Supplementary Table 5

Behaviors and mice sex

Laboras

Comparison	n	Pre-conditioning time in experimental room	Total time of the experiment	Figure	Parameter	Statistical tests and significance
WT vs Hoxb8 mutants (Male and Females)	79,113	5-10 min	24 hours	Fig. 3a	Grooming time	One-way ANOVA, Tukey's pairbiw test, P=0.0001, F=99.135628
Elevated plus maze test						
WT vs Hoxb8 mutants (Female)	21, 14	5 min	5 min	Fig. 3c	Time spent in open arm	One-way ANOVA, Tukey's pairbiw test, P= 0.0139965, P=0.006716
WT vs Hoxb8 mutants (Female)	21, 14	5 min	5 min	Fig. 3d	Time spent in closed arm	One-way ANOVA, Tukey's pairbiw test, P= 0.7733616, P=0.05975
Open-field test						
WT vs Hoxb8 mutants (Female)	15,14	5 min	30 min	Fig. 3e	Time spent in center	One-way ANOVA, Tukey's pairbiw test, P= 0.023589, P=0.70255
Light-Dark test						
WT vs Hoxb8 mutants (Males)	16,14	5 min	5 min	Fig. 3f	Time spent in light chamber	One-way ANOVA, Tukey's pairbiw test, P=35.855861 , P= 0.000027
Social behavioral test (Females)	15,14	5 min	30 min	Fig. 3h	Time spent in left chamber (Non-Contact duration)	One-way ANOVA, Tukey's pairbiw test, P= 2.6872275, P= 0.11148
WT vs Hoxb8 mutants (Females), Intruder: Novel Female					Time spent in center chamber (Total duration)	One-way ANOVA, Tukey's pairbiw test, P= 1.1147436, P= 0.8006
					Time spent in right chamber (Contact duration)	One-way ANOVA, Tukey's pairbiw test, P= 5.8929605, P= 0.02232
Social behavioral test (Females)					Time spent in left chamber (Non-Contact duration)	One-way ANOVA, Tukey's pairbiw test, P= 0.03861, P= 5.279353
WT vs Hoxb8 mutants (Females), Intruder: Cagemate Female	15,11	5 min	30 min	Fig. 3i	Time spent in center chamber (Total duration)	One-way ANOVA, Tukey's pairbiw test, P= 0.377 , P=0.8377
					Time spent in right chamber (Contact duration)	One-way ANOVA, Tukey's pairbiw test, P= -0.0095, P=0.3475

Grooming behavior (Fluoxetinetine 5 mg/kg)

Comparison	n		Figure	Parameter analysed	Treatment time	Statistical tests	Source of variation	% of total variation	F (DFn, DFd)	P value	P value summary	Significant?	Bonferroni's multiple comparisons test	Statistical significance	Summary
WT vs Hoxb8 mutant Saline vsFluoxetine	10,10 WT saline and Fluoxetine 10,10 Hoxb8 mutant saline and Fluoxetine	10 min	24 hours	Fig. 4a	Grooming time	1 week	Two-way ANOVA	Interaction	13.38	F (1, 36) = 18.95	P = 0.0001	***	Yes	Saline WT vs. Saline KO	Yes	****
								Drug	22.9	F (1, 36) = 32.43	P < 0.0001	****	Yes	Saline WT vs. Fluoxetine WT	No	ns
								Genotype	38.29	F (1, 36) = 54.23	P < 0.0001	****	Yes	Saline WT vs. Fluoxetine KO	No	ns
														Saline KO vs. Fluoxetine WT	Yes	****
														Saline KO vs. Fluoxetine KO	Yes	****
														Fluoxetine WT vs. Fluoxetine KO	No	ns

Locomotion behavior (Fluoxetinetine 5 mg/kg)

