

48 shared genes	4 week rank	8 week rank	4 week log2	8 week log2	Pcd Documented?
Atxn2	1	2	-7.4732094	-6.780358	
Ubc	2	16	-2.0086167	-1.8715258	
Serpina3n	5	52	-1.682463	2.0662901	
Gm10382	14	84	-1.602179	-1.9141468	
Gabra2	6	66	-1.2721598	-1.3045175	
Slc5a7	316	133	-0.9357452	3.7378566	
Scn4b	12	29	-0.8541392	-1.4225496	197
Gpr63	73	318	-0.7305293	-0.73758966	
Adamts18	53	90	-0.7055312	1.3110712	
Sostdc1	184	63	-0.6728273	1.841246	
Necab3	58	210	-0.62214035	0.92127657	
Mal	64	166	-0.5402001	0.7186927	
Gjc2	178	279	-0.53132725	0.86474824	
Rgs8	77	174	-0.5133364	-0.66039985	
Samd8	128	286	-0.49978667	-0.5847282	
Icmt	103	180	-0.49485043	-0.6580094	28
Col4a1	210	199	-0.4889918	0.96041375	
Epn3	297	310	-0.47788462	0.74240714	
Gsn	131	70	-0.4761319	1.0321409	
Garnl3	174	270	-0.45929033	-0.58577293	36
Kcng4	215	108	-0.43691155	-0.82882285	142
Sema5a	295	272	-0.4325809	-0.64830124	
Iqsec3	248	314	-0.42943862	-0.570212	
Rgs7bp	244	122	-0.41064015	-0.75939214	
Pde5a	345	223	-0.41029027	-0.66319704	
Cldn11	256	137	-0.40198544	0.79042125	
Nefh	313	235	-0.39272797	-0.62041676	
6330403K07Rik	157	17	0.54140764	-1.6596458	
Aebp1	197	229	0.5458387	0.8129056	
Adamts10	75	37	0.5778172	1.4173182	
Nr4a2	124	30	0.5869032	1.5592657	
Thbs1	258	186	0.63595587	1.1797714	
Rpl34	206	141	0.6934195	-1.3018614	
Ptgds	21	21	0.7119627	1.4394398	
Sema3b	309	73	0.7164313	1.8125392	
Per2	90	98	0.7325136	-1.095624	
Snhg11	18	219	0.7580691	-0.60536915	
Ogn	85	80	0.7690683	1.572512	
C4b	183	138	0.8264895	-1.3166682	
Nr4a3	29	56	0.8341391	1.2037193	
Slc22a6	141	230	0.83604294	1.3407391	
Lyz2	193	260	0.9160939	-1.2119151	
Neat1	8	50	1.0601262	1.3428527	
Slc6a13	24	234	1.095702	1.0721496	
Hbb-b1	3	146	1.0986458	0.9601942	
Hba-a1	7	304	1.1405486	1.0749602	

Hba-a2	10	74	1.1489944	2.4652126
Hbb-b2	4	124	1.3251873	1.9196464

Change

0.6928514
0.1370909
3.7487531
-0.3119678
-0.0323577
4.6736018
-0.5684104
-0.00706036
2.0166024
2.5140733
1.54341692
1.2588928
1.39607549
-0.14706345
-0.08494153
-0.16315897
1.44940555
1.22029176
1.5082728
-0.1264826
-0.3919113
-0.21572034
-0.14077338
-0.34875199
-0.25290677
1.19240669
-0.22768879
-2.20105344
0.2670669
0.839501
0.9723625
0.54381553
-1.9952809
0.7274771
1.0961079
-1.8281376
-1.36343825
0.8034437
-2.1431577
0.3695802
0.50469616
-2.128009
0.2827265
-0.0235524
-0.1384516
-0.0655884

