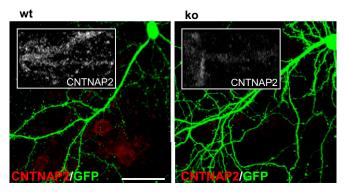
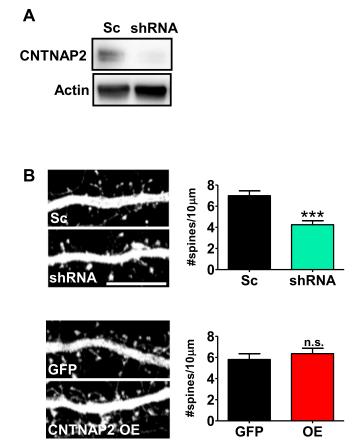
## **Supporting Information**

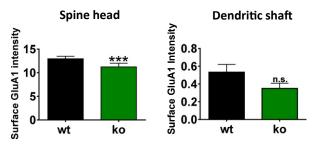
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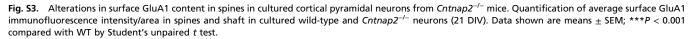


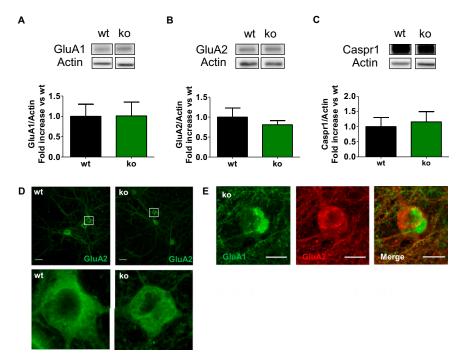
**Fig. S1.** Cultured cortical pyramidal neurons from wild-type and  $Cntnap2^{-/-}$  mice. Immunostaining of GFP-expressing cultured 21 DIV wild-type and  $Cntnap2^{-/-}$  neurons (n = 11-14 neurons). Insets show CNTNAP2 immunofluorescence.



**Fig. S2.** Effect of CNTNAP2 knockdown and overexpression on spine density. (*A*) Effectiveness of RNAi to knockdown (KD) CNTNAP2 measured by Western blot. (*B*) Effects of RNAi-mediated KD and overexpression (OE) of CNTNAP2 in mature 21 DIV neurons. Data shown are means  $\pm$  SEM; \*\*\**P* < 0.001 compared with scrambled control (Sc) by Student's unpaired *t* test.







**Fig. 54.** Western blot analysis and immunofluorescence of 21 DIV wild-type and  $Cntnap2^{-/-}$  cortical neurons in vitro. Analysis of GluA1 (*A*), GluA2 (*B*), and Caspr1 (*C*) expression. Representative blots are shown in the *Top* image together with actin used as a housekeeping control. Data shown are means ± SEM; Student's unpaired *t* test showed no differences between groups. (*D*) GluA2 staining of WT and KO cortical neurons. (Scale bars: 20  $\mu$ m.) (*E*) Soma of *Cntnap2<sup>-/-</sup>* cortical neuron stained for GluA1 and GluA2. (Scale bars: 10  $\mu$ m.)