

Supplemental Table 1 - Information regarding human postmortem tissue.

umbn	GUID	RIN	BrainWeight	DISORDER	CDEATHOFF	AGEYEARS	AGEDAYS	sex	race	HIV	HBSAG	PMINTERVAL
4787	NDAR_INVXT992PRB	6.9	1470	Unaffected Control	Asthma	12	321	Male	Black or African-American	Negative	Negative	15
5112	NDAR_INVFL200K1		1430	Unaffected Control	Occlusive Pulmonary Thromboembolism	16	194	Male	White	Negative	Negative	27
5334	NDAR_INVJJ928MHF	2.4		Unaffected Control	Hanging / Suicide	12	252	Male	Unknown	Negative	(no test results)	15
5387	NDAR_INVZH674MR7	7.5		Unaffected Control	Drowning	12	300	Male	White	(no test results)	(no test results)	13
5575	NDAR_INVDX531EMZ			Unaffected Control	Compressional asphyxia	19	304	Female	White	Negative	Negative	5
5879	NDAR_INVVMX960VMH	6.9	1580	Unaffected Control	Asphyxia By Hanging	15	15	Male	Black or African-American	(no test results)	(no test results)	18
5936	NDAR_INVEU178KHG	6.3	1260	Unaffected Control	Status Asthmaticus	14	244	Female	Black or African-American	Negative	Negative	23
6175	NDAR_INVG83RENEU	7.3	1400	Unaffected Control	Hanging	10	135	Male	Black or African-American	(no test results)	(no test results)	15
5144	NDARBM537WBK	7.7	1311	ASD - Autism	Cancer, Complications of	7	57	Male	White	(no test results)	(no test results)	3
5302	NDAR_INVUJ167KPM	3.5		Epilepsy;ASD - Autism	Diabetic Ketoacidosis	16	123	Male	White	(no test results)	(no test results)	20
5308	NDAR_INVGG735JVA	6	1310	ASD - Autism	Skull fractures	4	183	Male	White	(no test results)	(no test results)	21
5419	NDARTZ912AWU	8.4	1260	ASD - Autism	Natural / Epilepsy	19	355	Female	White	Negative	Negative	22
5454	NDAR_INVBG420UL2	4.8	1390	ASD - Autism	Toxic Megacolon	11	65	Male	White	Negative	Negative	20
5531	NDAR_INVRJ095LBJ	6.3	1641	ASD - Autism	Staphylococcus Aureus Pneumonia	15	140	Male	White	(no test results)	(no test results)	32
5565	NDAR_INVEN957VTL	8.3	1505	Epilepsy;ASD - Autism	Seizure Disorder, Complications	12	92	Male	Black or African-American	Negative	Negative	22
5841	NDAR_INVFF733VKM	6.5	1450	ADHD; ASD - Autism	Suicide, Hanging	12	190	Male	White	(no test results)	(no test results)	15
5978	NDAR_INVDU149NK7	6.7	1633	ADHD; ASD - Autism	Smoke Inhalation	11	158	Male	White	Negative	Negative	21

**Supplemental Table 2 - qPCR primers**

Gene	Species	Forward Primer	Reverse Primer	Accession #
<i>Mapk3</i>	Mouse	TATCAACACCACCTGCGACC	GGATTTGGTGTAGCCCTTGGA	NM_011952.2
<i>AldoA</i>	Mouse	CGTTCGCTCCTTAGTCCTTTC	GTGCTTTCCTTTCCTAACTCTGTC	NM_001177307.1
<i>Doc2a</i>	Mouse	GAGGCTCAGGGACAGGACTGA	TGACTGGGAGACGGGTGTAG	NM_010069.1
<i>Mvp</i>	Mouse	CAGCCAGCTACCCTGCTAAA	GGGCAAACAGTACCCTCTCA	NM_080638.3
<i>Cdipt</i>	Mouse	ATACCTCTAGGCCTTATATTGTGTG	CATGTTTCTTGACGCCGTGA	NM_001347656.1
<i>Brd4</i>	Mouse	TCCTCCTCCTCTCATTCCC	TCACCAGGCACTTACAGAGAAC	NM_020508.4
<i>Setd1b</i>	Mouse	CGGCGGGGATGTTGGGTTA	GAAATGCTGCCATCGTAGC	NM_001040398.2
<i>Kmt2a</i>	Mouse	AGGGAACCTTCTGCCCTCTCT	CATACATCTCATCTTCTGTACTGA	NM_001357549.1
<i>Kmt2d</i>	Mouse	ATCAAACAGGGTCGGAGCAG	TCAGCCACCAGTGTCTCAAC	NM_001033276.3
<i>Kdm6b</i>	Mouse	CCACCCCACTTCTGCTGTAA	CAACCAATCCAGCCTCCGT	NM_001017426.2
<i>EP300</i>	Mouse	GTGAACAACATGAGTGCTAGTCC	GCCACACCAGCATTTTCACT	NM_177821.6
<i>Shank1</i>	Mouse	AGAAATCTATCGGGGCTGCG	GCTCTGGTGGGGATGTAGTG	NM_001034115.1
<i>Syngap1</i>	Mouse	GAGCATCATTGGCAGGCTGAT	GTCACACGCGGGTTTGTTG	NM_001281491.1
<i>Scn9a</i>	Mouse	CCTTGGAAGTGGCTGGACTT	CACGATGGTTTTTAGTCCTGGAA	NM_001290674.1
<i>Wdfy3</i>	Mouse	GGTGTGAGATCGAGTGGGAG	AGCAGGTTTCCCACGCTG	NM_172882.3
<i>Bcl11a</i>	Mouse	TCCTGCGCCATCTTTGTAT	TCAAGAGGTTTCGGGCGAGAAT	NM_001242934.1
<i>Ank3</i>	Mouse	CAGACGATGAAGGTGATAAATGC	AACGGGCTCCAAGACTGAAG	NM_170690.2
<i>Asx13</i>	Mouse	CAGCTACGTGTGTTTCACCG	AACCAGACTTGTCTCTTTTAAGCC	NM_001167777.1
<i>Npas4</i>	Mouse	ACCTAGCCCTACTGGACGTT	CTTTCAGCCAACAGGCGGTA	NM_153553.5
<i>Npas4</i>	Human	CTCCGAGAGTGGCTGAGAGT	CCAGGCTTCCATGTCACTGAT	NM_001318804.1
<i>Gapdh</i>	Human	AGATCCCTCCAAAATCAAGT	CAGAGATGATGACCCTTTTG	NM_002046
<i>Vgat</i>	Mouse	GCCATTCAGGGCATGTTG	TGAGGATCTTGCCGGTGTAG	NM_009508.2
<i>Gad65</i>	Mouse	CGTGTATGGGGCTTTTGATCC	TCAGTCCCTCTCTAACCAG	NM_008078.2
<i>Gabra1</i>	Mouse	CACCATGAGGTTGACCGTGA	CTACAACCACTGAACGGGCT	NM_010250.5
<i>Gabrb2</i>	Mouse	ATTTGGTGGCTCAAACGGTC	GAGATTTCTCACCAGCAGGA	NM_008070.4
<i>Gabrg2</i>	Mouse	GGAGCCGGCATCAAATCATC	CTTTTGGCTTGTGAAGCCTGG	NM_008073.4
<i>Pvalb</i>	Mouse	GCTTTTCTGTATAGGCTCCGGC	TCAGAATGGACCCAGCTCATC	NM_013645.4

Supplemental Table 3 - Detailed statistical information for all experiments described.