1.3162182
0.5944591

Gene	4 week rank	8 week rank	4 week log2	8 week log2	Documented?	Change
Gchfr	61	393	-3.1628864	-1.9024493	18	1.260437
Mdfi	35	71	-1.736591	-2.3656747		-0.62908
Opn3	73	91	-1.5936227	-1.9498464		-0.35622
Gm13944	64	307	-1.5921236	-1.2473494		0.344774
Fam107b	7	1	-1.586022	-2.375244		-0.78922
Fgf7	24	24	-1.4567494	-2.3024333		-0.84568
Gpr63	32	26	-1.341803	-2.212989		-0.87119
9530056K15Rik	23	33	-1.3229147	-1.9330697		-0.61016
Gng13	13	3	-1.3208373	-2.5796657		-1.25883
Dap	72	235	-1.2222348	-1.0657455		0.156489
Gm12824	46	21	-1.1985961	-2.0349653	140	-0.83637
Rgs8	9	2	-1.1860577	-1.7970152		-0.61096
Stac	103	83	-1.1562532	-1.851951		-0.6957
Cep76	12	5	-1.1432967	-1.6916614		-0.54836
Grid2ip	15	13	-1.1255116	-1.6129229		-0.48741
Plcb3	25	93	-1.1221681	-0.99963194		0.122536
Tmem200b	135	110	-1.0901387	-1.7781327		-0.68799
Fam117a	173	70	-1.0760707	-1.762892		-0.68682
Car7	45	50	-1.0565186	-1.4780756		-0.42156
Espn	299	296	-1.0171522	-1.459863		-0.44271
Col18a1	21	22	-1.0123405	-1.4858131	37	-0.47347
Pcp4	17	37	-0.9830096	-1.1230667		-0.14006
Itпка	36	39	-0.98234314	-1.3842708		-0.40193
Neat1	71	72	-0.97661334	1.4284111		2.405024
Spag5	83	133	-0.9754261	-1.049072		-0.07365
Gldc	79	118	-0.9675749	-1.040375		-0.0728
Gm14033	155	89	-0.9632421	-1.581022		-0.61778
Garnl3	20	6	-0.9503792	-1.6654588		-0.71508
Tspan11	93	99	-0.9416059	-1.2430423		-0.30144
Corin	220	82	-0.93914545	-1.9607197		-1.02157
Chst8	117	208	-0.9331187	-1.0566542	105	-0.12354
Nek2	122	223	-0.91590637	-1.0888274		-0.17292
Sbk1	18	38	-0.91478354	-1.0085726		-0.09379
Pcp2	28	15	-0.8928881	-1.3840054		-0.49112
Atp2a3	19	8	-0.8927399	-1.4269689		-0.53423
Arhgef33	30	18	-0.8894222	-1.3687406		-0.47932
Col5a1	205	273	-0.88701934	-1.1321748		-0.24516
Dgkh	125	250	-0.8835243	-0.8227943		0.06073
Gm11799	85	104	-0.8825907	-1.105717		-0.22313
Doc2b	37	9	-0.87546104	-1.5783529	27	-0.70289
Gm5083	214	77	-0.8693092	-1.7852635		-0.91595
Trpc3	38	14	-0.85667306	-1.4492627		-0.59259
Ppp1r16b	26	17	-0.8559896	-1.2664505		-0.41046
Homer3	31	29	-0.848505	-1.1761743		-0.32767
Dagla	44	44	-0.843947	-1.1323295		-0.28838
Stk17b	50	10	-0.8407977	-1.6109855		-0.77019

Cep72	218	100	-0.83775324	-1.6540681		-0.81631
Npr1	275	369	-0.8325546	-0.8167311		0.015824
Car8	22	16	-0.8192504	-1.192376	4	-0.37313
Atl2	42	41	-0.81413406	-1.0428925		-0.22876
Pisd-ps1	106	28	-0.81322527	-1.6354429		-0.82222
AK129341	91	266	-0.8095341	-0.68256754	67	0.126967
Lhpp	196	380	-0.7993308	-0.7797738		0.019557
Aldoc	33	60	-0.7806749	-0.80673176		-0.02606
Bcar1	52	59	-0.7652379	-0.9619041	135	-0.19667
Rab3d	217	173	-0.7569622	-1.2293693		-0.47241
Hpcal1	53	32	-0.739867	-1.1714885		-0.43162
Rtel1	142	305	-0.7387348	-0.7552802		-0.01655
Inpp5a	49	40	-0.7238795	-1.000805	48	-0.27693
Srl	300	121	-0.72360516	-1.5241686		-0.80056
Slc1a6	57	49	-0.7162619	-1.0212384	2	-0.30498
Zdhhc14	96	167	-0.7089192	-0.7751523	127	-0.06623
Ppp1r1b	70	148	-0.7058625	-0.6899535		0.015909
Pde9a	123	125	-0.70137	-0.9843157		-0.28295
lcmt	51	7	-0.7003992	-1.3535386	28	-0.65314
Pkp3	291	177	-0.7000383	-1.2990764		-0.59904
Calb1	48	11	-0.6996092	-1.2677819	5	-0.56817
D6Wsu116e	56	35	-0.6896503	-1.0624675	59	-0.37282
Rnf19b	77	56	-0.6860558	-0.9964783		-0.31042
F2r	215	338	-0.68600786	-0.67226744	47	0.01374
Cntnap5b	207	73	-0.6828437	-1.2879454		-0.6051
Dner	54	45	-0.6786867	-0.94155747	60	-0.26287
Clmn	68	42	-0.6731929	-1.040444		-0.36725
Zfp385c	126	75	-0.66655725	-1.198054		-0.5315
Myo10	113	123	-0.66512704	-0.8324347		-0.16731
Cacna1g	65	25	-0.6486804	-1.1379119	22	-0.48923
Ipo5	90	154	-0.6421321	-0.6602881		-0.01816
Fam174b	158	69	-0.6417045	-1.1364979		-0.49479
Svil	204	178	-0.63705176	-0.9373762		-0.30032
Grik1	237	180	-0.63588125	-1.0222529		-0.38637
Rhobtb2	114	195	-0.6308134	-0.63379		-0.00298
Dgkz	69	57	-0.62974054	-0.8526913	169	-0.22295
Fam82a2	101	114	-0.6172829	-0.7717346		-0.15445
Prmt8	124	115	-0.61621445	-0.8144414		-0.19823
Ywhah	80	19	-0.6040897	-1.156747	107	-0.55266
Id2	97	46	-0.6027338	-1.0800434		-0.47731
Far2	199	116	-0.6025649	-1.0123892		-0.40982
Shank2	86	92	-0.6011147	-0.7716193		-0.1705
Grid2	87	74	-0.59829867	-0.8146188	68	-0.21632
Ttll5	109	98	-0.594562	-0.81908727		-0.22453
2310003H01Rik	255	335	-0.5920057	-0.7553412		-0.16334
Itgb1bp1	174	260	-0.5870017	-0.60437876	119	-0.01738
Nsg1	82	55	-0.58699805	-0.85762274		-0.27062

