

Table S1. Body weight of WT, *PCBP4*^{+/-}, and *PCBP4*^{-/-} female mice from 4 to 19 weeks of age

Genotype: WT

ID	Wks	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
69		13	17	20	21	21	23	24	25	26	28	29	29	28	31	29	30
74		17	21	20	21	22	23	24	25	24	26	25	26	26	24	25	26
47		14	20	18	20	21	20	22	22	22	23	23	24	24	24	26	26
Avg (g)		15	19	19	21	21	22	23	24	24	26	26	26	26	26	27	27
SD		2	2	1	1	1	2	1	2	2	3	3	3	2	4	2	2

Genotype: *PCBP4*^{+/-}

ID	Wks	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
73		14	19	19	20	22	22	23	26	24	25	26	26	28	27	27	29
81		15	17	18	18	18	21	21	21	20	22	21	21	22	21	21	24
49		12	19	19	19	20	20	20	19	21	21	20	19	21	21	22	21
Avg (g)		14	18	19	19	20	21	21	22	22	23	22	22	24	23	24	25
SD		2	1	1	1	2	1	2	4	2	2	3	4	4	3	4	4

Genotype: *PCBP4*^{-/-}

ID	Wks	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
79		12	15	16	17	16	18	18	19	19	20	19	20	21	21	20	20
50		11	17	18	18	19	21	18	20	20	19	20	20	18	20	21	21
46		13	19	17	19	19	18	19	20	20	20	20	21	21	21	21	21
Avg (g)		12	17	17	18	18	19	18	20	20	20	20	20	20	21	21	21
SD		1	2	1	1	2	2	1	1	1	1	1	1	2	1	1	1

Table S2. Body weight of WT, *PCBP4*^{+/-}, and *PCBP4*^{-/-} female mice from 20 to 45 weeks of age

Genotype: WT

ID	Wks	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
51					24	25	25	28	28	27	29	28	29	29	29	30	29	29	29	30	31	28	31	31	30	33	31
58			29	28	28	28	29	31	32	29	30	30	30	30	31	33	33	31	32	33	34	33	33	32	32	34	
65			31	32	31	31	31	31	32	30	31	31	30	31	31	31	30	31	31	31	30	30	29	32	32	31	31
69		33	32	31	36	34	34	35	35	35	36	42	40	38	38	38	40	42	40	38	40	40	40	44	41	42	43
77		25	25	24	25	26	28	28	27	29	27	30	27	29	28	27	29	29	28	29	28	30	31	30	29	30	31
96		22	22	22	23	21	21	23	21	23	24	23	22	21	25	23	25	26	24	23	26	26	26	26	25	27	26
99		35	35	35	34	35	35	38	34	35	37	37	38	39	38	38	39	41	43	42	43	44	44	45	44	44	45
6		30	31	30	30	32	32	29	33	34	32	32	35	32	34	33	35	35	36	35	36	36	35	35	37	37	37
12		39	38	37	39	40	39	39	40	40	41	44	41	42	42	43	41	40	39	40	40	39	38	37	38	36	40
21		32	35	37	39	37	38	40	39	39	41	41	42	42	43	44	44	46	44	43	46	48	46	46	45	48	50
Avg (g)		31	31	31	31	31	31	32	32	32	33	34	33	33	34	34	35	35	35	34	35	36	35	36	35	36	37
SD		6	5	5	6	6	6	6	6	5	6	7	7	7	6	7	6	7	7	6	7	7	7	7	7	7	8

Genotype: *PCBP4*^{+/-}

ID	Wks	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45		
47					28	28	28	27	28	29	27	28	28	28	30	30	28	28	29	29	28	28	31	29	30	30	29		
52					31	30	31	31	32	32	32	32	31	31	31	32	31	31	31	33	32	32	33	33	31	33	31		
67			23	23	24	23	24	23	26	24	25	26	26	26	25	26	25	26	25	26	26	26	26	28	28	27	27		
76		23	23	23	23	24	23	25	24	26	25	28	27	27	27	27	27	27	28	27	27	26	28	30	28	27	28		
97		26	25	26	27	26	26	26	26	25	27	26	28	29	28	30	29	31	29	30	33	32	34	33	33	34	34		
7		27	27	26	28	29	29	27	29	29	28	29	29	29	29	30	29	30	29	30	30	29	32	32	30	30	31		
11		26	27	26	26	29	27	27	29	28	29	29	29	29	29	31	30	30	30	30	30	30	30	30	31	29	31		
19		23	24	25	26	24	25	26	25	24	26	25	25	26	26	26	27	26	27	28	28	27	27	29	26	28	30		
Avg (g)		25	25	25	27	27	27	27	27	27	27	28	28	28	28	29	28	29	29	29	29	29	29	30	31	30	30	30	
SD		2	2	1	3	3	3	2	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	2	3	2

Genotype: *PCBP4*^{-/-}

ID	Wks	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
46					26	26	26	26	26	26	25	25	27	25	26	26	28	26	26	26	26	28	27	26	27	27	29	
71		19	19	20	20	20	21	20	20	22	21	23	21	21	21	20	21	19	22	20	21	21	22	24	22	23	23	
72		21	23	22	22	22	23	24	23	25	23	23	24	22	23	24	23	26	25	25	26	26	25	23	25	26	25	
73		25	23	26	25	26	26	25	27	27	24	25	26	25	24	25	28	26	25	25	26	26	29	28	31	30	27	
75		31	28	25	27	26	24	26	24	26	25	28	26	26	26	25	27	26	27	27	27	26	27	27	27	30	33	
81		25	24	25	26	26	25	27	24	26	25	26	27	25	25	26	28	27	26	26	28	26	27	27	29	27	28	
89		30	28	31	28	29	29	30	29	30	31	34	31	30	32	34	34	32	33	34	35	38	36	36	36	36	36	
94		20	21	20	21	20	20	21	21	20	20	20	21	21	19	21	19	20	20	21	22	21	21	21	23	21	21	
5		23	23	23	23	23	23	24	23	26	25	25	25	25	24	23	25	24	23	28	26	25	27	26	26	28	26	
Avg (g)		24	24	24	24	24	24	25	24	25	24	25	25	24	24	25	26	25	25	26	26	26	27	26	27	28	28	
SD		4	3	4	3	3	3	3	3	3	3	4	3	3	4	4	4	4	4	4	4	4	5	4	4	4	4	5

Table S3. Body weight of WT, *PCBP4*^{+/-}, and *PCBP4*^{-/-} male mice from 18 to 45 weeks of age

Genotype: WT

ID	Wks	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45		
48							48	48	47	43	42	42	41	41	42	40	41	41	40	41	44	43	41	42	42	42	42	42	43		
56							43	41	40	40	40	40	38	40	42	40	41	42	42	42	44	42	43	40	36	35	Euthanized				
60					40	40	40	39	39	40	40	40	39	37	38	38	38	37	38	38	38	36	38	37	38	38	37	38	38		
80					33	33	33	33	34	33	35	34	34	33	35	34	35	34	35	35	35	35	36	35	35	36	35	35	35		
84					42	44	43	43	43	44	44	44	45	44	44	45	44	44	43	46	45	45	46	46	46	48	47	47	45	47	
86		38	38	38	38	39	40	41	41	42	41	43	43	44	44	44	46	45	45	46	46	46	46	46	48	47	49	46	47	47	
98		39	39	39	39	39	40	41	41	41	42	42	43	44	44	45	46	44	45	47	47	47	47	48	49	47	49	49	48	48	
3		42	42	43	44	44	44	45	49	47	48	47	49	47	49	51	49	50	52	52	52	53	54	54	54	55	54	54	54		
8		32	32	31	33	31	33	33	36	33	33	34	35	34	34	34	33	34	35	35	35	34	35	35	35	35	35	35	35		
13		35	35	35	37	36	36	39	39	39	40	39	40	42	44	41	42	42	44	44	46	45	46	46	48	48	48	49	49		
15		35	36	38	38	39	39	42	39	41	43	42	42	44	44	43	43	43	45	45	44	46	47	48	47	47	46	47	48		
16		35	35	35	35	36	37	37	38	37	39	40	39	41	42	42	42	43	45	46	45	48	49	53	53	52	53	53	54		
20		36	36	37	39	39	42	41	41	44	44	45	47	48	49	48	48	50	50	51	51	52	54	54	54	53	53	57	56		
Avg (g)		37	37	37	38	38	40	40	41	41	41	41	41	41	42	42	42	42	42	42	43	44	44	44	45	46	46	46	45	46	46
SD		3	3	4	4	4	4	4	4	4	4	4	5	4	5	5	5	5	5	5	6	5	6	6	7	7	7	7	7	7	

Genotype: *PCBP4*^{+/-}

ID	Wks	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
54							39	39	38	36	36	35	36	37	36	35	36	35	35	35	35	37	35	33	33	32	Euthanized			
57					37	37	38	37	38	38	39	38	40	37	38	38	37	38	38	39	38	39	39	39	39	40	40	40	40	
82					40	40	40	40	40	41	40	40	41	41	39	41	40	40	42	43	42	43	44	44	45	45	46	46	47	
83					38	39	38	38	38	38	38	38	39	38	39	38	40	39	39	41	40	40	40	41	40	41	41	41	42	42
90		38	38	39	41	43	43	44	44	44	44	45	46	48	48	47	49	49	50	49	50	51	51	51	51	52	51	52	54	
95		30	30	30	30	30	29	31	31	31	31	31	33	32	32	33	33	32	33	34	34	34	35	35	34	35	35	35	35	
2		36	37	37	38	36	39	40	42	40	41	42	43	43	44	45	44	45	47	47	46	48	47	49	49	49	49	48	49	49
4		32	33	33	34	33	35	36	38	36	35	38	39	37	39	40	39	40	40	40	40	42	42	43	44	44	43	44	44	
10		30	34	34	34	35	34	35	35	36	36	37	37	36	37	37	37	37	37	37	35	36	37	38	35	34	36	35	35	
14		29	31	31	32	33	33	33	34	33	35	35	35	36	36	36	38	37	39	38	38	39	40	41	41	41	44	42	43	
18		30	31	32	32	33	31	35	32	32	33	33	32	35	35	34	34	34	35	35	36	36	36	37	37	37	38	38	37	
22		35	36	37	39	39	43	42	41	44	44	44	46	48	48	49	50	49	49	50	50	49	48	48	49	49	51	52	51	
Avg (g)		33	34	35	36	36	37	37	38	37	38	38	39	39	40	40	40	40	40	41	41	41	42	42	42	42	42	43	43	43
SD		3	3	4	4	4	5	4	4	4	4	4	5	5	5	5	6	6	6	5	6	6	5	5	6	6	6	6	6	

Genotype: *PCBP4*^{-/-}

ID	Wks	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
64						39	38	37	36	35	35	35	35	36	35	35	36	36	37	38	38	37	39	39	40	40	42	43	43	43
74					29	30	30	29	29	29	30	30	33	30	32	31	31	31	31	31	32	31	31	32	31	33	33	33	34	34
91		27	26	26	26	26	27	27	28	30	28	28	28	29	29	29	29	26	27	29	27	29	29	30	30	29	30	30	29	29
Avg (g)		27	26	28	32	31	31	31	31	32	31	32	31	32	32	32	32	31	32	33	32	32	33	34	34	34	35	35	35	35
SD					2	7	6	5	5	4	3	4	4	4	3	3	4	5	5	5	6	4	5	5	6	6	6	7	7	7

Table S4. Wild-type mice – survival time and tumor spectrum

ID	Genotype	Survival (wks)	Pathological diagnosis
45	PCBP4 ^{+/+}	152.4	No tumor found
48	PCBP4 ^{+/+}	149.4	No tumor found
80-1	PCBP4 ^{+/+}	138.1	No tumor found
21	PCBP4 ^{+/+}	124.6	lymphoma
58	PCBP4 ^{+/+}	117.3	lymphoma
33-1	PCBP4 ^{+/+}	111.3	lymphoma
12	PCBP4 ^{+/+}	110.4	lymphoma
65	PCBP4 ^{+/+}	110.0	lymphoma
74	PCBP4 ^{+/+}	98.7	No tumor found
60	PCBP4 ^{+/+}	96.3	No tumor found
99	PCBP4 ^{+/+}	91.0	No tumor found
24	PCBP4 ^{+/+}	62.9	No tumor found
50	PCBP4 ^{+/+}	47.1	No tumor found
80-2	PCBP4 ^{+/+}	38.0	No tumor found
84	PCBP4 ^{+/+}	37.4	No tumor found

Table S5. PCBP4^{+/-} mice – survival time and tumor spectrum

ID	Genotype	Survival (wks)	Pathological diagnosis
53	PCBP4 ^{+/-}	103.1	No tumor found
47-1	PCBP4 ^{+/-}	140.9	Lymphoma, lung adenocarcinoma, and kidney tumor
82	PCBP4 ^{+/-}	137.7	Lymphoma and intestinal adenoma
22	PCBP4 ^{+/-}	97.3	Lymphoma and intestinal adenoma
57	PCBP4 ^{+/-}	102.1	Lymphoma and lung adenocarcinoma
2	PCBP4 ^{+/-}	129.7	Lung adenocarcinoma
83	PCBP4 ^{+/-}	111.9	Lymphoma
67	PCBP4 ^{+/-}	91.4	Lymphoma
81	PCBP4 ^{+/-}	105.3	Lymphoma
52	PCBP4 ^{+/-}	99.4	Lymphoma and skin squamous cell carcinoma
97-1	PCBP4 ^{+/-}	90.1	Lymphoma
47-2	PCBP4 ^{+/-}	49.9	No tumor found
12-15-2	PCBP4 ^{+/-}	55.1	Lymphoma
90	PCBP4 ^{+/-}	38.6	No tumor found
87	PCBP4 ^{+/-}	37.4	No tumor found

Table S6. PCBP4^{-/-} mice – survival time and tumor spectrum

ID	Genotype	Survival (wks)	Pathological diagnosis
78	PCBP4 ^{-/-}	141.9	Lymphoma
46-1	PCBP4 ^{-/-}	140.9	Lymphoma
72	PCBP4 ^{-/-}	133.0	Lymphoma and lung adenocarcinoma
89	PCBP4 ^{-/-}	100.6	Lymphoma, lung adenocarcinoma, and kidney tumor
46-2	PCBP4 ^{-/-}	117.9	Lymphoma
36	PCBP4 ^{-/-}	135.4	Lymphoma and lung squamous cell carcinoma
75	PCBP4 ^{-/-}	114.7	Lymphoma and lung adenocarcinoma
64	PCBP4 ^{-/-}	73.0	Lymphoma
79	PCBP4 ^{-/-}	105.3	Lymphoma
73	PCBP4 ^{-/-}	60.7	Lymphoma
91	PCBP4 ^{-/-}	98.4	Lymphoma
65	PCBP4 ^{-/-}	38.3	Lymphoma
2-28	PCBP4 ^{-/-}	23.3	Found dead, no tissues for diagnosis
30	PCBP4 ^{-/-}	42.1	No tumor found
82	PCBP4 ^{-/-}	37.4	Lymphoma
51	PCBP4 ^{-/-}	39.6	Lymphoma

Table S7: RNA-seq data. The levels of PCBP4, p21, and Puma transcripts in lung cancer with wild-type vs. mutant p53 (means \pm SDs)

Gene	Lung cancer with wild-type p53 (n=123)	Lung cancer with mutant p53 (n=228)	<i>p</i> value
PCBP4	8.831 \pm 0.666	8.563 \pm 0.718	0.000286526
p21	11.748 \pm 0.761	11.402 \pm 0.871	0.000071816
Puma	7.358 \pm 0.718	6.958 \pm 0.741	0.000000798

Note: RNA-seq data (1,124 cases) and gene mutation data (408 cases) were downloaded from TCGA Lung Cancer database. After comparing RNA-seq data with gene mutation data, both the level of PCBP4 transcript and the status of the *p53* gene were found to be analyzed in 351 cases of lung cancer. Among 351 cases, 123 cases had wild-type p53 and 228 cases had mutant p53.

Table S8: Microarray data. The levels of PCBP4, p21, and Puma transcripts in lung cancer with wild-type vs. mutant p53 (means \pm SDs)

Gene	Lung cancer with wild-type p53 (n=30)	Lung cancer with mutant p53 (n=114)	<i>p</i> value
PCBP4	-0.484 \pm 0.512	-0.788 \pm 0.453	0.002466
p21	0.810 \pm 0.575	0.670 \pm 0.778	0.139812
Puma	0.023 \pm 0.440	-0.026 \pm 0.382	0.286264

Note: Microarray data (188 cases) and gene mutation data (408 cases) were downloaded from TCGA Lung Cancer database. After comparing microarray data with gene mutation data, both the level of PCBP4 transcript and the status of the *p53* gene were found to be analyzed in 144 cases. Among 144 cases, 30 cases had wild-type p53 and 114 cases had mutant p53.

Table S9. mRNAs associated with anti-PCBP4 immunoprecipitates in WT vs. *PCBP4*^{-/-} MEFs

Gene ID	Description	WT values	PCBP4 ^{-/-} values	Fold(WT/PCBP4 ^{-/-})
Ptn	pleiotrophin [[MGI:97804]	1710.3	79.7	21.5
Igf2	insulin-like growth factor 2	1583.9	1078.3	1.5
Fn1	fibronectin 1 [[MGI:95566]	1579.9	1514.4	1.0
Arf3	ADP-ribosylation factor 3	1525.3	689.3	2.2
Pabpc1	poly A binding protein, cytoplasmic 1	1407.4	590.8	2.4
MYADM	myeloid-associated differentiation marker (Myadm), transcript	1349.0	1015.2	1.3
Grem1	gremlin 1	1343.3	129.9	10.3
Thbs1	thrombospondin 1	1143.0	314.3	3.6
Sparc	secreted acidic cysteine rich glycoprotein	1100.8	406.5	2.7
Bgn	biglycan	1070.9	1423.3	0.8
Ccnd2	cyclin D2 [[MGI:88314]	1036.0	160.1	6.5
Lox	lysyl oxidase [[MGI:96817]	996.3	185.4	5.4
Ftl1	ferritin light chain 1	942.1	1005.6	0.9
Col8a1	procollagen type VIII alpha 1	816.4	39.0	20.9
Cfl1	cofilin 1, non-muscle [[MGI:101757]	735.9	2703.4	0.3
Arhgdia	Rho GDP dissociation inhibitor (GDI) alpha	710.5	1223.1	0.6
Npm1	nucleophosmin 1	648.4	30.7	21.1
Lrrc58	leucine rich repeat containing 58	623.9	69.4	9.0
Csde1	cold shock domain containing E1, RNA binding [[MGI:92356]	606.4	30.3	20.0
Tpm4	tropomyosin 4	587.4	37.6	15.6
Timp2	tissue inhibitor of metalloproteinase 2	584.3	482.2	1.2
Fstl1	follistatin-like 1	578.9	91.0	6.4
Ccng1	cyclin G1	576.8	62.4	9.3
Spp1	secreted phosphoprotein 1	553.2	108.5	5.1
Eef1a1	eukaryotic translation elongation factor 1 alpha 1	492.5	74.6	6.6
Inhba	inhibin beta-A [[MGI:96570]	457.9	83.6	5.5
Colla1	procollagen type I alpha 1	425.4	501.9	0.8
Tpm1	tropomyosin 1, alpha	417.9	96.8	4.3
Ywhaz	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase	364.3	178.5	2.0
Gnb1	guanine nucleotide binding protein, beta 1	359.1	164.8	2.2
Ccnd1	cyclin D1	351.1	34.5	10.2
Eif4g2	eukaryotic translation initiation factor 4, gamma 2	336.2	87.5	3.8
Cald1	caldesmon 1	323.1	47.5	6.8
Vim	vimentin	321.2	162.2	2.0
Hmga2	high mobility group AT-hook 2	298.0	129.0	2.3
F2r	coagulation factor II (thrombin) receptor [[MGI:101802]	292.2	56.2	5.2
Ssr3	signal sequence receptor, gamma	288.4	32.7	8.8
Ccni	cyclin I	285.3	55.3	5.2
Calr	calreticulin	274.0	51.4	5.3
Itgb1	integrin beta 1 (fibronectin receptor beta)	265.3	52.6	5.0
Lars2	leucyl-tRNA synthetase, mitochondrial [[MGI:2142973]	261.7	527.1	0.5

