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# Main Figures:	5
# Supplementary Figures:	10
# Supplementary Tables:	5
# Supplementary Videos:	N/A

Reporting Checklist for Nature Neuroscience

This checklist is used to ensure good reporting standards and to improve the reproducibility of published results. For more information, please read Reporting Life Sciences Research.

Please note that in the event of publication, it is mandatory that authors include all relevant methodological and statistical information in the manuscript.

▶ Statistics reporting, by figure

- Please specify the following information for each panel reporting quantitative data, and where each item is reported (section, e.g. Results, & paragraph number).
- Each figure legend should ideally contain an exact sample size (n) for each experimental group/condition, where n is an exact number and not a range, a clear definition of how n is defined (for example x cells from x slices from x animals from x litters, collected over x days), a description of the statistical test used, the results of the tests, any descriptive statistics and clearly defined error bars if applicable.
- For any experiments using custom statistics, please indicate the test used and stats obtained for each experiment.
- Each figure legend should include a statement of how many times the experiment shown was replicated in the lab; the details of sample collection should be sufficiently clear so that the replicability of the experiment is obvious to the reader.
- For experiments reported in the text but not in the figures, please use the paragraph number instead of the figure number.

Note: Mean and standard deviation are not appropriate on small samples, and plotting independent data points is usually more informative. When technical replicates are reported, error and significance measures reflect the experimental variability and not the variability of the biological process; it is misleading not to state this clearly.

	TEST USED		n			DESCRIPTIVE STATS (AVERAGE, VARIANCE)		P VALUE		DEGREES OF FREEDOM & F/t/z/R/ETC VALUE	
FIGURE NUMBER	WHICH TEST?	SECTION & PARAGRAPH #	EXACT VALUE	DEFINED?	SECTION & PARAGRAPH #	REPORTED?	SECTION & PARAGRAPH #	EXACT VALUE	SECTION & PARAGRAPH #	VALUE	SECTION & PARAGRAPH #
example 1a	one-way ANOVA	Fig. legend	9, 9, 10, 15	mice from at least 3 litters/group	Methods para 8	error bars are mean +/- SEM	Fig. legend	p = 0.044	Fig. legend	F(3, 36) = 2.97	Fig. legend
example results, para 6	unpaired t-test	Results para 6	15	slices from 10 mice	Results para 6	error bars are mean +/- SEM	Results para 6	p = 0.0006	Results para 6	t(28) = 2.808	Results para 6
+/− 1a sf1a	student's t test (unpaired)	legend	n=5,9/ group	human postmortem samples	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.0223	legend	t(12)=2.623	legend

	FIGURE NUMBER	TEST USED		n			DESCRIPTIVE STATS (AVERAGE, VARIANCE)		P VALUE		DEGREES OF FREEDOM & F/t/z/R/ETC VALUE	
		WHICH TEST?	SECTION & PARAGRAPH #	EXACT VALUE	DEFINED?	SECTION & PARAGRAPH #	REPORTED?	SECTION & PARAGRAPH #	EXACT VALUE	SECTION & PARAGRAPH #	VALUE	SECTION & PARAGRAPH #
+/−	1b	student's t test (unpaired)	legend	n=10,14/ group	rats from at least 3 litters/group	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.0106	legend	t(22)=2.793	legend
+/−	1c	student's t test (unpaired)	legend	n=9/ group	rats from at least 3 litters/group	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.00995	legend	t(16)=2.923	legend
+/−	1d	student's t test (unpaired)	legend	n=12/ group	mice from at least 3 litters/group	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.0423	legend	t(22)=2.155	legend
+/−	2a	two-way ANOVA	legend	n=9/ group, for all bdnf exons	rats from at least 3 litters/group	legend	mean +/- SEM	legend	region effect, p=0.435; drug effect, p<0.001; interaction, p=0.805	legend	region effect, F(3,64)=0.923; drug effect, F(1,64)=12.898; interaction, F(3,64)=0.328	legend
+/−	2c	two-way ANOVA	legend	n=6/ group, for bdnf p1; n=6,5/ group, for bdnf p2; n=6/ group, for bdnf p4; n=6/ group, for bdnf p6	rats from at least 2 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	region effect, p=0.395; drug effect, p<0.001; interaction, p=0.362	legend	region effect, F(3,39)=1.019; drug effect, F(1,39)=13.279; interaction, F(3,39)=1.096	legend
+/−	2d	two-way ANOVA	legend	n=5/ group, for bdnf p1; n=5,4/ group, for bdnf p2; n=5/ group, for bdnf p4; n=5/ group, for bdnf p6	rats from at least 2 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	region effect, p=0.002; drug effect, p<0.001; interaction, p=0.069	legend	region effect, F(3,31)=6.474; drug effect, F(1,31)=18.820; interaction, F(3,31)=2.609	legend
+/−	2e	two-way ANOVA	legend	n=5/ group, for all bdnf exons	rats from at least 2 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	region effect, p=1.000; drug effect, p<0.001; interaction, p=0.919	legend	region effect, F(3,32)=0.00309; drug effect, F(1,32)=19.291; interaction, F(3,32)=0.165	legend

