0.000243
233899	Ccdc189	coiled-coil domain containing 189	-1.54204	0.000244
224111	Ubxn7	UBX domain protein 7	0.822717	0.000247
68755	Cgrrf1	cell growth regulator with ring finger domain 1	-1.06901	0.000249
229949	Ak5	adenylate kinase 5	1.086419	0.00025
102635721	Gm26651	predicted gene, 26651	-5.65891	0.00025
246154	Vasn	vasorin	0.972043	0.000251
226123	Morn4	MORN repeat containing 4	-1.21558	0.000252
66455	Cnpy4	canopy GGF signaling regulator 4	-0.88126	0.000254
11826	Aqp1	aquaporin 1	-2.98068	0.000254
17874	Myd88	myeloid differentiation primary response gene 88	0.853521	0.000255
107770	Tm6sf2	transmembrane 6 superfamily member 2	2.17962	0.000258
20585	Hltf	helicase-like transcription factor	-0.86028	0.000259
16952	Anxa1	annexin A1	-1.04987	0.000261
52123	Agpat5	1-acylglycerol-3-phosphate O-acyltransferase 5 (lysophosphatidic	-0.773	0.000262
74043	Pex26	peroxisomal biogenesis factor 26	0.836523	0.000266
50935	St6galnac6	ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl-1,3)-N-acetyl	-0.69672	0.000266
56847	Aldh1a3	aldehyde dehydrogenase family 1, subfamily A3	3.446249	0.00027
74123	Foxp4	forkhead box P4	0.614868	0.000272
71778	Klhl5	kelch-like 5	-1.00895	0.000273
18823	Plp1	proteolipid protein (myelin) 1	1.465978	0.000274
11666	Abcd1	ATP-binding cassette, sub-family D (ALD), member 1	-0.61357	0.000275
668253	Dleu2	deleted in lymphocytic leukemia, 2	1.786213	0.000276
12450	Ccng1	cyclin G1	-1.14902	0.000277
54725	Cadm1	cell adhesion molecule 1	-3.63458	0.000277
12418	Cbx4	chromobox 4	0.847605	0.000278
104001	Rtn1	reticulum 1	0.91674	0.000281
13640	EfnA5	ephrin A5	1.581752	0.000281
67179	Ccdc25	coiled-coil domain containing 25	-0.68352	0.000283
12173	Bnc1	basoonuclin 1	1.727825	0.000284
56706	Ccnl1	cyclin L1	0.804519	0.000289
319604	Fam168a	family with sequence similarity 168, member A	1.117961	0.000296
59043	Wsb2	WD repeat and SOCS box-containing 2	-0.83154	0.000296
104886	Rab15	RAB15, member RAS oncogene family	1.454997	0.000296
140577	Ankrd6	ankyrin repeat domain 6	-2.10174	0.000299
72562	Pcbd2	pterin 4 alpha carbinolamine dehydratase/dimerization cofactor	-1.36153	0.000299
672511	Rnf213	ring finger protein 213	1.904185	0.0003
74580	Pyroxd2	pyridine nucleotide-disulphide oxidoreductase domain 2	1.316017	0.000301
13666	Eif2ak3	eukaryotic translation initiation factor 2 alpha kinase 3	-0.64701	0.000301
71492	Bbs7	Bardet-Biedl syndrome 7 (human)	-0.73751	0.000303
64051	Sv2a	synaptic vesicle glycoprotein 2 a	1.278881	0.000303
16633	Klra2	killer cell lectin-like receptor, subfamily A, member 2	-1.44423	0.000304
56312	Nupr1	nuclear protein transcription regulator 1	-2.73106	0.000312
14118	Fbn1	fibrillin 1	-1.04671	0.000315
68219	Nudt21	nudix (nucleoside diphosphate linked moiety X)-type motif 21	0.688187	0.000316
70240	Ufsp1	UFM1-specific peptidase 1	-1.19898	0.000318
76482	Rmc1	regulator of MON1-CCZ1	-0.76045	0.000319
229595	Adamts14	ADAMTS-like 4	-1.10785	0.000323
17713	Grpel1	GrpE-like 1, mitochondrial	-0.72362	0.000324
100504048	NA	NA	2.47926	0.00033
20723	Serpnb9	serine (or cysteine) peptidase inhibitor, clade B, member 9	-1.60999	0.000332
66371	Chmp4c	charged multivesicular body protein 4C	-1.57922	0.000332
12457	Noct	nocturnin	-1.70872	0.000334
677289	Prr33	proline rich 33	-1.45535	0.000336
22287	Scgb1a1	secretoglobin, family 1A, member 1 (uteroglobin)	6.074122	0.000336
230726	Rhbdl2	rhomboid like 2	-3.62541	0.000341
54394	Crif3	cytokine receptor-like factor 3	-0.69977	0.000344
242939	Cpz	carboxypeptidase Z	2.182387	0.000349
74513	Neto2	neuroligin (NRP) and tolloid (TLL)-like 2	1.278642	0.00035
21425	Tfeb	transcription factor EB	0.697504	0.00035
14677	Gnai1	guanine nucleotide binding protein (G protein), alpha inhibiting 1	-0.98457	0.000353
106861	Abhd3	abhydrolase domain containing 3	-1.98574	0.000354
217410	Trib2	tribbles pseudokinase 2	1.568763	0.000354
27984	Efh2	EF hand domain containing 2	-0.98651	0.000354
216148	Shc2	SHC (Src homology 2 domain containing) transforming protein 2	-1.80159	0.000356
381511	Pdp1	pyruvate dehydrogenase phosphatase catalytic subunit 1	1.228152	0.000357
319723	NA	NA	5.600546	0.000358
234365	Yjefn3	Yjef N-terminal domain containing 3	1.665674	0.000362
12332	Capg	capping protein (actin filament), gelsolin-like	-1.99114	0.000364
56375	B4gal4	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide	1.77539	0.000365
105245801	Gm41192	predicted gene, 41192	5.020938	0.000365

57278	Bcam	basal cell adhesion molecule	-1.75232	0.000367
14676	Gna15	guanine nucleotide binding protein, alpha 15	-2.98135	0.000367
50527	Ero1a	endoplasmic reticulum oxidoreductase 1 alpha	-1.09484	0.000369
56209	Gde1	glycerophosphodiester phosphodiesterase 1	-1.23649	0.000369
192678	Rassf3	Ras association (RalGDS/AF-6) domain family member 3	-1.46428	0.000371
67509	Saysd1	SAYSVFN motif domain containing 1	-1.79404	0.000371
21886	Tle2	transducin-like enhancer of split 2	0.913869	0.000371
17907	Mylpf	myosin light chain, phosphorylatable, fast skeletal muscle	-2.75189	0.000374
14299	Ncs1	neuronal calcium sensor 1	-0.86541	0.000374
19241	Tmsb4x	thymosin, beta 4, X chromosome	-2.10374	0.000379
67432	Hoga1	4-hydroxy-2-oxoglutarate aldolase 1	-1.68235	0.00038
320951	Pisd	phosphatidylserine decarboxylase	-0.88206	0.000381
243548	Prickle2	prickle planar cell polarity protein 2	0.96551	0.000387
52335	Atxn1l	ataxin 1-like	0.882373	0.000388
107986	Ddb2	damage specific DNA binding protein 2	1.374439	0.000389
223693	Tmem184b	transmembrane protein 184b	-0.65658	0.000391
319899	Dock6	dedicator of cytokinesis 6	0.717836	0.000393
627626	Ptchd4	patched domain containing 4	1.52874	0.0004
21857	Timp1	tissue inhibitor of metalloproteinase 1	-1.14685	0.000407
594843	Has2os	hyaluronan synthase 2, opposite strand	4.717525	0.00042
94092	Trim16	tripartite motif-containing 16	-1.85912	0.000421
319839	A530020G20RIK	RIKEN cDNA A530020G20 gene	1.624539	0.000424
14469	Gbp2	guanylate binding protein 2	-1.7688	0.000433
56838	Ccl28	chemokine (C-C motif) ligand 28	-4.50242	0.000436
78600	Pde6h	phosphodiesterase 6H, cGMP-specific, cone, gamma	-5.348	0.000436
67998	Retreg3	reticulophagy regulator family member 3	0.650546	0.000442
74521	Ppp4r4	protein phosphatase 4, regulatory subunit 4	1.668506	0.000443
667214	9930111J21RIK1	RIKEN cDNA 9930111J21 gene 1	-3.23742	0.000445
56357	Ivd	isovaleryl coenzyme A dehydrogenase	0.801761	0.000447
23808	Ash2l	ASH2 like histone lysine methyltransferase complex subunit	0.715253	0.000448
58911	Sumf1	sulfatase modifying factor 1	-1.14916	0.000454
20713	Serpini1	serine (or cysteine) peptidase inhibitor, clade I, member 1	-2.32404	0.000458
27055	Fkbp9	FK506 binding protein 9	-0.98999	0.000461
14789	P3h3	prolyl 3-hydroxylase 3	-1.2225	0.000463
67511	Tmed9	transmembrane p24 trafficking protein 9	-1.04139	0.000465
57764	Ntn4	netrin 4	-2.14058	0.000467
257633	Acsf3	acyl-CoA synthetase family member 3	0.745305	0.000467
93694	Clec2d	C-type lectin domain family 2, member d	-1.14208	0.000487
77519	Zfp266	zinc finger protein 266	0.774965	0.000488
74257	Tspan17	tetraspanin 17	-1.64612	0.000491
217082	Hlf	hepatic leukemia factor	3.431107	0.000491
71955	Ist1	increased sodium tolerance 1 homolog (yeast)	0.668377	0.000493
229877	Rap1gds1	RAP1, GTP-GDP dissociation stimulator 1	-1.00024	0.000496
72042	Cotl1	coactosin-like 1 (Dictyostelium)	1.780362	0.000502
21923	Tnc	tenascin C	-1.14657	0.000507
16470	Ush1g	USH1 protein network component sans	3.442466	0.000507
59288	Dctn5	dynactin 5	-0.83023	0.000507
14366	Fzd4	frizzled class receptor 4	1.525058	0.000509
21814	Tgfbf3	transforming growth factor, beta receptor III	1.08401	0.000516
72061	Aopep	aminopeptidase O	-1.64261	0.000517
619645	Gm6089	RRS1 ribosome biogenesis regulator homolog pseudogene	4.016362	0.000521
70423	Tspan15	tetraspanin 15	1.028224	0.000527
102634244	Platr16	pluripotency associated transcript 16	5.525785	0.000536
67554	Slc25a30	solute carrier family 25, member 30	1.101307	0.000536
338371	Endov	endonuclease V	1.104352	0.000539
12445	Ccnd3	cyclin D3	-0.64049	0.000541
233802	Thumpd1	THUMP domain containing 1	-0.82058	0.000543
235431	Coro2b	coronin, actin binding protein, 2B	1.189255	0.000556
68559	Pdrg1	p53 and DNA damage regulated 1	-0.84541	0.000557
380714	Rph3al	rabphilin 3A-like (without C2 domains)	2.500189	0.000557
66222	Serpnb1a	serine (or cysteine) peptidase inhibitor, clade B, member 1a	-2.7046	0.000557
212073	Syne3	spectrin repeat containing, nuclear envelope family member 3	-2.73386	0.00056
12062	Bdkrb2	bradykinin receptor, beta 2	-5.22976	0.000577
74164	Nfx1	nuclear transcription factor, X-box binding 1	0.719052	0.000583
407793	BC039966	cDNA sequence BC039966	5.63348	0.000583
30938	Fgd3	FYVE, RhoGEF and PH domain containing 3	-1.64363	0.000588
12334	Capn2	calpain 2	-0.81695	0.000588
217325	Llg12	LLGL2 scribble cell polarity complex component	1.17214	0.000588
404634	Macroh2a2	macroH2A.2 histone	1.002956	0.000597
666571	Gm8170	glyceraldehyde-3-phosphate dehydrogenase pseudogene	3.204494	0.000598
68618	Eola1	endothelium and lymphocyte associated ASCH domain 1	-0.68216	0.000601
71887	Ppm1j	protein phosphatase 1j	-2.9447	0.000609
66448	Mrpl20	mitochondrial ribosomal protein L20	-1.07271	0.00061
70713	Gpr137c	G protein-coupled receptor 137C	-3.69489	0.000616
240025	Dact2	dishevelled-binding antagonist of beta-catenin 2	3.051846	0.00062

217473	Ankmy2	ankyrin repeat and MYND domain containing 2	0.758727	0.000625
16782	Lamc2	laminin, gamma 2	-1.41253	0.000628
26360	Angptl2	angiopoietin-like 2	-1.71059	0.000631
13000	Csnk2a2	casein kinase 2, alpha prime polypeptide	0.69059	0.000633
66863	Lztr1	leucine-zipper-like transcriptional regulator, 1	0.706249	0.000642
69539	Trnp1	TMF1-regulated nuclear protein 1	-1.88999	0.000654
56707	Zfp111	zinc finger protein 111	0.686305	0.00066
97423	R74862	expressed sequence R74862	-1.14064	0.000663
93882	Pcdhb11	protocadherin beta 11	1.742496	0.000663
108167690	Gm26797	predicted gene, 26797	1.836192	0.000667
14013	Mecom	MDS1 and EV1 complex locus	-1.2276	0.000668
239027	Arhgap22	Rho GTPase activating protein 22	-2.00794	0.00067
50915	Grb14	growth factor receptor bound protein 14	1.005483	0.000674
69480	Ttc9	tetratricopeptide repeat domain 9	1.840518	0.000682
66356	Knop1	lysine rich nucleolar protein 1	-1.08321	0.000682
105841	Dennd3	DENN/MADD domain containing 3	1.49431	0.000683
12616	Cenpb	centromere protein B	-0.66501	0.000689
239554	Foxred2	FAD-dependent oxidoreductase domain containing 2	1.134982	0.000703
216152	Plppr3	phospholipid phosphatase related 3	2.511818	0.000703
74315	Rnf145	ring finger protein 145	-0.78574	0.000707
142682	Zcchc14	zinc finger, CCHC domain containing 14	1.176997	0.000717
381983	Lmtk3	lemur tyrosine kinase 3	1.274219	0.000726
80879	Slc16a3	solute carrier family 16 (monocarboxylic acid transporters), mem	-2.719	0.000729
67893	Tmem86a	transmembrane protein 86A	-1.21714	0.000729
12411	Cbs	cystathionine beta-synthase	1.989069	0.000732
100504591	Gm15987	predicted gene 15987	-3.84063	0.000736
100126795	Gm10575	predicted gene 10575	-1.37351	0.000748
100040421	Gm2762	predicted gene 2762	-4.63539	0.000752
75801	4930447C04Rik	RIKEN cDNA 4930447C04 gene	3.700804	0.00076
320609	Strip2	striatin interacting protein 2	2.67203	0.000761
12931	Crif1	cytokine receptor-like factor 1	-2.76983	0.000763
194237	Rimk1a	ribosomal modification protein rimK-like family member A	3.90264	0.000768
12295	Cacnb1	calcium channel, voltage-dependent, beta 1 subunit	1.016754	0.000787
20499	Slc12a7	solute carrier family 12, member 7	1.516533	0.000787
76900	Ssbp4	single stranded DNA binding protein 4	0.942022	0.000787
18605	Enpp1	ectonucleotide pyrophosphatase/phosphodiesterase 1	-2.50557	0.000791
14489	Mtpn	myotrophin	-0.67946	0.000792
13429	Dnm1	dynamitin 1	1.522444	0.000793
71665	Fuca1	fucosidase, alpha-L- 1, tissue	-1.31637	0.000793
17955	Nap114	nucleosome assembly protein 1-like 4	-0.73203	0.000797
237253	Lrp11	low density lipoprotein receptor-related protein 11	-1.41068	0.000805
93703	Pcdhgb6	protocadherin gamma subfamily B, 6	-2.42823	0.000806
14155	Fem1b	fem 1 homolog b	0.701409	0.000807
13200	Ddost	dolichyl-di-phosphooligosaccharide-protein glycotransferase	-0.80986	0.000812
243312	Elfn1	leucine rich repeat and fibronectin type III, extracellular 1	-2.43877	0.000812
226999	Slc9a2	solute carrier family 9 (sodium/hydrogen exchanger), member 2	3.27728	0.000816
13508	Dscam	DS cell adhesion molecule	2.904827	0.000825
114249	Npnt	nephronectin	-2.06747	0.000825
100043792	NA	NA	-3.76543	0.000826
83486	Rbm5	RNA binding motif protein 5	0.722552	0.000841
12934	Dpysl2	dihydropyrimidinase-like 2	-0.97592	0.000848
268747	Carmil3	capping protein regulator and myosin 1 linker 3	1.25234	0.000851
69884	2010300F17Rik	RIKEN cDNA 2010300F17 gene	-2.84855	0.000855
71338	Tprg	transformation related protein 63 regulated	2.894277	0.00086
271786	Galnt13	polypeptide N-acetylgalactosaminyltransferase 13	2.666192	0.000867
233571	P2ry6	pyrimidinergic receptor P2Y, G-protein coupled, 6	-2.72333	0.00087
66890	Lman2	lectin, mannose-binding 2	-0.69097	0.000874
72284	LTO1	ABCE maturation factor	-0.86001	0.000875
55983	Pdzrn3	PDZ domain containing RING finger 3	-1.13617	0.000875
77938	Fam53b	family with sequence similarity 53, member B	-0.99005	0.000879
12404	Cbln1	cerebellin 1 precursor protein	5.170766	0.000886
77427	9430092D12Rik	RIKEN cDNA 9430092D12 gene	5.325605	0.000893
97114	H3c15	H3 clustered histone 15	-2.84787	0.000893
102132	E230013L22Rik	RIKEN cDNA E230013L22 gene	1.86907	0.0009
18733	Pirb	paired Ig-like receptor B	-3.13318	0.000904
71952	Riox1	ribosomal oxygenase 1	0.760254	0.000904
215627	Zbtb8b	zinc finger and BTB domain containing 8b	4.304578	0.000906
333670	Gm867	predicted gene 867	5.545561	0.000906
100952	Emilin1	elastin microfibril interfacer 1	-0.80714	0.000908
66848	Fuca2	fucosidase, alpha-L- 2, plasma	-0.97468	0.000917
74011	Slc25a27	solute carrier family 25, member 27	1.911435	0.000923
13120	Cyp4b1	cytochrome P450, family 4, subfamily b, polypeptide 1	4.883612	0.000923
18987	Pou2f2	POU domain, class 2, transcription factor 2	-3.90189	0.000929
20254	Scg2	secretogranin II	2.953961	0.000936
73024	Emc7	ER membrane protein complex subunit 7	-0.78629	0.000942

100038582	Gm10824	predicted gene 10824	2.282259	0.000943
233733	Galnt18	polypeptide N-acetylgalactosaminyltransferase 18	-1.99462	0.000956
213019	Pdlim2	PDZ and LIM domain 2	-1.39473	0.000964
68815	Btbd10	BTB (POZ) domain containing 10	-0.73861	0.000964
69660	Tmbim1	transmembrane BAX inhibitor motif containing 1	-0.97829	0.00097
233280	Nipa1	non imprinted in Prader-Willi/Angelman syndrome 1 homolog (h	-1.02679	0.000979
71885	Faap100	Fanconi anemia core complex associated protein 100	1.224276	0.00098
17760	Map6	microtubule-associated protein 6	-1.65323	0.000984
100042577	Gm3912	predicted gene 3912	3.720323	0.000994
17388	Mmp15	matrix metalloproteinase 15	-2.15388	0.000995
69368	Wdfy1	WD repeat and FYVE domain containing 1	0.672251	0.000997
22223	Uchl1	ubiquitin carboxy-terminal hydrolase L1	-2.55159	0.000998
12702	Socs3	suppressor of cytokine signaling 3	1.048652	0.000999
20979	Syt1	synaptotagmin I	2.585839	0.001007
227731	Slc25a25	solute carrier family 25 (mitochondrial carrier, phosphate carrier,	-0.66553	0.001016
100038720	Gm10425	predicted gene 10425	1.952939	0.00102
110173	Manba	mannosidase, beta A, lysosomal	-0.96819	0.001026
268860	Abat	4-aminobutyrate aminotransferase	0.976495	0.00104
21949	Tnfsf8	tumor necrosis factor (ligand) superfamily, member 8	-3.3817	0.001045
16664	Krt14	keratin 14	3.963188	0.001055
74013	Rftn2	raftlin family member 2	-1.64698	0.001057
50490	Nox4	NADPH oxidase 4	-1.56862	0.001068
17268	Meis1	Meis homeobox 1	1.094729	0.001071
14865	Gstm4	glutathione S-transferase, mu 4	-1.0783	0.001072
53328	Pgrmc1	progesterone receptor membrane component 1	-0.8878	0.001082
192187	Stab1	stabilin 1	-2.88406	0.001084
22160	Twist1	twist basic helix-loop-helix transcription factor 1	1.732388	0.001087
330267	Thsd7a	thrombospondin, type I, domain containing 7A	1.594687	0.0011
76686	Clip3	CAP-GLY domain containing linker protein 3	-0.92612	0.001104
70155	Ogfr1	opioid growth factor receptor-like 1	-1.16094	0.001107
76477	Pcolce2	procollagen C-endopeptidase enhancer 2	3.123772	0.001117
78787	Usp54	ubiquitin specific peptidase 54	1.861554	0.001117
20389	Sftpc	surfactant associated protein C	6.092957	0.001133
56554	Raet1d	retinoic acid early transcript delta	-2.26563	0.001138
237336	Tbpl1	TATA box binding protein-like 1	1.074838	0.00114
68449	Tbc1d10b	TBC1 domain family, member 10b	-0.63729	0.001141
104271	Tex15	testis expressed gene 15	-3.15483	0.001144
76187	Adhfe1	alcohol dehydrogenase, iron containing, 1	2.109288	0.001187
212528	Trmt1	tRNA methyltransferase 1	0.791336	0.001192
58203	Zbp1	Z-DNA binding protein 1	-2.81203	0.001192
70227	Zfp619	zinc finger protein 619	1.072837	0.001192
21924	Tnnc1	troponin C, cardiac/slow skeletal	-1.53836	0.001195
20911	Stxbp2	syntaphin binding protein 2	1.511497	0.001202
11819	Nr2f2	nuclear receptor subfamily 2, group F, member 2	-0.84175	0.001208
192287	Slc25a36	solute carrier family 25, member 36	0.77691	0.001213
11302	Aatk	apoptosis-associated tyrosine kinase	2.993783	0.001232
11853	Rhoc	ras homolog family member C	-0.83716	0.001232
68986	Gad1os	glutamate decarboxylase 1, opposite strand	-5.75772	0.001247
242608	Podn	podocan	-2.73067	0.001252
53322	Nucb2	nucleobindin 2	-1.79018	0.001258
227933	Ccdc148	coiled-coil domain containing 148	1.443982	0.001259
17524	Mpp1	membrane protein, palmitoylated	-1.11181	0.001259
229011	Samd10	sterile alpha motif domain containing 10	-1.313	0.001259
18049	Ngf	nerve growth factor	-1.45732	0.001268
58801	Pmaip1	phorbol-12-myristate-13-acetate-induced protein 1	-1.15062	0.001269
330260	Pon2	paraoxonase 2	-1.06664	0.001272
241324	Crb2	crumbs family member 2	1.632758	0.001277
18163	Ctnnd2	catenin (cadherin associated protein), delta 2	-2.89614	0.001279
230904	Fbxo2	F-box protein 2	2.133155	0.001285
69784	1500009L16Rik	RIKEN cDNA 1500009L16 gene	-2.89191	0.00129
12550	Cdh1	cadherin 1	2.796578	0.00129
58869	Pex5l	peroxisomal biogenesis factor 5-like	-2.21168	0.001291
71240	Osbpl7	oxysterol binding protein-like 7	0.914109	0.001303
18452	P4ha2	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hyd	-1.14186	0.001307
20646	Snrpn	small nuclear ribonucleoprotein N	-1.86958	0.001307
381680	Nxpe5	neuraxophilin and PC-esterase domain family, member 5	-3.95777	0.001317
12815	Col11a2	collagen, type XI, alpha 2	1.957394	0.001321
57295	Icmt	isoprenylcysteine carboxyl methyltransferase	-0.80789	0.001328
353025	Caps2	calcylphosphine 2	-4.77306	0.001358
67775	Rtp4	receptor transporter protein 4	-3.28866	0.001366
94282	Sfxn5	sideroflexin 5	0.866384	0.001372
56295	Higd1a	HIG1 domain family, member 1A	-1.50318	0.001373
22142	Tuba1a	tubulin, alpha 1A	-1.06501	0.001375
64297	Gprc5b	G protein-coupled receptor, family C, group 5, member B	-1.69973	0.001385
232174	Cyp26b1	cytochrome P450, family 26, subfamily b, polypeptide 1	-2.77208	0.001392

68709	Cilp2	cartilage intermediate layer protein 2	2.767548	0.001395
12321	Calu	calumenin	-0.72377	0.001399
237887	Slfn10-ps	schlafen 10, pseudogene	1.703913	0.001403
621430	Vmn2r79	vomeronasal 2, receptor 79	-6.80601	0.001435
100417675	Nlrp5-ps	NLR family, pyrin domain containing 5, pseudogene	-3.55857	0.001436
109019	Nabp1	nucleic acid binding protein 1	-0.894	0.001457
70054	Ccdc89	coiled-coil domain containing 89	-2.25017	0.00146
11787	Apbb2	amyloid beta (A4) precursor protein-binding, family B, member 2	-0.69241	0.001466
17912	Myo1b	myosin IB	-1.88201	0.00149
12286	Cacna1a	calcium channel, voltage-dependent, P/Q type, alpha 1A subunit	-1.32468	0.001494
68166	Spire1	spire type actin nucleation factor 1	-1.3274	0.001505
27204	Syn3	synapsin III	1.52682	0.001505
66861	Dnajc10	DnaJ heat shock protein family (Hsp40) member C10	-0.78082	0.001521
56360	Acot9	acyl-CoA thioesterase 9	-0.89529	0.001526
72401	Slc43a1	solute carrier family 43, member 1	1.136448	0.001527
14173	Fgf2	fibroblast growth factor 2	-1.2421	0.001532
18738	Pitpna	phosphatidylinositol transfer protein, alpha	-0.77025	0.001535
11550	Adra1d	adrenergic receptor, alpha 1d	-1.92778	0.00155
223881	Rnd1	Rho family GTPase 1	-1.2699	0.001552
12125	Bcl2l11	BCL2-like 11 (apoptosis facilitator)	1.415138	0.001554
105246807	Gm42031	predicted gene, 42031	5.406556	0.001576
11997	Akr1b7	aldo-keto reductase family 1, member B7	4.269279	0.001597
170756	Slc8b1	solute carrier family 8 (sodium/lithium/calcium exchanger), mem	-0.76848	0.001611
75742	6820402A03Rik	RIKEN cDNA 6820402A03 gene	3.438364	0.001612
75345	Slamf7	SLAM family member 7	-6.00316	0.001614
244666	Sprtn	SprT-like N-terminal domain	0.745558	0.001619
67306	Zc2hc1a	zinc finger, C2HC-type containing 1A	-1.24244	0.001657
381967	Gm26705	predicted gene, 26705	-4.45271	0.001657
22658	Pcgf2	polycomb group ring finger 2	0.83733	0.001657
217344	Rhbdf2	rhomboid 5 homolog 2	-1.01892	0.001687
242083	Ppm1l	protein phosphatase 1 (formerly 2C)-like	1.788382	0.001706
12266	C3	complement component 3	2.60199	0.001708
102423	Hinfp	histone H4 transcription factor	0.918548	0.001708
22066	Trpc4	transient receptor potential cation channel, subfamily C, membe	3.902154	0.001716
70784	Rasl12	RAS-like, family 12	-2.11668	0.001719
18596	Pdgfrb	platelet derived growth factor receptor, beta polypeptide	-0.96916	0.001733
66120	Fkbp11	FK506 binding protein 11	-0.79861	0.001738
68691	Kansl1l	KAT8 regulatory NSL complex subunit 1-like	1.236079	0.001761
93708	Pcdhgc5	protocadherin gamma subfamily C, 5	0.978654	0.001761
75985	Rab30	RAB30, member RAS oncogene family	-1.17164	0.001762
217843	Unc79	unc-79 homolog	4.976641	0.001762
11979	Atp7b	ATPase, Cu++ transporting, beta polypeptide	2.027294	0.001763
67972	Atp2b1	ATPase, Ca++ transporting, plasma membrane 1	-0.77751	0.001788
74769	Pik3cb	phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit	0.890087	0.001792
70458	2610318N02Rik	RIKEN cDNA 2610318N02 gene	-3.25738	0.001795
69387	Dnajb13	DnaJ heat shock protein family (Hsp40) member B13	1.979707	0.001795
18655	Pgk1	phosphoglycerate kinase 1	-1.18651	0.001795
74901	Kbtbd11	kelch repeat and BTB (POZ) domain containing 11	1.914605	0.001808
70432	Rufy2	RUN and FYVE domain-containing 2	0.832664	0.001811
13609	S1pr1	sphingosine-1-phosphate receptor 1	-1.43381	0.001812
72371	2210408I21Rik	RIKEN cDNA 2210408I21 gene	-0.91016	0.001824
80750	N4bp1	NEDD4 binding protein 1	1.087775	0.001824
18212	Ntrk2	neurotrophic tyrosine kinase, receptor, type 2	5.213864	0.001824
329324	Syt14	synaptotagmin XIV	-4.00618	0.001824
20297	Ccl20	chemokine (C-C motif) ligand 20	-4.71713	0.001827
12394	Runx1	runt related transcription factor 1	0.634001	0.001835
319909	Ism1	isthmin 1, angiogenesis inhibitor	-3.23548	0.001854
76282	Gpt	glutamic pyruvic transaminase, soluble	0.859007	0.001857
108116	Slco3a1	solute carrier organic anion transporter family, member 3a1	-1.65776	0.001857
93709	Pcdhga1	protocadherin gamma subfamily A, 1	-2.58955	0.00186
66143	Eef1e1	eukaryotic translation elongation factor 1 epsilon 1	-0.77496	0.001866
56726	Sh3bgrl	SH3-binding domain glutamic acid-rich protein like	-0.84969	0.001879
235674	Acaa1b	acetyl-Coenzyme A acyltransferase 1B	1.76625	0.001885
93701	Pcdhgb4	protocadherin gamma subfamily B, 4	-2.15476	0.001885
24110	Usp18	ubiquitin specific peptidase 18	-2.45726	0.001885
52398	Septin11	septin 11	-0.68515	0.001887
100044509	Tgfb3l	transforming growth factor, beta receptor III-like	2.232581	0.001914
13860	Eps8	epidermal growth factor receptor pathway substrate 8	1.000096	0.001917
73728	Psd	pleckstrin and Sec7 domain containing	0.960083	0.001918
100504230	NA	NA	1.498793	0.001929
382010	Cep44	centrosomal protein 44	0.695631	0.001934
214627	Tent4b	terminal nucleotidyltransferase 4B	0.750317	0.001943
103098	Slc6a15	solute carrier family 6 (neurotransmitter transporter), member 15	-4.6219	0.001946
100628593	Mir5125	microRNA 5125	1.30899	0.001949
319812	9430018G01Rik	RIKEN cDNA 9430018G01 gene	2.148638	0.001954

101994	Champ1	chromosome alignment maintaining phosphoprotein 1	0.660707	0.001954
17231	Mcpt8	mast cell protease 8	-4.44355	0.001954
81845	Gpank1	G patch domain and ankyrin repeats 1	-0.98584	0.001958
244911	C2cd4a	C2 calcium-dependent domain containing 4A	5.092376	0.001976
13813	Eomes	eomesodermin	3.076592	0.001976
17256	Mea1	male enhanced antigen 1	-0.77029	0.001976
19085	Prkar1b	protein kinase, cAMP dependent regulatory, type I beta	-1.68054	0.001976
56380	Arid3b	AT rich interactive domain 3B (BRIGHT-like)	1.247198	0.001999
18019	Nfatc2	nuclear factor of activated T cells, cytoplasmic, calcineurin depen	-3.40124	0.002002
16155	Il10rb	interleukin 10 receptor, beta	-0.9292	0.002004
68169	Ndnf	neuron-derived neurotrophic factor	-2.30373	0.002004
18442	P2ry2	purinergic receptor P2Y, G-protein coupled 2	-1.44731	0.002004
22678	Zfp2	zinc finger protein 2	0.941148	0.002009
70552	Lrrc56	leucine rich repeat containing 56	-1.21993	0.002015
12259	C1qa	complement component 1, q subcomponent, alpha polypeptide	-4.61794	0.002038
22337	Vdr	vitamin D (1,25-dihydroxyvitamin D3) receptor	1.431877	0.002038
54411	Atp6ap1	ATPase, H+ transporting, lysosomal accessory protein 1	-0.79731	0.002042
23850	Pappa2	pappalysin 2	1.351183	0.002045
57438	Marchf7	membrane associated ring-CH-type finger 7	0.729958	0.002073
171508	Crelb1	cysteine-rich with EGF-like domains 1	-1.15926	0.002076
73739	Cby1	chibby family member 1, beta catenin antagonist	-0.68035	0.002082
227737	Niban2	niban apoptosis regulator 2	-1.08626	0.002082
270109	Pcnx2	pecanex homolog 2	3.221397	0.002104
17308	Mgat1	mannoside acetylglucosaminyltransferase 1	-0.9355	0.002105
320207	Pik3r5	phosphoinositide-3-kinase regulatory subunit 5	-1.05361	0.002105
234854	Cdk10	cyclin-dependent kinase 10	0.95371	0.002122
71519	Cyp2u1	cytochrome P450, family 2, subfamily u, polypeptide 1	-1.43251	0.002132
329910	Acot11	acyl-CoA thioesterase 11	-1.97021	0.002137
70508	Bbx	bobby sox HMG box containing	1.063513	0.002137
223864	Rapgef3	Rap guanine nucleotide exchange factor (GEF) 3	-0.83595	0.002137
16150	Ikbkb	inhibitor of kappaB kinase beta	0.654327	0.002146
57339	Jph1	junctophilin 1	0.863104	0.002146
67088	Cand2	cullin-associated and neddylation-dissociated 2 (putative)	0.79664	0.002153
233895	Prr14	proline rich 14	-0.628	0.002158
66559	Metap1d	methionyl aminopeptidase type 1D (mitochondrial)	0.992599	0.002168
244650	Phlpp2	PH domain and leucine rich repeat protein phosphatase 2	1.255655	0.002174
223922	Atf7	activating transcription factor 7	1.021335	0.002185
269437	Plch1	phospholipase C, eta 1	2.935269	0.002185
73737	1110008P14Rik	RIKEN cDNA 1110008P14 gene	-1.0287	0.002207
13476	Reep5	receptor accessory protein 5	-1.35744	0.002222
55932	Gbp3	guanylate binding protein 3	-2.1119	0.002238
13063	Cycs	cytochrome c, somatic	-0.94576	0.002239
19225	Ptgs2	prostaglandin-endoperoxide synthase 2	-2.59787	0.00227
17879	Myh1	myosin, heavy polypeptide 1, skeletal muscle, adult	-5.66345	0.002274
223453	Dap	death-associated protein	-0.96821	0.002283
211286	Cln5	ceroid-lipofuscinosis, neuronal 5	-0.66894	0.002287
319601	Zfp653	zinc finger protein 653	0.856459	0.002291
71776	Tha1	threonine aldolase 1	0.863369	0.002308
12443	Ccnd1	cyclin D1	-1.55477	0.002316
112422	Zfp979	zinc finger protein 979	-2.33135	0.002316
208795	Tmem63a	transmembrane protein 63a	0.627032	0.002324
15959	Ifit3	interferon-induced protein with tetratricopeptide repeats 3	-1.26578	0.00233
76633	Lrmda	leucine rich melanocyte differentiation associated	-1.22997	0.002337
320825	Samd5	sterile alpha motif domain containing 5	2.536356	0.002345
67210	Gatad1	GATA zinc finger domain containing 1	-0.62002	0.002365
109225	Ms4a7	membrane-spanning 4-domains, subfamily A, member 7	-4.66968	0.002365
11668	Aldh1a1	aldehyde dehydrogenase family 1, subfamily A1	1.605181	0.002369
15115	Hars	histidyl-tRNA synthetase	-0.80046	0.002369
20908	Stx3	syntaxin 3	0.872025	0.002369
77853	Msl2	MSL complex subunit 2	0.719687	0.002376
30046	Zfp292	zinc finger protein 292	0.92316	0.002377
241989	Pabpc4l	poly(A) binding protein, cytoplasmic 4-like	-1.80631	0.002411
23882	Gadd45g	growth arrest and DNA-damage-inducible 45 gamma	-1.55074	0.002415
102634822	Gm11131	predicted gene 11131	2.877535	0.002418
18104	Nqo1	NAD(P)H dehydrogenase, quinone 1	-1.55905	0.002419
74549	Mau2	MAU2 sister chromatid cohesion factor	0.930144	0.002425
76206	Gpr165	G protein-coupled receptor 165	-3.97404	0.002445
100534273	Fer1l5	fer-1-like 5 (C. elegans)	1.454776	0.002476
67916	Plpp3	phospholipid phosphatase 3	-1.08015	0.002476
13435	Dnmt3a	DNA methyltransferase 3A	1.048546	0.002481
107513	Ssr1	signal sequence receptor, alpha	-0.69451	0.002482
54720	Rcan1	regulator of calcineurin 1	-1.88332	0.002482
20349	Sema3e	sema domain, immunoglobulin domain (Ig), short basic domain, s	1.35804	0.0025
12722	Clca3a1	chloride channel accessory 3A1	-1.78407	0.002501
18793	Plaur	plasminogen activator, urokinase receptor	-1.14629	0.002509