3830431G21Rik	130	84	-0.58180964	-0.9195499	52	-0.33774
Ppp1r17	95	43	-0.58121586	-1.030168		-0.44895
Cacnb2	201	139	-0.5750066	-0.87199765		-0.29699
BC057022	251	211	-0.56423205	-0.8066403		-0.24241
Tmem90b	147	239	-0.55940557	-0.5616138		-0.00221
Trim9	115	105	-0.559361	-0.72590876		-0.16655
Ppp4r4	200	136	-0.55809295	-0.85935646		-0.30126
Itpr1	89	12	-0.5561066	-1.2351104	12	-0.679
Mtss1	112	47	-0.5532711	-0.9974868	120	-0.44422
Foxp4	177	347	-0.5528783	-0.49595985		0.056918
Prkcg	102	80	-0.5518949	-0.7802916		-0.2284
Kcnab1	131	127	-0.54686195	-0.7133366	92	-0.16647
Plxdc1	161	66	-0.5463295	-1.0438405	158	-0.49751
Pde5a	143	30	-0.5421276	-1.258494		-0.71637
Nell1	232	85	-0.5365963	-1.0486127		-0.51202
Ptprm	162	108	-0.52843124	-0.7908632		-0.26243
Strn3	139	119	-0.51837933	-0.71039146		-0.19201
Cttnbp2	222	196	-0.5170332	-0.6843799		-0.16735
Fam107a	118	241	-0.51694506	-0.45982414		0.057121
Atp2a2	119	130	-0.50822455	-0.6193839		-0.11116
Tuba8	254	166	-0.50255233	-0.8495642		-0.34701
Shisa6	144	51	-0.49811605	-0.9786639		-0.48055
Ppapdc2	233	122	-0.4980856	-0.85093164		-0.35285
Arhgap5	137	106	-0.497163	-0.6918551		-0.19469
Arhgap26	149	67	-0.49071807	-0.86041486		-0.3697
Spnb3	128	94	-0.4896268	-0.70833534	113	-0.21871
Rdh11	242	170	-0.4884815	-0.7770436	210	-0.28856
Agfg2	283	137	-0.48655415	-0.90376574		-0.41721
Arhgap20	224	87	-0.48157996	-0.89669704		-0.41512
Fam40b	171	81	-0.47811958	-0.820733		-0.34261
Gas7	140	203	-0.47568476	-0.51920754		-0.04352
Lhx1	273	215	-0.46799922	-0.67304504		-0.20505
Ptprr	203	134	-0.46414703	-0.72594863	101	-0.2618
Gabbr2	163	112	-0.4613439	-0.67976457		-0.21842
Slc20a1	192	153	-0.45336106	-0.6421431		-0.18878
Zbtb46	263	141	-0.44939336	-0.83958495		-0.39019
Atp2b2	182	188	-0.42279202	-0.52971137	167	-0.10692
Kcnma1	282	156	-0.41055167	-0.68585426		-0.2753
Anks1b	238	120	-0.40570357	-0.6919262		-0.28622
Kitl	246	48	-0.40045688	-0.99318266	41	-0.59273
Lrp8	284	143	-0.3994051	-0.72159475		-0.32219
Kcnc3	211	183	-0.39874423	-0.5390756		-0.14033
Mprip	234	176	-0.39155364	-0.5631955		-0.17164
Nomo1	264	168	-0.38698658	-0.61567646		-0.22869
Inpp4a	268	216	-0.37491003	-0.5163853		-0.14148
Kcng4	288	142	-0.37281936	-0.6656184	142	-0.2928
Pvalb	249	172	-0.3724676	-0.56631994		-0.19385