Data	Response Variable	IV Level	n Value	Mean	SEM	Test Type	Factor	Test Value/df	p-Value			
Figure 1A	Social interaction time (s)	-	WT n = 10 mice	126.03	14.86	Two-way ANOVA	Interaction	F(1,38) = 16.7	0.0002			
			16p n = 11 mice	73.33	9.76		Stimulus type	F(1,38) = 30.83	<0.0001			
	"		34.76	4.22	Genotype		F(1,38) = 2.19	0.1473				
	"		49.45	5.83								
Non-social Interaction time (s)	WT n = 10 mice	0.55	0.06	Mann-Whitney U test	N/A	U = 9	0.0006					
	16p n = 11 mice	0.08	0.08									
Figure 1B	Social preference index	-	WT n = 10 mice	63.47	8.9	Two-way ANOVA	Interaction	F(1,38) = 2.91	0.096			
			16p n = 11 mice	42.01	6.15		Stimulus type	F(1,38) = 11.55	0.0016			
			"	39.37	4.83		Genotype	F(1,38) = 2.27	0.1402			
			"	30.71	6.31							
Figure 1C	Novel-social interaction time (s)	-	WT n = 10 mice	0.36	0.05	Two-tailed unpaired t-test	N/A	t(19) = 1.667	0.1119			
	16p n = 11 mice		0.2	0.08								
Figure 1D	Social novelty index	-	WT n = 10 mice	172.5	13.77	Two-tailed unpaired t-test	N/A	t(53) = 3.647	0.0006			
			16p n = 11 mice	113.5	9.5							
Figure 1E	Social interaction time (s)	-	WT n = 12 mice	22.23	5.96	Mann-Whitney U test	N/A	U = 29	0.0224			
			16p n = 13 mice	64.27	18.03							
Figure 1F	Novel object interaction time (s)	-	WT n = 10 mice	17.13	2.02	Two-way ANOVA	Interaction	F(1,38) = 10.62	0.0024			
			16p n = 11 mice	9.29	1.35		Stimulus type	F(1,38) = 21.02	<0.0001			
	"		5.87	1.01	Genotype		F(1,38) = 4.85	0.0338				
	"		7.38	1.22								
Figure 1G	Familiar object interaction time (s)	-	WT n = 10 mice	0.51	0.06	Two-tailed unpaired t-test	N/A	t(19) = 2.551	0.0195			
	16p n = 11 mice		0.11	0.14								
Figure 1H	TORM discrimination ratio	-	WT n = 11 mice	0.52	0.06	Two-tailed unpaired t-test	N/A	t(19) = 0.7935	0.4368			
			16p n = 11 mice	0.45	0.07							
Figure 1I	NOR discrimination ratio	-	WT n = 9 mice	120.72	32.69	Two-way ANOVA	Interaction	F(3,51) = 0.2574	0.8557			
			16p n = 10 mice	80.32	19.58		Stimulus intensity	F(3,51) = 46.91	<0.0001			
Figure 1J	Startle response	90 dB	"	166.65	56.02	Two-way ANOVA	Genotype	F(1,17) = 0.8579	0.3673			
			"	62.68	10.65							
		100 dB	"	346.14	68.64							
			"	325.49	50.38							
		120 dB	"	640.76	79.17							
			"	584.44	103.79							
		Figure 1K	Pre-pulse inhibition (%)	-	WT n = 9 mice		49.69	5.06	Two-way ANOVA	Interaction	F(2,34) = 1.381	0.2651
					16p n = 10 mice		51.31	4.7		Stimulus intensity	F(2,34) = 44.28	<0.0001
"	60.55				3.7	Genotype	F(1,17) = 0.1059	0.7489				
"	66.86				3.99							
Figure 1L	Distance travelled (m)	-	WT n = 11 mice	79.07	3.45	Two-way ANOVA						
			16p n = 11 mice	75.85	3.55							
Figure 1M	Latency to fall (s)	4 weeks old	WT n = 9 mice	-	-	Two-way ANOVA	Interaction	F(29,522) = 1.439	0.0666			
			16p n = 11 mice	-	-		Time point	F(29,522) = 17.66	<0.0001			
		8 weeks old	WT n = 7 mice	99.74	10.08		Genotype	F(1,18) = 20.41	0.0003			
			16p n = 11 mice	96.37	10.65							
Figure 1N	Time in open arms (s)	-	WT n = 7 mice	91.49	18.55	Two-tailed unpaired t-test	N/A	t(15) = 0.1632	0.8725			
			16p n = 10 mice	94.39	7.406							
Figure 2A	NMDAR-EPSC amplitude (pA)	20 uA	WT n = 14 cells/3 mice	74.58	9.78	Two-way ANOVA	Interaction	F(4,116) = 0.3344	0.8543			
			16p n = 17 cells/4 mice	69.7	6.24		Stimulation Intensity	F(4,116) = 174.8	<0.0001			
		"	139.93	10.77	Genotype		F(1,29) = 0.001992	0.9647				
		"	136.38	7.33								
		40 uA	"	182.28	184.72							
			"	184.72	10.41							
		60 uA	"	226.16	16.29							
			"	224.92	13.63							
80 uA	"	243.24	16.24									
	"	253.77	17.15									
Figure 2B	AMPA-EPSC amplitude (pA)	20 uA	WT n = 15 cells/3 mice	75.08	4.94	Two-way ANOVA	Interaction	F(4,100) = 0.5842	0.6748			
			16p n = 12 cells/3 mice	68.74	7.04		Stimulation Intensity	F(4,100) = 199	<0.0001			
		"	133.71	6	Genotype		F(1,25) = 0.2211	0.6423				
		"	123.81	8.68								
		40 uA	"	168.51	7.25							
			"	176.95	6.1							
		60 uA	"	206.88	8							
			"	201.32	7.88							
80 uA	"	238.46	10.62									
	"	234.72	8.48									
Figure 2C	NMDAR-EPSC PPR (%)	-	WT n = 16 cells/3 mice	-	-	Two-way ANOVA	Interaction	F(3,114) = 2.031	0.1135			
			16p n = 24 cells/5 mice	-	-		Inter-pulse Interval	F(3,114) = 65.99	<0.0001			
Figure 2D	AMPA-EPSC PPR (%)	-	WT n = 8 cells/3 mice	-	-	Two-way ANOVA	Genotype	F(1,38) = 3.278	0.0781			
			16p n = 8 cells/3 mice	-	-		Interaction	F(3,42) = 0.6287	0.6005			
			"	-	-		Inter-pulse Interval	F(3,42) = 50.04	<0.0001			
			"	-	-		Genotype	F(1,14) = 0.333	0.5731			
Figure 2E	GABAR-IPSC amplitude (pA)	30 uA	WT n = 28 cells/7 mice	160.23	14.98	Two-way ANOVA	Interaction	F(4,228) = 6.622	<0.0001			
			16p n = 31 cells/8 mice	116.65	9.67		Stimulation Intensity	F(4,228) = 138.6	<0.0001			
		"	264.14	16.88	Genotype		F(1,57) = 24.41	<0.0001				
		"	196.79	11.04								
		50 uA	"	364.06	24.68							
			"	240.48	13.33							
		70 uA	"	418.67	25.93							
			"	282.27	14.73							
90 uA	"	447.93	26.82									
	"	313.86	15.03									
Figure 2F	eAP Frequency (Hz)	120 pA	WT n = 26 cells/4 mice	9.69	0.68	Two-way ANOVA	Interaction	F(11,561) = 4.941	<0.0001			
			16p n = 27 cells/4 mice	11.89	0.77		Stimulation Intensity	F(11,561) = 841.2	<0.0001			
		"	12.31	0.63	Genotype		F(1,51) = 13.03	0.0007				
		"	14.81	0.71								
		150 pA	"	14.42	0.56							
			"	17.3	0.62							
		180 pA	"	16.15	0.53							
			"	19.19	0.61							
210 pA	"	17.62	0.54									
	"	20.63	0.61									
240 pA	"	18.38	0.58									
	"	21.89	0.65									
270 pA	"	19.12	0.62									
	"	22.81	0.7									
Figure 2G	Resting Membrane Potential (mV)	-	WT n = 26 cells/4 mice	-72.75	0.77	Two-tailed unpaired t-test	N/A	t(51) = 1.547	0.1281			
			16p n = 27 cells/4 mice	-71.27	0.57							
Figure 2H	Action Potential Threshold (mV)	-	WT n = 18 cells/4 mice	-41.05	0.98	Two-tailed unpaired t-test	N/A	t(34) = 1.121	0.27			
			16p n = 18 cells/4 mice	-42.7	1.1							

Figure 2I	Input Resistance (mega ohms)	-	WT n = 15 cells/4 mice	286	23.06	Two-tailed unpaired t-test	N/A	t(29) = 0.2784	0.7827
			16p n = 16 cells/4 mice	277.7	19.31				
Figure 2J	PV+ Cells/mm2	Cingulate Cortex	WT n = 11 slices/4 mice	100.6	7.31	Two-tailed unpaired t-test	N/A	t(28) = 0.5929	0.558
			16p n = 19 slices/4 mice	107.9	8.29				
		Prelimbic Cortex	WT n = 15 slices/4 mice	68.39	4.62	Two-tailed unpaired t-test	N/A	t(32) = 1.38	0.1772
			16p n = 19 slices/4 mice	79.01	5.78				
Figure 3E	mRNA Level (norm. to GAPDH)	Mapk3	WT n = 12 mice	1	0.14	Two-tailed unpaired t-test	N/A	t(24) = 3.86	0.0007
			16p n = 14 mice	2.11	0.24				
		AldaA	WT n = 14 mice	1	0.14	Two-tailed unpaired t-test	N/A	t(27) = 2.77	0.0099
			16p n = 15 mice	1.87	0.2				
		Doc2A	WT n = 14 mice	1	0.1	Two-tailed unpaired t-test	N/A	t(26) = 2.23	0.035
			16p n = 14 mice	1.48	0.19				
		MVP	WT n = 12 mice	1	0.11	Two-tailed unpaired t-test	N/A	t(23) = 4.29	0.0003
			16p n = 13 mice	1.83	0.15				
		Cdipt	WT n = 14 mice	1	0.11	Two-tailed unpaired t-test	N/A	t(26) = 3.83	0.0007
			16p n = 14 mice	1.73	0.16				
Figure 4D	mRNA Level (norm. to GAPDH)	Setd1b	WT n = 10 mice	1	0.14	Two-tailed unpaired t-test	N/A	t(21) = 0.47	0.64
			16p n = 13 mice	1.08	0.12				
		Kmt2a	WT n = 14 mice	1	0.08	Two-tailed unpaired t-test	N/A	t(32) = 2.20	0.035
			16p n = 20 mice	0.74	0.08				
		Kmt2d	WT n = 15 mice	1	0.11	Two-tailed unpaired t-test	N/A	t(25) = 1.09	0.29
			16p n = 15 mice	0.86	0.08				
		Kdm6b	WT n = 7 mice	1	0.17	Two-tailed unpaired t-test	N/A	t(17) = 0.75	0.47
			16p n = 12 mice	0.85	0.11				
		Ep300	WT n = 6 mice	1	0.16	Two-tailed unpaired t-test	N/A	t(20) = 2.43	0.02
			16p n = 16 mice	0.49	0.11				
Brd4	WT n = 7 mice	1	0.08	Two-tailed unpaired t-test	N/A	t(17) = 2.61	0.018		
	16p n = 12 mice	0.59	0.11						
Figure 4E	mRNA Level (norm. to GAPDH)	Shank1	WT n = 11 mice	1	0.06	Two-tailed unpaired t-test	N/A	t(23) = 1.36	0.186
			16p n = 14 mice	0.87	0.07				
		Syngap1	WT n = 11 mice	1	0.09	Two-tailed unpaired t-test	N/A	t(24) = 1.83	0.079
			16p n = 15 mice	0.73	0.11				
		Scn9a	WT n = 6 mice	1	0.12	Two-tailed unpaired t-test	N/A	t(25) = 2.19	0.038
			16p n = 16 mice	0.71	0.08				
Figure 4F	mRNA Level (norm. to GAPDH)	Wdfy3	WT n = 9 mice	1	0.1	Two-tailed unpaired t-test	N/A	t(18) = 2.47	0.024
			16p n = 11 mice	0.64	0.11				
		Bcl11a	WT n = 6 mice	1	0.21	Two-tailed unpaired t-test	N/A	t(14) = 2.11	0.053
			16p n = 10 mice	0.53	0.12				
		Ank3	WT n = 7 mice	1	0.16	Two-tailed unpaired t-test	N/A	t(17) = 2.20	0.042
			16p n = 12 mice	0.64	0.08				
Asxl3	WT n = 14 mice	1	0.1	Two-tailed unpaired t-test	N/A	t(32) = 0.96	0.344		
	16p n = 20 mice	0.88	0.08						
Figure 4G	mRNA Level (norm. to GAPDH)	Npas4	WT n = 15 mice	1	0.1	Two-tailed unpaired t-test	N/A	t(35) = 2.92	0.006
Figure 4H	Protein Level (norm. to H3)	Npas4	WT n = 9 mice	1	0.1	Two-tailed unpaired t-test	N/A	t(17) = 2.59	0.019
Figure 4I	NPAS4 mRNA level	-	Healthy control n = 8	1	0.1	Mann-Whitney U test	N/A	U = 14	0.036
			ASD patient n = 9	0.47	0.16				
Figure 4J	mRNA Level (norm. to GAPDH)	Npas4	WT n = 4 mice	1	0.03	Two-tailed unpaired t-test	N/A	t(9) = 0.81	0.44
			16p n = 7 mice	1.14	0.13				
		Mapk3	WT n = 4 mice	1	0.13	Two-tailed unpaired t-test	N/A	t(9) = 2.32	0.045
			16p n = 7 mice	1.57	0.17				
Figure 4K	mRNA Level (norm. to GAPDH)	Vgat	WT n = 11 mice	1	0.05	Two-tailed unpaired t-test	N/A	t(23) = 0.49	0.631
			16p n = 14 mice	0.96	0.06				
		Gad65	WT n = 13 mice	1	0.07	Two-tailed unpaired t-test	N/A	t(27) = 0.02	0.981
			16p n = 16 mice	1	0.08				
		Gabra1	WT n = 12 mice	1	0.05	Two-tailed unpaired t-test	N/A	t(21) = 1.31	0.203
			16p n = 11 mice	1.13	0.09				
		Gabbr2	WT n = 14 mice	1	0.06	Two-tailed unpaired t-test	N/A	t(31) = 0.11	0.916
			16p n = 19 mice	0.99	0.07				
		Gabrg2	WT n = 7 mice	1	0.11	Two-tailed unpaired t-test	N/A	t(11) = 0.04	0.966
			16p n = 6 mice	1.01	0.11				
Pvalb	WT n = 14 mice	1	0.08	Two-tailed unpaired t-test	N/A	t(28) = 0.39	0.699		
	16p n = 16 mice	0.95	0.09						
Figure 5B	Npas4 mRNA level	GFP	WT n = 7 mice	1	0.17	Two-way ANOVA	Interaction	F(1,23) = 0.46	0.5034
			16p n = 7 mice	0.77	0.04				
		Npas4	WT n = 4 mice	1.4	0.26				
			16p n = 9 mice	1.54	0.29				
Figure 5C	Npas4 Immunofluorescence intensity	Npas4	16p + GFP n = 14 slices/3 mice	1	0.05	Two-tailed unpaired t-test	N/A	t(25) = 3.48	0.002
			16p + NPAS4 n = 13 slices/4 mice	1.24	0.04				
Figure 5D	VGAT Fluorescence Intensity (norm).	-	WT + GFP n = 19 slices/2 mice	1	0.05	Two-way ANOVA	Interaction	F(1,105) = 16.16	0.0001
			16p + GFP n = 34 slices/3 mice	0.71	0.03				
			WT + NPAS4 n = 18 slices/2 mice	0.87	0.04				
			16p + NPAS4 n = 38 slices/3 mice	0.89	0.03				
							Treatment	F(1,23) = 4.69	0.041
							Genotype	F(1,23) = 0.03	0.8675

