

## SUPPLEMENT

**Table S1.** Genes associated with the regulation of calcium processes selected for analysis

	Gene	Encoded protein
1.	<i>Cacna1a</i>	Voltage-dependent P/Q-type calcium channel subunit alpha-1A
2.	<i>Cacna1b</i>	Calcium channel, voltage-dependent, n type, alpha 1b subunit
3.	<i>Cacna1c</i>	Calcium channel, voltage-dependent, l type, alpha 1c subunit
4.	<i>Cacna1d</i>	Calcium channel, voltage-dependent, l type, alpha 1d subunit
5.	<i>Cacna1e</i>	Calcium channel, voltage-dependent, r type, alpha 1e subunit
6.	<i>Cacna1g</i>	Calcium channel, voltage-dependent, t type, alpha 1g subunit
7.	<i>Cacna1h</i>	Calcium channel, voltage-dependent, t type, alpha 1h subunit
8.	<i>Cacna1i</i>	Voltage-dependent T-type calcium channel subunit alpha
9.	<i>Cacna2d1</i>	Calcium channel, voltage-dependent, alpha2/delta subunit 1
10.	<i>Cacna2d2</i>	Calcium channel, voltage-dependent, alpha 2/delta subunit 2
11.	<i>Cacna2d3</i>	Calcium channel, voltage-dependent, alpha2/delta subunit 3
12.	<i>Cacnb1</i>	Voltage-dependent L-type calcium channel subunit beta-1
13.	<i>Cacnb2</i>	Voltage-dependent L-type calcium channel subunit beta-2
14.	<i>Cacnb3</i>	Voltage-dependent L-type calcium channel subunit beta-3
15.	<i>Cacnb4</i>	Voltage-dependent L-type calcium channel subunit beta-4
16.	<i>Cacng2</i>	Calcium channel, voltage-dependent, gamma subunit 2
17.	<i>Cacng3</i>	Calcium channel, voltage-dependent, gamma subunit 3
18.	<i>Cacng4</i>	Calcium channel, voltage-dependent, gamma subunit 4
19.	<i>Cacng5</i>	Voltage-dependent calcium channel gamma-5 subunit
20.	<i>Calb1</i>	Calbindin 1; Calbindin; Buffers cytosolic calcium
21.	<i>Calb2</i>	Calbindin 2; Calretinin; Calretinin is a calcium-binding protein
22.	<i>Calcoco1</i>	Calcium-binding and coiled-coil domain-containing protein 1
23.	<i>Calcr1</i>	Calcitonin gene-related peptide type 1 receptor
24.	<i>Calhm2</i>	Calcium homeostasis modulator family member 2
25.	<i>Calm1</i>	Calmodulin 1; calcium-binding protein
26.	<i>Calm2</i>	Calmodulin 2; calcium-binding protein
27.	<i>Calm3</i>	Calmodulin 3; calcium-binding protein
28.	<i>Calml4</i>	Calmodulin-like protein 4
29.	<i>Caln1</i>	Calcium-binding protein 8
30.	<i>Calr</i>	Calreticulin, calcium-binding chaperone
31.	<i>Calu</i>	Calumenin, binds 7 calcium ions with a low affinity
32.	<i>Caly</i>	Neuron-specific vesicular protein calcyon
33.	<i>Camk1</i>	Calcium/calmodulin-dependent protein kinase type 1
34.	<i>Camk1d</i>	Calcium/calmodulin-dependent protein kinase type 1D
35.	<i>Camk1g</i>	Calcium/calmodulin-dependent protein kinase type 1G
36.	<i>Camk2a</i>	Calcium/calmodulin-dependent protein kinase type II subunit alpha
37.	<i>Camk2b</i>	Calcium/calmodulin-dependent protein kinase type II subunit beta
38.	<i>Camk2d</i>	Calcium/calmodulin-dependent protein kinase type II subunit delta
39.	<i>Camk2g</i>	Calcium/calmodulin-dependent protein kinase type II subunit gamma
40.	<i>Camk2n1</i>	Calcium/calmodulin-dependent protein kinase II inhibitor 1
41.	<i>Camk2n2</i>	Calcium/calmodulin-dependent protein kinase II inhibitor 2
42.	<i>Camk4</i>	Calcium/calmodulin-dependent protein kinase
43.	<i>Camkk1</i>	Calcium/calmodulin-dependent protein kinase kinase 1
44.	<i>Camkk2</i>	Calcium/calmodulin-dependent protein kinase kinase 2, beta
45.	<i>Camkmt</i>	Calmodulin-lysine N-methyltransferase
46.	<i>Camkv</i>	CaM kinase-like vesicle-associated protein
47.	<i>Efcab4a</i>	EF-hand calcium-binding domain-containing protein 4A
48.	<i>Grin1</i>	Glutamate receptor, ionotropic, NMDA 1 (zeta 1)
49.	<i>Grin2a</i>	Glutamate receptor ionotropic, NMDA type subunit 2A
50.	<i>Grin2b</i>	Glutamate receptor, ionotropic, NMDA type subunit 2B (epsilon 2)
51.	<i>Grin2c</i>	Glutamate receptor ionotropic, NMDA type subunit 2C
52.	<i>Hpcal1</i>	Hippocalcin-like protein 1
53.	<i>Hpcal4</i>	Hippocalcin-like protein 4
54.	<i>Ppp3ca</i>	Serine/threonine-protein phosphatase 2B catalytic subunit alpha isoform