Zfp871	zinc finger protein 871	255.5	11.0	23.2
Cd81	CD 81 antigen	252.4	78.4	3.2
Timp3	tissue inhibitor of metalloproteinase 3	240.6	65.3	3.7
Bsg	basigin	236.1	222.5	1.1
Pfn1	profilin 1	233.6	364.9	0.6
Smarca4	SWI/SNF related, matrix associated, actin dependent regulator of	228.0	104.9	2.2
Fth1	ferritin heavy chain 1 [[MGI:95588]]	227.1	35.5	6.4
Ywhae	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase	225.9	187.5	1.2
Tnc	tenascin C (hexabrachion)	223.6	207.3	1.1
Scd2	stearoyl-Coenzyme A desaturase 2 [[MGI:98240]]	220.0	78.4	2.8
Mrfap1	Morf4 family associated protein 1	219.7	39.0	5.6
Ybx1	Y box protein 1	218.7	41.3	5.3
Rnd3	Rho family GTPase 3	218.2	14.7	14.9
Hsp90ab1	heat shock protein 90kDa alpha (cytosolic), class B member 1	214.0	45.7	4.7
Gsk3b	glycogen synthase kinase 3 beta	211.6	27.8	7.6
Rab7	RAB7, member RAS oncogene family	211.2	58.5	3.6
Kdelr2	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein	204.0	32.9	6.2
Pcbp2	poly(rC) binding protein 2 [[MGI:108202]]	202.9	125.9	1.6
Rplp1	ribosomal protein, large, P1 [[MGI:1927099]]	200.6	66.5	3.0
Sh3bgrl	SH3-binding domain glutamic acid-rich protein like	200.1	15.2	13.2
Canx	calnexin	199.9	19.7	10.2
Ptges3	prostaglandin E synthase 3 (cytosolic)	199.8	16.3	12.2
Klf6	Kruppel-like factor 6 [[MGI:1346318]]	195.2	18.8	10.4
Mlec	malectin	192.6	42.4	4.5
Trp53inp	tumor protein p53 inducible nuclear protein 2	192.5	207.2	0.9
Lpp	LIM domain containing preferred translocation partner in lipoma	187.3	64.1	2.9
Lbh	limb-bud and heart	185.8	187.8	1.0
AI597468	expressed sequence AI597468 [[MGI:2143652]]	182.7	12.8	14.3
02-Sep	septin 2	182.3	27.6	6.6
Eef2	eukaryotic translation elongation factor 2 [[MGI:95288]]	180.8	94.2	1.9
Prrx1	paired related homeobox 1	178.7	67.1	2.7
Tpt1	tumor protein, translationally-controlled 1	177.5	19.0	9.3
Rpl4	ribosomal protein L4 [[MGI:1915141]]	176.1	49.7	3.5
Mbnl1	muscleblind-like 1 (Drosophila) [[MGI:1928482]]	169.3	14.3	11.8
Tuba1a	tubulin, alpha 1A	169.1	58.7	2.9
Marcks	myristoylated alanine rich protein kinase C substrate	169.0	18.3	9.2
Nfix	nuclear factor I/X	167.6	133.8	1.3
B4galt1	UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide	164.8	95.7	1.7
Ctsd	cathepsin D	159.8	74.8	2.1
Vdac1	voltage-dependent anion channel 1	158.6	18.7	8.5
Msrb3	methionine sulfoxide reductase B3	157.0	15.2	10.3
Rpsa	ribosomal protein SA [[MGI:105381]]	154.0	60.0	2.6
Mtpn	myotrophin	153.7	22.3	6.9
S100a11	S100 calcium binding protein A11 (calizzarin)	153.1	142.7	1.1
Gm21092	predicted gene, 21092 [[MGI:5434447]]	152.7	22.8	6.7
Lgals1	lectin, galactose binding, soluble 1 [[MGI:96777]]	151.2	29.7	5.1
Egr1	early growth response 1	148.3	241.5	0.6

Msn	moesin	143.6	113.8	1.3
Emp1	epithelial membrane protein 1	140.2	29.3	4.8
Rpl32	ribosomal protein L32	139.8	20.9	6.7
Rab21	RAB21, member RAS oncogene family [[MGI:894308]	139.7	32.4	4.3
Fbln2	fibulin 2	138.3	48.5	2.9
Zcchc24	zinc finger, CCHC domain containing 24 [[MGI:1919168]	137.4	78.9	1.7
Scepep1	serine carboxypeptidase 1	137.2	25.0	5.5
Dkk3	dickkopf homolog 3 (<i>Xenopus laevis</i>) [[MGI:1354952]	137.1	13.8	10.0
Dpysl3	Dihydropyrimidinase-like 3	135.8	36.4	3.7
Insig1	insulin induced gene 1	132.8	23.0	5.8
Crim1	cysteine rich transmembrane BMP regulator 1 (chordin like)	132.7	12.3	10.8
Rpl41	ribosomal protein L41	132.2	18.4	7.2
Cdk6	cyclin-dependent kinase 6 [[MGI:1277162]	131.8	14.0	9.4
S100a6	S100 calcium binding protein A6 (calcyclin) [[MGI:1339467]	131.0	25.8	5.1
Lrrc32	leucine rich repeat containing 32 [[MGI:93882]	130.2	68.6	1.9
Ergic1	endoplasmic reticulum-golgi intermediate compartment (ERGIC)	128.3	71.2	1.8
Igfbp7	insulin-like growth factor binding protein 7 [[MGI:1352480]	125.7	127.7	1.0
Rpl5	ribosomal protein L5	120.0	17.6	6.8
Cd47	CD47 antigen (Rh-related antigen, integrin-associated signal	119.7	62.6	1.9
Calm1	calmodulin 1	119.2	12.3	9.7
Ncam1	neural cell adhesion molecule 1 [[MGI:97281]	118.4	26.3	4.5
Slc39a1	solute carrier family 39 (zinc transporter), member 1	116.6	21.1	5.5
Rps11	ribosomal protein S11 [[MGI:1351329]	114.5	8.5	13.4
Cd44	CD44 antigen	114.4	51.1	2.2
Gja1	gap junction protein, alpha 1 [[MGI:95713]	114.3	11.4	10.0
Actg1	actin, gamma, cytoplasmic 1	114.1	31.6	3.6
Col1a2	procollagen type I alpha 2	113.8	63.0	1.8
Serpine1	serine (or cysteine) peptidase inhibitor, clade E, member 1	113.6	101.7	1.1
Srrm2	serine/arginine repetitive matrix 2 [[MGI:1923206]	113.4	66.4	1.7
Ids	iduronate 2-sulfatase	112.8	56.7	2.0
Rpl6	ribosomal protein L6	112.6	36.7	3.1
Ctnd1	catenin (cadherin associated protein) delta 1	112.0	137.4	0.8
Mbnl2	muscleblind-like 2 [[MGI:2145597]	111.5	17.0	6.5
Cdv3	carnitine deficiency-associated gene expressed in ventricle 3	108.9	13.5	8.0
Tead1	TEA domain family member 1	108.4	131.4	0.8
Grb10	growth factor receptor bound protein 10	106.3	23.3	4.6
Samd4b	sterile alpha motif domain containing 4B [[MGI:2448542]	104.0	290.5	0.4
Acta2	actin, alpha 2, smooth muscle, aorta [[MGI:87909]	103.7	76.9	1.3
AC11987	Novel protein (2810407C02Rik)	102.3	8.5	12.1
Ttyh3	tweety homolog 3 (<i>Drosophila</i>) [[MGI:1925589]	101.7	161.5	0.6
Tpm3	tropomyosin 3, gamma	101.6	17.6	5.8
S100a4	S100 calcium binding protein A4	101.6	11.8	8.6
Laptm4a	lysosomal-associated protein transmembrane 4A	99.9	7.3	13.7
Irf2bp2	interferon regulatory factor 2 binding protein 2 [[MGI:2443921]	97.5	17.3	5.6
Zfp3611	zinc finger protein 36, C3H type-like 1 [[MGI:107946]	97.2	103.2	0.9
Cap1	CAP, adenylate cyclase-associated protein 1 (yeast)	97.0	51.9	1.9
Creb3l1	cAMP responsive element binding protein 3-like 1	96.7	226.3	0.4

Nucks1	nuclear casein kinase and cyclin-dependent kinase substrate 1	95.6	12.6	7.6
Wwtr1	WW domain containing transcription regulator 1	94.7	11.5	8.2
Sepw1	selenoprotein W muscle 1	94.0	376.1	0.2
Rps18	ribosomal protein S18	93.8	27.7	3.4
Fkbp1a	FK506 binding protein 1a	93.7	92.1	1.0
Hspa8	heat shock protein 8	93.4	26.7	3.5
Rpl10	ribosomal protein 10	93.4	18.1	5.2
Nek7	NIMA (never in mitosis gene a)-related expressed kinase 7	93.4	9.0	10.4
Rbms2	RNA binding motif, single stranded interacting protein 2	93.0	57.8	1.6
Zmat3	zinc finger matrix type 3	92.8	38.9	2.4
Postn	periostin, osteoblast specific factor	92.6	17.8	5.2
11-Sep	septin 11 [[MGI:1277214]	91.3	60.0	1.5
Ywhag	3-monooxygenase/tryptophan 5-monooxygenase activation	91.2	54.6	1.7
Calm3	calmodulin 3	91.2	86.1	1.1
My19	myosin light polypeptide 9, regulatory	91.0	51.8	1.8
Ece1	endothelin converting enzyme 1	90.4	24.6	3.7
Set	SET translocation	90.0	9.9	9.1
Kpnb1	karyopherin (importin) beta 1	88.9	7.8	11.5
Ptrf	polymerase I and transcript release factor	88.5	31.6	2.8
Zdhhc9	zinc finger, DHHC domain containing 9	88.2	68.1	1.3
Ptma	prothymosin alpha [[MGI:97803]	87.8	17.5	5.0
Lyz2	lysozyme 2 [[MGI:96897]	87.1	9.4	9.2
Wisp1	WNT1 inducible signaling pathway protein 1	87.0	29.8	2.9
F2rl1	coagulation factor II (thrombin) receptor-like 1 [[MGI:101910]	86.3	4.9	17.6
Nedd4	neural precursor cell expressed, developmentally down-regulated	86.1	47.9	1.8
Nutf2	nuclear transport factor 2 [[MGI:1915301]	85.5	19.5	4.4
Skp1a	S-phase kinase-associated protein 1A	84.9	9.4	9.1
Nras	neuroblastoma ras oncogene	84.9	11.9	7.2
Ube2d3	ubiquitin-conjugating enzyme E2D 3 [[MGI:1913355]	84.3	12.3	6.8
Ctgf	connective tissue growth factor	84.3	40.2	2.1
Calu	calumenin	83.9	16.5	5.1
Loxl2	lysyl oxidase-like 2 [[MGI:2137913]	83.4	47.1	1.8
Sdc4	syndecan 4	82.8	15.8	5.2
Lsm12	LSM12 homolog (<i>S. cerevisiae</i>)	82.7	66.7	1.2
Thy1	thymus cell antigen 1, theta	82.6	170.0	0.5
Cav1	caveolin, caveolae protein 1	81.5	15.4	5.3
Myh9	myosin, heavy polypeptide 9, non-muscle	81.2	64.3	1.3
Ugcg	UDP-glucose ceramide glucosyltransferase	80.1	35.4	2.3
Flrt2	fibronectin leucine rich transmembrane protein 2	79.8	9.8	8.1
Rplp2	ribosomal protein, large P2	79.7	10.6	7.5
Rpl18a	ribosomal protein L18A [[MGI:1924058]	79.7	21.2	3.8
Il1r1	interleukin 1 receptor-like 1	79.5	36.3	2.2
Cdh11	cadherin 11 [[MGI:99217]	79.4	20.7	3.8
Gm7292	predicted gene 7292 [[MGI:3645786]	79.3	42.0	1.9
Slc39a13	solute carrier family 39 (metal ion transporter), member 13	78.5	70.6	1.1
Pmaip1	phorbol-12-myristate-13-acetate-induced protein 1	78.5	8.4	9.3
Ube2r2	ubiquitin-conjugating enzyme E2R 2	78.3	23.4	3.3

Ctsb	cathepsin B [[MGI:88561]	78.2	73.5	1.1
Ctdnep1	Dullard homolog (<i>Xenopus laevis</i>) (novel NLI interacting factor-	78.1	87.4	0.9
Dusp3	dual specificity phosphatase 3 (vaccinia virus phosphatase VH1-	77.0	10.6	7.3
Antxr1	anthrax toxin receptor 1 [[MGI:1916788]	77.0	32.0	2.4
Setd7	SET domain containing (lysine methyltransferase) 7	76.5	37.4	2.0
Gnas	GNAS (guanine nucleotide binding protein, alpha stimulating)	76.2	23.8	3.2
Cyp1b1	cytochrome P450, family 1, subfamily b, polypeptide 1	75.9	18.5	4.1
Tnfrsf23	tumor necrosis factor receptor superfamily, member 23	75.9	75.8	1.0
Ywhab	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase	75.6	19.8	3.8
Eif2s3x	eukaryotic translation initiation factor 2, subunit 3, structural gene	75.4	15.4	4.9
Ckap4	cytoskeleton-associated protein 4 [[MGI:2444926]	75.3	48.4	1.6
Tuba1b	tubulin, alpha 1B	75.3	41.8	1.8
Rps10	ribosomal protein S10	75.3	18.8	4.0
Bmpr2	bone morphogenetic protein receptor, type II (serine/threonine	75.0	14.6	5.1
Impact	imprinted and ancient [[MGI:1098233]	74.6	15.5	4.8
Mcart1	mitochondrial carrier triple repeat 1	74.4	37.3	2.0
Dstn	destrin	74.3	11.5	6.4
RP23-	Novel protein (D17Wsu104e)	74.2	7.5	9.9
Nufip2	nuclear fragile X mental retardation protein interacting protein 2	72.9	7.9	9.2
Rps15	ribosomal protein S15	72.2	26.8	2.7
Capzb	capping protein (actin filament) muscle Z-line, beta	71.8	135.3	0.5
Tmem127	transmembrane protein 127	71.1	26.3	2.7
Rplp0	ribosomal protein, large, P0	69.9	14.8	4.7
Cyb5r3	cytochrome b5 reductase 3	69.6	26.2	2.7
Calm2	calmodulin 2	69.5	10.5	6.6
Ddx6	DEAD (Asp-Glu-Ala-Asp) box polypeptide 6 [[MGI:104976]	68.8	8.7	7.9
Cbx3	chromobox homolog 3 (<i>Drosophila</i> HP1 gamma)	68.6	3.2	21.7
Cyb5b	cytochrome b5 type B [[MGI:1913677]	68.4	16.4	4.2
Rps3a	ribosomal protein S3A	68.2	11.7	5.8
Tspan31	tetraspanin 31 [[MGI:1914375]	68.2	8.0	8.5
Crabp1	cellular retinoic acid binding protein I	67.9	49.0	1.4
Spes3	signal peptidase complex subunit 3 homolog (<i>S. cerevisiae</i>)	67.9	6.7	10.1
Rpl13a	ribosomal protein L13a	67.6	17.5	3.9
RP23-	novel protein (B230120H23Rik)	67.3	15.8	4.3
Atn1	atrophin 1	66.9	157.1	0.4
Impad1	inositol monophosphatase domain containing 1	66.8	13.3	5.0
Fscn1	fascin homolog 1, actin bundling protein (<i>Strongylocentrotus</i>	66.6	171.4	0.4
Ccdc80	coiled-coil domain containing 80	65.5	26.1	2.5
Nid1	nidogen 1 [[MGI:97342]	64.6	91.6	0.7
Pbx1	pre B-cell leukemia transcription factor 1	64.6	22.2	2.9
Vat1	vesicle amine transport protein 1 homolog (<i>T. californica</i>)	64.2	68.6	0.9
Il1rn	interleukin 1 receptor antagonist	63.8	10.5	6.1
Ccl7	chemokine (C-C motif) ligand 7	63.6	1.8	35.1
Gns	glucosamine (N-acetyl)-6-sulfatase [[MGI:1922862]	63.4	33.9	1.9
Arf6	ADP-ribosylation factor 6 [[MGI:99435]	63.4	15.3	4.1
Arl5a	ADP-ribosylation factor-like 5A	63.2	11.7	5.4
Psm11	proteasome (prosome, macropain) 26S subunit, non-ATPase, 11	62.7	63.2	1.0

Itgav	integrin alpha V	62.6	15.9	3.9
B230219	RIKEN cDNA B230219D22 gene [[MGI:1925771]	62.6	12.8	4.9
Tmed2	transmembrane emp24 domain trafficking protein 2	62.2	11.2	5.6
Bmpr1a	bone morphogenetic protein receptor, type 1A	62.1	7.3	8.5
Ap3s1	adaptor-related protein complex 3, sigma 1 subunit	62.1	3.8	16.4
Mat2a	methionine adenosyltransferase II, alpha [[MGI:2443731]	61.8	6.6	9.4
Ccnk	cyclin K [[MGI:1276106]	61.7	25.6	2.4
App	amyloid beta (A4) precursor protein [[MGI:88059]	61.0	39.1	1.6
Gng12	guanine nucleotide binding protein (G protein), gamma 12	60.4	16.9	3.6
Col5a1	procollagen type V alpha 1	60.3	65.0	0.9
Il6st	interleukin 6 signal transducer [[MGI:96560]	60.2	13.0	4.6
Fam198b	novel protein (1110032E23Rik)	60.1	14.0	4.3
Rps23	ribosomal protein S23 [[MGI:1913725]	59.9	12.5	4.8
Tbl1x	transducin (beta)-like 1 X-linked	59.9	40.2	1.5
Slc38a2	solute carrier family 38, member 2 [[MGI:1915010]	59.8	10.9	5.5
Tubb5	tubulin, beta 5	59.5	37.8	1.6
Hmgn1	high mobility group nucleosomal binding domain 1	59.5	5.3	11.1
Rps4x	ribosomal protein S4 X-linked	58.9	11.5	5.1
Rps29	ribosomal protein S29	58.6	4.4	13.2
Actr2	ARP2 actin-related protein 2 homolog (yeast)	58.5	6.7	8.8
Lrrc8a	leucine rich repeat containing 8A	58.4	25.5	2.3
Foxp1	forkhead box P1	58.4	7.5	7.8
RP23-	novel protein (9530068E07Rik)	58.1	11.8	4.9
Sorbs3	sorbin and SH3 domain containing 3 [[MGI:700013]	57.8	90.6	0.6
Rab1	RAB1, member RAS oncogene family	57.8	19.6	2.9
Hmox1	heme oxygenase (decycling) 1	57.6	14.5	4.0
Scd1	stearoyl-Coenzyme A desaturase 1 [[MGI:98239]	57.5	27.3	2.1
Fhl3	four and a half LIM domains 3	56.9	46.1	1.2
Rbms1	RNA binding motif, single stranded interacting protein 1	56.9	12.1	4.7
Tram2	translocating chain-associating membrane protein 2	56.8	52.1	1.1
Tmed9	transmembrane emp24 protein transport domain containing 9	55.9	5.1	10.9
Ybx3	Y box protein 3 [[MGI:2137670]	55.7	16.9	3.3
Ak1	adenylate kinase 1	55.6	16.1	3.5
Tgfbr2	transforming growth factor, beta receptor II [[MGI:98729]	55.5	24.4	2.3
Hsp90b1	heat shock protein 90kDa beta (Grp94), member 1	55.2	10.8	5.1
Mdm2	transformed mouse 3T3 cell double minute 2	55.2	11.5	4.8
Tmem106	transmembrane protein 106B	54.8	12.8	4.3
Fam160b	family with sequence similarity 160, member B2 [[MGI:3036290]	54.8	7.8	7.0
Max	Max protein [[MGI:96921]	54.7	34.1	1.6
Tcf4	transcription factor 4	54.7	7.0	7.9
Cdkn1a	cyclin-dependent kinase inhibitor 1A (P21)	54.5	119.4	0.5
Gosr2	golgi SNAP receptor complex member 2	54.4	14.8	3.7
Serpinh1	serine (or cysteine) peptidase inhibitor, clade H, member 1	54.4	42.2	1.3
Zfand2a	zinc finger, AN1-type domain 2A	54.4	7.2	7.5
Arf4	ADP-ribosylation factor 4	54.3	24.2	2.2
Tulp3	tubby-like protein 3	54.2	16.5	3.3
Nrep	neuronal regeneration related protein [[MGI:99444]	53.9	9.7	5.6