Comparison	n		Figure	Parameter analysed	Treatment time	Statistical tests	Source of variation	% of total variation	F (DFn, DFd)	P value	P value summary	Significant?	Bonferroni's multiple comparisons test	Statistical significance	Summary
WT vs Hoxb8 mutant Saline vsFluoxetine	10,8 WT saline and Fluoxetine 10,10 Hoxb8 mutant saline and Fluoxetine	10 min	24 hours	Fig. 4b	Locomotion duration	5 week	Two-way ANOVA	Interaction	0.06673	F (1, 34) = 0.03425	P = 0.8543	ns	No	Saline WT vs. Saline KO	No	ns
								Drug	6.897	F (1, 34) = 2.724	P = 0.1081	ns	No	Saline WT vs. Fluoxetine WT	No	ns
								Genotype	6.098	F (1, 34) = 2.408	P = 0.1303	ns	No	Saline WT vs. Fluoxetine KO	No	ns
														Saline KO vs. Fluoxetine WT	No	ns
														Saline KO vs. Fluoxetine KO	No	ns
														Fluoxetine WT vs. Fluoxetine KO	No	ns

Immobility behavior (Fluoxetinetine 5 mg/kg)

Comparison	n		Figure	Parameter analysed	Treatment time	Statistical tests	Source of variation	% of total variation	F (DFn, DFd)	P value	P value summary	Significant?	Bonferroni's multiple comparisons test	Statistical significance	Summary
WT vs Hoxb8 mutant Saline vsFluoxetine	10,12 WT saline and Fluoxetine 10,12 Hoxb8 mutant saline and Fluoxetine	10 min	24 hours	Fig. 4c	Immobility duration	5 week	Two-way ANOVA	Interaction	0.03559	F (1, 40) = 0.01079	P = 0.9007	ns	No	Saline WT vs. Saline KO	No	ns
								Drug	5.367	F (1, 40) = 2.379	P = 0.1309	ns	No	Saline WT vs. Fluoxetine WT	No	ns
								Genotype	4.382	F (1, 40) = 1.942	P = 0.1711	ns	No	Saline WT vs. Fluoxetine KO	No	ns
														Saline KO vs. Fluoxetine WT	No	ns
														Saline KO vs. Fluoxetine KO	No	ns
														Fluoxetine WT vs. Fluoxetine KO	No	ns

Anxiety behavior (Plus maze test, Fluoxetine 5 mg/kg)

Comparison	n		Figure	Parameter analysed	Treatment time	Statistical tests	Source of variation	% of total variation	F (DFn, DFd)	P value	P value summary	Significant?	Bonferroni's multiple comparisons test	Statistical significance	Summary
WT vs Hoxb8 mutant Saline vsFluoxetine	10,8 WT saline and Fluoxetine 10,10 Hoxb8 mutant saline and Fluoxetine	5 min	5 min	Fig. 4d	Time in open arm	5 week	Two-way ANOVA	Interaction	7.588	F (1, 36) = 3.798	P = 0.0595	ns	No	Saline WT vs. Saline KO	No	ns
								Drug	12.54	F (1, 36) = 6.261	P = 0.0170	*	Yes	Saline WT vs. Fluoxetine WT	No	ns
								Genotype	7.115	F (1, 36) = 3.554	P = 0.0675	ns	No	Saline WT vs. Fluoxetine KO	No	ns
														Saline KO vs. Fluoxetine WT	Yes	*
														Saline KO vs. Fluoxetine KO	Yes	*
														Fluoxetine WT vs. Fluoxetine KO	No	ns

Anxiety behavior (Open field test, Fluoxetine 5 mg/kg)

Comparison	n		Figure	Parameter analysed	Treatment time	Statistical tests	Source of variation	% of total variation	F (DFn, DFd)	P value	P value summary	Significant?	Bonferroni's multiple comparisons test	Statistical significance	Summary
WT vs Hoxb8 mutant Saline vsFluoxetine	17,9 WT saline and Fluoxetine 16,11 Hoxb8 mutant saline and Fluoxetine	5 min	30 min	Fig. 4e	Time in center	5 week	Two-way ANOVA	Interaction	20.49	F (1, 40) = 10.71	P = 0.0022	**	Yes	Saline WT vs. Saline KO	Yes	*
								Drug	0.01582	F (1, 40) = 0.005853	P = 0.9404	ns	No	Saline WT vs. Fluoxetine WT	No	ns
								Genotype	3.58	F (1, 40) = 1.871	P = 0.1790	ns	No	Saline WT vs. Fluoxetine KO	No	ns
														Saline KO vs. Fluoxetine WT	No	ns
														Saline KO vs. Fluoxetine KO	No	ns
														Fluoxetine WT vs. Fluoxetine KO	No	ns

