Supplemental Data

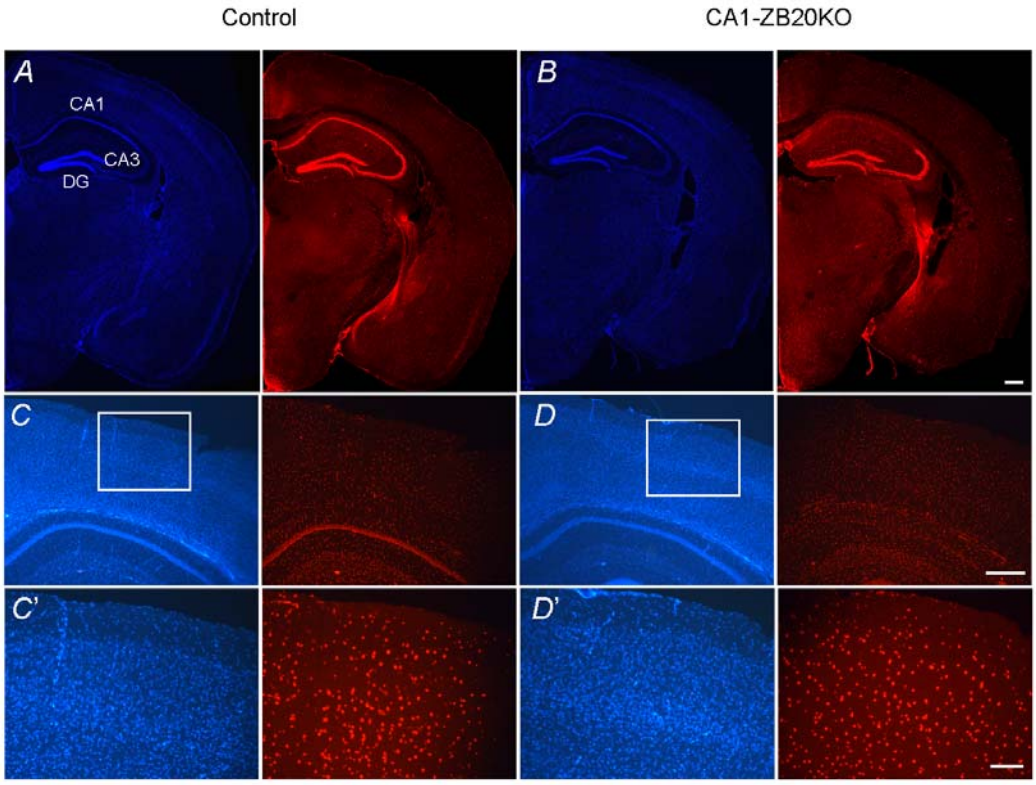

Figure S1. Zbtb20 protein expression in the adult brain of control and CA1-ZB20KO mice. Zbtb20 expression was detected by immunohistochemistry with anti-Zbtb20 antibody 9A10 on coronal sections. *A,B,* Zbtb20 was highly expressed in the control CA1, CA3 and DG regions and was markedly decreased in the CA1, but unaltered in the CA3, DG and other brain areas of mutant mice. (Scale bars: 200 μm) *C,D*, Zbtb20 expression was not significantly changed in the cortex in CA1-ZB20KO mice. *C',D',* High-magnification views of the boxed areas in C and D, respectively. (Scale bars: 200 μm for C and D; 50μm for C' and D')