Figure 5E	GABAR-IPSC amplitude (pA)	50 uA	WT+GFP n = 9 cells/3 mice	128.59	24.59	Two-way ANOVA	Interaction	F(12,216) = 1.19	0.2938
			WT+NPAS4 n = 11 cells/3 mice	131.97	17.33		Stimulation intensity	F(4,216) = 179.3	<0.0001
			16p + GFP n = 13 cells/4 mice	73.11	10.05		Group	F(3,54) = 7.405	0.0003
			16p+NPAS4 n = 25 cells/3 mice	95.69	10.05				
		70 uA	"	275.82	28.13				
			"	285.47	25.12				
			"	153.09	17.13				
			"	219.95	17.04				
		90 uA	"	366.73	26.23				
			"	359.88	33.89				
			"	232.44	17.45				
			"	324.26	20				
		110 uA	"	431.68	41.73				
			"	415.12	35.25				
			"	273.8	18.96				
			"	375.69	23.64				
130 uA	"	505.1	38.33						
	"	476.26	38.12						
	"	328.46	27.88						
	"	425.64	28.22						
Figure 5F		120 pA	WT+GFP n = 11 cells/3 mice	2	0.94	Two-way ANOVA	Interaction	F(21,364) = 3.26	<0.0001
			WT+NPAS4 n = 17 cells/3 mice	0.35	0.26		Stimulation intensity	F(7,364) = 285.8	<0.0001
			16p + GFP n = 13 cells/4 mice	2.08	0.8		Group	F(3,52) = 5.70	0.0019
			16p+NPAS4 n = 15 cells/3 mice	3.27	1.04				
		150 pA	WT+GFP	3.91	1.44				
			WT+NPAS4	2.94	0.93				
			16p + GFP	7.85	1.06				
			16p + NPAS4	6.27	0.89				
		180 pA	WT+GFP	6.18	1.54				
			WT+NPAS4	5.24	1.26				
			16p + GFP	11.54	0.72				
			16p + NPAS4	8.53	0.61				
		210 pA	WT+GFP	9.36	1.56				
			WT+NPAS4	9.19	1.46				
			16p + GFP	14.08	0.73				
			16p + NPAS4	11.4	0.45				
		240 pA	WT+GFP	11.18	1.39				
			WT+NPAS4	11.35	1.52				
			16p + GFP	16.46	0.87				
			16p + NPAS4	12.33	0.55				
		270 pA	WT+GFP	12.91	0.84				
			WT+NPAS4	14.41	1.04				
			16p + GFP	17.15	0.88				
			16p + NPAS4	13.73	0.58				
300 pA	WT+GFP	14.73	0.65						
	WT+NPAS4	15.18	0.68						
	16p + GFP	18.39	0.96						
	16p + NPAS4	14.2	0.72						
Figure 5G	Social Interaction time (s)	WT + GFP n = 12 mice	133.4	12.09	Three-way ANOVA	Genotype*Treatment*Stimulus	F(1,107) = 9.1	0.003	
		WT + NPAS4 n = 17 mice	129.78	13.2		Genotype*Stimulus	F(1,107) = 10.76	0.001	
		16p + GFP n = 11 mice	64.35	7.11		Genotype*Treatment	F(1,107) = .24	0.622	
		16p + NPAS4 n = 13 mice	109.97	9.14		Treatment*Stimulus	F(1,107) = 3.77	0.055	
	Non-social Interaction time (s)	WT+GFP	38.6	4.75		Stimulus Type	F(1,107) = 96.83	<0.0001	
		WT+NPAS4	52.42	6.97		Treatment	F(1,107) = 2.73	0.102	
		16p + GFP	54.05	5.42		Genotype	F(1,107) = 10.99	0.001	
		16p + NPAS4	35.99	2.85					
Figure 5H	Social Preference Index (%)	WT + GFP n = 12 mice	0.55	0.04	Two-way ANOVA	Interaction	F(1,49) = 21.78	<0.0001	
		WT + NPAS4 n = 17 mice	0.42	0.07		Treatment	F(1,49) = 5.53	0.0227	
		16p + GFP n = 11 mice	0.09	0.05		Genotype	F(1,49) = 11.40	0.0014	
		16p + NPAS4 n = 13 mice	0.49	0.04					
Figure 5I	Novel Object Investigation Time (s)	WT+GFP n = 12 mice	9.21	0.93	Two-way ANOVA	Interaction	F(2,64) = 9.56	0.0002	
		16p+GFP n = 10 mice	6.38	0.85		Object Type	F(1,64) = 18.02	<0.0001	
		16p+NPAS4 n = 13 mice	12.7	1.02		Group	F(2,64) = 9.77	0.0002	
	Familiar Object Investigation Time (s)	WT+GFP	4.6	0.5					
		16p+GFP	7.8	0.18					
		16p+NPAS4	7.36	0.88					
Figure 5J	Discrimination Ratio	WT+GFP n = 12 mice	0.32	0.06	One-way ANOVA	Group	F(2,32) = 11.72	0.0002	
		16p+GFP n = 10 mice	-0.14	0.08					
		16p+NPAS4 n = 13 mice	0.27	0.07					
Figure 5K	Self-grooming time (s)	WT + GFP n = 11 mice	36.94	13.92	Two-way ANOVA	Interaction	F(1,48) = 0.0127	0.9107	
		WT + NPAS4 n = 16 mice	25.26	6.62		Treatment	F(1,48) = 0.5253	0.4721	
		16p + GFP n = 12 mice	63.55	18.77		Genotype	F(1,48) = 4.085	0.0489	
		16p + NPAS4 n = 13 mice	55.02	16.15					