Cerk	279	244	-0.3660508	-0.47440335	88	-0.10835
Psd2	305	79	-0.35779342	-0.79299945		-0.43521
Asph	307	228	-0.3437499	-0.48411867	208	-0.14037
Gabbr1	292	161	-0.34291926	-0.5729819		-0.23006
Rapgef1	309	267	0.43465036	0.57586735		0.141217
Pde1c	223	174	0.46981442	0.6331059		0.163291
Gm15564	152	375	0.48513827	-0.385875		-0.87101
Atp6v0c	281	131	0.49188605	1.0738758		0.58199
Lars2	116	224	0.51681894	-0.4779764		-0.9948
7SK	293	146	0.54714906	-1.0389379		-1.58609
AY036118	84	88	0.5774237	-0.7329771		-1.3104
Spp1	208	207	0.61764187	0.7509367		0.133295
Casp3	262	200	0.71463716	1.0640782		0.349441
Slc18a2	157	189	1.0258034	-1.0476625		-2.07347
Hrk	99	132	1.1286	1.3608981		0.232298
Pappa	75	68	1.2137659	1.4523327		0.238567
Gm11223	110	53	1.3179293	-1.7890954		-3.10702
Rasgrf2	108	378	1.368393	-0.5162192		-1.88461
Baiap3	60	306	1.9739164	-0.64551187		-2.61943
Tac1	178	348	2.1793318	-0.958149		-3.13748
Tph2	40	20	2.364149	-2.310985		-4.67513
Tpm3-rs7	105	76	2.9142725	-3.5522106		-6.46648
Slc6a4	62	97	3.024273	-1.7999885		-4.82426
Gh	5	217	4.0395603	-4.7703366		-8.8099

KO	Q127	
Atxn2	Gchfr	
Ubc	Mdfi	
Serpina3n	Opn3	
Gm10382	Gm13944	
Gabra2	Fam107b	
Slc5a7	Fgf7	
Scn4b	Gpr63	
Gpr63	9530056K15Rik	8
Adamts18	Gng13	
Sostdc1	Dap	
Necab3	Gm12824	
Mal	Rgs8	
Gjc2	Stac	
Rgs8	Cep76	13
Samd8	Grid2ip	
Icmt	Plcb3	66
Col4a1	Tmem200b	
Epn3	Fam117a	
Gsn	Car7	
Garnl3	Espn	29
Kcng4	Col18a1	140
Sema5a	Pcp4	
Iqsec3	Itpka	
Rgs7bp	Neat1	
Pde5a	Spag5	108
Cldn11	Gldc	
Nefh	Gm14033	
330403K07F	Garnl3	
Aebp1	Tspan11	
Adamts10	Corin	
Nr4a2	Chst8	
Thbs1	Nek2	
Rpl34	Sbk1	
Ptgds	Pcp2	
Sema3b	Atp2a3	
Per2	Arhgef33	
Snhg11	Col5a1	
Ogn	Dgkh	
C4b	Gm11799	
Nr4a3	Doc2b	
Slc22a6	Gm5083	
Lyz2	Trpc3	
Neat1	Ppp1r16b	25
Slc6a13	Homer3	

Shared genes across all four treatment groups

		4 wk KO	8 wk KO
	Gpr63	-0.73053	-0.73759
	Rgs8	-0.51334	-0.6604
Pcd Marker	Icmt	-0.49485	-0.65801
Pcd Marker	Garnl3	-0.45929	-0.58577
Pcd Marker	Kcng4	-0.43691	-0.82882
	Pde5a	-0.41029	-0.6632
	Neat1	1.060126	1.342853