Ppic	peptidylprolyl isomerase C [[MGI:97751]	53.6	15.7	3.4
P4ha3	procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-	53.6	4.4	12.3
Ddx3x	DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 3, X-linked	53.5	14.5	3.7
Arhgdib	Rho, GDP dissociation inhibitor (GDI) beta	53.4	68.1	0.8
Casc4	cancer susceptibility candidate 4	53.2	4.5	11.7
Rps24	ribosomal protein S24 [[MGI:98147]	53.2	9.7	5.5
Rpl11	ribosomal protein L11	53.1	16.0	3.3
Abhd2	abhydrolase domain containing 2	52.5	21.5	2.4
Rpl23	ribosomal protein L23	51.2	7.6	6.7
Cyb5r1	cytochrome b5 reductase 1	51.2	5.4	9.4
Dusp1	dual specificity phosphatase 1	51.1	24.9	2.1
Mob1a	MOB1, Mps One Binder kinase activator-like 1B (yeast)	51.0	8.2	6.2
Gnai2	guanine nucleotide binding protein (G protein), alpha inhibiting 2	50.8	113.9	0.4
Cdk16	PCTAIRE-motif protein kinase 1	50.7	34.4	1.5
Eif1a	eukaryotic translation initiation factor 1A [[MGI:95298]	50.6	4.2	11.9
Wdr1	WD repeat domain 1 [[MGI:1337100]	50.4	15.8	3.2
Aes	amino-terminal enhancer of split [[MGI:95806]	50.2	92.0	0.5
Opa3	optic atrophy 3 (human)	50.1	29.8	1.7
Cxcl12	chemokine (C-X-C motif) ligand 12	50.0	37.3	1.3
Rpl36	ribosomal protein L36 [MGI:1860603]	50.0	19.9	2.5
Tubb6	tubulin, beta 6 class V [MGI:1915201]	49.9	16.5	3.0
Lamp1	lysosomal-associated membrane protein 1 [MGI:96745]	49.9	19.2	2.6
Itga5	integrin alpha 5 (fibronectin receptor alpha) [MGI:96604]	49.5	54.1	0.9
Col6a2	procollagen type VI alpha 2	49.5	83.0	0.6
Arpc2	actin related protein 2/3 complex subunit 2	49.3	32.1	1.5
Ammecr1	Alport syndrome, mental retardation, midface hypoplasia and ellipt	49.3	5.5	9.0
Twf1	twinfilin, actin-binding protein, homolog 1 (Drosophila)	49.0	9.5	5.2
Lamp2	lysosomal membrane glycoprotein 2	48.9	6.7	7.3
Dhcr24	24-dehydrocholesterol reductase	48.8	21.2	2.3
Rps17	ribosomal protein S17	48.7	17.1	2.9
Serpinf1	serine (or cysteine) proteinase inhibitor, clade F), member 1	48.3	19.9	2.4
Rpl36a	ribosomal protein L36a	48.2	2.7	17.6
Ppp1cb	protein phosphatase 1, catalytic subunit, beta isoform	48.1	3.9	12.2
Rps26	ribosomal protein S26 (pseudogene)	48.0	10.4	4.6
Eif4h	eukaryotic translation initiation factor 4H [MGI:1341822]	47.8	54.3	0.9
Pdpn	podoplanin	47.7	8.7	5.5
Wnt5a	wingless-related MMTV integration site 5A	47.3	9.6	5.0
Golph3	golgi phosphoprotein 3 [MGI:1913879]	47.3	9.6	4.9
Mmp19	matrix metalloproteinase 19 [MGI:1927899]	47.3	4.6	10.3
B2m	beta-2 microglobulin	47.2	6.1	7.7
AC148089	novel cadherin domain containing protein	47.0	7.8	6.0
Rod1	ROD1 regulator of differentiation 1 (S. pombe)	47.0	6.8	6.9
Plekho2	pleckstrin homology domain containing, family O member 2 [MGI:46.9	46.9	61.2	0.8
Rap2a	RAS related protein 2a	46.9	10.7	4.4
Cd248	CD248 antigen, endosialin [MGI:1917695]	46.8	101.3	0.5
Mapk1ip1	mitogen-activated protein kinase 1 interacting protein 1-like [MGI:46.8	46.8	11.3	4.1
Rpl9	ribosomal protein L9	46.2	14.6	3.2

Cbfb	core binding factor beta [MGI:99851]	46.0	7.5	6.1
Zfand3	zinc finger, AN1-type domain 3 [MGI:1096572]	45.8	21.2	2.2
Rpl3	ribosomal protein L3 [MGI:1351605]	45.8	26.5	1.7
Ppard	peroxisome proliferator activator receptor delta	45.7	71.4	0.6
AC114420	novel protein (6330406I15Rik)	45.5	9.6	4.7
Pafah1b2	platelet-activating factor acetylhydrolase, isoform 1b, subunit 2 [MGI:1810013L24]	45.5	10.7	4.2
1810013L24	RIKEN cDNA 1810013L24 gene [MGI:1916303]	45.5	7.7	5.9
Ptgs2	prostaglandin-endoperoxide synthase 2 [MGI:97798]	45.5	14.2	3.2
Sertad4	SERTA domain containing 4	45.4	37.8	1.2
Midn	midnolin	45.4	97.7	0.5
Setd5	SET domain containing 5	45.4	10.2	4.4
Pphln1	periphilin 1 [MGI:1917029]	45.3	8.6	5.3
P4hb	prolyl 4-hydroxylase, beta polypeptide	45.2	17.6	2.6
Agpat1	1-acylglycerol-3-phosphate O-acyltransferase 1 (lysophosphatidic acid acyltransferase) [MGI:1859730]	45.2	112.6	0.4
Sh3glb1	SH3-domain GRB2-like B1 (endophilin) [MGI:1859730]	45.0	17.4	2.6
Eif5a	eukaryotic translation initiation factor 5A	44.9	41.8	1.1
Hsbp1	heat shock factor binding protein 1 [MGI:1915446]	44.8	15.7	2.9
Limal	LIM domain and actin binding 1	44.6	8.6	5.2
Rbms3	RNA binding motif, single stranded interacting protein	44.6	7.1	6.3
Slc30a4	solute carrier family 30 (zinc transporter) member 4	44.5	4.8	9.2
Dctn4	dynactin 4 [MGI:1914915]	44.3	7.6	5.9
R3hdm2	R3H domain containing 2	43.9	58.5	0.8
Mob1b	MOB1, Mps One Binder kinase activator-like 1A (yeast)	43.5	8.0	5.4
Sox4	SRY (sex determining region Y)-box 4	43.5	16.0	2.7
Col3a1	procollagen type III alpha 1	43.4	19.1	2.3
Gpc4	glypican 4	43.3	57.3	0.8
Tsc22d2	TSC22 domain family, member 2 [MGI:1919283]	43.3	12.6	3.4
Gdi2	guanosine diphosphate (GDP) dissociation inhibitor 2 [MGI:99845]	43.1	14.8	2.9
Rpl27a	ribosomal protein L27a	43.0	7.0	6.1
Dpysl2	dihydropyrimidinase-like 2	42.7	34.6	1.2
Rpl12	ribosomal protein L12	42.6	5.8	7.4
Gnb211	guanine nucleotide binding protein (G protein), beta polypeptide 2	42.6	17.4	2.4
Arcn1	archain 1	42.5	24.2	1.8
Trp53inp1	transformation related protein 53 inducible nuclear protein 1	42.5	7.8	5.4
Rpl31	ribosomal protein L31 [MGI:2149632]	42.4	3.8	11.2
PDPN	Podoplanin [Source:UniProtKB/Swiss-Prot;Acc:Q62011]	42.4	9.2	4.6
Ptp4a1	protein tyrosine phosphatase 4a1	42.3	6.1	6.9
Eif3a	eukaryotic translation initiation factor 3, subunit A [MGI:95301]	42.3	20.9	2.0
Pgrmc2	progesterone receptor membrane component 2	42.2	14.0	3.0
Eif4a1	eukaryotic translation initiation factor 4A1	42.1	11.7	3.6
Reep3	receptor accessory protein 3 [MGI:88930]	41.9	19.5	2.2
Tram1	translocating chain-associating membrane protein 1 [MGI:191951]	41.8	6.4	6.5
Tmtc3	transmembrane and tetratricopeptide repeat containing 3	41.8	3.4	12.2
Dnajc5	DnaJ (Hsp40) homolog, subfamily C, member 5	41.7	10.7	3.9
Rrbp1	ribosome binding protein 1	41.7	36.7	1.1
Raph1	Ras association (RalGDS/AF-6) and pleckstrin homology domains	41.7	23.0	1.8
Rbpj	recombination signal binding protein for immunoglobulin kappa J region	41.6	19.3	2.2

Psap	prosaposin	41.5	21.5	1.9
Rpl8	ribosomal protein L8 [MGI:1350927]	41.4	14.3	2.9
Cyr61	cysteine rich protein 61 [MGI:88613]	41.3	24.0	1.7
Vcl	vinculin [MGI:98927]	41.2	45.1	0.9
Pea15a	phosphoprotein enriched in astrocytes 15A	41.2	15.9	2.6
Tstd2	thiosulfate sulfurtransferase (rhodanese)-like domain containing 2	41.2	5.4	7.7
Mmp14	matrix metalloproteinase 14 (membrane-inserted) [MGI:101900]	41.1	25.3	1.6
Ly6e	lymphocyte antigen 6 complex, locus E [MGI:106651]	41.0	90.6	0.5
Gapdh	glyceraldehyde-3-phosphate dehydrogenase	41.0	28.4	1.4
H2afx	H2A histone family, member X	40.9	61.8	0.7
Capns1	calpain, small subunit 1	40.9	92.2	0.4
Kras	v-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog	40.9	3.9	10.6
Atp5b	ATP synthase, H ⁺ transporting mitochondrial F1 complex, beta subunit	40.8	12.3	3.3
Cnn2	calponin 2	40.8	12.2	3.4
Arhgap5	Rho GTPase activating protein 5 [MGI:1332637]	40.5	3.6	11.2
Tpp1	tripeptidyl peptidase I [MGI:1336194]	40.4	71.8	0.6
Glipr2	GLI pathogenesis-related 2	40.2	10.4	3.9
Slc35a4	solute carrier family 35, member A4	40.2	79.6	0.5
Cox6a1	cytochrome c oxidase subunit VI a polypeptide 1	40.1	5.6	7.2
Pbxip1	pre-B-cell leukemia transcription factor interacting protein 1	40.0	10.9	3.7
Pitpnb	phosphatidylinositol transfer protein, beta [MGI:1927542]	40.0	29.2	1.4
Qrich1	glutamine-rich 1 [MGI:1916482]	39.8	7.2	5.5
Clip3	CAP-GLY domain containing linker protein 3	39.7	33.7	1.2
Fam120a	family with sequence similarity 120, member A [MGI:2446163]	39.5	11.7	3.4
Fam101b	family with sequence similarity 101, member B	39.4	11.7	3.4
Nudt3	nudix (nucleotide diphosphate linked moiety X)-type motif	39.2	14.0	2.8
RP23-92G	novel protein	39.1	13.4	2.9
Rps25	ribosomal protein S25 [MGI:1922867]	39.1	4.7	8.4
Thbs2	thrombospondin 2 [MGI:98738]	39.0	13.2	3.0
Fkbp9	FK506 binding protein 9	38.9	7.2	5.4
Arpc1a	actin related protein 2/3 complex, subunit 1A	38.9	6.7	5.8
Axl	AXL receptor tyrosine kinase	38.8	45.8	0.8
Mcl1	myeloid cell leukemia sequence 1 [MGI:101769]	38.8	8.6	4.5
Apbb2	amyloid beta (A4) precursor protein-binding, family B, member 2	38.8	6.8	5.7
Ube2h	ubiquitin-conjugating enzyme E2H	38.7	10.2	3.8
Ptp4a2	protein tyrosine phosphatase 4a2	38.7	8.4	4.6
Prkar2a	protein kinase, cAMP dependent regulatory, type II alpha [MGI:101900]	38.5	9.7	4.0
Rpl19	ribosomal protein L19	38.5	26.0	1.5
Ifitm2	interferon induced transmembrane protein 2 [MGI:1933382]	38.3	30.8	1.2
Runx1t1	runt-related transcription factor 1; translocated to, 1 (cyclin D-related)	38.3	13.7	2.8
Pank3	pantothenate kinase 3	38.3	4.9	7.8
Nudt6	nudix (nucleoside diphosphate linked moiety X)-type motif 6	38.3	4.8	7.9
Ap2m1	adaptor protein complex AP-2, mu1	38.1	48.4	0.8
Rap1b	RAS related protein 1b [MGI:894315]	38.0	3.6	10.5
Rpl38	ribosomal protein L38	37.9	1.5	24.5
Vgll3	vestigial like 3 (Drosophila) [MGI:1920819]	37.8	9.5	4.0
Lims1	LIM and senescent cell antigen-like domains 1	37.7	7.6	5.0

Pttglip	pituitary tumor-transforming 1 interacting protein	37.6	12.5	3.0
Tmem47	transmembrane protein 47	37.6	4.5	8.3
Cpne3	copine III	37.4	5.7	6.6
Zbtb34	zinc finger and BTB domain containing 34	37.3	5.2	7.2
Cdc27	cell division cycle 27 homolog (<i>S. cerevisiae</i>)	37.2	3.4	11.1
Dusp7	dual specificity phosphatase 7	37.2	32.9	1.1
Rpl26	ribosomal protein L26	37.1	6.2	6.0
Pdap1	PDGFA associated protein 1	37.1	0.5	71.1
Ghitm	growth hormone inducible transmembrane protein [MGI:1913342]	37.1	4.8	7.7
Efnb2	ephrin B2	37.1	10.8	3.4
Hspg2	perlecan (heparan sulfate proteoglycan 2)	36.7	61.9	0.6
Zdhhc20	zinc finger, DHHC domain containing 20 [MGI:1923215]	36.6	3.6	10.1
Zyx	zyxin [MGI:103072]	36.6	140.5	0.3
Ppia	peptidylprolyl isomerase A	36.6	21.2	1.7
Rc3h2	ring finger and CCCH-type zinc finger domains 2	36.6	6.0	6.1
Pdgfa	platelet derived growth factor, alpha	36.6	4.4	8.3
Rac1	RAS-related C3 botulinum substrate 1	36.5	18.1	2.0
Rlim	ring finger protein, LIM domain interacting	36.5	5.1	7.2
Tspan3	tetraspanin 3 [MGI:1928098]	36.3	4.9	7.4
Twsg1	twisted gastrulation homolog 1 (<i>Drosophila</i>) [MGI:2137520]	35.9	7.4	4.8
Spred2	sprouty protein with EVH-1 domain 2, related sequence	35.8	26.3	1.4
Hnrnpu	heterogeneous nuclear ribonucleoprotein U	35.8	7.3	4.9
Pdzd8	PDZ domain containing 8 [MGI:2677270]	35.8	4.1	8.6
Arl8a	ADP-ribosylation factor-like 8A	35.7	105.3	0.3
Polr2m	glutamate receptor, ionotropic, N-methyl D-aspartate-like 1A	35.6	9.3	3.8
Rpl10a	ribosomal protein L10A	35.6	18.8	1.9
Atf1	activating transcription factor 1	35.5	4.5	7.9
Rps3	ribosomal protein S3	35.3	20.0	1.8
Cd164	CD164 antigen [MGI:1859568]	35.2	7.8	4.5
RP23-22P2	novel protein (C78339)	35.1	2.5	13.8
Bace1	beta-site APP cleaving enzyme 1	35.1	8.2	4.3
Rps8	ribosomal protein S8	34.8	7.0	5.0
Rab5b	RAB5B, member RAS oncogene family [MGI:105938]	34.8	62.2	0.6
Adam19	a disintegrin and metalloproteinase domain 19 (meltrin beta)	34.8	69.3	0.5
Atf5	activating transcription factor 5	34.8	44.0	0.8
Spnb2	spectrin beta 2	34.8	12.9	2.7
Atl3	atlastin GTPase 3 [MGI:1924270]	34.7	6.4	5.4
Spin1	spindlin 1 [MGI:109242]	34.5	9.6	3.6
Papola	poly (A) polymerase alpha	34.5	9.6	3.6
Wrb	tryptophan rich basic protein	34.4	3.5	9.9
Cryab	crystallin, alpha B [MGI:88516]	34.2	27.5	1.2
Setd8	SET domain containing (lysine methyltransferase) 8	34.2	7.5	4.5
Amotl1	angiomin-like 1	34.2	12.3	2.8
Ptms	parathyrosin	34.2	541.5	0.1
Elov16	ELOVL family member 6, elongation of long chain fatty acids (yea)	34.0	6.4	5.3
Gna12	guanine nucleotide binding protein, alpha 12	34.0	16.3	2.1
Rnf150	ring finger protein 150 [MGI:2443860]	33.9	11.5	2.9

Ralb	v-ral simian leukemia viral oncogene homolog B	33.8	8.3	4.1
Ube2l3	ubiquitin-conjugating enzyme E2L 3	33.6	6.3	5.3
Pten	phosphatase and tensin homolog	33.6	5.7	5.9
Eif4b	eukaryotic translation initiation factor 4B [MGI:95304]	33.5	14.5	2.3
Atp6ap1	ATPase, H ⁺ transporting, lysosomal accessory protein	33.5	6.3	5.3
Gna11	guanine nucleotide binding protein, alpha 11	33.4	30.3	1.1
Rab31	RAB31, member RAS oncogene family [MGI:1914603]	33.4	10.1	3.3
Mfap4	microfibrillar-associated protein 4	33.4	67.8	0.5
Adm	adrenomedullin [MGI:108058]	33.3	2.8	11.8
Psme3	proteasome (prosome, macropain) 28 subunit, 3	33.3	37.4	0.9
Figf	c-fos induced growth factor	33.3	19.6	1.7
Prss23	protease, serine, 23 [MGI:1923703]	33.2	7.9	4.2
Mib1	mindbomb homolog 1 (Drosophila)	33.2	3.8	8.7
Ddit3	DNA-damage inducible transcript 3	33.1	4.5	7.4
Col12a1	procollagen type XII alpha 1	33.0	23.2	1.4
Edf1	endothelial differentiation-related factor 1	33.0	11.7	2.8
Surf4	surfeit gene 4	32.8	20.8	1.6
Hnrnpk	heterogeneous nuclear ribonucleoprotein K	32.8	5.7	5.7
Dap	death-associated protein [MGI:1918190]	32.8	21.0	1.6
Rps5	ribosomal protein S5	32.7	11.3	2.9
Tecr	trans-2,3-enoyl-CoA reductase [MGI:1915408]	32.7	45.3	0.7
Nrp2	neuropilin 2	32.7	12.3	2.7
Nme2	expressed in non-metastatic cells 2 protein	32.6	5.3	6.1
Wbscr17	Williams-Beuren syndrome chromosome region 17 homolog (human)	32.6	20.7	1.6
Cst3	cystatin C	32.6	2.2	14.9
Mtdh	metadherin	32.6	5.9	5.5
Mapk6	mitogen-activated protein kinase 6	32.5	9.8	3.3
Tuba1c	tubulin, alpha 1C [MGI:1095409]	32.5	13.0	2.5
Zfp36	zinc finger protein 36	32.5	30.9	1.1
Klhl9	kelch-like 9 (Drosophila)	32.5	3.9	8.3
Nfat5	nuclear factor of activated T-cells 5	32.4	16.1	2.0
Atxn2l	ataxin 2-like	32.4	73.1	0.4
Eef1g	eukaryotic translation elongation factor 1 gamma	32.2	18.6	1.7
Hnrnpul1	heterogeneous nuclear ribonucleoprotein U-like 1 [MGI:2443517]	32.1	22.5	1.4
Flna	filamin, alpha	32.1	35.0	0.9
Tagln	transgelin [MGI:106012]	32.1	38.7	0.8
Igfbp5	insulin-like growth factor binding protein 5	32.0	37.6	0.9
Fosl2	fos-like antigen 2 [MGI:102858]	32.0	32.5	1.0
Fkbp10	FK506 binding protein 10	31.9	42.1	0.8
Rpl37a	ribosomal protein L37a [MGI:98068]	31.9	9.1	3.5
Uprt	uracil phosphoribosyltransferase (FUR1) homolog (S. cerevisiae)	31.8	3.5	9.0
Hn11	hematological and neurological expressed 1-like [MGI:1196260]	31.8	8.5	3.7
Ahnak	AHNAK nucleoprotein (desmoyokin) [MGI:1316648]	31.8	10.8	2.9
Tmsb10	thymosin, beta 10	31.7	17.2	1.8
Pmepal	prostate transmembrane protein, androgen induced 1	31.6	28.5	1.1
Csrp1	cysteine and glycine-rich protein 1	31.4	70.2	0.4
Spry2	sprouty homolog 2 (Drosophila) [MGI:1345138]	31.4	10.6	2.9

