

SUPPLEMENTARY TABLES

Table S1: Statistics of the behavioral differences of BL6 and CD1 mice on EPM, OFT and SPAT corresponding to Figure 1. Factor time represents non-social vs social stimulus presentations during SPAT; factor strain represents BL6 vs CD1 effects; factor age represents adolescent vs adult effects.

EPM		Two-way ANOVA	Figure 1B-D
Open arm entries [%]	(Age) $F_{1,36} = 1.494$ (Strain) $F_{1,36} = 42.663$ (Age x Strain) $F_{1,36} = 0.634$		P = 0.230 P < 0.001 P = 0.431
Time open arm [%]	(Age) $F_{1,36} = 9.968$ (Strain) $F_{1,36} = 19.092$ (Age x strain) $F_{1,36} = 7.081$		P = 0.003 P < 0.001 P = 0.012
Closed arm entries [n]	(Age) $F_{1,36} = 1.750$ (Strain) $F_{1,36} = 16.680$ (Age x strain) $F_{1,36} = 0.744$		P = 0.194 P < 0.001 P = 0.394
OFT		Two-way ANOVA	Figure 1E-F
Time center zone [s]	(Age) $F_{1,48} = 832.871$ (Strain) $F_{1,48} = 601.201$ (Age x strain) $F_{1,48} = 715.951$		P < 0.001 P < 0.001 P < 0.001
Distance travelled [m]	(Age) $F_{1,48} = 2.227$ (Strain) $F_{1,48} = 8.673$ (Age x strain) $F_{1,48} = 6.817$		P = 0.142 P = 0.005 P = 0.012
SPAT – Strain effects		Mixed Model ANOVA	Figure 1G
Investigation time [%] Adolescent	(Time) $F_{1,18} = 44.306$ (Strain) $F_{1,18} = 11.667$ (Time x strain) $F_{1,18} = 15.096$		P < 0.001 P = 0.003 P = 0.001
Investigation time [%] Adult	(Time) $F_{1,33} = 31.561$ (Strain) $F_{1,33} = 35.630$ (Time x strain) $F_{1,33} = 4.819$		P < 0.001 P < 0.001 P = 0.035
SPAT – Age effects		Mixed Model ANOVA	Figure 1G
Investigation time [%] BL6	(Time) $F_{1,26} = 8.709$ (Age) $F_{1,26} = 3.243$ (Time x age) $F_{1,26} = 0.052$		P = 0.007 P = 0.083 P = 0.822
Investigation time [%] CD1	(Time) $F_{1,25} = 72.416$ (Age) $F_{1,25} = 0.579$ (Time x age) $F_{1,25} = 2.249$		P < 0.001 P = 0.454 P = 0.146

Table S2: Statistics of the behavioral differences of BL6 and CD1 mice during CFC corresponding to Figure 2. Factor time represents CS-US pairings during acquisition and CS presentations during extinction; factor strain represents BL6 vs CD1 effects; factor age represents adolescent vs adult effects.

