

KEY RESOURCES TABLE

REAGENT or RESOURCE	SOURCE	IDENTIFIER
Antibodies		
GFP	Abcam	cat#ab13970
HA	Biolegend	cat#16B12
G3BP	Abcam	cat#ab56574
DCP1a	Abcam	cat#ab47811
GluA2	Abcam	cat#ab20673
SUMO1	ENZO	cat#BML-PW8330
SUMO2	Sigma	cat#S9571-200UL
SUMO3	Fisher Scientific	cat#AF2959
FMRP	abcam	cat#ab17722
Extracellular GluA2	Alomone	cat#AGC-005
Bacterial and Virus Strains		
AAV-DJ8-(0.4)aCamKII-CPEB3-HA-P2A-eGFP	This manuscript	N/A
AAV-DJ8-(0.4)aCamKII-S240-242A-HA-P2A-eGFP	This manuscript	N/A
Critical Commercial Assays		
Q5 [®] Site-Directed Mutagenesis Kit	NEB	E0554
Dual-Glo Luciferase Assay System	Promega	E2920
Deposited Data		
Supplementary Data 1	This manuscript	N/A
Supplementary Data 2	This manuscript	N/A
Supplementary Data 3	This manuscript	N/A
Experimental Models: Cell Lines		
HEK293T	ATCC	CRL-11268

HeLa	ATCC	CRL-2
N2A	ATCC	CCL-131
Experimental Models: Organisms/Strains		
C57BL/6J mice	Jackson Lab	000664
Oligonucleotides		
Splice C: AAATTTATCCCATGCGACCTTTCAGAGGCTCATG GTC GACCATGAGCCTCTGAAAGGTCGCATGGGAATAA ATTT	This manuscript	N/A
Splice B: C TTCAAAGGGAAAGAGAGAAGAGGTGTTAAGTGC CATAATGTTA TAACATTATGGCACTTAACACCTTCTCTCTTTCC CTTTGAAG	This manuscript	N/A
S194A: GCTGGCGGGCGCGCGGGCGTTGCT AGCAACGCCGCGCGCCCGCCAGC	This manuscript	N/A
S197A: CCTGGCTGGGGGCGGCGGGCGAGC GCTCGCCCGCCGCCCCAGCCAGG	This manuscript	N/A
S237-238A: GGACGAGGCCGAGCGGCAGCGGCCG CGGCCGCTGCCGCTGCGGCCTCGTCC	This manuscript	N/A
S240-242A: GCTGCCTCTTCGGCCGCGGCCGCTGGAACACGC ACCA TGGTGCGTGTTCCAGGCGCCGCGGCCGAAGAG GCAGC	This manuscript	N/A
S349A: CATTAAGGAGTTCTCCAAGGCGTGCAAGTAAAA GTGTCAT ATGACACTTTTAACTTGCACGCCTTGGAGAACTCCTTAATG	This manuscript	N/A
Del_N	Fioriti et al., 2015 (Kandel Lab)	N/A
Del_RBD: GAACGAGTGGAACGCTACTCTCCGTACGTGCT AGCACGTACGGAGAGTAGCGTTCCTCACTCGTTC	This manuscript	N/A

S419-420A: CAAAGGGAAAGAGAGCAGCCCGACCTCGTCTCCG CGGAGACGAGGTCGGGCTGCTCTCTTCCCTTG	This manuscript	N/A
S444A: AGGAGCAGCTAAGCC GGCTTAGCTGCTCCT	This manuscript	N/A
Y457A/S458A: CCAACAAACACCTTTCTAGCGGCGCTTCCACTCG TTCCCCA TGGGGAACGAGTGGAACGCGCCGCTAGAAAGGTGTTTGT TGG	This manuscript	N/A
K459A/R460A: GGCCTCCAACAAACACCGCTGCAGAGTAGCGTTC CACTCGTTCCC GGGAACGAGTGGAACGCTACTCTGCAGCGGTGTTTGTGG AGGCC	This manuscript	N/A
S222A: GCCGAGGATGAGGCCGGCTTGCTGGTC GACCAGCAAGCCGGCCTCATCCTCGGC	This manuscript	N/A
S223A: CCGCCGAGGATGCGGACGGCTTGCT AGCAAGCCGTCCGCATCCTCGGCCG	This manuscript	N/A
S224A: CCAGCAAGCCGTCCTCAGCCTCGGCCG CCGCCGAGGCTGAGGACGGCTTGCTGG	This manuscript	N/A
S225A: CGTCCTCATCCGCGGCGGTGCGG CGCGACCGCCGCGGATGAGGACG	This manuscript	N/A
S237A: CGGCCGCTGCCGCTTCGGCCTCG CGAGGCCGAAGCGGCAGCGGCCG	This manuscript	N/A
S238A: CGAGGCCGAGAGGCAGCGGCCG GCGGCCGCTGCCTCTGCGGCCTCG	This manuscript	N/A
S240A: GCCTCTTCGGCCGCGTCCAGCTGGA TCCAGCTGGACGCGGCCGAAGAGGC	This manuscript	N/A
S242A: GTGTTCCAGCTGGCCGAGGCCGAAGAG CTCTTCGGCCTCGGCCAGCTGGAACAC	This manuscript	N/A
Recombinant DNA		

CPEB3-GFP	Fioriti et al., 2015 (Kandel Lab)	N/A
S240-242A-GFP	This Manuscript	N/A
CPEB3-HA	Fioriti et al., 2015 (Kandel Lab)	N/A
S240-242A-GFP	This Manuscript	N/A
Actin 3' UTR-Renilla	Stephan et al., 2015 (Kandel Lab)	N/A
Sumo 2 3' UTR- Renilla	Drisaldi et al., 2015 (Kandel Lab)	N/A
Mutant Sumo 2 3' UTR-Renilla	Drisaldi et al., 2015 (Kandel lab)	N/A
synapsin-CPEB3-HA-tdTomato	This Manuscript	N/A
synapsin-S240-242A-HA-tdTomato	This Manuscript	N/A
Software and Algorithms		
SyNPAnal	Danielson et al., 2014	N/A
Fiji/ImageJ	NIH.gov	N/A
Imaris	Cellular Imaging at Zuckerman Institute/ Oxford Instruments	9.5
Scaffold	Proteome Software	7
GraphPad Prism	GraphPad	7
Strings	Strings-db	11.0
PantherGO	Pantherdb	15.0