74149	Zfp946	zinc finger protein 946	-1.01771	0.002513
16818	Lck	lymphocyte protein tyrosine kinase	3.316054	0.002521
20751	Spr	sepiapterin reductase	-0.61595	0.002571
237422	Ric8b	RIC8 guanine nucleotide exchange factor B	1.005957	0.002581
73723	Sh3bgr13	SH3 domain binding glutamic acid-rich protein-like 3	-1.00366	0.002583
269152	Kif26b	kinesin family member 26B	1.723996	0.002593
235050	Zfp810	zinc finger protein 810	1.250569	0.002609
56807	Scamp5	secretory carrier membrane protein 5	0.902123	0.002614
54427	Dnmt3l	DNA (cytosine-5-)-methyltransferase 3-like	-1.78154	0.00262
56348	Hsd17b12	hydroxysteroid (17-beta) dehydrogenase 12	-0.71282	0.002629
104079	Nxph3	neurexophilin 3	-1.46481	0.002632
20293	Ccl12	chemokine (C-C motif) ligand 12	-4.39976	0.002633
225288	Rhod3	formin homology 2 domain containing 3	-1.89212	0.002643
268880	Xylt1	xyloside xylosyltransferase 1	-0.68598	0.002643
319572	C730027H18Rik	RIKEN cDNA C730027H18 gene	3.793185	0.002657
225280	Ino80c	INO80 complex subunit C	-0.703	0.002657
245607	Gprasp2	G protein-coupled receptor associated sorting protein 2	2.99971	0.002661
69094	Tmem160	transmembrane protein 160	-1.2988	0.002666
56738	Mocs1	molybdenum cofactor synthesis 1	1.173231	0.002666
71973	Rbpms2	RNA binding protein with multiple splicing 2	-0.8527	0.002666
233805	Dcun1d3	DCN1, defective in cullin neddylation 1, domain containing 3 (S. c	-0.60672	0.002685
20536	Slc4a3	solute carrier family 4 (anion exchanger), member 3	0.730357	0.002687
233863	Gtf3c1	general transcription factor III C 1	-0.71291	0.002694
105661729	Gm45925	NLR family, pyrin domain containing 5 pseudogene	3.266369	0.002697
668158	Ccdc85c	coiled-coil domain containing 85C	1.202075	0.002708
67830	Rel1	retention in endoplasmic reticulum sorting receptor 1	-0.87497	0.00272
26893	Cops6	COP9 signalosome subunit 6	-0.64098	0.002725
22272	Uqcrcq	ubiquinol-cytochrome c reductase, complex III subunit VII	-1.10327	0.002725
68537	Mrpl13	mitochondrial ribosomal protein L13	-0.60976	0.002726
22352	Vim	vimentin	-0.65316	0.002741
11479	Acvr1b	activin A receptor, type 1B	0.887406	0.002751
378466	Gm10033	predicted gene 10033	1.302924	0.002765
241624	Exd1	exonuclease 3'-5' domain containing 1	-1.71153	0.002767
77827	Krba1	KRAB-A domain containing 1	0.887443	0.002769
241289	Ppp1r26	protein phosphatase 1, regulatory subunit 26	1.248571	0.002769
214642	Cped1	cadherin-like and PC-esterase domain containing 1	-2.1784	0.002784
218877	Sema3g	sema domain, immunoglobulin domain (Ig), short basic domain, t	-3.34828	0.002798
353172	Gars	glycyl-tRNA synthetase	-0.60355	0.002808
67938	Myl12b	myosin, light chain 12B, regulatory	-1.24408	0.002815
102182	Prmt9	protein arginine methyltransferase 9	0.605923	0.002822
117606	Boc	biregional cell adhesion molecule-related/down-regulated by onc	0.989856	0.002833
26440	PsmA1	proteasome subunit alpha 1	-0.92852	0.002858
72137	Wdsub1	WD repeat, SAM and U-box domain containing 1	0.684363	0.002859
73086	Rps6ka5	ribosomal protein S6 kinase, polypeptide 5	1.354142	0.002867
224530	Acat3	acetyl-Coenzyme A acetyltransferase 3	2.676266	0.002869
69354	Slc38a4	solute carrier family 38, member 4	-3.74213	0.002892
16399	Itga2b	integrin alpha 2b	1.231994	0.002904
72007	Fndc3b	fibronectin type III domain containing 3B	-0.7394	0.002909
320011	Ugg1	UDP-glucose glycoprotein glucosyltransferase 1	-0.64521	0.002915
12400	Cbfb	core binding factor beta	0.670631	0.002915
211548	Nomo1	nodal modulator 1	-0.82063	0.002915
269831	Tspan12	tetraspanin 12	-1.46635	0.002915
19240	Tmsb10	thymosin, beta 10	-1.38551	0.002933
105827	Amigo2	adhesion molecule with Ig like domain 2	1.485584	0.002942
22152	Tubb3	tubulin, beta 3 class III	-1.66908	0.002942
231633	Tmem119	transmembrane protein 119	-1.31002	0.002953
235180	Fez1	fasciculation and elongation protein zeta 1 (zyglin I)	-1.17588	0.002971
13608	Edar	ectodysplasin-A receptor	-4.85638	0.002977
13998	Fgd6	FYVE, RhoGEF and PH domain containing 6	-1.34853	0.00299
11846	Arg1	arginase, liver	-3.57322	0.003029
78304	Naa38	N(alpha)-acetyltransferase 38, NatC auxiliary subunit	-0.64546	0.00304
238057	Gdf7	growth differentiation factor 7	1.886802	0.003048
18129	Notch2	notch 2	0.612626	0.003048
100532	Rel1	REL1-like 1	-0.89957	0.003051
13660	Ehd1	EH-domain containing 1	-0.74062	0.003052
319804	Glt1d1	glycosyltransferase 1 domain containing 1	2.455909	0.003053
97086	Slc9b2	solute carrier family 9, subfamily B (NHA2, cation proton antiport	-4.04079	0.003072
243025	Tmem156	transmembrane protein 156	-3.5548	0.003099
76453	Prss23	protease, serine 23	-0.90213	0.003106
227736	Cfap157	cilia and flagella associated protein 157	-1.07087	0.003109
238252	Gpr135	G protein-coupled receptor 135	-1.01838	0.003109
272347	Zfp398	zinc finger protein 398	0.748486	0.003109
56745	C1qtnf1	C1q and tumor necrosis factor related protein 1	1.087854	0.003111
18221	Nudc	nudC nuclear distribution protein	-0.62605	0.003191
16480	Jup	junction plakoglobin	-0.93951	0.003216

68396	Nat8	N-acetyltransferase 8 (GCN5-related)	2.517506	0.003234
73904	4833412C05Rik	RIKEN cDNA 4833412C05 gene	-3.22725	0.003249
67739	Slc48a1	solute carrier family 48 (heme transporter), member 1	-1.09725	0.003253
50760	Fbxo17	F-box protein 17	-0.88551	0.003254
319179	H2bc6	H2B clustered histone 6	-2.08643	0.003261
22409	Wnt10a	wingless-type MMTV integration site family, member 10A	-5.20003	0.003261
227526	Cdnf	cerebral dopamine neurotrophic factor	-1.88738	0.003266
99712	Cept1	choline/ethanolaminephosphotransferase 1	-0.79334	0.003266
327812	Gm15663	predicted gene 15663	-1.63166	0.003266
319984	Jph4	junctophilin 4	1.534239	0.003266
18654	Pgf	placental growth factor	-3.91336	0.003266
21412	Tcf21	transcription factor 21	-2.40316	0.003266
78249	Adgrf4	adhesion G protein-coupled receptor F4	2.275897	0.003268
75597	Ndufaf2	NADH:ubiquinone oxidoreductase complex assembly factor 2	-0.91877	0.003268
76252	Atp6v0e2	ATPase, H+ transporting, lysosomal V0 subunit E2	1.039021	0.003271
67838	Dnajb11	DnaJ heat shock protein family (Hsp40) member B11	-0.81234	0.003271
14051	Eya4	EYA transcriptional coactivator and phosphatase 4	1.843869	0.003295
244867	Arhgap20	Rho GTPase activating protein 20	2.225488	0.003335
14457	Gas7	growth arrest specific 7	-1.9737	0.003343
234138	Tti2	TELO2 interacting protein 2	0.765296	0.003431
109245	Lrrc39	leucine rich repeat containing 39	-2.25062	0.003455
12454	Ccnk	cyclin K	0.778845	0.003461
140491	Ppp1r3a	protein phosphatase 1, regulatory subunit 3A	-3.62019	0.003474
24059	Slco2a1	solute carrier organic anion transporter family, member 2a1	-2.73407	0.003491
27096	Trappc3	trafficking protein particle complex 3	-0.88324	0.003499
15361	Hmga1	high mobility group AT-hook 1	-1.55166	0.003501
67269	Agtbbp1	ATP/GTP binding protein 1	-0.6641	0.003521
67883	Uxs1	UDP-glucuronate decarboxylase 1	-0.67693	0.003535
93697	Ice2	interactor of little elongation complex ELL subunit 2	0.749025	0.003545
50911	Exosc9	exosome component 9	-0.74613	0.003548
218203	Mylip	myosin regulatory light chain interacting protein	-1.67019	0.003548
102640045	Gm36211	predicted gene, 36211	-1.87575	0.003594
15273	Hivep2	human immunodeficiency virus type I enhancer binding protein 2	0.932037	0.003594
16905	Lmna	lamin A	-0.95225	0.003597
98878	Ehd4	EH-domain containing 4	-1.06288	0.003627
268807	Klhl38	kelch-like 38	-4.67468	0.003657
69185	Dtwd1	DTW domain containing 1	-1.27787	0.003669
54194	Akap8l	A kinase (PRKA) anchor protein 8-like	0.946633	0.00367
76895	Bicd2	BICD cargo adaptor 2	-0.62967	0.003673
106326	Osbpl11	oxysterol binding protein-like 11	0.662107	0.003673
140484	Pofut1	protein O-fucosyltransferase 1	-1.00143	0.003673
67150	Rnf141	ring finger protein 141	-0.76088	0.003673
68721	1110032A03Rik	RIKEN cDNA 1110032A03 gene	-1.18174	0.003682
22029	Traf1	TNF receptor-associated factor 1	-3.57521	0.00369
66960	Mindy3	MINDY lysine 48 deubiquitinase 3	-1.02047	0.003692
20556	Slnf2	schlafen 2	-1.47807	0.003692
56376	Pdlim5	PDZ and LIM domain 5	-0.85087	0.003699
15442	Hpse	heparanase	-2.26472	0.003705
194590	Reps2	RALBP1 associated Eps domain containing protein 2	0.964511	0.003709
71699	Slc41a3	solute carrier family 41, member 3	-0.80726	0.003723
21341	Taf1c	TATA-box binding protein associated factor, RNA polymerase I, C	0.691337	0.003727
71834	Zbtb43	zinc finger and BTB domain containing 43	0.741975	0.003727
218629	Dhx29	DEAH (Asp-Glu-Ala-His) box polypeptide 29	-0.7607	0.003766
235300	Tlcd5	TLC domain containing 5	1.627959	0.003766
66648	Tpgs2	tubulin polyglutamylase complex subunit 2	-1.08276	0.003766
54473	Tollip	toll interacting protein	-0.71068	0.003779
219105	Zmym5	zinc finger, MYM-type 5	0.667861	0.003783
104709	Pik3r6	phosphoinositide-3-kinase regulatory subunit 5	-2.55459	0.00379
140780	Bmp2k	BMP2 inducible kinase	0.914971	0.00379
227659	Slc2a6	solute carrier family 2 (facilitated glucose transporter), member 6	-2.43364	0.00379
20768	Sepsb2	selenophosphate synthetase 2	-0.97112	0.003796
211228	Lrrc25	leucine rich repeat containing 25	-3.09973	0.003798
60533	Cd274	CD274 antigen	-1.13414	0.0038
380711	Rap1gap2	RAP1 GTPase activating protein 2	-1.99618	0.003826
215446	Entpd3	ectonucleoside triphosphate diphosphohydrolase 3	4.26303	0.003843
67760	Slc38a2	solute carrier family 38, member 2	0.828203	0.003843
235469	Zfp280d	zinc finger protein 280D	0.778424	0.003843
11863	Arnt	aryl hydrocarbon receptor nuclear translocator	0.687347	0.003847
21927	Tnfaip1	tumor necrosis factor, alpha-induced protein 1 (endothelial)	-0.67029	0.003847
260299	Cadm4	cell adhesion molecule 4	-2.65891	0.003865
56347	Eif3c	eukaryotic translation initiation factor 3, subunit C	-0.61879	0.003865
72828	Ubash3b	ubiquitin associated and SH3 domain containing, B	-1.45562	0.003865
320162	Cep95	centrosomal protein 95	0.879825	0.003881
27267	Cars	cysteinyl-tRNA synthetase	-0.71246	0.003886
385658	Nxpe3	neurexophilin and PC-esterase domain family, member 3	-1.0272	0.003902

12262	C1qc	complement component 1, q subcomponent, C chain	-4.4898	0.003916
12395	Runx1t1	RUNX1 translocation partner 1	0.83838	0.003928
234678	D230025D16Rik	RIKEN cDNA D230025D16 gene	0.841207	0.00395
98432	Phlpp1	PH domain and leucine rich repeat protein phosphatase 1	0.777234	0.00395
229521	Syt11	synaptotagmin XI	-1.35051	0.00395
20742	Sptbn1	spectrin beta, non-erythrocytic 1	-1.23266	0.003951
211135	D130040H23Rik	RIKEN cDNA D130040H23 gene	1.261309	0.003967
100503519	Gm19744	predicted gene, 19744	4.527137	0.003974
229937	Znhit6	zinc finger, HIT type 6	-0.69531	0.003978
213393	Depp1	DEPP1 autophagy regulator	2.760126	0.003989
243362	Stard13	StAR-related lipid transfer (START) domain containing 13	-0.60172	0.003993
73845	Ankrd42	ankyrin repeat domain 42	-1.03989	0.004001
68642	Tmem216	transmembrane protein 216	0.803978	0.004027
67442	Retsat	retinol saturase (all trans retinol 13,14 reductase)	-1.2753	0.004058
224022	Slc7a4	solute carrier family 7 (cationic amino acid transporter, y+ system)	1.120261	0.004106
226778	Mark1	MAP/microtubule affinity regulating kinase 1	1.021626	0.00411
56527	Mast1	microtubule associated serine/threonine kinase 1	2.387652	0.004128
66598	NA	NA	1.143511	0.004128
104252	Cdc42ep2	CDC42 effector protein (Rho GTPase binding) 2	0.767469	0.004129
15505	Hsph1	heat shock 105kDa/110kDa protein 1	-0.67113	0.004132
74646	Spsb1	splA/ryanodine receptor domain and SOCS box containing 1	-0.96349	0.004132
21817	Tgm2	transglutaminase 2, C polypeptide	-0.98597	0.004132
100037278	Niban3	niban apoptosis regulator 3	1.723593	0.004157
80749	Lfn1	leucine rich repeat and fibronectin type III domain containing 1	1.119594	0.004172
58859	Efemp2	epidermal growth factor-containing fibulin-like extracellular matrix protein 2	-0.8171	0.00418
75625	Mageh1	MAGE family member H1	-1.31687	0.004193
22174	Tyro3	TYRO3 protein tyrosine kinase 3	-0.82129	0.004202
69894	Fam241b	family with sequence similarity 241, member B	1.54075	0.004211
83679	Pde4dip	phosphodiesterase 4D interacting protein (myomegalin)	-1.34591	0.004216
73173	Pcdh18	protocadherin 18	-2.03946	0.004219
14083	Ptk2	PTK2 protein tyrosine kinase 2	-0.71499	0.004235
268709	Fam107a	family with sequence similarity 107, member A	4.052729	0.004242
211429	Pla2g4b	phospholipase A2, group IVB (cytosolic)	1.586661	0.004248
270711	Calhm4	calcium homeostasis modulator family member 4	2.09401	0.004249
236069	Gm13238	carnitine deficiency-associated gene expressed in ventricle 3 protein	3.5302	0.004252
22793	Zyx	zyxin	0.872869	0.004252
330385	9530026P05Rik	RIKEN cDNA 9530026P05 gene	1.467102	0.004252
226654	Tstd1	thiosulfate sulfurtransferase (rhodanese)-like domain containing 12	0.060425	0.004273
21351	Taldo1	transaldolase 1	-0.81162	0.004294
227923	A930012O16Rik	RIKEN cDNA A930012O16 gene	-2.85744	0.004297
13664	Eif1a	eukaryotic translation initiation factor 1A	-0.65547	0.004297
68404	Nrn1	neuritin 1	-0.83217	0.004306
99887	Tlcd4	TLC domain containing 4	-3.07751	0.004334
56741	Igdcc4	immunoglobulin superfamily, DCC subclass, member 4	0.797115	0.004358
17301	Foxd2	forkhead box D2	1.880659	0.004359
18103	Nme2	NME/NM23 nucleoside diphosphate kinase 2	-1.08796	0.004381
100034251	Wfdc17	WAP four-disulfide core domain 17	-2.9739	0.004387
12850	Coq7	demethyl-Q 7	-0.89287	0.004396
68024	H2bc4	H2B clustered histone 4	-1.69959	0.004396
12258	Serping1	serine (or cysteine) peptidase inhibitor, clade G, member 1	-1.67401	0.004414
14705	Bsc12	Berardinelli-Seip congenital lipodystrophy 2 (seipin)	-0.62965	0.004448
233902	Fbxl19	F-box and leucine-rich repeat protein 19	-0.61406	0.004448
59022	Edf1	endothelial differentiation-related factor 1	-0.68583	0.004448
14811	Grin2a	glutamate receptor, ionotropic, NMDA2A (epsilon 1)	-5.0862	0.004453
69440	Dennd6b	DENN/MADD domain containing 6B	0.953074	0.004484
72634	Tdrkh	tudor and KH domain containing protein	-1.647	0.004524
106052	Fbxo4	F-box protein 4	-0.80004	0.004579
12041	Bckdk	branched chain ketoacid dehydrogenase kinase	-0.86932	0.004587
18590	Pdgfra	platelet derived growth factor, alpha	-0.83679	0.004616
237781	Mief2	mitochondrial elongation factor 2	-0.82443	0.004618
71738	Mamdc2	MAM domain containing 2	1.511048	0.004623
17755	Map1b	microtubule-associated protein 1B	-1.51796	0.004647
16669	Krt19	keratin 19	-3.06201	0.004692
110829	Lims1	LIM and senescent cell antigen-like domains 1	0.757723	0.0047
21386	Tbx3	T-box 3	-0.99548	0.004702
216543	Cep68	centrosomal protein 68	0.62556	0.004721
227937	Pkp4	plakophilin 4	1.339558	0.004721
20409	Ostf1	osteoclast stimulating factor 1	-0.89235	0.004724
17389	Mmp16	matrix metalloproteinase 16	-1.69355	0.004728
636741	Zfp964	zinc finger protein 964	1.217497	0.004731
14726	Pdprn	podoplanin	-1.07799	0.004752
16913	Psmb8	proteasome (prosome, macropain) subunit, beta type 8 (large subunit)	1.442308	0.004752
212514	Spice1	spindle and centriole associated protein 1	0.691507	0.004783
50788	Fbxl8	F-box and leucine-rich repeat protein 8	0.733885	0.004802
23832	Xcr1	chemokine (C motif) receptor 1	2.122586	0.00482

71544	Arhgap42	Rho GTPase activating protein 42	-1.34666	0.004822
17349	Mlf1	myeloid leukemia factor 1	-2.52631	0.004849
330369	Fbxo41	F-box protein 41	1.097548	0.00489
378435	Mafa	v-maf musculoaponeurotic fibrosarcoma oncogene family, protei	-2.38686	0.00489
18213	Ntrk3	neurotrophic tyrosine kinase, receptor, type 3	1.978505	0.00489
72433	Rab38	RAB38, member RAS oncogene family	-1.96722	0.00489
13603	Opn3	opsin 3	-2.2658	0.004901
69482	Nup35	nucleoporin 35	-0.71885	0.004912
77781	Epm2aip1	EPM2A (laforin) interacting protein 1	0.787992	0.004914
66985	Rassf7	Ras association (RalGDS/AF-6) domain family (N-terminal) memb	-1.43612	0.004956
225651	Mppe1	metallopheosphoesterase 1	-0.89127	0.004962
12288	Cacna1c	calcium channel, voltage-dependent, L type, alpha 1C subunit	1.005603	0.00497
14538	Gcnt2	glucosaminyl (N-acetyl) transferase 2, l-branching enzyme	-1.55612	0.00498
74463	Exoc3l2	exocyst complex component 3-like 2	-4.29917	0.005013
14254	Flt1	FMS-like tyrosine kinase 1	-1.43151	0.005025
212111	Inpp5a	inositol polyphosphate-5-phosphatase A	-1.23382	0.005029
399558	Flrt2	fibronectin leucine rich transmembrane protein 2	1.25842	0.00503
57815	Spta5	spermatogenesis associated 5	-0.77968	0.005031
71602	Myo1e	myosin IE	-1.11999	0.00505
12386	Ctnna2	catenin (cadherin associated protein), alpha 2	-3.90964	0.005054
240892	Dusp27	dual specificity phosphatase 27 (putative)	-1.88227	0.005088
252837	Ackr4	atypical chemokine receptor 4	2.062788	0.005106
14672	Gna11	guanine nucleotide binding protein, alpha 11	-0.77351	0.005111
12020	Nkx3-2	NK3 homeobox 2	2.236674	0.005118
22421	Wnt7a	wingless-type MMTV integration site family, member 7A	3.567576	0.005118
233870	Tufm	Tu translation elongation factor, mitochondrial	-0.81846	0.00512
19249	Ptpn13	protein tyrosine phosphatase, non-receptor type 13	0.93409	0.005141
211064	Alkbh1	alkB homolog 1, histone H2A dioxygenase	0.720573	0.005157
239393	Lrp12	low density lipoprotein-related protein 12	-0.82379	0.005157
94066	Mrpl36	mitochondrial ribosomal protein L36	-0.77216	0.005157
20515	Slc20a1	solute carrier family 20, member 1	-0.74745	0.005157
270076	Gcdh	glutaryl-Coenzyme A dehydrogenase	0.657985	0.00516
622175	E430024I08Rik	RIKEN cDNA E430024I08 gene	1.041223	0.00523
70729	Nos1ap	nitric oxide synthase 1 (neuronal) adaptor protein	1.71586	0.005242
56016	Hebp2	heme binding protein 2	-1.12967	0.005249
78439	A930037H05Rik	RIKEN cDNA A930037H05 gene	1.485772	0.005268
66789	Alg14	asparagine-linked glycosylation 14	-0.99353	0.005284
69724	Rnaseh2a	ribonuclease H2, large subunit	0.864452	0.005317
17954	Nap1l2	nucleosome assembly protein 1-like 2	-3.58821	0.005322
241494	Zfp385b	zinc finger protein 385B	2.652103	0.005322
26357	Abcg2	ATP binding cassette subfamily G member 2 (Junior blood group)	-1.09646	0.005348
102638630	Gm26779	predicted gene, 26779	1.474828	0.005371
215798	Adgrg6	adhesion G protein-coupled receptor G6	-2.06598	0.005417
12257	Tspo	translocator protein	-0.95919	0.005421
231871	Daglb	diacylglycerol lipase, beta	-0.94286	0.005432
212483	Fam193b	family with sequence similarity 193, member B	0.762374	0.005449
234593	Ndr4	N-myc downstream regulated gene 4	-0.9945	0.005481
16363	Irf2	interferon regulatory factor 2	0.839661	0.005501
78816	Gmip	Gem-interacting protein	0.989296	0.005511
26879	B3galnt1	UDP-GalNAc:betaGlcNAc beta 1,3-galactosaminyltransferase, pol	-1.81371	0.00554
242700	Ifnlr1	interferon lambda receptor 1	1.743105	0.005547
19012	Plpp1	phospholipid phosphatase 1	-1.91498	0.0056
107975	Pacs1	phosphofurin acidic cluster sorting protein 1	1.020821	0.0056
76775	Slc10a7	solute carrier family 10 (sodium/bile acid cotransporter family), r	0.682668	0.005604
329777	Pigk	phosphatidylinositol glycan anchor biosynthesis, class K	-1.05214	0.005628
14198	Fhit	fragile histidine triad gene	-3.57633	0.005639
225609	Gm9949	predicted gene 9949	-1.49288	0.00564
54137	Acrbp	proacrosin binding protein	1.219689	0.005654
19737	Rgs5	regulator of G-protein signaling 5	-5.16545	0.005675
102634096	Gm11476	predicted gene 11476	-1.78493	0.005714
214742	Rcor3	REST corepressor 3	0.692178	0.005723
20932	Surf4	surfeit gene 4	-0.6317	0.005749
16440	Itpr3	inositol 1,4,5-triphosphate receptor 3	1.132774	0.005751
74153	Uba7	ubiquitin-like modifier activating enzyme 7	0.951985	0.005775
58909	Fam13a	family with sequence similarity 13, member A	-2.66854	0.005787
14231	Fkbp7	FK506 binding protein 7	-1.20022	0.005791
64658	Mrps25	mitochondrial ribosomal protein S25	-0.62138	0.005845
257926	Olfrr544	olfactory receptor 544	4.513201	0.005845
383374	Gm10557	cadherin 11 pseudogene	0.972563	0.005886
66503	1810034E14Rik	RIKEN cDNA 1810034E14 gene	-1.40308	0.005931
170759	Atp13a1	ATPase type 13A1	0.68209	0.005931
227357	Espnl	espin-like	2.490094	0.005931
21388	Tbx5	T-box 5	-1.06312	0.005954
52700	Txndc17	thioredoxin domain containing 17	-0.75978	0.00596
319387	Adgrl3	adhesion G protein-coupled receptor L3	-6.04177	0.005961

240095	H2-M5	histocompatibility 2, M region locus 5	2.498193	0.005961
12816	Col12a1	collagen, type XII, alpha 1	-2.03367	0.005975
16336	InsI3	insulin-like 3	1.928923	0.005983
665119	Sec14I5	SEC14-like lipid binding 5	-4.25482	0.005989
66520	2610001J05Rik	RIKEN cDNA 2610001J05 gene	-0.91508	0.006012
216551	LgalSI	lectin, galactoside binding-like	-1.71447	0.006056
103135	Pan2	PAN2 poly(A) specific ribonuclease subunit	0.989375	0.006057
70719	Arhgap45	Rho GTPase activating protein 45	-1.47909	0.00606
74518	8430419K02Rik	RIKEN cDNA 8430419K02 gene	1.889922	0.00606
27356	InsI6	insulin-like 6	-1.24883	0.00606
74356	4931428F04Rik	RIKEN cDNA 4931428F04 gene	1.218394	0.006102
328110	Prpf39	pre-mRNA processing factor 39	0.902876	0.006102
72003	Synpr	synaptoporin	-2.44261	0.006108
107589	Myk	myosin, light polypeptide kinase	2.483338	0.006126
54195	Gucy1b1	guanylate cyclase 1, soluble, beta 1	-2.16566	0.006141
77516	9330198N18Rik	RIKEN cDNA 9330198N18 gene	4.585353	0.006152
100417422	Gm16574	RAN GTPase activating protein 1 pseudogene	3.280312	0.006156
66892	Eif4e3	eukaryotic translation initiation factor 4E member 3	-2.01373	0.006174
12366	Casp2	caspase 2	1.127388	0.006181
11966	Atp6v1b2	ATPase, H+ transporting, lysosomal V1 subunit B2	0.984591	0.006197
80281	Ctnnbp2nl	CTTNBP2 N-terminal like	-0.97697	0.006197
20115	Rps7	ribosomal protein S7	0.811804	0.006197
210356	Nckap5	NCK-associated protein 5	0.976717	0.006223
26939	Polr3e	polymerase (RNA) III (DNA directed) polypeptide E	-0.65463	0.006286
217353	Tmc6	transmembrane channel-like gene family 6	-0.97264	0.006286
68203	Diras2	DIRAS family, GTP-binding RAS-like 2	-2.53046	0.006296
18951	Septin5	septin 5	-0.69673	0.006296
12521	Cd82	CD82 antigen	-0.99406	0.006299
72512	Sting1	stimulator of interferon response cGAMP interactor 1	-0.67863	0.0063
58220	Pard6b	par-6 family cell polarity regulator beta	1.457916	0.006304
18648	Pgam1	phosphoglycerate mutase 1	-0.76581	0.006307
53620	Vamp5	vesicle-associated membrane protein 5	-0.75261	0.006309
18557	Cdk18	cyclin-dependent kinase 18	-1.14005	0.006313
100910	Chpf2	chondroitin polymerizing factor 2	-0.86726	0.006326
217331	Unk	unkempt family zinc finger	0.905704	0.006386
11747	Anxa5	annexin A5	-0.85566	0.006388
75599	Pcdh1	protocadherin 1	-2.35953	0.006394
192232	Hps4	HPS4, biogenesis of lysosomal organelles complex 3 subunit 2	0.747694	0.006438
319622	Itipripl2	inositol 1,4,5-triphosphate receptor interacting protein-like 2	-1.25916	0.006511
13852	Stx2	syntaxin 2	-0.81767	0.006511
15586	Hyal1	hyaluronoglucosaminidase 1	-0.997	0.006528
243910	Nfkbid	nuclear factor of kappa light polypeptide gene enhancer in B cells	1.933236	0.006528
56517	Slc22a21	solute carrier family 22 (organic cation transporter), member 21	0.954305	0.006528
230594	Tut4	terminal uridylyl transferase 4	0.976727	0.006528
620790	Gm14443	predicted gene 14443	1.297613	0.006533
80880	Kank3	KN motif and ankyrin repeat domains 3	-1.06831	0.006533
72333	Palld	palladin, cytoskeletal associated protein	0.945378	0.006533
18121	Nog	noggin	-3.43099	0.006538
22781	Ikzf4	IKAROS family zinc finger 4	1.506597	0.006543
212517	Cfap44	cilia and flagella associated protein 44	3.298344	0.006558
57782	Rbak	RB-associated KRAB zinc finger	0.812293	0.006558
224860	Plcl2	phospholipase C-like 2	-1.71751	0.006568
76808	Rpl18a	ribosomal protein L18A	0.904447	0.006573
14187	Akr1b8	aldo-keto reductase family 1, member B8	-0.79039	0.006686
60440	Iigp1	interferon inducible GTPase 1	-2.63814	0.006688
11732	Ank	progressive ankylosis	-0.89594	0.006817
225888	Kmt5b	lysine methyltransferase 5B	0.740222	0.006832
192950	Nacad	NAC alpha domain containing	-1.51343	0.006838
224650	Anks1	ankyrin repeat and SAM domain containing 1	0.854577	0.00685
13874	Ereg	epiregulin	-1.71855	0.006869
234515	Inpp4b	inositol polyphosphate-4-phosphatase, type II	-2.7606	0.006869
80284	Ssmim12	small integral membrane protein 12	-0.99932	0.006869
54352	Irx5	Iroquois homeobox 5	1.550148	0.006872
30957	Mapk8ip3	mitogen-activated protein kinase 8 interacting protein 3	0.926464	0.006927
64293	Stk32b	serine/threonine kinase 32B	-5.69799	0.006933
327956	Vmo1	vitelline membrane outer layer 1 homolog (chicken)	-4.72745	0.006943
319160	H4c12	H4 clustered histone 12	2.0166	0.006962
73608	Marveld3	MARVEL (membrane-associating) domain containing 3	4.467536	0.006964
212285	Arap2	ArfGAP with RhoGAP domain, ankyrin repeat and PH domain 2	1.184693	0.006972
319650	A430108G06Rik	RIKEN cDNA A430108G06 gene	-4.49632	0.007043
76820	Cyria	CYFIP related Rac1 interactor A	-1.25727	0.007043
237178	Ppef1	protein phosphatase with EF hand calcium-binding domain 1	-4.47367	0.007043
21961	Tns1	tensin 1	-1.07457	0.007043
170737	Znrf1	zinc and ring finger 1	0.632294	0.007062
100417679	Gm17709	ornithine decarboxylase, structural 1 pseudogene	1.523819	0.007063

212307	Mapre2	microtubule-associated protein, RP/EB family, member 2	-0.66762	0.007063
246198	Mllt6	myeloid/lymphoid or mixed-lineage leukemia; translocated to, 6	0.736078	0.007119
14264	Fmod	fibromodulin	-1.05959	0.007126
75965	Zdhhc20	zinc finger, DHHC domain containing 20	-0.64594	0.007137
68588	Cthrc1	collagen triple helix repeat containing 1	-5.15974	0.007145
231430	Cox18	cytochrome c oxidase assembly protein 18	-0.60059	0.007159
21822	Tgtp1	T cell specific GTPase 1	-2.47736	0.007159
211770	Trib1	tribbles pseudokinase 1	1.089666	0.007159
19143	St14	suppression of tumorigenicity 14 (colon carcinoma)	-2.15773	0.007168
108902	B4gat1	beta-1,4-glucuronyltransferase 1	-0.9127	0.007172
56036	Ccnl2	cyclin L2	0.641812	0.007176
18577	Pde4a	phosphodiesterase 4A, cAMP specific	0.626849	0.007176
209773	Dennd2a	DENN/MADD domain containing 2A	-0.60982	0.00718
353190	Edc3	enhancer of mRNA decapping 3	0.670096	0.00718
13116	Cyp46a1	cytochrome P450, family 46, subfamily a, polypeptide 1	1.329	0.007196
105785	Kdelr3	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention	-1.08106	0.007196
320633	Zbtb26	zinc finger and BTB domain containing 26	0.852477	0.007196
67946	Spta6	spermatogenesis associated 6	-0.63328	0.007256
24075	Taf10	TATA-box binding protein associated factor 10	-0.66845	0.007273
68955	Srrm4	serine/arginine repetitive matrix 4	2.32841	0.007277
271813	Agbl2	ATP/GTP binding protein-like 2	-1.7641	0.007286
71777	Ing3	inhibitor of growth family, member 3	0.680672	0.007294
109305	Orai1	ORAI calcium release-activated calcium modulator 1	-0.79501	0.007312
67268	Myl12a	myosin, light chain 12A, regulatory, non-sarcomeric	-0.95882	0.007318
66237	Atp6v1g2	ATPase, H+ transporting, lysosomal V1 subunit G2	0.839345	0.007358
56436	Adrm1	adhesion regulating molecule 1	-0.69342	0.007363
56013	Srcin1	SRC kinase signaling inhibitor 1	4.429298	0.00737
69769	Tnfaip8l2	tumor necrosis factor, alpha-induced protein 8-like 2	-3.41814	0.007374
269016	Sh3rf2	SH3 domain containing ring finger 2	1.565322	0.00738
93732	Acox2	acyl-Coenzyme A oxidase 2, branched chain	3.447483	0.007384
108156	Mthfd1	methylenetetrahydrofolate dehydrogenase (NADP+ dependent),	1.240332	0.007468
72826	Fam76b	family with sequence similarity 76, member B	0.750216	0.007493
226518	Nmnat2	nicotinamide nucleotide adenyltransferase 2	1.092157	0.007505
76311	1110019D14Rik	RIKEN cDNA 1110019D14 gene	-1.29352	0.007534
66273	Aamdc	adipogenesis associated Mth938 domain containing	-1.28371	0.007534
100216343	Gm17501	predicted gene, 17501	-1.21819	0.007534
21991	Tpi1	triosephosphate isomerase 1	-0.85118	0.007534
18822	Plod1	procollagen-lysine, 2-oxoglutarate 5-dioxygenase 1	-1.2523	0.007553
22762	Zfpm2	zinc finger protein, multitype 2	0.86392	0.007563
239833	Lmln	leishmanolysin-like (metallopeptidase M8 family)	1.051076	0.007588
24004	Rai2	retinoic acid induced 2	-2.30828	0.007588
232086	Tmem150a	transmembrane protein 150A	0.899778	0.007588
232413	Clec12a	C-type lectin domain family 12, member a	-2.90375	0.007593
80891	Fcrls	Fc receptor-like 5, scavenger receptor	-5.56303	0.007611
12282	Hyou1	hypoxia up-regulated 1	-0.63723	0.007611
23917	Impdh1	inosine monophosphate dehydrogenase 1	-0.6909	0.007611
66464	Taf12	TATA-box binding protein associated factor 12	-0.76348	0.00764
78754	Galnt15	polypeptide N-acetylgalactosaminyltransferase 15	1.160907	0.007653
104346	Gas8	growth arrest specific 8	0.623097	0.007653
100503946	Gm10925	ATP synthase FO subunit 6 pseudogene	0.806778	0.007653
19663	Rbpms	RNA binding protein gene with multiple splicing	0.788173	0.007653
58185	Rsad2	radical S-adenosyl methionine domain containing 2	-2.36351	0.007653
232801	Lilra5	leukocyte immunoglobulin-like receptor, subfamily A (with TM di	-5.19791	0.00768
68427	Slc39a13	solute carrier family 39 (metal ion transporter), member 13	-0.8026	0.00768
15184	Hdac5	histone deacetylase 5	0.645493	0.007688
547150	6820431F20Rik	cadherin 11 pseudogene	0.91968	0.00774
67420	Far1	fatty acyl CoA reductase 1	-0.74903	0.007818
71685	Galnt14	polypeptide N-acetylgalactosaminyltransferase 14	-5.18463	0.007818
108699	Chn1	chimerin 1	-1.99757	0.007843
14082	Fadd	Fas (TNFRSF6)-associated via death domain	-0.60487	0.007852
12747	Clk1	CDC-like kinase 1	0.843806	0.007868
76737	Crel2	cysteine-rich with EGF-like domains 2	-1.11964	0.007905
67304	3110070M22Rik	RIKEN cDNA 3110070M22 gene	-2.11983	0.007907
14293	Fpr1	formyl peptide receptor 1	-5.71338	0.007961
22715	Zfp57	zinc finger protein 57	1.299216	0.007961
15220	Foxq1	forkhead box Q1	1.794042	0.007965
68032	Emc4	ER membrane protein complex subunit 4	-0.65318	0.007973
18810	Plec	plectin	-0.98979	0.007973
77015	Mpped2	metallophosphoesterase domain containing 2	2.697981	0.008007
57321	Terf2ip	telomeric repeat binding factor 2, interacting protein	0.721181	0.00803
236733	Usp11	ubiquitin specific peptidase 11	1.319386	0.008042
245877	Map7d1	MAP7 domain containing 1	-0.79887	0.008046
67943	Mesd	mesoderm development LRP chaperone	-0.77138	0.008056
319183	H2bc11	H2B clustered histone 11	-2.76545	0.008076
269424	Jade1	jade family PHD finger 1	-0.68103	0.008076

226422	Rab29	RAB29, member RAS oncogene family	-0.9145	0.008086
70078	Nol7	nucleolar protein 7	-0.84538	0.008099
18709	Pik3r2	phosphoinositide-3-kinase regulatory subunit 2	0.606886	0.00811
75767	Rab11fip1	RAB11 family interacting protein 1 (class I)	1.252662	0.008132
12802	Cnr2	cannabinoid receptor 2 (macrophage)	-3.29955	0.008144
13167	Dbi	diazepam binding inhibitor	-1.09387	0.008148
72281	Sh2d4a	SH2 domain containing 4A	-1.32416	0.00815
245857	Ssh3	slingshot protein phosphatase 3	0.962344	0.008152
58237	Nkain4	Na+/K+ transporting ATPase interacting 4	-1.34362	0.008156
107702	Rnh1	ribonuclease/angiogenin inhibitor 1	-0.7648	0.008156
101943	Sf3b3	splicing factor 3b, subunit 3	0.675085	0.008165
109050	Inka2	inka box actin regulator 2	-1.09361	0.008222
19244	Ptp4a2	protein tyrosine phosphatase 4a2	-0.61154	0.008249
16324	Inhbb	inhibin beta-B	-1.51442	0.008255
77604	Rbm12b2	RNA binding motif protein 12 B2	0.785026	0.008261
60504	Il21r	interleukin 21 receptor	-4.26762	0.00828
18993	Pou3f3	POU domain, class 3, transcription factor 3	-7.98379	0.00828
214601	Slc10a3	solute carrier family 10 (sodium/bile acid cotransporter family), r	-0.63399	0.008347
13682	Eif4a2	eukaryotic translation initiation factor 4A2	0.864936	0.008353
100038548	Gm10521	predicted gene 10521	-5.05941	0.00836
15483	Hsd11b1	hydroxysteroid 11-beta dehydrogenase 1	-2.40583	0.00836
11910	Atf3	activating transcription factor 3	-1.25625	0.008377
93723	Pcdhga11	protocadherin gamma subfamily A, 11	-3.41474	0.008377
58245	Gpr180	G protein-coupled receptor 180	-0.90137	0.008391
329436	Gm14461	predicted gene 14461	-4.47945	0.008394
67711	Nsmce1	NSE1 homolog, SMC5-SMC6 complex component	-1.11545	0.008423
78248	Armcx1	armadillo repeat containing, X-linked 1	-0.71769	0.008433
56372	1110004F10Rik	RIKEN cDNA 1110004F10 gene	-0.73921	0.008438
70209	Tmem143	transmembrane protein 143	-0.76052	0.008438
66269	Tmed6	transmembrane p24 trafficking protein 6	4.045875	0.008446
330216	Mblac1	metallo-beta-lactamase domain containing 1	-1.75552	0.008462
76804	Kdm4c	lysine (K)-specific demethylase 4C	0.680876	0.008471
99382	Abtb2	ankyrin repeat and BTB (POZ) domain containing 2	-1.29802	0.008479
213484	Nudt18	nudix (nucleoside diphosphate linked moiety X)-type motif 18	-0.98044	0.008504
14219	Ccn2	cellular communication network factor 2	-1.97803	0.008548
327978	Slfm5	schlafen 5	1.934592	0.008548
77975	Tmem50b	transmembrane protein 50B	-0.82183	0.008552
13134	Dach1	dachshund family transcription factor 1	-3.89028	0.008602
98711	Rdh10	retinol dehydrogenase 10 (all-trans)	-0.71332	0.008602
20408	Sh3gl3	SH3-domain GRB2-like 3	-1.31031	0.008602
320782	Tmem154	transmembrane protein 154	0.656866	0.008608
214048	Larp1b	La ribonucleoprotein domain family, member 1B	-1.35115	0.008609
68097	Dynl12	dynein light chain LC8-type 2	-0.65883	0.008625
170743	Tlr7	toll-like receptor 7	-2.44124	0.008625
114229	Kiss1r	KISS1 receptor	1.41537	0.008626
69572	Mfsd3	major facilitator superfamily domain containing 3	-0.88775	0.008636
319317	Snhg11	small nucleolar RNA host gene 11	-2.03786	0.00864
241556	Tspan18	tetraspanin 18	2.265168	0.008642
16764	Aff3	AF4/FMR2 family, member 3	-1.63231	0.008721
14735	Gpc4	glypican 4	-0.90122	0.008739
15116	Has1	hyaluronan synthase 1	-2.14922	0.008739
70625	Med26	mediator complex subunit 26	0.863602	0.008739
214779	Zfp879	zinc finger protein 879	1.770728	0.008739
269513	Nkain3	Na+/K+ transporting ATPase interacting 3	1.769117	0.008743
66671	Ccnh	cyclin H	-0.84794	0.008748
59029	Psmid14	proteasome (prosome, macropain) 26S subunit, non-ATPase, 14	-0.70732	0.008748
217258	Abca8a	ATP-binding cassette, sub-family A (ABC1), member 8a	2.141127	0.008763
71198	Otud1	OTU domain containing 1	-1.01046	0.008767
68597	Ccdc167	coiled-coil domain containing 167	1.170463	0.008767
52637	Cisd1	CDGSH iron sulfur domain 1	-0.67252	0.00882
71828	Gtf2a1l	general transcription factor IIA, 1-like	5.036544	0.00882
11596	Ager	advanced glycosylation end product-specific receptor	1.277155	0.008834
18457	Bloc1s6	biogenesis of lysosomal organelles complex-1, subunit 6, pallidin	-0.65137	0.008843
80797	Cica3a2	chloride channel accessory 3A2	-5.68594	0.008862
17105	Ly2	lysozyme 2	-3.68188	0.008876
12962	Crybb3	crystallin, beta B3	2.513317	0.008886
105833	Ccdc65	coiled-coil domain containing 65	-1.22714	0.00894
12228	Btg3	BTG anti-proliferation factor 3	0.747206	0.008962
100313945	Gm14866	predicted gene 14866	3.652294	0.008962
74596	Cds1	CDP-diacylglycerol synthase 1	-2.42281	0.008964
193385	Ripor2	RHO family interacting cell polarization regulator 2	-1.88293	0.00899
280668	Adam1a	a disintegrin and metallopeptidase domain 1a	1.831165	0.009028
12508	Cd53	CDS3 antigen	-2.34502	0.009083
93684	Selenof	selenoprotein F	-1.18456	0.009111
330627	Trim66	tripartite motif-containing 66	1.821057	0.009181

