

Supplementary Table S2. Synopsis of enrichment effects across strains and labs.

	4-way ANOVA ^a all cases n=432 pooled data				partial ANOVA ^b all cases n=432 split by strain (x lab)			partial ANOVA all cases, n=432 strain comparison		partial ANOVA all cases, n=432 lab comparison		
	enrichment main effect		enrichm. x lab	enrichm. x strain	enrichment effect direction ^c			reliability of enrichm. effects		reliability of enrichm. effects		
	p<	ω ²	p<	p<	F1	B6	D2	missed effects ^d	direction conflicts ^e	missed effects ^f	direction conflicts ^g	
<i>O-maze</i>												
total head dips	.0001	.283	↑	.0016	.0128	↑(↑↑↑)	↑(↑↑↑)	↑(↑↑↑)	0 / 3	0 / 3	0 / 9	0 / 9
% protected head dips	.0063	.015	↓	ns	.0415	-(- - -)	↓(↓ - ↓)	↓(↓ - -)	1 / 3	0 / 3	3 / 9	0 / 9
% open arm entries	.0001	.268	↑	.0001	.0127	↑(-↑↑)	↑(↑↑↑)	↑(↑↑↑)	0 / 3	0 / 3	1 / 9	0 / 9
fecal bolus count	ns		-	ns	.0001	↓(-↓ -)	↑(↑↑ -)	↑(↑ - ↑)	0 / 3	2 / 3	4 / 9	0 / 9
path traveled	.0001	.104	↑	.0272	.0006	↑(- - ↑)	↑(↑↑↑)	↑(- - -)	0 / 3	0 / 3	2 / 9	0 / 9
<i>open-field</i>												
center avoidance (1st 10min)	.0001	.053	↓	ns	ns	↓(-↓ -)	-(- - -)	↓(↓↓ -)	1 / 3	0 / 3	3 / 9	0 / 9
center avoidance (habituation)	.0003	.029	↓	ns	ns	↓(-↓ -)	↓(↓ - ↓)	-(- - -)	1 / 3	0 / 3	3 / 9	0 / 9
path traveled (1st 10min)	.0004	.027	↑	ns	ns	↑(-↑ -)	-(- - -)	-(- - -)	2 / 3	0 / 3	2 / 9	0 / 9
path traveled (habituation)	.0001	.042	↑	ns	ns	↑(-↑↑)	-(-↑ -)	↑(- - -)	1 / 3	0 / 3	3 / 9	0 / 9
% time running/walking	.0040	.017	↑	ns	ns	↑(-↑ -)	-(- - -)	-(- - -)	2 / 3	0 / 3	2 / 9	0 / 9
<i>object exploration</i>												
horizontal object exploration	.0001	.060	↑	ns	.0470	↑(↑↑ -)	↑(↑ - -)	↑(↑ - ↑)	0 / 3	0 / 3	4 / 9	0 / 9
vertical object exploration	.0001	.034	↑	ns	ns	↑(↑↑ -)	-(-↑ -)	-(- - ↑)	2 / 3	0 / 3	5 / 9	0 / 9
% path in object zone	.0001	.087	↑	ns	.0118	↑(↑↑↑)	↑(- - -)	↑(↑ - ↑)	0 / 3	0 / 3	1 / 9	0 / 9
object exploration distance	.0001	.088	↓	ns	ns	↓(↓↓ -)	↓(- - ↓)	↓(↓ - ↓)	0 / 3	0 / 3	4 / 9	0 / 9
corner distance	.0001	.042	↑	ns	ns	-(- - -)	↑(-↑ -)	↑(↑ - ↑)	1 / 3	0 / 3	3 / 9	0 / 9
<i>water-maze</i>												
swim path length	ns		-	ns	.0129	-(-↓ -)	↑(- - ↑)	-(- - -)	2 / 3	0 / 3	4 / 9	0 / 9
% time near wall	ns		-	.0393	ns	-(-↓ -)	-(- - -)	-(- - -)	0 / 3	0 / 3	2 / 9	0 / 9
average swim speed	.0001	.054	↑	ns	.0097	↑(↑↑ -)	↑(↑ - -)	-(-↑ -)	1 / 3	0 / 3	5 / 9	0 / 9
probe: annulus crossings	ns		-	ns	ns	-(- - -)	-(- - -)	-(- - -)	0 / 3	0 / 3	0 / 9	0 / 9
probe: target proximity	ns		-	ns	ns	-(- - -)	-(- - -)	-(- - -)	0 / 3	0 / 3	0 / 9	0 / 9
<i>average</i>									23.3%	3.3%	28.3%	0.0%

^a between subject factors housing x strain x lab x replicate (only effects of interest are shown); first column: type-1 error p-values; second column for main effect: effect size as partial omega squared, the proportion of variance accounted for by enrichment if only this factor were in the design (range 0 to 1.0); third column: effect direction (arrow up if enriched animals earned higher scores)

^b between subject factors housing x lab x replicate, or housing x replicate, respectively

^c effect directions for each strain with data from all labs pooled or kept separately (arrows within parentheses: Lipp, Nitsch, Würbel lab)

^d failure in one strain to reproduce significance of effect that is present in another strain (in 3 strains evaluated)

^e strains showing significant effect opposite to effect observed in other strain(s) (of 3 strains evaluated)

^f failure to reproduce significance of effect that is present in the same strain in another lab (in 3 labs x 3 strains evaluated)

^g labs showing significant effect opposite to effects observed in the same strain in other lab(s) (of 3 labs x 3 strains evaluated)