Kctd17	potassium channel tetramerisation domain containing 17	31.3	133.7	0.2
Rpl13	ribosomal protein L13	31.3	5.2	6.1
Akap2	A kinase (PRKA) anchor protein 2	31.1	4.2	7.4
Lhfp	lipoma HMGIC fusion partner	30.7	3.9	7.8
2310022B	(RIKEN cDNA 2310022B05 gene [MGI:1916801]	30.7	119.8	0.3
Rere	arginine glutamic acid dipeptide (RE) repeats	30.7	46.6	0.7
Ehd2	EH-domain containing 2	30.7	45.9	0.7
Kdelr1	KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention	30.6	16.5	1.9
Tgoln1	trans-golgi network protein	30.6	9.7	3.2
Rcc2	regulator of chromosome condensation 2	30.5	14.9	2.0
Gpc6	glypican 6	30.5	39.3	0.8
Lasp1	LIM and SH3 protein 1	30.4	59.6	0.5
Vezf1	vascular endothelial zinc finger 1	30.4	5.8	5.2
Gxylt2	glycosyltransferase 8 domain containing 4	30.4	7.7	3.9
Map2k4	mitogen activated protein kinase kinase 4, variant 1	30.3	7.0	4.3
Caprin1	cell cycle associated protein 1	30.3	5.8	5.2
Rpl14	ribosomal protein L14 [MGI:1914365]	30.3	23.1	1.3
Ewsr1	Ewing sarcoma breakpoint region 1	30.3	9.6	3.2
Clic4	chloride intracellular channel 4 (mitochondrial)	30.2	18.9	1.6
Elk4	ELK4, member of ETS oncogene family	30.2	18.2	1.7
Poldip3	polymerase (DNA-directed), delta interacting protein 3	30.2	10.6	2.9
Gtlf3b	gene trap locus F3b	30.1	42.0	0.7
Eif5	eukaryotic translation initiation factor 5 [MGI:95309]	30.1	5.4	5.5
Gm21811	predicted gene, 21811 [MGI:5433975]	30.0	4.1	7.3
RP23-124I	novel protein (B230312A22Rik)	30.0	28.0	1.1
Ptbp1	polypyrimidine tract binding protein 1	30.0	23.0	1.3
Fam195b	family with sequence similarity 195, member B	29.9	15.9	1.9
Sgta	small glutamine-rich tetratricopeptide repeat (TPR)-containing, alp	29.8	21.5	1.4
Hyou1	hypoxia up-regulated 1	29.8	35.3	0.8
Litaf	LPS-induced TN factor	29.8	11.9	2.5
Brd4	bromodomain containing 4	29.8	24.9	1.2
Acat2	acetyl-Coenzyme A acetyltransferase 2	29.7	3.1	9.6
Acly	ATP citrate lyase	29.6	4.7	6.3
My16	myosin, light polypeptide 6, alkali, smooth muscle and non-muscle	29.6	13.8	2.1
Hdlbp	high density lipoprotein (HDL) binding protein [MGI:99256]	29.5	23.2	1.3
Tcea1	transcription elongation factor A (SII) 1	29.4	3.5	8.3
Rhoa	ras homolog gene family, member A [MGI:1096342]	29.4	12.2	2.4
Pappa	pregnancy-associated plasma protein A	29.4	8.6	3.4
Pdia4	protein disulfide isomerase associated 4 [MGI:104864]	29.3	6.9	4.3
Qk	quaking [MGI:97837]	29.3	4.8	6.1
Efemp1	epidermal growth factor-containing fibulin-like extracellular matrix	29.2	5.0	5.8
Rps2	ribosomal protein S2	29.2	9.8	3.0
Mob3a	MOB kinase activator 3A [MGI:3050117]	29.1	7.2	4.1
Cited2	Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-ter	29.1	13.2	2.2
Syngap1	synaptic Ras GTPase activating protein 1 homolog (rat) [MGI:303	29.1	29.0	1.0
Ccl2	chemokine (C-C motif) ligand 2	29.0	5.1	5.7
Tceb2	transcription elongation factor B (SIII), polypeptide 2 [MGI:19149	29.0	4.0	7.3

Tgfb1i1	transforming growth factor beta 1 induced transcript 1	29.0	99.2	0.3
Atf4	activating transcription factor 4 [MGI:88096]	28.9	10.5	2.8
Mapre1	microtubule-associated protein, RP/EB family, member 1	28.9	13.2	2.2
Gatad2b	GATA zinc finger domain containing 2B [MGI:2443225]	28.9	25.6	1.1
Naa50	N-acetyltransferase 13	28.7	4.3	6.7
Wsb2	WD repeat and SOCS box-containing 2	28.7	12.1	2.4
Elov15	ELOVL family member 5, elongation of long chain fatty acids (yea	28.6	4.3	6.7
Tfdp1	transcription factor Dp 1 [MGI:101934]	28.6	19.5	1.5
Kif5b	kinesin family member 5B	28.6	3.9	7.4
Cox7a2l	cytochrome c oxidase subunit VIIa polypeptide 2-like [MGI:1060128.5	28.5	7.0	4.1
Dcakd	dephospho-CoA kinase domain containing	28.5	33.9	0.8
Mt2	metallothionein 2 [MGI:97172]	28.4	1.5	18.9
Pkm	pyruvate kinase, muscle [MGI:97591]	28.4	50.7	0.6
Rpl37	ribosomal protein L37 [MGI:1914531]	28.3	2.1	13.3
Aebp1	AE binding protein 1	28.2	45.5	0.6
Rpl30	ribosomal protein L30	28.2	2.7	10.4
Gsk3a	glycogen synthase kinase 3 alpha	28.2	59.0	0.5
Tmx3	thioredoxin-related transmembrane protein 3 [MGI:2442418]	28.1	1.5	18.6
Fndc3b	fibronectin type III domain containing 3B [MGI:1919257]	28.1	10.7	2.6
Grina	glutamate receptor, ionotropic, N-methyl D-aspartate-associated pr	28.0	38.5	0.7
Dazap2	DAZ associated protein 2 [MGI:1344344]	27.9	29.0	1.0
Tbx15	T-box 15	27.9	3.4	8.3
Col4a1	procollagen type IV alpha 1	27.8	25.6	1.1
Arpc1b	actin related protein 2/3 complex, subunit 1B	27.7	12.6	2.2
Picalm	phosphatidylinositol binding clathrin assembly protein [MGI:238527.7	27.7	4.8	5.8
Wasf2	WAS protein family, member 2	27.6	38.6	0.7
Myo1d	myosin ID	27.6	10.7	2.6
Clic1	chloride intracellular channel 1	27.6	3.6	7.6
S1pr3	sphingosine-1-phosphate receptor 3 [MGI:1339365]	27.5	12.7	2.2
Atxn7l3	ataxin 7-like 3	27.5	14.6	1.9
Gng10	guanine nucleotide binding protein (G protein) gamma 10	27.5	2.0	13.6
Ypel5	yippee-like 5 (Drosophila) [MGI:1916937]	27.5	4.7	5.8
Tob1	transducer of ErbB-2.1	27.5	7.4	3.7
Pcdh7	protocadherin 7 [MGI:1860487]	27.3	6.9	3.9
Rpl7a	ribosomal protein L7a	27.3	11.6	2.4
Cmip	c-Maf inducing protein [MGI:1921690]	27.3	28.6	1.0
Gm10800	predicted gene 10800 [MGI:3641657]	27.2	509.9	0.1
St3gal1	ST3 beta-galactoside alpha-2,3-sialyltransferase 1 [MGI:98304]	27.2	32.4	0.8
Preli1	PRELI domain containing 1 [MGI:1913744]	27.2	15.5	1.8
Gsr	glutathione reductase 1	27.1	3.1	8.7
Capza1	capping protein (actin filament) muscle Z-line, alpha 1	27.1	5.3	5.1
Gtf2a1	general transcription factor II A, 1	27.1	3.1	8.6
Acsl4	acyl-CoA synthetase long-chain family member 4	27.1	2.0	13.7
Psm7	proteasome (prosome, macropain) subunit, alpha type 7	27.0	3.8	7.1
Kdm6b	KDM1 lysine (K)-specific demethylase 6B	27.0	36.3	0.7
Pcgf2	polycomb group ring finger 2	26.9	50.5	0.5
Tcf20	transcription factor 20 [MGI:108399]	26.9	14.5	1.9

Ttyh2	tweety homolog 2	26.9	17.3	1.6
Gatad1	GATA zinc finger domain containing 1	26.9	2.8	9.4
Ctxn1	cortexin 1 [MGI:88566]	26.8	113.6	0.2
Lpar1	lysophosphatidic acid receptor 1	26.7	2.6	10.3
Bag1	Bcl2-associated athanogene 1	26.7	16.1	1.7
Cdk4	cyclin-dependent kinase 4	26.5	10.5	2.5
Ywhah	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activator	26.4	8.2	3.2
Carm1	coactivator-associated arginine methyltransferase 1	26.4	41.5	0.6
Fmr1	fragile X mental retardation syndrome 1 homolog	26.4	2.2	12.0
Mfap1a	microfibrillar-associated protein 1A	26.3	2.3	11.6
Chmp4b	chromatin modifying protein 4B	26.3	9.6	2.7
Ubp2	ubiquitin-associated protein 2	26.3	28.5	0.9
Hs2st1	heparan sulfate 2-O-sulfotransferase 1	26.3	7.1	3.7
Rps20	ribosomal protein S20	26.3	3.7	7.1
Ldlr	low density lipoprotein receptor [MGI:96765]	26.2	8.2	3.2
Cox8a	cytochrome c oxidase subunit VIIIa [MGI:105959]	26.2	3.3	8.0
Spop	speckle-type POZ protein	26.2	13.3	2.0
Dvl3	dishevelled 3, dsh homolog (Drosophila)	26.2	65.6	0.4
Cdc42	cell division cycle 42 homolog (S. cerevisiae)	26.2	6.4	4.1
Mfsd1	major facilitator superfamily domain containing 1 [MGI:1914118]	26.1	2.7	9.5
Csnk1a1	casein kinase 1, alpha 1	26.0	6.5	4.0
Papd4	PAP associated domain containing 4 [MGI:2140950]	25.8	8.5	3.0
Mest	mesoderm specific transcript	25.8	6.6	3.9
Plp2	proteolipid protein 2	25.7	20.4	1.3
Sp3	trans-acting transcription factor 3	25.7	4.3	6.0
Itpr12	inositol 1,4,5-triphosphate receptor interacting protein-like 2 [MGI:256	25.6	6.5	3.9
Fdft1	farnesyl diphosphate farnesyl transferase 1 [MGI:102706]	25.6	3.0	8.5
Wipf2	WAS/WASL interacting protein family, member 2	25.6	7.9	3.2
Rps19	ribosomal protein S19	25.6	6.1	4.2
Afap1	actin filament associated protein 1	25.5	14.8	1.7
Cdkn2b	cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4) [MGI:125.5	25.5	21.7	1.2
Zfp266	zinc finger protein 266	25.4	4.9	5.2
Tnpo1	transportin 1	25.4	3.8	6.7
Foxn3	forkhead box N3	25.4	8.0	3.2
Ubf1	ubiquitin family domain containing 1	25.4	7.9	3.2
Ston1	stonin 1	25.4	14.1	1.8
Prkci	protein kinase C, iota	25.3	4.3	5.9
Esyt2	extended synaptotagmin-like protein 2 [MGI:1261845]	25.3	5.2	4.9
Spred1	sprouty protein with EVH-1 domain 1, related sequence	25.2	4.6	5.5
Git1	G protein-coupled receptor kinase-interactor 1	25.2	46.1	0.5
Tmed5	transmembrane emp24 protein transport domain containing 5	25.1	1.7	14.6
Plxna1	plexin A1 [MGI:107685]	25.1	35.6	0.7
Tnfaip1	tumor necrosis factor, alpha-induced protein 1 (endothelial)	25.1	10.7	2.3
Sike1	suppressor of IKBKE 1	25.1	4.9	5.1
Bak1	BCL2-antagonist/killer 1	25.1	43.4	0.6
Tnfrsf10b	tumor necrosis factor receptor superfamily, member 10b [MGI:132	25.0	8.2	3.1
Lin7c	lin-7 homolog C (C. elegans)	25.0	3.9	6.3

Zbed3	zinc finger, BED domain containing 3 [MGI:1919364]	25.0	35.7	0.7
Stat3	signal transducer and activator of transcription 3	24.9	10.8	2.3
Hif1a	hypoxia inducible factor 1, alpha subunit	24.9	3.6	6.9
Rhoq	ras homolog gene family, member Q	24.9	4.7	5.3
Col5a2	procollagen, type V, alpha 2	24.8	27.0	0.9
RP23-279J	novel protein	24.8	1.2	20.4
Rock2	Rho-associated coiled-coil containing protein kinase 2 [MGI:1079:24.8	24.8	4.6	5.4
Gabarap1	gamma-aminobutyric acid (GABA) A receptor-associated protein-1	24.8	6.9	3.6
Igf2bp2	insulin-like growth factor 2 mRNA binding protein 2	24.7	22.8	1.1
Tmem184f	transmembrane protein 184b [MGI:2445179]	24.7	65.8	0.4
Pcolce	procollagen C-endopeptidase enhancer protein	24.7	35.9	0.7
Mef2a	myocyte enhancer factor 2A	24.7	5.2	4.7
Ghr	growth hormone receptor	24.6	5.1	4.8
Sdc3	syndecan 3	24.6	42.0	0.6
Sec61a1	Sec61 alpha 1 subunit (S. cerevisiae)	24.6	11.9	2.1
Zfhx3	zinc finger homeobox 3	24.4	17.7	1.4
Glg1	golgi apparatus protein 1	24.4	11.2	2.2
Pcnp	PEST proteolytic signal containing nuclear protein	24.3	3.2	7.7
Erlec1	endoplasmic reticulum lectin 1	24.2	19.7	1.2
Gmfb	glia maturation factor, beta	24.2	3.7	6.6
Ereg	epiregulin [MGI:107508]	24.2	1.5	16.6
Zmiz1	zinc finger, MIZ-type containing 1	23.9	61.9	0.4
Nrp1	neuropilin 1 [MGI:106206]	23.8	6.4	3.7
RP23-160C	ortholog of chromosome 20 open reading frame 108 C20orf108 (Hs)	23.8	4.8	5.0
Otub1	OTU domain, ubiquitin aldehyde binding 1	23.8	26.6	0.9
Mxra8	matrix-remodelling associated 8	23.8	8.5	2.8
Rcn1	reticulocalbin 1	23.7	6.3	3.8
Rcn3	reticulocalbin 3, EF-hand calcium binding domain	23.7	9.6	2.5
Tmem30a	transmembrane protein 30A	23.7	3.1	7.8
Crk	v-crk sarcoma virus CT10 oncogene homolog (avian)	23.6	6.7	3.5
Hmgb1	high mobility group box 1	23.6	1.3	18.7
Dynlt3	dynein light chain Tctex-type 3	23.5	2.8	8.3
Rnf44	ring finger protein 44	23.5	95.3	0.2
Cyp20a1	cytochrome P450 family 20 subfamily A polypeptide 1	23.4	3.2	7.4
Podn	podocan	23.3	3.7	6.3
Csf1	colony stimulating factor 1 (macrophage)	23.3	13.0	1.8
Prkaca	protein kinase, cAMP dependent, catalytic, alpha [MGI:97592]	23.3	28.1	0.8
Ddah1	dimethylarginine dimethylaminohydrolase 1	23.3	30.7	0.8
Anxa1	annexin A1	23.3	4.3	5.4
Eif4ebp2	eukaryotic translation initiation factor 4E binding protein 2 [MGI:	23.2	95.8	0.2
Kpna4	karyopherin (importin) alpha 4	23.2	4.6	5.0
Taok1	TAO kinase 1	23.2	3.6	6.3
Nfya	nuclear transcription factor-Y alpha	23.1	6.1	3.8
Csnk2a1	casein kinase 2, alpha 1 polypeptide	23.0	4.2	5.4
Rps6	ribosomal protein S6	23.0	28.1	0.8
Rnf187	ring finger protein 187	23.0	15.1	1.5
Nfe2l1	nuclear factor, erythroid derived 2,-like 1	23.0	11.7	2.0

Atp5g3	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit 2	22.9	1.5	14.8
Stom	stomatin	22.8	7.8	2.9
Capn2	calpain 2 [MGI:88264]	22.8	8.4	2.7
Srsf5	splicing factor, arginine/serine-rich 5 (SRp40, HRS)	22.8	7.5	3.0
Kif1a	kinesin family member 1A [MGI:108391]	22.7	5.9	3.9
Ubc	ubiquitin C	22.7	10.4	2.2
Cltc	clathrin, heavy polypeptide (Hc)	22.7	5.7	4.0
Hipk3	homeodomain interacting protein kinase 3	22.6	7.5	3.0
Klf7	Kruppel-like factor 7 (ubiquitous)	22.6	10.9	2.1
Sec22b	SEC22 vesicle trafficking protein homolog B (<i>S. cerevisiae</i>)	22.6	9.2	2.4
Serp1	stress-associated endoplasmic reticulum protein 1	22.5	6.8	3.3
Dlgap4	discs, large homolog-associated protein 4 (<i>Drosophila</i>)	22.5	38.7	0.6
Csnk1d	casein kinase 1, delta	22.5	7.4	3.0
St13	suppression of tumorigenicity 13	22.5	4.9	4.6
Pi15	peptidase inhibitor 15 [MGI:1934659]	22.5	1.3	17.5
Runx2	runt related transcription factor 2	22.5	28.2	0.8
Snx18	sorting nexin 18 [MGI:2137642]	22.4	3.6	6.2
Ccdc50	coiled-coil domain containing 50	22.4	1.9	11.5
Tbc1d20	TBC1 domain family, member 20	22.3	18.7	1.2
Rpl23a	ribosomal protein L23a	22.3	4.5	5.0
Lass6	longevity assurance homolog 6 (<i>S. cerevisiae</i>)	22.3	6.7	3.3
AC162528	novel protein (2900026A02Rik)	22.3	15.6	1.4
C1qtnf3	C1q and tumor necrosis factor related protein 3	22.3	3.7	6.0
R3hdm4	R3H domain containing 4 [MGI:1924814]	22.3	85.2	0.3
Htr1b	5-hydroxytryptamine (serotonin) receptor 1B [MGI:96274]	22.3	9.8	2.3
Slc6a6	solute carrier family 6 (neurotransmitter transporter, taurine), member 6	22.2	11.5	1.9
Usp22	ubiquitin specific protease 22	22.2	8.6	2.6
Prelp	proline arginine-rich end leucine-rich repeat	22.1	12.5	1.8
Sirpa	signal-regulatory protein alpha	22.1	4.5	4.9
Pomp	proteasome maturation protein [MGI:1913787]	22.0	3.2	6.9
Hoxb9	homeobox B9	22.0	15.4	1.4
Ncstn	nicastrin	22.0	44.7	0.5
Rbfox2	RNA binding protein, fox-1 homolog (<i>C. elegans</i>) 2 [MGI:193397]	21.9	24.3	0.9
Dhcr7	7-dehydrocholesterol reductase	21.9	6.6	3.3
Gls	glutaminase	21.9	2.0	11.2
Arf1	ADP-ribosylation factor 1	21.9	18.3	1.2
Ndufa4	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 4 [MGI:21814]	21.8	3.0	7.4
Srpk1	serine/arginine-rich protein specific kinase 1	21.8	3.5	6.2
Ppp4r2	protein phosphatase 4, regulatory subunit 2 [MGI:3027896]	21.8	3.2	6.8
Atp13a3	ATPase type 13A3	21.8	8.2	2.7
Rsl24d1	ribosomal L24 domain containing 1	21.8	7.1	3.1
Thbd	thrombomodulin	21.8	11.8	1.8
Rps28	ribosomal protein S28	21.8	1.4	15.2
Cstb	cystatin B [MGI:109514]	21.8	3.0	7.3
Fdx11	ferredoxin 1-like [MGI:1915415]	21.8	2.9	7.6
Frs2	fibroblast growth factor receptor substrate 2 [MGI:1100860]	21.7	13.5	1.6
Ano6	anoctamin 6 [MGI:2145890]	21.7	10.1	2.1