65964	Map3k20	mitogen-activated protein kinase kinase kinase 20	-0.65828	0.0092
12505	Cd44	CD44 antigen	-1.50994	0.009298
17005	Ltk	leukocyte tyrosine kinase	2.390097	0.009298
105242443	Gm38708	predicted gene, 38708	-1.98351	0.009298
11499	Adam5	a disintegrin and metallopeptidase domain 5	-1.52527	0.009329
667171	Gm8493	predicted gene 8493	1.687883	0.009355
52708	Zfp410	zinc finger protein 410	0.735674	0.009378
18671	Abcb1a	ATP-binding cassette, sub-family B (MDR/TAP), member 1A	-2.38193	0.009387
12491	Cd36	CD36 molecule	-3.81046	0.009387
67171	Dram2	DNA-damage regulated autophagy modulator 2	-0.76043	0.009387
667281	H60b	histocompatibility 60b	-3.12658	0.009389
232440	H2aj	H2I.A histone	-0.75345	0.009431
214133	Tet2	tet methylcytosine dioxygenase 2	0.993837	0.009472
380686	Cnrip1	cannabinoid receptor interacting protein 1	-0.9283	0.009472
68774	Ms4a6d	membrane-spanning 4-domains, subfamily A, member 6D	-3.09784	0.009472
17384	Mmp10	matrix metallopeptidase 10	2.1196	0.00953
242509	Bnc2	basonuclin 2	0.851519	0.00959
20220	Sap18	Sin3-associated polypeptide 18	-0.77388	0.009601
102639339	Gm26559	predicted gene, 26559	-2.19471	0.009618
627214	Insyn2a	inhibitory synaptic factor 2A	-2.58437	0.009651
75812	Tasp1	taspace, threonine aspartase 1	-0.85096	0.009669
171282	Acot4	acyl-CoA thioesterase 4	1.838218	0.009676
625901	Gm6634	predicted gene 6634	-1.40126	0.009705
666237	Gm7997	lactate dehydrogenase A pseudogene	1.950512	0.009705
66175	Mustn1	musculoskeletal, embryonic nuclear protein 1	-2.2383	0.009705
57247	Zfp276	zinc finger protein (C2H2 type) 276	0.893329	0.009705
102644	Oaf	out at first homolog	-1.49404	0.009708
18783	Pla2g4a	phospholipase A2, group IVA (cytosolic, calcium-dependent)	-1.22467	0.009718
11927	Atox1	antioxidant 1 copper chaperone	-0.98437	0.009719
29858	Pmm1	phosphomannomutase 1	-0.69278	0.009729
108058	Camk2d	calcium/calmodulin-dependent protein kinase II, delta	-0.60218	0.009739
13607	Eda	ectodysplasin-A	-1.05608	0.009739
24045	Scamp3	secretory carrier membrane protein 3	-0.64458	0.009739
100043489	1300002E11Rik	RIKEN cDNA 1300002E11 gene	0.984836	0.009794
433408	Gm13375	predicted gene 13375	-1.07414	0.009795
71639	4930430E12Rik	RIKEN cDNA 4930430E12 gene	-3.66261	0.009815
236727	Slc9a7	solute carrier family 9 (sodium/hydrogen exchanger), member 7	-2.60899	0.009815
107522	Ece2	endothelin converting enzyme 2	-1.88713	0.009817
50709	H1f4	H1.4 linker histone, cluster member	-2.06488	0.00983
224794	Enpp4	ectonucleotide pyrophosphatase/phosphodiesterase 4	1.019105	0.009854
17474	Clec4d	C-type lectin domain family 4, member d	-4.01697	0.009891
243780	Dennd11	DENN domain containing 11	1.105255	0.009898
16404	Itga7	integrin alpha 7	-2.1847	0.009923
26457	Slc27a1	solute carrier family 27 (fatty acid transporter), member 1	0.757481	0.009923
236794	Slc9a6	solute carrier family 9 (sodium/hydrogen exchanger), member 6	-0.88898	0.009923
71797	Chst13	carbohydrate sulfotransferase 13	-5.07217	0.009943
71566	Clmp	CXADR-like membrane protein	0.773209	0.009943
77836	Mlana	melan-A	-2.84259	0.009943
503610	Zdhhc18	zinc finger, DHHC domain containing 18	-0.79228	0.009943
74120	Zfp263	zinc finger protein 263	0.685892	0.009943
69721	Nkiras1	NFKB inhibitor interacting Ras-like protein 1	-0.96147	0.009984
20194	S100a10	S100 calcium binding protein A10 (calpactin)	-1.01304	0.009993
77996	Cutal	cutA divalent cation tolerance homolog-like	-4.72691	0.009994
264134	Ttc26	tetratricopeptide repeat domain 26	-0.69538	0.010015
223672	Apol9a	apolipoprotein L 9a	-2.21362	0.010016
66625	Pnir	PNN interacting serine/arginine-rich	0.90828	0.010021
170826	Ppargc1b	peroxisome proliferative activated receptor, gamma, coactivator	1.484113	0.010021
107321	Lpxn	leupaxin	-2.22641	0.010045
56273	Pex14	peroxisomal biogenesis factor 14	-0.92191	0.010045
224585	Zfp160	zinc finger protein 160	0.675706	0.010078
27226	Pla2g7	phospholipase A2, group VII (platelet-activating factor acetylhyd	-4.71417	0.010088
11658	Alcam	activated leukocyte cell adhesion molecule	-2.40972	0.010119
93876	Pcdhb5	protocadherin beta 5	0.873652	0.010119
66390	Prelid3b	PRELI domain containing 3B	-0.66823	0.010119
70503	Ddo	D-aspartate oxidase	-3.82284	0.010197
407819	BC031181	cDNA sequence BC031181	-1.00861	0.010198
56421	Pfkp	phosphofructokinase, platelet	-0.9849	0.010198
16009	Igfbp3	insulin-like growth factor binding protein 3	-1.84285	0.010234
326623	Tnfsf15	tumor necrosis factor (ligand) superfamily, member 15	-4.10778	0.010244
57296	Psm8	proteasome (prosome, macropain) 26S subunit, non-ATPase, 8	-0.917	0.010265
66154	Tmem14c	transmembrane protein 14C	-0.74546	0.010265
65116	Prrg2	proline-rich Gla (G-carboxylglutamic acid) polypeptide 2	-1.1684	0.010274
74012	Rap2b	RAP2B, member of RAS oncogene family	-0.74622	0.010274
18040	Nefm	neurofilament, medium polypeptide	3.201929	0.010345
71398	Tasl	TLR adaptor interacting with endolysosomal SLC15A4	-4.15917	0.010345

330908	Opcml	opioid binding protein/cell adhesion molecule-like	2.675321	0.010365
108672	Zdhhc15	zinc finger, DHHC domain containing 15	-2.25195	0.010392
17133	Maff	v-maf musculoaponeurotic fibrosarcoma oncogene family, protein 1	-0.89358	0.010437
22751	Zfp90	zinc finger protein 90	0.954833	0.010444
230075	Ndufb6	NADH:ubiquinone oxidoreductase subunit B6	-0.64249	0.010447
54384	Mtmr7	myotubularin related protein 7	1.917026	0.010454
20650	Sntb2	syntrophin, basic 2	1.220505	0.010498
216820	Dhrs7b	dehydrogenase/reductase (SDR family) member 7B	-0.76137	0.010596
72552	Hsd11	hydroxysteroid dehydrogenase like 1	0.867542	0.010596
245350	AA414768	expressed sequence AA414768	-1.48079	0.010618
21955	Tnnt1	troponin T1, skeletal, slow	-2.89055	0.010737
18391	Sigmar1	sigma non-opioid intracellular receptor 1	-0.68519	0.010777
12549	Arhgap31	Rho GTPase activating protein 31	1.136901	0.010797
58991	Ghrl	ghrelin	2.357632	0.010801
21981	Ppp1r13b	protein phosphatase 1, regulatory subunit 13B	1.181424	0.010802
22414	Wnt2b	wingless-type MMTV integration site family, member 2B	-1.46991	0.010836
58242	Nudt11	nudix (nucleoside diphosphate linked moiety X)-type motif 11	-4.99686	0.010877
16589	Uhmk1	U2AF homology motif (UHM) kinase 1	-0.72249	0.010888
209086	Samd9l	sterile alpha motif domain containing 9-like	-0.61218	0.010893
100503043	Armxc4	armadillo repeat containing, X-linked 4	-1.69844	0.010899
12267	C3ar1	complement component 3a receptor 1	-2.60139	0.010899
12260	C1qb	complement component 1, q subcomponent, beta polypeptide	-4.12528	0.010934
78771	Mctp1	multiple C2 domains, transmembrane 1	-2.72401	0.010942
332579	Card9	caspase recruitment domain family, member 9	-2.28994	0.010961
73738	Haus7	HAUS augmin-like complex, subunit 7	-1.09653	0.011008
20361	Sema7a	sema domain, immunoglobulin domain (Ig), and GPI membrane anchor	-1.74427	0.011008
234699	Edc4	enhancer of mRNA decapping 4	0.644106	0.011011
17882	Myh2	myosin, heavy polypeptide 2, skeletal muscle, adult	-6.17275	0.011017
20454	St3gal5	ST3 beta-galactoside alpha-2,3-sialyltransferase 5	-0.73196	0.011024
20848	Stat3	signal transducer and activator of transcription 3	0.679334	0.011054
235134	Nfrkb	nuclear factor related to kappa B binding protein	0.823292	0.011079
624223	Gm13688	predicted gene 13688	-2.37525	0.011107
76454	Fbxo31	F-box protein 31	0.760683	0.011141
117591	Slc2a9	solute carrier family 2 (facilitated glucose transporter), member 9	-1.03186	0.011169
434179	Zfp975	zinc finger protein 975	0.801195	0.011213
22213	Ube2g2	ubiquitin-conjugating enzyme E2G 2	-0.77584	0.011124
20200	S100a6	S100 calcium binding protein A6 (calcyclin)	-1.06328	0.011427
107371	Exoc6	exocyst complex component 6	0.973557	0.011434
70237	Bhlhb9	basic helix-loop-helix domain containing, class B9	0.973723	0.011439
72108	Ddhd2	DDHD domain containing 2	0.606143	0.011455
109624	Cald1	caldesmon 1	-1.07451	0.011482
30878	Apln	apelin	1.792593	0.011544
66881	Pcyox1	prenylcysteine oxidase 1	-0.62913	0.011551
18795	Plcb1	phospholipase C, beta 1	0.964195	0.011583
20520	Slc22a5	solute carrier family 22 (organic cation transporter), member 5	1.009588	0.011605
213469	Lgi3	leucine-rich repeat LGI family, member 3	-2.24777	0.011668
66834	Acot13	acyl-CoA thioesterase 13	-0.8188	0.011682
17084	Ly86	lymphocyte antigen 86	-3.66392	0.011721
16534	Kcnn4	potassium intermediate/small conductance calcium-activated channel subunit 4	-2.38551	0.011822
328830	A530064D06Rik	RIKEN cDNA A530064D06 gene	-5.4373	0.011831
12554	Cdh13	cadherin 13	-2.42853	0.011848
218121	Mboat1	membrane bound O-acyltransferase domain containing 1	1.651477	0.011904
67856	Echdc3	enoyl Coenzyme A hydratase domain containing 3	0.713891	0.012152
50766	Crim1	cysteine rich transmembrane BMP regulator 1 (chordin like)	-0.87841	0.012184
69274	Ctdspl	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A)	0.66027	0.012199
22289	Kdm6a	lysine (K)-specific demethylase 6A	0.794228	0.012206
105244290	Gm39929	predicted gene, 39929	2.20804	0.012212
216725	Adamts2	a disintegrin-like and metalloproteinase (reprolysin type) with thrombospondin type 1 motifs 2	-1.1536	0.012218
235323	Usp28	ubiquitin specific peptidase 28	0.834884	0.012218
54169	Kat6b	K(lysine) acetyltransferase 6B	0.829547	0.012282
53320	Folh1	folate hydrolase 1	-4.18233	0.012293
621823	Psme2b	protease (prosome, macropain) activator subunit 2B	-1.7999	0.012293
69441	Efcab15	EF-hand calcium binding domain 15	1.523159	0.012298
16997	Ltbp2	latent transforming growth factor beta binding protein 2	-0.884	0.012316
56193	Plek	pleckstrin	-2.35607	0.012316
15228	Foxg1	forkhead box G1	-3.73337	0.012317
15497	Hsd3b6	hydroxy-delta-5-steroid dehydrogenase, 3 beta- and steroid delta-5 isomerase 6	-6.03448	0.012317
321000	Lrif1	ligand dependent nuclear receptor interacting factor 1	-0.60495	0.012317
100126034	Gm10644	predicted gene 10644	3.312161	0.012318
75210	Prr3	proline-rich polypeptide 3	0.61064	0.012323
76967	2700049A03Rik	RIKEN cDNA 2700049A03 gene	0.782292	0.012331
73729	Zfp383	zinc finger protein 383	0.786124	0.012356
12176	Snip3	BCL2/adenovirus E1B interacting protein 3	-1.6274	0.012369
234594	Cnot1	CCR4-NOT transcription complex, subunit 1	0.92464	0.012372
17314	Mgmt	O-6-methylguanine-DNA methyltransferase	-1.32634	0.012372

98733	Obsl1	obscurin-like 1	0.796946	0.012372
76612	Lrrc27	leucine rich repeat containing 27	-1.4401	0.012386
216871	Gltpd2	glycolipid transfer protein domain containing 2	-5.09541	0.012398
94040	Cimn	calmin	1.11604	0.012423
76497	Ppp1r11	protein phosphatase 1, regulatory inhibitor subunit 11	-0.62672	0.012423
235505	Cd109	CD109 antigen	-1.97741	0.012466
14867	Gstm6	glutathione S-transferase, mu 6	-2.87274	0.012509
26383	Fto	fat mass and obesity associated	0.626401	0.012516
269233	Fam171a1	family with sequence similarity 171, member A1	-1.03691	0.012558
13522	Adam28	a disintegrin and metallopeptidase domain 28	3.61773	0.012583
14802	Gria4	glutamate receptor, ionotropic, AMPA4 (alpha 4)	-1.79247	0.012583
66147	Necap2	NECAP endocytosis associated 2	-0.80041	0.012585
12237	Bub3	BUB3 mitotic checkpoint protein	-0.70868	0.0126
11891	Rab27a	RAB27A, member RAS oncogene family	1.153024	0.01261
12273	CSar1	complement component 5a receptor 1	-2.76376	0.012685
231600	Chfr	checkpoint with forkhead and ring finger domains	-0.7075	0.012685
74175	Crct1	cysteine-rich C-terminal 1	1.363065	0.012685
100503924	Fcor	Foxo1 corepressor	0.951655	0.012685
70153	2210016F16Rik	RIKEN cDNA 2210016F16 gene	-0.9015	0.012781
12495	Entpd1	ectonucleoside triphosphate diphosphohydrolase 1	-2.53752	0.012781
98952	Fam102a	family with sequence similarity 102, member A	0.781435	0.012782
100503482	Gm649	melanoma antigen family A pseudogene	-4.67476	0.012794
13642	Efnb2	ephrin B2	0.651281	0.012865
66329	Susd3	sushi domain containing 3	-3.62997	0.012872
100043424	Morrbid	myeloid RNA regulator of BCL2L11 induced cell death	-0.77342	0.012895
12517	Cd72	CD72 antigen	-2.58797	0.012912
18194	Nsdhl	NAD(P) dependent steroid dehydrogenase-like	-0.80779	0.01296
216858	Kctd11	potassium channel tetramerisation domain containing 11	-0.63145	0.013013
108735	Sft2d2	SFT2 domain containing 2	0.621335	0.013026
240041	Zfp945	zinc finger protein 945	1.007258	0.013029
18294	Ogg1	8-oxoguanine DNA-glycosylase 1	-0.68221	0.013061
74008	Argg	arylsulfatase G	-1.49949	0.013062
100502698	Rubcn	RUN domain and cysteine-rich domain containing, Beclin 1-intera	0.603795	0.013142
12040	Bckdhhb	branched chain ketoacid dehydrogenase E1, beta polypeptide	0.725441	0.013162
99899	Ifi44	interferon-induced protein 44	-3.23392	0.01318
18584	Pde8a	phosphodiesterase 8A	-1.56053	0.013213
319781	9530051G07Rik	RIKEN cDNA 9530051G07 gene	-2.73148	0.01324
56405	Dusp14	dual specificity phosphatase 14	-1.30152	0.01324
22779	Ikzf2	IKAROS family zinc finger 2	1.12943	0.013241
69123	Eci3	enoyl-Coenzyme A delta isomerase 3	2.537387	0.013255
68846	Rnf208	ring finger protein 208	-5.0678	0.013255
18725	Pira2	paired-Ig-like receptor A2	-3.15466	0.013268
23996	Psmc4	proteasome (prosome, macropain) 26S subunit, ATPase, 4	-0.71217	0.013284
100043387	Gm14305	predicted gene 14305	-0.62586	0.013288
231630	Ficd	FIC domain containing	-0.94771	0.01335
57896	Krcc1	lysine-rich coiled-coil 1	-0.67444	0.013364
14688	Gnb1	guanine nucleotide binding protein (G protein), beta 1	-0.65258	0.013364
223775	Pim3	proviral integration site 3	0.683494	0.01337
18611	Pea15a	phosphoprotein enriched in astrocytes 15A	-0.72625	0.013418
19302	Pex2	peroxisomal biogenesis factor 2	-0.73702	0.013423
21854	Timm17a	translocase of inner mitochondrial membrane 17a	-0.6415	0.013486
319991	Kif6	kinesin family member 6	1.162738	0.01351
20296	Ccl2	chemokine (C-C motif) ligand 2	-1.52491	0.013525
212996	Galnt17	polypeptide N-acetylgalactosaminyltransferase 17	-1.08177	0.013525
100036535	Gm9913	predicted gene 9913	-2.0128	0.013525
13043	Ctnn	cortactin	-0.64588	0.013544
13033	Ctsd	cathepsin D	-1.50784	0.013578
22139	Ttr	transthyretin	4.887353	0.013595
70415	Stk26	serine/threonine kinase 26	2.153289	0.013596
66074	Tmem167	transmembrane protein 167	-0.70979	0.013626
69922	Vrk2	vaccinia related kinase 2	-0.78983	0.013669
210622	Pamr1	peptidase domain containing associated with muscle regeneratio	-0.91529	0.013678
13180	Pcbd1	pterin 4 alpha carbinolamine dehydratase/dimerization cofactor	-2.8288	0.013678
328977	Zfp532	zinc finger protein 532	0.756091	0.013678
22688	Zfp26	zinc finger protein 26	0.9253	0.013706
22413	Wnt2	wingless-type MMTV integration site family, member 2	-4.43603	0.013735
22351	Vill	villin-like	1.409965	0.013743
14661	Glud1	glutamate dehydrogenase 1	0.815782	0.013786
27472	Slc16a10	solute carrier family 16 (monocarboxylic acid transporters), mem	0.680374	0.013786
23827	Bpnt1	3'(2'), 5'-bisphosphate nucleotidase 1	-0.6035	0.013823
56749	Dhodh	dihydroorotate dehydrogenase	0.732153	0.013823
72167	Thumpd2	THUMP domain containing 2	0.777709	0.013823
20197	S100a3	S100 calcium binding protein A3	-2.01952	0.013862
69534	Avp1	arginine vasopressin-induced 1	-0.7767	0.013934
50781	Dkk3	dickkopf WNT signaling pathway inhibitor 3	-2.46629	0.013934

100043899	R3hdm1	R3H domain containing-like	2.257405	0.013934
66384	Srp19	signal recognition particle 19	-0.74249	0.013943
216350	Tspan8	tetraspanin 8	2.771604	0.013957
19200	Pstpip1	proline-serine-threonine phosphatase-interacting protein 1	1.31196	0.013958
107765	Ankrd1	ankyrin repeat domain 1 (cardiac muscle)	-2.11251	0.013966
12390	Cav2	caveolin 2	-0.72728	0.013968
80837	Rhoj	ras homolog family member J	-0.86998	0.013968
13853	Epm2a	epilepsy, progressive myoclonic epilepsy, type 2 gene alpha	-1.90401	0.013969
58998	Nectin3	nectin cell adhesion molecule 3	-0.80822	0.014016
66169	Tomm7	translocase of outer mitochondrial membrane 7	-1.03055	0.014136
104625	Cnot6	CCR4-NOT transcription complex, subunit 6	0.711398	0.014191
66065	Hsd17b14	hydroxysteroid (17-beta) dehydrogenase 14	2.633203	0.014191
20307	Ccl8	chemokine (C-C motif) ligand 8	-4.13596	0.0142
102632669	Gm16206	predicted gene 16206	2.200383	0.01426
100043771	Gm10651	predicted pseudogene 10651	3.871238	0.014262
12527	Cd9	CD9 antigen	-1.56385	0.014286
12182	Bst1	bone marrow stromal cell antigen 1	-3.03422	0.014292
54373	Prss16	protease, serine 16 (thymus)	1.399957	0.014311
80901	Cxcr6	chemokine (C-X-C motif) receptor 6	2.795035	0.014376
320253	Marchf3	membrane associated ring-CH-type finger 3	-0.8978	0.01439
67472	Mtfr1	mitochondrial fission regulator 1	-0.60585	0.014593
78455	Helz	helicase with zinc finger domain	0.840644	0.014609
12540	Cdc42	cell division cycle 42	-0.64919	0.01463
70737	Cgn	cingulin	1.449668	0.01466
94109	Csmd1	CUB and Sushi multiple domains 1	-3.85362	0.01466
72669	2810032G03Rik	RIKEN cDNA 2810032G03 gene	-1.58985	0.014703
320923	Map7d3	MAP7 domain containing 3	-2.34344	0.014751
100048534	Cfap43	cilia and flagella associated protein 43	-0.69161	0.014897
68865	Arv1	ARV1 homolog, fatty acid homeostasis modulator	1.083881	0.014905
56644	Clec7a	C-type lectin domain family 7, member a	-2.80102	0.014905
105439	Slain1	SLAIN motif family, member 1	2.438323	0.014905
232223	Txnrd3	thioredoxin reductase 3	0.761176	0.014905
68119	Cmtm3	KLFL-like MARVEL transmembrane domain containing 3	0.949348	0.014947
76432	2310001H17Rik	RIKEN cDNA 2310001H17 gene	-1.45297	0.014962
68106	Nt5c3b	5'-nucleotidase, cytosolic IIIB	0.770499	0.014962
15465	Hrh1	histamine receptor H1	-2.05685	0.014978
11501	Adam8	a disintegrin and metallopeptidase domain 8	-2.29143	0.015012
433790	Gm13241	carnitine deficiency-associated gene expressed in ventricle 3 psei	1.927633	0.015034
217864	Rcor1	REST corepressor 1	0.717254	0.015034
72297	B3gnt3	UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 3	-1.65274	0.015044
15529	Sdc2	syndecan 2	-0.85408	0.015109
270106	Rpl13	ribosomal protein L13	0.648209	0.015137
17132	Maf	avian musculoaponeurotic fibrosarcoma oncogene homolog	2.003158	0.015167
17450	Morc1	microorchidia 1	3.074228	0.015167
73658	Spns1	spinster homolog 1	-0.60112	0.015178
434437	Amt	aminomethyltransferase	1.126001	0.015265
102638882	Gm35339	predicted gene, 35339	1.195704	0.015288
216618	Cfap36	cilia and flagella associated protein 36	-0.68936	0.01533
16420	Itgb6	integrin beta 6	-5.00254	0.015383
209047	Gipc3	GIPC PDZ domain containing family, member 3	-2.40545	0.015385
19876	Robo1	roundabout guidance receptor 1	-1.89325	0.015409
54366	Ctnnal1	catenin (cadherin associated protein), alpha-like 1	1.611442	0.015435
432555	Gm5431	predicted gene 5431	-3.03192	0.015438
106522	Pkdcc	protein kinase domain containing, cytoplasmic	1.049775	0.015438
70804	Pgrmc2	progesterone receptor membrane component 2	-1.2443	0.015455
101056094	Gm21811	predicted gene, 21811	0.776867	0.015456
18830	Pltp	phospholipid transfer protein	-0.79891	0.015486
52864	Slx4	SLX4 structure-specific endonuclease subunit homolog (S. cerevisiae)	0.792959	0.015525
19727	Rfxank	regulatory factor X-associated ankyrin-containing protein	0.639087	0.015542
66493	Mrpl51	mitochondrial ribosomal protein L51	-0.66035	0.015628
100504632	Gm11478	predicted gene 11478	1.088329	0.015643
330427	9330102E08Rik	RIKEN cDNA 9330102E08 gene	-1.24992	0.015825
244416	Ppp1r3b	protein phosphatase 1, regulatory subunit 3B	-1.21291	0.015883
67861	Akr1b10	aldo-keto reductase family 1, member B10 (aldose reductase)	-0.77802	0.015907
207175	Cetn4	centrin 4	-1.85821	0.015907
252967	Ropn1l	ropporin 1-like	-1.13295	0.015948
320265	Tafa1	TAFA chemokine like family member 1	-4.99627	0.01598
53857	Tuba8	tubulin, alpha 8	-2.85745	0.015982
329480	Wt1os	Wilms tumor 1 homolog, opposite strand	3.061951	0.016053
11981	Atp9a	ATPase, class II, type 9A	-1.45239	0.016117
216867	Slc16a11	solute carrier family 16 (monocarboxylic acid transporters), member 11	1.58912	0.01612
407243	Tmem189	transmembrane protein 189	-0.8387	0.016165
231668	Vsig10	V-set and immunoglobulin domain containing 10	0.641821	0.016178
68366	Tmem129	transmembrane protein 129	-0.63431	0.016227
16835	Ldlr	low density lipoprotein receptor	-0.68815	0.016239

230857	Ece1	endothelin converting enzyme 1	-1.12917	0.016252
11606	Agt	angiotensinogen (serpin peptidase inhibitor, clade A, member 8)	-3.06011	0.016261
69029	Smdt1	single-pass membrane protein with aspartate rich tail 1	-0.84451	0.016261
668108	Gvin-ps3	GTPase, very large interferon inducible, pseudogene 3	2.14763	0.01627
54711	Plagl2	pleiomorphic adenoma gene-like 2	0.816411	0.016318
14086	Fscn1	fascin actin-bundling protein 1	1.050722	0.016359
66690	Tmem186	transmembrane protein 186	0.69438	0.016381
13867	ErbB3	erb-b2 receptor tyrosine kinase 3	1.684256	0.0164
71946	Endod1	endonuclease domain containing 1	-1.07399	0.016446
68991	Ssu72	Ssu72 RNA polymerase II CTD phosphatase homolog (yeast)	-0.77562	0.016453
70088	Meaf6	MYST/Esa1-associated factor 6	0.758113	0.016545
22025	Nr2c1	nuclear receptor subfamily 2, group C, member 1	0.766538	0.016545
791300	Gm9752	predicted gene 9752	1.501898	0.016546
17390	Mmp2	matrix metalloproteinase 2	-1.56908	0.016573
64075	Smoc1	SPARC related modular calcium binding 1	-3.21995	0.016634
12823	Col19a1	collagen, type XIX, alpha 1	-2.04976	0.016651
58233	Dnaj4	DnaJ heat shock protein family (Hsp40) member A4	-0.65765	0.016674
666537	Gm8153	glyceraldehyde-3-phosphate dehydrogenase pseudogene	4.329222	0.016674
66607	Ms4a4d	membrane-spanning 4-domains, subfamily A, member 4D	-1.0917	0.016674
194744	Slc25a43	solute carrier family 25, member 43	-1.75671	0.016674
26358	Aldh1a7	aldehyde dehydrogenase family 1, subfamily A7	-1.82088	0.016715
20375	Spi1	spleen focus forming virus (SFFV) proviral integration oncogene	-2.77581	0.016883
26611	Rcn2	reticulocalbin 2	-0.89411	0.017026
77006	Ddrgk1	DDRKG domain containing 1	-0.88723	0.01705
320472	Ppm1e	protein phosphatase 1E (PP2C domain containing)	-1.41697	0.017072
20557	Sfn3	schlafen 3	2.677944	0.017073
170755	Sgk3	serum/glucocorticoid regulated kinase 3	-1.12776	0.017113
26877	B3galt1	UDP-Gal:betaGlcNAc beta 1,3-galactosyltransferase, polypeptide	1.050827	0.017124
19171	Psmb10	proteasome (prosome, macropain) subunit, beta type 10	0.67262	0.01721
19141	Lgmn	legumain	-1.45206	0.017271
234684	Lrrc29	leucine rich repeat containing 29	1.41542	0.017271
73144	Mir100hg	Mir100 Mirlet7a-2 Mir125b-1 cluster host gene	1.329696	0.017346
66388	Cutc	cutC copper transporter	0.838441	0.017354
11857	Arhgdib	Rho, GDP dissociation inhibitor (GDI) beta	-1.55944	0.017355
74711	TtlI9	tubulin tyrosine ligase-like family, member 9	-2.72667	0.017355
72607	Usp13	ubiquitin specific peptidase 13 (isopeptidase T-3)	-0.61554	0.017355
80904	Dtx3	deltex 3, E3 ubiquitin ligase	0.792022	0.017378
104836	Cbl11	Casitas B-lineage lymphoma-like 1	0.739982	0.017393
241311	Zbtb34	zinc finger and BTB domain containing 34	0.790407	0.017445
52838	Dnlz	DNL-type zinc finger	-0.65723	0.017454
234725	Zfp612	zinc finger protein 612	0.816345	0.017454
74165	Fbxl22	F-box and leucine-rich repeat protein 22	-2.02201	0.017493
56378	Arpc3	actin related protein 2/3 complex, subunit 3	-0.63947	0.017496
225010	Lclat1	lysocardiolipin acyltransferase 1	-0.68514	0.017496
70727	Rasgef1a	RasGEF domain family, member 1A	1.464548	0.017502
22626	Slc23a3	solute carrier family 23 (nucleobase transporters), member 3	1.70567	0.017503
170625	Snx18	sorting nexin 18	-0.85752	0.017532
16419	Itgb5	integrin beta 5	-0.83675	0.017544
70750	Kdsr	3-ketodihydrosphingosine reductase	-0.61821	0.017544
56334	Tmed2	transmembrane p24 trafficking protein 2	-0.65997	0.017544
100039805	D5Ert605e	DNA segment, Chr 5, ERATO Doi 605, expressed	-2.31166	0.017562
85031	Pla1a	phospholipase A1 member A	1.747848	0.017566
94089	Trim7	tripartite motif-containing 7	-0.87904	0.01759
239556	Cacna1i	calcium channel, voltage-dependent, alpha 1I subunit	2.760106	0.017599
116847	Prelp	proline arginine-rich end leucine-rich repeat	-1.89057	0.017602
170644	Ubn1	ubnuclein 1	0.866789	0.017658
545551	BC021767	cingulin pseudogene	2.033086	0.017699
109901	Cela1	chymotrypsin-like elastase family, member 1	1.688479	0.017764
17096	Lyn	LYN proto-oncogene, Src family tyrosine kinase	-0.7027	0.017772
60507	Qtrt1	queuine tRNA-ribosyltransferase catalytic subunit 1	0.65428	0.017786
60344	Fign	fidgetin	1.445636	0.017789
242466	Zfp462	zinc finger protein 462	1.089313	0.01779
54614	Prpf40b	pre-mRNA processing factor 40B	0.631337	0.017818
53416	Stk39	serine/threonine kinase 39	-1.32574	0.017818
23833	Cd52	CD52 antigen	-3.19827	0.017863
320795	Pkn1	protein kinase N1	0.645516	0.017863
22095	Tshr	thyroid stimulating hormone receptor	-4.10122	0.017897
21873	Tjp2	tight junction protein 2	-1.1001	0.017989
102631843	Gm30074	predicted gene, 30074	-2.65132	0.018032
77087	Ankrd11	ankyrin repeat domain 11	0.79117	0.018095
72368	Borcs8	BLOC-1 related complex subunit 8	0.778816	0.018099
14827	Pdia3	protein disulfide isomerase associated 3	-0.84629	0.018099
16582	Kifc3	kinesin family member C3	-0.83766	0.018162
56314	Zfp113	zinc finger protein 113	0.714664	0.01823
210503	Zfp677	zinc finger protein 677	0.631688	0.018309

20042	Rps12	ribosomal protein S12	0.727267	0.018333
434325	Tmem221	transmembrane protein 221	-1.34098	0.018333
12416	Cbx2	chromobox 2	1.007675	0.018372
241226	Itga8	integrin alpha 8	-4.39066	0.018391
333654	Ppp1r13l	protein phosphatase 1, regulatory subunit 13 like	-0.65269	0.018391
12793	Cnih1	cornichon family AMPA receptor auxiliary protein 1	-0.84698	0.018426
13349	Ackr1	atypical chemokine receptor 1 (Duffy blood group)	3.107179	0.018534
12831	Col5a1	collagen, type V, alpha 1	-0.93663	0.01862
68267	Slc25a22	solute carrier family 25 (mitochondrial carrier, glutamate), memt	-0.77133	0.018634
68212	Tmbim4	transmembrane BAX inhibitor motif containing 4	-0.7514	0.018677
14536	Nr6a1	nuclear receptor subfamily 6, group A, member 1	0.95248	0.018698
320879	B230217O12Rik	RIKEN cDNA B230217O12 gene	-1.16702	0.018706
233912	Armc5	armadillo repeat containing 5	-0.60458	0.01872
319164	H2ac6	H2A clustered histone 6	-1.41193	0.018731
57890	Il17re	interleukin 17 receptor E	-1.38127	0.018731
208884	Zdhhc9	zinc finger, DHHC domain containing 9	-0.65679	0.018731
100504121	Med9os	mediator complex subunit 9, opposite strand	-2.34539	0.018739
64602	Ireb2	iron responsive element binding protein 2	0.6531	0.018833
232035	Ccser1	coiled-coil serine rich 1	1.45019	0.018851
54637	Praf2	PRA1 domain family 2	-0.86837	0.018851
19267	Ptpre	protein tyrosine phosphatase, receptor type, E	-2.46019	0.018851
387609	Zhx2	zinc fingers and homeoboxes 2	0.60256	0.018972
240725	Sulf1	sulfatase 1	-1.52536	0.018999
252903	Ap1s3	adaptor-related protein complex AP-1, sigma 3	1.189061	0.019017
66494	Prelid1	PRELI domain containing 1	-0.73298	0.01903
234595	Slc38a7	solute carrier family 38, member 7	0.830355	0.01903
80297	Sptbn4	spectrin beta, non-erythrocytic 4	-3.25354	0.019035
15234	Hgf	hepatocyte growth factor	-2.10555	0.019089
408062	Zfp873	zinc finger protein 873	0.874514	0.019089
100502938	Gm17491	predicted gene, 17491	1.081733	0.019165
230775	Adgrb2	adhesion G protein-coupled receptor B2	1.48955	0.019292
70785	Dennd1c	DENN/MADD domain containing 1C	-2.99676	0.019303
380836	Mrs2	MRS2 magnesium transporter	-0.65217	0.01937
69206	2010016118Rik	RIKEN cDNA 2010016118 gene	2.587821	0.019387
19264	Ptprc	protein tyrosine phosphatase, receptor type, C	-2.6507	0.019573
378702	Serf2	small EDRK-rich factor 2	-1.0996	0.019573
16981	Lrrn3	leucine rich repeat protein 3, neuronal	-4.27369	0.019577
244059	Chd2	chromodomain helicase DNA binding protein 2	0.680272	0.019642
17436	Me1	malic enzyme 1, NADP(+)-dependent, cytosolic	-0.64976	0.019665
11491	Adam17	a disintegrin and metallopeptidase domain 17	0.772976	0.019682
17119	Mxd1	MAX dimerization protein 1	0.679674	0.019696
100503569	Gm16754	predicted gene, 16754	1.161267	0.0197
22671	Rnf112	ring finger protein 112	2.035777	0.019721
208171	Tmprss7	transmembrane serine protease 7	-1.77888	0.019721
81877	Tnxb	tenascin XB	-1.3862	0.019752
259300	Ehd2	EH-domain containing 2	-0.60151	0.019815
71838	Phf7	PHD finger protein 7	-1.0225	0.019836
14783	Grb10	growth factor receptor bound protein 10	-2.16627	0.01985
66368	Rtca	RNA 3'-terminal phosphate cyclase	-0.77118	0.019872
216049	Zfp365	zinc finger protein 365	-1.10813	0.019915
17476	Mpeg1	macrophage expressed gene 1	-2.40182	0.01993
320172	E230016M11Rik	RIKEN cDNA E230016M11 gene	1.451378	0.01998
54403	Slc4a4	solute carrier family 4 (anion exchanger), member 4	-1.37722	0.020015
78284	Creb3l4	cAMP responsive element binding protein 3-like 4	-1.42768	0.020061
57330	Gigyf1	GRB10 interacting GYF protein 1	0.755515	0.020108
50876	Tmod2	tropomodulin 2	0.625259	0.020108
68490	Zfp579	zinc finger protein 579	0.93481	0.020108
67367	Paxbp1	PAX3 and PAX7 binding protein 1	0.869692	0.020119
105244739	Gm15866	predicted gene 15866	-2.46795	0.020127
623078	Gm8108	predicted gene 8108	4.818684	0.020157
19017	Ppargc1a	peroxisome proliferative activated receptor, gamma, coactivator	1.903253	0.020206
109754	Cyb5r3	cytochrome b5 reductase 3	-0.90153	0.020276
192285	Phf21a	PHD finger protein 21A	0.684905	0.020288
21892	Tll1	tolloid-like	1.489121	0.020289
83397	Akap12	A kinase (PRKA) anchor protein (gravin) 12	-1.45648	0.020324
102634692	Gm32219	predicted gene, 32219	-3.18851	0.020324
74199	Vit	vitrin	-2.7164	0.020376
77422	C330018D20Rik	RIKEN cDNA C330018D20 gene	-0.82484	0.0204
628004	Gm10561	predicted gene 10561	-1.56867	0.0204
328232	Gfod1	glucose-fructose oxidoreductase domain containing 1	-1.0295	0.020404
234267	Gpm6a	glycoprotein m6a	1.706803	0.020411
227753	Gsn	gelsolin	-1.01018	0.020444
20775	Sqle	squalene epoxidase	-1.3149	0.020494
93874	Pcdhb3	protocadherin beta 3	-2.04118	0.020541
218461	Pde8b	phosphodiesterase 8B	-1.51477	0.020601