+ -	3a sf2a	two-way ANOVA	legend	n=4/ group, for bdnf p1; n=4/ group, for bdnf p2; n=4/ group, for bdnf p4; n=3,4/ group, for bdnf p6	rats from at least 3 litters/group	legend	mean +/- SEM	legend	region effect, p=0.252; drug effect, p=0.061; interaction, p=0.163	legend	region effect, $F_{(3,23)}$=1.458; drug effect, $F_{(1,23)}$=3.876; interaction, $F_{(3,23)}$=1.872	legend
+ -	3a sf2b	two-way ANOVA	legend	n=5,4/ group, for bdnf p1; n=4/ group, for bdnf p2; n=5,4/ group, for bdnf p4; n=5,4/ group, for bdnf p6	rats from at least 3 litters/group	legend	mean +/- SEM	legend	region effect, p=0.698; drug effect, p=0.002; interaction, p=0.906	legend	region effect, $F_{(3,27)}$=0.482; drug effect, $F_{(1,27)}$=11.509; interaction, $F_{(3,27)}$=0.184	legend
+ -	3a sf2c	two-way ANOVA	legend	n=4,5/ group, for bdnf p1; n=5/ group, for bdnf p2; n=5/ group, for bdnf p4; n=5/ group, for bdnf p6	rats from at least 3 litters/group	legend	mean +/- SEM	legend	region effect, p=0.157; drug effect, p=0.337; interaction, p=0.132	legend	region effect, $F_{(3,31)}$=1.857; drug effect, $F_{(1,31)}$=0.950; interaction, $F_{(3,31)}$=2.017	legend
+ -	3a sf2d	two-way ANOVA	legend	n=4/ group, for all bdnf promoters	rats from at least 3 litters/group	legend	mean +/- SEM	legend	region effect, p=0.231; drug effect, p=0.546; interaction, p=0.425		region effect, $F_{(3,18)}$=1.570; drug effect, $F_{(1,18)}$=0.379; interaction, $F_{(3,18)}$=0.978	legend
+ -	3a sf2e	two-way ANOVA	legend	n=5/ group, for all bdnf promoters	rats from at least 3 litters/group	legend	mean +/- SEM	legend	region effect, p=0.552; drug effect, p=0.537; interaction, p=0.585		region effect, $F_{(3,32)}$=0.712; drug effect, $F_{(1,32)}$=0.389; interaction, $F_{(3,32)}$=0.657	legend

+ - -	3a sf2f	two-way ANOVA	legend	n=4/ group, for bdnf p1; n=4/ group, for bdnf p2; n=4,3/ group, for bdnf p4; n=4,3/ group, for bdnf p6	rats from at least 3 litters/group	legend	mean +/- SEM	legend	region effect, p=0.003; drug effect, p=0.708; interaction, p=0.003	legend	region effect, F(3,22)=6.442; drug effect, F(1,22)=0.144; interaction, F(3,22)=6.178	legend
+ - -	3a sf2g	two-way ANOVA	legend	n=6,5/ group, for all bdnf promoters	rats from at least 3 litters/group	legend	mean +/- SEM	legend	region effect, p=0.819; drug effect, p=0.124; interaction, p=0.707	legend	region effect, F(3,36)=0.309; drug effect, F(1,36)=2.482; interaction, F(3,36)=0.467	legend
+ - -	3a	student's t test (unpaired)	legend	n=4/ group, for acH3	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.0417, for acH3	legend	t(6)=2.581, for acH3	legend
+ - -	3a	student's t test (unpaired)	legend	n=5/ group, for H3K4me3	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.0495, for H3K4me3	legend	t(8)=2.312, for H3K4me3	legend
+ - -	3b sf2h	two-way ANOVA	legend	n=6,5/ group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	region effect, p=0.653; drug effect, p<0.001; interaction, p=0.709	legend	region effect, F(3,36)=0.541; drug effect, F(1,36)=25.829; interaction, F(3,36)=0.464	legend
+ - -	3b sf2i	two-way ANOVA	legend	n=5,4/ group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	region effect, p=0.614; drug effect, p<0.001; interaction, p=0.651	legend	region effect, F(3,28)=2.450; drug effect, F(1,28)=37.786; interaction, F(3,28)=0.552	legend
+ - -	3c sf2j	two-way ANOVA	legend	n=4/ group, for bdnf p1; n=3,4/ group, for bdnf p2; n=4/ group, for bdnf p4; n=4/ group, for bdnf p6	rats from at least 2 litters/group 2 animals pooled/ sample	legend	median, quartiles (boxes), range (whiskers)	legend	region effect, p=0.106; drug effect, p<0.001; interaction, p=0.118	legend	region effect, F(3,23)=2.285; drug effect, F(1,23)=24.884; interaction, F(3,23)=2.177	legend
+ - -	3d sf2k	two-way ANOVA	legend	n=5,4/ group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/ sample	legend	median, quartiles (boxes), range (whiskers)	legend	region effect, p=0.927; drug effect, p=0.951; interaction, p=0.927	legend	region effect, F(3,27)=0.153; drug effect, F(1,27)=0.00384; interaction, F(3,27)=0.153	legend
+ - -	3e sf2l	two-way ANOVA	legend	n=4/ group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	region effect, p=0.327; drug effect, p=0.002; interaction, p=0.668	legend	region effect, F(3,24)=1.211; drug effect, F(1,24)=12.662; interaction, F(3,24)=0.526	legend