Ube3a	ubiquitin protein ligase E3A [MGI:105098]	21.7	3.6	6.1
Srcap	Snf2-related CREBBP activator protein [MGI:2444036]	21.7	20.0	1.1
Lypla1	lysophospholipase 1	21.7	2.0	10.9
Larp4	La ribonucleoprotein domain family, member 4 [MGI:2443114]	21.7	3.2	6.8
Pgam1	phosphoglycerate mutase 1 [MGI:97552]	21.6	12.7	1.7
Fgfr1	fibroblast growth factor receptor 1	21.6	34.5	0.6
Rab8b	RAB8B, member RAS oncogene family [MGI:2442982]	21.6	3.4	6.4
Decr2	2-4-dienoyl-Coenzyme A reductase 2, peroxisomal	21.6	2.2	9.7
Rps21	ribosomal protein S21	21.6	7.1	3.0
Ptpn23	protein tyrosine phosphatase, non-receptor type 23 [MGI:2144837]	21.5	31.0	0.7
Uhmk1	U2AF homology motif UHM kinase 1	21.5	3.9	5.5
Grem2	gremlin 2 homolog, cysteine knot superfamily (<i>Xenopus laevis</i>)	21.4	10.8	2.0
Purb	purine rich element binding protein B	21.4	3.1	6.9
Plk2	polo-like kinase 2 [MGI:1099790]	21.4	9.5	2.3
Golt1b	golgi transport 1 homolog B (<i>S. cerevisiae</i>)	21.4	6.9	3.1
Cd24a	CD24a antigen [MGI:88323]	21.4	3.8	5.7
Prnp	prion protein	21.4	3.3	6.5
Txn1	thioredoxin 1	21.4	2.3	9.4
Ext2	exostoses (multiple) 2	21.3	4.4	4.9
Gadd45b	growth arrest and DNA-damage-inducible 45 beta [MGI:107776]	21.3	2.8	7.5
Ogn	osteoglycin [MGI:109278]	21.2	0.4	56.7
S1pr2	sphingosine-1-phosphate receptor 2 [MGI:99569]	21.2	5.9	3.6
Tax1bp3	Tax1 (human T-cell leukemia virus type I) binding protein 3	21.2	10.6	2.0
Ubap2l	ubiquitin associated protein 2-like [MGI:1921633]	21.1	31.7	0.7
R3hdm1	R3H domain containing 1 [MGI:2448514]	21.1	22.3	0.9
Zcchc9	zinc finger, CCHC domain containing 9	21.1	2.5	8.4
RP23-369M	novel protein	21.0	0.1	198.0
Rpl18	ribosomal protein L18	21.0	4.0	5.3
Cfdp1	craniofacial development protein 1 [MGI:1344403]	21.0	0.7	28.5
Glrx3	glutaredoxin 3 [MGI:1353653]	21.0	2.3	9.3
Ddx5	DEAD (Asp-Glu-Ala-Asp) box polypeptide 5	21.0	3.7	5.7
Tns1	tensin 1 [MGI:104552]	20.9	25.0	0.8
Sc5d	sterol-C5-desaturase (fungal ERG3, delta-5-desaturase) homolog (S	20.9	4.1	5.1
Fbxw8	F-box and WD-40 domain protein 8 [MGI:1923041]	20.9	11.2	1.9
Vps35	vacuolar protein sorting 35 [MGI:1890467]	20.9	2.6	8.1
Glud1	glutamate dehydrogenase 1	20.8	5.2	4.0
Pdia3	protein disulfide isomerase associated 3	20.8	6.8	3.1
Dab2	disabled homolog 2 (<i>Drosophila</i>)	20.8	10.0	2.1
Pacsin2	protein kinase C and casein kinase substrate in neurons 2 [MGI:13	20.8	4.0	5.3
Rassf1	Ras association (RalGDS/AF-6) domain family 1	20.8	4.2	5.0
Tm9sf4	transmembrane 9 superfamily protein member 4	20.8	12.4	1.7
Gorasp2	golgi reassembly stacking protein 2	20.8	16.0	1.3
Hspb11	heat shock protein family B (small), member 11	20.8	0.1	287.9
Furin	furin (paired basic amino acid cleaving enzyme)	20.7	29.1	0.7
Smurf1	SMAD specific E3 ubiquitin protein ligase 1	20.7	9.7	2.1
Tspan5	tetraspanin 5	20.6	7.1	2.9
Tmem167l	transmembrane protein 167B	20.6	3.9	5.3

Pdrg1	p53 and DNA damage regulated 1	20.6	13.5	1.5
Wsb1	WD repeat and SOCS box-containing 1	20.6	3.2	6.5
Fhl1	four and a half LIM domains 1	20.6	6.6	3.1
Cacul1	CDK2 associated, cullin domain 1 [MGI:1926082]	20.6	4.6	4.5
Ythdf3	YTH domain family 3 [MGI:1918850]	20.6	2.3	8.8
Mocs1	molybdenum cofactor synthesis 1	20.5	3.8	5.4
Smg7	Smg-7 homolog, nonsense mediated mRNA decay factor (C. elegans)	20.5	6.8	3.0
2700089E2	RIKEN cDNA 2700089E24 gene [MGI:1914379]	20.5	2.6	7.8
Tpm2	tropomyosin 2 beta	20.5	18.4	1.1
Coa5	novel protein	20.5	11.9	1.7
Sh3pxd2b	SH3 and PX domains 2B	20.5	17.5	1.2
RP23-478A	novel UPF0608 family membrane protein homologous to C19orf42 (20.5	20.5	1.9	10.8
Epb4.113	erythrocyte protein band 4.1-like 3 [MGI:103008]	20.3	6.6	3.1
Fech	ferrochelatase [MGI:95513]	20.3	5.0	4.0
Prdx2	peroxiredoxin 2	20.3	4.4	4.6
Pmp22	peripheral myelin protein	20.2	6.2	3.3
Erlin2	ER lipid raft associated 2 [MGI:2387215]	20.2	6.1	3.3
Srcap	Snf2-related CREBBP activator protein [MGI:2444036]	20.1	32.5	0.6
Hdgf	hepatoma-derived growth factor	20.1	20.0	1.0
Shoc2	soc-2 (suppressor of clear) homolog (C. elegans) [MGI:1927197]	20.0	4.7	4.3
Sec23a	SEC23A (S. cerevisiae)	20.0	2.0	10.2
Sdpr	serum deprivation response [MGI:99513]	20.0	3.4	5.8
Srpr	signal recognition particle receptor ('docking protein')	20.0	14.6	1.4
Smarcc1	SWI/SNF related matrix associated actin dependent regulator of ch	19.9	9.0	2.2
Zc3h11a	zinc finger CCCH type containing 11A [MGI:1917829]	19.9	8.3	2.4
RP23-452I	novel protein (KIAA1191)	19.9	11.7	1.7
Runx1	runt related transcription factor 1 [MGI:99852]	19.9	6.5	3.1
Fads1	fatty acid desaturase 1 [MGI:1923517]	19.8	14.9	1.3
Tcf7l2	transcription factor 7-like 2, T-cell specific, HMG-box	19.8	11.0	1.8
Lrrn4cl	LRRN4 C-terminal like [MGI:1916102]	19.8	2.4	8.1
Lmna	lamin A	19.8	9.2	2.1
Ankrd13c	ankyrin repeat domain 13c [MGI:2139746]	19.7	3.0	6.5
7-Sep	septin 7 [MGI:1335094]	19.7	1.5	13.2
Sec63	SEC63-like (S. cerevisiae)	19.7	13.0	1.5
Akr1b10	aldo-keto reductase family 1, member B10 (aldose reductase)	19.7	3.5	5.6
H3f3b	H3 histone, family 3B	19.7	4.9	4.0
Tfg	Trk-fused gene	19.6	4.7	4.2
Igln5	IgLON family member 5	19.6	52.7	0.4
Bcap31	B-cell receptor-associated protein 31	19.6	3.3	6.0
Inf2	inverted formin, FH2 and WH2 domain containing [MGI:1917685]	19.6	20.6	1.0
Tbx3	T-box 3	19.6	9.5	2.1
Fndc3a	fibronectin type III domain containing 3A	19.6	2.5	7.8
Smarca2	SWI/SNF related, matrix associated, actin dependent regulator of c	19.6	4.8	4.1
Irs1	insulin receptor substrate 1	19.6	9.5	2.1
Prdm2	PR domain containing 2, with ZNF domain	19.5	14.4	1.4
Itm2b	integral membrane protein 2B [MGI:1309517]	19.5	4.4	4.5
S100a10	S100 calcium binding protein A10 (calpactin)	19.5	3.7	5.3

Ddit4	DNA-damage-inducible transcript 4 [MGI:1921997]	19.5	7.3	2.7
Gla	galactosidase, alpha	19.4	1.7	11.1
Polr2a	polymerase (RNA) II (DNA directed) polypeptide A	19.4	27.2	0.7
Ranbp1	RAN binding protein 1	19.4	5.3	3.7
Rab18	RAB18, member RAS oncogene family [MGI:102790]	19.4	2.4	8.2
Stc2	stanniocalcin 2	19.4	1.4	13.7
Osr1	odd-skipped related 1 (Drosophila) [MGI:1344424]	19.4	8.1	2.4
AC156982	novel protein, possible orthologue of human chromosome 10 open	19.4	11.0	1.8
Ifnar1	interferon (alpha and beta) receptor 1	19.3	6.4	3.0
Dlst	dihydrolipoamide S-succinyltransferase (E2 component of 2-oxo-glutarate dehydrogenase complex)	19.3	4.2	4.6
Timp1	tissue inhibitor of metalloproteinase 1	19.3	3.8	5.1
Msi2	Musashi homolog 2 (Drosophila)	19.3	7.1	2.7
Cbx5	chromobox homolog 5 (Drosophila HP1a)	19.3	6.6	2.9
Sdc2	syndecan 2	19.3	5.1	3.8
Sod1	superoxide dismutase 1, soluble [MGI:98351]	19.3	5.0	3.8
Zfp3612	zinc finger protein 36, C3H type-like 2	19.2	16.0	1.2
Ncln	nicalin homolog (zebrafish)	19.1	11.8	1.6
Lclat1	lysocardiolipin acyltransferase 1	19.1	14.1	1.4
Mtch1	mitochondrial carrier homolog 1 (C. elegans)	19.1	6.7	2.8
Tmem33	transmembrane protein 33	19.1	5.2	3.7
Creb3l2	cAMP responsive element binding protein 3-like 2	19.1	17.3	1.1
Tab2	mitogen-activated protein kinase kinase kinase 7 interacting protein	19.0	13.0	1.5
Rps9	ribosomal protein S9	19.0	9.7	2.0
Gucyl1a2	guanylate cyclase 1, soluble, alpha 2 [MGI:2660877]	19.0	3.0	6.3
Raver1	ribonucleoprotein, PTB-binding 1 [MGI:1919016]	18.9	38.6	0.5
Aplp1	amyloid beta (A4) precursor-like protein 1 [MGI:88046]	18.9	28.9	0.7
Tmem123	transmembrane protein 123	18.9	7.1	2.7
Matr3	matrin 3 [MGI:1298379]	18.9	2.2	8.7
Gpr176	G protein-coupled receptor 176	18.9	8.1	2.3
Actn1	actinin, alpha 1 [MGI:2137706]	18.9	25.1	0.8
Polr3g1	polymerase (RNA) III (DNA directed) polypeptide G like	18.9	0.2	120.5
Rab12	RAB12, member RAS oncogene family	18.9	3.9	4.9
Itga11	integrin alpha 11	18.9	11.3	1.7
Fat1	FAT tumor suppressor homolog 1 (Drosophila) [MGI:109168]	18.8	16.4	1.1
Trerf1	transcriptional regulating factor 1 [MGI:2442086]	18.8	8.9	2.1
Igf1r	insulin-like growth factor I receptor [MGI:96433]	18.8	12.3	1.5
Coq10b	coenzyme Q10 homolog B (S. cerevisiae) [MGI:1915126]	18.8	1.6	11.9
Ccdc6	coiled-coil domain containing 6	18.7	8.8	2.1
Rnf24	ring finger protein 24	18.7	19.6	1.0
Tmem248	transmembrane protein 248 [MGI:1918917]	18.6	5.8	3.2
Sfxn1	sideroflexin 1 [MGI:2137677]	18.6	4.4	4.2
Dusp11	dual specificity phosphatase 11 (RNA/RNP complex 1-interacting)	18.5	12.4	1.5
Sar1a	SAR1 gene homolog A (S. cerevisiae) [MGI:98230]	18.5	8.0	2.3
Fblim1	filamin binding LIM protein 1	18.4	18.3	1.0
Arpc5	actin related protein 2/3 complex, subunit 5	18.4	3.6	5.1
Nmt2	N-myristoyltransferase 2	18.4	2.6	7.0
Mgp	matrix Gla protein [MGI:96976]	18.4	2.3	7.9

Ctsl	cathepsin L [MGI:88564]	18.4	8.9	2.1
Mtap4	microtubule-associated protein 4	18.3	10.7	1.7
Slc48a1	solute carrier family 48 (heme transporter), member 1	18.3	17.5	1.0
Wnk1	WNK lysine deficient protein kinase 1	18.3	9.6	1.9
AW54987	expressed sequence AW549877 [MGI:2146232]	18.2	5.3	3.4
Btg2	B-cell translocation gene 2, anti-proliferative	18.2	12.3	1.5
Coro1c	coronin, actin binding protein 1C	18.2	8.0	2.3
Csnk1e	casein kinase 1, epsilon	18.2	6.3	2.9
Hspd1	heat shock protein 1 (chaperonin)	18.2	3.8	4.8
Mical2	microtubule associated monooxygenase, calponin and LIM domain c	18.2	13.1	1.4
Fads2	fatty acid desaturase 2 [MGI:1930079]	18.1	15.3	1.2
Arsb	arylsulfatase B [MGI:88075]	18.1	20.0	0.9
Strap	serine/threonine kinase receptor associated protein	18.1	4.4	4.1
Arl16	ADP-ribosylation factor-like 16	18.1	1.3	13.4
Hnrnp1	heterogeneous nuclear ribonucleoprotein L	18.1	4.3	4.2
Vegfa	vascular endothelial growth factor A	18.1	11.5	1.6
Rfx7	regulatory factor X, 7 [MGI:2442675]	18.1	6.1	3.0
Reep5	receptor accessory protein 5 [MGI:1270152]	18.0	3.8	4.8
Hspe1	heat shock protein 1 chaperonin 10	17.9	4.8	3.8
Npc2	Niemann Pick type C2 [MGI:1915213]	17.9	4.7	3.8
Man1a	mannosidase 1, alpha	17.9	1.7	10.4
Hsd17b7	hydroxysteroid (17-beta) dehydrogenase 7	17.8	4.5	4.0
Hmgcs1	3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1 [MGI:107592	17.8	4.0	4.5
Cxcl14	chemokine (C-X-C motif) ligand 14 [MGI:1888514]	17.8	8.3	2.1
Trove2	TROVE domain family, member 2	17.8	2.1	8.4
Csnk1g1	casein kinase 1, gamma 1	17.7	9.9	1.8
Cyth3	cytohesin 3	17.7	8.5	2.1
Tcf3	transcription factor 3	17.7	16.9	1.0
RP23-146I	novel protein	17.7	2.9	6.1
Ltbp1	latent transforming growth factor beta binding protein 1	17.7	7.9	2.2
Ccdc97	coiled-coil domain containing 97	17.7	45.8	0.4
Cd63	CD63 antigen [MGI:99529]	17.7	8.3	2.1
Peg3	paternally expressed 3	17.7	6.0	2.9
Gnai1	guanine nucleotide binding protein (G protein), alpha inhibiting 1 [17.7	17.7	1.9	9.2
Snai2	snail homolog 2 (Drosophila) [MGI:1096393]	17.7	3.7	4.8
Med15	mediator complex subunit 15 [MGI:2137379]	17.7	9.3	1.9
Lrp1	low density lipoprotein receptor-related protein 1	17.6	17.6	1.0
Bzw1	basic leucine zipper and W2 domains 1 [MGI:1914132]	17.6	4.7	3.8
Stard4	StAR-related lipid transfer (START) domain containing 4	17.6	1.7	10.1
Slc20a1	solute carrier family 20, member 1	17.6	2.5	7.0
Ube2v1	ubiquitin-conjugating enzyme E2 variant 1	17.6	40.8	0.4
Fam53c	family with sequence similarity 53, member C [MGI:1913556]	17.6	9.7	1.8
Isoc1	isochorismatase domain containing 1 [MGI:1913557]	17.6	3.0	5.9
Adamts5	a disintegrin-like and metallopeptidase (reprolysin type) with thron	17.5	2.4	7.2
Srp19	signal recognition particle 19	17.5	1.0	17.0
Socs4	suppressor of cytokine signaling 4	17.5	4.2	4.2
Hbegf	heparin-binding EGF-like growth factor [MGI:96070]	17.5	7.3	2.4

Hook3	hook homolog 3 (Drosophila)	17.4	2.2	8.0
Srm	spermidine synthase	17.4	9.0	1.9
Diap2	diaphanous homolog 2 (Drosophila)	17.4	4.7	3.7
Rpl35	ribosomal protein L35	17.4	1.8	9.5
Kdm2a	lysine (K)-specific demethylase 2A	17.3	8.2	2.1
Fstl3	follistatin-like 3	17.3	9.4	1.8
Nfic	nuclear factor I/C	17.3	55.3	0.3
Hspa4	heat shock protein 4	17.2	4.5	3.9
D8ErtD738	DNA segment, Chr 8, ERATO Doi 738, expressed [MGI:1289231]	17.2	2.3	7.5
Psmb2	proteasome (prosome, macropain) subunit, beta type 2	17.2	3.7	4.6
Igf1	insulin-like growth factor 1	17.2	1.9	9.2
Eda2r	ectodysplasin A2 isoform receptor	17.2	3.4	5.1
Actn4	actinin alpha 4	17.1	17.6	1.0
Prkab1	protein kinase AMP-activated beta 1 non-catalytic subunit	17.1	2.8	6.1
Magt1	magnesium transporter 1	17.1	3.3	5.2
Pafah1b1	platelet-activating factor acetylhydrolase, isoform 1b, beta1 subunit	17.1	2.9	5.8
Kpna6	karyopherin (importin) alpha 6	17.1	20.7	0.8
Wbp2	WW domain binding protein 2	17.1	45.9	0.4
Alkbh5	alkB, alkylation repair homolog 5 (E. coli)	17.1	5.5	3.1
Hist1h1c	histone 1, H1c	17.1	3.0	5.6
Basp1	brain abundant, membrane attached signal protein 1 [MGI:191760]	17.0	4.5	3.8
Cops2	COP9 (constitutive photomorphogenic) homolog, subunit 2 (Arabidopsis)	17.0	1.9	9.2
Usf2	upstream transcription factor 2	17.0	9.7	1.7
Ilk	integrin linked kinase	16.9	12.8	1.3
Prrc2c	proline-rich coiled-coil 2C	16.9	11.1	1.5
Nars	asparaginyl-tRNA synthetase [MGI:1917473]	16.9	5.4	3.1
Mtss1l	metastasis suppressor 1-like	16.9	20.2	0.8
Mea1	male enhanced antigen 1 [MGI:96957]	16.9	49.9	0.3
Gpc1	glypican 1 [MGI:1194891]	16.9	14.7	1.1
Pcdh19	protocadherin 19	16.8	8.1	2.1
Gas7	growth arrest specific 7	16.8	9.5	1.8
Sumo1	SMT3 suppressor of mif two 3 homolog 1 (yeast)	16.8	1.1	15.3
Abhd17c	abhydrolase domain containing 17C [MGI:1917428]	16.8	6.1	2.8
Fbn1	fibrillin 1	16.8	14.8	1.1
Ankrd52	ankyrin repeat domain 52	16.8	44.7	0.4
Chst2	carbohydrate sulfotransferase 2 [MGI:1891160]	16.8	4.0	4.2
Camk2d	calcium/calmodulin-dependent protein kinase II, delta	16.8	4.3	3.9
Rps14	ribosomal protein S14	16.8	4.3	3.9
Ikbip	Novel IKK interacting protein	16.8	2.4	6.9
Ly96	lymphocyte antigen 96 [MGI:1341909]	16.8	0.6	25.9
Rras	Harvey rat sarcoma oncogene, subgroup R	16.8	7.6	2.2
Tubb4b	tubulin, beta 2C	16.8	4.3	3.9
Ncor2	nuclear receptor co-repressor 2	16.7	29.4	0.6
Rab2a	RAB2A, member RAS oncogene family	16.7	3.2	5.1
Myc	myelocytomatosis oncogene	16.7	7.3	2.3
Mras	muscle and microspikes RAS	16.7	8.6	1.9
Cercam	cerebral endothelial cell adhesion molecule	16.6	11.9	1.4

