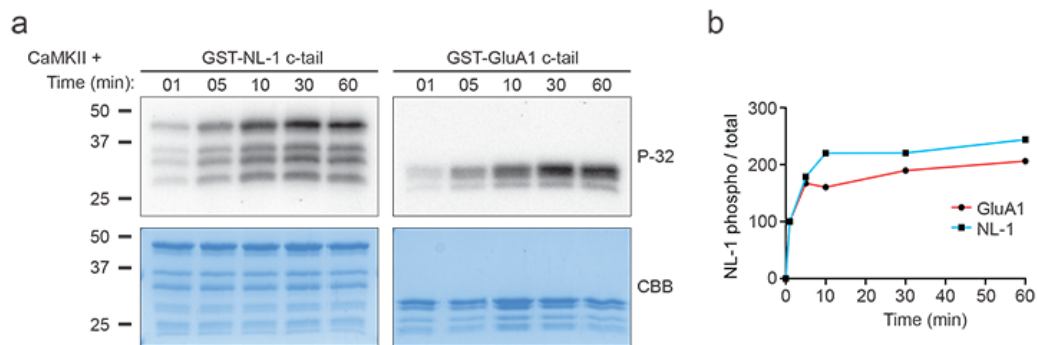


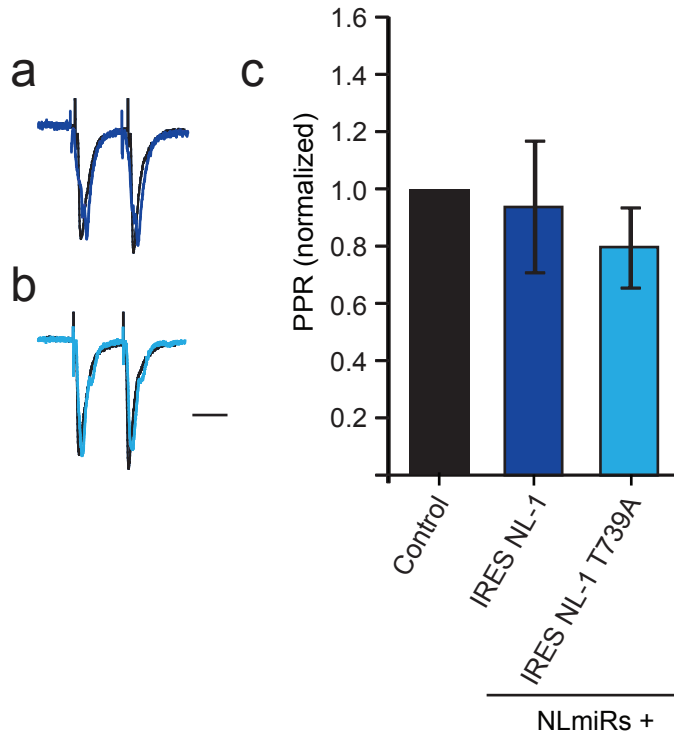
Supplementary Information to

CaMKII phosphorylation of neuroligin-1 regulates excitatory synapses

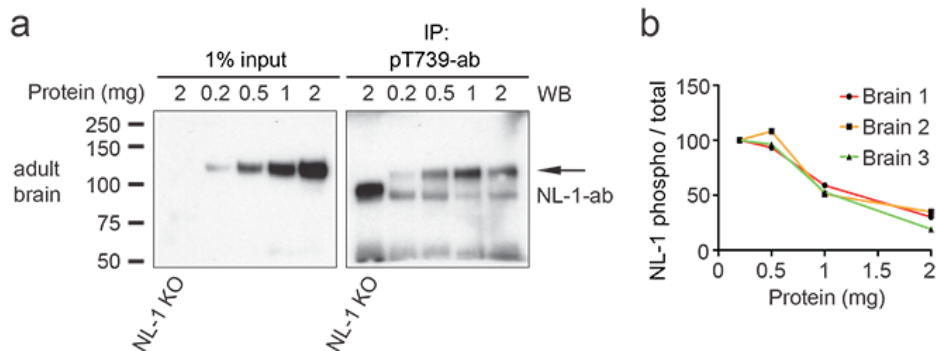
Michael A. Bemben^{1,2}, Seth L. Shipman³, Takaaki Hirai², Bruce E. Herring³, Yan Li⁴,
John D. Badger II², Roger A. Nicoll³, Jeffrey S. Diamond⁵, and Katherine W. Roche^{2*}



Supplementary Figure 1: NL-1 and GluA1 c-tails have similar reaction kinetics. **(a)** GST-NL-1 or GluA1 were incubated with purified CaMKII and [γ -P³²]ATP and analyzed by autoradiography. Reactions were stopped at their marked time. **(b)** Protein concentrations are plotted as a ratio of phosphorylated NL-1 (P-32) to total NL-1 (CBB) normalized to the 1 min reaction condition. Saturation of phosphorylated NL-1 and GluA1 occurred at approximately 10 min. Total protein was visualized by CBB protein staining, in **a,b**. Full-length blots are presented in Supplementary Figure 4 when applicable.