+ −	3e sf2m	two-way ANOVA	legend	n=4,3/group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/sample	legend	mean +/- SEM	legend	region effect, p=0.332; drug effect, p<0.001; interaction, p=0.368	legend	region effect, F(3,20)=1.209; drug effect, F(1,20)=16.872; interaction, F(3,20)=1.111	legend
+ −	3f sf2n	two-way ANOVA	legend	n=4/group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/sample	legend	mean +/- SEM	legend	region effect, p=0.997; drug effect, p<0.001; interaction, p=0.067	legend	region effect, F(3,24)=0.0154; drug effect, F(1,24)=13.708; interaction, F(3,24)=2.713	legend
+ −	3f sf2o	two-way ANOVA	legend	n=4/group, for bdnf p1; n=3,4/group, for bdnf p2; n=4/group, for bdnf p4; n=4/group, for bdnf p6	rats from at least 2 litters/group 2 animals pooled/sample	legend	mean +/- SEM	legend	region effect, p=0.848; drug effect, p=0.253; interaction, p=0.827	legend	region effect, F(3,23)=0.267; drug effect, F(1,23)=1.372; interaction, F(3,23)=0.298	legend
+ −	3f sf2p	two-way ANOVA	legend	n=5/group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/sample	legend	mean +/- SEM	legend	region effect, p=0.950; drug effect, p=0.002; interaction, p=0.991	legend	region effect, F(3,32)=0.117; drug effect, F(1,32)=10.975; interaction, F(3,32)=0.0345	legend
+ −	3h	student's t test (unpaired)	legend	n=9/group	mice from at least 3 litters/group	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.0456	legend	t(16)=2.168	legend
+ −	3i	student's t test (unpaired)	legend	n=12/group	mice from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.000435	legend	t(22)=4.134	legend
+ −	4a	two-way ANOVA	legend	n=5/group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/sample	legend	mean +/- SEM	legend	region effect, p=0.774; drug effect, p<0.001; interaction, p=0.745	legend	region effect, F(3,32)=0.371; drug effect, F(1,32)=15.053; interaction, F(3,32)=0.412	legend
+ −	4b	two-way ANOVA	legend	n=4/group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/sample	legend	mean +/- SEM	legend	region effect, p=0.399; drug effect, p<0.001; interaction, p=0.489	legend	region effect, F(3,24)=1.026; drug effect, F(1,24)=32.487; interaction, F(3,24)=0.834	legend
+ −	4d	Mann-Whitney U test	legend	n=9,8/group	mice from at least 3 litters/group	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.006	legend	U=7	legend
+ −	4f	student's t test (unpaired)	legend	n=10/group	mice from at least 4 litters/group	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.0220	legend	t(18)=2.506	legend
+ −	4g	two-way ANOVA	legend	n=8,6/group, for all bdnf promoters	rats from at least 2 litters/group2 animals pooled/sample	legend	mean +/- SEM	legend	region effect, p=0.087; drug effect, p<0.001; interaction, p=0.087	legend	region effect, F(3,48)=2.318; drug effect, F(1,48)=35.413; interaction, F(3,48)=2.318	legend