Adolescent CFC – Strain effects		Mixed Model ANOVA, Independent T-Test	Figure 3B-D
Acquisition		(Time) $F_{3,54} = 24.111$ (Strain) $F_{1,18} = 29.033$ (Time x strain) $F_{3,54} = 6.722$	$P < 0.001$ $P < 0.001$ $P = 0.001$
Extinction		(Time) $F_{4,958,89.245} = 5.195$ (Strain) $F_{1,18} = 110.649$ (Time x strain) $F_{4,958,89.245} = 3.603$	$P < 0.001$ $P < 0.001$ $P = 0.005$
Recall		$T_{18} = 0.7973$	$P < 0.001$
Adult CFC – Strain effects		Mixed Model ANOVA, Independent T-Test	Figure 3E-G
Acquisition		(Time) $F_{1.672,30.096} = 20.073$ (Strain) $F_{1,18} = 37.197$ (Time x strain) $F_{1.672,30.096} = 10.235$	$P < 0.001$ $P < 0.001$ $P < 0.001$
Extinction		(Time) $F_{4.974,89.532} = 3.518$ (Strain) $F_{1,18} = 116.962$ (Time x strain) $F_{4.974,89.532} = 0.616$	$P = 0.006$ $P < 0.001$ $P = 0.687$
Recall		$T_{18} = 11.732$	$P < 0.001$
BL6 CFC – Age effects		Mixed Model ANOVA, Independent T-Test	Figure 3B-G
Acquisition		(Time) $F_{3,54} = 38.955$ (Age) $F_{1,18} = 1.817$ (Time x age) $F_{3,54} = 0.431$	$P < 0.001$ $P = 0.194$ $P = 0.732$
Extinction		(Time) $F_{9,162} = 5.405$ (Age) $F_{1,18} = 1.889$ (Time x age) $F_{9,162} = 1.237$	$P < 0.001$ $P = 0.186$ $P = 0.276$
Recall		$T_{18} = -1.019$	$P = 0.322$
CD1 CFC – Age effects		Mixed Model ANOVA, Independent T-Test	Figure 3B-G
Acquisition		(Time) $F_{1.981,35.652} = 8.095$ (Age) $F_{1,18} = 0.083$ (Time x age) $F_{1.981,35.652} = 1.873$	$P = 0.001$ $P = 0.777$ $P = 0.169$
Extinction		(Time) $F_{4.530,81.544} = 5.539$ (Age) $F_{1,18} = 0.477$ (Time x age) $F_{4.530,81.544} = 0.478$	$P < 0.001$ $P = 0.499$ $P = 0.775$
Recall		$T_{18} = 1.410$	$P = 0.176$

Table S3: Statistics of the behavioral differences of BL6 and CD1 mice during SFC corresponding to Figure 3. Factor time represents repeated stimuli presentations during extinction and recall; factor strain represents BL6 vs CD1 effects; factor age represents adolescent vs adult effects.

Adolescent SFC – Strain effects		Mann-Whitney-U Test, Mixed Model ANOVA	Figure 4B-D
Acquisition Extinction non-social Extinction social Recall		U = 52.5, z = -1.82	P = 0.101
		(Time) $F_{1.838,80.868} = 47.271$	P < 0.001
		(Strain) $F_{1,44} = 25.353$	P < 0.001
		(Conditioning) $F_{1,44} = 0.535$	P = 0.468
		(Time x strain) $F_{1.838,80.868} = 7.816$	P = 0.001
		(Time x conditioning) $F_{1.838,80.868} = 0.344$	P = 0.692
		(Strain x conditioning) $F_{1,44} = 1.817$	P = 0.185
		(Time x strain x conditioning) $F_{1.838,80.868} = 0.628$	P = 0.523
		(Time) $F_{3.415,146.853} = 6.307$	P < 0.001
		(Strain) $F_{1,43} = 23.264$	P < 0.001
		(Conditioning) $F_{1,43} = 33.193$	P < 0.001
		(Time x strain) $F_{3.415,146.853} = 0.843$	P = 0.485
	(Time x conditioning) $F_{3.415,146.853} = 1.985$	P = 0.110	
	(Strain x conditioning) $F_{1,43} = 0.119$	P = 0.731	
	(Time x strain x conditioning) $F_{3.415,146.853} = 1.091$	P = 0.359	
	(Time) $F_{3.039,133.728} = 6.592$	P < 0.001	
	(Strain) $F_{1,44} = 5.141$	P = 0.028	
	(Conditioning) $F_{1,44} = 6.949$	P = 0.012	
	(Time x strain) $F_{3.039,133.728} = 1.844$	P = 0.142	
	(Time x conditioning) $F_{3.039,133.728} = 1.315$	P = 0.272	
	(Strain x conditioning) $F_{1,44} = 0.364$	P = 0.550	
	(Time x strain x conditioning) $F_{3.039,133.728} = 1.222$	P = 0.304	
Adult SFC – Strain effects		Mann-Whitney-U Test, Mixed Model ANOVA	Figure 4E-G
Acquisition Extinction non-social Extinction social Recall		U = 86, z = -2.43	P = 0.027
		(Time) $F_{1.801,97.257} = 38.036$	P < 0.001
		(Strain) $F_{1,54} = 1.501$	P = 0.226
		(Conditioning) $F_{1,54} = 1.295$	P = 0.260
		(Time x strain) $F_{1.801,97.257} = 0.192$	P = 0.803
		(Time x conditioning) $F_{1.801,97.257} = 0.985$	P = 0.370
		(Strain x conditioning) $F_{1,54} = 0.811$	P = 0.372
		(Time x strain x conditioning) $F_{1.801,97.257} = 0.010$	P = 0.985
		(Time) $F_{2.559,138.175} = 11.195$	P < 0.001
		(Strain) $F_{1,54} = 42.055$	P < 0.001
		(Conditioning) $F_{1,54} = 36.297$	P < 0.001
		(Time x strain) $F_{2.559,138.175} = 9.928$	P < 0.001
	(Time x conditioning) $F_{2.559,138.175} = 8.691$	P < 0.001	
	(Strain x conditioning) $F_{1,54} = 9.343$	P = 0.003	
	(Time x strain x conditioning) $F_{2.559,138.175} = 1.725$	P = 0.173	
	(Time) $F_{2.561,135.742} = 5.178$	P = 0.003	
	(Strain) $F_{1,53} = 40.507$	P < 0.001	
	(Conditioning) $F_{1,53} = 7.240$	P = 0.010	
	(Time x strain) $F_{2.561,135.742} = 2.997$	P = 0.041	
	(Time x conditioning) $F_{2.561,135.742} = 3.323$	P = 0.028	
	(Strain x conditioning) $F_{1,53} = 32.397$	P < 0.001	
	(Time x strain x conditioning) $F_{2.561,135.742} = 1.365$	P = 0.258	
SFC – Strain and age effects		Two-way ANOVA	Figure 4B, E
Acquisition	(Age) $F_{1,57} = 6.639$	P = 0.013	
	(Strain) $F_{1,57} = 6.928$	P = 0.011	
	(Age x strain) $F_{1,57} = 0.403$	P = 0.528	
BL6 SFC – Age effects		Two-way ANOVA, Mixed Model ANOVA	Figure 4C-D, F-G
Extinction non-social	(Time) $F_{1.676,85.487} = 30.230$	P < 0.001	
	(Age) $F_{1,51} = 4.596$	P = 0.037	
	(Conditioning) $F_{1,51} = 1.937$	P = 0.170	
	(Time x age) $F_{1.676,85.487} = 0.628$	P = 0.509	