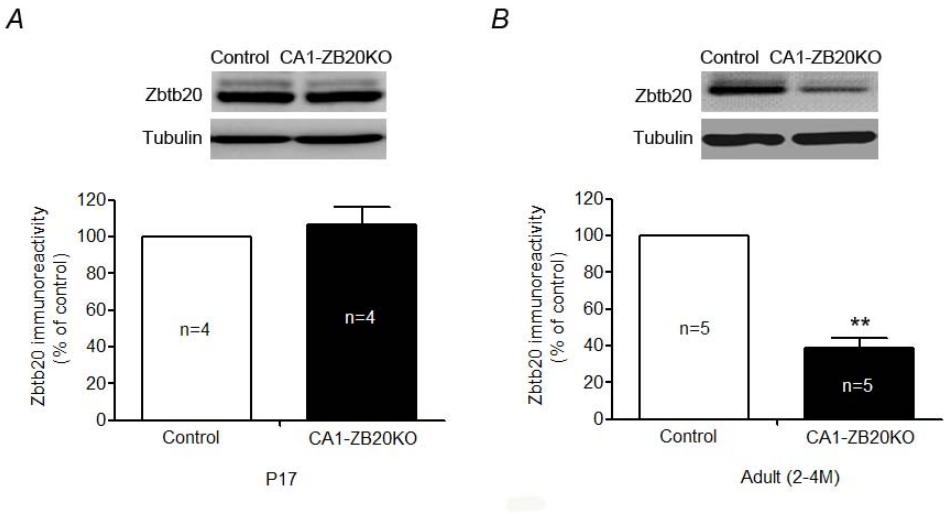

Figure S2. Expressions of Zbtb20 in the hippocampal CA1 of P17 and adult CA1-ZB20KO mice. *A,* Western blotting showed that Zbtb20 protein level was not significantly changed in the CA1 region of P17 mutant hippocampus. *B,* Western blotting showed that Zbtb20 protein level in the hippocampal CA1 of adult (2-4 month old) CA1-ZB20KO mice was significantly lower than control. **, $P < 0.01$

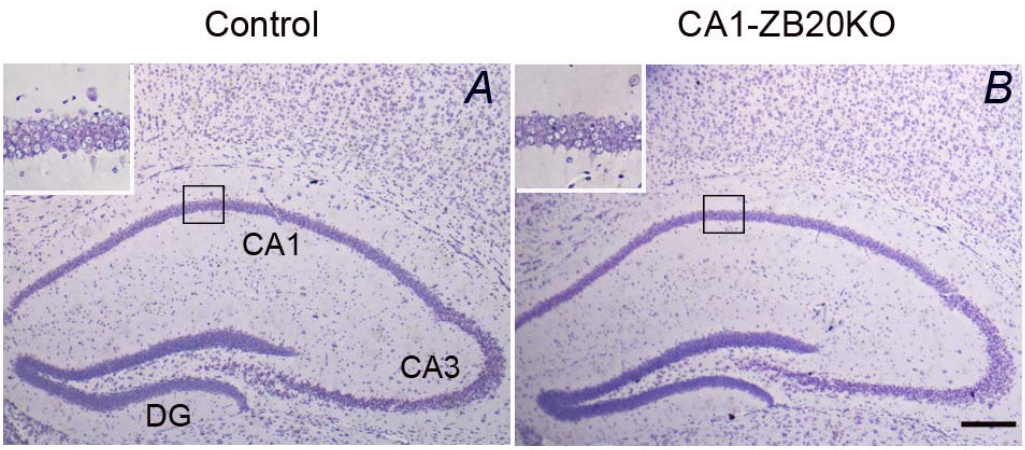

Figure S3. Normal cytoarchitecture of the CA1-ZB20KO hippocampus. *A*,*B*, Nissl-stained coronal forebrain sections from 2-month-old mice. Inserts show high magnification views of boxed areas. The stratum pyramidale appeared normally as a single layer in CA1-ZB20KO mice. (Scale bars: 200 μm)