270096	Mon1b	MON1 homolog B, secretory trafficking associated	0.62441	0.020699
58994	Smpd3	sphingomyelin phosphodiesterase 3, neutral	1.742806	0.020705
269941	Chsy1	chondroitin sulfate synthase 1	-0.64457	0.02075
100042480	Nhsl2	NHS-like 2	2.229295	0.020752
93691	Klf7	Kruppel-like factor 7 (ubiquitous)	1.090434	0.020752
96935	Susd4	sushi domain containing 4	1.771578	0.020752
226527	Cryz12	crystallin zeta like 2	-1.38915	0.020759
382051	Pdp2	pyruvate dehydrogenase phosphatase catalytic subunit 2	0.63328	0.020759
14164	Fgf1	fibroblast growth factor 1	-1.9869	0.020764
105244982	Gm26584	predicted gene, 26584	2.737355	0.020797
239408	Tmem74	transmembrane protein 74	-2.44801	0.020825
100504287	Ifi203-ps	interferon activated gene 203, pseudogene	3.050623	0.020862
73919	Lym1	LYR motif containing 1	-1.28874	0.020862
668706	NA	NA	1.768546	0.020862
234135	Nsd3	nuclear receptor binding SET domain protein 3	0.735361	0.020862
21413	Tcf4	transcription factor 4	-0.89364	0.020862
100043712	Gm9844	thymosin, beta 10 pseudogene	-1.28748	0.02094
18710	Pik3r3	phosphoinositide-3-kinase regulatory subunit 3	-0.86187	0.020982
245865	Spag4	sperm associated antigen 4	-0.70254	0.021028
12725	Cln3	chloride channel, voltage-sensitive 3	1.183799	0.021135
72345	Amer1	APC membrane recruitment 1	1.196803	0.021223
195531	Zfp982	zinc finger protein 982	-1.82884	0.021234
224523	4732491K20Rik	RIKEN cDNA 4732491K20 gene	-1.28279	0.021304
215900	Calhm6	calcium homeostasis modulator family member 6	1.028426	0.021304
107527	Il1rl2	interleukin 1 receptor-like 2	-1.40065	0.021304
19261	Sirpa	signal-regulatory protein alpha	-0.89417	0.021304
15395	Hoxa10	homeobox A10	-2.30503	0.02131
100042514	Sprr2a3	small proline-rich protein 2A3	5.445491	0.021415
104248	Cabin1	calcineurin binding protein 1	0.80915	0.021427
237636	Npc1l1	NPC1 like intracellular cholesterol transporter 1	4.37241	0.021453
78267	Klhdc8b	kelch domain containing 8B	0.989265	0.021471
218544	Sgtb	small glutamine-rich tetratricopeptide repeat (TPR)-containing, b	-0.6686	0.021471
217214	Nags	N-acetylglutamate synthase	4.830122	0.021491
74734	Rhoh	ras homolog family member H	-2.96285	0.021522
57319	Smpd13a	sphingomyelin phosphodiesterase, acid-like 3A	-1.93089	0.021565
14999	H2-DMb1	histocompatibility 2, class II, locus Mb1	-1.43105	0.021613
217304	Cd300lb	CD300 molecule like family member B	-1.93459	0.021625
319165	H2ac7	H2A clustered histone 7	-2.70048	0.021625
18293	Ogdh	oxoglutarate (alpha-ketoglutarate) dehydrogenase (lipoamide)	-0.66996	0.021625
29876	Clic4	chloride intracellular channel 4 (mitochondrial)	-1.08008	0.021676
69234	Zfp688	zinc finger protein 688	-0.99099	0.021716
67255	Zfp422	zinc finger protein 422	0.732753	0.021724
74741	C2cd5	C2 calcium-dependent domain containing 5	0.781723	0.021754
107239	Carns1	carnosine synthase 1	-1.13811	0.021818
14225	Fkbp1a	FK506 binding protein 1a	-0.72013	0.021818
244049	Mctp2	multiple C2 domains, transmembrane 2	-2.04871	0.021818
244281	Myo16	myosin XVI	2.00607	0.021918
69071	Tmem97	transmembrane protein 97	-1.02574	0.021918
67299	Dock7	dedicator of cytokinesis 7	0.661414	0.021982
22402	Ccn4	cellular communication network factor 4	-0.82751	0.022061
20750	Spp1	secreted phosphoprotein 1	-3.03405	0.022078
242785	Klhl21	kelch-like 21	-0.80458	0.022094
140488	Igf2bp3	insulin-like growth factor 2 mRNA binding protein 3	-1.1104	0.022113
192113	Atp12a	ATPase, H+/K+ transporting, nongastric, alpha polypeptide	2.711517	0.022133
72722	Fam98a	family with sequence similarity 98, member A	-0.77849	0.022133
100532730	C230037L18Rik	RIKEN cDNA C230037L18 gene	2.549929	0.022229
234889	Gucy1a2	guanylate cyclase 1, soluble, alpha 2	-2.04175	0.022449
667100	Rpl18-ps1	ribosomal protein L18, pseudogene 1	2.042077	0.022489
330914	Arhgap32	Rho GTPase activating protein 32	0.873865	0.022664
13008	Csrp2	cysteine and glycine-rich protein 2	-0.99594	0.022664
214895	Lman2l	lectin, mannose-binding 2-like	0.869192	0.022664
381002	Gm5144	predicted gene 5144	-1.93498	0.022796
258022	Olf1r1318	olfactory receptor 1318	-2.37709	0.022796
408022	Primpol	primase and polymerase (DNA-directed)	0.723699	0.022797
93705	Pcdhgb8	protocadherin gamma subfamily B, 8	2.152094	0.022817
213573	Cracr2b	calcium release activated channel regulator 2B	-1.15319	0.022854
18792	Plau	plasminogen activator, urokinase	-0.71157	0.022854
80885	Hcar2	hydroxycarboxylic acid receptor 2	-4.98392	0.022967
15926	Idh1	isocitrate dehydrogenase 1 (NADP+), soluble	-0.66692	0.022967
319997	A630001G21Rik	RIKEN cDNA A630001G21 gene	1.233979	0.022972
320139	Ptpn7	protein tyrosine phosphatase, non-receptor type 7	-2.05803	0.022993
26415	Mapk13	mitogen-activated protein kinase 13	-2.35656	0.023093
320817	Atad2b	ATPase family, AAA domain containing 2B	0.946043	0.023095
20312	Cx3cl1	chemokine (C-X3-C motif) ligand 1	0.862871	0.023095
14621	Gjb4	gap junction protein, beta 4	-1.67735	0.023095

231997	Fkbp14	FK506 binding protein 14	-0.74772	0.023134
26970	Pla2g2e	phospholipase A2, group IIE	-2.78217	0.023151
72136	Chst14	carbohydrate sulfotransferase 14	-0.64104	0.023186
66261	Tm4sf20	transmembrane 4 L six family member 20	4.999659	0.023198
12304	Pdia4	protein disulfide isomerase associated 4	-0.66205	0.023308
14302	Frk	fyn-related kinase	-1.03305	0.023427
107733	Mrpl41	mitochondrial ribosomal protein L41	-0.73128	0.023461
235611	Plxnb1	plexin B1	1.085069	0.023475
12914	Crebbp	CREB binding protein	0.766581	0.023591
23886	Gdf15	growth differentiation factor 15	-1.72327	0.023591
320842	C230035I16Rik	RIKEN cDNA C230035I16 gene	1.391253	0.023665
212508	Mtg1	mitochondrial ribosome-associated GTPase 1	-0.76869	0.02369
100504114	Gm16907	predicted gene, 16907	-1.27694	0.023757
20112	Rps6ka2	ribosomal protein S6 kinase, polypeptide 2	-0.80297	0.02379
319172	H2ac4	H2A clustered histone 4	-1.85742	0.023812
108153	Adamts7	a disintegrin-like and metallopeptidase (reprolysin type) with thr	0.989504	0.023817
102638921	Gm21917	predicted gene, 21917	-4.79189	0.024145
110095	Pygl	liver glycogen phosphorylase	-2.15102	0.024223
76650	Srxn1	sulfiredoxin 1 homolog (S. cerevisiae)	-0.63283	0.024336
13599	Ecel1	endothelin converting enzyme-like 1	3.221029	0.024339
18124	Nr4a3	nuclear receptor subfamily 4, group A, member 3	-2.03917	0.024357
20855	Stc1	stanniocalcin 1	2.238387	0.02442
78653	Bola3	bola-like 3 (E. coli)	-0.83708	0.024427
242443	Grin3a	glutamate receptor ionotropic, NMDA3A	-2.96851	0.024427
223989	Marf1	meiosis regulator and mRNA stability 1	0.817218	0.024427
102871	Radx	RPA1 related single stranded DNA binding protein, X-linked	-2.4529	0.024623
72709	C1qtnf6	C1q and tumor necrosis factor related protein 6	0.64419	0.024661
71145	Scara5	scavenger receptor class A, member 5	1.803201	0.024661
72225	1700003M07Rik	RIKEN cDNA 1700003M07 gene	-1.38787	0.024715
110962	Mbd6	methyl-CpG binding domain protein 6	0.975339	0.024724
16154	Il10ra	interleukin 10 receptor, alpha	-3.12679	0.024741
52377	Rcn3	reticulocalbin 3, EF-hand calcium binding domain	-1.28046	0.024758
383435	Ms4a14	membrane-spanning 4-domains, subfamily A, member 14	-3.10672	0.024841
69386	H4c8	H4 clustered histone 8	-2.10483	0.024894
624124	Rps7-ps3	ribosomal protein S7, pseudogene 3	0.819497	0.025072
11608	Agtr1b	angiotensin II receptor, type 1b	-5.44551	0.025132
94253	Hecw1	HECT, C2 and WW domain containing E3 ubiquitin protein ligase 1	-3.91122	0.025183
12006	Axin2	axin 2	1.825628	0.0252
99730	Taf13	TATA-box binding protein associated factor 13	-1.02688	0.0252
22224	Usp10	ubiquitin specific peptidase 10	0.665741	0.0252
75871	Zfp821	zinc finger protein 821	0.869733	0.0252
100038363	F630028O10Rik	RIKEN cDNA F630028O10 gene	-3.17942	0.025214
66873	Tril	TLR4 interactor with leucine-rich repeats	2.242101	0.025214
13848	Ephb6	Eph receptor B6	2.163193	0.025295
64058	Perp	PERP, TP53 apoptosis effector	-4.92233	0.025295
621442	Gm14414	ribosomal protein S8 pseudogene	2.852876	0.02533
20429	Shox2	short stature homeobox 2	2.268126	0.025345
11816	Apoe	apolipoprotein E	-1.74708	0.025374
12663	Chml	choroideremia-like	0.859087	0.025433
233977	Ppfia1	protein tyrosine phosphatase, receptor type, f polypeptide (PTPR	-0.67262	0.02544
75495	Morn5	MORN repeat containing 5	-4.16874	0.025443
11765	Ap1g1	adaptor protein complex AP-1, gamma 1 subunit	0.707738	0.025448
434232	lqck	IQ motif containing K	-1.47786	0.025454
232431	Gprc5a	G protein-coupled receptor, family C, group 5, member A	-0.92215	0.025462
75115	4930509E16Rik	RIKEN cDNA 4930509E16 gene	-2.75354	0.025463
213311	Fbxl21	F-box and leucine-rich repeat protein 21	-1.57169	0.025486
83946	Phip	pleckstrin homology domain interacting protein	0.91996	0.025486
13653	Egr1	early growth response 1	1.724144	0.025607
18242	Oat	ornithine aminotransferase	-1.05022	0.025705
15185	Hdac6	histone deacetylase 6	0.666259	0.025726
21789	Tfpi2	tissue factor pathway inhibitor 2	-3.86338	0.025773
78334	Cdk19	cyclin-dependent kinase 19	0.815816	0.025811
244646	Pkd1l3	polycystic kidney disease 1 like 3	1.600662	0.025835
268567	Tmem229b	transmembrane protein 229B	1.069736	0.025907
242341	Atp6v0d2	ATPase, H+ transporting, lysosomal V0 subunit D2	-3.44108	0.025938
319636	Fsd1l	fibronectin type III and SPRY domain containing 1-like	0.711445	0.025938
269643	Ppp2r2c	protein phosphatase 2, regulatory subunit B, gamma	-3.95686	0.025938
69583	Tnfsf13	tumor necrosis factor (ligand) superfamily, member 13	0.857922	0.025938
84544	Cd96	CD96 antigen	4.299112	0.026079
108138	Xrcc4	X-ray repair complementing defective repair in Chinese hamster	-1.03177	0.026079
242620	Dmrta2	doublesex and mab-3 related transcription factor like family A2	-1.99862	0.026116
192119	Dicer1	dicer 1, ribonuclease type III	0.743491	0.026125
23960	Oas1g	2'-5' oligoadenylate synthetase 1G	-2.80301	0.026222
243743	Plxna4	plexin A4	1.348279	0.026259
18018	Nfatc1	nuclear factor of activated T cells, cytoplasmic, calcineurin depen	-0.9056	0.026312

448987	Fbxl7	F-box and leucine-rich repeat protein 7	-1.14779	0.02632
13527	Dtna	dystrobrevin alpha	-1.38606	0.026363
56543	Kcnd3	potassium voltage-gated channel, Shal-related family, member 3	-2.72118	0.026363
15284	Hlx	H2.0-like homeobox	0.631207	0.026406
171285	Havcr2	hepatitis A virus cellular receptor 2	-2.26791	0.02655
97820	4833439L19Rik	RIKEN cDNA 4833439L19 gene	-0.63199	0.026585
19731	Rgl1	ral guanine nucleotide dissociation stimulator,-like 1	0.829117	0.026585
12514	Cd68	CD68 antigen	-2.03932	0.026665
54399	Bet1l	Bet1 golgi vesicular membrane trafficking protein like	-1.00558	0.026732
13497	Drp2	dystrophin related protein 2	-1.76842	0.026732
21834	Thrb	thyroid hormone receptor beta	1.466075	0.026732
269954	Ttl13	tubulin tyrosine ligase-like family, member 13	-2.50454	0.026755
30785	Ctnnbp2	cortactin binding protein 2	3.222359	0.026776
56420	Ppp4c	protein phosphatase 4, catalytic subunit	-0.77995	0.026776
20481	Ski	ski sarcoma viral oncogene homolog (avian)	-0.6943	0.026864
16625	Serpina3c	serine (or cysteine) peptidase inhibitor, clade A, member 3C	-3.39959	0.026965
56382	Rab9	RAB9, member RAS oncogene family	1.064455	0.027013
74996	Usp47	ubiquitin specific peptidase 47	-0.62514	0.027097
433771	Micos10	mitochondrial contact site and cristae organizing system subunit 10	0.82384	0.027146
20014	Rpn2	ribophorin II	-0.6446	0.027165
18553	Pcsk6	proprotein convertase subtilisin/kexin type 6	-0.66332	0.027179
66912	Bzw2	basic leucine zipper and W2 domains 2	0.699241	0.027213
22417	Wnt4	wingless-type MMTV integration site family, member 4	1.59334	0.02741
68598	Dnajc8	DnaJ heat shock protein family (Hsp40) member C8	-0.64977	0.027466
83964	Jam3	junction adhesion molecule 3	-0.89117	0.027466
224902	Safb2	scaffold attachment factor B2	0.64938	0.027466
73774	4930422M22Rik	RIKEN cDNA 4930422M22 gene	5.214157	0.027479
19152	Prtn3	proteinase 3	3.322224	0.027479
56772	MLlt11	myeloid/lymphoid or mixed-lineage leukemia; translocated to, 11	-0.84252	0.027715
269999	Orai3	ORAI calcium release-activated calcium modulator 3	-0.8577	0.027715
17082	IL1rl1	interleukin 1 receptor-like 1	-3.43351	0.027764
102941	B630019K06Rik	F-box and leucine-rich repeat protein 17 pseudogene	-1.0413	0.027902
235048	Zfp599	zinc finger protein 599	0.900081	0.027946
64945	Cldn12	claudin 12	0.648544	0.027958
69774	Ms4a6b	membrane-spanning 4-domains, subfamily A, member 6B	-3.532	0.028016
330671	B4galnt4	beta-1,4-N-acetyl-galactosaminyl transferase 4	2.181212	0.028031
225998	Rorb	RAR-related orphan receptor beta	-4.2016	0.028099
113855	Vmn1r40	vomerolateral 1 receptor 40	-3.35213	0.028168
207958	Alg11	asparagine-linked glycosylation 11 (alpha-1,2-mannosyltransferase)	0.602886	0.028171
268281	Shprh	SNF2 histone linker PHD RING helicase	0.819918	0.028175
20364	Selenow	selenoprotein W	-1.10913	0.028189
12818	Col14a1	collagen, type XIV, alpha 1	-2.86345	0.028202
66704	Rbm4b	RNA binding motif protein 4B	0.66253	0.028202
21841	Tia1	cytotoxic granule-associated RNA binding protein 1	0.794556	0.028241
64292	Ptges	prostaglandin E synthase	-1.38706	0.028244
329003	Zfp516	zinc finger protein 516	0.765951	0.02834
208898	Unc13c	unc-13 homolog C	-1.75834	0.028486
15504	Dnajb3	DnaJ heat shock protein family (Hsp40) member B3	-4.10976	0.028493
320679	Samd12	sterile alpha motif domain containing 12	-1.79078	0.028493
14325	Ftl1	ferritin light polypeptide 1	-1.25764	0.028752
100041953	Sap18b	Sin3-associated polypeptide 18B	-0.88107	0.028772
22324	Vav1	vav 1 oncogene	-2.7157	0.028784
17470	Cd200	CD200 antigen	-3.02777	0.028791
13448	Dok1	docking protein 1	-0.63825	0.028791
73656	Ms4a6c	membrane-spanning 4-domains, subfamily A, member 6C	-4.0718	0.028791
224829	Trerf1	transcriptional regulating factor 1	0.897994	0.028791
235184	Msantd2	Myb/SANT-like DNA-binding domain containing 2	0.758037	0.028891
70564	Prxl2a	peroxiredoxin like 2A	0.932888	0.028891
243905	Zfp568	zinc finger protein 568	0.625057	0.029006
244631	Pskh1	protein serine kinase H1	0.789948	0.029015
100039748	Rpl15-ps6	ribosomal protein L15, pseudogene 6	4.013843	0.029015
66815	Mcub	mitochondrial calcium uniporter dominant negative beta subunit	-0.9075	0.029021
331474	Rtl5	retrotransposon Gag like 5	-0.81311	0.029022
76719	Kansl1	KAT8 regulatory NSL complex subunit 1	0.64888	0.029045
209032	Zc3hav1l	zinc finger CCCH-type, antiviral 1-like	0.720371	0.029091
226652	Arhgap30	Rho GTPase activating protein 30	-2.46523	0.029162
100126229	Gm12758	predicted gene 12758	2.470642	0.029162
170738	Kcnh7	potassium voltage-gated channel, subfamily H (eag-related), member 7	1.305509	0.029162
67046	Tbc1d7	TBC1 domain family, member 7	-0.7732	0.029162
260302	Gga3	golgi associated, gamma adaptin ear containing, ARF binding protein 3	0.782894	0.029376
195727	Nhs	NHS actin remodeling regulator	-1.1328	0.029537
224912	Crb3	crumbs family member 3	2.051766	0.029668
14630	Gclm	glutamate-cysteine ligase, modifier subunit	-0.60742	0.029687
414093	A830082N09Rik	RIKEN cDNA A830082N09 gene	1.412885	0.029718
117599	Helb	helicase (DNA) B	0.699931	0.029744

60406	Sap30	sin3 associated polypeptide	0.766125	0.029758
381067	Zfp229	zinc finger protein 229	0.70736	0.029793
100502619	AW046200	expressed sequence AW046200	1.336295	0.029839
74241	Chpf	chondroitin polymerizing factor	-0.82176	0.029874
22317	Vamp1	vesicle-associated membrane protein 1	0.862566	0.029874
16181	Il1rn	interleukin 1 receptor antagonist	-2.59126	0.029899
12583	Cdo1	cysteine dioxygenase 1, cytosolic	-1.71053	0.029931
20474	Six4	sine oculis-related homeobox 4	1.089659	0.029959
213053	Slc39a14	solute carrier family 39 (zinc transporter), member 14	-0.7512	0.029965
67180	Yipf5	Yip1 domain family, member 5	-0.7488	0.03012
319161	H4c18	H4 clustered histone 18	-2.14358	0.030272
23880	Fyb	FYN binding protein	-2.29219	0.030368
26410	Map3k8	mitogen-activated protein kinase kinase kinase 8	0.963751	0.030394
71609	Tradd	TNFRSF1A-associated via death domain	0.731468	0.030452
11497	Adam3	a disintegrin and metallopeptidase domain 3 (cyritestin)	-3.16106	0.030613
55963	Slc1a4	solute carrier family 1 (glutamate/neutral amino acid transporter	-0.86237	0.030624
330812	Rnf150	ring finger protein 150	0.862714	0.030639
103963	Rpn1	ribophorin I	-0.76738	0.030703
240332	Slc6a7	solute carrier family 6 (neurotransmitter transporter, L-proline), i	2.1419	0.03076
218885	Oxnad1	oxidoreductase NAD-binding domain containing 1	-0.74799	0.030777
14239	Foxs1	forkhead box S1	-1.62825	0.03079
13040	Ctss	cathepsin S	-3.60875	0.030839
170677	Cdhr1	cadherin-related family member 1	-1.58062	0.030972
22017	Tpmt	thiopurine methyltransferase	-0.76116	0.030982
381352	Mamdc4	MAM domain containing 4	1.222312	0.031042
234915	Cep126	centrosomal protein 126	-1.66467	0.031052
100041686	Gm15427	predicted pseudogene 15427	0.93796	0.031097
223645	Mroh6	maestro heat-like repeat family member 6	2.077884	0.031166
67178	Zmat5	zinc finger, matrin type 5	-0.83634	0.031181
22341	Vegfc	vascular endothelial growth factor C	-1.28145	0.031198
214812	Zfp609	zinc finger protein 609	0.928598	0.031295
67044	Higd2a	HIG1 domain family, member 2A	-0.60229	0.031497
330450	Far2	fatty acyl CoA reductase 2	1.11808	0.031527
77866	E130102H24Rik	RIKEN cDNA E130102H24 gene	1.718068	0.031529
224694	Zfp81	zinc finger protein 81	0.723156	0.031529
13805	Eng	endoglin	2.12904	0.031565
67622	Mxra7	matrix-remodelling associated 7	-0.63221	0.031617
70025	Acot7	acyl-CoA thioesterase 7	-0.8682	0.031621
20280	Scp2	sterol carrier protein 2, liver	-1.23167	0.03176
242202	Pde5a	phosphodiesterase 5A, cGMP-specific	1.813067	0.031819
20583	Snai2	snail family zinc finger 2	-1.01492	0.031819
74840	Manf	mesencephalic astrocyte-derived neurotrophic factor	-1.04003	0.031963
320920	NA	NA	-2.03261	0.031963
67704	1810037117Rik	RIKEN cDNA 1810037117 gene	-0.84821	0.032203
15015	H2-Q4	histocompatibility 2, Q region locus 4	1.366502	0.032219
258439	Olfir1309	olfactory receptor 1309	-4.95633	0.032219
101807	AV356131	expressed sequence AV356131	-1.27111	0.032261
68303	Fam114a1	family with sequence similarity 114, member A1	-0.83156	0.032261
14729	Gp5	glycoprotein 5 (platelet)	2.641404	0.03232
72873	Bbof1	basal body orientation factor 1	1.203368	0.03234
664883	Nova1	NOVA alternative splicing regulator 1	-2.29701	0.032426
15473	Rida	reactive intermediate imine deaminase A homolog	-0.6848	0.032426
67898	Pef1	penta-EF hand domain containing 1	-0.63898	0.032442
107368	Pdzd8	PDZ domain containing 8	0.734923	0.032506
407785	Ndufs6	NADH:ubiquinone oxidoreductase core subunit S6	-0.96804	0.03251
102636045	Gm16185	predicted gene 16185	1.476612	0.032677
195209	Zfp469	zinc finger protein 469	0.742838	0.032695
66191	Ier3ip1	immediate early response 3 interacting protein 1	-1.09609	0.032754
67528	Nudt7	nudix (nucleoside diphosphate linked moiety X)-type motif 7	0.654872	0.032832
20362	Septin8	septin 8	-0.71302	0.032846
78316	Platr27	pluripotency associated transcript 27	-4.64276	0.032866
319388	Irx3os	iroquois homeobox 3, opposite strand	2.991191	0.032877
67117	Dynlt3	dynein light chain Tctex-type 3	-0.74693	0.032892
209760	Tmc7	transmembrane channel-like gene family 7	-1.49985	0.0329
381560	Xkr8	X-linked Kx blood group related 8	-0.71429	0.0329
30843	Fbxl12	F-box and leucine-rich repeat protein 12	0.851656	0.032925
11983	Atpif1	ATPase inhibitory factor 1	-0.80138	0.033022
67103	Ptgr1	prostaglandin reductase 1	-0.71167	0.033043
319508	Syt15	synaptotagmin XV	2.170407	0.033082
83433	Trem2	triggering receptor expressed on myeloid cells 2	-2.05432	0.033082
68364	O610030E20Rik	RIKEN cDNA O610030E20 gene	0.7314	0.033123
102448	Xylb	xylulokinase homolog (H. influenzae)	0.826766	0.03313
69544	Wdr5b	WD repeat domain 5B	0.785818	0.033173
14256	Flt3l	FMS-like tyrosine kinase 3 ligand	0.665312	0.033223
244668	Sipa1l2	signal-induced proliferation-associated 1 like 2	0.683017	0.033223

53415	Htatip2	HIV-1 Tat interactive protein 2	-1.02099	0.033252
72168	Aifm3	apoptosis-inducing factor, mitochondrion-associated 3	2.880549	0.033276
595140	Gm6044	peptidylprolyl isomerase A pseudogene 22	3.862941	0.03329
12834	Col6a2	collagen, type VI, alpha 2	1.017765	0.033345
14859	Gsta3	glutathione S-transferase, alpha 3	-1.55341	0.033345
56452	Orc6	origin recognition complex, subunit 6	0.934645	0.033345
214301	Crygn	crystallin, gamma N	-2.69276	0.033391
319743	9630013D21Rik	RIKEN cDNA 9630013D21 gene	1.285394	0.033423
28146	Serp1	stress-associated endoplasmic reticulum protein 1	-0.68973	0.033534
12767	Cxcr4	chemokine (C-X-C motif) receptor 4	-3.02286	0.033535
639527	Gm7269	calcyphosphine 2 pseudogene	-3.51616	0.033576
72043	Sulf2	sulfatase 2	-0.72355	0.033597
22651	Zfp125	zinc finger protein 125	0.880429	0.033641
75516	Ttc32	tetratricopeptide repeat domain 32	-0.853	0.033679
16002	Igf2	insulin-like growth factor 2	-2.4496	0.033754
81500	Sil1	endoplasmic reticulum chaperone SIL1 homolog (S. cerevisiae)	-1.09532	0.033754
193736	Zbtb12	zinc finger and BTB domain containing 12	0.747599	0.033754
14130	Fcgr2b	Fc receptor, IgG, low affinity IIb	-3.28826	0.033827
104080	Nxph4	neurexophilin 4	-2.43536	0.033827
74570	Zkscan1	zinc finger with KRAB and SCAN domains 1	0.646185	0.033844
66141	Ifitm3	interferon induced transmembrane protein 3	-0.90895	0.033869
22276	Uros	uroporphyrinogen III synthase	-0.70993	0.034138
70691	3830403N18Rik	RIKEN cDNA 3830403N18 gene	-4.79612	0.034242
14115	Fbln2	fibulin 2	-1.25221	0.034345
12837	Col8a1	collagen, type VIII, alpha 1	-0.94545	0.034356
69655	Cd164l2	CD164 sialomucin-like 2	-4.20519	0.034457
666819	Gm8307	ubiquitin specific peptidase 10 pseudogene	-4.40661	0.034481
66350	Pla2g12a	phospholipase A2, group XIA	-0.9954	0.034544
12349	Car2	carbonic anhydrase 2	-5.48578	0.034585
17248	Mdm4	transformed mouse 3T3 cell double minute 4	0.982759	0.034585
101100	Ttli3	tubulin tyrosine ligase-like family, member 3	1.365562	0.034585
268903	Nrip1	nuclear receptor interacting protein 1	0.820619	0.034589
270086	Ogfod1	2-oxoglutarate and iron-dependent oxygenase domain containing	0.603182	0.034589
19419	Rasgrp1	RAS guanyl releasing protein 1	-2.80922	0.034629
242316	Gdf6	growth differentiation factor 6	-1.38702	0.034637
432438	Gm5421	aconitase 2, mitochondrial pseudogene	-1.84118	0.034648
110959	Nudt19	nudix (nucleoside diphosphate linked moiety X)-type motif 19	-0.67164	0.034648
19173	Psbmb5	proteasome (prosome, macropain) subunit, beta type 5	-0.75431	0.034723
52585	Dhrs1	dehydrogenase/reductase (SDR family) member 1	-0.74511	0.034775
80515	Rnf227	ring finger protein 227	1.054083	0.034775
66397	Sar1b	secretion associated Ras related GTPase 1B	-0.62701	0.034775
13136	Cd55	CD55 molecule, decay accelerating factor for complement	-1.1375	0.034786
78408	Fam131a	family with sequence similarity 131, member A	-1.07413	0.034786
235682	Zfp445	zinc finger protein 445	0.696413	0.034786
69325	1700012B09Rik	RIKEN cDNA 1700012B09 gene	-5.11924	0.034821
12506	Cd48	CD48 antigen	-2.44099	0.034919
110172	Slc35b1	solute carrier family 35, member B1	-0.67086	0.034919
68631	Cryl1	crystallin, lambda 1	-0.81618	0.03493
21838	Thy1	thymus cell antigen 1, theta	-1.62833	0.03493
12861	Cox6a1	cytochrome c oxidase subunit 6A1	-0.7434	0.034948
71774	Shroom1	shroom family member 1	-0.94512	0.035109
69487	Ndufa5	NADH:ubiquinone oxidoreductase complex assembly factor 5	-0.74825	0.035167
67290	3110040N11Rik	RIKEN cDNA 3110040N11 gene	-0.71707	0.035177
17441	Mog	myelin oligodendrocyte glycoprotein	3.604463	0.035213
67197	Zcrb1	zinc finger CCHC-type and RNA binding motif 1	-0.6028	0.03522
12750	Clk4	CDC like kinase 4	0.637104	0.035339
225341	Lims2	LIM and senescent cell antigen like domains 2	-1.41506	0.035339
71583	9130008F23Rik	RIKEN cDNA 9130008F23 gene	0.756564	0.035364
236285	LancI3	LanC lantibiotic synthetase component C-like 3 (bacterial)	-3.01951	0.035367
50708	H1f2	H1.2 linker histone, cluster member	-1.65836	0.035443
102443350	Xndc1	Xrcc1 N-terminal domain containing 1	0.937115	0.035443
12362	Casp1	caspase 1	-2.44638	0.035623
12488	Cd2ap	CD2-associated protein	0.606687	0.035861
54446	Nfat5	nuclear factor of activated T cells 5	0.776532	0.035888
12798	Cnn2	calponin 2	-0.60568	0.035917
53603	Tslp	thymic stromal lymphopoietin	-1.39137	0.035917
236366	5730507C01Rik	RIKEN cDNA 5730507C01 gene	-2.35951	0.035919
100465	Mob3c	MOB kinase activator 3C	0.630822	0.035919
67298	Gprasp1	G protein-coupled receptor associated sorting protein 1	0.817445	0.035995
18113	Nnmt	nicotinamide N-methyltransferase	0.964314	0.036066
54371	Chst2	carbohydrate sulfotransferase 2	1.298767	0.036236
101476	Plekha1	pleckstrin homology domain containing, family A (phosphoinositide)	-0.76024	0.036236
20850	Stat5a	signal transducer and activator of transcription 5A	0.715014	0.036342
114564	Csprs	component of Sp100-rs	4.086446	0.036362
78512	3300005D01Rik	RIKEN cDNA 3300005D01 gene	-1.70534	0.036373

12389	Cav1	caveolin 1, caveolae protein	-1.14678	0.036373
13656	Egr4	early growth response 4	4.87867	0.036573
19220	Ptgfr	prostaglandin F receptor	-2.32831	0.036615
18023	Nfe2l1	nuclear factor, erythroid derived 2,-like 1	-0.69889	0.036649
207495	Baiap2l2	BAI1-associated protein 2-like 2	1.027402	0.03667
75769	Plppr5	phospholipid phosphatase related 5	-3.80748	0.036797
240913	Adamts4	a disintegrin-like and metallopeptidase (repolysin type) with thr	-0.91698	0.036856
192185	Nadk	NAD kinase	-0.75513	0.036895
83409	Lamtor2	late endosomal/lysosomal adaptor, MAPK and MTOR activator 2	-1.10978	0.036974
319207	Pgbd1	piggyBac transposable element derived 1	-1.30455	0.036985
208748	Prrg3	proline rich Gla (G-carboxyglutamic acid) 3 (transmembrane)	0.775815	0.037003
68108	Snhg17	small nucleolar RNA host gene 17	0.843667	0.037007
15248	Hic1	hypermethylated in cancer 1	-0.68193	0.037021
234695	Carmil2	capping protein regulator and myosin 1 linker 2	1.509498	0.037091
27384	Akr1c13	aldo-keto reductase family 1, member C13	-3.90413	0.037092
17969	Ncf1	neutrophil cytosolic factor 1	-2.44077	0.037103
53412	Ppp1r3c	protein phosphatase 1, regulatory subunit 3C	1.604849	0.037103
24056	Sh3bp5	SH3-domain binding protein 5 (BTK-associated)	-0.90866	0.037106
12842	Col1a1	collagen, type I, alpha 1	0.814455	0.037344
65113	Ndfip1	Nedd4 family interacting protein 1	-0.67007	0.037417
246313	Prokr2	prokineticin receptor 2	3.914065	0.037461
77097	Tanc2	tetratricopeptide repeat, ankyrin repeat and coiled-coil containin	1.090838	0.037461
11733	Ank1	ankyrin 1, erythroid	1.582377	0.037473
72309	Tmem158	transmembrane protein 158	-1.53115	0.037542
74154	Unkl	unkempt family like zinc finger	0.740668	0.037573
380694	Ccnj	cyclin J-like	2.856553	0.037655
14465	Gata6	GATA binding protein 6	1.028038	0.03781
11639	Ak4	adenylate kinase 4	-1.30774	0.037815
64929	Scel	sciellin	2.06974	0.037815
235406	Snx33	sorting nexin 33	0.633864	0.037815
230126	Shb	src homology 2 domain-containing transforming protein B	0.706058	0.037824
74732	Stx11	syntaxin 11	0.619513	0.037842
338370	Nalcn	sodium leak channel, non-selective	-4.37753	0.03785
192654	Pla2g15	phospholipase A2, group XV	-0.88483	0.037853
320772	Mdga2	MAM domain containing glycosylphosphatidylinositol anchor 2	-4.50372	0.037859
56857	Slc37a2	solute carrier family 37 (glycerol-3-phosphate transporter), mem	-1.37375	0.037859
217012	Unc45b	unc-45 myosin chaperone B	2.254446	0.038046
78892	Crispld2	cysteine-rich secretory protein LCCL domain containing 2	1.586463	0.038079
67876	Coq10b	coenzyme Q10B	-0.63969	0.038093
12833	Col6a1	collagen, type VI, alpha 1	0.964361	0.038165
17984	Ndn	necdin, MAGE family member	-1.3242	0.038351
319586	Celf5	CUGBP, Elav-like family member 5	-1.10423	0.038449
14828	Hspa5	heat shock protein 5	-0.7627	0.038449
54393	Gabbr1	gamma-aminobutyric acid (GABA) B receptor, 1	0.621794	0.038454
105245938	Gm26704	predicted gene, 26704	2.233659	0.038479
16783	Lamp1	lysosomal-associated membrane protein 1	-0.65857	0.038524
100415915	A530072M11Rik	RIKEN cDNA gene A530072M11	-2.34018	0.038762
78779	Spta2l	spermatogenesis associated 2-like	0.854064	0.038767
107652	Uap1	UDP-N-acetylglucosamine pyrophosphorylase 1	-0.65054	0.038979
320790	Chd7	chromodomain helicase DNA binding protein 7	-1.89151	0.039035
666586	Gm11808	ubiquitin A-52 residue ribosomal protein fusion product 1 pseud	0.937148	0.039042
213084	Cdkl3	cyclin-dependent kinase-like 3	-0.62844	0.039091
53608	Map3k6	mitogen-activated protein kinase kinase kinase 6	-1.17447	0.039091
17831	Muc2	mucin 2	1.579632	0.039111
320299	Iqcb1	IQ calmodulin-binding motif containing 1	0.853266	0.039134
16456	F11r	F11 receptor	1.107362	0.039209
19283	Ptprz1	protein tyrosine phosphatase, receptor type Z, polypeptide 1	2.356458	0.039242
69065	Chac1	ChaC, cation transport regulator 1	-1.17909	0.039269
13601	Ecm1	extracellular matrix protein 1	-1.06919	0.039316
17988	Ndrg1	N-myc downstream regulated gene 1	-1.81509	0.039325
338523	Kdm7a	lysine (K)-specific demethylase 7A	1.036885	0.039393
229007	Zgpat	zinc finger, CCCH-type with G patch domain	0.719299	0.039393
14066	F3	coagulation factor III	-1.19451	0.03948
15424	Hoxc5	homeobox C5	2.730859	0.03948
76123	Gpsm2	G-protein signalling modulator 2 (AGS3-like, C. elegans)	-1.48826	0.039507
16855	Lgals4	lectin, galactose binding, soluble 4	1.386159	0.039598
69632	Arhgef12	Rho guanine nucleotide exchange factor (GEF) 12	0.701834	0.039709
100418381	Gm16209	translocase of inner mitochondrial membrane 23 homolog pseud	1.481596	0.039753
12955	Cryab	crystallin, alpha B	-0.65551	0.03978
68922	Dnaic1	dynein, axonemal, intermediate chain 1	-4.10036	0.039783
170744	Tlr8	toll-like receptor 8	-2.53421	0.039878
211147	Marchf11	membrane associated ring-CH-type finger 11	-4.39128	0.039885
79362	Bhlhe41	basic helix-loop-helix family, member e41	-0.94183	0.03991
382427	Best3	bestrophin 3	-2.09961	0.040063
15024	H2-T10	histocompatibility 2, T region locus 10	1.576618	0.040268