Extinction social	(Time x conditioning) $F_{1.676,85.487} = 0.499$ (Age x conditioning) $F_{1,51} = 0.853$ (Time x age x conditioning) $F_{1.676,85.487} = 0.048$ (Time) $F_{2.910,148.434} = 2.126$ (Age) $F_{1,51} = 537$ (Conditioning) $F_{1,51} = 61.535$ (Time x age) $F_{2.910,148.434} = 1.662$ (Time x conditioning) $F_{2.910,148.434} = 3.356$ (Age x conditioning) $F_{1,51} = 0.358$ (Time x age x conditioning) $F_{2.910,148.434} = 0.867$	P = 0.576 P = 0.360 P = 0.929 P = 0.101 P = 0.467 P < 0.001 P = 0.179 P = 0.022 P = 0.552 P = 0.457
Recall	(Time) $F_{2.608,132.988} = 5.134$ (Age) $F_{1,51} = 2.847$ (Conditioning) $F_{1,51} = 23.144$ (Time x age) $F_{2.608,132.988} = 3.076$ (Time x conditioning) $F_{2.608,132.988} = 3.270$ (Age x conditioning) $F_{1,51} = 1.582$ (Time x age x conditioning) $F_{2.608,132.988} = 0.723$	P = 0.003 P = 0.098 P < 0.001 P = 0.036 P = 0.029 P = 0.214 P = 0.522
CD1 SFC – Age effects		
Mann-Whitney-U Test, Mixed Model ANOVA		
Figure 4C-D, F-G		
Extinction non-social	(Time) $F_{1.884,88.536} = 55.155$ (Age) $F_{1,47} = 0.083$ (Conditioning) $F_{1,47} = 0.420$ (Time x age) $F_{1.884,88.536} = 3.873$ (Time x conditioning) $F_{1.884,88.536} = 0.437$ (Age x conditioning) $F_{1,47} = 0.837$ (Time x age x conditioning) $F_{1.884,88.536} = 0.848$	P < 0.001 P = 0.775 P = 0.520 P = 0.027 P = 0.636 P = 0.365 P = 0.426
Extinction social	(Time) $F_{3.041,139.899} = 18.632$ (Age) $F_{1,46} = 0.890$ (Conditioning) $F_{1,46} = 17.378$ (Time x age) $F_{3.041,139.899} = 1.251$ (Time x conditioning) $F_{3.041,139.899} = 6.648$ (Age x conditioning) $F_{1,46} = 2.769$ (Time x age x conditioning) $F_{3.041,139.899} = 0.876$	P < 0.001 P = 0.350 P < 0.001 P = 0.294 P < 0.001 P = 0.103 P = 0.457
Recall	(Time) $F_{2.840,130.632} = 7.362$ (Age) $F_{1,46} = 0.319$ (conditioning) $F_{1,46} = 0.00$ (Time x age) $F_{2.840,130.632} = 0.921$ (Time x conditioning) $F_{2.840,130.632} = 2.760$ (Age x conditioning) $F_{1,46} = 8.224$ (Time x age x conditioning) $F_{2.840,130.632} = 0.381$	P < 0.001 P = 0.575 P = 0.970 P = 0.429 P = 0.048 P = 0.006 P = 0.756