**Supplemental Table 4 - Significantly upregulated genes in 16p11.2 duplication PFC identified via RNA-seq.**

Geneid	log FC	Fold Chang	FDR	AveExpr	P value	Gene name	GO Classification
Kctd13	0.759	1.691862	5.07E-05	6.092524	2.21E-08	BTB/POZ domain-containing adapter for CUL3-mediated RhoA degradation protein	Enzyme/Enzyme modulator
Cdh1	2.571	5.943014	0.002109	0.449136	2.118E-06	Cadherin-1	Cell adhesion molecule
Mapk3	0.595	1.510907	0.002355	6.435676	2.468E-06	MAP kinase-activated protein kinase 3	Signaling molecule
Gdpd3	3.547	11.68792	1.06E-11	1.292601	2.75E-16	Glycerophosphodiester phosphodiesterase domain-containing protein 3	Enzyme/Enzyme modulator
Aldoa	0.894	1.858723	1.06E-11	11.18451	4.63E-16	Fructose-bisphosphate aldolase A	Enzyme/Enzyme modulator
Coro1a	0.899	1.865332	2.53E-08	7.012965	1.65E-12	Coronin-1A	Cytoskeleton/cytoskeletal regulation protein
Cdpt	0.821	1.767081	8.82E-08	7.31272	9.34E-12	CDP-diacylglycerol--inositol 3-phosphatidyltransferase	Enzyme/Enzyme modulator
Ppp4c	0.931	1.906953	8.82E-08	4.789134	9.63E-12	Serine/threonine-protein phosphatase 4 catalytic subunit	Enzyme/Enzyme modulator
Myc	1.374	2.591808	1.54E-06	3.09174	2.36E-10	Myocilin	Cytoskeleton/cytoskeletal regulation protein
Tao2	0.719	1.645861	4.37E-06	7.648475	7.64E-10	Serine/threonine-protein kinase TAO2	Signaling molecule
Ypel3	0.723	1.650211	6.66E-06	6.651578	1.31E-09	Protein yippee-like 3	OTHER
Ogn	1.911	3.761475	2.36E-05	2.02531	5.50E-09	Mimecan	Signaling molecule
Met	0.924	1.897208	3.4E-05	4.637578	8.92E-09	Hepatocyte growth factor receptor	Signaling molecule
Cd2bp2	0.74	1.669641	3.43E-05	6.692462	1.05E-08	CD2 antigen cytoplasmic tail-binding protein 2	Nucleic acid binding
Ptgds	1.36	2.566056	3.43E-05	7.132057	1.10E-08	Prostaglandin-H2 D-isomerase	Enzyme/Enzyme modulator
Fn1	1.165	2.242471	3.43E-05	4.234994	1.12E-08	Fibronectin	Extracellular matrix protein
Tmem219	0.979	1.971499	3.58E-05	3.559534	1.25E-08	Insulin-like growth factor-binding protein 3 receptor	Receptor
Doc2a	0.819	1.764451	4.4E-05	6.394358	1.73E-08	Double C2-like domain-containing protein alpha	Calcium binding protein
Aldoat1	1.079	2.112629	4.63E-05	3.006574	1.92E-08	Fructose-bisphosphate aldolase	Enzyme/Enzyme modulator
Ino80e	0.776	1.7121	6.8E-05	4.590754	3.19E-08	INO80 complex subunit E (Fragment)	Nucleic acid binding
Maz	0.757	1.689571	8.15E-05	6.616054	4.09E-08	Myc-associated zinc finger protein	Nucleic acid binding
Bola2	0.758	1.691505	0.000139	4.468256	8.50E-08	BolA-like protein 2	OTHER
Fmod	1.902	3.737286	0.000192	1.824754	1.26E-07	Fibromodulin	Extracellular matrix protein
Asphd1	0.784	1.721485	0.000338	4.42792	2.36E-07	Aspartate beta-hydroxylase domain-containing protein 1	Enzyme/Enzyme modulator
Tbc1d10b	0.633	1.550852	0.000608	6.360537	4.51E-07	TBC1 domain family member 10B	Signaling molecule
Fgfbp1	2.572	5.945001	0.000825	-0.34144	6.48E-07	Fibroblast growth factor-binding protein 1	Signaling molecule
Prg4	2.928	7.611186	0.001349	-0.44608	1.178E-06	Proteoglycan 4	OTHER
Slc13a4	1.645	3.127447	0.003777	1.917209	5.112E-06	Putative uncharacterized protein	Transporter
Slc47a1	2.03	4.084996	0.004129	1.108036	6.04E-06	Multidrug and toxin extrusion protein 1	Transporter
Mgp	1.064	2.090253	0.005612	2.052228	9.433E-06	Matrix Gla protein	Extracellular matrix protein
Slc22a6	1.532	2.891086	0.007048	1.297163	1.231E-05	Solute carrier family 22 member 6	Transporter
Slx1b	0.697	1.621464	0.007136	3.351021	1.282E-05	Structure-specific endonuclease subunit SLX1	Nucleic acid binding
Igf2	1.065	2.092029	0.007262	3.041817	1.406E-05	Insulin-like growth factor II	Signaling molecule
Aebp1	1.623	3.079368	0.008105	1.652728	1.716E-05	Adipocyte enhancer-binding protein 1	Transcription factor
Cd6	0.831	1.77834	0.010057	2.018316	2.419E-05	T-cell differentiation antigen CD6	Cell adhesion molecule
Tbx22	2.019	4.05348	0.011666	-0.32138	3.463E-05	T-box transcription factor TBX22	Nucleic acid binding
Cyp2f2	3.826	14.18151	0.012094	-1.35408	3.67E-05	Cytochrome P450 2F2	Enzyme/Enzyme modulator
Gjb2	1.306	2.471875	0.013697	1.730259	4.712E-05	Gap junction beta-2 protein	Cell junction protein
Vsx1	5.09	34.06209	0.018124	-1.86164	7.596E-05	Visual system homeobox 1	Nucleic acid binding
Pnlip	1.692	3.231643	0.022186	-0.33956	0.0001032	Pancreatic triacylglycerol lipase	Enzyme/Enzyme modulator
Slc6a20a	0.999	1.998557	0.022439	2.6683	0.0001068	Sodium- and chloride-dependent transporter XTRP3A	Transporter
Tbx18	1.27	2.411484	0.023172	1.159464	0.0001148	T-box transcription factor TBX18	Transcription factor
Mvp	0.835	1.783414	0.023948	2.173749	0.0001226	Major vault protein	Nucleic acid binding
Chac2	0.602	1.517663	0.02597	3.128977	0.0001372	Putative glutathione-specific gamma-glutamylcyclotransferase 2	Enzyme/Enzyme modulator
Mrc1	0.824	1.770054	0.03174	2.238268	0.0001912	Macrophage mannose receptor 1	Receptor
Foxc1	0.989	1.985239	0.040136	1.388524	0.000276	Forkhead box protein C1	Nucleic acid binding
Fcrlb	1.953	3.870849	0.051169	-0.94691	0.0004144	Fc receptor-like B	Cell adhesion molecule
Tdrd1	1.104	2.149932	0.057132	0.526453	0.0004976	Tudor domain-containing protein 1	Nucleic acid binding
Spink8	1.252	2.38234	0.061991	0.10701	0.0005681	Serine protease inhibitor Kazal-type 8	OTHER
Omd	1.692	3.230049	0.062791	-0.54563	0.0005836	Osteomodulin	Extracellular matrix protein
Bnc2	1.991	3.976156	0.067907	-0.2024	0.0006847	Zinc finger protein basonuclin-2	Transcription factor
Mylpf	1.911	3.759526	0.070907	-0.80904	0.0007337	Myosin regulatory light chain 2, skeletal muscle isoform	Cytoskeleton/cytoskeletal regulation protein
Vasn	0.618	1.534981	0.071337	2.367087	0.0007397	Vasorin	Extracellular matrix protein
Eng	0.623	1.540473	0.072577	2.251131	0.0007614	Endoglin	Signaling molecule
Svep1	1.397	2.633891	0.073479	-0.10932	0.000778	Sushi, von Willebrand factor type A, EGF and pentraxin domain-containing protein	Calcium binding protein
Pmaip1	0.758	1.691244	0.078173	2.476497	0.0008694	Phorbol-12-myristate-13-acetate-induced protein 1	OTHER
Cyp2c44	4.609	24.40262	0.089543	-2.10145	0.0011005	Cytochrome P450, family 2, subfamily c, polypeptide 44	Enzyme/Enzyme modulator
Mrc2	0.853	1.805996	0.089764	1.960009	0.0011111	C-type mannose receptor 2	Receptor
Sbk2	4.481	22.3282	0.10013	-2.16778	0.0013221	Serine/threonine-protein kinase SBK2	Signaling molecule
Bche	0.786	1.724379	0.100228	2.491977	0.0013259	Cholinesterase	Enzyme/Enzyme modulator
Aldh1a2	1.041	2.057471	0.110205	1.390151	0.0016023	Retinal dehydrogenase 2	Enzyme/Enzyme modulator
Alx4	1.452	2.735853	0.110205	-0.30366	0.0016047	Homeobox protein aristaless-like 4	Transcription factor
Colec12	0.657	1.576837	0.114466	2.902874	0.0017067	Collectin-12	Signaling molecule
Mael	3.193	9.146436	0.118849	-1.75088	0.0018443	Protein maelstrom homolog	Nucleic acid binding
Fam180a	1.249	2.377038	0.129197	0.231435	0.0020984	Protein FAM180A	OTHER
Tspan8	2.506	5.681762	0.129777	-1.246	0.0021147	Tetraspanin-8	Signaling molecule
Zic2	0.813	1.756309	0.135006	1.825193	0.0022488	Zinc finger protein ZIC 2	Transcription factor
Bmp5	1.372	2.587449	0.136586	0.578521	0.0022929	Bone morphogenetic protein 5	Signaling molecule
Olfml2a	0.731	1.659634	0.137167	1.381346	0.0023207	Olfactomedin-like protein 2A	Receptor
F13a1	0.823	1.769567	0.139613	1.015735	0.0023826	Coagulation factor XIII A chain	Enzyme/Enzyme modulator
Efhb	4.321	19.98095	0.140695	-2.23541	0.0024186	EF-hand domain-containing family member B	Calcium binding protein
Foxd2	4.32	19.97118	0.140695	-2.23723	0.0024232	Forkhead box protein D2	Nucleic acid binding
Mplz2	1.651	3.141063	0.141316	-0.44395	0.0024495	Myelin protein zero-like protein 2	Cell adhesion molecule
Fat2	1.603	3.037816	0.144404	0.189193	0.0025471	Protocadherin Fat 2	Calcium binding protein
Foxc2	2.09	4.257703	0.146393	-1.01427	0.0026029	Forkhead box protein C2	Nucleic acid binding
Ptafr	0.729	1.657119	0.164668	1.304755	0.00314	Platelet-activating factor receptor	Receptor
Tnxb	1.111	2.159525	0.166567	0.016908	0.0032131	Tenascin X	Extracellular matrix protein
Aox3	0.935	1.911631	0.182977	0.419383	0.0037182	Aldehyde oxidase 3	Enzyme/Enzyme modulator
Pappalys2	0.598	1.513369	0.185777	4.265741	0.0038163	Pappalysin 2	Enzyme/Enzyme modulator
Ap4b1	0.651	1.570451	0.19141	1.722928	0.0040182	AP-4 complex subunit beta-1	Transporter
Pter	0.749	1.680685	0.19141	1.134159	0.0040228	Phosphotriesterase-related protein	OTHER
A2m	0.873	1.831984	0.19885	0.628406	0.0044264	Pregnancy zone protein	Enzyme/Enzyme modulator