328329	Mast4	microtubule associated serine/threonine kinase family member 4	0.615605	0.040273
14345	Fut4	fucosyltransferase 4	-1.42558	0.040313
17035	Lxn	latexin	-1.18529	0.040313
406218	Panx2	pannexin 2	2.425589	0.040313
240034	Zfp760	zinc finger protein 760	0.762781	0.040476
244349	Kat6a	K(lysine) acetyltransferase 6A	1.006529	0.040477
241950	Bbs12	Bardet-Biedl syndrome 12 (human)	0.79221	0.040557
634386	Ftl1-ps1	ferritin light polypeptide 1, pseudogene 1	-1.46315	0.040567
192734	Lrrc75b	leucine rich repeat containing 75B	-1.37608	0.040567
19332	Rab20	RAB20, member RAS oncogene family	0.85381	0.040567
75646	Rai14	retinoic acid induced 14	-0.63524	0.040567
230863	Sh2d5	SH2 domain containing 5	1.279349	0.040567
20842	Stag1	stromal antigen 1	0.64814	0.040567
13876	Erg	ETS transcription factor	-3.16246	0.040572
78388	Mvp	major vault protein	-0.7287	0.040572
223433	Otulinl	OTU deubiquitinase with linear linkage specificity like	-2.48892	0.040572
115487914	Gm25835	predicted gene, 25835	1.489464	0.040594
217305	CD300ld	CD300 molecule like family member d	-2.37684	0.04062
382118	Zkscan7	zinc finger with KRAB and SCAN domains 7	0.753029	0.040723
271849	Shc4	SHC (Src homology 2 domain containing) family, member 4	-1.11522	0.04082
26412	Map4k2	mitogen-activated protein kinase kinase kinase 2	0.993174	0.040918
16656	Hivep3	human immunodeficiency virus type I enhancer binding protein 3	0.932104	0.041012
193022	Gm53	predicted gene 53	-2.28089	0.041024
102614	Rpp25	ribonuclease P/MRP 25 subunit	-1.16135	0.041046
13845	Ephb3	Eph receptor B3	0.699233	0.041108
17079	Cd180	CD180 antigen	-2.3274	0.041114
68970	Dcaf12	DDB1 and CUL4 associated factor 12	0.639413	0.041134
66593	Diablo	diablo, IAP-binding mitochondrial protein	0.699748	0.041148
18173	Slc11a1	solute carrier family 11 (proton-coupled divalent metal ion transp	-2.36358	0.04115
105446	Gmpr2	guanosine monophosphate reductase 2	-0.60903	0.041232
230088	Fam214b	family with sequence similarity 214, member B	-0.78849	0.04125
20130	Rras	related RAS viral (r-ras) oncogene	-0.96364	0.041291
11989	Slc7a3	solute carrier family 7 (cationic amino acid transporter, y+ system	0.883291	0.041291
100129	Gpr153	G protein-coupled receptor 153	1.200781	0.041503
235281	Scn3b	sodium channel, voltage-gated, type III, beta	-1.43819	0.041514
117167	Steap4	STEAP family member 4	1.547175	0.041514
116870	Mta1	metastasis associated 1	0.617968	0.041627
100504464	E230016K23Rik	RIKEN cDNA E230016K23 gene	1.237297	0.04164
100504307	Gm20163	predicted gene, 20163	1.548946	0.041706
78921	9130019O22Rik	RIKEN cDNA 9130019O22 gene	-0.96019	0.041806
19009	Pou6f1	POU domain, class 6, transcription factor 1	0.760837	0.041946
19299	Abcd3	ATP-binding cassette, sub-family D (ALD), member 3	-0.61548	0.042031
14586	Gfra2	glial cell line derived neurotrophic factor family receptor alpha 2	-3.82983	0.042031
18187	Nrp2	neuropilin 2	-1.43533	0.042053
21380	Tbx1	T-box 1	-9.07901	0.042086
16911	Lmo4	LIM domain only 4	-0.85337	0.042088
224703	Marchf2	membrane associated ring-CH-type finger 2	-0.67667	0.042088
71970	Zbed5	zinc finger, BED type containing 5	0.690907	0.042088
17916	Myo1f	myosin IF	-2.22379	0.042141
76365	Tbx18	T-box18	-0.83993	0.042213
12843	Col1a2	collagen, type I, alpha 2	0.659568	0.042259
18858	Pmp22	peripheral myelin protein 22	-1.22047	0.042397
108089	Rnf144a	ring finger protein 144A	1.183664	0.042397
22377	Wbp1	WW domain binding protein 1	-0.66578	0.04241
69190	Dym	dymeclin	-0.64132	0.042496
14744	Gpr65	G-protein coupled receptor 65	-3.30127	0.042497
219144	Arl11	ADP-ribosylation factor-like 11	-2.87777	0.04253
18994	Pou3f4	POU domain, class 3, transcription factor 4	-2.85906	0.042614
67890	Ufm1	ubiquitin-fold modifier 1	-0.72139	0.042669
231842	Amz1	archaelysin family metallopeptidase 1	-1.69161	0.042715
11307	Abcg1	ATP binding cassette subfamily G member 1	-2.26708	0.042806
13590	Lefty1	left right determination factor 1	-0.7478	0.042806
77300	Raph1	Ras association (RalGDS/AF-6) and pleckstrin homology domains	11.036116	0.042849
14766	Adgrg1	adhesion G protein-coupled receptor G1	-1.26751	0.042875
94060	Lce3c	late cornified envelope 3C	4.883196	0.043033
71382	Pex1	peroxisomal biogenesis factor 1	0.687163	0.043033
229776	Cdc14a	CDC14 cell division cycle 14A	0.63448	0.043033
100039239	Gm2115	predicted gene 2115	-1.62076	0.043033
80902	Zfp202	zinc finger protein 202	0.816485	0.043033
213742	Xist	inactive X specific transcripts	1.183278	0.043194
54201	Zfp316	zinc finger protein 316	0.674756	0.043244
228366	Large2	LARGE xylosyl- and glucuronyltransferase 2	2.926578	0.043486
108078	Olr1	oxidized low density lipoprotein (lectin-like) receptor 1	-0.81091	0.043486
18020	Nfatc2ip	nuclear factor of activated T cells, cytoplasmic, calcineurin depend	-0.69001	0.04353
21848	Trim24	tripartite motif-containing 24	0.641918	0.04357

68949	Zfas1	zinc finger, NFX1-type containing 1, antisense RNA 1	0.765662	0.04357
74393	Map10	microtubule-associated protein 10	-1.6168	0.043887
320469	9930014A18Rik	RIKEN cDNA 9930014A18 gene	1.228773	0.043889
58805	Mlxip1	MLX interacting protein-like	2.429317	0.044016
13058	Cybb	cytochrome b-245, beta polypeptide	-2.31886	0.044065
109151	Chd9	chromodomain helicase DNA binding protein 9	0.765629	0.044269
50776	Polg2	polymerase (DNA directed), gamma 2, accessory subunit	0.650131	0.044269
13521	Slc26a2	solute carrier family 26 (sulfate transporter), member 2	-0.65062	0.044309
230700	Foxj3	forkhead box J3	0.69734	0.044323
68170	Iftap	intraflagellar transport associated protein	-0.84136	0.044347
70676	Gulp1	GULP, engulfment adaptor PTB domain containing 1	-0.62629	0.044354
237313	IL20ra	interleukin 20 receptor, alpha	1.755415	0.044354
113847	Vmn1r43	vomerolateral 1 receptor 43	-2.01964	0.044354
19122	Prnp	prion protein	-0.97472	0.044382
19221	Ptgfrn	prostaglandin F2 receptor negative regulator	-0.73212	0.044384
67695	Ost4	oligosaccharyltransferase complex subunit 4 (non-catalytic)	-0.86465	0.044392
67880	Dcxr	dicarbonyl L-xylulose reductase	-0.77152	0.044462
235626	Setd2	SET domain containing 2	0.662363	0.044503
14432	Gap43	growth associated protein 43	-3.1829	0.044655
11856	Arhgap6	Rho GTPase activating protein 6	-0.91232	0.044693
18751	Prkcb	protein kinase C, beta	-2.12616	0.044696
338365	Slc41a2	solute carrier family 41, member 2	-0.84599	0.04478
108167550	Gm38250	predicted gene, 38250	-1.65931	0.044844
71607	Snx20	sorting nexin 20	-2.54484	0.045063
20597	Smpd1	sphingomyelin phosphodiesterase 1, acid lysosomal	-0.7394	0.04514
100039441	Gm2237	predicted gene 2237	0.934411	0.04516
100039045	Gm10471	predicted gene 10471	4.413081	0.045261
75761	Apol7a	apolipoprotein L 7a	-1.6309	0.045279
26913	Gprn1	G protein-regulated inducer of neurite outgrowth 1	1.340137	0.045484
320452	P4ha3	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase)	0.779276	0.045548
75079	Zbtb49	zinc finger and BTB domain containing 49	0.772935	0.045591
11490	Adam15	a disintegrin and metalloproteinase domain 15 (metagardian)	-0.95301	0.045649
21933	Tnfrsf10b	tumor necrosis factor receptor superfamily, member 10b	-0.71618	0.045686
13972	Gnb1l	guanine nucleotide binding protein (G protein), beta polypeptide	0.622778	0.04573
13480	Dpm1	dolichol-phosphate (beta-D) mannosyltransferase 1	0.73523	0.045832
72175	Mfsd8	major facilitator superfamily domain containing 8	-0.99065	0.045832
277360	Prex1	phosphatidylinositol-3,4,5-trisphosphate-dependent Rac exchange factor 1	-1.74799	0.045832
434438	Iho1	interactor of HORMAD1 1	-5.06919	0.045856
14767	Nmur1	neuromedin U receptor 1	-3.44897	0.046083
100379143	Gm9754	predicted gene 9754	1.683835	0.046114
16516	Kcnj15	potassium inwardly-rectifying channel, subfamily J, member 15	1.218407	0.046114
20509	Slc19a1	solute carrier family 19 (folate transporter), member 1	0.672685	0.046172
101055758	Gm7592	predicted gene 7592	3.919417	0.04625
628900	Serpina3i	serine (or cysteine) peptidase inhibitor, clade A, member 3i	-1.02391	0.04625
100040944	Gm3055	predicted gene 3055	1.267257	0.046344
69276	Sec62	SEC62 homolog (S. cerevisiae)	-0.92579	0.046749
195522	Zfp691	zinc finger protein 691	0.641151	0.046813
16161	IL12rb1	interleukin 12 receptor, beta 1	1.417691	0.046818
76980	Ube2ql1	ubiquitin-conjugating enzyme E2Q family-like 1	-4.29845	0.046834
18755	Prkch	protein kinase C, eta	-2.05131	0.046972
270624	Spin4	spindlin family, member 4	0.838555	0.047005
105246847	Gm14963	predicted gene 14963	-3.12554	0.047032
67840	Mrpl57	mitochondrial ribosomal protein L57	-0.60313	0.047062
223646	Naprt	nicotinate phosphoribosyltransferase	0.763987	0.047062
26563	Ror1	receptor tyrosine kinase-like orphan receptor 1	-1.31611	0.047074
70615	Ankrd24	ankyrin repeat domain 24	0.678328	0.047076
212728	Tarbp1	TAR RNA binding protein 1	0.95233	0.047099
101604	E430018J23Rik	RIKEN cDNA E430018J23 gene	-0.99365	0.047144
19300	Abcd4	ATP-binding cassette, sub-family D (ALD), member 4	0.639732	0.047212
57781	Cd200r1	CD200 receptor 1	-2.64281	0.047222
14165	Fgf10	fibroblast growth factor 10	-1.65561	0.047222
100216455	Gm14124	predicted gene 14124	2.468747	0.047317
240817	Teddm2	transmembrane epididymal family member 2	1.521659	0.047317
114679	Selenom	selenoprotein M	-1.14151	0.047319
70333	Cd3eap	CD3E antigen, epsilon polypeptide associated protein	-0.62866	0.047358
56490	Zbtb20	zinc finger and BTB domain containing 20	1.050712	0.04737
233893	Zfp764	zinc finger protein 764	-0.77911	0.047574
269401	Zfp512b	zinc finger protein 512B	0.82831	0.047617
19165	Psen2	presenilin 2	0.900895	0.047698
407812	Zfp941	zinc finger protein 941	1.239409	0.047698
20322	Sord	sorbitol dehydrogenase	0.618184	0.047756
237775	Zfp867	zinc finger protein 867	0.802088	0.047835
12661	Chl1	cell adhesion molecule L1-like	1.864121	0.047919
70083	Metrn	metastrophin, glial cell differentiation regulator	-1.03683	0.048003
104718	Ttc7b	tetratricopeptide repeat domain 7B	0.739727	0.048106

66537	Pomp	proteasome maturation protein	-0.6473	0.048144
319150	H3c2	H3 clustered histone 2	-1.98693	0.048159
21940	Cd27	CD27 antigen	2.024794	0.048201
72397	Rbm12b1	RNA binding motif protein 12 B1	1.200364	0.048242
68017	Mrm2	mitochondrial rRNA methyltransferase 2	-0.6019	0.048414
269061	Cpsf7	cleavage and polyadenylation specific factor 7	0.726047	0.048461
67698	Fam174a	family with sequence similarity 174, member A	-0.85433	0.048461
74134	Cyp2s1	cytochrome P450, family 2, subfamily s, polypeptide 1	1.867083	0.048475
72701	Zfp618	zinc finger protein 618	-1.19758	0.048517
78923	Chsy3	chondroitin sulfate synthase 3	-2.43246	0.048583
217430	Pqlc3	PQ loop repeat containing	-1.07983	0.048609
246196	Zfp277	zinc finger protein 277	0.731147	0.048653
75796	Cdyl2	chromodomain protein, Y chromosome-like 2	0.940243	0.048753
545557	Gm12474	predicted gene 12474	2.739933	0.048753
76205	Stard3nl	STAR3 N-terminal like	-0.63439	0.048753
59052	Mettl9	methyltransferase like 9	-0.71973	0.048776
546546	Serpina3h	serine (or cysteine) peptidase inhibitor, clade A, member 3H	-2.41129	0.048783
12075	Bfsp1	beaded filament structural protein 1, in lens-CP94	-1.95307	0.048831
108167733	Gm10138	predicted gene 10138	-0.64771	0.048831
19277	Ptpro	protein tyrosine phosphatase, receptor type, O	-2.64003	0.048901
100043045	Gm4189	predicted gene 4189	1.46732	0.048923
277978	Exoc3l	exocyst complex component 3-like	0.887492	0.048929
18227	Nr4a2	nuclear receptor subfamily 4, group A, member 2	-0.82244	0.048929
73174	Tbkbp1	TBK1 binding protein 1	1.235	0.048929
68027	Tmem178	transmembrane protein 178	0.669653	0.048945
26943	Serinc3	serine incorporator 3	-0.7302	0.048997
102631905	Gm30122	predicted gene, 30122	1.116639	0.049037
14924	Magi1	membrane associated guanylate kinase, WW and PDZ domain co	-0.78134	0.049083
78896	Ecrg4	ECRG4 augurin precursor	-3.3928	0.04916
29816	Hip1r	huntingtin interacting protein 1 related	0.694785	0.049162
54123	Irf7	interferon regulatory factor 7	-1.42489	0.049168
217166	Nr1d1	nuclear receptor subfamily 1, group D, member 1	-0.89551	0.049252
238988	Erc2	ELKS/RAB6-interacting/CAST family member 2	1.95309	0.04926
14472	Gbx2	gastrulation brain homeobox 2	-1.72613	0.049273
108899	2700081O15Rik	RIKEN cDNA 2700081O15 gene	0.780393	0.04938
217826	Kcnk13	potassium channel, subfamily K, member 13	-2.33112	0.04941
140795	P2ry14	purinergic receptor P2Y, G-protein coupled, 14	-5.785	0.04941
14131	Fcgr3	Fc receptor, IgG, low affinity III	-3.07059	0.049423
18022	Nfe2	nuclear factor, erythroid derived 2	2.884873	0.049423
213696	Duoxa1	dual oxidase maturation factor 1	1.797489	0.049482
67525	Trim62	tripartite motif-containing 62	-0.70775	0.049626
112415	Zfp607b	zinc finger protein 607B	0.978474	0.049732
73942	Fam151b	family with sequence similarity 151, member B	-1.05538	0.049738
73652	2210408F21Rik	RIKEN cDNA 2210408F21 gene	-0.98857	0.049822
20308	Ccl9	chemokine (C-C motif) ligand 9	-1.58546	0.049822
233806	Tmem159	transmembrane protein 159	-1.12498	0.049934
258508	Olfir99	olfactory receptor 99	2.674203	0.049956
100503386	Tpbgl	trophoblast glycoprotein-like	-2.0867	0.049964

Supp. Table S2: Impacted pathways. Count DE column shows the DEGs identified in hIGFBP5 pFBs that belong to a given pathway, and the count ALL column shows all the genes in the pathway as defined by KEGG.

Pathway Name	count DE	count All	p-value
Cytokine-cytokine receptor interaction	52	163	6.45E-07
Focal adhesion	47	187	2.46E-05
Staphylococcus aureus infection	14	37	3.04E-05
Viral protein interaction with cytokine and cytokine receptor	18	50	6.95E-05
AGE-RAGE signaling pathway in diabetic complications	34	98	1.29E-04
Systemic lupus erythematosus	20	77	1.97E-04
Proteoglycans in cancer	54	186	2.79E-04
Chemokine signaling pathway	35	147	7.48E-04
Neuroactive ligand-receptor interaction	38	133	1.10E-03
Calcium signaling pathway	34	150	2.06E-03
Pentose and glucuronate interconversions	10	19	2.07E-03
Axon guidance	43	163	2.15E-03
Chagas disease	27	87	2.58E-03
Platelet activation	30	108	2.97E-03
MicroRNAs in cancer	42	161	3.09E-03
Renin secretion	16	57	3.34E-03
PI3K-Akt signaling pathway	67	288	3.38E-03
Complement and coagulation cascades	16	50	4.48E-03
Prion disease	43	229	4.72E-03
Rap1 signaling pathway	46	188	5.01E-03
Human papillomavirus infection	66	294	7.55E-03
Leukocyte transendothelial migration	26	84	8.38E-03
Bacterial invasion of epithelial cells	21	71	8.57E-03
Glycosaminoglycan biosynthesis - chondroitin sulfate / dermatan sulfate	9	19	8.68E-03
Glycosphingolipid biosynthesis - lacto and neolacto series	9	19	8.68E-03
Signaling pathways regulating pluripotency of stem cells	31	109	8.70E-03
Cortisol synthesis and secretion	15	55	1.04E-02
Malaria	14	36	1.09E-02
MAPK signaling pathway	57	253	1.30E-02
Epstein-Barr virus infection	43	174	1.38E-02
Vascular smooth muscle contraction	24	103	1.58E-02
Retinol metabolism	11	28	1.61E-02
ECM-receptor interaction	23	75	1.66E-02
Folate biosynthesis	9	21	1.78E-02
Gastric cancer	31	124	1.94E-02
cGMP-PKG signaling pathway	25	138	1.98E-02
GnRH secretion	16	49	2.04E-02
Aldosterone synthesis and secretion	18	77	2.34E-02
Natural killer cell mediated cytotoxicity	20	74	2.55E-02
Adrenergic signaling in cardiomyocytes	26	117	2.65E-02
TNF signaling pathway	26	104	2.71E-02
EGFR tyrosine kinase inhibitor resistance	18	77	2.75E-02
Regulation of actin cytoskeleton	40	193	2.92E-02
Hematopoietic cell lineage	17	57	3.82E-02
Fluid shear stress and atherosclerosis	30	127	4.23E-02
Wnt signaling pathway	32	134	4.30E-02
Endocrine and other factor-regulated calcium reabsorption	8	39	4.33E-02
Metabolic pathways	236	1212	4.36E-02
Peroxisome	21	76	4.39E-02
Amoebiasis	19	80	4.57E-02
VEGF signaling pathway	16	53	5.06E-02
Melanoma	16	63	5.08E-02
B cell receptor signaling pathway	20	69	5.13E-02
Pertussis	12	63	5.35E-02
Cushing syndrome	33	132	6.44E-02
Mucin type O-glycan biosynthesis	8	22	6.60E-02
Fat digestion and absorption	8	22	6.60E-02
Toll-like receptor signaling pathway	18	78	6.63E-02
Pancreatic secretion	15	59	6.67E-02
Long-term depression	13	47	7.59E-02
Thyroid hormone synthesis	12	56	7.67E-02
Fructose and mannose metabolism	10	31	7.70E-02
Graft-versus-host disease	7	25	7.91E-02
Arginine biosynthesis	6	15	8.01E-02

Apoptosis	30	122	8.03E-02
Ras signaling pathway	43	189	8.06E-02
Protein digestion and absorption	19	72	8.13E-02
Necroptosis	28	117	8.36E-02
Taste transduction	9	34	8.40E-02
Neurotrophin signaling pathway	24	110	8.40E-02
Apelin signaling pathway	25	119	8.51E-02
Antigen processing and presentation	11	53	8.72E-02
Influenza A	30	123	8.82E-02
Hepatocellular carcinoma	32	152	8.97E-02
Autoimmune thyroid disease	7	26	9.08E-02
Phospholipase D signaling pathway	29	120	9.53E-02
Th1 and Th2 cell differentiation	16	64	9.84E-02
ABC transporters	11	37	1.01E-01
Metabolism of xenobiotics by cytochrome P450	11	37	1.01E-01
JAK-STAT signaling pathway	26	112	1.01E-01
Pathways in cancer	92	453	1.02E-01
Nicotinate and nicotinamide metabolism	10	33	1.07E-01
Ovarian steroidogenesis	8	31	1.09E-01
Bile secretion	11	45	1.12E-01
Osteoclast differentiation	25	108	1.16E-01
C-type lectin receptor signaling pathway	23	90	1.17E-01
Insulin secretion	11	58	1.22E-01
Inflammatory mediator regulation of TRP channels	20	81	1.23E-01
Ether lipid metabolism	10	34	1.24E-01
Hepatitis C	25	123	1.24E-01
Cell adhesion molecules	23	96	1.26E-01
Growth hormone synthesis, secretion and action	24	97	1.33E-01
Kaposi sarcoma-associated herpesvirus infection	38	165	1.35E-01
Salivary secretion	16	60	1.37E-01
Transcriptional misregulation in cancer	28	152	1.37E-01
Drug metabolism - cytochrome P450	10	35	1.43E-01
Tuberculosis	32	140	1.45E-01
Allograft rejection	6	26	1.46E-01
Chemical carcinogenesis	11	40	1.50E-01
Type II diabetes mellitus	9	34	1.52E-01
Biosynthesis of amino acids	16	64	1.54E-01
Lysosome	26	114	1.56E-01
Type I diabetes mellitus	6	29	1.57E-01
HIF-1 signaling pathway	22	97	1.62E-01
alpha-Linolenic acid metabolism	5	14	1.62E-01
Rheumatoid arthritis	17	67	1.65E-01
Human cytomegalovirus infection	42	199	1.72E-01
Yersinia infection	24	124	1.73E-01
Alcoholism	29	135	1.74E-01
Mineral absorption	7	37	1.74E-01
Chronic myeloid leukemia	16	75	1.77E-01
Cholinergic synapse	19	90	1.79E-01
T cell receptor signaling pathway	19	80	1.87E-01
Th17 cell differentiation	19	78	1.88E-01
Alanine, aspartate and glutamate metabolism	8	28	1.89E-01
Glucagon signaling pathway	11	84	1.94E-01
Synaptic vesicle cycle	14	57	1.97E-01
Proximal tubule bicarbonate reclamation	5	15	1.98E-01
Arachidonic acid metabolism	10	38	2.04E-01
Thiamine metabolism	4	11	2.05E-01
Nitrogen metabolism	4	11	2.05E-01
Glycosphingolipid biosynthesis - globo and isoglobo series	4	11	2.05E-01
PD-L1 expression and PD-1 checkpoint pathway in cancer	18	77	2.06E-01
African trypanosomiasis	6	24	2.07E-01
Circadian entrainment	18	76	2.10E-01
Measles	25	111	2.10E-01
Glycerolipid metabolism	12	48	2.11E-01
PPAR signaling pathway	12	60	2.13E-01
Olfactory transduction	7	47	2.14E-01
Aldosterone-regulated sodium reabsorption	6	30	2.15E-01
Fc gamma R-mediated phagocytosis	21	88	2.19E-01
Endometrial cancer	12	56	2.25E-01

Insulin resistance	21	98	2.29E-01
Proteasome	11	44	2.29E-01
RIG-I-like receptor signaling pathway	9	48	2.29E-01
Central carbon metabolism in cancer	11	60	2.30E-01
Choline metabolism in cancer	16	85	2.31E-01
Phagosome	27	126	2.34E-01
IL-17 signaling pathway	13	72	2.35E-01
Acute myeloid leukemia	13	61	2.41E-01
Pancreatic cancer	13	75	2.47E-01
Arginine and proline metabolism	10	40	2.49E-01
Small cell lung cancer	17	89	2.50E-01
Linoleic acid metabolism	4	12	2.50E-01
Collecting duct acid secretion	6	21	2.51E-01
Herpes simplex virus 1 infection	74	377	2.59E-01
Galactose metabolism	7	26	2.61E-01
Long-term potentiation	12	56	2.62E-01
Cholesterol metabolism	7	37	2.64E-01
Dilated cardiomyopathy	14	75	2.65E-01
Non-small cell lung cancer	16	70	2.75E-01
Purine metabolism	23	109	2.87E-01
Human immunodeficiency virus 1 infection	32	179	2.90E-01
Glycine, serine and threonine metabolism	8	32	2.94E-01
Glutamatergic synapse	17	82	2.95E-01
FoxO signaling pathway	21	113	2.95E-01
Hepatitis B	26	141	2.96E-01
Basal cell carcinoma	12	50	2.96E-01
p53 signaling pathway	15	68	3.06E-01
Oocyte meiosis	10	105	3.11E-01
Glycerophospholipid metabolism	17	79	3.13E-01
Primary immunodeficiency	6	23	3.18E-01
Ubiquinone and other terpenoid-quinone biosynthesis	3	9	3.18E-01
Viral myocarditis	12	52	3.21E-01
Prolactin signaling pathway	13	54	3.27E-01
Colorectal cancer	15	82	3.28E-01
Glioma	15	69	3.29E-01
Platinum drug resistance	15	69	3.31E-01
Hippo signaling pathway	28	134	3.37E-01
Ferroptosis	6	36	3.53E-01
AMPK signaling pathway	11	108	3.53E-01
mRNA surveillance pathway	10	91	3.55E-01
Longevity regulating pathway - multiple species	6	58	3.57E-01
Dopaminergic synapse	18	110	3.70E-01
Inflammatory bowel disease	10	41	3.84E-01
Leishmaniasis	13	59	3.86E-01
NOD-like receptor signaling pathway	26	143	3.93E-01
Various types of N-glycan biosynthesis	8	36	4.03E-01
mTOR signaling pathway	25	140	4.03E-01
Regulation of lipolysis in adipocytes	10	47	4.04E-01
Longevity regulating pathway	7	83	4.05E-01
Biosynthesis of unsaturated fatty acids	6	26	4.15E-01
Progesterone-mediated oocyte maturation	11	80	4.16E-01
Nicotine addiction	5	21	4.20E-01
Primary bile acid biosynthesis	3	11	4.23E-01
Sulfur metabolism	3	11	4.23E-01
Other glycan degradation	4	16	4.24E-01
2-Oxocarboxylic acid metabolism	4	16	4.24E-01
Salmonella infection	38	232	4.24E-01
Glutathione metabolism	11	53	4.27E-01
Melanogenesis	17	81	4.29E-01
Other types of O-glycan biosynthesis	8	37	4.29E-01
Gastric acid secretion	11	52	4.31E-01
Oxytocin signaling pathway	25	121	4.32E-01
Protein processing in endoplasmic reticulum	29	159	4.38E-01
Breast cancer	24	122	4.42E-01
RNA transport	11	157	4.44E-01
Bladder cancer	9	38	4.44E-01
Drug metabolism - other enzymes	11	54	4.49E-01
Gap junction	16	74	4.53E-01

Steroid hormone biosynthesis	5	22	4.54E-01
Cell cycle	11	118	4.59E-01
Vitamin digestion and absorption	4	17	4.63E-01
Estrogen signaling pathway	17	98	4.65E-01
Apoptosis - multiple species	5	29	4.67E-01
TGF-beta signaling pathway	15	80	4.77E-01
Serotonergic synapse	17	79	4.80E-01
beta-Alanine metabolism	5	23	4.87E-01
cAMP signaling pathway	30	151	4.87E-01
Fanconi anemia pathway	2	51	4.91E-01
Hypertrophic cardiomyopathy	14	73	4.95E-01
Cocaine addiction	6	37	4.99E-01
Histidine metabolism	4	18	5.00E-01
Sphingolipid signaling pathway	21	112	0.50334883
Glycosphingolipid biosynthesis - ganglio series	3	13	0.513760332
Cytosolic DNA-sensing pathway	9	44	0.515452332
Retrograde endocannabinoid signaling	19	109	0.517662441
Carbon metabolism	19	103	0.52297149
Viral carcinogenesis	35	183	0.5233854
Sphingolipid metabolism	8	41	0.52590988
GnRH signaling pathway	16	76	0.527869285
ErbB signaling pathway	16	78	0.528103549
Amphetamine addiction	9	56	0.5337822
Notch signaling pathway	7	48	0.538032535
Fc epsilon RI signaling pathway	12	56	0.538173596
Valine, leucine and isoleucine degradation	9	48	0.554278519
SNARE interactions in vesicular transport	7	32	0.55721241
GABAergic synapse	11	60	0.57171058
Protein export	5	26	0.573477971
Circadian rhythm	3	30	0.574241812
NF-kappa B signaling pathway	17	88	0.574800927
Intestinal immune network for IgA production	6	29	0.59054908
Mannose type O-glycan biosynthesis	4	21	0.594111175
Tight junction	26	134	0.604858113
Human T-cell leukemia virus 1 infection	34	199	0.608997489
Valine, leucine and isoleucine biosynthesis	1	4	0.615962428
D-Glutamine and D-glutamate metabolism	1	4	0.615962428
Biosynthesis of cofactors	21	122	0.615989648
Phenylalanine metabolism	2	10	0.618096059
Selenocompound metabolism	3	16	0.619287322
Arrhythmogenic right ventricular cardiomyopathy	12	59	0.630161927
N-Glycan biosynthesis	8	47	0.641891323
Endocrine resistance	15	85	0.645447986
Renin-angiotensin system	3	17	0.64714842
Parkinson disease	31	211	0.663192659
Pentose phosphate pathway	4	24	0.666194401
Fatty acid elongation	4	24	0.666194401
Prostate cancer	15	91	0.666611157
Steroid biosynthesis	3	18	0.671818728
Glycolysis / Gluconeogenesis	8	49	0.672308042
Maturity onset diabetes of the young	2	7	0.676593999
Glycosaminoglycan biosynthesis - keratan sulfate	2	12	0.681870464
Ascorbate and aldarate metabolism	2	12	0.681870464
Legionellosis	9	54	0.682505397
Renal cell carcinoma	13	67	0.685712318
Inositol phosphate metabolism	11	69	0.692083133
Thermogenesis	20	201	0.702311853
Hippo signaling pathway - multiple species	2	25	0.702329609
Phosphonate and phosphinate metabolism	1	6	0.704802913
Taurine and hypotaurine metabolism	1	6	0.704802913
Spinocerebellar ataxia	22	125	0.708789398
Tyrosine metabolism	3	20	0.712783297
Lysine degradation	9	59	0.718443478
Basal transcription factors	6	40	0.71948612
Thyroid hormone signaling pathway	19	110	0.72516976
Alzheimer disease	56	312	0.729695175
Cysteine and methionine metabolism	6	41	0.731393977
Antifolate resistance	5	27	0.732991229

Glyoxylate and dicarboxylate metabolism	4	28	0.73351353
Vitamin B6 metabolism	1	7	0.73377489
Phosphatidylinositol signaling system	13	87	0.74211709
Adherens junction	10	68	0.742912423
Relaxin signaling pathway	21	113	0.743828478
Hedgehog signaling pathway	3	43	0.744392798
Terpenoid backbone biosynthesis	3	22	0.744456943
Fatty acid biosynthesis	2	15	0.745504094
Pyrimidine metabolism	7	49	0.746586734
Adipocytokine signaling pathway	8	60	0.751053512
Riboflavin metabolism	1	8	0.756180045
Starch and sucrose metabolism	3	23	0.757441598
Parathyroid hormone synthesis, secretion and action	16	87	0.759038569
Glycosaminoglycan degradation	2	16	0.760609414
Pantothenate and CoA biosynthesis	2	16	0.760609414
Cardiac muscle contraction	8	59	0.773395224
Propanoate metabolism	4	32	0.776779713
Tryptophan metabolism	4	32	0.776779713
Amino sugar and nucleotide sugar metabolism	6	46	0.777157859
Pathways of neurodegeneration - multiple diseases	67	401	0.78181575
Autophagy - animal	13	130	0.78694348
Synthesis and degradation of ketone bodies	1	10	0.78756298
Asthma	1	10	0.78756298
Toxoplasmosis	17	95	0.789414498
Thyroid cancer	6	33	0.789648922
Fatty acid degradation	5	41	0.790608314
Carbohydrate digestion and absorption	6	31	0.791585608
One carbon pool by folate	2	19	0.793564147
Porphyrin and chlorophyll metabolism	3	27	0.795111111
Glycosaminoglycan biosynthesis - heparan sulfate / heparin	2	20	0.801432078
Butanoate metabolism	2	20	0.801432078
Non-homologous end-joining	1	12	0.807436121
Phototransduction	1	15	0.813251397
Cellular senescence	26	153	0.819716516
Fatty acid metabolism	6	56	0.822917229
Endocytosis	32	234	0.823680514
Pyruvate metabolism	3	33	0.824353428
RNA degradation	12	76	0.825776185
Insulin signaling pathway	17	120	0.827796048
Citrate cycle (TCA cycle)	2	28	0.8341111
RNA polymerase	2	29	0.835974377
Oxidative phosphorylation	12	110	0.837588506
Aminoacyl-tRNA biosynthesis	3	44	0.842077372
Glycosylphosphatidylinositol (GPI)-anchor biosynthesis	1	25	0.843410015
Nucleotide excision repair	2	43	0.845521407
Base excision repair	1	33	0.845875907
DNA replication	1	35	0.846095149
Ubiquitin mediated proteolysis	11	136	0.846323302
Ribosome biogenesis in eukaryotes	4	78	0.846454627
Ribosome	8	136	0.84656547
Spliceosome	3	129	0.846573587
Morphine addiction	11	64	0.874247843
Mitophagy - animal	9	64	0.895453392
Non-alcoholic fatty liver disease	19	132	0.960369892
Vasopressin-regulated water reabsorption	4	37	0.967690304
Autophagy - other	1	31	0.97966484
Amyotrophic lateral sclerosis	35	314	0.989271414
Huntington disease	32	260	0.998463506

Supp. Table S3: Differentially expressed receptors. This list includes integrins. The q-value cut off is 0.05, upregulated receptors have a log2FC above 0.6 (red), and downregulated receptors have a log2FC below -0.6 (blue).

SYMBOL	GENENAME	log2FC	q-value
Adcyap1r1	adenylate cyclase activating polypeptide 1 receptor 1	-4.981068202	1.00E-06
Adora2b	adenosine A2b receptor	-1.143494105	1.00E-06
Antxr1	anthrax toxin receptor-like	4.553982293	1.00E-06
Cxadr	coxsackie virus and adenovirus receptor	3.058938096	1.00E-06
Epha1	Eph receptor A1	1.431393709	1.00E-06
Fas	Fas (TNF receptor superfamily member 6)	-1.618621567	1.00E-06
Flvcr2	feline leukemia virus subgroup C cellular receptor 2	2.739375597	1.00E-06
Fzd6	frizzled class receptor 6	1.320089949	1.00E-06
Gab1	growth factor receptor bound protein 2-associated protein 1	1.603900206	1.00E-06
Grip1	glutamate receptor interacting protein 1	6.172341174	1.00E-06
Grk5	G protein-coupled receptor kinase 5	-1.421961981	1.00E-06
Mchr1	melanin-concentrating hormone receptor 1	3.739767803	1.00E-06
Mrap	melanocortin 2 receptor accessory protein	2.324639509	1.00E-06
Npr3	natriuretic peptide receptor 3	-2.32993028	1.00E-06
Olfr1372-ps1	olfactory receptor 1372, pseudogene 1	2.657294779	1.00E-06
Ptger3	prostaglandin E receptor 3 (subtype EP3)	3.903749436	1.00E-06
Ptpu	protein tyrosine phosphatase, receptor type, U	4.472800433	1.00E-06
Rapsn	receptor-associated protein of the synapse	-3.798857496	1.00E-06
Rtn4rl2	reticulon 4 receptor-like 2	1.622597289	1.00E-06
Ryr3	ryanodine receptor 3	4.122199731	1.00E-06
Sorl1	sortilin-related receptor, LDLR class A repeats-containing	3.154360143	1.00E-06
Trbc2	T cell receptor beta, constant 2	4.14325321	1.00E-06
Scarf2	scavenger receptor class F, member 2	1.347157193	2.33E-06
Nr5a2	nuclear receptor subfamily 5, group A, member 2	4.349592675	4.44E-06
Adrb2	adrenergic receptor, beta 2	-1.412086564	4.60E-06
Gpr85	G protein-coupled receptor 85	-2.298353529	7.01E-06
Eps15l1	epidermal growth factor receptor pathway substrate 15-like 1	0.881529861	7.90E-06
Tnfrsf12a	tumor necrosis factor receptor superfamily, member 12a	-1.107658963	8.74E-06
Trpm5	transient receptor potential cation channel, subfamily M, member 5	-3.131523437	9.66E-06
Itga3	integrin alpha 3	1.703551417	1.07E-05
Pvr	poliovirus receptor	-0.989641864	1.74E-05
Htr2a	5-hydroxytryptamine (serotonin) receptor 2A	-2.001585663	1.94E-05
Chrna4	cholinergic receptor, nicotinic, alpha polypeptide 4	2.719951081	2.10E-05
Ripk2	receptor (TNFRSF)-interacting serine-threonine kinase 2	-1.498581008	2.19E-05
Epha3	Eph receptor A3	-6.405623883	3.39E-05
Itga2	integrin alpha 2	-3.903032556	3.70E-05
Rarres1	retinoic acid receptor responder (tazarotene induced) 1	-2.861882552	4.76E-05
Tnfrsf9	tumor necrosis factor receptor superfamily, member 9	-6.609201441	5.12E-05
Celsr2	cadherin, EGF LAG seven-pass G-type receptor 2	1.812102398	6.90E-05
Lpar2	lysophosphatidic acid receptor 2	2.062966232	8.29E-05
Il2rg	interleukin 2 receptor, gamma chain	-3.272564154	8.64E-05
Prokr1	prokineticin receptor 1	2.445102116	9.12E-05
Ramp1	receptor (calcitonin) activity modifying protein 1	3.095853192	9.12E-05
Bmpr1b	bone morphogenetic protein receptor, type 1B	-1.622418046	9.85E-05
Scara3	scavenger receptor class A, member 3	-1.910149969	0.000116458
Gfra4	glial cell line derived neurotrophic factor family receptor alpha 4	-1.312821088	0.000128891
Mst1r	macrophage stimulating 1 receptor (c-met-related tyrosine kinase)	1.703643588	0.000190689
Adgr1	adhesion G protein-coupled receptor L1	1.148051324	0.000191437
Ifngr2	interferon gamma receptor 2	-0.937548642	0.000193008
Klra4	killer cell lectin-like receptor, subfamily A, member 4	-3.303926908	0.000193468
Acvrl1	activin A receptor, type II-like 1	-2.438245346	0.000206663
Epor	erythropoietin receptor	2.472378962	0.000219768
P2rx7	purinergic receptor P2X, ligand-gated ion channel, 7	-3.386467426	0.000235385
Unc5c	unc-5 netrin receptor C	-4.408562779	0.00023558
Il1rap	interleukin 1 receptor accessory protein	0.974563503	0.000236399
Epha7	Eph receptor A7	1.611522818	0.000240603
Adra1b	adrenergic receptor, alpha 1b	-1.66521395	0.000242203
Klra2	killer cell lectin-like receptor, subfamily A, member 2	-1.444232871	0.000303913
Crif3	cytokine receptor-like factor 3	-0.699768697	0.000343965
Fzd4	frizzled class receptor 4	1.52505821	0.00050876
Tgfb3	transforming growth factor, beta receptor III	1.084009579	0.000515581
Bdkrb2	bradykinin receptor, beta 2	-5.229756717	0.000577267
Gpr137c	G protein-coupled receptor 137C	-3.694886563	0.000615662
Grb14	growth factor receptor bound protein 14	1.005482645	0.000673997