Light-dark test (Fluoxetine 5 mg/kg)

Comparison	n		Figure	Parameter analysed	Treatment time	Statistical tests	Source of variation	% of total variation	F (DFn, DFd)	P value	P value summary	Significant?	Bonferroni's multiple comparisons test	Statistical significance	Summary
WT vs Hoxb8 mutant (Fluoxetine 5mg/kg) 13 weeks treatment Saline vs Fluoxetine	14,14 WT saline and Fluoxetine 14,12 Hoxb8 mutant saline and Fluoxetine	5	5 min	fig. 4f	Time in the light zone	15 weeks	Two-way ANOVA	Interaction	15.85	F (1, 46) = 11.56	P = 0.0013	**	Yes	Saline WT vs. Saline KO	Yes	*
					Time in the light zone	13 weeks		Drug	15.76	F (1, 46) = 11.50	P = 0.0014	**	Yes	Saline WT vs. Fluoxetine WT	No	ns
								Genotype	1.145	F (1, 46) = 0.8359	P = 0.3651	ns	No	Saline WT vs. Fluoxetine KO	No	ns
														Saline KO vs. Fluoxetine WT	Yes	*
														Saline KO vs. Fluoxetine KO	Yes	***
														Fluoxetine WT vs. Fluoxetine KO	No	ns

Social behavior (Three-chambered test, Fluoxetine 5 mg/kg)

Comparison	n		Figure	Parameter analysed	Treatment time	Statistical tests	Source of variation	% of total variation	F (DFn, DFd)	P value	P value summary	Significant?	Bonferroni's multiple comparisons test	Statistical significance	Summary
WT vs Hoxb8 mutant Saline vs Fluoxetine	13,12 WT saline andFluoxetine 12,10 Hoxb8 mutant saline and Fluoxetine	5 min	30 min	fig. 4h	Time in center chamber	2 week	Two-way ANOVA	Interaction	0.2728	F (1, 43) = 0.1211	P = 0.7295	ns	No	Saline WT vs. Saline KO	No	ns
								Drug	1.916	F (1, 43) = 0.8509	P = 0.3615	ns	No	Saline WT vs. Fluoxetine WT	No	ns
								Genotype	0.855	F (1, 43) = 0.3796	P = 0.5411	ns	No	Saline KO vs. Fluoxetine WT	No	ns
														Saline KO vs. Fluoxetine KO	No	ns
														Fluoxetine WT vs. Fluoxetine KO	No	ns
WT vs Hoxb8 mutant Saline vs Fluoxetine	13,12 WT saline and Fluoxetine 12,10 Hoxb8 mutant saline and Fluoxetine	5 min	30 min	fig. 4h	Time in left chamber	2 week	Two-way ANOVA	Interaction	0.1751	F (1, 43) = 0.1082	P = 0.7438	ns	No	Saline WT vs. Saline KO	No	ns
								Drug	26.92	F (1, 43) = 16.45	P = 0.0002	***	Yes	Saline WT vs. Fluoxetine WT	Yes	*
								Genotype	3.602	F (1, 43) = 2.227	P = 0.1429	ns	No	Saline WT vs. Fluoxetine KO	Yes	**
														Saline KO vs. Fluoxetine WT	No	ns
														Saline KO vs. Fluoxetine KO	No	ns
														Fluoxetine WT vs. Fluoxetine KO	No	ns
WT vs Hoxb8 mutant Saline vs Fluoxetine	13,12 WT saline and Fluoxetine 12,10 Hoxb8 mutant saline and Fluoxetine	5 min	30 min	fig. 4h	Time in right chamber	2 week	Two-way ANOVA	Interaction	4.857	F (1, 43) = 2.593	P = 0.1147	ns	No	Saline WT vs. Saline KO	Yes	*
								Drug	0.8474	F (1, 43) = 0.4523	P = 0.5048	ns	No	Saline WT vs. Fluoxetine WT	No	ns
								Genotype	12.88	F (1, 43) = 6.776	P = 0.0126	*	Yes	Saline WT vs. Fluoxetine KO	No	ns
														Saline KO vs. Fluoxetine WT	No	ns
														Saline KO vs. Fluoxetine KO	No	ns
														Fluoxetine WT vs. Fluoxetine KO	No	ns