Akr1a1	aldo-keto reductase family 1, member A4 (aldehyde reductase)	16.6	7.3	2.3
Ski	Sloan-Kettering viral oncogene homolog	16.6	21.7	0.8
Nr2f2	nuclear receptor subfamily 2, group F, member 2	16.6	5.7	2.9
Mrc2	mannose receptor, C type 2	16.6	10.3	1.6
Btg1	B cell translocation gene 1, anti-proliferative [MGI:88215]	16.6	2.9	5.7
Eif1	eukaryotic translation initiation factor 1	16.6	10.9	1.5
Tmem43	transmembrane protein 43	16.6	5.7	2.9
Clcn5	chloride channel 5	16.6	7.8	2.1
Slc7a5	solute carrier family 7 (cationic amino acid transporter, y+ system)	16.6	8.7	1.9
Slc25a4	solute carrier family 25 (mitochondrial carrier, adenine nucleotide)	16.5	6.2	2.7
Lman2	lectin, mannose-binding 2 [MGI:1914140]	16.5	10.6	1.6
Appbp2	amyloid beta precursor protein (cytoplasmic tail) binding protein 2	16.5	3.5	4.7
Sulf2	sulfatase 2	16.5	14.2	1.2
RP24-535P	novel protein	16.5	9.6	1.7
Etf1	eukaryotic translation termination factor 1	16.5	2.5	6.5
Shisa4	shisa homolog 4 (<i>Xenopus laevis</i>)	16.5	11.8	1.4
Manea	mannosidase, endo-alpha	16.5	1.1	14.3
Ubxn1	UBX domain protein 1 [MGI:1289301]	16.5	4.8	3.5
Ctdsp2	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A)	16.4	23.4	0.7
Mmp2	matrix metalloproteinase 2 [MGI:97009]	16.3	8.7	1.9
Cat	catalase	16.3	0.6	25.4
Xiap	X-linked inhibitor of apoptosis	16.3	2.5	6.5
Hnrnpa0	heterogeneous nuclear ribonucleoprotein A0 [MGI:1924384]	16.3	2.8	5.9
Tulp4	tubby like protein 4	16.3	14.8	1.1
Rpl35a	ribosomal protein L35a	16.3	3.7	4.4
Kdelc2	KDEL (Lys-Asp-Glu-Leu) containing 2 [MGI:1923765]	16.2	2.0	8.0
Plaa	phospholipase A2, activating protein	16.2	1.2	13.4
Tex261	testis expressed gene 261	16.2	17.0	1.0
Gatad2a	GATA zinc finger domain containing 2A [MGI:2384585]	16.2	12.9	1.3
Vhl	von Hippel-Lindau syndrome	16.1	3.2	5.0
Aplp2	amyloid beta (A4) precursor-like protein 2 [MGI:88047]	16.1	18.9	0.9
Foxo3	forkhead box O3	16.1	5.0	3.2
Slc25a44	solute carrier family 25, member 44 [MGI:2444391]	16.1	13.1	1.2
C1galt1	core 1 UDP-galactose:N-acetylgalactosamine-alpha-R beta 1,3-galact	16.1	1.9	8.4
Comt	catechol-O-methyltransferase 1	16.0	5.2	3.1
Aff4	AF4/FMR2 family, member 4	16.0	7.6	2.1
Kcnj15	potassium inwardly-rectifying channel, subfamily J, member 15	16.0	5.7	2.8
Map1b	microtubule-associated protein 1B [MGI:1306778]	16.0	5.4	2.9
Eif3i	eukaryotic translation initiation factor 3, subunit I	16.0	4.6	3.5
B4galt7	xylosylprotein beta1,4-galactosyltransferase, polypeptide 7 (galact	15.9	4.7	3.4
Rhob	ras homolog gene family, member B [MGI:107949]	15.9	8.2	1.9
Acbd3	acyl-Coenzyme A binding domain containing 3 [MGI:2181074]	15.8	2.9	5.5
Hmga1	high mobility group AT-hook 1	15.8	71.8	0.2
E2f4	E2F transcription factor 4 [MGI:103012]	15.8	29.0	0.5
Tmed10	transmembrane emp24-like trafficking protein 10 (yeast) [MGI:19	15.8	8.9	1.8
Ywhaq	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activator	15.8	5.6	2.8
Rgl1	ral guanine nucleotide dissociation stimulator,-like 1	15.8	8.2	1.9

Flnb	filamin, beta	15.7	12.3	1.3
4933426M	RIKEN cDNA 4933426M11 gene [MGI:2444661]	15.7	29.3	0.5
Rrn3	RRN3 RNA polymerase I transcription factor homolog (yeast) [MGI:156	15.6	3.1	5.0
Itgb5	integrin beta 5	15.6	12.8	1.2
6-Mar	membrane-associated ring finger (C3HC4) 6 [MGI:2442773]	15.6	2.1	7.4
Pon2	paraoxonase 2	15.6	1.8	8.8
Fbxo11	F-box protein 11	15.6	3.7	4.2
Slc31a2	solute carrier family 31 (copper transporters), member 2	15.6	1.9	8.2
Plbd2	phospholipase B domain containing 2	15.6	43.0	0.4
Cmtm3	CKLF-like MARVEL transmembrane domain containing 3 [MGI:15.5	15.5	21.7	0.7
Zc3hav11	zinc finger CCCH-type, antiviral 1-like	15.5	7.0	2.2
Nfia	nuclear factor I/A	15.5	7.2	2.1
Mxra7	matrix-remodelling associated 7	15.5	7.9	2.0
Soat1	sterol O-acyltransferase 1 [MGI:104665]	15.5	4.0	3.9
Tceb3	transcription elongation factor B (SIII), polypeptide 3	15.5	3.5	4.5
Gadd45a	growth arrest and DNA-damage-inducible 45 alpha	15.5	5.5	2.8
AC157561	likely orthologue of H. sapiens chromosome 19 open reading frame	15.4	5.0	3.1
Cpe	carboxypeptidase E [MGI:101932]	15.4	12.2	1.3
Sfxn3	sideroflexin 3 [MGI:2137679]	15.4	52.3	0.3
Gstm1	glutathione S-transferase, mu 1	15.4	28.8	0.5
Fyttd1	forty-two-three domain containing 1	15.4	1.8	8.6
Ccny11	cyclin Y-like 1	15.4	6.0	2.6
Myh10	myosin, heavy polypeptide 10, non-muscle	15.4	10.8	1.4
Dnajb1	DnaJ (Hsp40) homolog, subfamily B, member 1 [MGI:1931874]	15.4	2.7	5.6
Sesn3	sestrin 3	15.4	7.1	2.2
Pir	pirin	15.4	0.2	91.2
Hist1h2bb	histone cluster 1, H2bb	15.3	0.1	128.8
Anxa6	annexin A6	15.3	18.5	0.8
Adam12	a disintegrin and metallopeptidase domain 12 meltrin alpha	15.3	7.1	2.2
Snx12	sorting nexin 12	15.3	5.9	2.6
Ganab	alpha glucosidase 2 alpha neutral subunit [MGI:1097667]	15.2	17.8	0.9
Spag7	sperm associated antigen 7	15.2	2.2	7.0
Rest	RE1-silencing transcription factor	15.2	3.5	4.3
Cggbp1	CGG triplet repeat binding protein 1	15.1	3.7	4.1
Ipo7	importin 7 [MGI:2152414]	15.1	2.1	7.3
Eps15	epidermal growth factor receptor pathway substrate 15	15.1	2.1	7.3
Mtmr2	myotubularin related protein 2	15.1	1.2	12.4
Nabp1	nucleic acid binding protein 1 [MGI:1923258]	15.1	1.7	8.7
Nudt4	nudix (nucleoside diphosphate linked moiety X)-type motif 4 [MG	15.1	3.6	4.2
Pacs2	phosphofurin acidic cluster sorting protein 2 [MGI:1924399]	15.1	10.5	1.4
Llph	LLP homolog, long-term synaptic facilitation (Aplysia)	15.1	2.7	5.6
Prrg4	proline rich Gla (G-carboxyglutamic acid) 4 (transmembrane)	15.1	2.6	5.8
Bbx	bobby sox homolog (Drosophila)	15.1	2.8	5.5
Chchd2	coiled-coil-helix-coiled-coil-helix domain containing 2	15.1	4.2	3.6
Trp53	transformation related protein 53	15.1	44.7	0.3
Hist2h3c1	histone cluster 2, H3c1	15.1	0.9	15.9
Ubb	ubiquitin B	15.1	2.9	5.1

Camk2g	calcium/calmodulin-dependent protein kinase II gamma [MGI:882	15.0	3.3	4.5
Heg1	HEG homolog 1 (zebrafish)	15.0	5.2	2.9
Cxxc5	CXXC finger 5 [MGI:1914643]	15.0	7.6	2.0
Uqcr10	novel protein similar to human ubiquinol-cytochrome C reductase c	15.0	2.3	6.5
Erbp2ip	Erbp2 interacting protein [MGI:1890169]	15.0	2.9	5.1
5-Sep	septin 5 [MGI:1195461]	15.0	9.8	1.5
Ap1g1	adaptor protein complex AP-1, gamma 1 subunit	15.0	2.5	5.9
Irf2	interferon regulatory factor 2 [MGI:96591]	15.0	7.2	2.1
Etv6	ets variant gene 6 (TEL oncogene)	14.9	2.9	5.2
Sf1	splicing factor 1	14.9	13.1	1.1
Shc1	src homology 2 domain-containing transforming protein C1	14.9	15.3	1.0
Ltbr	lymphotoxin B receptor	14.9	8.3	1.8
Dnajc18	DnaJ (Hsp40) homolog, subfamily C, member 18 [MGI:1923844]	14.8	4.3	3.5
Spna2	spectrin alpha 2	14.8	12.0	1.2
Mif	macrophage migration inhibitory factor [MGI:96982]	14.8	2.8	5.2
Bmp4	bone morphogenetic protein 4	14.8	1.0	14.8
Ago2	argonaute RISC catalytic subunit 2 [MGI:2446632]	14.8	13.0	1.1
Eif3d	eukaryotic translation initiation factor 3, subunit D [MGI:1933181]	14.8	4.3	3.5
Tom1l2	target of myb1-like 2 (chicken)	14.8	12.8	1.2
Tcf7l1	transcription factor 7-like 2 (T-cell specific, HMG box)	14.8	44.8	0.3
Uba52	ubiquitin A-52 residue ribosomal protein fusion product 1	14.8	7.2	2.1
Tlk1	tousled-like kinase 1	14.7	1.6	9.1
Qpctl	glutaminy-peptide cyclotransferase-like [MGI:1914619]	14.7	3.6	4.1
Fam3c	family with sequence similarity 3, member C	14.7	0.9	15.8
Grn	granulin	14.7	8.2	1.8
Rap2b	RAP2B, member of RAS oncogene family [MGI:1921262]	14.6	4.7	3.1
Cct5	chaperonin containing Tcp1, subunit 5 (epsilon)	14.6	3.3	4.5
Bmi1	B lymphoma Mo-MLV insertion region 1	14.6	2.0	7.1
Nono	non-POU-domain-containing, octamer binding protein	14.6	7.3	2.0
C230081A	RIKEN cDNA C230081A13 gene [MGI:2442366]	14.6	11.4	1.3
Ube2g1	ubiquitin-conjugating enzyme E2G 1 (UBC7 homolog, C. elegans)	14.6	2.1	6.9
Copz1	coatamer protein complex, subunit zeta 1 [MGI:1929063]	14.6	27.7	0.5
Paip1	polyadenylate binding protein-interacting protein 1	14.6	1.9	7.7
Acap2	ArfGAP with coiled-coil, ankyrin repeat and PH domains 2 [MGI:	14.6	2.3	6.4
Wdfy1	WD repeat and FYVE domain containing 1	14.6	0.4	32.8
Gm10479	predicted gene 10479 [MGI:3704385]	14.6	0.2	82.8
Ssr1	signal sequence receptor, alpha [MGI:105082]	14.5	3.6	4.0
Jagn1	jagunal homolog 1 (Drosophila)	14.5	1.5	9.8
Celf2	CUGBP, Elav-like family member 2	14.5	5.8	2.5
Sdf4	stromal cell derived factor 4	14.5	3.1	4.7
Osmr	oncostatin M receptor	14.5	2.5	5.9
Rwdd4a	RWD domain containing 4A	14.5	1.1	12.8
Strn	striatin, calmodulin binding protein	14.5	2.2	6.6
Ell2	elongation factor RNA polymerase II 2 [MGI:2183438]	14.5	5.1	2.8
Tnfrsf22	tumor necrosis factor receptor superfamily, member 22	14.5	16.0	0.9
Elk3	ELK3, member of ETS oncogene family	14.4	18.8	0.8
Tmed7	transmembrane emp24 protein transport domain containing 7	14.4	1.7	8.3

Maz	MYC-associated zinc finger protein (purine-binding transcription f	14.4	30.0	0.5
Anp32b	acidic nuclear phosphoprotein 32 family, member B	14.4	3.7	3.9
Nfib	nuclear factor I/B	14.4	3.3	4.3
Emc3	transmembrane protein 111	14.4	2.6	5.6
Rnf38	ring finger protein 38	14.4	7.1	2.0
Pdcd6ip	programmed cell death 6 interacting protein	14.4	11.5	1.3
Siva1	SIVA1, apoptosis-inducing factor [MGI:1353606]	14.4	3.7	3.9
Tmem50a	transmembrane protein 50A	14.4	2.6	5.5
Arpc4	actin related protein 2/3 complex, subunit 4	14.3	9.2	1.6
Zfp385a	zinc finger protein 385A [MGI:1352495]	14.3	122.0	0.1
Cfl2	cofilin 2, muscle [MGI:101763]	14.3	3.0	4.8
Prkg1	protein kinase, cGMP-dependent, type I	14.3	1.9	7.5
G3bp2	GTPase activating protein (SH3 domain) binding protein 2 [MGI:2	14.3	2.8	5.1
Fnip1	folliculin interacting protein 1	14.2	1.9	7.4
Maml2	mastermind like 2 (Drosophila)	14.2	8.4	1.7
Pmpca	peptidase (mitochondrial processing) alpha	14.2	4.5	3.2
Bnip3l	BCL2/adenovirus E1B interacting protein 3-like	14.2	4.8	3.0
Rangap1	RAN GTPase activating protein 1 [MGI:103071]	14.2	2.2	6.3
Ttc9c	tetratricopeptide repeat domain 9C	14.2	3.1	4.6
Aspn	asporin [MGI:1913945]	14.2	2.1	6.9
Ncl	nucleolin [MGI:97286]	14.2	3.2	4.4
Rgmb	RGM domain family, member B [MGI:1916049]	14.2	3.8	3.7
Man2a1	mannosidase 2, alpha 1	14.2	6.8	2.1
15-Sep	selenoprotein	14.1	4.0	3.5
Dtnbp1	dystrobrevin binding protein 1 [MGI:2137586]	14.1	1.9	7.5
Isg20l2	interferon stimulated exonuclease gene 20-like 2	14.1	3.0	4.7
Adi1	acireductone dioxygenase 1	14.1	5.9	2.4
Desi2	novel protein (5830417C01Rik)	14.1	2.7	5.3
Lrrc59	leucine rich repeat containing 59	14.1	7.0	2.0
Procr	protein C receptor endothelial	14.0	1.0	14.3
Wac	WW domain containing adaptor with coiled-coil	14.0	2.8	4.9
Rad23b	RAD23b homolog (S. cerevisiae)	14.0	8.6	1.6
Hipk1	homeodomain interacting protein kinase 1	14.0	5.5	2.5
Ptpn11	protein tyrosine phosphatase non-receptor type 11	14.0	8.0	1.7
Crkl	v-crk sarcoma virus CT10 oncogene homolog (avian)-like	14.0	3.3	4.3
Nacc1	nucleus accumbens associated 1, BEN and BTB (POZ) domain con	14.0	38.3	0.4
Slc25a24	solute carrier family 25 (mitochondrial carrier, phosphate carrier),	13.9	2.4	5.7
Bfar	bifunctional apoptosis regulator	13.9	1.4	10.2
Akap13	A kinase (PRKA) anchor protein 13	13.9	5.6	2.5
Ptplad1	protein tyrosine phosphatase-like A domain containing 1 [MGI:18	13.9	2.7	5.2
Ube2g2	ubiquitin-conjugating enzyme E2G 2	13.9	8.7	1.6
Sae1	SUMO1 activating enzyme subunit 1 [MGI:1929264]	13.9	2.8	5.0
Hnrnpa1	heterogeneous nuclear ribonucleoprotein A1 [MGI:104820]	13.9	2.4	5.9
Lrrc8c	leucine rich repeat containing 8 family, member C	13.9	4.4	3.1
Tpbg	trophoblast glycoprotein [MGI:1341264]	13.8	4.3	3.2
Smim15	small integral membrane protein 15 [MGI:1922866]	13.8	1.0	13.5
Gm9938	predicted gene 9938 [MGI:3641836]	13.8	2.6	5.2

Ube4b	ubiquitination factor E4B, UFD2 homolog (<i>S. cerevisiae</i>)	13.8	4.8	2.9
Gid8	Novel protein	13.8	2.4	5.7
Slit3	slit homolog 3 (<i>Drosophila</i>)	13.7	12.1	1.1
Cpeb4	cytoplasmic polyadenylation element binding protein 4	13.7	2.6	5.3
Alg11	asparagine-linked glycosylation 11 homolog (yeast, alpha-1,2-man)	13.7	5.2	2.6
Lysmd3	LysM, putative peptidoglycan-binding, domain containing 3 [MGI	13.7	3.0	4.6
Emp2	epithelial membrane protein 2	13.7	6.1	2.3
Edil3	EGF-like repeats and discoidin I-like domains 3	13.7	2.3	6.1
Map3k7	mitogen activated protein kinase kinase kinase 7	13.7	3.7	3.7
Sp2	Sp2 transcription factor	13.7	12.0	1.1
Pfkfb3	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3	13.7	6.1	2.2
Tspo	translocator protein [MGI:88222]	13.6	3.6	3.8
Atg12	autophagy related 12 [MGI:1914776]	13.6	5.5	2.5
Zeb2	zinc finger E-box binding homeobox 2	13.6	1.6	8.4
Jun	Jun oncogene	13.6	4.8	2.8
Tmem150a	transmembrane protein 150	13.6	13.7	1.0
Ppp3r1	protein phosphatase 3, regulatory subunit B, alpha isoform (calcineu	13.6	5.3	2.6
Tmsb4x	thymosin, beta 4, X chromosome	13.6	1.8	7.4
Tgfb2	transforming growth factor, beta 2 [MGI:98726]	13.6	2.4	5.6
Copz2	coatamer protein complex, subunit zeta 2	13.6	15.6	0.9
Eif2s1	eukaryotic translation initiation factor 2, subunit 1 alpha	13.6	2.3	5.8
Sfxn2	sideroflexin 2 [MGI:2137678]	13.5	0.7	19.5
Prkaa1	protein kinase, AMP-activated, alpha 1 catalytic subunit [MGI:214	13.5	3.2	4.2
Txnrd1	thioredoxin reductase 1 [MGI:1354175]	13.5	6.4	2.1
Arid1a	AT rich interactive domain 1A (<i>Swi1</i> like)	13.5	22.5	0.6
N4bp1	NEDD4 binding protein 1 [MGI:2136825]	13.5	22.5	0.6
Ubxn7	UBX domain protein 7 [MGI:2146388]	13.5	1.8	7.5
Phf17	PHD finger protein 17 [MGI:1925835]	13.5	4.0	3.4
Efhd2	EF hand domain containing 2	13.5	6.0	2.2
Abhd4	abhydrolase domain containing 4 [MGI:1915938]	13.5	12.3	1.1
Avpi1	arginine vasopressin-induced 1	13.5	1.1	11.9
Rfk	riboflavin kinase	13.5	3.6	3.8
Pura	purine rich element binding protein A	13.4	2.4	5.6
Rcan1	regulator of calcineurin 1 [MGI:1890564]	13.4	3.3	4.0
Cflar	CASP8 and FADD-like apoptosis regulator	13.4	3.5	3.9
Peg10	paternally expressed 10	13.4	2.3	5.9
Ppfibp1	PTPRF interacting protein, binding protein 1 (liprin beta 1)	13.4	3.1	4.3
Tcp1	t-complex protein 1	13.4	5.4	2.5
Dctpp1	dCTP pyrophosphatase 1	13.4	0.2	81.1
Cinp	cyclin-dependent kinase 2 interacting protein [MGI:1914486]	13.4	0.9	15.2
Phactr4	phosphatase and actin regulator 4	13.4	13.2	1.0
Bpnt1	bisphosphate 3'-nucleotidase 1	13.4	2.3	5.9
Zfp617	zinc finger protein 617	13.4	1.8	7.6
Ergic3	ERGIC and golgi 3	13.3	7.6	1.8
Enah	enabled homolog (<i>Drosophila</i>) [MGI:108360]	13.3	3.8	3.6
Sfrp1	secreted frizzled-related sequence protein 1	13.3	2.3	5.7
Kank2	KN motif and ankyrin repeat domains 2 [MGI:2384568]	13.3	8.9	1.5

