

**Appendix 1** to Huang TN and Hsueh YP. Calcium/calmodulin-dependent serine protein kinase (CASK), a protein implicated in mental retardation and autism spectrum disorders, interacts with T-Brain-1 (TBR1) to control extinction of associative memory in male mice. *JPsychiatry Neurosci* 2016.

DOI: 10.1503/jpn.150359

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**Supplementary Table 1. All of statistic results.**

<b>Fig2A</b>	unpaired T-test			
	df	t	P	F
NR2b	df=6	t = -0.0283	P = 0.978	F=2.412
Mint1	df=6	t = 1.661	P = 0.148	F=1.716
CINAP	df=6	t = -0.455	P = 0.665	F=1.937
Cask	df=6	t = 0.0563	P = 0.957	F=1.963
SAP-97	df=6	t=0.4185	P=0.690	F=6.958
PSD-95	df=6	t = 0.833	P = 0.437	F=3.322
Tubulin	df=6	t = 0.745	P = 0.484	F=1.157
Parkin	df=6	t = -1.726	P = 0.135	F=2.082
GAPDH	df=6	t=1.418	P=0.206	F=2.345
Veli-2	df=6	t = 0.337	P = 0.747	F=1.491
Veli-3	df=6	t = 0.127	P = 0.903	F=3.752
<b>Fig3</b>	unpaired T-test			
	df	t	P	F
insular cortex	df=4	t=0.4554	P=0.706	F=14.09
Amygdala	df=4	t=2.483	P=0.0497	F=4.552
Hippocampus	df=4	t=0.7165	P=0.5133	F=12.14
S1 cortex	df=4	t=1.864	P=0.1357	F=1.454

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Fig4A	unpaired T-test			
	df	t	P	F
D10	df=38	t=1.144	P=0.2600	F=1.351
D15	df=38	t=1.127	P=0.2668	F=1.05
D20	df=38	t=0.5152	P=0.694	F=1.13
D25	df=38	t=1.058	P=0.2846	F=1.105
D30	df=38	t=0.6403	P=0.5258	F=1.515
D35	df=38	t=0.4514	P=0.6543	F=11.74
D40	df=38	t=1.362	P=0.1812	F=1.141

Fig5 A	Two way ANOVA		Bonferroni posttests
	F=0.293	P=0.588	
Trav dist.	Diff of Means	t	P
<b>14h</b>	0.0981	0.0457	0.964
<b>15h</b>	0.792	0.369	0.712
<b>16h</b>	0.751	0.35	0.727
<b>17h</b>	0.102	0.0474	0.962
<b>18h</b>	0.25	0.116	0.908
<b>19h</b>	0.151	0.073	0.944
<b>20h</b>	1.844	0.858	0.391
<b>21h</b>	2.64	1.1229	0.219
<b>22h</b>	0.28	0.13	0.896
<b>23h</b>	0.971	0.452	0.651
<b>24h</b>	3.431	1.597	0.111
<b>1h</b>	0.745	0.347	0.729
<b>2h</b>	0.0303	0.0141	0.989

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<b>3h</b>	0.582	0.271	0.786
<b>4h</b>	0.261	0.122	0.903
<b>5h</b>	1.831	0.852	0.394
<b>6h</b>	3.917	1.824	0.069
<b>7h</b>	1.136	0.529	0.597
<b>8h</b>	2.002	0.932	0.352
<b>9h</b>	0.304	0.141	0.888
<b>10h</b>	1.669	0.777	0.437
<b>11h</b>	0.224	0.104	0.917
<b>Groom</b>	F=5.479	P=0.019	
	Diff of Means	t	P
<b>14h</b>	61.622	0.742	0.458
<b>15h</b>	1.22.26	1.473	0.141
<b>16h</b>	39.478	0.476	0.635
<b>17h</b>	121.297	1.461	0.144
<b>18h</b>	109.288	1.317	0.188
<b>19h</b>	16.193	0.195	0.845
<b>20h</b>	54.352	0.655	0.513
<b>21h</b>	23.942	0.288	0.773
<b>22h</b>	175.91	2.119	0.034
<b>23h</b>	9.062	0.109	0.913
<b>24h</b>	67.893	0.818	0.414
<b>1h</b>	35.378	0.426	0.67
<b>2h</b>	29.732	0.358	0.72
<b>3h</b>	105.77	1.274	0.203