Crif1	cytokine receptor-like factor 1	-2.769830959	0.000762905
Lrp11	low density lipoprotein receptor-related protein 11	-1.410684115	0.000805311
P2ry6	pyrimidinergic receptor P2Y, G-protein coupled, 6	-2.723327675	0.000870242
Pirb	paired Ig-like receptor B	-3.133180864	0.00090352
Pgrmc1	progesterone receptor membrane component 1	-0.887795143	0.001081619
Ogfr1	opioid growth factor receptor-like 1	-1.160937425	0.001106534
Nr2f2	nuclear receptor subfamily 2, group F, member 2	-0.841745184	0.001208425
Rtp4	receptor transporter protein 4	-3.288655889	0.001365915
Gprc5b	G protein-coupled receptor, family C, group 5, member B	-1.699728614	0.001385115
Vmn2r79	vomeroneasal 2, receptor 79	-6.806011554	0.001434523
Adra1d	adrenergic receptor, alpha 1d	-1.927779763	0.001550362
Trpc4	transient receptor potential cation channel, subfamily C, member 4	3.902153569	0.001716242
Pdgfrb	platelet derived growth factor receptor, beta polypeptide	-0.969158974	0.001732918
S1pr1	sphingosine-1-phosphate receptor 1	-1.433812634	0.001812412
Ntrk2	neurotrophic tyrosine kinase, receptor, type 2	5.213863699	0.001824005
Tgfb3l1	transforming growth factor, beta receptor III-like	2.232581073	0.001914332
Eps8	epidermal growth factor receptor pathway substrate 8	1.000095684	0.001917335
Il10rb	interleukin 10 receptor, beta	-0.929195028	0.002004122
P2ry2	purinergic receptor P2Y, G-protein coupled 2	-1.447311673	0.002004122
Vdr	vitamin D (1,25-dihydroxyvitamin D3) receptor	1.431877441	0.002038051
Reep5	receptor accessory protein 5	-1.357440975	0.002222368
Gpr165	G protein-coupled receptor 165	-3.974043637	0.002444543
Ssr1	signal sequence receptor, alpha	-0.69451409	0.002481872
Plaur	plasminogen activator, urokinase receptor	-1.146292459	0.002508939
Gprasp2	G protein-coupled receptor associated sorting protein 2	2.99971014	0.002661486
Rer1	retention in endoplasmic reticulum sorting receptor 1	-0.874968363	0.002720388
Acvr1b	activin A receptor, type 1B	0.887406272	0.002751096
Itga2b	integrin alpha 2b	1.231993598	0.002903529
Edar	ectodysplasin-A receptor	-4.856381745	0.002977391
Gpr135	G protein-coupled receptor 135	-1.018376989	0.00310932
Adgrf4	adhesion G protein-coupled receptor F4	2.275896867	0.003267834
Traf1	TNF receptor-associated factor 1	-3.575206524	0.003690393
Arnt	aryl hydrocarbon receptor nuclear translocator	0.687346542	0.003847273
Spsb1	splA/ryanodine receptor domain and SOCS box containing 1	-0.963489345	0.004131773
Grin2a	glutamate receptor, ionotropic, NMDA2A (epsilon 1)	-5.086199303	0.004452627
Xcr1	chemokine (C motif) receptor 1	2.12258558	0.004820252
Ntrk3	neurotrophic tyrosine kinase, receptor, type 3	1.978504674	0.004890327
Ackr4	atypical chemokine receptor 4	2.062788397	0.005106014
Ptpn13	protein tyrosine phosphatase, non-receptor type 13	0.934090188	0.005140595
Adgrg6	adhesion G protein-coupled receptor G6	-2.065976869	0.005417267
Ifnlr1	interferon lambda receptor 1	1.743105027	0.005546553
Itpr3	inositol 1,4,5-trisphosphate receptor 3	1.132773891	0.005751373
Olfir544	olfactory receptor 544	4.513201245	0.005845066
Adgrl3	adhesion G protein-coupled receptor L3	-6.041766416	0.005961472
Itpril2	inositol 1,4,5-trisphosphate receptor interacting protein-like 2	-1.25916198	0.006511008
Kdelr3	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention receptor 3	-1.08106013	0.007195823
Fcrls	Fc receptor-like S, scavenger receptor	-5.563031959	0.007611407
Lilra5	leukocyte immunoglobulin-like receptor, subfamily A (with TM domain), member 5	-5.197910332	0.007679915
Fpr1	formyl peptide receptor 1	-5.713381945	0.007961185
Cnr2	cannabinoid receptor 2 (macrophage)	-3.299545761	0.00814392
Il21r	interleukin 21 receptor	-4.267622036	0.008279783
Gpr180	G protein-coupled receptor 180	-0.901369202	0.008390694
Tlr7	toll-like receptor 7	-2.44123678	0.008624683
Kiss1r	KISS1 receptor	1.41537032	0.008626151
Ager	advanced glycosylation end product-specific receptor	1.277154842	0.008834422
Cnrip1	cannabinoid receptor interacting protein 1	-0.928300812	0.009471894
Itga7	integrin alpha 7	-2.184701543	0.009923419
Ppargc1b	peroxisome proliferative activated receptor, gamma, coactivator 1 beta	1.484112637	0.010020738
Sigmar1	sigma non-opioid intracellular receptor 1	-0.685189321	0.010777312
C3ar1	complement component 3a receptor 1	-2.601385362	0.010899396
Liril1	ligand dependent nuclear receptor interacting factor 1	-0.604952911	0.012316941
Gria4	glutamate receptor, ionotropic, AMPA4 (alpha 4)	-1.792468103	0.012583308
CSar1	complement component 5a receptor 1	-2.763755896	0.012685318
Pira2	paired-Ig-like receptor A2	-3.154658878	0.013267912
Cxcr6	chemokine (C-X-C motif) receptor 6	2.795035075	0.014375622
Hrh1	histamine receptor H1	-2.056848309	0.014977761
Itgb6	integrin beta 6	-5.002543557	0.015383342
Robo1	roundabout guidance receptor 1	-1.893251121	0.015409193

Pgrmc2	progesterone receptor membrane component 2	-1.244303881	0.015454609
Ldlr	low density lipoprotein receptor	-0.688146759	0.016238679
ErbB3	erb-b2 receptor tyrosine kinase 3	1.68425629	0.016399723
Nr2c1	nuclear receptor subfamily 2, group C, member 1	0.766537569	0.016544777
Itgb5	integrin beta 5	-0.836745649	0.017543718
Tshr	thyroid stimulating hormone receptor	-4.101223713	0.017897015
Itga8	integrin alpha 8	-4.390664624	0.018391085
Cnih1	cornichon family AMPA receptor auxiliary protein 1	-0.846979031	0.018426414
Ackr1	atypical chemokine receptor 1 (Duffy blood group)	3.107178744	0.018534383
Nr6a1	nuclear receptor subfamily 6, group A, member 1	0.95248023	0.018697809
Il17re	interleukin 17 receptor E	-1.381271963	0.018730702
Ptpre	protein tyrosine phosphatase, receptor type, E	-2.460186621	0.018851297
Adgrb2	adhesion G protein-coupled receptor B2	1.48954952	0.019291649
Ptprc	protein tyrosine phosphatase, receptor type, C	-2.65070343	0.019573316
Grb10	growth factor receptor bound protein 10	-2.166274849	0.019850396
Ppargc1a	peroxisome proliferative activated receptor, gamma, coactivator 1 alpha	1.903253455	0.020206455
Nsd3	nuclear receptor binding SET domain protein 3	0.735360564	0.020862448
Il1rl2	interleukin 1 receptor-like 2	-1.400647326	0.021303627
Olfr1318	olfactory receptor 1318	-2.377088663	0.022795666
Hcar2	hydroxycarboxylic acid receptor 2	-4.983924691	0.022967236
Ptpn7	protein tyrosine phosphatase, non-receptor type 7	-2.058032111	0.022992673
Nr4a3	nuclear receptor subfamily 4, group A, member 3	-2.039174747	0.024356579
Grin3a	glutamate receptor ionotropic, NMDA3A	-2.968507667	0.024426669
Scara5	scavenger receptor class A, member 5	1.803201045	0.02466061
Il10ra	interleukin 10 receptor, alpha	-3.126789697	0.02474089
Agtr1b	angiotensin II receptor, type 1b	-5.445510886	0.025131599
Ephb6	Eph receptor B6	2.163192886	0.025295198
Ppfia1	protein tyrosine phosphatase, receptor type, f polypeptide (PTPRF), interacting protein (liprin), alpha 1	-0.672617235	0.025440355
Gprc5a	G protein-coupled receptor, family C, group 5, member A	-0.922153332	0.025461532
Havcr2	hepatitis A virus cellular receptor 2	-2.267908736	0.026549551
Thrb	thyroid hormone receptor beta	1.46607512	0.026732329
Il1rl1	interleukin 1 receptor-like 1	-3.433513808	0.027764161
Rorb	RAR-related orphan receptor beta	-4.201601713	0.028099157
Vmn1r40	vomerionasal 1 receptor 40	-3.352125896	0.028168037
Il1rn	interleukin 1 receptor antagonist	-2.59126267	0.029899139
Olfr1309	olfactory receptor 1309	-4.956325924	0.032219042
Trem2	triggering receptor expressed on myeloid cells 2	-2.054324022	0.033082263
Cxcr4	chemokine (C-X-C motif) receptor 4	-3.022864117	0.033534976
Fcgr2b	Fc receptor, IgG, low affinity IIb	-3.288260742	0.033827062
Nrip1	nuclear receptor interacting protein 1	0.820618997	0.0345886
Gprasp1	G protein-coupled receptor associated sorting protein 1	0.817444898	0.035995445
Ptgfr	prostaglandin F receptor	-2.328310133	0.036614773
Prokr2	prokineticin receptor 2	3.91406515	0.037460734
Gabbr1	gamma-aminobutyric acid (GABA) B receptor, 1	0.621794363	0.038454491
F11r	F11 receptor	1.107362264	0.039209426
Ptpnz1	protein tyrosine phosphatase, receptor type Z, polypeptide 1	2.356457652	0.039241823
Tlr8	toll-like receptor 8	-2.534205244	0.039878038
Ephb3	Eph receptor B3	0.699232745	0.041107959
Gpr153	G protein-coupled receptor 153	1.200780848	0.041503438
Gfra2	glial cell line derived neurotrophic factor family receptor alpha 2	-3.829831431	0.042030726
Gpr65	G-protein coupled receptor 65	-3.301269949	0.042496779
Adgrg1	adhesion G protein-coupled receptor G1	-1.267511692	0.042875143
Olrl	oxidized low density lipoprotein (lectin-like) receptor 1	-0.810907472	0.043486146
Il20ra	interleukin 20 receptor, alpha	1.755415421	0.044353559
Vmn1r43	vomerionasal 1 receptor 43	-2.019639714	0.044353559
Ptgfrn	prostaglandin F2 receptor negative regulator	-0.732124459	0.044384452
Tnfrsf10b	tumor necrosis factor receptor superfamily, member 10b	-0.716175309	0.045685537
Nmur1	neuromedin U receptor 1	-3.44896536	0.046082901
Il12rb1	interleukin 12 receptor, beta 1	1.417690589	0.046818201
Ror1	receptor tyrosine kinase-like orphan receptor 1	-1.316108967	0.047074476
Cd200r1	CD200 receptor 1	-2.642809096	0.047221801
Ptpro	protein tyrosine phosphatase, receptor type, O	-2.640031292	0.048901104
Nr4a2	nuclear receptor subfamily 4, group A, member 2	-0.822435128	0.04892871
Nr1d1	nuclear receptor subfamily 1, group D, member 1	-0.895513016	0.049252075
P2ry14	purinergic receptor P2Y, G-protein coupled, 14	-5.785003834	0.049410283
Fcgr3	Fc receptor, IgG, low affinity III	-3.070589392	0.049423005
Olfr99	olfactory receptor 99	2.674202537	0.04995561

Supp. Table 4: ToppFun output for differentially expressed receptor molecular function terms are shown here.

Name	p-value	Hit Count in Query List	Hit Count in Genome	Hit in Query List
signaling receptor activity	1.50E-95	128	1587	EPHB3,EPHB6,IL10RA,IL10RB,EPOR,IL12RB1,NR2C1,HCAR2,ERBB3,TNFRSF9,RAMP1,CRLF1,PDGFRB,SIGMAR1,GPR85,TGFB3L,ADGRB2,GPR135,IL20RA,ADGRG1,NMUR1,TLR7,TSHR,ITGA2,NR6A1,ACVR1B,TNFRSF10B,ACVRL1,GFRA4,PTGER3,IL1RL2,PTGFR,ITGB5,ITGB6,TLR8,BDKRB2,CHRNA4,GFRA2,ADCYAP1R1,FZD4,FZD6,PROKR1,ADORA2B,ADRA1D,BMPR1B,ADRA1B,ADRB2,KISS1R,PTPRC,PTPRE,EDAR,PROKR2,FCGR2B,FCGR3B,PTPRO,PTPRZ1,CXCR4,AGER,PGRMC2,AGTR1,PVR,HRH1,P2RY14,C3AR1,PLAUR,ADGRF4,C5AR1,GRIN3A,ADGRL3,CNR2,VDR,OGFRL1,XCR1,LILRB3,NPR3,HTR2A,GPR65,MCHR1,NTRK2,NTRK3,FPR1,ROR1,NR4A2,ADGRL1,GRIA4,NR4A3,GRIN2A,GPRCSA,PTPRU,ACKR4,FAS,NR1D1,S1PR1,NR2F2,IFNLR1,CD200R1,ADGRG6,IFNGR2,MST1R,TGFB3,ANTXR1,THRB,CELSR2,P2RX7,P2RY2,CXCR6,P2RY6,IL17RE,GPR153,IL21R,UNC5C,NR5A2,TREM2,ROBO1,RORB,LPAR2,IL1RL1,ACKR1,IL1RAP,IL1RN,RTN4RL2,IL2RG,GABBR1,GPRC5B,EPHA1,EPHA3,EPHA7,SORL1
molecular transducer activity	1.50E-95	128	1587	EPHB3,EPHB6,IL10RA,IL10RB,EPOR,IL12RB1,NR2C1,HCAR2,ERBB3,TNFRSF9,RAMP1,CRLF1,PDGFRB,SIGMAR1,GPR85,TGFB3L,ADGRB2,GPR135,IL20RA,ADGRG1,NMUR1,TLR7,TSHR,ITGA2,NR6A1,ACVR1B,TNFRSF10B,ACVRL1,GFRA4,PTGER3,IL1RL2,PTGFR,ITGB5,ITGB6,TLR8,BDKRB2,CHRNA4,GFRA2,ADCYAP1R1,FZD4,FZD6,PROKR1,ADORA2B,ADRA1D,BMPR1B,ADRA1B,ADRB2,KISS1R,PTPRC,PTPRE,EDAR,PROKR2,FCGR2B,FCGR3B,PTPRO,PTPRZ1,CXCR4,AGER,PGRMC2,AGTR1,PVR,HRH1,P2RY14,C3AR1,PLAUR,ADGRF4,C5AR1,GRIN3A,ADGRL3,CNR2,VDR,OGFRL1,XCR1,LILRB3,NPR3,HTR2A,GPR65,MCHR1,NTRK2,NTRK3,FPR1,ROR1,NR4A2,ADGRL1,GRIA4,NR4A3,GRIN2A,GPRCSA,PTPRU,ACKR4,FAS,NR1D1,S1PR1,NR2F2,IFNLR1,CD200R1,ADGRG6,IFNGR2,MST1R,TGFB3,ANTXR1,THRB,CELSR2,P2RX7,P2RY2,CXCR6,P2RY6,IL17RE,GPR153,IL21R,UNC5C,NR5A2,TREM2,ROBO1,RORB,LPAR2,IL1RL1,ACKR1,IL1RAP,IL1RN,RTN4RL2,IL2RG,GABBR1,GPRC5B,EPHA1,EPHA3,EPHA7,SORL1
transmembrane signaling receptor activity	9.87E-80	110	1331	EPHB3,EPHB6,IL10RA,IL10RB,EPOR,IL12RB1,HCAR2,ERBB3,RAMP1,CRLF1,PDGFRB,SIGMAR1,GPR85,TGFB3L,ADGRB2,GPR135,IL20RA,ADGRG1,NMUR1,TLR7,TSHR,ITGA2,ACVR1B,ACVRL1,GFRA4,PTGER3,IL1RL2,PTGFR,TLR8,BDKRB2,CHRNA4,GFRA2,ADCYAP1R1,FZD4,FZD6,PROKR1,ADORA2B,ADRA1D,BMPR1B,ADRA1B,ADRB2,KISS1R,PTPRC,PTPRE,EDAR,PROKR2,FCGR2B,FCGR3B,PTPRO,PTPRZ1,CXCR4,AGER,AGTR1,HRH1,P2RY14,C3AR1,ADGRF4,C5AR1,GRIN3A,ADGRL3,CNR2,OGFRL1,XCR1,LILRB3,NPR3,HTR2A,GPR65,MCHR1,NTRK2,NTRK3,FPR1,ROR1,ADGRL1,GRIA4,GRIN2A,GPRCSA,PTPRU,ACKR4,FAS,S1PR1,IFNLR1,CD200R1,ADGRG6,IFNGR2,MST1R,TGFB3,ANTXR1,CELSR2,P2RX7,P2RY2,CXCR6,P2RY6,IL17RE,GPR153,IL21R,UNC5C,TREM2,ROBO1,RORB,LPAR2,IL1RL1,ACKR1,IL1RAP,IL2RG,GABBR1,GPRC5B,EPHA1,EPHA3,EPHA7,SORL1
G protein-coupled receptor activity	2.92E-29	54	873	HCAR2,RAMP1,PDGFRB,SIGMAR1,GPR85,ADGRB2,GPR135,ADGRG1,NMUR1,TSHR,PTGER3,PTGFR,BDKRB2,ADCYAP1R1,FZD4,FZD6,PROKR1,ADORA2B,ADRA1D,ADRA1B,ADRB2,KISS1R,PROKR2,CXCR4,AGTR1,HRH1,P2RY14,C3AR1,ADGRF4,C5AR1,ADGRL3,CNR2,OGFRL1,XCR1,NPR3,HTR2A,GPR65,MCHR1,FPRI,ADGRL1,GPRCSA,ACKR4,S1PR1,ADGRG6,CELSR2,P2RY2,CXCR6,P2RY6,GPR153,RORB,LPAR2,ACKR1,GABBR1,GPRC5B
cytokine binding	1.64E-28	30	184	IL10RA,IL10RB,EPOR,IL12RB1,TNFRSF9,CRLF1,TGFB3L,IL20RA,ACVRL1,GFRA4,IL1RL2,GFRA2,FZD4,BMPR1B,CXCR4,AGER,XCR1,ACKR4,FAS,IFNLR1,IFNGR2,TGFB3,CXCR6,IL17RE,IL21R,IL1RL1,ACKR1,IL1RAP,IL1RN,IL2RG
immune receptor activity	2.96E-26	26	141	IL10RA,IL10RB,EPOR,IL12RB1,CRLF1,IL20RA,GFRA4,IL1RL2,GFRA2,FZD4,FCGR2B,CXCR4,C3AR1,C5AR1,XCR1,FPR1,ACKR4,IFNLR1,CD200R1,IFNGR2,CXCR6,IL17RE,IL21R,IL1RL1,IL1RAP,IL2RG
cytokine receptor activity	6.08E-23	21	97	IL10RA,IL10RB,EPOR,IL12RB1,CRLF1,IL20RA,GFRA4,IL1RL2,GFRA2,FZD4,CXCR4,XCR1,ACKR4,IFNLR1,IFNGR2,CXCR6,IL17RE,IL21R,IL1RL1,IL1RAP,IL2RG
peptide binding	5.74E-20	33	452	RAMP1,SIGMAR1,NMUR1,TSHR,ITGA2,PGRMC1,BDKRB2,ADCYAP1R1,FZD4,FZD6,PROKR1,ADRB2,KISS1R,PROKR2,FCGR2B,CXCR4,AGER,AGTR1,GPRASP2,KDELRL3,OGFRL1,XCR1,LILRB3,NPR3,MCHR1,FPR1,GRIA4,GRIN2A,ACKR4,LDLR,CXCR6,TREM2,SORL1
amide binding	1.40E-17	33	542	RAMP1,SIGMAR1,NMUR1,TSHR,ITGA2,PGRMC1,BDKRB2,ADCYAP1R1,FZD4,FZD6,PROKR1,ADRB2,KISS1R,PROKR2,FCGR2B,CXCR4,AGER,AGTR1,GPRASP2,KDELRL3,OGFRL1,XCR1,LILRB3,NPR3,MCHR1,FPR1,GRIA4,GRIN2A,ACKR4,LDLR,CXCR6,TREM2,SORL1
transmembrane receptor protein kinase activity	1.30E-16	16	86	EPHB3,EPHB6,ERBB3,PDGFRB,TGFB3L,ACVR1B,ACVRL1,BMPR1B,NTRK2,NTRK3,ROR1,MST1R,TGFB3,EPHA1,EPHA3,EPHA7
G protein-coupled peptide receptor activity	4.86E-15	18	150	RAMP1,SIGMAR1,NMUR1,TSHR,BDKRB2,ADCYAP1R1,PROKR1,KISS1R,PROKR2,CXCR4,AGTR1,OGFRL1,XCR1,NPR3,MCHR1,FPR1,ACKR4,CXCR6
peptide receptor activity	7.77E-15	18	154	RAMP1,SIGMAR1,NMUR1,TSHR,BDKRB2,ADCYAP1R1,PROKR1,KISS1R,PROKR2,CXCR4,AGTR1,OGFRL1,XCR1,NPR3,MCHR1,FPR1,ACKR4,CXCR6
amyloid-beta binding	1.49E-13	14	90	ITGA2,PGRMC1,FZD4,FZD6,ADRB2,FCGR2B,AGER,GPRASP2,LILRB3,GRIA4,GRIN2A,LDLR,TREM2,SORL1
nuclear receptor activity	1.88E-12	11	52	NR2C1,NR6A1,VDR,NR4A2,NR4A3,NR1D1,NR2F2,ARNT,THRB,NR5A2,RORB
ligand-activated transcription factor activity	1.88E-12	11	52	NR2C1,NR6A1,VDR,NR4A2,NR4A3,NR1D1,NR2F2,ARNT,THRB,NR5A2,RORB
steroid hormone receptor activity	3.62E-12	11	55	NR2C1,NR6A1,PGRMC2,VDR,NR4A2,NR4A3,NR1D1,NR2F2,THRB,NR5A2,RORB
signaling receptor binding	5.23E-12	50	1842	IL12RB1,NRIP1,ERBB3,TRAF1,CRLF1,PDGFRB,TGFB3L,RIPK2,ITGA2,ITGA3,ITGA7,RTPA,ITGB5,ITGB6,BDKRB2,PPARGC1A,ADRB2,PTPRC,F11R,PTPRZ1,AGTR1,PLAUR,GPRASP2,VDR,RAPSN,MCHR1,NTRK2,FPR1,NR4A2,CNIP1,GRB10,RER1,GRB14,NR4A3,GRIN2A,S1PR1,GRIP1,TGFB3,PPARGC1B,ARNT,P2RX7,P2RY2,MRAP,TRBC2,IL1RAP,IL1RN,LRIF1,CXADR,GPRC5B,EPHA7
growth factor binding	6.27E-12	16	168	IL10RA,IL10RB,ERBB3,PDGFRB,TGFB3L,ACVR1B,ACVRL1,IL1RL2,PTPRZ1,NTRK2,NTRK3,TGFB3,IL1RL1,IL1RAP,IL1RN,IL2RG
transmembrane receptor protein tyrosine kinase activity	3.53E-11	11	67	EPHB3,EPHB6,ERBB3,PDGFRB,NTRK2,NTRK3,ROR1,MST1R,EPHA1,EPHA3,EPHA7
protein tyrosine kinase activity	1.59E-08	12	146	EPHB3,EPHB6,ERBB3,PDGFRB,RIPK2,NTRK2,NTRK3,ROR1,MST1R,EPHA1,EPHA3,EPHA7
ephrin receptor activity	1.69E-08	6	19	EPHB3,EPHB6,NTRK3,EPHA1,EPHA3,EPHA7
virus receptor activity	6.18E-08	9	79	ITGA2,ITGB5,ITGB6,F11R,CXCR4,PVR,HTR2A,LDLR,CXADR
exogenous protein binding	6.91E-08	9	80	ITGA2,ITGB5,ITGB6,F11R,CXCR4,PVR,HTR2A,LDLR,CXADR
transmembrane receptor protein tyrosine phosphatase activity	4.20E-07	5	17	PTPRC,PTPRE,PTPRO,PTPRZ1,PTPRU
transmembrane-ephrin receptor activity	4.20E-07	5	17	EPHB3,EPHB6,EPHA1,EPHA3,EPHA7

transmembrane receptor protein phosphatase activity	4.20E-07	5	17	PTPRC,PTPRE,PTPRO,PTPRZ1,PTPRU
transmembrane receptor protein serine/threonine kinase activity	7.77E-07	5	19	TGFB3L,ACVR1B,ACVRL1,BMPR1B,TGFBR3
neuropeptide binding	9.96E-07	7	56	NMUR1,ADCYAP1R1,PROKR1,KISS1R,PROKR2,MCHR1,SORL1
cargo receptor activity	1.14E-06	8	82	SCARF2,AGER,SCARA3,ACKR4,LDLR,OLR1,SCARA5,SORL1
G protein-coupled pyrimidinergic nucleotide receptor activity	3.38E-06	3	4	P2RY14,P2RY2,P2RY6
C-C chemokine binding	3.39E-06	5	25	CXCR4,XCR1,ACKR4,CXCR6,ACKR1
transforming growth factor beta-activated receptor activity	5.34E-06	4	13	TGFB3L,ACVRL1,BMPR1B,TGFBR3
coreceptor activity	9.76E-06	6	52	RAMP1,GFRA4,CXCR4,ROR1,TGFBR3,CXCR6
protein-containing complex binding	1.21E-05	33	1565	ADGRG1,TSHR,ITGA2,ITGA2B,ACVR1B,ITGA3,ACVRL1,ITGA7,ITGB5,ITGB6,CHRNA4,ITPR3,FZD4,ADRB2,PTPRC,F11R,FCGR2B,FCGR3B,PTPRZ1,AGER,HTR2A,GRB10,GRIN2A,FAS,LDLR,OLR1,CD200R1,ADGRG6,TGFBR3,ARNT,TREM2,CXADR,SORL1
ligand-gated cation channel activity	1.27E-05	8	113	CHRNA4,RYR3,ITPR3,TRPM5,GRIN3A,GRIA4,GRIN2A,P2RX7
interleukin-1 binding	1.33E-05	4	16	IL1RL2,IL1RL1,IL1RAP,IL1RN
chemokine binding	2.53E-05	5	37	CXCR4,XCR1,ACKR4,CXCR6,ACKR1
GPI-linked ephrin receptor activity	2.90E-05	3	7	NTRK3,EPHA3,EPHA7
extracellular matrix binding	3.27E-05	6	64	ADGRG1,ITGA2,ITGA2B,ITGA3,ITGA7,ADGRG6
glucocorticoid receptor binding	3.43E-05	4	20	NRIP1,NR4A2,NR4A3,GRIP1
protein kinase activity	3.94E-05	20	759	EPHB3,EPHB6,ERBB3,PDGFRB,TGFBR3L,RIPK2,ACVR1B,ACVRL1,BMPR1B,NTRK2,NTRK3,GRK5,ROR1,GPRC5A,MST1R,TGFBR3,GPRC5B,EPHA1,EPHA3,EPHA7
nucleotide receptor activity	4.21E-05	4	21	P2RY14,P2RX7,P2RY2,P2RY6
purinergic nucleotide receptor activity	4.21E-05	4	21	P2RY14,P2RX7,P2RY2,P2RY6
interleukin-1 receptor activity	4.60E-05	3	8	IL1RL2,IL1RL1,IL1RAP
C-C chemokine receptor activity	6.13E-05	4	23	CXCR4,XCR1,ACKR4,CXCR6
neuropeptide receptor activity	6.68E-05	5	45	NMUR1,PROKR1,KISS1R,PROKR2,MCHR1
adrenergic receptor activity	6.86E-05	3	9	ADRA1D,ADRA1B,ADRB2
protein tyrosine phosphatase activity	7.44E-05	7	107	PTPN7,PTPN13,PTPRC,PTPRE,PTPRO,PTPRZ1,PTPRU
ligand-gated ion channel activity	8.43E-05	8	147	CHRNA4,RYR3,ITPR3,TRPM5,GRIN3A,GRIA4,GRIN2A,P2RX7
interleukin-33 receptor activity	9.12E-05	2	2	IL1RL1,IL1RAP
interleukin-33 binding	9.12E-05	2	2	IL1RL1,IL1RAP
interleukin-10 binding	9.12E-05	2	2	IL10RA,IL10RB
interleukin-10 receptor activity	9.12E-05	2	2	IL10RA,IL10RB
G protein-coupled UDP receptor activity	9.12E-05	2	2	P2RY14,P2RY6
ligand-gated channel activity	9.71E-05	8	150	CHRNA4,RYR3,ITPR3,TRPM5,GRIN3A,GRIA4,GRIN2A,P2RX7
ligand-gated calcium channel activity	1.01E-04	4	26	RYR3,ITPR3,TRPM5,GRIN2A
G protein-coupled chemoattractant receptor activity	1.01E-04	4	26	CXCR4,XCR1,ACKR4,CXCR6
chemokine receptor activity	1.01E-04	4	26	CXCR4,XCR1,ACKR4,CXCR6
molecular adaptor activity	1.12E-04	14	451	EPS8,SCARF2,AGER,SCARA3,RAPSN,SPSB1,GRB10,GRB14,ACKR4,LDLR,OLR1,GRIP1,SCARA5,SORL1
low-density lipoprotein particle binding	1.18E-04	4	27	LDLR,OLR1,TREM2,SORL1
G protein-coupled amine receptor activity	1.23E-04	5	51	ADRA1D,ADRA1B,ADRB2,HRH1,HTR2A
cell adhesion molecule binding	1.25E-04	16	573	TRPC4,ITGA2,ITGA3,ITGA7,ITGB5,ITGB6,EP515L1,F11R,PTPRO,PTPRZ1,PVR,ADGRL1,GRIN2A,GPRC5A,CD200R1,CXADR
axon guidance receptor activity	1.33E-04	3	11	EPHB3,ROBO1,EPHA7
integrin binding	1.33E-04	8	157	ITGA2,ITGA3,ITGA7,ITGB5,ITGB6,F11R,PTPRZ1,CXADR
scavenger receptor activity	1.35E-04	5	52	SCARF2,AGER,SCARA3,ACKR4,SCARA5
nuclear receptor binding	1.61E-04	7	121	NRIP1,PPARGC1A,VDR,NR4A2,NR4A3,GRIP1,PPARGC1B
complement receptor activity	1.76E-04	3	12	C3AR1,C5AR1,FPR1
neurotransmitter receptor activity involved in regulation of postsynaptic membrane potential	1.76E-04	5	55	CHRNA4,GRIN3A,GRIA4,GRIN2A,GABBR1
neurotransmitter receptor activity	2.07E-04	7	126	CHRNA4,HRH1,GRIN3A,HTR2A,GRIA4,GRIN2A,GABBR1
pyrimidine nucleotide binding	2.27E-04	3	13	P2RY14,P2RY2,P2RY6
G protein-coupled receptor binding	2.60E-04	11	320	RTP4,BDKRB2,ADRB2,AGTR1,GPRASP2,FPR1,CNRIP1,S1PR1,P2RY2,MRAP,GPRC5B
Wnt-protein binding	2.63E-04	4	33	FZD4,FZD6,PTPRO,ROR1
phosphotransferase activity, alcohol group as acceptor	2.68E-04	20	875	EPHB3,EPHB6,ERBB3,PDGFRB,TGFBR3L,RIPK2,ACVR1B,ACVRL1,BMPR1B,NTRK3,NTRK3,GRK5,ROR1,GPRC5A,MST1R,TGFBR3,GPRC5B,EPHA1,EPHA3,EPHA7
bradykinin receptor binding	2.69E-04	2	3	ADRB2,AGTR1
alpha1-adrenergic receptor activity	2.69E-04	2	3	ADRA1D,ADRA1B
G protein-coupled UTP receptor activity	2.69E-04	2	3	P2RY2,P2RY6
neurotransmitter binding	2.76E-04	7	132	CHRNA4,HRH1,GRIN3A,HTR2A,GRIA4,GRIN2A,GABBR1

low-density lipoprotein particle receptor activity	2.87E-04	3	14	LDLR, OLR1, SORL1
G protein-coupled purinergic nucleotide receptor activity	2.87E-04	3	14	P2RY14, P2RY2, P2RY6
retinoic acid receptor binding	2.96E-04	4	34	NRIP1, VDR, NR4A2, LRIF1
laminin binding	2.96E-04	4	34	ITGA2, ITGA3, ITGA7, ADGRG6
Wnt-activated receptor activity	4.35E-04	3	16	FZD4, FZD6, ROR1
NAD(P)+ nucleosidase activity	4.35E-04	3	16	IL1RL2, IL1RL1, IL1RAP
NAD+ nucleotidase, cyclic ADP-ribose generating	4.35E-04	3	16	IL1RL2, IL1RL1, IL1RAP
cyclic ADP-ribose hydrolase	4.35E-04	3	16	IL1RL2, IL1RL1, IL1RAP
ADP-ribosyl cyclase activity	4.35E-04	3	16	IL1RL2, IL1RL1, IL1RAP
activin binding	5.25E-04	3	17	ACVR1B, ACVRL1, TGFBR3
NAD+ nucleosidase activity	5.25E-04	3	17	IL1RL2, IL1RL1, IL1RAP
calcium ion transmembrane transporter activity	6.20E-04	7	151	TRPC4, RYR3, ITPR3, TRPM5, HRH1, GRIN3A, GRIN2A
kinase activity	6.65E-04	20	940	EPHB3, EPHB6, ERBB3, PDGFRB, TGFBR3L, RIPK2, ACVR1B, ACVRL1, BMPR1B, NTRK2, NTRK3, GRK5, ROR1, GPRC5A, MST1R, TGFBR3, GPRC5B, EPHA1, EPHA3, EPHA7
hormone receptor binding	6.81E-04	8	200	NRIP1, PPARGC1A, VDR, NR4A2, NR4A3, GRIP1, PPARGC1B, LRIF1
lipoprotein particle binding	7.37E-04	4	43	LDLR, OLR1, TREM2, SORL1
protein-lipid complex binding	7.37E-04	4	43	LDLR, OLR1, TREM2, SORL1
lipoprotein particle receptor activity	7.37E-04	3	19	LDLR, OLR1, SORL1
ionotropic glutamate receptor activity	7.37E-04	3	19	GRIN3A, GRIA4, GRIN2A
extracellular ligand-gated ion channel activity	7.96E-04	5	76	CHRNA4, GRIN3A, GRIA4, GRIN2A, P2RX7
activin receptor activity, type I	8.86E-04	2	5	ACVR1B, ACVRL1
glial cell-derived neurotrophic factor receptor activity	8.86E-04	2	5	GFRA4, GFRA2
neurotrophin receptor activity	8.86E-04	2	5	NTRK2, NTRK3
transforming growth factor beta receptor activity, type I	8.86E-04	2	5	ACVRL1, BMPR1B
postsynaptic neurotransmitter receptor activity	1.25E-03	5	84	CHRNA4, GRIN3A, GRIA4, GRIN2A, GABBR1
retinoid X receptor binding	1.31E-03	3	23	NRIP1, VDR, NR4A2
alpha-adrenergic receptor activity	1.32E-03	2	6	ADRA1D, ADRA1B
transmitter-gated ion channel activity involved in regulation of postsynaptic membrane potential	1.51E-03	4	52	CHRNA4, GRIN3A, GRIA4, GRIN2A
calcium channel activity	1.68E-03	6	132	TRPC4, RYR3, ITPR3, TRPM5, GRIN3A, GRIN2A
very-low-density lipoprotein particle binding	1.84E-03	2	7	LDLR, TREM2
BMP receptor activity	1.84E-03	2	7	ACVRL1, BMPR1B
transforming growth factor beta binding	2.10E-03	3	27	TGFBR3L, ACVRL1, TGFBR3
glutamate receptor activity	2.10E-03	3	27	GRIN3A, GRIA4, GRIN2A
beta-catenin binding	2.26E-03	5	96	TRPC4, NR4A2, PTPRU, GRIP1, CXADR
C-X-C chemokine receptor activity	2.44E-03	2	8	CXCR4, CXCR6
immunoglobulin receptor activity	2.44E-03	2	8	FCGR2B, CD200R1
NMDA glutamate receptor activity	2.44E-03	2	8	GRIN3A, GRIN2A
transmitter-gated channel activity	2.73E-03	4	61	CHRNA4, GRIN3A, GRIA4, GRIN2A
transmitter-gated ion channel activity	2.73E-03	4	61	CHRNA4, GRIN3A, GRIA4, GRIN2A
hormone binding	2.94E-03	5	102	RAMP1, ADCYAP1R1, NPR3, MCHR1, THRB
heme transmembrane transporter activity	3.11E-03	2	9	PGRMC2, FLVCR2
type II transforming growth factor beta receptor binding	3.11E-03	2	9	TGFBR3L, TGFBR3
G protein-coupled opioid receptor activity	3.11E-03	2	9	SIGMAR1, OGFRL1
RNA polymerase II-specific DNA-binding transcription factor binding	3.11E-03	9	312	NRIP1, PPARGC1A, VDR, NR4A2, NR4A3, GRIP1, PPARGC1B, ARNT, LRIF1
immunoglobulin binding	3.14E-03	3	31	FCGR2B, FCGR3B, CD200R1
complement binding	3.45E-03	3	32	C3AR1, C5AR1, FPR1
C-X-C chemokine binding	3.87E-03	2	10	CXCR4, CXCR6
activin-activated receptor activity	3.87E-03	2	10	ACVR1B, ACVRL1
neuropeptide Y receptor activity	3.87E-03	2	10	PROKR1, PROKR2
protein dimerization activity	3.92E-03	20	1093	NR2C1, ERBB3, RIPK2, NR6A1, ITGA3, PGRMC1, BDKRB2, FZD4, ADRA1B, ADRB2, F11R, PTPRO, AGTR1, NPR3, NTRK2, NR4A2, NR4A3, NR2F2, ARNT, GABBR1
transferase activity, transferring phosphorus-containing groups	4.34E-03	20	1103	EPHB3, EPHB6, ERBB3, PDGFRB, TGFBR3L, RIPK2, ACVR1B, ACVRL1, BMPR1B, NTRK2, NTRK3, GRK5, ROR1, GPRC5A, MST1R, TGFBR3, GPRC5B, EPHA1, EPHA3, EPHA7
glutamate binding	4.45E-03	3	35	GRIN3A, GRIA4, GRIN2A
IgG binding	4.69E-03	2	11	FCGR2B, FCGR3B

neurotrophin binding	4.69E-03	2	11	NTRK2,NTRK3
prostaglandin receptor activity	4.69E-03	2	11	PTGER3,PTGFR
excitatory extracellular ligand-gated ion channel activity	4.82E-03	3	36	CHRNA4,GRIN2A,P2RX7
PDZ domain binding	5.28E-03	5	117	FZD4,F11R,TGFBR3,LPAR2,CXADR
prostanoid receptor activity	5.60E-03	2	12	PTGER3,PTGFR
cation channel activity	6.08E-03	10	410	TRPC4,CHRNA4,RYR3,ITPR3,ADRB2,TRPM5,GRIN3A,GRIA4,GRIN2A,P2RX7
hydrolase activity, hydrolyzing N-glycosyl compounds	6.49E-03	3	40	IL1RL2,IL1RL1,IL1RAP
acetylcholine receptor binding	6.57E-03	2	13	RAPSN,RER1
protein heterodimerization activity	7.02E-03	9	354	ERBB3,ITGA3,BDKRB2,FZD4,ADRA1B,AGTR1,NR4A2,ARNT,GABBR1
protein binding involved in heterotypic cell-cell adhesion	7.62E-03	2	14	CD200R1,CXADR
inositol 1,4,5 trisphosphate binding	7.62E-03	2	14	TRPC4,ITPR3
phosphoprotein phosphatase activity	7.77E-03	7	237	PTPN7,PTPN13,PTPRC,PTPRE,PTPRO,PTPRZ1,PTPRU
collagen binding	7.84E-03	4	82	ADGRG1,ITGA2,ITGA3,ADGRG6
adenylate cyclase binding	8.74E-03	2	15	ADCYAP1R1,ADRB2
cyclase activity	9.57E-03	3	46	IL1RL2,IL1RL1,IL1RAP
SMAD binding	9.61E-03	4	87	ACVR1B,ACVRL1,BMPR1B,TGFBR3
interleukin-12 receptor activity	9.62E-03	1	1	IL12RB1
ferritin receptor activity	9.62E-03	1	1	SCARA5
complement component C3a receptor activity	9.62E-03	1	1	C3AR1
B2 bradykinin receptor binding	9.62E-03	1	1	ADRB2
type 1 cannabinoid receptor binding	9.62E-03	1	1	CNRIP1
transforming growth factor beta receptor activity, type III	9.62E-03	1	1	TGFBR3
cannabinoid receptor binding	9.62E-03	1	1	CNRIP1
high mobility group box 1 binding	9.62E-03	1	1	AGER
C-X-C motif chemokine 12 receptor activity	9.62E-03	1	1	CXCR4
interleukin-21 binding	9.62E-03	1	1	IL21R
advanced glycation end-product binding	9.62E-03	1	1	AGER
lithocholic acid receptor activity	9.62E-03	1	1	VDR
lithocholic acid binding	9.62E-03	1	1	VDR
netrin receptor activity involved in chemorepulsion	9.62E-03	1	1	UNC5C
brain-derived neurotrophic factor-activated receptor activity	9.62E-03	1	1	NTRK2
low-affinity IgG receptor activity	9.62E-03	1	1	FCGR2B
urokinase plasminogen activator receptor activity	9.62E-03	1	1	PLAUR
melanin-concentrating hormone receptor activity	9.62E-03	1	1	MCHR1
cell adhesive protein binding involved in AV node cell-bundle of His cell communication	9.62E-03	1	1	CXADR
calcitonin gene-related peptide binding	9.62E-03	1	1	RAMP1
erythropoietin receptor activity	9.62E-03	1	1	EPOR
calcitriol binding	9.62E-03	1	1	VDR
beta2-adrenergic receptor activity	9.62E-03	1	1	ADRB2
nicotinic acid receptor activity	9.62E-03	1	1	HCAR2
interleukin-21 receptor activity	9.62E-03	1	1	IL21R
angiotensin type I receptor activity	9.62E-03	1	1	AGTR1
interleukin-1 type II receptor antagonist activity	9.62E-03	1	1	IL1RN
interleukin-1 type I receptor antagonist activity	9.62E-03	1	1	IL1RN
bioactive lipid receptor activity	9.93E-03	2	16	S1PR1,LPAR2
icosanoid receptor activity	9.93E-03	2	16	PTGER3,PTGFR
calcium-release channel activity	1.12E-02	2	17	RYR3,ITPR3
transcription factor binding	1.15E-02	14	740	NRIP1,TNFRSF10B,PPARGC1A,VDR,NR4A2,NR4A3,NR1D1,GRIP1,PPARGC1B,ARNT,THRB,RORB,LRI1,GABBR1
carboxylic acid binding	1.35E-02	7	264	PTGER3,PTGFR,GRIN3A,VDR,GRIA4,GRIN2A,NR2F2
protein-hormone receptor activity	1.39E-02	2	19	TSHR,MCHR1
estrogen receptor binding	1.41E-02	3	53	NRIP1,PPARGC1A,PPARGC1B
interleukin-1 receptor binding	1.53E-02	2	20	IL1RAP,IL1RN

Supp. Table S5: 500 DEGs used as input in hub gene analysis.