+/-												
+ -	4g	Mann-Whitney U test, for bdnf p1 & p6; student's t test (unpaired), for bdnf p2 & p4	legend	n=8,6/group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/sample	legend	mean +/- SEM	legend	p=0.013, for bdnf p1; p=0.012, for bdnf p2; p=0.0166, for bdnf p4; p=0.003, for bdnf p6	legend	U=5, for bdnf p1; t(12)=2.957, for bdnf p2; t(12)=2.781, for bdnf p4; U=2, for bdnf p6	legend
+ -	4h	two-way ANOVA	legend	n=5,6/group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/sample	legend	mean +/- SEM	legend	region effect, p=0.908; drug effect, p<0.001; interaction, p=0.957	legend	region effect, F(3,36)=0.182; drug effect, F(1,36)=25.091; interaction, F(3,36)=0.104	legend
+ -	5a	two-way ANOVA	legend	n=4,5/group, for bdnf p1; n=4/group for bdnf p2; n=4,5/group, for bdnf p4; n=4,5/group, for bdnf p6	rats from at least 2 litters/group 2 animals pooled/sample	legend	mean +/- SEM	legend	region effect, p=0.752; drug effect, p<0.001; interaction, p=0.412	legend	region effect, F(3,27)=0.403; drug effect, F(1,27)=17.990; interaction, F(3,27)=0.990	legend
+ -	5b	student's t test (unpaired)	legend	n=9,8/group	rats from at least 3 litters/group	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.0241	legend	t(15)=2.509	legend
+ -	5c	student's t test (unpaired)	legend	n=8,10/group	rats from at least 3 litters/group	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.0461	legend	t(16)=2.162	legend
+ -	5d	student's t test (unpaired)	legend	n=5/group	rats from at least 2 litters/group	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.0257	legend	t(8)=2.733	legend
+ -	5e	student's t test (unpaired)	legend	n=10,8/group	rats from at least 4 litters/group 2 animals pooled/sample	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.0363	legend	t(16)=2.285	legend
+ -	5f	student's t test (unpaired) w/ Welch's correction	legend	n=9/group	mice from at least 3 litters/group	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.0157	legend	t(9.496)=2.935	legend
+ -	5h	one-way ANOVA	legend	n=10,8,9/group	mice from at least 4 litters/group	legend	mean +/- SEM	legend	p=0.0188	legend	F(2,24)=4.712	legend
+ -	5j	student's t test (unpaired) w/ Welch's correction	legend	n=9,10/group	rats from at least 2 litters/group	legend	median, quartiles (boxes), range (whiskers)	legend	p=0.0328	legend	t(10.98)=2.440	legend
+ -	5k	student's t test (unpaired)	legend	n=8,7/group	mice from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.0496	legend	t(13)=2.165	legend
+ -	5l	student's t test (unpaired)	legend	n=10,9/group	mice from at least 4 litters/group	legend	mean +/- SEM	legend	p=0.6897	legend	t(17)=0.4062	legend

+ −	sf1b	two-way RM ANOVA	legend	n=9,14/ group	rats from at least 3 litters/group	legend	mean +/- SEM	legend	day effect, p<0.001; drug effect, p<0.001; interaction, p<0.001	legend	day effect, F(9,378)=4.660; drug effect, F(3,378)=13.854; interaction, F(27,378)=2.520	
+ −	sf1c	for day 0-14: two-way RM ANOVA; for day 28: one-way ANOVA	legend	for day 0-14: n=18/ group; for day 28: n=9/ group	rats from at least 6 litters/group	legend	mean +/- SEM	legend	for day 0-14: day effect, p<0.001; drug effect, p=0.402; interaction, p<0.001; for day 28: p<0.001	legend	for day 0-14: day effect, F(3,102)=81.073; drug effect, F(1,102)=0.722; interaction, F(3,102)=42.097; for day 28: F(3,32)=22.412	
+ −	results, para2	one-way ANOVA	results, para2	n=9/ group	rats from at least 6 litters/group	results, para2	mean +/- SEM	results, para2	p=0.0181	results, para2	F(3,32)=3.872	results, para2
+ −	sf1d	student's t test (unpaired)	legend	n=12/ group	rats from at least 2 litters/group	legend	mean +/- SEM	legend	p=0.000855	legend	t(22)=4.801	legend
+ −	sf1e	student's t test (unpaired), for Bdnf III & VII; Mann-Whitney U test, for Bdnf VIII	legend	n=8/ group, for Bdnf III & VII; n=7,8/ group, for Bdnf VIII	rats from at least 2 litters/group	legend	mean +/- SEM	legend	p=0.576, for Bdnf III; p=0.987, for Bdnf VII; p=0.867, for Bdnf VIII	legend	t(14)=0.573, for Bdnf III; t(14)=0.0163, for Bdnf VII; U=26, for Bdnf VIII	legend
+ −	sf3a	student's t test (unpaired)	legend	n=9/ group	mice from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.00774	legend	t(16)=3.044	legend
+ −	sf3a	Mann-Whitney U test	legend	n=9/ group, for th; n=9/ group, for gria1	mice from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.185, for th; p=0.377, for gria1	legend	U=25, for th; U=30, for gria1	legend
+ −	sf3c	student's t test (unpaired)	legend	n=11/ group	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.0403	legend	t(20)=2.193	legend
+ −	sf3d	one-way ANOVA	legend	n=5,4,5/ group	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.0280	legend	F(2,11)=5.003	legend
+ −	sf4a	student's t test (unpaired), for SN & VTA; Mann-Whitney U test, for RN	legend	n=7/ group, for all regions	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.312, for SN; p=0.209, for RN; p=0.0352, for VTA	legend	t(12)=1.056, for SN; U=14, for RN; t(12)=2.373, for VTA	
+ −	sf4b	one-way ANOVA	legend	n=6/ group, for SN; n=6/ group, for RN; n=5,6,6/ group, for VTA	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.457, for SN; p=0.409, for RN; p=0.050, for VTA	legend	F(2,15)=0.825, for SN; F(2,15)=0.949, for RN; F(2,14)=3.764, for VTA	legend