Serping1	0.92	1.892462	0.198964	0.597224	0.0044346	Plasma protease C1 inhibitor	Enzyme/Enzyme modulator
Rpl13-ps3	4.138	17.60298	0.201612	-2.31029	0.0045508	60S ribosomal protein L13	Nucleic acid binding
Col8a2	0.973	1.963041	0.202828	0.59785	0.0046005	Collagen alpha-2(VIII) chain	Extracellular matrix protein
Dmrtb1	1.878	3.674995	0.204354	-1.38885	0.0046754	Doublesex- and mab-3-related transcription factor B1	Nucleic acid binding
Cped1	0.792	1.731939	0.218076	1.964272	0.0052825	Cadherin-like and PC-esterase domain-containing 1	OTHER
Agmat	1.508	2.844154	0.218161	-0.91884	0.0053007	Agmatinase, mitochondrial	OTHER
Crabp2	1.367	2.578785	0.220667	-0.54555	0.005398	Cellular retinoic acid-binding protein 2	Signaling molecule
Nphs1	0.985	1.979946	0.230953	0.189058	0.0058623	Nephrin	Cell junction protein
Nup62cl	4.146	17.70884	0.232803	-2.30974	0.0059285	Nucleoporin 62 C-terminal-like	OTHER
Car13	1.157	2.229736	0.242359	0.158637	0.0063013	Carbonic anhydrase 13	Enzyme/Enzyme modulator
Cytip	2.743	6.695124	0.246028	-1.9755	0.0064531	Cytohesin-interacting protein	Cell adhesion molecule
Mesp2	1.314	2.486226	0.248531	-0.48124	0.0066191	Mesoderm posterior protein 2	Transcription factor
Hcar1	1.242	2.364534	0.25522	-0.63216	0.0069588	Hydroxycarboxylic acid receptor 1	Receptor
Cbr2	1.805	3.494741	0.260724	-1.431	0.007199	Carbonyl reductase [NADPH] 2	Enzyme/Enzyme modulator
Cubn	1.491	2.811332	0.267926	-0.78405	0.0075392	Cubilin	Calcium binding protein
Rorc	1.364	2.574332	0.268714	-0.75763	0.0075849	Nuclear receptor ROR-gamma	Receptor
Olfir78	0.879	1.839178	0.270721	0.537413	0.0076829	Olfactory receptor 51E2	Receptor
Osr1	0.985	1.978738	0.272247	0.047607	0.0077797	Protein odd-skipped-related 1	Nucleic acid binding
Diap3	0.682	1.604157	0.275172	2.080689	0.0079761	Protein diaphanous homolog 3	Cytoskeleton/cytoskeletal regulation protein
Rad21l	1.003	2.003577	0.275172	0.661766	0.0079853	Double-strand-break repair protein rad21-like protein 1	OTHER
Ptgfr	0.905	1.872359	0.277023	0.276019	0.0081328	Prostaglandin F2-alpha receptor	Receptor
Slco6c1	1.647	3.131031	0.27837	-1.31263	0.0082631	Putative uncharacterized protein	Transporter
Armc4	1.004	2.00569	0.280657	-0.17089	0.0083933	Armadillo repeat-containing protein 4	Cytoskeleton/cytoskeletal regulation protein
Gmfg	1.137	2.199559	0.282352	-0.51593	0.0084629	Glia maturation factor gamma	Enzyme/Enzyme modulator
Cks1b	0.856	1.80975	0.284916	0.244348	0.0085689	Cyclin-dependent kinases regulatory subunit 1	Enzyme/Enzyme modulator
Oasl1	3.929	15.22826	0.285767	-2.38862	0.0086214	2'-5'-oligoadenylate synthase-like protein 1	Enzyme/Enzyme modulator
Col1a2	0.598	1.513108	0.287684	3.311699	0.0087358	Collagen alpha-2(I) chain	Extracellular matrix protein
Creb3l4	1.942	3.842212	0.294076	-1.60669	0.0091481	Cyclic AMP-responsive element-binding protein 3-like protein 4	Transcription factor
Msx1	1.133	2.192619	0.29767	-0.02904	0.0094179	Homeobox protein MSX-1	Nucleic acid binding

Supplemental Table 5 - Significantly downregulated genes in 16p11.2 duplication PFC identified via RNA-seq.

Geneid	log FC	FC	FDR	AveExpr	P value	Gene name	GO Classification
Tenn2	-0.7778	-1.7145	9.96E-05	6.6499	5.22E-08	Teneurin-2	Signaling molecule
Pcsk5	-0.6852	-1.608	0.000133	4.6022	7.53E-08	Proprotein convertase subtilisin/kexin type 5	Hydrolase
Tenn3	-0.7509	-1.6828	0.000825	6.68	6.40E-07	Teneurin-3	Signaling molecule
Fam163b	-1.5689	-2.9667	0.001874	4.1999	1.7181E-06	Protein FAM163B	Other
Fus	-0.9566	-1.9407	0.002016	4.801	1.93605E-06	RNA-binding protein FUS	Transcription factor
Nav2	-0.8965	-1.8616	0.002659	5.0917	2.94937E-06	Neuron navigator 2	Cytoskeletal protein
Dscam1	-0.7664	-1.7011	0.002713	4.9446	3.07991E-06	Down syndrome cell adhesion molecule-like protein 1 homolog	Cytoskeletal protein
Spen	-0.9193	-1.8912	0.003348	5.2145	4.09323E-06	Msx2-interacting protein	Nucleic acid binding
Trerf1	-0.9246	-1.8981	0.003374	3.8524	4.1984E-06	Transcriptional-regulating factor 1	Transcription factor
Sema6a	-0.799	-1.7399	0.004131	3.7543	6.13181E-06	Semaphorin-6A	Signaling molecule
Setd1b	-1.4502	-2.7325	0.004894	2.9848	7.58619E-06	Histone-lysine N-methyltransferase SETD1B	Transferase
Csm2	-0.8508	-1.8035	0.004953	6.0095	7.78547E-06	CUB and Sushi multiple domains 2	Other
Pxdn	-0.6073	-1.5234	0.005102	5.5395	8.13131E-06	Peroxidase homolog	Extracellular matrix protein
Kmt2d	-1.4139	-2.6645	0.005612	5.9476	9.26492E-06	Histone-lysine N-methyltransferase 2D	Transferase
Tmem131	-0.641	-1.5594	0.007136	5.7928	1.31888E-05	Transmembrane protein 131	Signaling molecule
Npas4	-0.6785	-1.6005	0.007262	4.2827	1.40845E-05	Neuronal PAS domain-containing protein 4	Transcription factor
Zfh2	-1.0869	-2.1242	0.007262	3.7085	1.41255E-05	ZFH-5	Transcription factor
Entpd7	-0.7021	-1.6269	0.007262	3.4797	1.44267E-05	Ectonucleoside triphosphate diphosphohydrolase 7	Hydrolase
Adamts16	-0.8339	-1.7825	0.008003	2.054	1.61146E-05	A disintegrin and metalloproteinase with thrombospondin motifs	Ezyme modulator
Brd4	-1.1827	-2.2701	0.008023	4.5514	1.68144E-05	Bromodomain-containing protein 4	Transcription factor
Ksr2	-0.9051	-1.8727	0.008188	5.6829	1.76959E-05	Kinase suppressor of Ras 2	Signaling molecule
Zfpn2	-0.9548	-1.9384	0.009061	4.0236	2.04988E-05	Zinc finger protein ZFPM2	Transcription factor
Fos	-0.7283	-1.6567	0.009061	4.414	2.05714E-05	Proto-oncogene c-Fos	Transcription factor
Mast4	-0.6836	-1.6062	0.009176	5.6572	2.10328E-05	Microtubule-associated serine/threonine-protein kinase 4	Calcium binding protein
Baz2a	-0.6751	-1.5967	0.009398	5.1101	2.17472E-05	Bromodomain adjacent to zinc finger domain protein 2A	Nucleic acid binding
Prr36	-1.4411	-2.7152	0.010057	2.8595	2.39008E-05	Proline-rich 36	Other
Catsper2	-0.9155	-1.8863	0.010057	1.4775	2.40708E-05	Cation channel sperm-associated protein 2	Transporter
Lrrc8c	-0.639	-1.5572	0.010861	4.341	2.72651E-05	Volume-regulated anion channel subunit LRR8C	Transporter
Tmem21	-1.0937	-2.1342	0.010927	5.309	2.84028E-05	Zinc finger MIZ domain-containing protein 1	Transcription factor
Bcl9	-0.9312	-1.9068	0.010927	3.8987	2.84553E-05	B-cell CLL/lymphoma 9 protein	Transcription factor
Dpysl5	-1.0626	-2.0887	0.010927	3.5297	2.86247E-05	Dihydropyrimidinase-related protein 5	Hydrolase