Iqsec1	IQ motif and Sec7 domain 1	13.3	11.4	1.2
Atp6v0c	ATPase, H ⁺ transporting, lysosomal V0 subunit C	13.3	17.8	0.7
Rnf181	ring finger protein 181	13.3	5.8	2.3
Tmem104	transmembrane protein 104	13.3	13.0	1.0
Nfatc4	nuclear factor of activated T cells, cytoplasmic, calcineurin depend	13.2	5.5	2.4
C1qbp	complement component 1, q subcomponent binding protein	13.2	5.8	2.3
Gsto1	glutathione S-transferase omega 1	13.2	7.9	1.7
Phf12	PHD finger protein 12	13.2	15.3	0.9
Crtc3	CREB regulated transcription coactivator 3	13.2	11.2	1.2
Asap1	ArfGAP with SH3 domain, ankyrin repeat and PH domain 1	13.2	5.0	2.6
Tgfb3	transforming growth factor, beta 3 [MGI:98727]	13.2	12.2	1.1
Gnl3l	guanine nucleotide binding protein-like 3 (nucleolar)-like	13.2	3.5	3.7
Rps16	ribosomal protein S16	13.2	3.0	4.4
Fam13b	family with sequence similarity 13, member B [MGI:2447834]	13.2	4.4	3.0
Fads3	fatty acid desaturase 3 [MGI:1928740]	13.2	6.3	2.1
Arhgap29	Rho GTPase activating protein 29	13.2	2.9	4.6
Grif1	glucocorticoid receptor DNA binding factor 1 [MGI:1929494]	13.2	14.1	0.9
Sh3pxd2a	SH3 and PX domains 2A [MGI:1298393]	13.2	14.6	0.9
Tmem222	transmembrane protein 222	13.2	11.0	1.2
09-Sep	septin 9	13.1	11.2	1.2
Ddt	D-dopachrome tautomerase	13.1	0.7	18.1
Prcp	prolylcarboxypeptidase (angiotensinase C) [MGI:1919711]	13.1	2.1	6.4
Elf2	E74-like factor 2	13.1	4.6	2.9
Znrd1	zinc ribbon domain containing, 1	13.1	0.4	37.1
Pigl	phosphatidylinositol glycan class L	13.1	3.2	4.1
Tcf12	transcription factor 12 [MGI:101877]	13.1	3.6	3.7
Tmem50b	transmembrane protein 50B	13.1	1.7	7.6
Nckap1	NCK-associated protein 1	13.1	2.4	5.5
RP23-43J1	novel protein, ortholog of human C17orf63	13.0	22.2	0.6
Wdr26	WD repeat domain 26	13.0	4.7	2.8
Akap12	A kinase (PRKA) anchor protein (gravin) 12 [MGI:1932576]	13.0	5.2	2.5
Sel1l	sel-1 suppressor of lin-12-like (C. elegans)	13.0	4.6	2.8
Mospd3	motile sperm domain containing 3	13.0	47.2	0.3
Cbl	Casitas B-lineage lymphoma [MGI:88279]	13.0	8.1	1.6
Tnks2	tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase	13.0	2.4	5.4
Strn3	striatin, calmodulin binding protein 3 [MGI:2151064]	13.0	2.3	5.6
Tor1aip1	torsin A interacting protein 1	13.0	7.5	1.7
Samd8	sterile alpha motif domain containing 8	13.0	1.8	7.1
Yipf4	Yip1 domain family, member 4 [MGI:1915114]	12.9	1.3	10.3
RP23-249M	Novel protein (A430107O13Rik)	12.9	1.4	9.4
Rnf4	ring finger protein 4	12.9	7.4	1.7
Glo1	glyoxalase 1 [MGI:95742]	12.9	3.5	3.7
Smurf2	SMAD specific E3 ubiquitin protein ligase 2	12.9	4.2	3.1
Plxdc2	plexin domain containing 2	12.9	2.6	5.0
Crebbp	CREB binding protein [MGI:1098280]	12.9	11.1	1.2
Atxn1	ataxin 1 [MGI:104783]	12.8	5.6	2.3
Gnai3	guanine nucleotide binding protein, alpha inhibiting 3	12.8	2.6	4.9

RP23-221C	novel protein (BC005624)	12.8	1.1	12.2
Mapk9	mitogen activated protein kinase 9	12.8	3.0	4.3
C1qc	complement component 1, q subcomponent, C chain	12.8	1.5	8.6
Pip4k2b	phosphatidylinositol-5-phosphate 4-kinase, type II, beta	12.8	9.7	1.3
Ctdsp1	CTD (carboxy-terminal domain, RNA polymerase II, polypeptide A	12.8	20.2	0.6
Myef2	myelin basic protein expression factor 2, repressor	12.8	1.0	13.2
Smap1	stromal membrane-associated protein 1	12.8	1.5	8.4
Wdr18	WD repeat domain 18 [MGI:2158400]	12.8	4.5	2.9
Larp1	La ribonucleoprotein domain family, member 1	12.7	9.2	1.4
Chm	choroideremia	12.7	1.4	9.0
Extl3	exostoses (multiple)-like 3 [MGI:1860765]	12.7	6.0	2.1
Haus2	HAUS augmin-like complex, subunit 2	12.7	2.5	5.0
Loxl3	lysyl oxidase-like 3	12.7	3.7	3.4
Sema3a	sema domain, immunoglobulin domain (Ig), short basic domain, se	12.7	2.6	4.9
Arid5b	AT rich interactive domain 5B (MRF1-like) [MGI:2175912]	12.7	5.7	2.2
Rpl21	ribosomal protein L21	12.7	2.5	5.1
Ngfrap1	nerve growth factor receptor (TNFRSF16) associated protein 1	12.6	1.6	8.2
Pros1	protein S (alpha)	12.6	1.5	8.7
Eif4g1	eukaryotic translation initiation factor 4, gamma 1	12.6	15.8	0.8
Akt1	thymoma viral proto-oncogene 1	12.6	11.9	1.1
Pebp1	phosphatidylethanolamine binding protein 1	12.6	2.2	5.7
1810055G	RIKEN cDNA 1810055G02 gene [MGI:1919306]	12.6	10.0	1.3
Chd4	chromodomain helicase DNA binding protein 4	12.6	8.7	1.4
Rps271	ribosomal protein S27-like	12.6	0.8	16.4
Pls3	plastin 3 (T-isoform)	12.6	3.0	4.2
Arl2	ADP-ribosylation factor-like 2	12.6	2.1	6.1
Pofut2	protein O-fucosyltransferase 2 [MGI:1916863]	12.5	9.8	1.3
Ptar1	protein prenyltransferase alpha subunit repeat containing 1 [MGI:112.5	12.5	1.9	6.4
Blcap	Blcapbladder cancer associated protein homolog (human)	12.5	12.5	1.0
Pdgfrb	platelet derived growth factor receptor, beta polypeptide	12.5	14.0	0.9
Zdhhc5	zinc finger DHHC domain containing 5	12.5	8.6	1.5
Lrrfip1	leucine rich repeat (in FLII) interacting protein 1 [MGI:1342770]	12.4	3.7	3.4
Pik3r1	phosphatidylinositol 3-kinase, regulatory subunit, polypeptide 1 (pδ	12.4	2.1	6.0
Layn	layilin [MGI:2685357]	12.4	4.3	2.9
Tln1	talin 1	12.4	11.4	1.1
Tm9sf3	transmembrane 9 superfamily member 3 [MGI:1914262]	12.4	2.4	5.2
Tmem234	novel multidrug resistance efflux transporter EmrE superfamily pro	12.3	4.2	3.0
Gltscr2	glioma tumor suppressor candidate region gene 2 [MGI:2154441]	12.3	3.5	3.5
Usp9x	ubiquitin specific peptidase 9, X chromosome	12.3	1.5	8.4
Efna5	ephrin A5	12.3	6.0	2.1
B630005N	RIKEN cDNA B630005N14 gene [MGI:2141466]	12.3	2.2	5.7
Fam162a	family with sequence similarity 162, member A [MGI:1917436]	12.3	1.4	8.7
Ctnna1	catenin (cadherin associated protein), alpha 1 [MGI:88274]	12.3	4.6	2.7
Khdrbs1	KH domain containing, RNA binding, signal transduction associate	12.3	2.5	5.0
Lmbrd2	LMBR1 domain containing 2 [MGI:2444173]	12.3	4.5	2.8
Sulf1	sulfatase 1 [MGI:2138563]	12.2	5.7	2.1
Tmf1	TATA element modulatory factor 1	12.2	2.5	4.9

Egfr	epidermal growth factor receptor	12.2	2.5	5.0
Klhl42	kelch-like 42 [MGI:2444786]	12.2	4.0	3.1
Mapre3	microtubule-associated protein, RP/EB family, member 3	12.2	6.8	1.8
Ecm1	extracellular matrix protein 1	12.2	9.3	1.3
Vps25	vacuolar protein sorting 25 (yeast)	12.2	20.6	0.6
Prr13	proline rich 13	12.2	15.6	0.8
Jazf1	JAZF zinc finger 1	12.2	1.6	7.5
Actr1b	ARP1 actin-related protein 1 homolog B, centractin beta (yeast)	12.2	18.3	0.7
Ccbe1	collagen and calcium binding EGF domains 1	12.2	17.1	0.7
Pid1	phosphotyrosine interaction domain containing 1	12.2	1.5	8.1
Efemp2	epidermal growth factor-containing fibulin-like extracellular matrix	12.2	5.7	2.1
Col6a3	procollagen type VI alpha 3	12.2	8.6	1.4
Pam	peptidylglycine alpha-amidating monooxygenase	12.2	2.0	6.0
Cnpy3	canopy 3 homolog (zebrafish)	12.2	6.5	1.9
Acot2	acyl-CoA thioesterase 2	12.1	2.2	5.5
Maged1	melanoma antigen, family D, 1	12.1	7.4	1.6
Pbrm1	polybromo 1	12.1	2.5	4.8
Iars	isoleucine-tRNA synthetase	12.1	4.4	2.7
Atp2a2	ATPase, Ca ⁺⁺ transporting, cardiac muscle, slow twitch 2 [MGI:8	12.1	3.3	3.7
Zfp187	zinc finger protein 187	12.1	1.9	6.3
Mprip	myosin phosphatase Rho interacting protein	12.1	11.1	1.1
Hs6st2	heparan sulfate 6-O-sulfotransferase 2	12.1	2.0	6.0
Prkacb	protein kinase, cAMP dependent, catalytic, beta	12.0	3.7	3.3
Hspa9	heat shock protein 9	12.0	3.8	3.2
Seh1l	SEH1-like (S. cerevisiae [MGI:1919374]	12.0	10.2	1.2
Atrn	attractin	12.0	2.7	4.5
Dync1li2	dynein, cytoplasmic 1 light intermediate chain 2 [MGI:107738]	12.0	2.6	4.6
Gnaq	guanine nucleotide binding protein, alpha q polypeptide	12.0	17.7	0.7
Ormdl3	ORM1-like 3 (S. cerevisiae)	12.0	4.0	3.0
Frrs1	ferric-chelate reductase 1 [MGI:108076]	11.9	3.4	3.5
Tspan9	tetraspanin 9	11.9	9.0	1.3
Hist1h2bc	histone cluster 1, H2bc	11.9	3.2	3.7
Gna13	guanine nucleotide binding protein, alpha 13	11.9	3.2	3.7
Asah1	N-acylsphingosine amidohydrolase 1	11.9	3.2	3.7
Lats1	large tumor suppressor [MGI:1333883]	11.9	4.0	3.0
Rab23	RAB23, member RAS oncogene family	11.9	2.9	4.0
Snap23	synaptosomal-associated protein 23	11.9	1.7	6.8
Nek6	NIMA (never in mitosis gene a)-related expressed	11.9	4.8	2.5
Mob3c	MOB1, Mps One Binder kinase activator-like 2C (yeast)	11.9	1.4	8.5
Mfge8	milk fat globule-EGF factor 8 protein [MGI:102768]	11.9	10.8	1.1
Med13	mediator complex subunit 13	11.9	3.1	3.9
Plagl2	pleiomorphic adenoma gene-like 2	11.9	13.9	0.9
Cd2ap	CD2-associated protein [MGI:1330281]	11.8	1.5	8.1
Yipf6	Yip1 domain family, member 6	11.8	0.8	14.0
Klf13	Kruppel-like factor 13 [MGI:1354948]	11.8	4.0	3.0
Dnajc10	DnaJ (Hsp40) homolog, subfamily C, member 10	11.8	1.0	12.2
Mospd1	motile sperm domain containing 1	11.8	0.8	15.2

Actr3	ARP3 actin-related protein 3 [MGI:1921367]	11.8	2.6	4.5
Psmc7	proteasome (prosome, macropain) 26S subunit, non-ATPase, 7 [MGI:1921367]	11.8	2.8	4.3
Tmem119	transmembrane protein 119	11.8	4.3	2.8
Sdhb	succinate dehydrogenase complex, subunit D, integral membrane protein	11.8	0.8	14.3
Atp5f1	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit 1	11.8	1.9	6.4
Sorcs2	sortilin-related VPS10 domain containing receptor 2	11.8	20.0	0.6
Nup115	nucleoporin like 1 [MGI:1919094]	11.8	1.9	6.3
Trp53ip1	transformation related protein 53 inducible protein 1	11.8	7.5	1.6
Marcks1	MARCKS-like 1	11.8	33.1	0.4
Lnpep	leucyl/cystinyl aminopeptidase [MGI:2387123]	11.8	3.4	3.5
Rgs16	regulator of G-protein signaling 16	11.8	6.7	1.8
Colgalt1	collagen beta(1-O)galactosyltransferase 1 [MGI:1924348]	11.8	6.4	1.8
Mll5	myeloid/lymphoid or mixed-lineage leukemia 5	11.8	8.9	1.3
Gid4	novel protein (4933439F18Rik) with a vacuolar import and degradation signal	11.7	6.0	2.0
Clta	clathrin light polypeptide (Lca)	11.7	4.0	2.9
Cdk14	cyclin-dependent kinase 14	11.7	2.5	4.7
Arl14ep	novel protein	11.7	2.1	5.5
Copb2	coatamer protein complex, subunit beta 2 (beta prime) [MGI:1354135]	11.7	3.4	3.4
Phlda3	pleckstrin homology-like domain, family A, member 3	11.7	17.0	0.7
08-Sep	septin 8	11.7	4.5	2.6
Snrpg	small nuclear ribonucleoprotein polypeptide G [MGI:1915261]	11.7	4.3	2.7
Hdac7	histone deacetylase 7	11.7	16.2	0.7
Zfp148	zinc finger protein 148 [MGI:1332234]	11.7	1.9	6.2
Psen1	presenilin 1 [MGI:1202717]	11.7	5.3	2.2
Nploc4	nuclear protein localization 4 homolog (<i>S. cerevisiae</i>)	11.7	7.7	1.5
D10Wsu1	(DNA segment, Chr 10, Wayne State University 102, expressed in 102)	11.7	3.7	3.2
2810004N	RIKEN cDNA 2810004N23 gene [MGI:1913773]	11.7	1.2	9.9
Igf2r	insulin-like growth factor 2 receptor	11.7	8.5	1.4
Atp1a1	ATPase, Na ⁺ /K ⁺ transporting, alpha 1 polypeptide	11.7	5.9	2.0
Sod3	superoxide dismutase 3, extracellular [MGI:103181]	11.6	67.0	0.2
Arrdc3	arrestin domain containing 3	11.6	0.9	13.4
Sp1	trans-acting transcription factor 1	11.6	5.8	2.0
Serbp1	serpine1 mRNA binding protein 1 [MGI:1914120]	11.6	2.0	5.7
Mmab	methylmalonic aciduria (cobalamin deficiency) type B homolog (human)	11.6	4.4	2.7
Ddr2	discoidin domain receptor family, member 2 [MGI:1345277]	11.6	5.1	2.3
Dcn	decorin [MGI:94872]	11.6	1.6	7.1
Zfx4	zinc finger homeodomain 4	11.6	6.1	1.9
Fxr1	fragile X mental retardation gene 1, autosomal homolog [MGI:104104]	11.6	1.6	7.3
Rgs17	regulator of G-protein signaling 17	11.6	2.0	5.8
Use1	unconventional SNARE in the ER 1 homolog (<i>S. cerevisiae</i>)	11.6	1.2	9.8
Gpx3	glutathione peroxidase 3	11.6	10.3	1.1
Sidt2	SID1 transmembrane family, member 2	11.6	22.9	0.5
Far1	fatty acyl CoA reductase 1	11.6	1.7	6.9
RP23-286I	novel protein	11.6	1.1	10.2
Slc25a37	solute carrier family 25, member 37 [MGI:1914962]	11.6	2.8	4.2
Trim44	tripartite motif-containing 44	11.5	5.2	2.2
Txndc17	thioredoxin domain containing 17	11.5	3.3	3.5

Kpna3	karyopherin (importin) alpha 3 [MGI:1100863]	11.5	1.8	6.3
Ero11	ERO1-like (<i>S. cerevisiae</i>) [MGI:1354385]	11.5	6.1	1.9
Zfp703	zinc finger protein 703 [MGI:2662729]	11.5	29.8	0.4
Arl8b	ADP-ribosylation factor-like 8B [MGI:1914416]	11.5	3.2	3.6
Slc26a2	solute carrier family 26 (sulfate transporter), member 2	11.5	1.2	9.3
Rpl7	ribosomal protein L7	11.5	2.9	3.9
Med29	mediator complex subunit 29	11.5	1.3	8.8
Rai14	retinoic acid induced 14 [MGI:1922896]	11.5	7.2	1.6
Rab43	RAB43, member RAS oncogene family	11.5	10.3	1.1
Cd276	CD276 antigen [MGI:2183926]	11.5	52.7	0.2
Hipk2	homeodomain interacting protein kinase 2	11.5	9.2	1.2
Lsp1	lymphocyte specific 1	11.5	4.7	2.4
Fbrs	fibrosin [MGI:104648]	11.5	35.5	0.3
Ube2j1	ubiquitin-conjugating enzyme E2 J1	11.5	3.9	2.9
Sec31a	Sec31 homolog A (<i>S. cerevisiae</i>)	11.4	18.8	0.6
Myst2	MYST histone acetyltransferase 2	11.4	3.6	3.1
Zbtb38	Zinc finger and BTB domain-containing protein 38	11.4	2.9	4.0
Slc7a1	solute carrier family 7 (cationic amino acid transporter, y+ system)	11.4	5.8	2.0
Rnf10	ring finger protein 10	11.4	32.0	0.4
Fam65a	family with sequence similarity 65, member A [MGI:1922937]	11.4	18.8	0.6
C1qtnf6	C1q and tumor necrosis factor related protein 6	11.4	35.5	0.3
Mafg	v-maf musculoaponeurotic fibrosarcoma oncogene family, protein 4	11.4	9.4	1.2
Sesn2	sestrin 2	11.4	14.6	0.8
Rgs2	regulator of G-protein signaling 2	11.4	0.3	41.0
Dhrs9	dehydrogenase/reductase (SDR family) member 9	11.4	1.0	11.2
Sash1	SAM and SH3 domain containing 1 [MGI:1917347]	11.4	7.8	1.5
Eif3f	eukaryotic translation initiation factor 3, subunit F	11.4	4.3	2.6
Bax	BCL2-associated X protein [MGI:99702]	11.4	9.3	1.2
Phldb2	pleckstrin homology-like domain, family B, member 2	11.4	4.2	2.7
Pabpn1	poly(A) binding protein, nuclear 1	11.4	1.8	6.4
Cdc73	cell division cycle 73, Paf1/RNA polymerase II complex component	11.3	0.9	12.5
Sec24a	SEC24 related gene family, member A (<i>S. cerevisiae</i>)	11.3	4.2	2.7
Fermt2	fermitin family homolog 2 (<i>Drosophila</i>)	11.3	3.0	3.8
RP23-455I	novel protein similar to rat lectin, galactose binding, soluble 5 Lgal	11.3	3.3	3.5
Col6a1	procollagen type VI alpha 1	11.3	12.8	0.9
C80913	expressed sequence C80913	11.3	2.0	5.7
Psme2	proteasome (prosome, macropain) 28 subunit, beta	11.3	1.1	10.5
Abi1	abl-interactor 1	11.3	2.7	4.2
Trmt61a	tRNA methyltransferase 61A [MGI:2443487]	11.3	2.2	5.2
Rab10	RAB10, member RAS oncogene family [MGI:105066]	11.3	8.5	1.3
Pan3	PAN3 polyA specific ribonuclease subunit homolog (<i>S. cerevisiae</i>)	11.3	1.5	7.6
Epm2aip1	EPM2A (laforin) interacting protein 1	11.3	5.2	2.2
Csnk1g3	casein kinase 1, gamma 3 [MGI:1917675]	11.3	1.9	5.9
B4galt6	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 6	11.2	3.9	2.9
Dbi	diazepam binding inhibitor	11.2	2.4	4.6
E2f1	E2F transcription factor 1	11.2	4.4	2.6
Txndc5	thioredoxin domain containing 5	11.2	9.4	1.2