Supplementary Figures

Comparison	n		Figure	Parameter analysed	Treatment time	Statistical tests	Source of variation	% of total variation	F (DFn, DFd)	P value	P value summary	Significant?	Bonferroni's multiple comparisons test	Statistical significance	Summary
Elevated plus maze test															
WT vs Hoxb8 mutants (Females)	21,14	5 min	5 min	Supplementary Fig 6a	Closed arm distance										
	21,22	5 min	5 min	Supplementary Fig 6b	Time in open arm (15 lx, Low)										
	22,11	5 min	5 min		Time in open arm (75 lx, Medium)										
	12,19	5 min	5 min		Time in open arm (130 lx, High)										
	15,22	5 min	5 min	Supplementary Fig 6c	Distance in open arm (15 lx, Low)										
	22,11	5 min	5 min		Distance in open arm (75 lx, Medium)										
	12,19	5 min	5 min		Distance in open arm (130 lx, High)										
	15,22	5 min	5 min	Supplementary Fig 6d	Latency in open arm (15 lx, Low)										
	22,11	5 min	5 min		Latency in open arm (75 lx, Medium)										
	12,19	5 min	5 min		Latency in open arm (130 lx, High)										
Open field test															
WT vs Hoxb8 mutants (Females)	15,10	5 min	30 min	Supplementary Fig 6e	Line crossings										
	15,14	5 min	30 min	Supplementary Fig 6f	Number of entries (Center)										
					Number of entries (Periphery)										
	15,18	5 min	30 min	Supplementary Fig 6g	Circling number (Total)										
	15,18	5 min	30 min		Circling number (Clockwise)										
	15,18	5 min	30 min		Circling number (Anticlockwise)										
Light-dark emergence test															
WT vs Hoxb8 mutants (Females)	15,13	5 min	5 min	Supplementary Fig 6h	Time in dark zone										
	15,13	5 min	5 min	Supplementary Fig 6i	Number of entries in light zone										
Three-chambered social behavioral test															
WT vs Hoxb8 mutants (Males)	15,13	5 min	30 min	Supplementary Fig 6j	Center chamber										
					Left chamber non-contact (Empty)										
					Right chamber contact (Male, cage-mate)										
					Right chamber non-contact (Male, cage-mate)										
Grooming behavior															
WT vs Hoxb8 mutant (Fluoxetine 5mg/kg) 1 day treatment WT vs Hoxb8 mutant (Fluoxetine 5mg/kg) 1 week treatment	12 WT and 12 Hoxb8 mutants 10 WT and 10 Hoxb8 mutants	5-10 min 5-10 min	24 hours 24 hours	Supplementary Fig 7a Supplementary Fig 7a	Grooming duration Grooming duration	One-way ANOVA, Tukey's pairbiw test, P=0.8597868 , P=0.0202 One-way ANOVA, Tukey's pairbiw test, P=2.7963753 , P=0.1139									
Open-field test (Fluoxetine 5 mg/kg)															
WT vs Hoxb8 mutant (Fluoxetine 5mg/kg) 13 weeks treatment Saline vs Fluoxetine	17,9 WT saline and Fluoxetine 16,11 Hoxb8 mutant saline and Fluoxetine	5 min	30 min	Supplementary Fig 7b	Distance traveled in the center zone	15 weeks									
					Distance traveled in the center zone	15 weeks									
Open-field test (Fluoxetine 5 mg/kg)															
WT vs Hoxb8 mutant (Fluoxetine 5mg/kg) 13 weeks treatment Saline vs Fluoxetine	17,9 WT saline andFluoxetine 16,11 Hoxb8 mutant saline andFluoxetine	5-10 min	30 min	Supplementary Fig 7c	Distance traveled in the periphery zone	15 weeks									
					Distance traveled in the periphery zone	15 weeks									
Light-dark test (Fluoxetine 5 mg/kg)															
WT vs Hoxb8 mutant (Fluoxetine 5mg/kg) 13 weeks treatment Saline vs Fluoxetine	14,14 WT saline and Fluoxetine 14,12 Hoxb8 mutant saline andFluoxetine	5	5 min	Supplementary Fig 7d	Time in the light zone	15 weeks									
					Time in the light zone	13 weeks									