Mlxip	-0.7328	-1.6619	0.011035	3.7284	3.0058E-05	MLX-interacting protein	Nucleic acid binding
Ncoa6	-0.8112	-1.7546	0.011227	5.206	3.06055E-05	Nuclear receptor coactivator 6	Nucleic acid binding
Raph1	-0.9339	-1.9104	0.011316	6.2267	3.17491E-05	Ras association (RalGDS/AF-6) and pleckstrin homology domains	Cytoskeletal protein
Cacna1e	-0.7282	-1.6565	0.011383	8.8024	3.305E-05	Voltage-dependent R-type calcium channel subunit alpha-1E	Transporter
Syn1	-1.0144	-2.0201	0.011666	7.314	3.45452E-05	Synapsin-1	Membrane traffic protein
Egr1	-0.9354	-1.9125	0.012141	6.1579	3.75854E-05	Early growth response protein 1	Transcription factor
Plekha6	-0.6729	-1.5943	0.012141	5.7918	3.76366E-05	Pleckstrin homology domain-containing family A member 6	Ezyme modulator
Ep300	-0.7474	-1.6787	0.012652	5.7459	3.97727E-05	Histone acetyltransferase p300	Transferase
Srcap	-1.027	-2.0377	0.012921	6.1011	4.1463E-05	Snf2-related CREBBP activator protein	Transcription factor
Kmt2a	-1.0376	-2.0528	0.013535	6.5187	4.43193E-05	Histone-lysine N-methyltransferase 2A	Transferase
Mast1	-1.016	-2.0223	0.013563	4.9517	4.49971E-05	Microtubule-associated serine/threonine-protein kinase 1	Signaling molecule
Chrna4	-0.7643	-1.6986	0.013649	5.033	4.55874E-05	Neuronal acetylcholine receptor subunit alpha-4	Transporter
Nova2	-1.3107	-2.4806	0.013697	4.5471	4.69282E-05	Neuro-oncological ventral antigen 2	Ezyme modulator
Elf4g3	-0.7954	-1.7356	0.013697	7.0885	4.72186E-05	Eukaryotic translation initiation factor 4 gamma 3	Nucleic acid binding
Kcnc3	-0.9741	-1.9644	0.014424	4.1686	5.01593E-05	Potassium voltage-gated channel subfamily C member 3	Transporter
Gse1	-0.7634	-1.6975	0.014424	4.4605	5.11255E-05	Genetic suppressor element 1	Transcription factor
Fam65a	-1.0192	-2.0268	0.014424	4.5016	5.13252E-05	Protein FAM65A	Signaling molecule
Polr2a	-1.1033	-2.1485	0.01453	5.2963	5.202E-05	DNA-directed RNA polymerase II subunit RPB1	Nucleic acid binding
Nav1	-0.921	-1.8934	0.014709	6.0004	5.39445E-05	Neuron navigator 1	Cytoskeletal protein
Bsn	-1.1955	-2.2903	0.015588	8.5163	5.75915E-05	Protein bassoon	Cytoskeletal protein
Per1	-0.7792	-1.7162	0.015588	4.5416	5.78477E-05	Period circadian protein homolog 1	Transcription factor
Foxk1	-0.7957	-1.7359	0.016145	4.8735	6.19903E-05	Forkhead box protein K1	Transcription factor
Srrm4	-0.9818	-1.975	0.01645	3.9786	6.4762E-05	Serine/arginine repetitive matrix protein 4	Nucleic acid binding
Hivep3	-0.9637	-1.9503	0.01645	4.9286	6.49978E-05	Transcription factor HIVEP3	Transcription factor
Trim62	-0.6319	-1.5496	0.017169	3.4206	6.84379E-05	E3 ubiquitin-protein ligase TRIM62	Ligase
Ank3	-0.7857	-1.7239	0.017222	8.7454	6.94602E-05	Ankyrin-3	Cytoskeletal protein
Ankr52	-0.7869	-1.7254	0.017909	5.0462	7.46714E-05	Serine/threonine-protein phosphatase 6 regulatory ankyrin repe	Ezyme modulator
Map1a	-0.8605	-1.8156	0.01822	9.1301	7.83577E-05	Microtubule-associated protein 1A	Cytoskeletal protein
Arid1a	-0.8907	-1.8541	0.018626	5.6544	8.09159E-05	AT-rich interactive domain-containing protein 1A	Nucleic acid binding
Map1b	-0.6042	-1.5202	0.018859	10.91	8.35724E-05	Microtubule-associated protein 1B	Cytoskeletal protein
Hist1h3b	-4.0659	-16.747	0.020023	-1.5969	8.91697E-05	Histone H3.2	Nucleic acid binding
Prrc2a	-0.7737	-1.7096	0.020668	6.2269	9.24925E-05	Protein PRRC2A	Transcription factor
Sez6	-1.0374	-2.0525	0.021419	6.4415	9.63218E-05	Seizure protein 6	Membrane traffic protein
Abi3bp	-1.5595	-2.9474	0.02185	3.3322	0.000100169	ABI gene family, member 3 (NESH)-binding protein	Extracellular matrix protein
Tacr1	-1.4148	-2.6661	0.022103	0.3809	0.000101813	Substance-P receptor	Receptor
Bcl11a	-0.5911	-1.5064	0.022115	5.3204	0.000102349	B-cell lymphoma/leukemia 11A	Transcription factor
Atxn2l	-0.7975	-1.7381	0.022287	4.6002	0.000104117	Ataxin-2-like protein	Nucleic acid binding
Setd1a	-0.7673	-1.7021	0.022375	2.9052	0.000105016	SET domain-containing 1A	Transferase
Wipf3	-0.8468	-1.7984	0.022468	4.46	0.000107642	WAS/WASL-interacting protein family member 3	Cytoskeletal protein
Gatad2b	-0.7799	-1.7171	0.023113	6.0252	0.00011302	Transcriptional repressor p66-beta	Nucleic acid binding
Cic	-0.6281	-1.5456	0.023172	5.8183	0.000114436	Protein capicua homolog	Nucleic acid binding
Atp1a3	-0.9659	-1.9533	0.023172	9.6363	0.000116204	Sodium/potassium-transporting ATPase subunit alpha-3	Ezyme modulator
Shisa7	-0.945	-1.9251	0.023172	5.431	0.000117104	Protein shisa-7	Signaling molecule
Pom121	-1.1382	-2.2011	0.023172	4.4527	0.0001173	Nuclear envelope pore membrane protein POM 121	Nucleic acid binding
Fam19a3	-4.8282	-28.408	0.023172	-2.1609	0.000117356	Protein FAM19A3	Other
Clip3	-0.985	-1.9793	0.023934	6.7135	0.000121739	CAP-Gly domain-containing linker protein 3	Cytoskeletal protein
Dopey2	-0.6014	-1.5171	0.023948	5.9504	0.000122855	Protein dopey-2	Other
Grik3	-0.7361	-1.6657	0.024059	6.8302	0.000124475	Glutamate receptor ionotropic, kainate 3	Receptor
Ubr4	-0.7553	-1.688	0.024874	7.8786	0.000130321	E3 ubiquitin-protein ligase UBR4	Ligase
Cacna1a	-0.6855	-1.6083	0.02598	6.6347	0.000137819	Voltage-dependent P/Q-type calcium channel subunit alpha-1A	Transporter
Celsr2	-1.136	-2.1977	0.026125	7.5932	0.000139728	Cadherin EGF LAG seven-pass G-type receptor 2	Receptor
Ccnk	-0.9164	-1.8875	0.026456	2.3505	0.000142651	Cyclin-K	Ezyme modulator
Pclo	-1.059	-2.0835	0.027888	8.8887	0.000153649	Protein piccolo	Cytoskeletal protein
Celf5	-0.6513	-1.5706	0.027888	6.095	0.000154026	CUGBP, Elav-like family member 5	Nucleic acid binding
Nfasc	-0.7018	-1.6266	0.028636	7.1284	0.000159705	Neurofascin	Cytoskeletal protein
Celf2	-0.7304	-1.6591	0.028667	7.9611	0.000161459	CUGBP Elav-like family member 2	Nucleic acid binding
Pcdh411	-0.7241	-1.6519	0.028712	3.2776	0.000162337	Protocadherin alpha 11	Calcium binding protein
Atp2b4	-0.6069	-1.523	0.030539	8.4248	0.000174	Plasma membrane calcium-transporting ATPase 4	Hydrolase
Tmem245	-0.7642	-1.6984	0.030726	6.9538	0.000176907	Transmembrane protein 245	Other
Sec22c	-0.8058	-1.7481	0.030726	3.9751	0.000177026	Vesicle-trafficking protein SEC22c	Other
Acan	-1.1915	-2.2838	0.030726	0.8979	0.000177552	Aggrecan core protein	Extracellular matrix protein