+/-	ref	test		n	source		error		p-value		statistic	
+ -	sf4c	one-way ANOVA	legend	n=6/group, for SN; n=6/group, for RN; n=5,6,6/group, for VTA	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.593, for SN; p=0.451, for RN; p=0.022, for VTA	legend	F(2,15)=0.541, for SN; F(2,15)=0.841, for RN; F(2,14)=5.092, for VTA	legend
+ -	sf5a	student's t test (unpaired)	legend	n=9/group	mice from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.0422	legend	t(16)=2.208	legend
+ -	sf5b	student's t test (unpaired)	legend	n=10/group	mice from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.000391	legend	t(18)=4.344	legend
+ -	sf5c	student's t test (unpaired)	legend	n=5/group	rats from at least 2 litters/group	legend	mean +/- SEM	legend	p=0.00514	legend	t(8)=3.813	legend
+ -	sf5d	Mann-Whitney U test	legend	n=5/group	rats from at least 2 litters/group	legend	mean +/- SEM	legend	p=0.032	legend	U=2	legend
+ -	sf6a	student's t test (unpaired)	legend	n=9,7/group, for th; n=5,4/group, for gria1	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.0482, for th; p=0.0416, for gria1	legend	t(14)=2.165, for th; t(7)=2.489, for gria1	legend
+ -	sf6b	student's t test (unpaired), for th; Mann-Whitney U test, for gria1	legend	n=5,4/group, for th; n=5,4/group, for gria1	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.715, for th; p=0.905, for gria1	legend	t(7)=0.380, for th; U=9, for gria1	legend
+ -	sf6c	student's t test (unpaired), for th; Mann-Whitney U test, for gria1	legend	n=5/group, for th; n=5/group, for gria1	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.977, for th; p=0.310, for gria1	legend	t(8)=0.0297, for th; U=7, for gria1	legend
+ -	sf6d	two-way ANOVA	legend	n=5/group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/sample	legend	mean +/- SEM	legend	region effect, p=0.941; drug effect, p<0.001; interaction, p=0.941	legend	region effect, F(3,32)=0.132; drug effect, F(1,32)=32.004; interaction, F(3,32)=0.132	legend
+ -	sf6e	two-way ANOVA	legend	n=3,4/group, for all bdnf promoters	rats from at least 2 litters/group 2 animals pooled/sample	legend	mean +/- SEM	legend	region effect, p=0.123; drug effect, p=0.027; interaction, p=0.123	legend	region effect, F(3,20)=2.175; drug effect, F(1,20)=5.683; interaction, F(3,20)=2.175	legend
+ -	sf6f	two-way ANOVA	legend	n=5,6/group	rats from at least 2 litters/group	legend	mean +/- SEM	legend	region effect, p=0.656; drug effect, p<0.001; interaction, p=0.656	legend	region effect, F(3,36)=0.542; drug effect, F(1,36)=19.593; interaction, F(3,36)=0.542	legend
+ -	sf6f	student's t test (unpaired)	legend	n=5,6/group	rats from at least 2 litters/group	legend	mean +/- SEM	legend	p=0.0211, for bdnf p1; p=0.0341, for bdnf p2; p=0.0313 for bdnf p4; p=0.239, for bdnf p6	legend	t(9)=2.789, for bdnf p1; t(9)=2.495, for bdnf p2; t(9)=2.549, for bdnf p4; t(9)=1.262, for bdnf p6	legend

+ -	sf7a	student's t test (unpaired)	legend	n=9,10/ group	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.0448	legend	t(17)=2.166	legend
+ -	sf7b	for day 0-14, two-way RM ANOVA;	legend	for day 0-14: n=11,27/ group; for day 28: n=5, for SS-TMT; n=6, for SS-NURR1; n=10, for MS-TMT; n=8, for MM-TMT; n=9, for MM-NURR1	rats from at least 6 litters/group	legend	mean +/- SEM	legend	for day 0-14: day effect, p<0.001; drug effect, p=0.012; interaction, p<0.001; for day 28: p=0.031	legend	for day 0-14: day effect, F(1,36)=54.272; drug effect, F(1,36)=7.087; interaction, F(1.36)=13.080; for day 28: F(4,37)=3.031	legend
+ -	sf7c	student's t test (unpaired)	legend	n=3/ group	rats from at least 3 litters/group 5 animals pooled/ sample	legend	mean +/- SEM	legend	p=0.000251	legend	t(4)=12.297	legend
+ -	sf7d	student's t test (unpaired)	legend	n=3/ group	rats from at least 3 litters/group 5 animals pooled/ sample	legend	mean +/- SEM	legend	p=0.212	legend	t(4)=1.483	
+ -	sf7e	student's t test (unpaired)	legend	n=3/ group	rats from at least 3 litters/group 5 animals pooled/ sample	legend	mean +/- SEM	legend	p=0.600	legend	t(4)=0.569	
+ -	sf9a	one-way ANOVA	legend	n=3/ group	rats from at least 3 litters/group 2 animals pooled/	legend	mean +/- SEM	legend	p=0.044	legend	F(3,8)=4.297	
+ -	sf9b	one-way ANOVA	legend	n=3/ group	rats from at least 3 litters/group 2 animals pooled/	legend	mean +/- SEM	legend	p=0.004	legend	F(3,8)=10.535	
+ -	sf9c	one-way ANOVA	legend	n=3/ group	rats from at least 3 litters/group 2 animals pooled/	legend	mean +/- SEM	legend	p=0.016	legend	F(3,8)=6.970	
+ -	sf9d	one-way ANOVA	legend	n=3/ group	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p<0.001	legend	F(4,10)=214.998	
+ -	sf9e	one-way ANOVA	legend	n=3/ group	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p=0.027	legend	F(4,10)=4.378	
+ -	sf9f	one-way ANOVA	legend	n=3, for all groups; but n=2, for Myt1-2	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p<0.001	legend	F(5,11)=27.039	
+ -	sf9g	one-way ANOVA	legend	n=3/ group	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p<0.001	legend	F(5,12)=13.836	
+ -	sf9h	one-way ANOVA	legend	n=3/ group	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p<0.001	legend	F(5,12)=31.043	
+ -	sf9i	one-way ANOVA	legend	n=3/ group	rats from at least 3 litters/group	legend	mean +/- SEM	legend	p<0.001	legend	F(6,14)=41.67	
+ -	sf9j	one-way ANOVA	legend	n=6/ group	rats from at least 4 litters/group	legend	mean +/- SEM	legend	p<0.001	legend	F(3,20)=35.617	