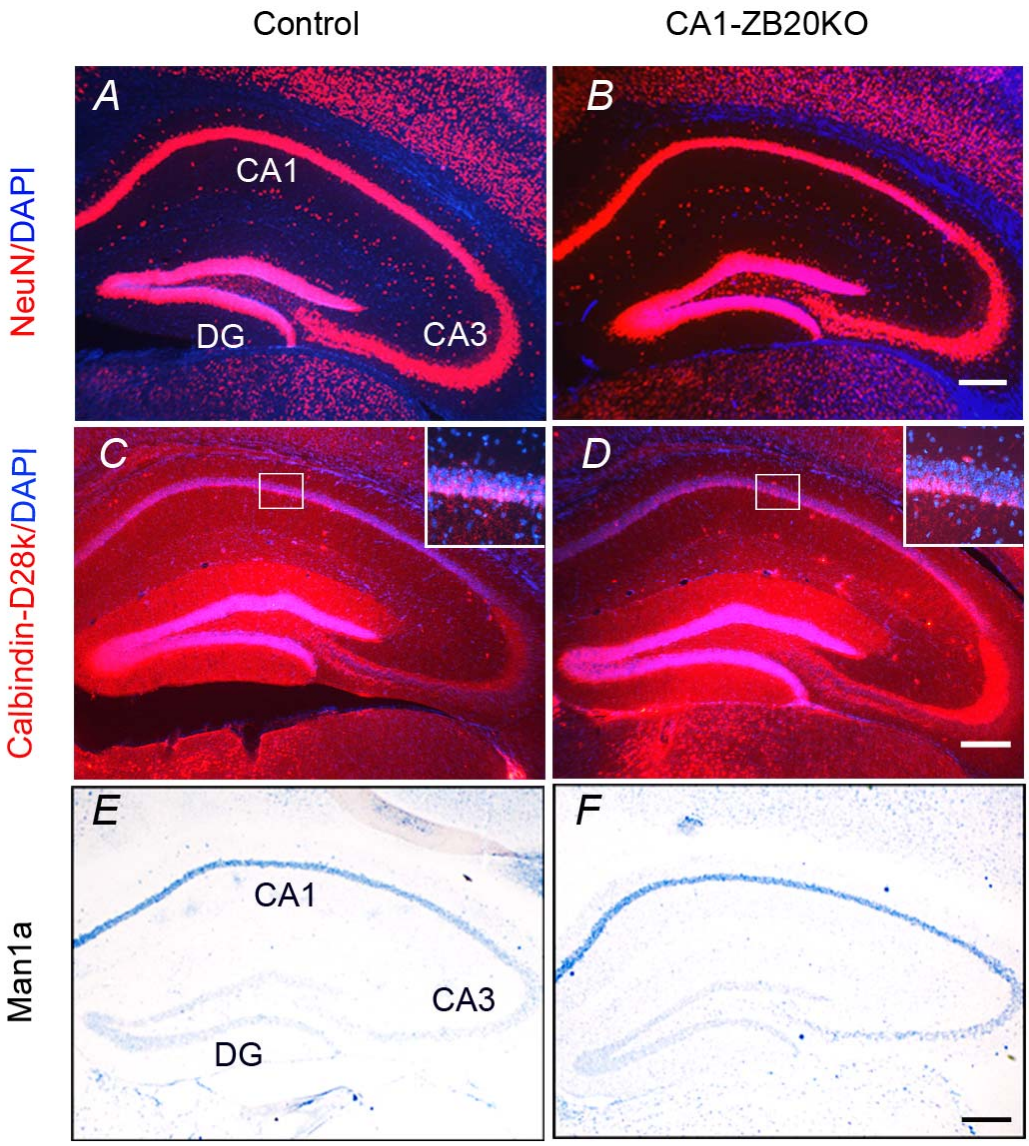

Figure S4. Normal expression of NeuN, Calbindin-D28k and Man1α in the CA1 of CA1-ZB20KO mice. *A-D*, Immunohistochemistry was used to detect NeuN and Calbindin-D28k expression on coronal forebrain sections. NeuN and Calbindin-D28k expression was not different between control and CA1-ZB20KO mice. *E,F*, *In situ* hybridization was used to detect Man1α expression on coronal forebrain sections. CA1-specific Man1α expression was not different between control (*E*) and CA1-ZB20KO (*F*) mice. (Scale bar: 200 μm)