Symbol	Entrez	log2FC	q-value
1700007K13Rik	69327	-3.215	1.00E-06
9330159F19Rik	212448	4.971	1.00E-06
A630023A22Rik	105518	4.580	1.00E-06
Acot1	26897	4.087	1.00E-06
Adcyap1r1	11517	-4.981	1.00E-06
Adm	11535	-2.920	1.00E-06
Aldh1a2	19378	-7.933	1.00E-06
Alpl	11647	6.011	1.00E-06
Alx1	216285	10.000	1.00E-06
Alx3	11694	6.881	1.00E-06
Amer2	72125	7.479	1.00E-06
Angpt2	11601	-4.796	1.00E-06
Antxrl	239029	4.554	1.00E-06
Aox3	71724	4.078	1.00E-06
Asb4	65255	3.420	1.00E-06
Asic3	171209	7.191	1.00E-06
Bend7	209645	4.379	1.00E-06
Bmf	171543	3.021	1.00E-06
C920009B18Rik	606736	-4.644	1.00E-06
Cadm3	94332	4.540	1.00E-06
Cas21	69743	3.532	1.00E-06
Cav3	12391	-7.164	1.00E-06
Ccdc114	211535	2.935	1.00E-06
Ccdc88c	68339	4.401	1.00E-06
Cd34	12490	3.293	1.00E-06
Cdh3	12560	3.903	1.00E-06
Col20a1	73368	3.217	1.00E-06
Col27a1	373864	3.201	1.00E-06
Cpa3	12873	-4.115	1.00E-06
Crip2	68337	-3.259	1.00E-06
Crybg1	11630	5.198	1.00E-06
Cxadr	13052	3.059	1.00E-06
Daam2	76441	3.320	1.00E-06
Dkk1	13380	6.280	1.00E-06
Dlx4	13394	4.051	1.00E-06
Dlx4os	320453	4.879	1.00E-06
Dmrt2	226049	5.635	1.00E-06
Dpysl5	65254	3.742	1.00E-06
Draxin	70433	6.080	1.00E-06
Dusp15	252864	-3.642	1.00E-06
Ebf3	13593	7.350	1.00E-06
Eml5	319670	3.726	1.00E-06
Epb41l4a	13824	3.134	1.00E-06
Exph5	320051	4.282	1.00E-06
Fam124a	629059	-3.513	1.00E-06
Fam84a	105005	4.760	1.00E-06
Fbn2	14119	7.342	1.00E-06
Fibin	67606	-3.021	1.00E-06
Foxl1	14241	-5.431	1.00E-06
Frmd4b	232288	3.495	1.00E-06
Frmd5	228564	-3.648	1.00E-06
Fstl4	320027	3.498	1.00E-06
Gata4	14463	4.688	1.00E-06
Gatm	67092	5.338	1.00E-06
Gdpd2	71584	4.812	1.00E-06
Glipr1	73690	-5.694	1.00E-06
Gm10451	100041694	6.233	1.00E-06
Gm15446	100642166	-8.630	1.00E-06
Gm21451	100862072	-8.070	1.00E-06
Gm26878	102636330	6.933	1.00E-06
Gm30083	102631856	4.426	1.00E-06
Gm48826	115487375	4.535	1.00E-06
Gprin2	432839	3.560	1.00E-06
Grip1	74053	6.172	1.00E-06
Gstm7	68312	-3.125	1.00E-06
Gyg	27357	-3.119	1.00E-06
Has2	15117	4.337	1.00E-06
Hopx	74318	3.097	1.00E-06
Hoxb5	15413	-3.105	1.00E-06
Hoxb5os	75395	-2.897	1.00E-06
Hoxb6	15414	-3.466	1.00E-06
Hoxb7	15415	-3.126	1.00E-06
Hoxc4	15423	3.766	1.00E-06
Hp	15439	3.351	1.00E-06
Hspb7	29818	-3.383	1.00E-06
Htra4	330723	-4.382	1.00E-06
Icam1	15894	-2.994	1.00E-06
Igfbp4	16010	-3.539	1.00E-06
Il6	16193	-3.021	1.00E-06
Irx3	16373	3.832	1.00E-06
Isg15	100038882	-4.422	1.00E-06

Klhdc8a	213417	3.608	1.00E-06
Klhl13	67455	-2.929	1.00E-06
Lce3d	630994	6.248	1.00E-06
Lingo1	235402	-3.310	1.00E-06
Lpl	16956	4.148	1.00E-06
Ly9	17085	-2.992	1.00E-06
Map3k9	338372	4.079	1.00E-06
Mccc1os	654424	4.106	1.00E-06
Mchr1	207911	3.740	1.00E-06
Mgp	17313	-3.967	1.00E-06
Mroh2a	100040766	3.798	1.00E-06
Naaladl2	635702	-3.288	1.00E-06
Nipal1	70701	-4.694	1.00E-06
Npl	74091	3.886	1.00E-06
Oas1a	246730	-3.883	1.00E-06
Olfml2a	241327	4.469	1.00E-06
Pcdhga3	93711	-2.946	1.00E-06
Pcdhga5	93713	3.680	1.00E-06
Pcdhgb2	93700	-3.478	1.00E-06
Pcdhgb5	93702	-3.717	1.00E-06
Plce1	74055	3.237	1.00E-06
Plekha6	240753	4.205	1.00E-06
Plin4	57435	-4.109	1.00E-06
Ppp1r9a	243725	3.038	1.00E-06
Ptger3	19218	3.904	1.00E-06
Ptpru	19273	4.473	1.00E-06
Qprt	67375	7.469	1.00E-06
Rab3c	67295	4.806	1.00E-06
Rapsn	19400	-3.799	1.00E-06
Ryr3	20192	4.122	1.00E-06
Satb1	20230	-3.892	1.00E-06
Serpinb6b	20708	-3.967	1.00E-06
Serpinb9b	20706	-4.039	1.00E-06
Sez6l	56747	3.917	1.00E-06
Sfrp1	20377	2.940	1.00E-06
Sfrp2	20319	6.558	1.00E-06
Sgms2	74442	-3.001	1.00E-06
Sgpp2	433323	6.477	1.00E-06
Shisa3	330096	6.453	1.00E-06
Sim2	20465	7.170	1.00E-06
Sncaip	67847	3.340	1.00E-06
Sntg2	268534	4.295	1.00E-06
Sod3	20657	-3.917	1.00E-06
Sorl1	20660	3.154	1.00E-06
Sowahd	245381	4.075	1.00E-06
Spata13	219140	4.071	1.00E-06
Stxbp6	217517	3.828	1.00E-06
Svop	68666	-3.097	1.00E-06
Syt6	54524	5.311	1.00E-06
Tchh	99681	-3.191	1.00E-06
Tenm3	23965	3.115	1.00E-06
Tent5c	74645	3.430	1.00E-06
Thbd	21824	-3.550	1.00E-06
Tmem252	226040	3.103	1.00E-06
Tns4	217169	-5.453	1.00E-06
Tox	252838	4.218	1.00E-06
Trbc2	100125263	4.143	1.00E-06
Ttc39a	230603	3.235	1.00E-06
Wt1	22431	3.368	1.00E-06
Xlr3a	22445	6.824	1.00E-06
Zfp345	545471	4.346	1.00E-06
Zfp488	382867	7.752	1.00E-06
Dpp6	13483	3.673	1.15E-06
Hoxd9	15438	6.704	1.17E-06
Masp1	17174	-3.200	1.47E-06
Cd5l	11801	-5.700	1.48E-06
Gm32443	102634994	3.604	1.48E-06
Soga3	67412	3.852	1.48E-06
Dact1	59036	4.296	1.51E-06
Mef2c	17260	-3.682	1.59E-06
Rspo2	239405	-3.975	1.61E-06
8430422M14Rik	109319	3.061	1.72E-06
Dkk2	56811	-4.803	2.51E-06
Egln3	112407	-3.117	2.77E-06
Gcnt4	218476	-3.576	3.06E-06
Rgs7	24012	6.443	3.27E-06
St8sia1	20449	6.167	3.29E-06
Parvb	170736	-3.735	3.34E-06
Ugt1a6a	94284	3.338	3.43E-06
A930003A15Rik	68162	5.823	3.60E-06
Ndufa4l2	407790	-7.381	3.77E-06
Cd38	12494	3.000	4.41E-06
Nr5a2	26424	4.350	4.44E-06
Wisp2	22403	-3.014	4.44E-06

2610016A17Rik	100503074	5.825	4.93E-06
Gsc	14836	5.924	6.19E-06
Pde1c	18575	3.912	6.92E-06
Tram1l1	229801	-3.969	7.20E-06
Ctsc	13032	-3.242	7.26E-06
Gdf3	14562	-7.629	7.47E-06
Isl2	104360	3.937	7.79E-06
Fn3k	63828	3.373	8.27E-06
Ccdc68	381175	-3.388	9.27E-06
Trpm5	56843	-3.132	9.66E-06
Pcdh19	279653	-3.177	1.19E-05
Mirt1	381232	3.481	1.46E-05
Gm7967	666182	4.913	1.95E-05
Lrrtm2	107065	-3.918	2.27E-05
Ebf2	13592	4.172	2.28E-05
Gja4	14612	-5.507	2.42E-05
Catip	241112	-3.084	2.47E-05
Gm13146	384087	3.729	2.57E-05
Pitx2	18741	-3.501	2.88E-05
Epha3	13837	-6.406	3.39E-05
Gm6020	547091	3.081	3.43E-05
Podxl	27205	3.361	3.44E-05
Acpp	56318	3.917	3.62E-05
Itga2	16398	-3.903	3.70E-05
Gm16867	100504489	-6.184	3.79E-05
Lpcat2	270084	-3.776	3.94E-05
Gm18787	100417726	-4.503	4.15E-05
Mfap3l	71306	-3.424	4.15E-05
Pi15	94227	-4.215	4.76E-05
Tnfrsf9	21942	-6.609	5.12E-05
Eepd1	67484	3.087	5.70E-05
Syk	20963	-3.518	5.88E-05
Syndig1l	627191	5.615	5.89E-05
Anks1b	77531	-3.994	6.35E-05
Ccdc144b	241943	4.940	6.35E-05
Gm26507	105246453	6.277	6.43E-05
Hoxd8	15437	3.796	6.76E-05
Adamtsl3	269959	-3.186	6.87E-05
Gm14127	668924	5.537	7.48E-05
2410018L13Rik	69732	-5.887	8.51E-05
Gm19990	100503961	4.028	8.63E-05
Il2rg	16186	-3.273	8.64E-05
Myzap	102371	-3.124	8.81E-05
Gm7162	635617	2.971	8.88E-05
Eya2	14049	5.832	9.12E-05
Ramp1	51801	3.096	9.12E-05
Tbx20	57246	5.677	9.32E-05
Tppp	72948	2.929	9.65E-05
4930452B06Rik	74430	-3.560	9.96E-05
Gm6093	619715	-4.193	1.07E-04
Msx2	17702	-4.529	1.10E-04
Alx4	11695	5.721	1.13E-04
Apol9b	71898	-2.968	1.16E-04
Gal3st3	545276	3.614	1.16E-04
Shisa2	219134	3.100	1.18E-04
Ttc39aos1	102635290	3.129	1.27E-04
Elobl	217066	-3.145	1.30E-04
Kcnh1	16510	2.920	1.40E-04
Lonrf2	381338	-3.590	1.40E-04
Slc14a1	108052	-6.113	1.50E-04
Art4	109978	-3.434	1.65E-04
Grap	71520	-3.154	1.93E-04
Klra4	16635	-3.304	1.93E-04
P2rx7	18439	-3.386	2.35E-04
Unc5c	22253	-4.409	2.36E-04
Prl2c2	18811	-5.934	2.43E-04
Gm26651	102635721	-5.659	2.50E-04
Aqp1	11826	-2.981	2.54E-04
Aldh1a3	56847	3.446	2.70E-04
Cadm1	54725	-3.635	2.77E-04
Scgb1a1	22287	6.074	3.36E-04
Rhbdl2	230726	-3.625	3.41E-04
9430053O09Rik	319723	5.601	3.58E-04
Gm41192	105245801	5.021	3.65E-04
Gna15	14676	-2.981	3.67E-04
Has2os	594843	4.718	4.20E-04
Ccl28	56838	-4.502	4.36E-04
Pde6h	78600	-5.348	4.36E-04
9930111J21Rik1	667214	-3.237	4.45E-04
Hlf	217082	3.431	4.91E-04
Ush1g	16470	3.442	5.07E-04
Gm6089	619645	4.016	5.21E-04
Platr16	102634244	5.526	5.36E-04
Bdkrb2	12062	-5.230	5.77E-04

BC039966	407793	5.633	5.83E-04
Gm8170	666571	3.204	5.98E-04
Ppm1j	71887	-2.945	6.09E-04
Gpr137c	70713	-3.695	6.16E-04
Dact2	240025	3.052	6.20E-04
Gm15987	100504591	-3.841	7.36E-04
Gm2762	100040421	-4.635	7.52E-04
4930447C04Rik	75801	3.701	7.60E-04
Rimk1a	194237	3.903	7.68E-04
Slc9a2	226999	3.277	8.16E-04
Dscam	13508	2.905	8.25E-04
Gm14066	100043792	-3.765	8.26E-04
Tprg	71338	2.894	8.60E-04
Cbln1	12404	5.171	8.86E-04
9430092D12Rik	77427	5.326	8.93E-04
Pirb	18733	-3.133	9.04E-04
Zbtb8b	215627	4.305	9.06E-04
Gm867	333670	5.546	9.06E-04
Cyp4b1	13120	4.884	9.23E-04
Pou2f2	18987	-3.902	9.29E-04
Scg2	20254	2.954	9.36E-04
Gm3912	100042577	3.720	9.94E-04
Tnfrsf8	21949	-3.382	1.04E-03
Krt14	16664	3.963	1.06E-03
Pcolce2	76477	3.124	1.12E-03
Sftpc	20389	6.093	1.13E-03
Tex15	104271	-3.155	1.14E-03
Aatk	11302	2.994	1.23E-03
Gad1os	68986	-5.758	1.25E-03
Ctnnd2	18163	-2.896	1.28E-03
1500009L16Rik	69784	-2.892	1.29E-03
Nxpe5	381680	-3.958	1.32E-03
Caps2	353025	-4.773	1.36E-03
Rtp4	67775	-3.289	1.37E-03
Vmn2r79	621430	-6.806	1.43E-03
Nlrp5-ps	100417675	-3.559	1.44E-03
Gm42031	105246807	5.407	1.58E-03
Akr1b7	11997	4.269	1.60E-03
6820402A03Rik	75742	3.438	1.61E-03
Slamf7	75345	-6.003	1.61E-03
Gm26705	381967	-4.453	1.66E-03
Trpc4	22066	3.902	1.72E-03
Unc79	217843	4.977	1.76E-03
2610318N02Rik	70458	-3.257	1.79E-03
Ntrk2	18212	5.214	1.82E-03
Syt14	329324	-4.006	1.82E-03
Ccl20	20297	-4.717	1.83E-03
Ism1	319909	-3.235	1.85E-03
Slc6a15	103098	-4.622	1.95E-03
Mcpt8	17231	-4.444	1.95E-03
C2cd4a	244911	5.092	1.98E-03
Eomes	13813	3.077	1.98E-03
Nfatc2	18019	-3.401	2.00E-03
C1qa	12259	-4.618	2.04E-03
Pcnx2	270109	3.221	2.10E-03
Plch1	269437	2.935	2.19E-03
Myh1	17879	-5.663	2.27E-03
Ms4a7	109225	-4.670	2.37E-03
Gpr165	76206	-3.974	2.44E-03
Lck	16818	3.316	2.52E-03
Ccl12	20293	-4.400	2.63E-03
C730027H18Rik	319572	3.793	2.66E-03
Gprasp2	245607	3.000	2.66E-03
Gm45925	105661729	3.266	2.70E-03
Sema3g	218877	-3.348	2.80E-03
Slc38a4	69354	-3.742	2.89E-03
Edar	13608	-4.856	2.98E-03
Arg1	11846	-3.573	3.03E-03
Slc9b2	97086	-4.041	3.07E-03
Tmem156	243025	-3.555	3.10E-03
4833412C05Rik	73904	-3.227	3.25E-03
Wnt10a	22409	-5.200	3.26E-03
Pgf	18654	-3.913	3.27E-03
Ppp1r3a	140491	-3.620	3.47E-03
Klhl38	268807	-4.675	3.66E-03
Traf1	22029	-3.575	3.69E-03
Lrrc25	211228	-3.100	3.80E-03
Entpd3	215446	4.263	3.84E-03
C1qc	12262	-4.490	3.92E-03
Gm19744	100503519	4.527	3.97E-03
Fam107a	268709	4.053	4.24E-03
Gm13238	236069	3.530	4.25E-03
Tmem56	99887	-3.078	4.33E-03
Wfdc17	100034251	-2.974	4.39E-03

Grin2a	14811	-5.086	4.45E-03
Krt19	16669	-3.062	4.69E-03
Exoc3l2	74463	-4.299	5.01E-03
Ctnna2	12386	-3.910	5.05E-03
Wnt7a	22421	3.568	5.12E-03
Nap1l2	17954	-3.588	5.32E-03
Fhit	14198	-3.576	5.64E-03
Rgs5	19737	-5.165	5.67E-03
Olfr544	257926	4.513	5.85E-03
Adgrl3	319387	-6.042	5.96E-03
Sec14l5	665119	-4.255	5.99E-03
9330198N18Rik	77516	4.585	6.15E-03
Gm16574	100417422	3.280	6.16E-03
Nog	18121	-3.431	6.54E-03
Cfap44	212517	3.298	6.56E-03
Stk32b	64293	-5.698	6.93E-03
Vmo1	327956	-4.727	6.94E-03
Marveld3	73608	4.468	6.96E-03
A430108G06Rik	319650	-4.496	7.04E-03
Ppef1	237178	-4.474	7.04E-03
Cthrc1	68588	-5.160	7.14E-03
Srcin1	56013	4.429	7.37E-03
Tnfrsf8l2	69769	-3.418	7.37E-03
Acox2	93732	3.447	7.38E-03
Clec12a	232413	-2.904	7.59E-03
Fcrls	80891	-5.563	7.61E-03
Lilra5	232801	-5.198	7.68E-03
Galnt14	71685	-5.185	7.82E-03
Fpr1	14293	-5.713	7.96E-03
Cnr2	12802	-3.300	8.14E-03
Il21r	60504	-4.268	8.28E-03
Pou3f3	18993	-7.984	8.28E-03
Gm10521	100038548	-5.059	8.36E-03
Pcdhga11	93723	-3.415	8.38E-03
Gm14461	329436	-4.479	8.39E-03
Tmed6	66269	4.046	8.45E-03
Dach1	13134	-3.890	8.60E-03
Gtf2a1l	71828	5.037	8.82E-03
C1ca3a2	80797	-5.686	8.86E-03
Lyz2	17105	-3.682	8.88E-03
Gm14866	100313945	3.652	8.96E-03
Cd36	12491	-3.810	9.39E-03
H60b	667281	-3.127	9.39E-03
Ms4a6d	68774	-3.098	9.47E-03
4930430E12Rik	71639	-3.663	9.82E-03
Clec4d	17474	-4.017	9.89E-03
Chst13	71797	-5.072	9.94E-03
Cutal	77996	-4.727	9.99E-03
Pla2g7	27226	-4.714	1.01E-02
Ddo	70503	-3.823	1.02E-02
Tnfrsf15	326623	-4.108	1.02E-02
5430427O19Rik	71398	-4.159	1.03E-02
Nefm	18040	3.202	1.03E-02
Nudt11	58242	-4.997	1.09E-02
C1qb	12260	-4.125	1.09E-02
Myh2	17882	-6.173	1.10E-02
Ly86	17084	-3.664	1.17E-02
A530064D06Rik	328830	-5.437	1.18E-02
Folh1	53320	-4.182	1.23E-02
Foxg1	15228	-3.733	1.23E-02
Hsd3b6	15497	-6.034	1.23E-02
Gm10644	100126034	3.312	1.23E-02
Gltpd2	216871	-5.095	1.24E-02
Adam28	13522	3.618	1.26E-02
Gm649	100503482	-4.675	1.28E-02
Susd3	66329	-3.630	1.29E-02
Ifi44	99899	-3.234	1.32E-02
Rnf208	68846	-5.068	1.33E-02
Pira2	18725	-3.155	1.33E-02
Ttr	22139	4.887	1.36E-02
Wnt2	22413	-4.436	1.37E-02
Ccl8	20307	-4.136	1.42E-02
Gm10651	100043771	3.871	1.43E-02
Bst1	12182	-3.034	1.43E-02
Csmd1	94109	-3.854	1.47E-02
Morrc1	17450	3.074	1.52E-02
Itgb6	16420	-5.003	1.54E-02
Gm5431	432555	-3.032	1.54E-02
Fam19a1	320265	-4.996	1.60E-02
Wt1os	329480	3.062	1.61E-02
Agt	11606	-3.060	1.63E-02
Smoc1	64075	-3.220	1.66E-02
Gm8153	666537	4.329	1.67E-02
Cd52	23833	-3.198	1.79E-02

Tshr	22095	-4.101	1.79E-02
ltga8	241226	-4.391	1.84E-02
Ackr1	13349	3.107	1.85E-02
Sptbn4	80297	-3.254	1.90E-02
Dennd1c	70785	-2.997	1.93E-02
Lrrn3	16981	-4.274	1.96E-02
Gm8108	623078	4.819	2.02E-02
Gm32219	102634692	-3.189	2.03E-02
Ifi203-ps	100504287	3.051	2.09E-02
Spr2a3	100042514	5.445	2.14E-02
Npc1l1	237636	4.372	2.15E-02
Nags	217214	4.830	2.15E-02
Rhoh	74734	-2.963	2.15E-02
Spp1	20750	-3.034	2.21E-02
Hcar2	80885	-4.984	2.30E-02
Tm4sf20	66261	5.000	2.32E-02
Gm21917	102638921	-4.792	2.41E-02
Ecel1	13599	3.221	2.43E-02
Grin3a	242443	-2.969	2.44E-02
Il10ra	16154	-3.127	2.47E-02
Ms4a14	383435	-3.107	2.48E-02
Agtr1b	11608	-5.446	2.51E-02
Hecw1	94253	-3.911	2.52E-02
F630028O10Rik	100038363	-3.179	2.52E-02
Perp	64058	-4.922	2.53E-02
Morn5	75495	-4.169	2.54E-02
Tfpi2	21789	-3.863	2.58E-02
Atp6v0d2	242341	-3.441	2.59E-02
Ppp2r2c	269643	-3.957	2.59E-02
Cd96	84544	4.299	2.61E-02
Cttnbp2	30785	3.222	2.68E-02
Serpina3c	16625	-3.400	2.70E-02
4930422M22Rik	73774	5.214	2.75E-02
Prtn3	19152	3.322	2.75E-02
Il1rl1	17082	-3.434	2.78E-02
Ms4a6b	69774	-3.532	2.80E-02
Rorb	225998	-4.202	2.81E-02
Vmn1r40	113855	-3.352	2.82E-02
Dnajb3	15504	-4.110	2.85E-02
Cd200	17470	-3.028	2.88E-02
Ms4a6c	73656	-4.072	2.88E-02
Gm10020	100039748	4.014	2.90E-02
Adam3	11497	-3.161	3.06E-02
Ctss	13040	-3.609	3.08E-02
Olfr1309	258439	-4.956	3.22E-02
Platr27	78316	-4.643	3.29E-02
Irx3os	319388	2.991	3.29E-02
Gm6044	595140	3.863	3.33E-02
Cxcr4	12767	-3.023	3.35E-02
Gm7269	639527	-3.516	3.36E-02
Fcgr2b	14130	-3.288	3.38E-02
3830403N18Rik	70691	-4.796	3.42E-02
Cd164l2	69655	-4.205	3.45E-02
Gm8307	666819	-4.407	3.45E-02
Car2	12349	-5.486	3.46E-02
1700012B09Rik	69325	-5.119	3.48E-02
Mog	17441	3.604	3.52E-02
Lancl3	236285	-3.020	3.54E-02
Csprs	114564	4.086	3.64E-02
Egr4	13656	4.879	3.66E-02
Plppr5	75769	-3.807	3.68E-02
Akr1c13	27384	-3.904	3.71E-02
Prokr2	246313	3.914	3.75E-02
Nalcn	338370	-4.378	3.79E-02
Mdga2	320772	-4.504	3.79E-02
Dnaic1	68922	-4.100	3.98E-02
Marchf11	211147	-4.391	3.99E-02
Erg	13876	-3.162	4.06E-02
Gfra2	14586	-3.830	4.20E-02
Tbx1	21380	-9.079	4.21E-02
Gpr65	14744	-3.301	4.25E-02
Lce3c	94060	4.883	4.30E-02
Large2	228366	2.927	4.35E-02
Gap43	14432	-3.183	4.47E-02
Gm10471	100039045	4.413	4.53E-02
Ccdc36	434438	-5.069	4.59E-02
Nmur1	14767	-3.449	4.61E-02
Gm7592	101055758	3.919	4.62E-02
Ube2ql1	76980	-4.298	4.68E-02
Gm14963	105246847	-3.126	4.70E-02
1500015O10Rik	78896	-3.393	4.92E-02
P2ry14	140795	-5.785	4.94E-02
Fcgr3	14131	-3.071	4.94E-02

Supp. Table S6: Drugs targeting hub genes. The data was acquired using the DrugBank Online (<https://go.drugbank.com/>).

target	drug	drugbank ID	group	pharmacological action?	actions
Bdkrb2	DB05038	Anatibant	investigational	unknown	antagonist
Bdkrb2	DB06196	Icatibant	approved, investigational	yes	antagonist
Bdkrb2	DB06549	Labradimil	investigational	unknown	agonist
Ccl28	no results				
Cd20	DB00078	Ibritumomab tiuxetan	approved, investigational	yes	antibody
Cd20	DB08935	Obinutuzumab	approved, investigational	yes	antibody
Cd20	DB11988	Ocrelizumab	approved, investigational	yes	antagonist / antibody
Cd20	DB06650	Ofatumumab	approved	yes	antibody
Cd20	DB00073	Rituximab	approved	yes	antibody
Cd20	DB09336	Technetium Tc-99m nofetumomab merpentan	approved, withdrawn	yes	binder
Cd20	DB00081	Tositumomab	approved, investigational	yes	antibody
Cnr2	DB09061	Cannabidiol	approved, investigational	unknown	antagonist
Cnr2	DB00470	Dronabinol	approved, illicit	unknown	agonist
Cnr2	DB06202	Lasoflofen	approved, investigational	unknown	inverse agonist
Cnr2	DB14009	Medical Cannabis	experimental, investigational	unknown	
Cnr2	DB00486	Nabilone	approved, investigational	yes	partial agonist
Cnr2	DB14011	Nabiximols	investigational	yes	
Cnr2	DB02955	Ricinoleic acid	experimental	unknown	
Cnr2	DB11755	Tetrahydrocannabivarin	investigational	unknown	partial agonist
Cxcr4	DB05501	AMD-070	investigational	unknown	
Cxcr4	DB00452	Framycetin	approved	unknown	antagonist
Cxcr4	DB12698	Ibalizumab	approved, investigational	unknown	antagonist
Cxcr4	DB06809	Plerixafor	approved	yes	antagonist
Frp1	DB00716	Nedocromil	approved, investigational	unknown	antagonist
Gna15	no results				
Hcar2	DB00257	Clotrimazole	approved, vet approved	unknown	partial agonist
Hcar2	DB08949	Inositol nicotinate	approved, withdrawn	yes	agonist
Hcar2	DB00627	Niacin	approved, investigational, nutraceutical	yes	agonist
Mchr1	DB00502	Haloperidol	approved	unknown	
Nmur1	no results				
P2ry14	DB01069	Promethazine	approved, investigational	unknown	inhibitor
Ptger3	DB00905	Bimatoprost	approved, investigational	yes	agonist
Ptger3	DB11113	Castor oil	approved, investigational, nutraceutical, vet approved	yes	agonist / activator
Ptger3	DB00917	Dinoprostone	approved	yes	agonist
Ptger3	DB08964	Gemeprost	approved, withdrawn	yes	agonist
Ptger3	DB09211	Limaprost	investigational	unknown	agonist
Ptger3	DB00929	Misoprostol	approved	yes	agonist

Figure S1: AGE-RAGE signaling pathway in diabetic complications. (A) DEGs in hIGFBP5 fibroblasts that belong to this pathway. **(B)** KEGG pathway showing the logFC of DEGs in (A). Red: upregulated, blue: downregulated, yellow arrow and box highlight biological outcomes.

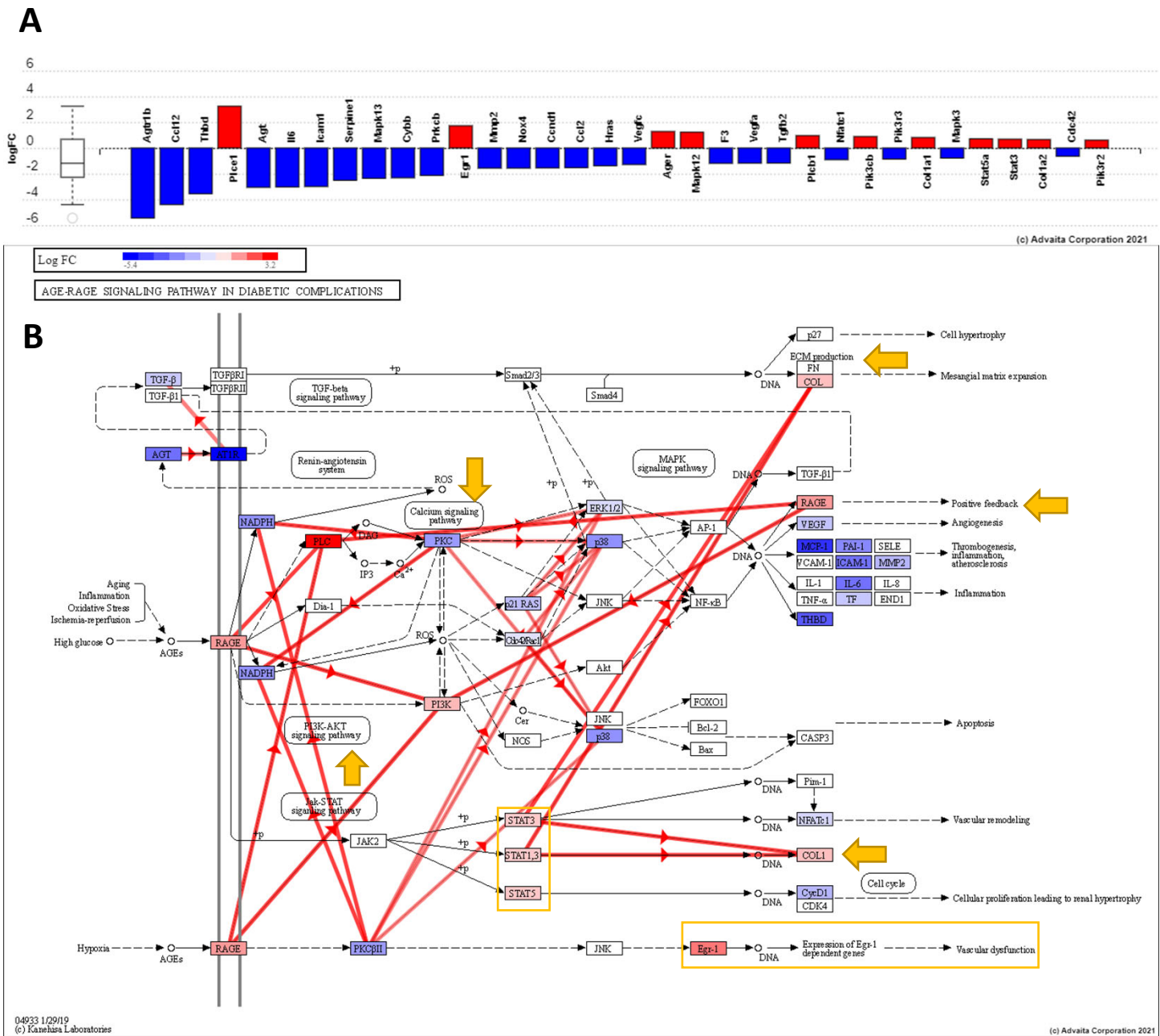


Figure S2: ECM receptor interaction. (A) DEGs in hIGFBP5 fibroblasts that belong to this pathway. **(B)** KEGG pathway showing the logFC of DEGs in (A). Red: upregulated, blue: downregulated.