+ –	sf9k	one-way ANOVA	legend	n=3, for Esr1; n=4, for Rpl30; n=3, for Myod1	rats from at least 3 litters/group 2 animals pooled/	legend	mean +/- SEM	legend	p=0.024	legend	F(2,7)=6.708	
+ –	sf9l	one-way ANOVA	legend	n=3, for Esr1; n=3, for Myod1; n=4, for Afm	rats from at least 3 litters/group 2 animals pooled/	legend	mean +/- SEM	legend	p=0.013	legend	F(2,7)=8.670	
+ –	sf9m	one-way ANOVA	legend	n=4/ group	rats from at least 3 litters/group 2 animals pooled/	legend	mean +/- SEM	legend	p=0.025	legend	F(2,9)=5.757	
+ –	sf9n	student's t test (unpaired)	legend	n=4, for Rpl30; n=3, for Afm	rats from at least 2 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	p=0.043	legend	t(5)=4.024	
+ –	sf9o	student's t test (unpaired)	legend	n=3/ group	rats from at least 2 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	p=0.0459	legend	t(4)=2.861	
+ –	sf9p	student's t test (unpaired)	legend	n=3, for Gapdh; n=4, for Myod1	rats from at least 2 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	p=0.0375	legend	t(5)=2.811	
+ –	sf9q	one-way ANOVA	legend	n=4, for Gapdh; n=4, for Hoxa2; n=3, for Myod1	rats from at least 3 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	p=0.023	legend	F(2,8)=6.314	
+ –	sf9r	one-way ANOVA	legend	n=3, for Gapdh; n=4, for Hoxa2; n=4, for Myod1	rats from at least 3 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	p<0.001	legend	F(2,8)=24.32	
+ –	sf9s	one-way ANOVA	legend	n=4/ group	rats from at least 3 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	p=0.008	legend	F(2,9)=8.483	
+ –	sf9t	student's t test (unpaired)	legend	n=6/ group	rats from at least 2 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	p=0.0433	legend	t(10)=2.313	
+ –	sf9u	student's t test (unpaired)	legend	n=5/ group	rats from at least 2 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	p=0.0304	legend	t(8)=2.625	
+ –	sf9v	one-way ANOVA	legend	n=2/ group, for Bdnf, Pitx3,Th; n=3/ group, for Myod1, Afm	rats from at least 4 litters/group 2 animals pooled/ sample	legend	mean +/- SEM	legend	p=0.004	legend	F(4,7)=11.057	
+ –												

▶ Representative figures

1. Are any representative images shown (including Western blots and immunohistochemistry/staining) in the paper?

   If so, what figure(s)?

   > Yes.
   > Fig. 3g, Fig. 4c, Fig. 4e, and Fig. 5g;
   > Supplementary Figs. 3b, 4a-c, and 7c-e

2. For each representative image, is there a clear statement of how many times this experiment was successfully repeated and a discussion of any limitations in repeatability?

   If so, where is this reported (section, paragraph #)?

   > - Histology figures (Fig. 3g, Fig. 4c, Fig. 4e, and Fig. 5g) showing localization of viral-mediated gene do not depend on repetitions but this experiment repeated independently at least 2 times (described in Methods"Immunohistochemistry" and figure legends).
   > - Western blotting (sf.4 and sf.7) were repeated twice with no limitations of reproducibility (described in Methods"Western blotting").

▶ Statistics and general methods

1. Is there a justification of the sample size?

   If so, how was it justified?

   Where (section, paragraph #)?

   Even if no sample size calculation was performed, authors should report why the sample size is adequate to measure their effect size.

   > No statistical methods were used to predetermine sample sizes, but our sample sizes are similar to those reported in previous works and based on expected effect sizes and power analyses.

2. Are statistical tests justified as appropriate for every figure?

   Where (section, paragraph #)?