Cblb	Casitas B-lineage lymphoma b [MGI:2146430]	11.2	6.0	1.9
0610009O	RIKEN cDNA 0610009O20 gene [MGI:1914089]	11.2	1.4	8.0
Pdlim5	PDZ and LIM domain 5 [MGI:1927489]	11.2	5.3	2.1
Alcam	activated leukocyte cell adhesion molecule	11.2	1.0	11.3
Dnajc3	DnaJ (Hsp40) homolog, subfamily C, member 3 [MGI:107373]	11.2	2.6	4.2
Golga3	golgi autoantigen, golgin subfamily a, 3	11.2	2.0	5.7
Socs6	suppressor of cytokine signaling 6	11.1	2.5	4.5
Terf2ip	telomeric repeat binding factor 2, interacting protein [MGI:192987]	11.1	1.3	8.4
RP23-130I	novel protein (2010106G01Rik)	11.1	1.8	6.4
Fdps	farnesyl diphosphate synthetase [MGI:104888]	11.1	1.2	9.2
Zkscan1	zinc finger with KRAB and SCAN domains 1	11.1	2.1	5.2
Sh3gl1	SH3-domain GRB2-like 1 [MGI:700010]	11.1	9.7	1.1
Ncbp2	nuclear cap binding protein subunit 2	11.1	1.3	8.2
RP23-3M1	novel protein (1500011B03Rik)	11.1	1.0	11.5
Ppp1r15b	protein phosphatase 1 regulatory (inhibitor) subunit 15b	11.1	4.4	2.5
Cdr2l	cerebellar degeneration-related protein 2-like	11.1	12.0	0.9
Elovl1	elongation of very long chain fatty acids (FEN1/Elo2, SUR4/Elo3,	11.1	11.4	1.0
Rab11b	RAB11B, member RAS oncogene family	11.1	16.5	0.7
Nucb1	nucleobindin 1	11.1	31.3	0.4
Ube2d2a	ubiquitin-conjugating enzyme E2D 2A [MGI:1930715]	11.1	9.2	1.2
Rab5c	RAB5C, member RAS oncogene family	11.1	7.7	1.4
Cul5	cullin 5	11.1	1.3	8.8
Cdc34	cell division cycle 34 [MGI:102657]	11.0	23.4	0.5
Sdccag3	serologically defined colon cancer antigen 3	11.0	5.7	1.9
Eif2s2	eukaryotic translation initiation factor 2 subunit 2 (beta)	11.0	1.5	7.3
Pdk2	pyruvate dehydrogenase kinase, isoenzyme 2	11.0	5.0	2.2
Cacfd1	likely ortholog of H. sapiens chromosome 9 open reading frame 7 (11.0	3.0	3.7
Ddb1	damage specific DNA binding protein 1 [MGI:1202384]	11.0	5.7	1.9
Serinc3	serine incorporator 3	11.0	4.5	2.5
Rap1gds1	RAP1, GTP-GDP dissociation stimulator 1 [MGI:2385189]	11.0	2.1	5.2
Flot2	flotillin 2	11.0	19.9	0.6
Larp4b	La ribonucleoprotein domain family, member 4B [MGI:106330]	11.0	2.4	4.6
Ahcy11	S-adenosylhomocysteine hydrolase-like 1	11.0	3.1	3.6
Smad4	MAD homolog 4 (Drosophila)	11.0	2.1	5.3
Pi4k2a	phosphatidylinositol 4-kinase type 2 alpha [MGI:1934031]	10.9	6.0	1.8
Cplx2	complexin 2	10.9	5.5	2.0
Bcl2l1	Bcl2-like 1	10.9	8.7	1.3
Fbxw9	F-box and WD-40 domain protein 9	10.9	3.2	3.4
RP23-360/	novel KRAB box and zinc finger, C2H2 type domain containing pr	10.9	0.4	27.6
Dnajb11	DnaJ (Hsp40) homolog, subfamily B, member 11	10.9	2.4	4.5
Pacs1	phosphofurin acidic cluster sorting protein 1 [MGI:1277113]	10.9	23.8	0.5
Ctif	CBP80/20-dependent translation initiation factor [MGI:2685518]	10.9	6.0	1.8
Copa	coatamer protein complex subunit alpha	10.9	8.4	1.3
Rap2c	RAP2C, member of RAS oncogene family	10.9	7.5	1.5
Csnk1g2	casein kinase 1, gamma 2 [MGI:1920014]	10.9	7.9	1.4
H2afj	H2A histone family, member J	10.9	1.8	6.0
Trio	triple functional domain (PTPRF interacting) [MGI:1927230]	10.8	13.0	0.8

Ran	RAN, member RAS oncogene family	10.8	2.0	5.5
Srsf2	splicing factor, arginine/serine-rich 2 (SC-35)	10.8	1.2	8.8
Uba1	ubiquitin-like modifier activating enzyme 1	10.8	20.0	0.5
Tmem131	transmembrane protein 131 [MGI:1927110]	10.8	3.3	3.3
Alg10b	asparagine-linked glycosylation 10B (alpha-1,2-glucosyltransferase	10.8	3.1	3.5
B4galt5	UDP-Gal:betaGlcNAc beta 1 4-galactosyltransferase polypeptide 5	10.8	6.7	1.6
Actg2	actin, gamma 2, smooth muscle, enteric	10.8	2.5	4.4
Rpl39	ribosomal protein L39	10.8	1.0	10.7
Rhbdd1	rhomoid domain containing 1	10.8	2.8	3.8
9430020K1	RIKEN cDNA 9430020K01 gene [MGI:2685174]	10.8	7.5	1.4
Degs1	degenerative spermatocyte homolog 1	10.8	2.2	5.0
Ephx1	epoxide hydrolase 1 microsomal	10.8	4.3	2.5
Ubqln2	ubiquilin 2	10.8	14.3	0.8
Arl1	ADP-ribosylation factor-like 1	10.8	2.4	4.6
Aff1	AF4/FMR2 family, member 1	10.7	6.0	1.8
Srrm1	serine/arginine repetitive matrix 1	10.7	7.9	1.4
Gxylt1	glycosyltransferase 8 domain containing 3	10.7	1.5	7.0
Eci2	peroxisomal delta3, delta2-enoyl-Coenzyme A isomerase	10.7	0.7	15.4
Lmo4	LIM domain only 4	10.7	2.5	4.4
Gm2a	GM2 ganglioside activator protein	10.7	2.0	5.4
Fam63b	family with sequence similarity 63, member B [MGI:2443086]	10.7	1.8	5.9
Napa	N-ethylmaleimide sensitive fusion protein attachment protein alpha	10.7	11.1	1.0
Nkain1	Na ⁺ /K ⁺ transporting ATPase interacting 1	10.7	7.4	1.4
Pard6g	par-6 partitioning defective 6 homolog gamma (C. elegans) [MGI:	10.7	1.9	5.6
Asna1	arsA arsenite transporter, ATP-binding, homolog 1 (bacterial) [MC	10.7	21.0	0.5
Atp5j	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit	10.7	2.8	3.8
Fam114a1	family with sequence similarity 114, member A1	10.6	1.9	5.6
Aga	aspartylglucosaminidase [MGI:104873]	10.6	2.8	3.8
Snrpd1	small nuclear ribonucleoprotein D1 [MGI:98344]	10.6	0.6	17.7
Dkk2	dickkopf homolog 2 (Xenopus laevis) [MGI:1890663]	10.6	1.3	8.2
Stc1	stanniocalcin 1 [MGI:109131]	10.6	7.2	1.5
Iqgap1	IQ motif containing GTPase activating protein 1 [MGI:1352757]	10.6	4.9	2.2
Cast	calpastatin [MGI:1098236]	10.6	2.8	3.8
Vamp7	vesicle-associated membrane protein 7 [MGI:1096399]	10.6	0.9	11.4
Uqcrh	ubiquinol-cytochrome c reductase hinge protein	10.6	2.3	4.5
Slc25a23	solute carrier family 25 (mitochondrial carrier; phosphate carrier), 1	10.6	17.5	0.6
Ucp2	uncoupling protein 2 (mitochondrial, proton carrier)	10.6	11.2	0.9
St5	suppression of tumorigenicity 5 [MGI:108517]	10.6	8.6	1.2
Tmem55a	transmembrane protein 55A	10.6	2.1	5.0
Xpo5	exportin 5 [MGI:1913789]	10.6	1.9	5.6
Kctd10	potassium channel tetramerisation domain containing 10	10.5	8.5	1.2
Dynlrb1	dynein light chain roadblock-type 1	10.5	4.0	2.7
Atox1	ATX1 (antioxidant protein 1) homolog 1 (yeast)	10.5	0.5	20.4
Tnfrsf1a	tumor necrosis factor receptor superfamily, member 1a	10.5	23.4	0.5
Pcmt1	protein-L-isoaspartate (D-aspartate) O-methyltransferase domain co	10.5	1.5	6.9
Fasn	fatty acid synthase	10.5	11.9	0.9
Ykt6	YKT6 homolog (S. Cerevisiae)	10.5	7.4	1.4

Pdzrn3	PDZ domain containing RING finger 3	10.5	4.6	2.3
Morf4l2	mortality factor 4 like 2	10.5	1.4	7.7
Dpp8	dipeptidylpeptidase 8 [MGI:1921638]	10.5	2.4	4.4
Stk24	serine/threonine kinase 24 [MGI:2385007]	10.5	3.5	3.0
Pitpna	phosphatidylinositol transfer protein, alpha	10.5	4.4	2.4
Cdh2	cadherin 2	10.5	3.5	3.0
Fam134a	family with sequence similarity 134, member A [MGI:2388278]	10.5	13.0	0.8
Efr3a	EFR3 homolog A (<i>S. cerevisiae</i>)	10.5	2.8	3.8
RP23-149C	novel protein similar to phosphoserine/threonine/tyrosine interacti	10.5	2.0	5.1
Atp6ap2	ATPase, H ⁺ transporting, lysosomal accessory protein	10.5	0.7	14.0
Rtn3	reticulon 3 [MGI:1339970]	10.5	8.7	1.2
Cdk12	Cdc2-related kinase, arginine/serine-rich	10.4	2.4	4.4
Zeb1	zinc finger E-box binding homeobox 1	10.4	3.2	3.3
Ephb3	Eph receptor B3	10.4	2.2	4.8
Plxnb2	plexin B2	10.4	8.3	1.2
Atp6v1a	ATPase, H ⁺ transporting, lysosomal V1 subunit A	10.4	2.6	4.0
Dctn5	dynactin 5	10.4	1.2	8.5
Map2k1	mitogen activated protein kinase kinase 1	10.4	1.3	8.3
Cnih	cornichon homolog (<i>Drosophila</i>)	10.4	1.3	7.9
Tor1b	torsin family 1, member B	10.4	3.7	2.8
Agpat4	1-acylglycerol-3-phosphate O-acyltransferase 4 (lysophosphatidic ε	10.4	1.3	7.8
Add1	adducin 1 (alpha)	10.4	12.3	0.8
Ebf1	early B-cell factor 1	10.4	2.2	4.7
Btf3l4	basic transcription factor 3-like 4	10.4	0.2	58.3
Stt3b	STT3, subunit of the oligosaccharyltransferase complex, homolog l	10.4	3.9	2.6
Gli3	GLI-Kruppel family member GLI3	10.3	8.8	1.2
Ndufa13	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 13 [MGI	10.3	1.7	6.2
Trim35	tripartite motif-containing 35	10.3	5.4	1.9
Gpi1	glucose phosphate isomerase 1	10.3	6.0	1.7
Fnip2	folliculin interacting protein 2	10.3	2.6	3.9
Usp45	ubiquitin specific petidase 45	10.3	1.2	8.5
Ppap2b	phosphatidic acid phosphatase type 2B	10.3	5.6	1.8
Pgrmc1	progesterone receptor membrane component 1	10.3	3.1	3.3
Srprb	signal recognition particle receptor, B subunit	10.3	5.6	1.8
Ltbp2	latent transforming growth factor beta binding protein 2	10.3	11.6	0.9
Gpr107	G protein-coupled receptor 107	10.3	6.3	1.6
Fam136a	family with sequence similarity 136, member A [MGI:1913738]	10.3	1.4	7.2
Taok3	TAO kinase 3	10.3	4.3	2.4
Map4k4	mitogen-activated protein kinase kinase kinase kinase 4 [MGI:134	10.2	7.0	1.5
Sh2b3	SH2B adaptor protein 3	10.2	25.3	0.4
Pcgf3	polycomb group ring finger 3	10.2	3.3	3.1
Vps26a	vacuolar protein sorting 26 homolog A (yeast) [MGI:1353654]	10.2	2.0	5.1
Brd3	bromodomain containing 3	10.2	3.3	3.1
Atp11a	ATPase, class VI, type 11A	10.2	5.2	2.0
Marveld1	MARVEL (membrane-associating) domain containing 1	10.2	7.9	1.3
Srsf1	serine/arginine-rich splicing factor 1	10.2	2.5	4.0
Cnbp	cellular nucleic acid binding protein	10.2	1.9	5.2

Plau	plasminogen activator, urokinase [MGI:97611]	10.2	3.6	2.9
Mt1	metallothionein 1 [MGI:97171]	10.2	1.8	5.8
Syncrip	synaptotagmin binding, cytoplasmic RNA interacting protein	10.2	1.3	8.0
Sfr1	SWI5 dependent recombination repair 1 [MGI:1915038]	10.2	1.8	5.5
Kbtbd2	kelch repeat and BTB (POZ) domain containing 2	10.2	1.1	8.9
Il1r1	interleukin 1 receptor, type I [MGI:96545]	10.2	2.0	5.0
Luc712	LUC7-like 2 (<i>S. cerevisiae</i>)	10.2	1.1	9.6
Hnrnpab	heterogeneous nuclear ribonucleoprotein A/B	10.1	5.5	1.9
Mob4	MOB1, Mps One Binder kinase activator-like 3 (yeast)	10.1	1.1	9.6
Polk	polymerase (DNA directed), kappa [MGI:1349767]	10.1	0.7	15.0
Mex3c	mex3 homolog C (<i>C. elegans</i>)	10.1	3.8	2.7
Tmx4	thioredoxin-related transmembrane protein 4	10.1	2.3	4.4
Fnbp1	formin binding protein 1	10.1	7.8	1.3
Sgp11	sphingosine phosphate lyase 1	10.1	7.3	1.4
Nop56	NOP56 ribonucleoprotein homolog (yeast)	10.1	1.6	6.3
Ndufb10	NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 10	10.1	0.7	14.0
H6pd	hexose-6-phosphate dehydrogenase (glucose 1-dehydrogenase)	10.1	7.7	1.3
Tgfbr3	transforming growth factor, beta receptor III	10.1	2.4	4.2
Irak1	interleukin-1 receptor-associated kinase 1	10.1	6.8	1.5
Atp6v1b2	ATPase, H ⁺ transporting, lysosomal V1 subunit B2	10.0	3.2	3.1
Ufd11	ubiquitin fusion degradation 1 like	10.0	2.5	4.0
Prdx1	peroxiredoxin 1	10.0	1.5	6.5
Cdc37	cell division cycle 37 [MGI:109531]	10.0	4.6	2.2
Rpl28	ribosomal protein L28	10.0	17.6	0.6
Scarb2	scavenger receptor class B, member 2 [MGI:1196458]	10.0	2.4	4.2
Rnh1	ribonuclease/angiogenin inhibitor 1 [MGI:1195456]	10.0	4.2	2.4
RP23-22A	novel protein (1500003O03Rik)	10.0	11.9	0.8
Sav1	salvador homolog 1 (<i>Drosophila</i>) [MGI:1927144]	10.0	3.5	2.9
Stk35	serine/threonine kinase 35	10.0	13.5	0.7
Rap1a	RAS-related protein-1a [MGI:97852]	10.0	1.0	10.5
Trip12	thyroid hormone receptor interactor 12 [MGI:1309481]	10.0	4.2	2.4
Zfp593	zinc finger protein 593	10.0	1.2	8.5
Stxbp1	syntaxin binding protein 1	10.0	11.2	0.9
Ubxn4	UBX domain protein 4 [MGI:1915062]	10.0	1.7	5.9
Eif3c	eukaryotic translation initiation factor 3, subunit C	10.0	3.4	2.9
Cox14	cytochrome c oxidase assembly protein 14 [MGI:1913629]	10.0	0.5	21.5

Table S10. Primers used for amplifying potential PCBP4 targets

Genes	Primers	Sequences	Region
ZFP871	Forward	5'-CAGTTTGGAGCACCATATC-3'	nt 281-500
	Reverse	5'-AGAGATAAATGGCCAATGAC-3'	
CCNI	Forward	5'-TGTTGGAAAGGGCAATCTC-3'	nt 670-933
	Reverse	5'-TCAACAGTCTTAGCAGCCAG-3'	
BMP1a	Forward	5'-TACACCAGTGAGACAGCAG-3'	nt 341-570
	Reverse	5'-GTATCCTCTGGTGCTAAAG-3'	
ARF3	Forward	5'-CCATTGGGTT TAATGTGGAG-3'	nt 371-599
	Reverse	5'-ACACAAGGAGCACAGCATC-3'	
RAB1	Forward	5'-CAAGTTGTT GGTAGGGAAC-3'	nt 382-580
	Reverse	5'-CACCAGCTGTAGCTCCAG-3'	
BMP4	Forward	5'-GTTTGTCAA GATTGGCTCC-3'	nt 361-510
	Reverse	5'-GTATCAAAC TAGCATGGCTC-3'	
Rhoq	Forward	5'-CATGACTGACGTCTTCCTC-3'	nt 732-950
	Reverse	5'-GCTAGTTTCTGTCCTTGTTTC-3'	
Polr3gl	Forward	5'-GCACTGAAGCAAGAGCTG-3'	nt 301-520
	Reverse	5'-GGGAAGGATAATGGTGGT-3'	

Table S11. Primers used to amplify fragments A-F from ZFP871 3`UTR

Probe templates	Primers	Sequences
A (nt 1968-3480)	Forward	5'-GGATCCTAATACGACTCACTAAGGGAGTCATGGGAGGATTTTTTCC-3'
	Reverse	5'-CAATTTACCAATGAATCTAACAT-3'
B (nt 3481-5000)	Forward	5'-GGATCCTAATACGACTCACTATAGGGAGATATTTGAAGTATGCCAGTCC-3'
	Reverse	5'-AGGTAGTGAATAGCTGCTGG-3'
C (nt 5001-6520)	Forward	5'-GGATCCTAATACGACTCACTATAGGGAGGTAGCTTCTCAGTAAGGGAG-3'
	Reverse	5'-TAAGGGAGTCTACTTGGGAG-3'
D (nt 6251-8070)	Forward	5'-GGATCCTAATACGACTCACTATAGGGAGTTCATCTCTCTAGTTTGTTTAC-3'
	Reverse	5'-TTTCCAGAAATAGAGAACACAC-3'
E (nt 8071-9582)	Forward	5'-GGATCCTAATACGACTCACTATAGGGAGTAATGACATTGGAACCTTTGAGG-3'
	Reverse	5'-TAAACATGGAAGAGAACAAATG-3'
F (nt 9583-10829)	Forward	5'-GGATCCTAATACGACTCACTATAGGGAGACCTACAGTCTCCTTAATGC-3'
	Reverse	5'-GAGATTTACTTACAGGAGTATC-3'