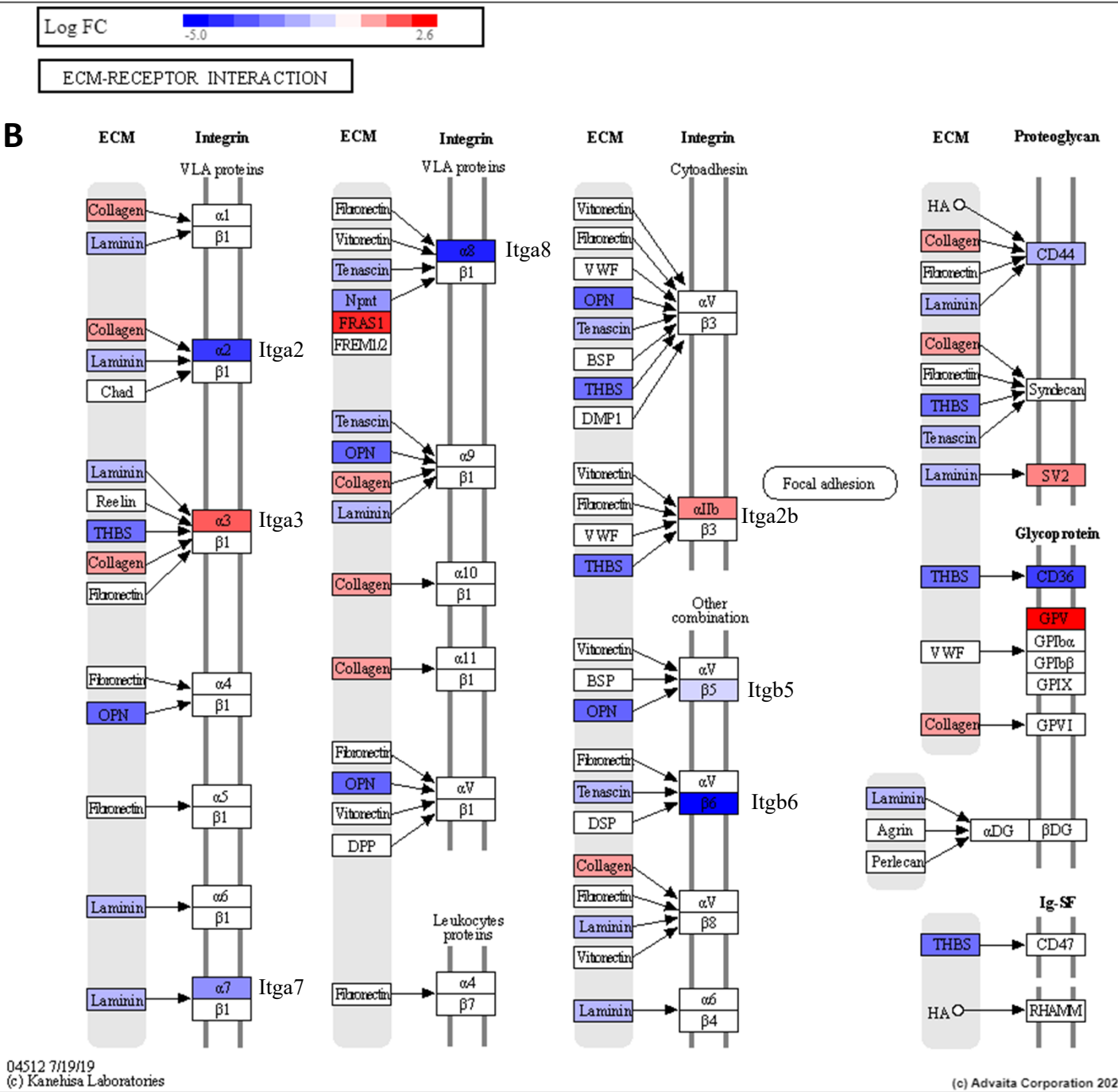
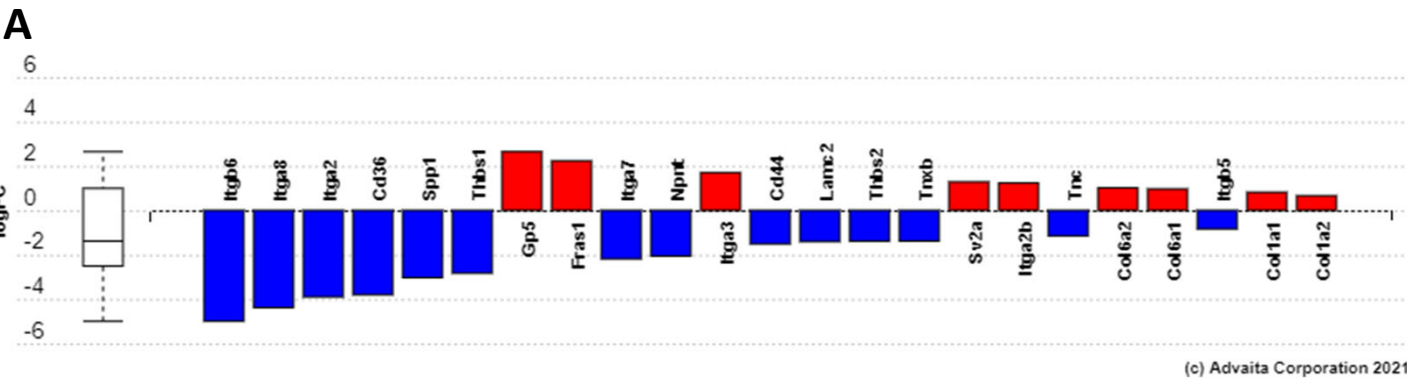
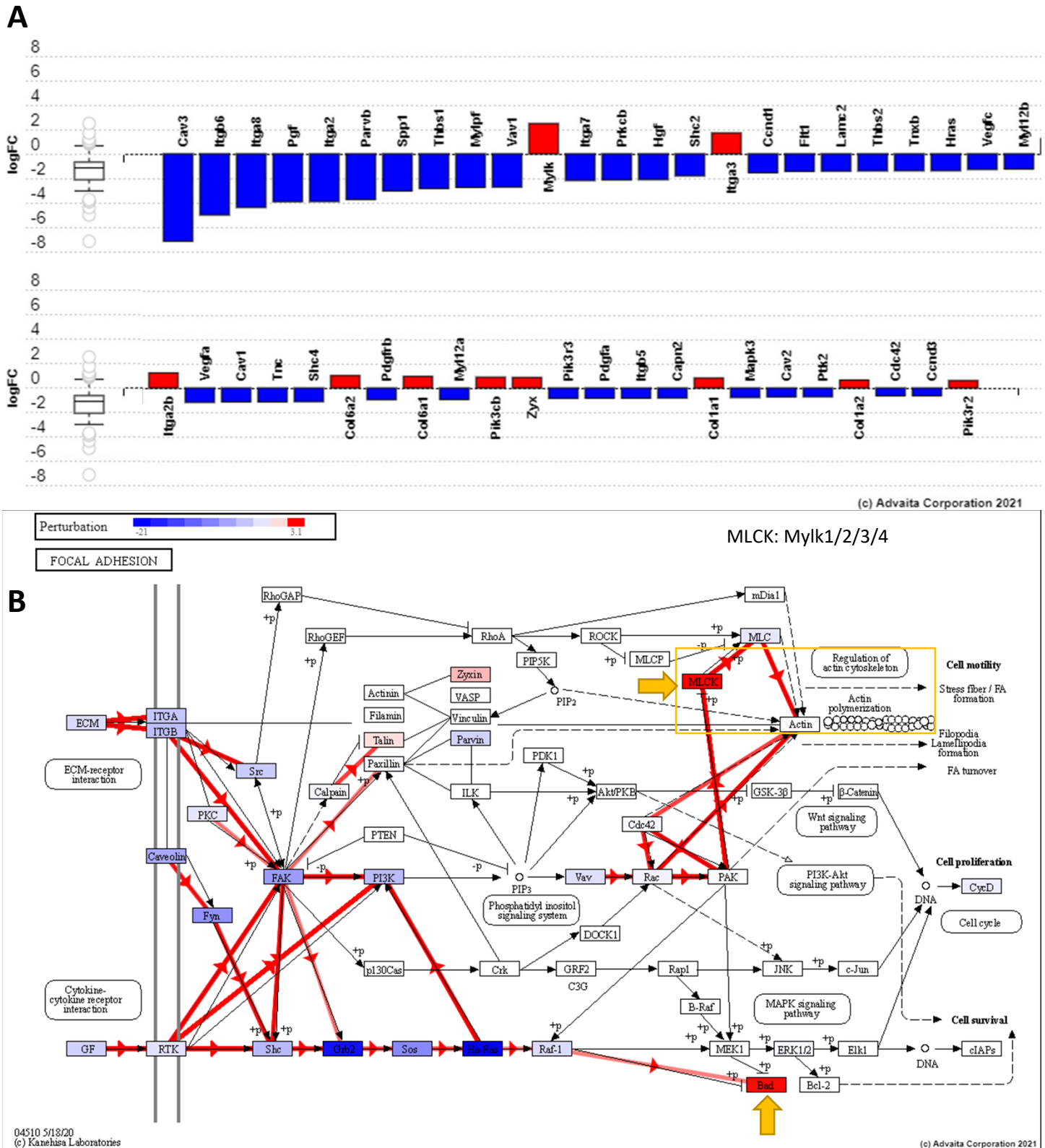


Figure S3: Focal adhesion. (A) DEGs in hIGFBP5 fibroblasts that belong to this pathway. (B) KEGG pathway showing the predicted perturbation of the transcriptomic signature in (A) in hIGFBP5 fibroblasts. Red: upregulated, blue: downregulated, yellow arrow and box highlight biological outcomes.



A



A

logFC

Legend:

- Upregulated cytokines *
- Downregulated Cytokines *
- Bars without stars denote receptors

B

logFC

Figure 2 displays two bar charts, A and B, showing the log2 fold change (logFC) of various cytokines and chemokines in the spleen. Chart A shows upregulated cytokines (red bars) and downregulated cytokines (blue bars). Chart B shows upregulated cytokines (red bars) and downregulated cytokines (blue bars). A legend indicates that red bars represent upregulated cytokines, blue bars represent downregulated cytokines, and bars without stars denote receptors. Box plots on the left of each chart show the distribution of logFC values.

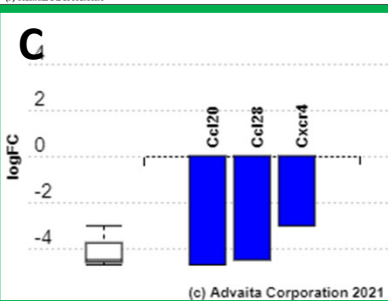
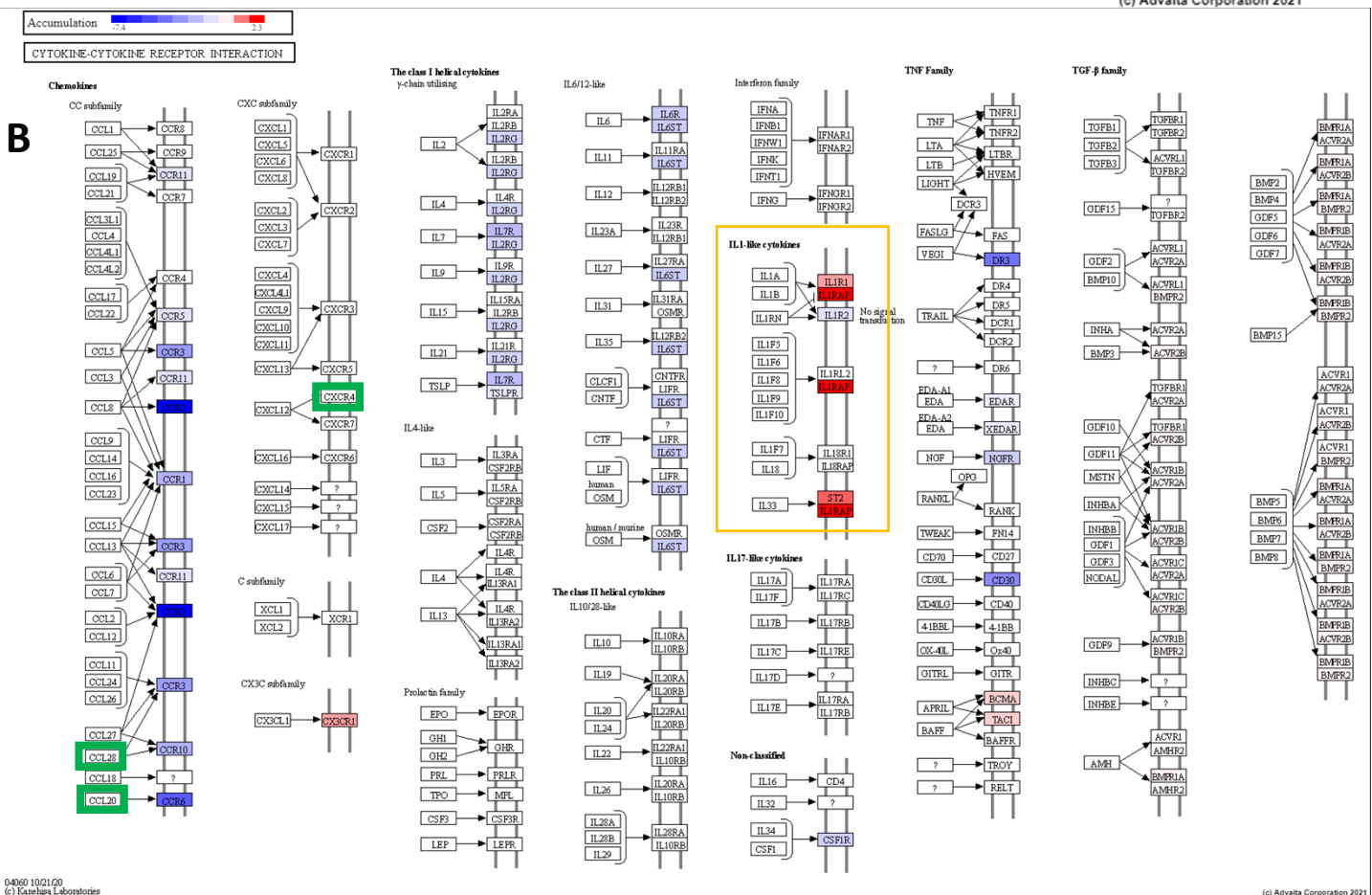
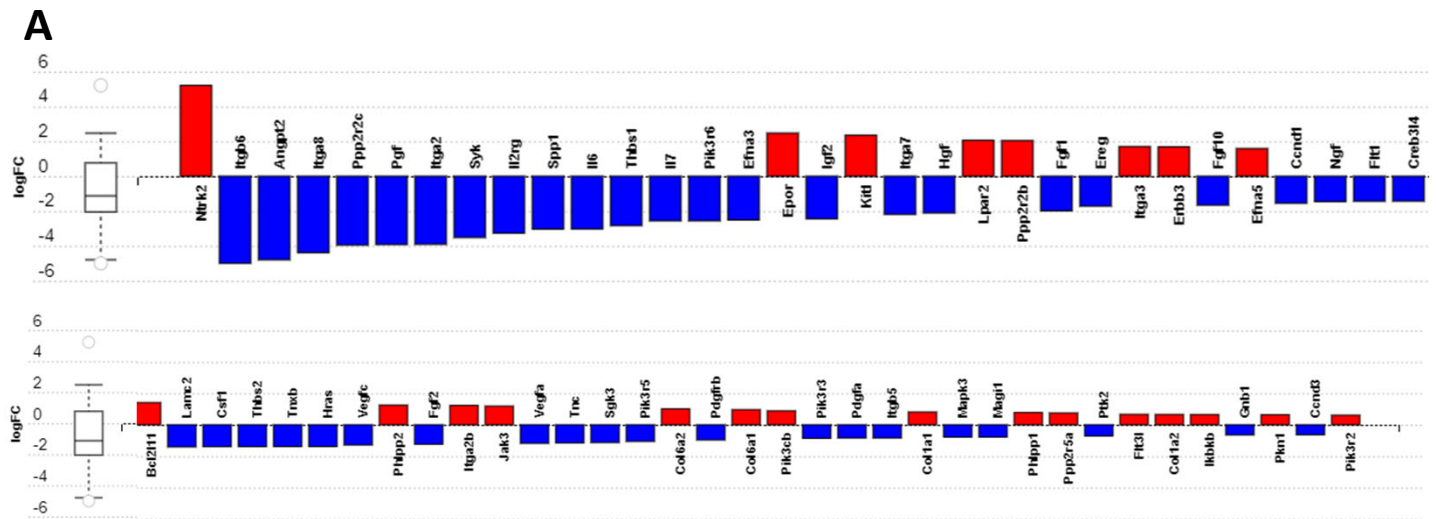


Figure S6: PI3K-Akt signaling pathway. (A) DEGs in hIGFBP5 fibroblasts that belong to this pathway. **(B)** KEGG pathway showing the predicted accumulation of the transcriptomic signature in (A) in hIGFBP5 fibroblasts. Red: upregulated, blue: downregulated, yellow arrow and box highlight major ligand/receptor interactions enriched in this pathway and biological outcomes.



(c) Advaita Corporation 2021

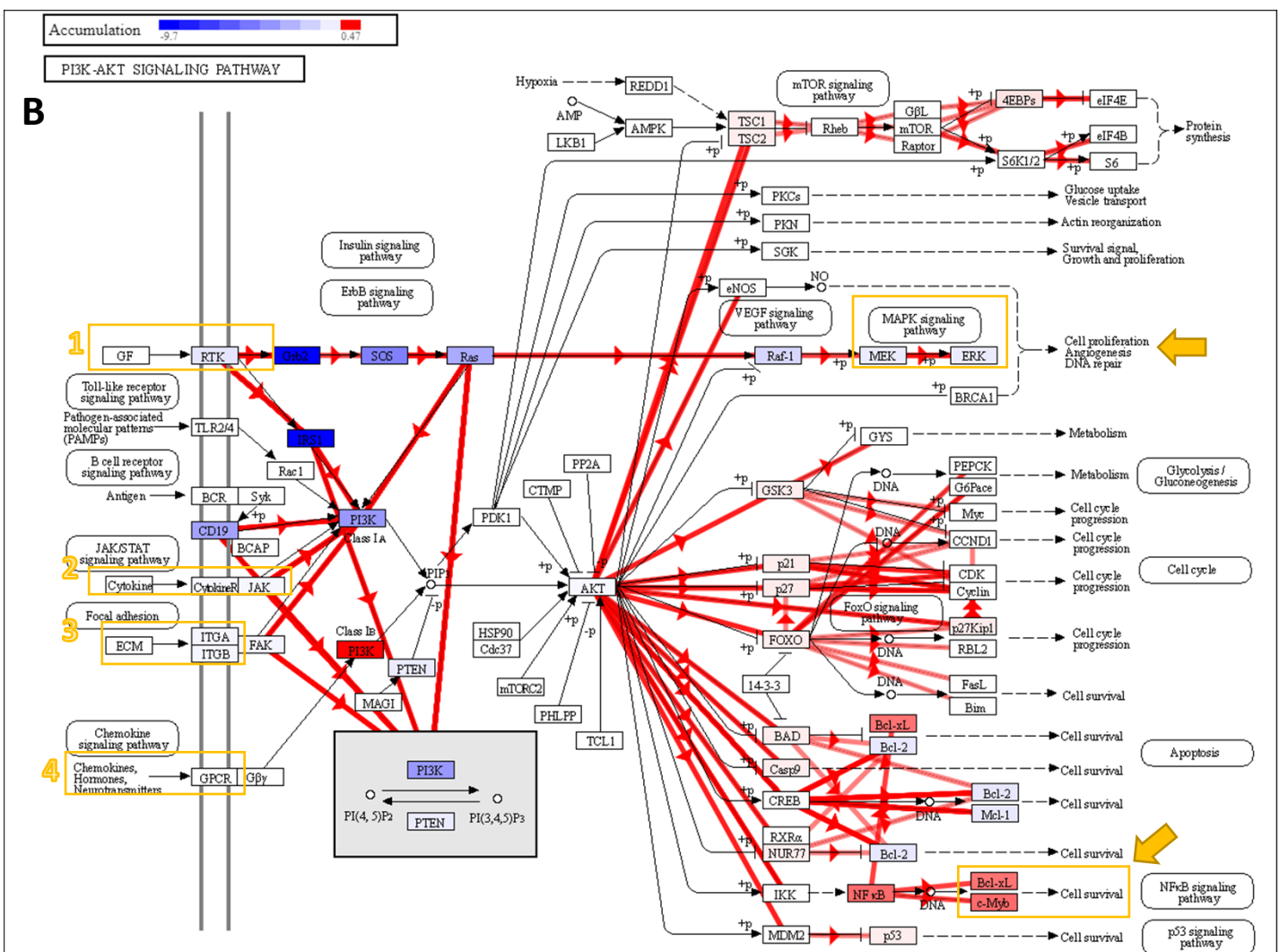
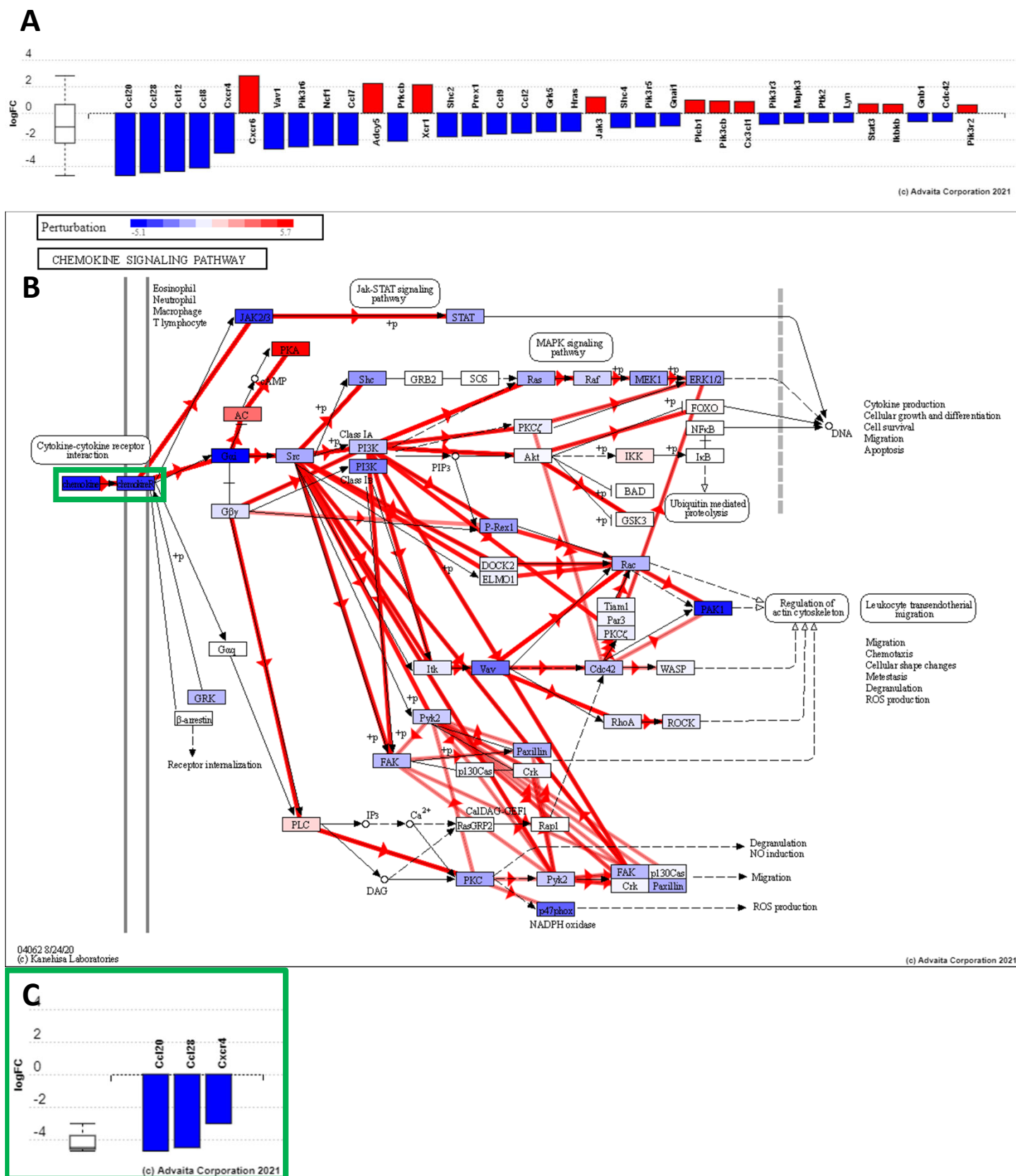


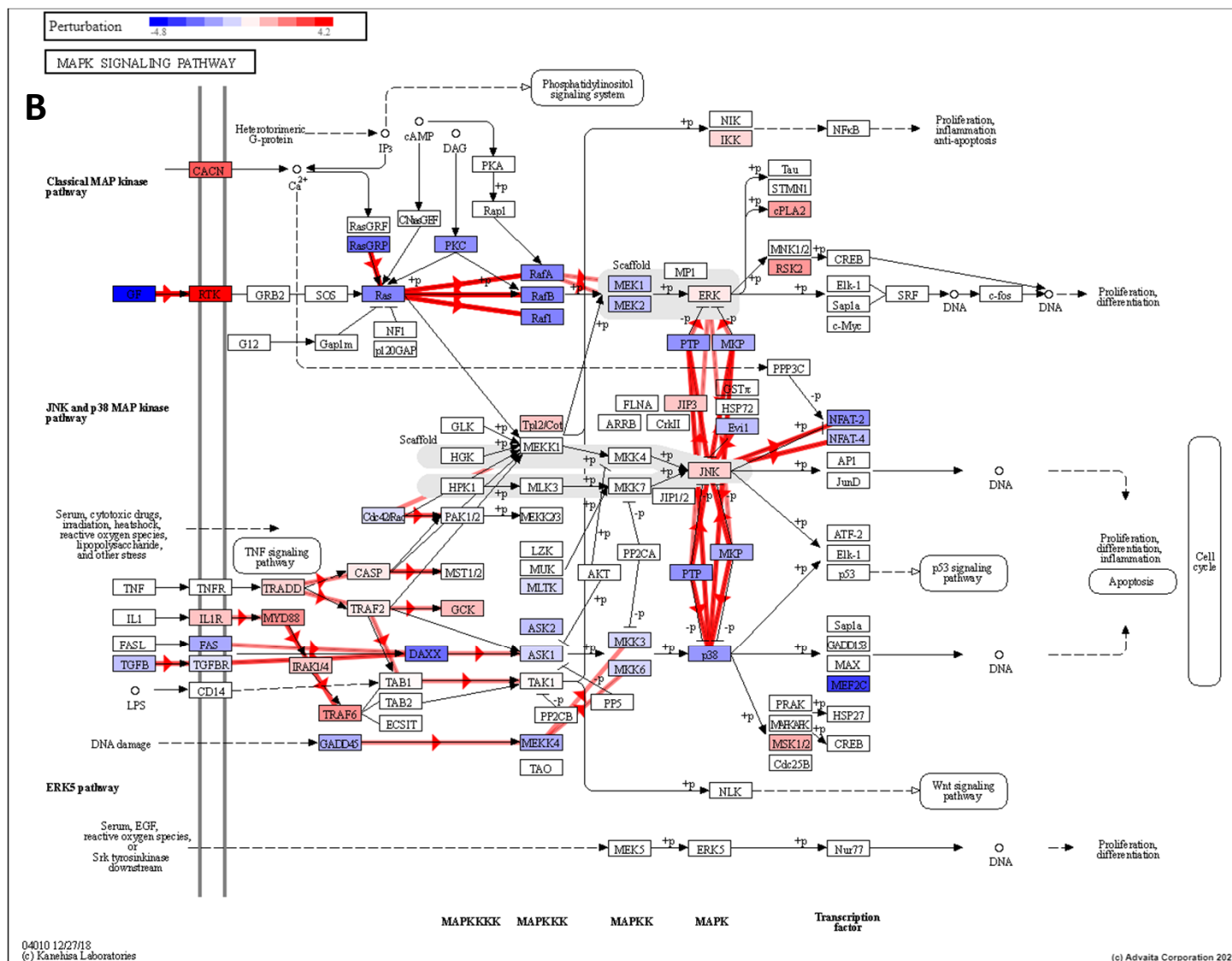
Figure S7: Chemokine signaling pathway. (A) DEGs in hIGFBP5 fibroblasts that belong to this pathway. **(B)** KEGG pathway showing the predicted perturbation of the transcriptomic signature in (A) in hIGFBP5 fibroblasts. Red: upregulated, blue: downregulated, green: hub gene(s). **(C)** Barplot of the logFC of hub gene(s).



A

Box plot showing the distribution of gene expression levels for 42 genes. The y-axis ranges from -6 to 6. The x-axis lists genes: NRX2, ANGPT2, PIGF, MIF2C, SCN5P1, CCRN1, ESRB3, SLC7, MAPK13, HIF1, PRKCB, IGF1, PRK2, TRIP, RPS24K, ESRB2, FGF10, FOS, PI3K, PRKAB, CACD1G, DUSP6, NGF, FGF, FGF, CCL1, FOS, RPS24K, CACN1A, CACN1, FGF2, FGF2, ACCN, MAPK12, RPS24K, VEGFA, VEGF, MAPK6, CACN1, CACN1, CACN1, MAPK8, IL1RN, IL1RN, MAPK6, RPS, MAPK3, MAPK1, MYD88, NGF, RPS24K, MAPK3, TRAF6, FGF2, MAPK6, CACN1.

(c) AdvaLife Corporation 2022



A

Gene	log2FC (approx.)
Agtr1b	-5.8
Bdnf2	-5.8
Gria2a	-5.8
Ryr3	3.5
Pde1c	3.2
Ptger3	3.2
Pzrx7	-4.5
Plec1	2.5
Cxcr4	-4.5
Cd38	-4.5
Gna15	2.2
Gacnati	2.2
Mylk	1.8
Pdgfr	-4.2
Prlcb	-4.2
Hrh1	-4.2
Hr2a	-4.2
Adra1d	-4.2
Erb3	1.2
Adra1b	-3.5
Tnfr1	-3.5
Adrb2	-3.5
Cacna1a	-3.5
Adora2b	-3.5
Itpr3	0.8
Cacna1c	0.5
Pdgfrb	-1.5
Prlcb1	0.5
Oral3	-2.5
Pdgfra	-2.5
Oral1	-2.5
Alp2b1	-2.5
Gna11	-2.5
Camk2d	-1.5

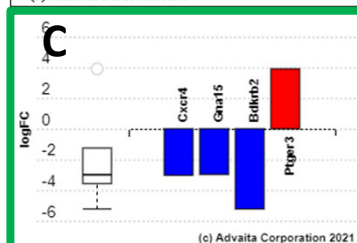
[illegible]

Figure S10: Neuroactive ligand-receptor interaction. (A) DEGs in hIGFBP5 fibroblasts that belong to this pathway. **(B)** KEGG pathway showing the logFC of DEGs in (A). Red: upregulated, blue: downregulated, yellow boxes highlight type of ligands, green: hub gene(s). **(C)** Barplot of the logFC of hub gene(s).

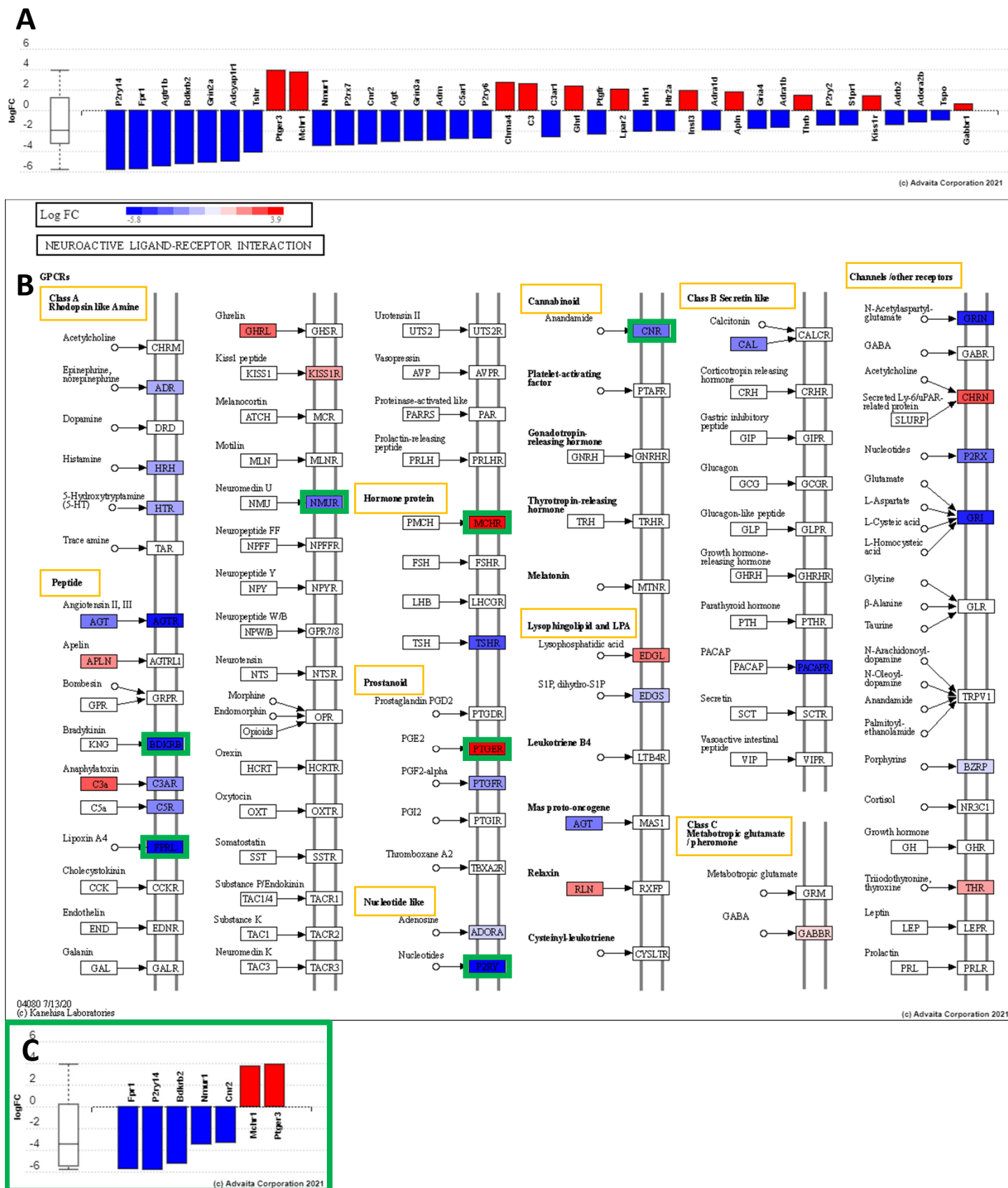


Figure S11: Impact of hIGFBP5 on the mRNA levels of genes of interest in pFBs. Expression levels of genes of interest were quantified by qRT-PCR and normalized to female WT for (A) *Col27a1*, (B) *Pcolc2*, (C) *Bdkrb2*, (D) *Cav3*, (E) *Spp1*, (F) *Nmur1* and (G) *Il6*. N= 3 per group. The housekeeping gene used to normalize the data was B2m. *P < 0.05. **P < 0.01. ***P < 0.001. ****P < 0.0001. ns: not significant. F: female (in purple), M: male (in green), WT: wild type, HOMO: hIGFBP5 homozygous mice.

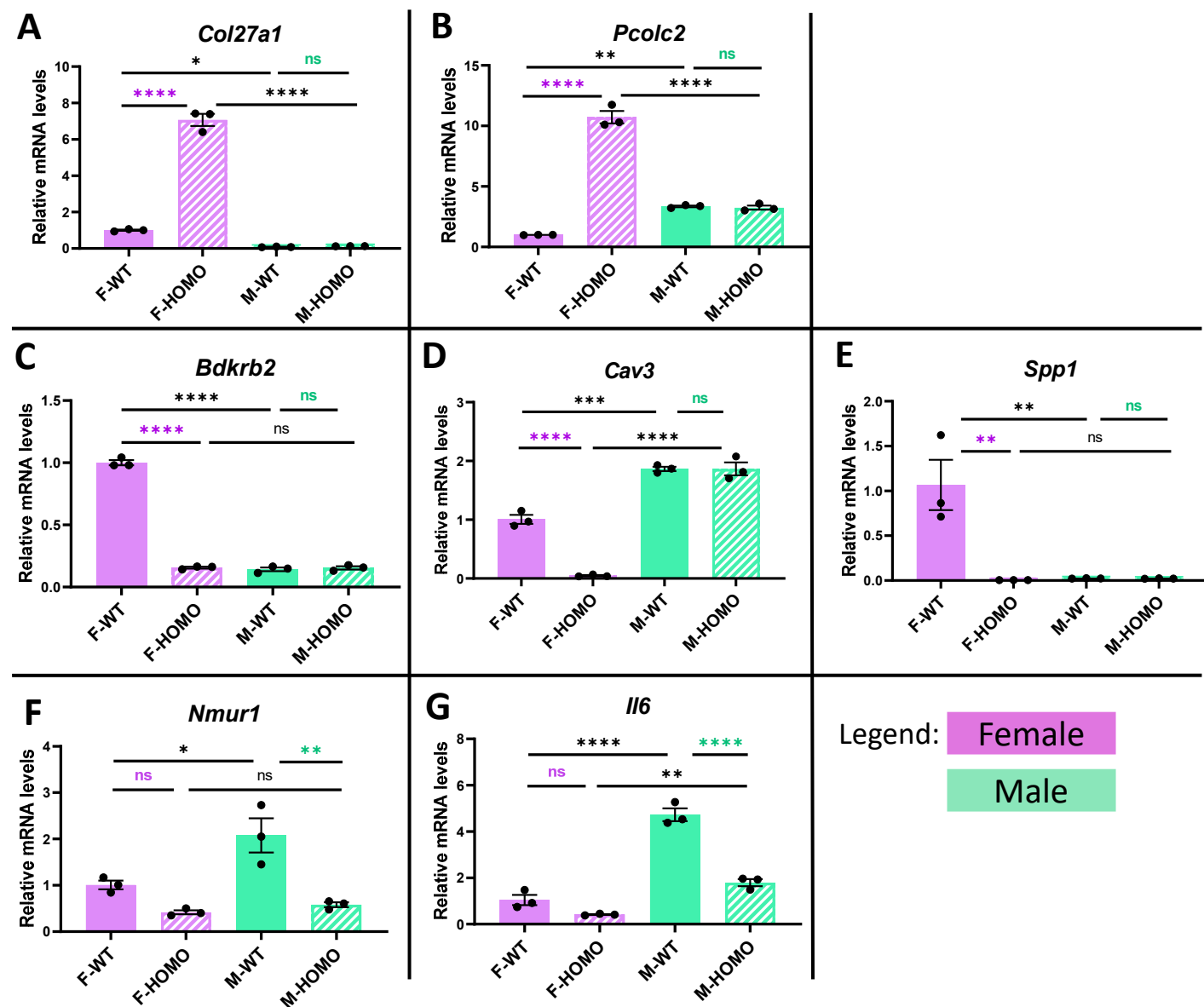


Figure S12: Effect of hIGFBP5 on Intracellular Protein Abundance. Cell lysates were analyzed by immunoblotting for selected proteins. Quantification of immunoblots (n=3) for the protein abundance of **(A)** Nmur1, **(B)** Bdkrb2, **(C)** Serpine1, **(D)** Fpr1 and **(E)** Tbx1 was performed, and the results were normalized to female WT. The housekeeping protein used as loading control was β -actin. *P < 0.05. **P < 0.01. ***P < 0.001. ns: not significant. F: female (in purple), M: male (in green), WT: wild type, HOMO: hIGFBP5 homozygous mice. **(F)** Representative immunoblots for each protein shown in panels A-E and β -actin, as a loading control.

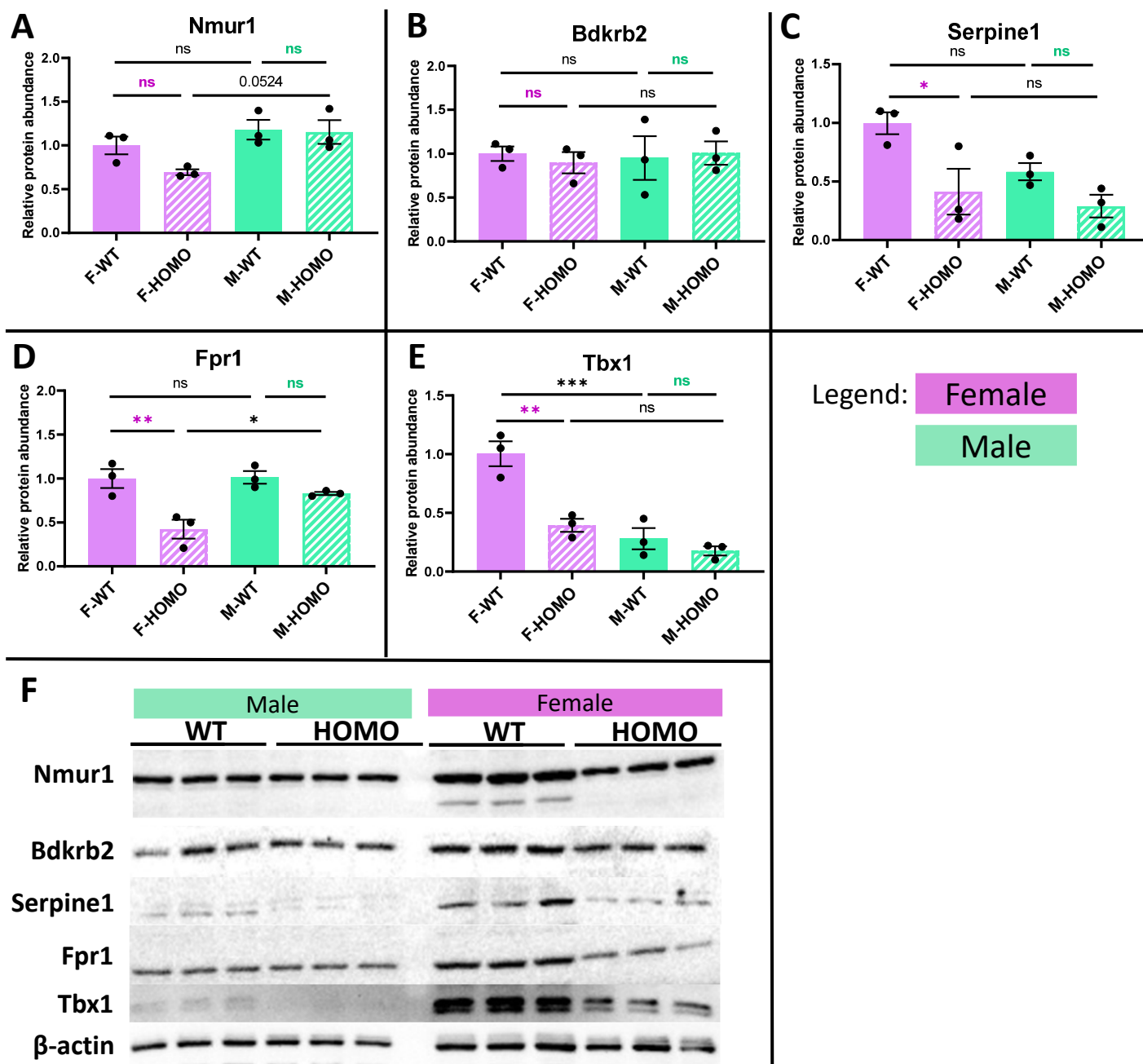


Figure S13: Effect of hIGFBP5 on the secretion of Igfbp4, Serpine1 and Pappa2. Conditioned media of cultured pFBs of hIGFBP5 HOMO and WT mice were analyzed by immunoblotting for selected proteins. Quantification of immunoblots (n=3) for the protein abundance of **(A)** Igfbp4, **(B)** Serpine1 and **(C)** Pappa2 were normalized to female WT. *P < 0.05. **P < 0.01. ***P < 0.001. ****P < 0.0001. ns: not significant. F: female (in purple), M: male (in green), WT: wild type, HOMO: hIGFBP5 homozygous mice. **(D)** Representative immunoblots showing protein abundance of Igfbp4, Serpine1 and Pappa2 in conditioned media of cultured pFBs from hIGFBP5 HOMO and WT mice. Ponceau S staining was used as loading control.