   > Yes.

   a. If there is a section summarizing the statistical methods in the methods, is the statistical test for each experiment clearly defined?

   > Yes, all statistical tests are described in Methods "Statistical analysis".

   b. Do the data meet the assumptions of the specific statistical test you chose (e.g. normality for a parametric test)?

   Where is this described (section, paragraph #)?

   > Yes. But non-parametric tests were used in the events that normal distribution could not be assumed (described in Methods "Statistical analysis").

   c. Is there any estimate of variance within each group of data?

   Is the variance similar between groups that are being statistically compared?

   Where is this described (section, paragraph #)?

   > Yes. homogeneity of variance was assessed. But Student's t test with Welch's correction was used in the events that equality of variance could not be assumed (e.g., Fig. 5f and Fig. 5j).
   > This is described in figure legend and Methods "Statistical analysis".

   d. Are tests specified as one- or two-sided?

   > Yes, two-sided.

   e. Are there adjustments for multiple comparisons?

   > Yes, these are indicated in figure legend where necessary.

3. Are criteria for excluding data points reported?

   Was this criterion established prior to data collection?

   Where is this described (section, paragraph #)?

   > Yes, outliers were excluded when identified as outlier using the Grubbs test (described in Methods "Statistical analysis"). But this happened only occasionally.

4. Define the method of randomization used to assign subjects (or samples) to the experimental groups and to collect and process data.

   If no randomization was used, state so.

   Where does this appear (section, paragraph #)?

   Animals were assigned to various experimental groups randomly before treatment and surgery. Additionally, the order of the animals was randomized before behavioral tests (described in Methods "Animals" and "Statistical analysis").

5. Is a statement of the extent to which investigator knew the group allocation during the experiment and in assessing outcome included?

   If no blinding was done, state so.

   Where (section, paragraph #)?

   Data collection and analysis were not performed blind to the conditions of the experiments (described in Methods "Statistical analysis").

6. For experiments in live vertebrates, is a statement of compliance with ethical guidelines/regulations included?

   Where (section, paragraph #)?

   Yes, described in Methods "Animals".

7. Is the species of the animals used reported?

   Where (section, paragraph #)?

   Yes, described in Methods "Animals".

8. Is the strain of the animals (including background strains of KO/transgenic animals used) reported?

   Where (section, paragraph #)?

   Background of floxed CREB is C57BL/6 and that of floxed BDNF is BL6/sv129 (described in Methods "Animals").

9. Is the sex of the animals/subjects used reported?

   Where (section, paragraph #)?

   Yes, all animal used are males (described in Methods "Animals").

10. Is the age of the animals/subjects reported?

    Where (section, paragraph #)?

    Yes, described in Methods "Animals".

11. For animals housed in a vivarium, is the light/dark cycle reported?

    Where (section, paragraph #)?

    Yes, described in Methods "Animals".

12. For animals housed in a vivarium, is the housing group (i.e. number of animals per cage) reported?

    Where (section, paragraph #)?

    All animals were housed in group of 2 rats or of 2-5 mice per cage (described in Methods "Animals").

13. For behavioral experiments, is the time of day reported (e.g. light or dark cycle)?

    Where (section, paragraph #)?

    All behavioral experiments, except self-administration, were performed during the light cycle (described in Methods "Animals").

14. Is the previous history of the animals/subjects (e.g. prior drug administration, surgery, behavioral testing) reported?

    Where (section, paragraph #)?

    All animals used were experimentally naive (described in Methods "Animals").

a. If multiple behavioral tests were conducted in the same group of animals, is this reported?

Where (section, paragraph #)?

> N/A

15. If any animals/subjects were excluded from analysis, is this reported?

Where (section, paragraph #)?

> Yes, one western blot (e.g., Supplementary fig. 10c) of internal control did not appropriately appear and was not included for analysis. This is reported in figure legend of sf.10.

a. How were the criteria for exclusion defined?

Where is this described (section, paragraph #)?

> N/A

b. Specify reasons for any discrepancy between the number of animals at the beginning and end of the study.

Where is this described (section, paragraph #)?

> Viral targeting to VTA was confirmed for all animals; <3% were excluded for anatomically incorrect placements (described in Methods "HSV vectors").

▸ Reagents

1. Have antibodies been validated for use in the system under study (assay and species)?

> Yes.

a. Is antibody catalog number given?

Where does this appear (section, paragraph #)?

> Yes, described in Methods "qChIP", "Immunohistochemistry", "Western blotting", "Experiment 2", "Experiment 3", and "Experiment 5".

b. Where were the validation data reported (citation, supplementary information, Antibodypedia)?

Where does this appear (section, paragraph #)?

> See Supplementary figs 7 & 9 and Supplementary table 4 for validation of antibodies for ChIP assays with rat tissues.

2. If cell lines were used to reflect the properties of a particular tissue or disease state, is their source identified?

Where (section, paragraph #)?

> N/A

a. Were they recently authenticated?

Where is this information reported (section, paragraph #)?