Lmtk3	-0.7187	-1.6457	0.031512	5.6741	0.000186098	Serine/threonine-protein kinase LMTK3	Signaling molecule
Wdfy3	-0.7294	-1.6579	0.031512	8.0063	0.000186456	WD repeat and FYVE domain-containing protein 3	Signaling molecule
Szt2	-0.6998	-1.6243	0.031512	4.4084	0.000186964	Protein Szt2	Signaling molecule
Srrm2	-0.9237	-1.8969	0.031725	7.6098	0.000189764	Serine/arginine repetitive matrix protein 2	Other
Ncor2	-1.2832	-2.4338	0.031868	5.1316	0.000193376	Nuclear receptor corepressor 2	Transcription factor
Ulk1	-0.6711	-1.5923	0.032329	4.918	0.000197609	Serine/threonine-protein kinase ULK1	Signaling molecule
Nfat5	-0.8245	-1.771	0.034694	6.2379	0.000221153	Nuclear factor of activated T-cells 5	Transcription factor
Lrp1	-0.7689	-1.704	0.034977	8.4896	0.000228356	Prolow-density lipoprotein receptor-related protein 1	Calcium binding protein
Slit1	-0.7368	-1.6665	0.034977	5.4591	0.000229065	Slit homolog 1 protein	Calcium binding protein
Grin2b	-0.7266	-1.6547	0.036717	10.022	0.000241262	Glutamate receptor ionotropic, NMDA 2B	Receptor
Ylpm1	-0.6919	-1.6154	0.037792	6.609	0.000254322	YLP motif-containing protein 1	Nucleic acid binding
Cntn2	-0.6244	-1.5416	0.037792	6.0382	0.000254771	Contactin-2	Cytoskeletal protein
Tnrc18	-0.691	-1.6144	0.037792	5.0829	0.000255401	Trinucleotide repeat-containing gene 18 protein	Nucleic acid binding
Wasf1	-0.938	-1.9159	0.038478	6.197	0.000262076	Wiskott-Aldrich syndrome protein family member 1	Cytoskeletal protein
Vwa7	-1.7571	-3.3801	0.038534	-0.6401	0.000263298	von Willebrand factor A domain-containing protein 7	Other
Prrc2c	-0.6982	-1.6225	0.039199	7.703	0.000268696	Protein PRRC2C	Transcription factor
Zbtb39	-0.6412	-1.5597	0.040232	2.6494	0.000277537	Zinc finger and BTB domain containing 39	Transcription factor
Proser1	-0.9076	-1.876	0.040654	2.5011	0.000283039	Proline and serine-rich protein 1	Other
Prrc2b	-0.7213	-1.6486	0.040701	8.194	0.000284327	Protein PRRC2B	Transcription factor
Ahdc1	-0.7297	-1.6583	0.041329	5.0821	0.000289615	AT-hook DNA-binding motif-containing protein 1	Nucleic acid binding
Pcdh1	-0.7429	-1.6735	0.042009	7.1169	0.000298049	Protocadherin 1 (Fragment)	Calcium binding protein
Coro2b	-0.6651	-1.5857	0.044961	5.5591	0.000330766	Coronin-2B	Cytoskeletal protein
Tanc2	-0.6223	-1.5393	0.045145	7.9271	0.000333104	Protein TANC2	Other
Tenm4	-0.6729	-1.5942	0.045199	7.4428	0.000334494	Teneurin-4	Signaling molecule
Kmt2e	-0.6389	-1.5571	0.045936	6.1385	0.000347228	Histone-lysine N-methyltransferase 2E	Transferase
Mdc1	-0.7372	-1.6669	0.045936	3.1241	0.000347352	Mediator of DNA damage checkpoint protein 1	Nucleic acid binding
Prrt1	-0.8388	-1.7885	0.046837	3.6867	0.000357104	Proline-rich transmembrane protein 1	Other
Slc4a8	-0.6759	-1.5975	0.046912	6.8155	0.000359456	Electroneutral sodium bicarbonate exchanger 1	Transporter
Vamp2	-0.7046	-1.6296	0.046921	7.7106	0.000361798	Vesicle-associated membrane protein 2	Membrane traffic protein
Crebbp	-0.7661	-1.7007	0.046921	6.6977	0.000362605	CREB-binding protein	Transcription factor
Nlgn2	-0.843	-1.7938	0.047314	6.5043	0.000366672	Neurologin-2	Signaling molecule
Dlg5	-0.6287	-1.5462	0.047516	3.834	0.000369276	Discs, large homolog 5 (Drosophila)	Signaling molecule
Pcbp2	-0.7004	-1.625	0.048353	5.3205	0.000382109	Poly(rC)-binding protein 2	Ezyme modulator
Sdk2	-1.0283	-2.0396	0.051717	5.559	0.000421117	Protein sidekick-2	Cytoskeletal protein
Fam227a	-0.6666	-1.5874	0.052709	2.2124	0.000433006	Family with sequence similarity 227, member A	Other
Nos1ap	-0.9662	-1.9537	0.052709	6.244	0.0004345	Carboxyl-terminal PDZ ligand of neuronal nitric oxide synthase p	Signaling molecule
Sv2c	-0.6743	-1.5958	0.054572	4.5641	0.000455084	Synaptic vesicle glycoprotein 2C	Membrane traffic protein
Atn1	-1.1315	-2.1909	0.054658	3.807	0.000459834	Atrophin-1	Transcription factor
Inf2	-0.946	-1.9266	0.055286	4.9776	0.000469483	Inverted formin-2	Ezyme modulator
Syngap1	-0.6686	-1.5895	0.05529	6.9495	0.000470732	Ras/Rap GTPase-activating protein SynGAP	Membrane traffic protein
Ylft1	-0.6541	-1.5736	0.055334	4.7646	0.000472311	Xylosyltransferase 1	Transferase
Map3k13	-0.6679	-1.5888	0.055495	4.3601	0.000476103	Mitogen-activated protein kinase kinase kinase 13	Signaling molecule
Bcl9l	-0.7454	-1.6765	0.056496	2.8999	0.000490866	B-cell CLL/lymphoma 9-like protein	Transcription factor
Prr12	-1.2661	-2.405	0.057608	3.3156	0.000503041	Proline-rich protein 12	Nucleic acid binding
Rnf165	-1.0013	-2.0018	0.05893	3.7503	0.000521013	E3 ubiquitin-protein ligase RNF165	Ligase
Camta2	-0.6258	-1.5431	0.060642	6.027	0.000520336	Calmodulin-binding transcription activator 2	Transcription factor
Pik3c2b	-0.7033	-1.6283	0.062356	3.212	0.000573081	Phosphoinositide-3-kinase, class 2, beta polypeptide	Signaling molecule
Dlgap2	-0.5997	-1.5154	0.062612	5.5668	0.000576806	Disks large-associated protein 2	Signaling molecule
Xkr6	-0.7935	-1.7333	0.062672	2.778	0.000578722	XK-related protein 6	Other
Peak1	-0.699	-1.6234	0.062791	5.4407	0.000583934	Pseudopodium-enriched atypical kinase 1	Signaling molecule
Gltscr1	-1.093	-2.1331	0.064928	1.8155	0.000608828	Gloma tumor suppressor candidate region gene 1	Transcription factor
Sema5a	-0.7742	-1.7102	0.064928	6.0389	0.000609475	Semaphorin-5A	Signaling molecule
Hdx	-0.5888	-1.504	0.065866	3.3313	0.000624041	Highly divergent homeobox	Nucleic acid binding
Brpf3	-0.6264	-1.5437	0.067374	3.8055	0.000643348	Bromodomain and PHD finger containing, 3	Transcription factor
Sdk1	-0.6716	-1.5929	0.067419	3.903	0.000649344	Protein kinase C delta type	Signaling molecule
Tbr1	-0.6161	-1.5327	0.067419	6.1077	0.000659213	T-box brain protein 1	Transcription factor
Cd47	-0.6826	-1.605	0.067419	6.328	0.000660823	Leukocyte surface antigen CD47	Cytoskeletal protein
Scnn1a	-1.8958	-3.7214	0.067457	-1.0913	0.000662671	Amiloride-sensitive sodium channel subunit alpha	Transporter
Ryr3	-0.7247	-1.6525	0.067586	5.6474	0.000668061	Ryanodine receptor 3	Transporter
Cacna1i	-0.6275	-1.5448	0.067626	6.3807	0.000671706	Voltage-dependent T-type calcium channel subunit alpha	Transporter
Plec	-0.6023	-1.5182	0.067861	7.4228	0.000677728	Plectin	Cytoskeletal protein
Pde4a	-0.5957	-1.5112	0.067861	5.6919	0.000680351	cAMP-specific 3',5'-cyclic phosphodiesterase 4A	Signaling molecule
Fras1	-0.6252	-1.5424	0.070484	6.1967	0.000721487	Extracellular matrix protein FRAS1	Extracellular matrix protein
Zbtb34	-0.7528	-1.6851	0.070484	3.4248	0.00072164	Zinc finger and BTB domain-containing 34	Transcription factor
Bahcc1	-0.6076	-1.5237	0.070777	2.8699	0.000729274	BAH and coiled-coil domain-containing protein 1	Transcription factor
Pou2f2	-0.7963	-1.7367	0.072181	1.3318	0.000750049	POU domain, class 2, transcription factor 2	Transcription factor
Sec24b	-0.6026	-1.5185	0.072364	4.9999	0.000755229	Sec24 related gene family, member B (S. cerevisiae)	Other
Adams17	-0.6572	-1.577	0.073825	2.3116	0.000786575	A disintegrin-like and metallopeptidase (reprolysin type) with thr	Ezyme modulator
Scgn	-2.4353	-5.4088	0.073825	-0.2882	0.000788085	Secretagogin	Calcium binding protein
Zmat3	-0.7216	-1.649	0.074098	6.3105	0.000793488	Zinc finger matrin-type protein 3	Transcription factor
Adra2a	-0.8076	-1.7503	0.075199	1.9315	0.0008123	Alpha-2A adrenergic receptor	Receptor
Zdbf2	-0.6596	-1.5797	0.075199	5.5767	0.000812354	DBF4-type zinc finger-containing protein 2 homolog	Transcription factor
Myrf	-0.9234	-1.8965	0.075745	2.1112	0.000823462	Myelin regulatory factor	Nucleic acid binding
Helz	-0.6295	-1.547	0.075902	5.983	0.000830136	Probable helicase with zinc finger domain	Hydrolase
Khlh14	-1.2444	-2.3691	0.076046	1.4829	0.000836306	Kelch-like protein 14	Other
Ptpn23	-0.8273	-1.7744	0.076046	3.8709	0.000836693	Tyrosine-protein phosphatase non-receptor type 23	Hydrolase
Adam4	-1.2393	-2.3608	0.078656	0.2256	0.000880859	A disintegrin and metallopeptidase domain 4	Hydrolase
Zdhhc9	-0.6473	-1.5662	0.081578	4.3696	0.000922494	Palmitoyltransferase ZDHHC9	Transferase
Grm4	-0.65	-1.5692	0.082127	3.6238	0.000930492	Metabotropic glutamate receptor 4	Receptor
Sez6l	-0.6134	-1.5299	0.082237	7.304	0.000933527	Seizure 6-like protein	Other
Pacs1	-0.5976	-1.5132	0.083364	5.629	0.000949967	Phosphofurin acidic cluster sorting protein 1	Other
Kcng1	-0.8812	-1.8419	0.084015	3.9457	0.000968389	Potassium voltage-gated channel subfamily G member 1	Transporter
Dcx	-0.6166	-1.5333	0.084797	4.7487	0.000979251	Neuronal migration protein doublecortin	Cytoskeletal protein
Ndst4	-2.095	-4.2721	0.086098	3.2227	0.001019454	Bifunctional heparan sulfate N-deacetylase/N-sulfotransferase 4	Ezyme modulator
Shank1	-0.7026	-1.6275	0.08741	5.9834	0.001039956	SH3 and multiple ankyrin repeat domains protein 1	Cytoskeletal protein
Sl8sia1	-0.7678	-1.7027	0.08792	5.1841	0.001053699	Alpha-N-acetylneuraminide alpha-2,8-sialyltransferase	Transferase
Tcp111	-0.6541	-1.5736	0.089456	4.7905	0.001086923	T-complex protein 11-like protein 1	Receptor
Piamp	-0.7617	-1.6955	0.089456	4.9571	0.00109447	PILR alpha-associated neural protein	Signaling molecule
Gm4787	-0.9845	-1.9787	0.089456	0.4634	0.001094895	MCG140564	Hydrolase
Pth2r	-1.15	-2.2191	0.091191	0.1862	0.001134708	Parathyroid hormone 2 receptor	Receptor
Kmt2b	-0.6744	-1.5959	0.095358	4.0502	0.001218906	Histone-lysine N-methyltransferase 2B	Transferase
Wnk2	-0.6593	-1.5793	0.0965	5.8404	0.001238687	Serine/threonine-protein kinase WNK2	Signaling molecule
Sobp	-0.595	-1.5105	0.096825	5.402	0.001247094	Sine oculis-binding protein homolog	Other
Foxg1	-0.6237	-1.5409	0.098525	4.0935	0.001279737	Forkhead box protein G1	Transcription factor