Table S4: Statistics of responses to foot shocks of increasing intensities of adult and adolescent BL6 and CD1 mice using FSSC corresponding to Figure 4. Factor intensity represents foot shocks at increasing intensities during FSIT; factor strain represents BL6 vs CD1 effects; factor age represents adolescent vs adult effects.

FSSC	Mixed Model ANOVA	Figure 2B-D
Response to shock	(Intensity) $F_{2.543,50.864} = 91.580$ (Age) $F_{1,20} = 13.065$ (Strain) $F_{1,20} = 36.290$ (Intensity x age) $F_{2.543,50.864} = 2.884$ (Intensity x strain) $F_{2.543,50.864} = 5.899$ (Age x strain) $F_{1,20} = 7.903$ (Intensity x age x strain) $F_{2.543,50.864} = 3.812$	$P < 0.001$ $P = 0.002$ $P < 0.001$ $P = 0.053$ $P = 0.003$ $P = 0.011$ $P = 0.020$
Response score	(Intensity) $F_{4.342,86.845} = 128.615$ (Age) $F_{1,20} = 4.515$ (Strain) $F_{1,20} = 3.457$ (Intensity x age) $F_{4.342,86.845} = 0.782$ (Intensity x strain) $F_{4.342,86.845} = 3.884$ (Age x strain) $F_{1,20} = 0.018$	$P < 0.001$ $P = 0.046$ $P = 0.078$ $P = 0.550$ $P = 0.005$ $P = 0.896$
Vocalization	(Intensity x age x strain) $F_{4.342,86.845} = 3.523$ (Intensity) $F_{4.293,85.861} = 52.948$ (Age) $F_{1,20} = 3.451$ (Strain) $F_{1,20} = 37.254$ (Intensity x age) $F_{4.293,85.861} = 0.553$ (Intensity x strain) $F_{4.293,85.861} = 7.958$ (Age x strain) $F_{1,20} = 3.451$ (Intensity x age x strain) $F_{4.293,85.861} = 1.841$	$P = 0.009$ $P < 0.001$ $P = 0.078$ $P < 0.001$ $P = 0.709$ $P < 0.001$ $P = 0.078$ $P = 0.124$

Table S5: Statistics of the molecular differences of adult BL6 and CD1 mice on the OXT system using RAR and IHC corresponding to Figure 5. Factor age presentations adolescent vs adult effects; factor strain represents BL6 vs CD1 effects.