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<b>4h</b>	77.642	0.935	0.35
<b>5h</b>	180.523	2.175	0.03
<b>6h</b>	68.597	0.826	0.409
<b>7h</b>	130.072	1.567	0.118
<b>8h</b>	32.108	0.387	0.699
<b>9h</b>	9.872	0.118	0.905
<b>10h</b>	120.643	1.453	0.147
<b>11h</b>	8.928	0.108	0.914
<b>Stretch</b>	F=0.607	P=0.436	
	Diff of Means	t	P
<b>14h</b>	3.772	0.146	0.884
<b>15h</b>	7.372	0.272	0.786
<b>16h</b>	5.695	0.21	0.834
<b>17h</b>	17.372	0.641	0.522
<b>18h</b>	2.575	0.095	0.924
<b>19h</b>	3.19	0.118	0.906
<b>20h</b>	5.27	0.194	0.864
<b>21h</b>	27.968	1.032	0.303
<b>22h</b>	6.725	0.248	0.804
<b>23h</b>	16.755	0.618	0.537
<b>24h</b>	2.942	0.108	0.914
<b>1h</b>	66.54	2.454	0.014
<b>2h</b>	88.398	3.26	0.001
<b>3h</b>	20.652	0.762	0.446
<b>4h</b>	35.792	1.32	0.187

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5h	28.193	1.04	0.299
6h	16.967	0.626	0.532
7h	32.882	1.213	0.226
8h	34.045	1.256	0.21
9h	3.708	0.137	0.891
10h	2.927	0.108	0.914
11h	10.593	0.391	0.696
<b>Turn</b>	F=0.000445	P=0.983	
	Diff of Means	t	P
14h	2.272	0.222	0.825
15h	20.703	2.021	0.044
16h	8.748	0.854	0.393
17h	5.387	0.526	0.599
18h	10.872	1.061	0.289
19h	2.635	2.257	0.797
20h	4.6	0.449	0.653
21h	11.115	1.085	0.278
22h	2.29	0.244	0.823
23h	16.015	1.564	0.118
24h	3.812	0.372	0.71
1h	5.953	0.581	0.561
2h	4.56	0.445	0.656
3h	3.893	0.38	0.704
4h	2.173	0.212	0.832
5h	7.508	0.733	0.464

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<b>6h</b>	12.238	1.195	0.232
<b>7h</b>	6.578	0.642	0.521
<b>8h</b>	15.717	1.534	0.125
<b>9h</b>	2.945	0.288	0.774
<b>10h</b>	6.538	0.638	0.523
<b>11h</b>	0.437	0.0426	0.966
<b>Sleep</b>	F=2.682	P=0.102	
	Diff of Means	t	P
<b>14h</b>	198.138	0.775	0.439
<b>15h</b>	318.367	1.245	0.213
<b>16h</b>	184.338	0.721	0.471
<b>17h</b>	285.872	1.118	0.264
<b>18h</b>	204.375	0.799	0.424
<b>19h</b>	69.122	0.27	0.787
<b>20h</b>	140.922	0.551	0.582
<b>21h</b>	36.483	0.143	0.887
<b>22h</b>	191.22	0.748	0.455
<b>23h</b>	136.062	0.532	0.595
<b>24h</b>	89.788	0.351	0.726
<b>1h</b>	18.02	0.0705	0.944
<b>2h</b>	30.7	0.12	0.904
<b>3h</b>	269.358	1.054	0.292
<b>4h</b>	215.428	0.843	0.4
<b>5h</b>	420.27	1.644	0.101
<b>6h</b>	346.578	1.356	0.176

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7h	122.852	0.481	0.631
8h	269.238	1.053	0.293
9h	242.563	0.949	0.343
10h	73.66	0.288	0.773
11h	317.737	1.243	0.214
<b>Pause</b>	F=6.773	P=0.009	
	Diff of Means	t	P
14h	13.392	0.367	0.714
15h	41.39	1.134	0.257
16h	32.397	0.888	0.375
17h	59.418	1.628	0.104
18h	43.692	1.197	0.231
19h	25.175	0.69	0.49
20h	8.708	0.239	0.811
21h	0.412	0.0113	0.991
22h	8.962	0.246	0.806
23h	10.635	0.291	0.711
24h	52.263	1.432	0.152
1h	29.917	0.82	0.413
2h	35.597	0.976	0.33
3h	102.753	2.816	0.005
4h	47.268	1.295	0.196
5h	115.227	3.158	0.002
6h	57.587	1.578	0.115
7h	18.357	0.503	0.615