Hbb-b1	Dagla
Hba-a1	Stk17b
Hba-a2	Cep72
Hbb-b2	Npr1
	Car8
	Atl2
	Pisd-ps1
	AK129341
	Lhpp
	Aldoc
	Bcar1
	Rab3d
	Hpcal1
	Rtel1
	Inpp5a
	Srl
	Slc1a6
	Zdhhc14
	Ppp1r1b
	Pde9a
	Icmt
	Pkp3
	Calb1
	D6Wsu116e
	Rnf19b
	F2r
	Cntnap5b
	Dner
	Clmn
	Zfp385c
	Myo10
	Cacna1g
	Ipo5
	Fam174b
	Svil
	Grik1
	Rhobtb2
	Dgkz
	Fam82a2
	Prmt8
	Ywhah
	Id2
	Far2
	Shank2
	Grid2
	Ttll5
	2310003H01Rik

Itgb1bp1
Nsg1
3830431G21Rik
Ppp1r17
Cacnb2
BC057022
Tmem90b
Trim9
Ppp4r4
Itpr1
Mtss1
Foxp4
Prkcg
Kcnab1
Plxdc1
Pde5a
Nell1
Ptprm
Strn3
Cttnbp2
Fam107a
Atp2a2
Tuba8
Shisa6
Ppapdc2
Arhgap5
Arhgap26
Spon3
Rdh11
Agfg2
Arhgap20
Fam40b
Gas7
Lhx1
Ptpr
Gabbr2
Slc20a1
Zbtb46
Atp2b2
Kcnma1
Anks1b
Kitl
Lrp8
Kcnc3
Mprp
Nomo1
Inpp4a

Kcng4

Pvalb

Cerk

Psd2

Asph

Gabbr1

Rapgef1

Pde1c

Gm15564

Atp6v0c

Lars2

7SK

AY036118

Spp1

Casp3

Slc18a2

Hrk

Pappa

Gm11223

Rasgrf2

Baiap3

Tac1

Tph2

Tpm3-rs7

Slc6a4

Gh

	4 wk Tg	8 wk Tg
	-1.3418	-2.21299
	-1.18606	-1.79702
	-0.7004	-1.35354
	-0.95038	-1.66546
	-0.37282	-0.66562
	-0.54213	-1.25849
	-0.97661	1.428411

Very liberal analysis of RNA seq experiments. More so than v2.

		4 wk KO	8 wk KO		4 wk Tg	8 wk Tg
Pcd Marker	Gpr63	-0.73053	-0.73759		-1.3418	-2.21299
	Rgs8	-0.51334	-0.6604		-1.18606	-1.79702
	Icmt	-0.49485	-0.65801		-0.7004	-1.35354
Pcd Marker	Garnl3	-0.45929	-0.58577		-0.95038	-1.66546
Pcd Marker	Kcng4	-0.43691	-0.82882		-0.37282	-0.66562
	Pde5a	-0.41029	-0.6632		-0.54213	-1.25849
	Neat1	1.060126	1.342853		-0.97661	1.428411

Neat1 nuclear paraspeckle assembly transcript 1 (non-protein coding)

LncRNA approximately 20kb

Upregulated in HD brain

aka Men epsilon

contains experimentally detected p53 binding sites in its TSS region

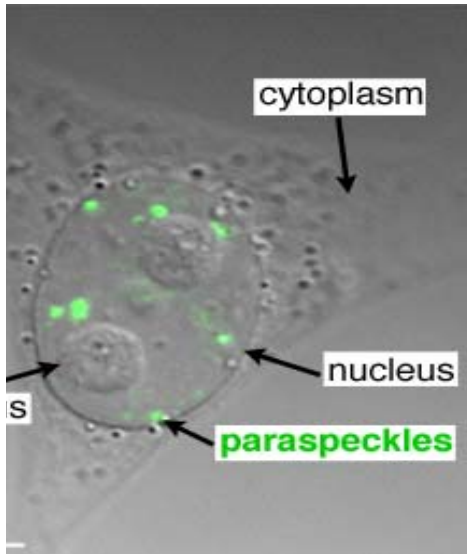
The other upregulated lncRNA is NEAT1 — also known as Men epsilon. This lncRNA is one of the first examples of a transcript necessary for the formation of a nuclear structure — the paraspeckles (Sunwoo et al., 2009). Presently the significance of this is unclear, particularly given that a recent study showed that NEAT1-knockout mice are viable, despite completely lacking paraspeckles (Nakagawa et al., 2011). Generally, NEAT1 appears to be induced during the differentiation of various cell lineages (Dinger et al., 2008; Mercer et al., 2010; Sunwoo et al., 2009), and its expression is ubiquitous, consistent with it being a cellular structural component (Sunwoo et al., 2009). Nevertheless, NEAT1 may have some specific roles in the pathology of the brain, since its expression is specifically upregulated in the nucleus accumbens of heroin users (M



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ichelhaugh et al., 2011).