RAR	Two-way ANOVA	Figure 5A
VMH	(Age) $F_{1,24} = 28.316$ (Strain) $F_{1,24} = 1.946$ (Age x strain) $F_{1,24} = 2.907$	$P < 0.001$ $P = 0.176$ $P = 0.101$
PAG	(Age) $F_{1,23} = 11.369$ (Strain) $F_{1,23} = 10.689$ (Age x strain) $F_{1,23} = 0.009$	$P = 0.003$ $P = 0.003$ $P = 0.924$
dLS	(Age) $F_{1,24} = 0.055$ (Strain) $F_{1,24} = 16.307$ (Age x strain) $F_{1,24} = 8.295$	$P = 0.817$ $P < 0.001$ $P = 0.008$
vLS	(Age) $F_{1,24} = 2.213$ (Strain) $F_{1,24} = 3.545$ (Age x strain) $F_{1,24} = 3.144$	$P = 0.150$ $P = 0.072$ $P = 0.089$
CeA	(Age) $F_{1,23} = 5.155$ (Strain) $F_{1,23} = 2.503$ (Age x strain) $F_{1,23} = 0.114$	$P = 0.033$ $P = 0.127$ $P = 0.739$
BLA	(Age) $F_{1,24} = 29.961$ (Strain) $F_{1,24} = 0.035$ (Age x strain) $F_{1,24} = 1.516$	$P < 0.001$ $P = 0.853$ $P = 0.230$
IHC	Two-way ANOVA	Figure 5C
PVN	(Age) $F_{1,15} = 2.631$ (Strain) $F_{1,15} = 0.158$ (Age x strain) $F_{1,15} = 0.025$	$P = 0.126$ $P = 0.697$ $P = 0.877$
SON	(Age) $F_{1,16} = 0.182$ (Strain) $F_{1,16} = 0.975$ (Age x strain) $F_{1,16} = 0.033$	$P = 0.675$ $P = 0.338$ $P = 0.858$

Table S6: Statistics of the behavioral differences of adult BL6 and CD1 mice following icv OXT injection on the EPM and SPAT corresponding to Figure 6. Factor strain represents BL6 vs CD1 effects; factor treatment represents Veh vs OXT_{LD} vs OXT_{HD} effects.

EPM		One-way ANOVA	Figure 6B-D
Open arm entries [%]	(BL6) $F_{2,33} = 0.070$ (CD1) $F_{2,33} = 0.767$		P = 0.933 P = 0.472
Time open arm [%]	(BL6) $F_{2,33} = 2.83$ (CD1) $F_{2,33} = 1.528$		P = 0.073 P = 0.232
Closed arm entries [n]	(BL6) $F_{2,33} = 3.59$ (CD1) $F_{2,33} = 2.50$		P = 0.039 P = 0.098
SPAT		Two-way ANOVA	Figure 6E
Investigation time [%] Non-social	(Strain) $F_{1,71} = 43.9$ (Treatment) $F_{2,71} = 5.72$ (Strain x treatment) $F_{2,71} = 0.886$		P < 0.001 P = 0.005 P = 0.417
Investigation time [%] Social	(Strain) $F_{1,71} = 39.4$ (Treatment) $F_{2,71} = 2.13$ (Strain x treatment) $F_{2,71} = 0.451$		P < 0.001 P = 0.126 P = 0.639

Table S7: Statistics of thermal pain perception using HPT and bodyweight between adult and adolescent BL6 and CD1 mice corresponding to Supplementary Figure S1. Factor strain represents BL6 vs CD1 effects; factor age represents adolescent vs adult effects.

FSSC day 2		Mixed Model ANOVA	Figure S1A-C
Response to shock	(Intensity) $F_{3,888,77.753} = 36.184$ (Age) $F_{1,20} = 0.656$ (Strain) $F_{1,20} = 4.098$ (Intensity x age) $F_{3,888,77.753} = 0.848$ (Intensity x strain) $F_{3,888,77.753} = 1.237$ (Age x strain) $F_{1,20} = 0.164$ (Intensity x age x strain) $F_{3,888,77.753} = 0.671$		P < 0.001 P = 0.428 P = 0.056 P = 0.496 P = 0.302 P = 0.690 P = 0.610
Response score	(Intensity) $F_{4,364,87.281} = 66.559$ (Age) $F_{1,20} =$ (Strain) $F_{1,20} =$ (Intensity x age) $F_{4,364,87.281} = 0.622$ (Intensity x strain) $F_{4,364,87.281} = 0.265$ (Age x strain) $F_{1,20} =$		P < 0.001 P = 0.950 P = 0.573 P = 0.662 P = 0.265 P = 0.950
Vocalization	(Intensity x age x strain) $F_{4,364,87.281} = 0.259$ (Intensity) $F_{3,615,72.300} = 28.194$ (Age) $F_{1,20} = 0.016$ (Strain) $F_{1,20} = 10.246$ (Intensity x age) $F_{3,615,72.300} = 0.741$ (Intensity x strain) $F_{3,615,72.300} = 2.007$ (Age x strain) $F_{1,20} = 0.410$ (Intensity x age x strain) $F_{3,615,72.300} = 1.029$		P = 0.916 P < 0.001 P = 0.899 P = 0.004 P = 0.554 P = 0.109 P = 0.529 P = 0.394
HPT		Two-way ANOVA, pearson correlation	Figure S1D-E
Paw withdrawal latency [sec]	(Age) $F_{1,19} = 29.395$ (Strain) $F_{1,19} = 1.315$ (Age x Strain) $F_{1,19} = 6.284$		P < 0.001 P = 0.266 P = 0.021
Correlation paw withdrawal - bodyweight	$r = 0.517, n = 23$		P = 0.011
Bodyweight		Two-way ANOVA	Figure S1F
FSSC [g]	(Age) $F_{1,20} = 116.727$ (Strain) $F_{1,20} = 90.835$ (Age x Strain) $F_{1,20} = 176.243$		P < 0.001 P < 0.001 P < 0.001
HPT [g]	(Age) $F_{1,20} = 29.395$ (Strain) $F_{1,20} = 146.398$ (Age x Strain) $F_{1,20} = 41.056$		P < 0.001 P < 0.001 P < 0.001
FSSC - bodyweight		Pearson correlation	Not illustrated