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<b>8h</b>	29.17	0.799	0.424
<b>9h</b>	12.28	0.337	0.737
<b>10h</b>	22.055	0.604	0.546
<b>11h</b>	7.488	0.205	0.837
<b>Twitch</b>	F=1.64	P=0.201	
	Diff of Means	t	P
<b>14h</b>	10.773	0.839	0.402
<b>15h</b>	4.73	0.368	0.713
<b>16h</b>	12.002	0.934	0.35
<b>17h</b>	14.015	1.091	0.276
<b>18h</b>	20.072	1.563	0.119
<b>19h</b>	4.675	0.364	0.716
<b>20h</b>	2.632	0.205	0.838
<b>21h</b>	7.473	0.582	0.561
<b>22h</b>	1.527	0.119	0.905
<b>23h</b>	0.71	0.0553	0.956
<b>24h</b>	7.918	0.616	0.538
<b>1h</b>	43.297	3.371	<0.001
<b>2h</b>	6.692	0.521	0.603
<b>3h</b>	2.863	0.223	0.824
<b>4h</b>	4.932	0.384	0.701
<b>5h</b>	20.38	1.587	0.113
<b>6h</b>	38.543	3.001	0.003
<b>7h</b>	4.498	0.35	0.726
<b>8h</b>	5.195	0.404	0.686



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<b>9h</b>	1.435	0.112	0.911
<b>10h</b>	0.28	0.0218	0.983
<b>11h</b>	4.323	0.337	0.737
<b>Awaken</b>	F=1.674	P=0.196	
	Diff of Means	t	P
<b>14h</b>	0.805	0.251	0.802
<b>15h</b>	2.065	0.644	0.52
<b>16h</b>	2.358	0.735	0.463
<b>17h</b>	1.762	0.549	0.583
<b>18h</b>	2.72	0.848	0.379
<b>19h</b>	2.003	0.624	0.533
<b>20h</b>	9.818	3.06	0.002
<b>21h</b>	0.0117	0.00364	0.997
<b>22h</b>	4763	1.484	0.138
<b>23h</b>	1.998	0.623	0.534
<b>24h</b>	1.277	0.398	0.691
<b>1h</b>	1.303	0.406	0.685
<b>2h</b>	0.693	0.216	0.829
<b>3h</b>	0.537	0.167	0.867
<b>4h</b>	0.642	0.2	0.842
<b>5h</b>	3.293	1.026	0.305
<b>6h</b>	3.743	1.167	0.244
<b>7h</b>	4.973	1.55	0.122
<b>8h</b>	2.673	0.833	0.405
<b>9h</b>	0.153	0.0478	0.962

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<b>10h</b>	3.27	1.019	0.308
<b>11h</b>	2.122	0.661	0.509
<b>Eat</b>	F=2.267	P=0.133	
	Diff of Means	t	P
<b>14h</b>	6.805	0.117	0.86
<b>15h</b>	40.43	1.049	0.294
<b>16h</b>	31.57	0.819	0.413
<b>17h</b>	17.777	0.461	0.645
<b>18h</b>	1.988	0.0516	0.959
<b>19h</b>	24.45	0.634	0.526
<b>20h</b>	31.085	0.807	0.42
<b>21h</b>	3.98	0.103	0.918
<b>22h</b>	41.545	1.078	0.281
<b>23h</b>	6.812	0.177	0.86
<b>24h</b>	61.197	1.588	0.113
<b>1h</b>	45.823	1.189	0.235
<b>2h</b>	39.533	1.026	0.305
<b>3h</b>	12.953	0.366	0.737
<b>4h</b>	20.542	0.533	0.594
<b>5h</b>	62.317	1.617	0.106
<b>6h</b>	37.468	0.972	0.331
<b>7h</b>	54.382	1.411	0.159
<b>8h</b>	24.312	0.631	0.528
<b>9h</b>	7.395	0.192	0.848
<b>10h</b>	18.858	0.489	0.625

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11h	16.815	0.436	0.663
<b>Chew</b>	F=0.866	P=0.352	
	Diff of Means	t	P
14h	4.808	0.407	0.684
15h	8.713	0.737	0.461
16h	9.775	0.827	0.409
17h	2.272	0.192	0.848
18h	2.213	0.187	0.852
19h	12.462	1.054	0.292
20h	0.882	0.0746	0.941
21h	8.342	0.706	0.481
22h	11.087	0.938	0.349
23h	5.927	0.501	0.616
24h	27.07	2.29	0.022
1h	18.142	1.535	0.125
2h	8.187	0.693	0.489
3h	12.345	1.044	0.297
4h	2.608	0.221	0.825
5h	4.138	0.35	0.726
6h	4.422	0.374	0.708
7h	24.838	2.101	0.036
8h	13.105	1.109	0.268
9h	4.643	0.393	0.695
10h	0.563	0.0477	0.962
11h	3.46	0.293	0.77