55.	<i>Ppp3cb</i>	Serine/threonine-protein phosphatase 2B catalytic subunit beta isoform
56.	<i>Ppp3cc</i>	Serine/threonine-protein phosphatase 2B catalytic subunit gamma isoform
57.	<i>Ppp3r1</i>	Protein phosphatase 3, regulatory subunit b, alpha isoform (calcineurin b, type i)
58.	<i>S100a1</i>	S100 calcium binding protein A1
59.	<i>S100a10</i>	Protein S100-A10
60.	<i>S100a11</i>	S100 calcium binding protein A11
61.	<i>S100a13</i>	Protein S100-A13
62.	<i>S100a16</i>	Protein S100-A16; Calcium-binding protein.
63.	<i>S100a4</i>	S100 calcium binding protein A4
64.	<i>S100a6</i>	Protein S100-A6
65.	<i>S100b</i>	S100 protein, beta polypeptide, neural
66.	<i>S100pbp</i>	S100P binding protein
67.	<i>Slc24a1</i>	Solute carrier family 24 (sodium/potassium/calcium exchanger), member 1
68.	<i>Slc24a2</i>	Solute carrier family 24 (sodium/potassium/calcium exchanger), member 2
69.	<i>Slc24a3</i>	Solute carrier family 24 (sodium/potassium/calcium exchanger), member 3
70.	<i>Slc24a4</i>	Solute carrier family 24 (sodium/potassium/calcium exchanger), member 4
71.	<i>Slc24a5</i>	Solute carrier family 24 (sodium/potassium/calcium exchanger), member 5
72.	<i>Slc8a1</i>	Sodium/calcium exchanger 1
73.	<i>Slc8a2</i>	Sodium/calcium exchanger 2
74.	<i>Slc8a3</i>	Sodium/calcium exchanger 3
75.	<i>Slc8b1</i>	Mitochondrial sodium/calcium exchanger protein

**Table S2.** Coexpression of DEGs (15) involved in the regulation of calcium processes in the hippocampus of male

	<i>Cacna1g</i>	<i>Cacnb3</i>	<i>Camk1g</i>	<i>Camk2d</i>	<i>Camk2n2</i>	<i>Caly</i>	<i>Caln1</i>	<i>S100a16</i>	<i>Slc24a4</i>	<i>Cacna2d1</i>	<i>Cacng5</i>	<i>Grin2a</i>	<i>Calm2</i>	<i>Cacna1a</i>	<i>Cacng2</i>
<i>Cacna1g</i>	1,000	0,791*	0,812**	0,678*	0,844**	0,571	0,903***	0,869**	0,790*	-0,634	-0,317	-0,670*	-0,853**	0,573	0,620
<i>Cacnb3</i>	0,791*	1,000	0,796*	0,375	0,795*	0,828*	0,826**	0,581	0,533	-0,622	-0,345	-0,468	-0,845**	0,798*	0,672*
<i>Camk1g</i>	0,812**	0,796*	1,000	0,560	0,891**	0,666	0,949***	0,750*	0,644	-0,830**	-0,398	-0,832**	-0,927***	0,689*	0,826**
<i>Camk2d</i>	0,678*	0,375	0,560	1,000	0,697*	0,449	0,648	0,559	0,721*	-0,308	0,250	-0,725*	-0,703*	0,640	0,228
<i>Camk2n2</i>	0,844**	0,795*	0,891**	0,697*	1,000	0,654	0,941***	0,719*	0,566	-0,783*	-0,137	-0,812**	-0,953***	0,640	0,651
<i>Caly</i>	0,571	0,828**	0,666	0,449	0,654	1,000	0,697*	0,504	0,547	-0,448	-0,140	-0,542	-0,784*	0,393	0,337
<i>Caln1</i>	0,903***	0,826**	0,949***	0,648	0,941***	0,697*	1,000	0,851**	0,719*	-0,861**	-0,283	-0,801**	-0,942***	0,608	0,671*
<i>S100a16</i>	0,869**	0,581	0,750*	0,559	0,719*	0,504	0,851**	1,000	0,811**	-0,715*	-0,444	-0,754*	-0,756*	0,276	0,441
<i>Slc24a4</i>	0,790*	0,533	0,644	0,721*	0,566	0,547	0,719*	0,811**	1,000	-0,436	-0,341	-0,629	-0,704*	0,182	0,365
<i>Cacna2d1</i>	-0,634	-0,622	-0,830**	-0,308	-0,783*	-0,448	-0,861**	-0,715*	-0,436	1,000	0,332	0,644	0,717*	-0,564	-0,607
<i>Cacng5</i>	-0,317	-0,345	-0,398	0,250	-0,137	-0,140	-0,283	-0,444	-0,341	0,332	1,000	0,228	0,287	-0,438	-0,599
<i>Grin2a</i>	-0,670*	-0,468	-0,832**	-0,725*	-0,812**	-0,542	-0,801**	-0,754*	-0,629	0,644	0,228	1,000	0,851**	-0,271	-0,541
<i>Calm2</i>	-0,853**	-0,845**	-0,927***	-0,703*	-0,953***	-0,784*	-0,942***	-0,756*	-0,704*	0,717*	0,287	0,851**	1,000	-0,614	-0,683*
<i>Cacna1a</i>	0,573	0,798*	0,689*	0,640	0,640	0,393	0,608	0,276	0,182	-0,564	-0,438	-0,271	-0,614	1,000	0,883**
<i>Cacng2</i>	0,620	0,672*	0,826**	0,228	0,651	0,337	0,671*	0,441	0,365	-0,607	-0,599	-0,541	-0,683*	0,883**	1,000
<i>n</i>	9	8	10	5	9	3	11	8	5	5	0	7	12	3	5

This table gives Pearson correlation coefficient values. Bold type - statistically significant correlations: \* -  $p < 0.05$ ; \*\* -  $p < 0.01$ ; \*\*\* -  $p < 0.001$ ; n - number of significant correlations.