Supplementary Figure 2: NL-1 T739A does not affect presynaptic release probability. Paired-pulse ratio (PPR), second EPSC over first EPSC for consecutive stimuli separated by 40 ms. Example traces normalized at first EPSC for (a) NL-1. (b) NL-1 T739A. (c) Second EPSC over first \pm SEM. NL-1 and NL-1 T739A had similar PPRs ($P > 0.05$, $n = 5$). Scale bars represent 25 ms.



Supplementary Figure 3: Titration of phosphorylated NL-1 with pT739-Ab (a) Protein concentrations from adult WT or NL-1 KO brains were titrated with pT739-Ab. (b) Protein concentrations are plotted as ratio of phosphorylated (IP) to total NL-1 (input) normalized to the 0.2 mg protein condition for an individual brain. Saturation of the pT739-Ab occurs between 0.5 and 1 mg of protein.

Figure 1.

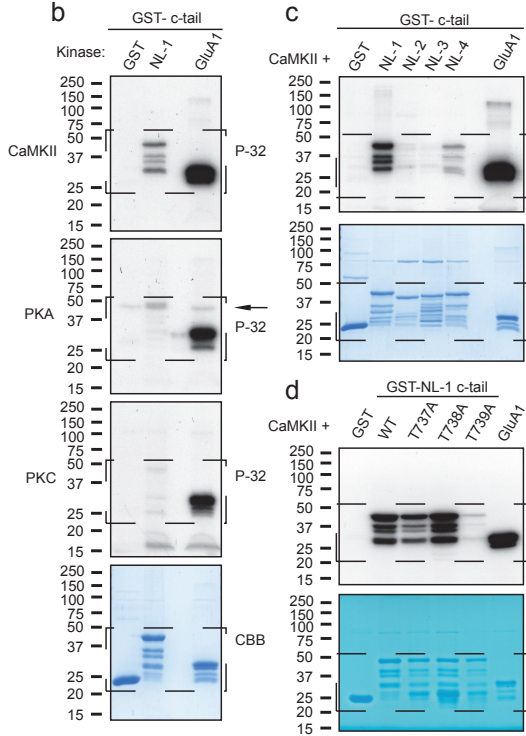


Figure 2.

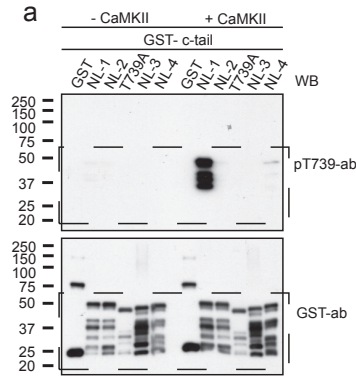


Figure 3.

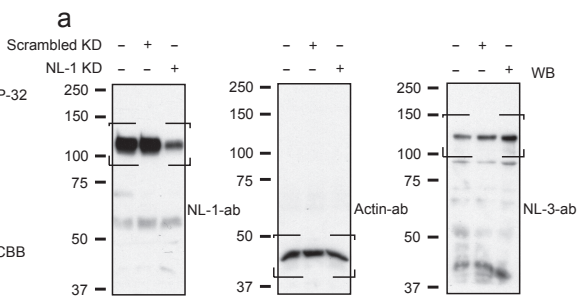


Figure 3.

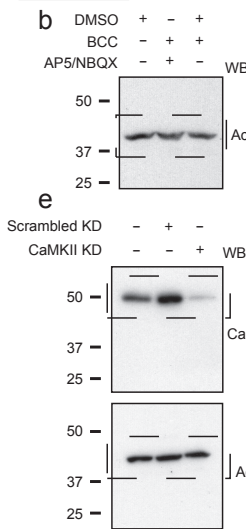
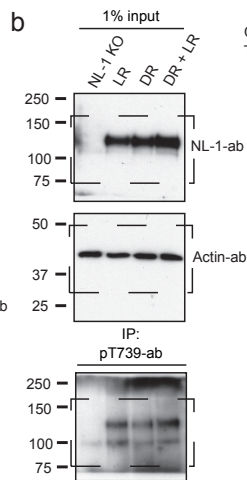
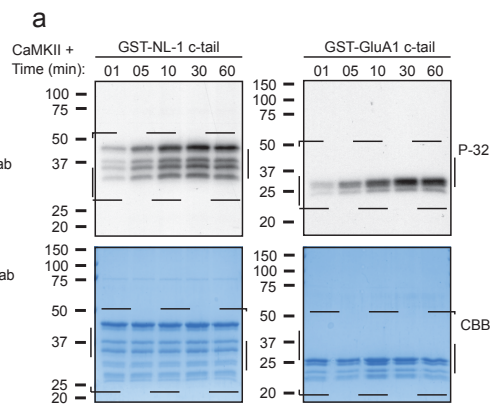


Figure 7.



Supplementary Figure 1.



Supplementary Figure 4: Full-length blots of cropped blots from the manuscript.