0.05mA	no responses	
0.1mA	$r = -0.215$, $n = 24$	$P = 0.314$
0.15mA	$r = -0.269$, $n = 24$	$P = 0.204$
0.2mA	$r = -0.253$, $n = 24$	$P = 0.232$
0.3mA	$r = 0.005$, $n = 24$	$P = 0.982$
0.5mA	$r = 0.304$, $n = 24$	$P = 0.148$
0.7mA	$r = 0.267$, $n = 24$	$P = 0.207$
1.0mA	$r = 0.152$, $n = 24$	$P = 0.479$

Table S8: Statistics of the behavioral differences of adult BL6 mice following icv OXT injection during SFC extinction training corresponding to Supplementary Figure S2. Factor time represents repeated stimuli presentations during extinction and recall; factor treatment represents Veh vs OXT_{LD} effects; factor SFC represents SFC⁻ vs SFC⁺ effects.

SFC	Mann-Whitney-U Test, Mixed Model ANOVA	Figure S2	
Acquisition	$U = 29$, $z = -0.812$	$P = 0.541$	
Extinction non-social	(Time) $F_{1,490,43,200} = 8.512$	$P = 0.002$	
	(OXT) $F_{1,29} = 4.715$	$P = 0.038$	
	(SFC) $F_{1,29} = 0.082$	$P = 0.777$	
	(Time x OXT) $F_{1,490,43,200} = 1.003$	$P = 0.354$	
	(Time x SFC) $F_{1,490,43,200} = 0.049$	$P = 0.910$	
	(OXT x SFC) $F_{1,29} = 0.188$	$P = 0.668$	
	(Time x OXT x SFC) $F_{1,490,43,200} = 0.040$	$P = 0.922$	
	Extinction social	(Time) $F_{2,168,62,880} = 1.909$	$P = 0.153$
		(OXT) $F_{1,29} = 1.492$	$P = 0.232$
		(SFC) $F_{1,29} = 18.249$	$P < 0.001$
(Time x OXT) $F_{2,168,62,880} = 0.733$		$P = 0.495$	
(Time x SFC) $F_{2,168,62,880} = 0.701$		$P = 0.511$	
(OXT x SFC) $F_{1,29} = 0.316$		$P = 0.578$	
(Time x OXT x SFC) $F_{2,168,62,880} = 1.250$		$P = 0.295$	
Recall		(Time) $F_{2,168,62,880} = 1.909$	$P = 0.153$
		(OXT) $F_{1,29} = 1.492$	$P = 0.232$
		(SFC) $F_{1,29} = 18.249$	$P < 0.001$
	(Time x OXT) $F_{2,168,62,880} = 0.733$	$P = 0.495$	
	(Time x SFC) $F_{2,168,62,880} = 0.701$	$P = 0.511$	
	(OXT x SFC) $F_{1,29} = 0.316$	$P = 0.578$	
	(Time x OXT x SFC) $F_{2,168,62,880} = 1.250$	$P = 0.295$	