Trrap	-0.6076	-1.5237	0.098924	7.1244	0.0012871	Transformation/transcription domain-associated protein	Nucleic acid binding
Npy2r	-0.7733	-1.7092	0.100599	2.3535	0.001334492	Neuropeptide Y receptor type 2	Receptor
Ubain2	-0.6778	-1.5997	0.102168	6.2132	0.001378353	Ubiquilin-2	Ezyme modulator
Cacng5	-0.9233	-1.8965	0.102429	2.4391	0.00138412	Voltage-dependent calcium channel gamma-5 subunit	Transporter
Ago2	-0.6232	-1.5403	0.103359	6.4395	0.001436788	Protein argonaute-2	Hydrolase
Sgk2	-1.3086	-2.477	0.103359	-0.4646	0.001438166	Serine/threonine-protein kinase Sgk2	Signaling molecule
Atp8b1	-0.5936	-1.509	0.103421	2.5711	0.001457851	Phospholipid-transporting ATPase IC	Hydrolase
Pcdha1	-1.1025	-2.1472	0.103421	0.2907	0.001458475	Protocadherin alpha 1	Calcium binding protein
Atp6ap11	-0.68	-1.6021	0.111185	2.8669	0.001623789	ATPase, H <sup>+</sup> -transporting, lysosomal accessory protein 1-like	Hydrolase
Ms4a15	-3.5445	-11.668	0.115424	-0.7577	0.00173358	Membrane-spanning 4-domains subfamily A member 15	Receptor
Dvl3	-0.6661	-1.5867	0.116924	2.785	0.001777452	Segment polarity protein dishevelled homolog DVL-3	Signaling molecule
Zfp703	-1.0519	-2.0733	0.116924	2.7305	0.00177988	Zinc finger protein 703	Transcription factor
Abca8a	-0.6599	-1.5799	0.117897	2.2206	0.001804183	ATP-binding cassette sub-family A member 8-A	Transporter
Slit3	-0.6211	-1.5381	0.118849	4.738	0.001845552	Slit homolog 3 protein	Calcium binding protein
Tubb4a	-0.5906	-1.5058	0.123092	7.7815	0.001945475	Tubulin beta-4A chain	Cytoskeletal protein
Tox2	-1.214	-2.3198	0.124351	1.1794	0.001978953	TOX high mobility group box family member 2	Nucleic acid binding
Ctgf	-1.1351	-2.1963	0.124727	3.7451	0.001987655	Connective tissue growth factor	Signaling molecule
Sic39a2	-0.9133	-1.8833	0.127783	1.118	0.002046792	MCG18706, isoform CRA_b	Transporter
Cnga2	-3.0745	-8.4238	0.128193	-2.0937	0.002064947	Cyclic nucleotide-gated olfactory channel	Transporter
Iqsec2	-0.596	-1.5115	0.130112	6.0462	0.002126511	IQ motif and SEC7 domain-containing protein 2	Signaling molecule
Nos1	-0.6539	-1.5734	0.133514	4.8565	0.002194723	Nitric oxide synthase, brain	Ezyme modulator
Bcor1	-0.6967	-1.6208	0.133835	3.6669	0.002205849	BCL-6 corepressor-like protein 1	Transcription factor
Astn2	-0.6193	-1.5361	0.134541	4.8828	0.002234691	Astrotactin-2	Calcium binding protein
Shisa6	-0.9202	-1.8924	0.139613	1.6246	0.002375806	Protein shisa-6 homolog	Signaling molecule
Scn9a	-0.8307	-1.7785	0.139696	1.637	0.002390887	Sodium channel protein type 9 subunit alpha	Transporter
Dot1	-0.5856	-1.5006	0.140695	3.3452	0.002425289	Histone-lysine N-methyltransferase, H3 lysine-79 specific	Transferase
Srgap1	-0.7235	-1.6512	0.143908	2.8552	0.002528938	SLIT-ROBO Rho GTPase-activating protein 1	Ezyme modulator
Sspo	-1.3867	-2.6148	0.148886	-0.8505	0.002665184	SCO-spondin	Ezyme modulator
Scrt2	-0.8082	-1.751	0.151266	1.2074	0.002727604	Transcriptional repressor scratch 2	Transcription factor
Sic9a1	-0.6462	-1.5651	0.15245	4.0338	0.002762254	Sodium/hydrogen exchanger 1	Transporter
Disp2	-0.6511	-1.5703	0.154483	7.7587	0.002812379	Protein dispatched homolog 2	Other
Stac3	-1.3347	-2.5222	0.156479	-0.7969	0.002868062	SH3 and cysteine-rich domain-containing protein 3	Signaling molecule
Sic25a42	-0.6769	-1.5987	0.156992	2.9205	0.002885676	Mitochondrial coenzyme A transporter SLC25A42	Calcium binding protein
Zfp628	-0.8181	-1.7631	0.160383	1.4205	0.002995155	Zinc finger protein 628	Transcription factor
Cdhr2	-1.632	-3.0994	0.164668	-1.2304	0.003134681	Cadherin-related family member 2	Cytoskeletal protein
Cpa6	-0.815	-1.7593	0.164668	1.1806	0.003144893	Carboxypeptidase A6	Hydrolase
Dchs2	-0.7206	-1.6479	0.166188	2.1493	0.003188939	Dachsous 2 (Drosophila)	Calcium binding protein
Mroh8	-1.0529	-2.0747	0.166657	-0.0919	0.003214952	Maestro heat-like repeat family member 8	Other
Cyr61	-0.7581	-1.6913	0.167247	1.6924	0.003241925	Protein CYR61	Signaling molecule
Akap2	-1.7578	-3.3818	0.168147	-1.1563	0.003281337	A-kinase anchor protein 2	Cytoskeletal protein
Trdn	-2.5142	-5.7128	0.169747	-1.0214	0.00332024	Triadin	Signaling molecule
Asxl3	-0.6625	-1.5828	0.177321	4.4306	0.003526455	Putative Polycomb group protein ASXL3	Nucleic acid binding
Gja6	-1.2557	-2.3877	0.178024	-0.2621	0.003544313	Gap junction alpha-6 protein	Other
Mnt	-0.6341	-1.552	0.18125	3.4009	0.003620095	Max-binding protein MNT	Transcription factor
Rnf152	-0.7635	-1.6976	0.182696	4.5945	0.003705136	E3 ubiquitin-protein ligase RNF152	Ligase
Thbs4	-1.491	-2.8108	0.188669	-0.3227	0.003912757	Thrombospondin-4	Calcium binding protein
Cnot3	-0.607	-1.523	0.188739	3.2271	0.003926019	CCR4-NOT transcription complex subunit 3	Transcription factor
Tfap2d	-2.048	-4.1353	0.190307	-0.6869	0.00398195	Transcription factor AP-2-delta	Transcription factor
Frm7	-1.8636	-3.639	0.190307	0.6573	0.003983508	FERM domain-containing protein 7	Cytoskeleton/cytoskeletal regulatory protein
Frm3p3	-0.653	-1.5725	0.19141	1.7805	0.004030679	FERM and PDZ domain-containing 3	Cytoskeleton/cytoskeletal regulatory protein
Gal3st3	-0.7321	-1.6611	0.19141	4.0263	0.004073284	Galactose-3-O-sulfotransferase 3	Transferase
9130023H24Rik	-0.5981	-1.5137	0.19141	1.9829	0.004078629	Putative uncharacterized protein	Transcription factor
Wnt9b	-2.2097	-4.6257	0.19141	-1.7982	0.004094957	Protein Wnt-9b	Signaling molecule
Tmem102	-4.0199	-16.222	0.192405	-2.4674	0.00414793	Transmembrane protein 102	Other
Stil	-1.0422	-2.0593	0.194698	-0.1421	0.00421631	SCL-interrupting locus protein homolog	Transcription factor
Mgam	-4.7222	-26.395	0.197885	-2.2307	0.00433715	Maltase-glucoamylase	Hydrolase
Spta4	-3.0738	-8.4199	0.201612	-2.0935	0.00454218	Spermatogenesis-associated protein 4	Other
Gpx3	-0.5912	-1.5065	0.203685	1.8307	0.004631663	Glutathione peroxidase 3	Ezyme modulator
Clrn1	-1.7212	-3.297	0.204777	-1.0604	0.004712425	Clarín-1	Other
Dnaaf1	-2.453	-5.4753	0.204777	-1.9679	0.00471619	Dynein assembly factor 1, axonemal	Cytoskeleton/cytoskeletal regulatory protein
Zfp524	-0.7126	-1.6388	0.214216	1.5087	0.005113072	Zinc finger protein 524	Transcription factor
Syn3	-0.7076	-1.6331	0.214975	3.2095	0.005153593	Synapsin-3	Membrane traffic protein
St3gal1	-0.6329	-1.5507	0.217605	3.7249	0.005244405	CMP-N-acetylneuraminic-beta-galactosamide-alpha-2,3-sialylt	Transferase
Ttn	-0.8014	-1.7428	0.223156	6.238	0.005490226	Titin	Calcium binding protein
Col12a1	-0.621	-1.5379	0.228634	5.0507	0.00566495	Collagen alpha-1(XII) chain	Receptor
Crb1	-1.1276	-2.1849	0.230394	-0.379	0.005794057	Protein crumbs homolog 1	Calcium binding protein
Nr4a3	-0.6816	-1.6039	0.232803	4.2918	0.005935951	Nuclear receptor subfamily 4 group A member 3	Transcription factor
Kdm6b	-0.883	-1.8443	0.244847	1.7676	0.006403394	Lysine-specific demethylase 6B	Transferase
Scube1	-0.5899	-1.5051	0.246233	6.1434	0.006486706	Signal peptide, CUB and EGF-like domain-containing protein 1	Extracellular matrix protein
Polq	-0.744	-1.6749	0.249401	1.4952	0.006653165	DNA polymerase theta	Nucleic acid binding
Lmod3	-4.0069	-16.077	0.249827	-2.4676	0.006686702	Leiomodin-3	Cytoskeletal protein
Cd244	-4.0069	-16.077	0.249827	-2.4676	0.006688267	Natural killer cell receptor 2B4	Signaling molecule
C8b	-4.0101	-16.112	0.252787	-2.4674	0.00685386	Complement component C8 beta chain	Other
Scaf4	-0.6214	-1.5384	0.25522	3.41	0.006954762	SR-related CTD-associated factor 4	Nucleic acid binding
Parppb	-0.9751	-1.9657	0.270398	0.1395	0.007667807	PCNA-interacting partner	Nucleic acid binding
Gpr63	-0.6266	-1.5439	0.272247	2.0091	0.007769352	Probable G-protein coupled receptor 63	Receptor
Hapln2	-0.6701	-1.5912	0.272467	1.7809	0.007791907	Hyaluronan and proteoglycan link protein 2	Extracellular matrix protein
Syvn1	-0.5917	-1.507	0.275172	3.6921	0.007950396	E3 ubiquitin-protein ligase synoviolin	Ligase
Pbx3	-0.871	-1.8289	0.275172	2.8385	0.007973597	Pre-B-cell leukemia transcription factor 3	Transcription factor
Heph1	-4.3119	-19.862	0.275923	-2.3837	0.008035414	Hephaestin-like protein 1	Other
Tfap2c	-4.3192	-19.962	0.275923	-2.3836	0.008058318	Transcription factor AP-2 gamma	Transcription factor
Impg2	-0.8383	-1.7879	0.276332	0.381	0.008083399	Interphotoreceptor matrix proteoglycan 2	Extracellular matrix protein
Cyp2j12	-1.4691	-2.7684	0.277519	-0.2628	0.008168504	Cytochrome P450, family 2, subfamily j, polypeptide 12	Other
Muc15	-1.3318	-2.5171	0.27837	-0.8767	0.008269721	Mucin-15	Other
Ackr1	-0.7752	-1.7115	0.281288	3.2164	0.0084249	Atypical chemokine receptor 1	Receptor
Ccdc169	-1.4823	-2.794	0.290681	-1.3038	0.008953681	Coiled-coil domain-containing protein 169	Transcription factor
Pvr1	-0.6042	-1.5202	0.291424	4.0276	0.008989293	Nectin-1	Signaling molecule
Cd28	-1.0863	-2.1233	0.295671	-0.19	0.009246311	T-cell-specific surface glycoprotein CD28	Signaling molecule
Pcdhb2	-0.6546	-1.5741	0.297157	1.2656	0.009328325	Protocadherin beta 2	Calcium binding protein
Cdca7	-0.6745	-1.5961	0.297188	0.9874	0.009342051	Cell division cycle-associated protein 7	Transcription factor
EfnA5	-0.656	-1.5757	0.29767	3.8245	0.009455083	Ephrin-A5	Signaling molecule