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<b>Drink</b>	F=1.629	P=0.202	
	Diff of Means	t	P
<b>14h</b>	1.28	0.301	0.763
<b>15h</b>	0.375	0.0883	0.93
<b>16h</b>	2.49	0.586	0.558
<b>17h</b>	1.56	0.367	0.713
<b>18h</b>	0.478	0.113	0.91
<b>19h</b>	1.827	0.43	0.667
<b>20h</b>	3.842	0.905	0.366
<b>21h</b>	1.032	0.243	0.808
<b>22h</b>	5.903	1.39	0.165
<b>23h</b>	7.447	1.754	0.08
<b>24h</b>	6.063	1.428	0.154
<b>1h</b>	12.703	2.991	0.003
<b>2h</b>	0.312	0.0734	0.942
<b>3h</b>	5.46	1.286	0.199
<b>4h</b>	0.727	0.171	0.864
<b>5h</b>	1.297	0.305	0.76
<b>6h</b>	2.715	0.639	0.523
<b>7h</b>	6.625	1.56	0.119
<b>8h</b>	4.323	1.018	0.309
<b>9h</b>	0.552	0.13	0.897
<b>10h</b>	3.845	0.905	0.365
<b>11h</b>	3.585	0.844	0.399

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<b>Fig5B</b>	unpaired T test			
	df	t	P	F
Moving Distance	df=38	t=1.032	P=0.3085	F=1.734
Rearing against wall	df=38	t=0.7685	P=0.447	F=1.983
Free-standing rearing	df=38	t=1.066	P=0.2932	F=1.667
Groom	df=38	t=0.9718	P=0.3373	F=1.297
Center/(center+corner)	df=38	t=0.01886	P=0.985	F=1.598

<b>Fig6A</b>	unpaired T test			
	df	t	P	F
H	df=34	t=0.1546	P=0.8781	F=1.844
AFS	df=34	t=1.55	P=0.1303	F=1.022
Memory	df=34	t=0.8524	P=0.3999	F=1.008
Extinct.	df=34	t=2.433	P=0.0204	F=4.583

<b>Fig6B</b>	Two-way ANOVA		Bonferroni posttests P	F=2.81	P=0.0949
	Diff of Means	t			
H	1.573	0.4664	0.641		
AFS	4.628	1.373	0.171		
D1	4.078	1.209	0.227		
D2	3.534	1.048	0.295		
D3	-1.015	0.3009	0.764		
D4	1.248	0.3703	0.711		
D5	1.119	0.332	0.74		

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D6 0.809 0.24 0.811

**Fig7B**

unpaired T test

	df	t	P	F
D-1	df=38	t=-0.7457	P=0.4604	F=1.654
D0	df=38	t=0.8057	P=0.4254	F=1.693

**Fig7C**

Repeated measures two-way anova

Bonferroni posttests

	NaCl (WT V.S. T740A)			LiCl (WT V.S. T740A)		
	Diff of Means	t	P	Diff of Means	t	P
D2	0.0977	1.468	0.146	0.0172	0.272	0.786
D9	0.0808	1.214	0.228	0.0525	0.829	0.411
D16	0.00841	0.126	0.9	0.183	2.894	0.005
D23	0.0899	1.351	0.18	0.285	4.506	<0.001
D30	0.0158	0.237	0.813	0.487	7.698	<0.001

**Fig7D**

Repeated measures two-way anova

Bonferroni posttests

	0.1MLiCl (WT V.S. T740A)			0.15MLiCl (WT V.S. T740A)		
	Diff of Means	t	P	Diff of Means	t	P
D2	6.036	0.611	0.545	5.831	0.584	0.562
D4	16.213	1.642	0.109	2.369	0.237	0.813
D6	29.2	2.957	0.005	6.699	0.671	0.505
D8	11.26	1.14	0.261	17.977	1.8	0.078

**Appendix 1** to Huang TN and Hsueh YP. Calcium/calmodulin-dependent serine protein kinase (CASK), a protein implicated in mental retardation and autism spectrum disorders, interacts with T-Brain-1 (TBR1) to control extinction of associative memory in male mice. *JPsychiatry Neurosci* 2016.

DOI: 10.1503/jpn.150359

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D10	15.475	1.567	0.125	27.684	2.773	0.008
D12	7.11	0.72	0.476	9.837	0.985	0.329
D14	6.73	0.682	0.5	13.138	1.316	0.194
D16	7.126	0.722	0.475	0.934	0.0936	0.926

**Fig7E**

unpaired T test

	df	t	P	F
D2	df=10	t=0.3255	P=0.7515	F=3.157
D9	df=10	t=0.918	P=0.3802	F=1.179
D16	df=10	t=0.8926	P=0.393	F=1.634

**Fig7F**

unpaired T test

	df	t	P	F
D30	df=10	t=1.772	P=0.1067	F=1.28