> N/A

▶ Data deposition

Data deposition in a public repository is mandatory for:

    a. Protein, DNA and RNA sequences
    b. Macromolecular structures
    c. Crystallographic data for small molecules
    d. Microarray data

Deposition is strongly recommended for many other datasets for which structured public repositories exist; more details on our data policy are available here. We encourage the provision of other source data in supplementary information or in unstructured repositories such as Figshare and Dryad.

1. Are accession codes for deposit dates provided?

   Where (section, paragraph #)?

> N/A

▶ Computer code/software

Any custom algorithm/software that is central to the methods must be supplied by the authors in a usable and readable form for readers at the time of publication. However, referees may ask for this information at any time during the review process.

1. Identify all custom software or scripts that were required to conduct the study and where in the procedures each was used.

> N/A

2. Is computer source code/software provided with the paper or deposited in a public repository? Indicate in what form this is provided or how it can be obtained.

> N/A

▶ Human subjects

1. Which IRB approved the protocol?

   Where is this stated (section, paragraph #)?

> The Department of Forensic Medicine at Semmelweis University, Hungary and the National Institute of Forensic Medicine, Karolinska Institutet, Stockholm, Sweden (described in Methods "Human postmortem subjects").

2. Is demographic information on all subjects provided?

   Where (section, paragraph #)?

> Yes, see Supplementary Table 1.

3. Is the number of human subjects, their age and sex clearly defined?

   Where (section, paragraph #)?

> Yes, see Supplementary Table 1.

4. Are the inclusion and exclusion criteria (if any) clearly specified?

   Where (section, paragraph #)?

> Yes, described in Methods "Human postmortem subjects".

5. How well were the groups matched?

   Where is this information described (section, paragraph #)?

> Yes, groups were matched for mean subject age and pH, as well as sex. See Supplementary Table 1.

6. Is a statement included confirming that informed consent was obtained from all subjects?

    Where (section, paragraph #)?

    N/A

7. For publication of patient photos, is a statement included confirming that consent to publish was obtained?

    Where (section, paragraph #)?

    N/A

▶ fMRI studies

For papers reporting functional imaging (fMRI) results please ensure that these minimal reporting guidelines are met and that all this information is clearly provided in the methods:

1. Were any subjects scanned but then rejected for the analysis after the data was collected?

    N/A

    a. If yes, is the number rejected and reasons for rejection described?

        Where (section, paragraph #)?

        N/A

2. Is the number of blocks, trials or experimental units per session and/ or subjects specified?

    Where (section, paragraph #)?

    N/A

3. Is the length of each trial and interval between trials specified?

    N/A

4. Is a blocked, event-related, or mixed design being used? If applicable, please specify the block length or how the event-related or mixed design was optimized.

    N/A

5. Is the task design clearly described?

    Where (section, paragraph #)?

    N/A

6. How was behavioral performance measured?

    N/A

7. Is an ANOVA or factorial design being used?

    N/A

8. For data acquisition, is a whole brain scan used?

    If not, state area of acquisition.

    N/A

    a. How was this region determined?

        N/A

9. Is the field strength (in Tesla) of the MRI system stated?

N/A

   a. Is the pulse sequence type (gradient/spin echo, EPI/spiral) stated?

N/A

   b. Are the field-of-view, matrix size, slice thickness, and TE/TR/ flip angle clearly stated?

N/A

10. Are the software and specific parameters (model/functions, smoothing kernel size if applicable, etc.) used for data processing and pre-processing clearly stated?

N/A

11. Is the coordinate space for the anatomical/functional imaging data clearly defined as subject/native space or standardized stereotaxic space, e.g., original Talairach, MNI305, ICBM152, etc? Where (section, paragraph #)?

N/A

12. If there was data normalization/standardization to a specific space template, are the type of transformation (linear vs. nonlinear) used and image types being transformed clearly described? Where (section, paragraph #)?

N/A

13. How were anatomical locations determined, e.g., via an automated labeling algorithm (AAL), standardized coordinate database (Talairach daemon), probabilistic atlases, etc.?

N/A

14. Were any additional regressors (behavioral covariates, motion etc) used?

N/A

15. Is the contrast construction clearly defined?

N/A

16. Is a mixed/random effects or fixed inference used?

N/A

   a. If fixed effects inference used, is this justified?

N/A

17. Were repeated measures used (multiple measurements per subject)?

N/A

   a. If so, are the method to account for within subject correlation and the assumptions made about variance clearly stated?

N/A

18. If the threshold used for inference and visualization in figures varies, is this clearly stated?

N/A

19. Are statistical inferences corrected for multiple comparisons?

N/A

   a. If not, is this labeled as uncorrected?

N/A

20. Are the results based on an ROI (region of interest) analysis?

N/A

    a. If so, is the rationale clearly described?

N/A

    b. How were the ROI's defined (functional vs anatomical localization)?

N/A

21. Is there correction for multiple comparisons within each voxel?

N/A

22. For cluster-wise significance, is the cluster-defining threshold and the corrected significance level defined?

N/A

▶ Additional comments

Additional Comments