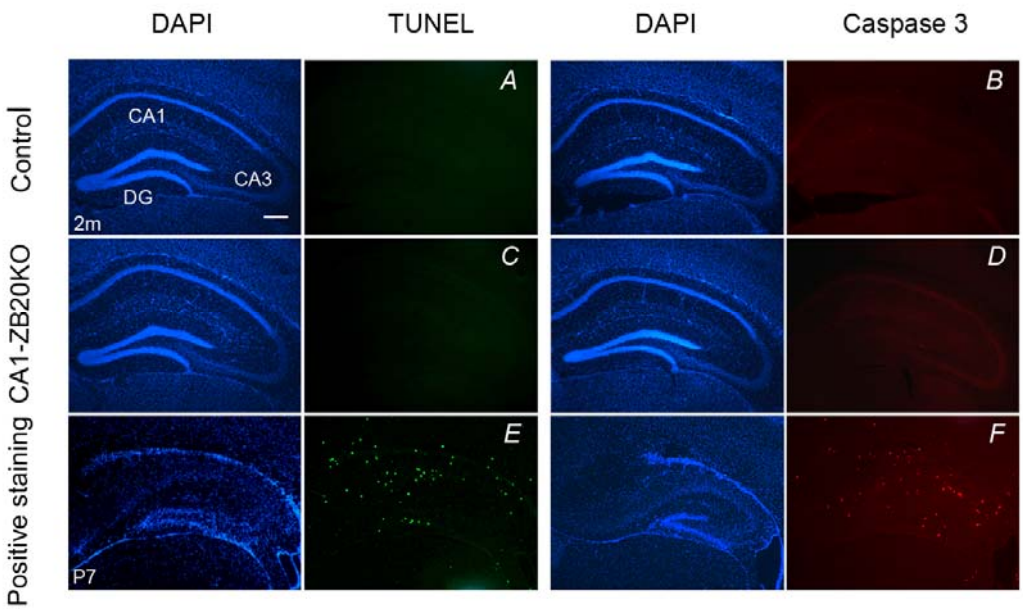

Figure S5. Apoptotic cells were rarely seen in CA1-ZB20KO hippocampi. Apoptosis assays were performed by TUNEL and caspase 3 staining on forebrain coronal sections. *A-D*, In the hippocampi of 2 months old mice, few TUNEL positive (*A*,*C*) or caspase 3 positive (*B*,*D*) cells were detected in control and CA1-ZB20KO mice. *E*,*F*, Positive TUNEL or caspase 3 staining of hippocampi from globe Zbtb20 knockout mice at P7. (Scale bar: 200 μm)

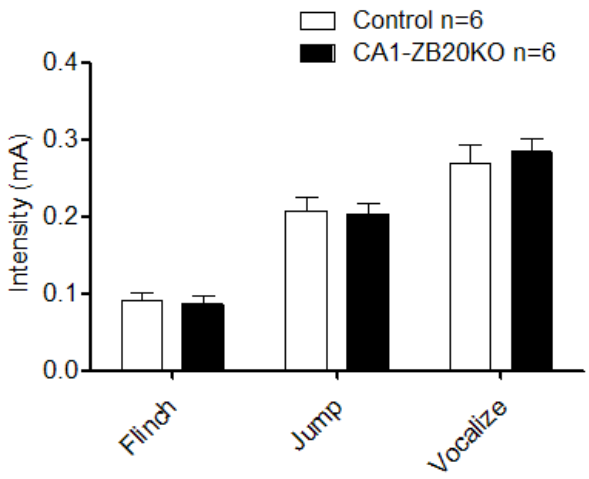

Figure S6. Sensitivity to shock in CA1-ZB20KO mice and controls. To evaluate the sensitivity of the mice to shock, we determined the minimal amount of current required to elicit three stereotypical behaviors in CA1-ZB20KO mice and controls: flinching/ running, jumping, and vocalizing. There was no difference between the two genotypes.

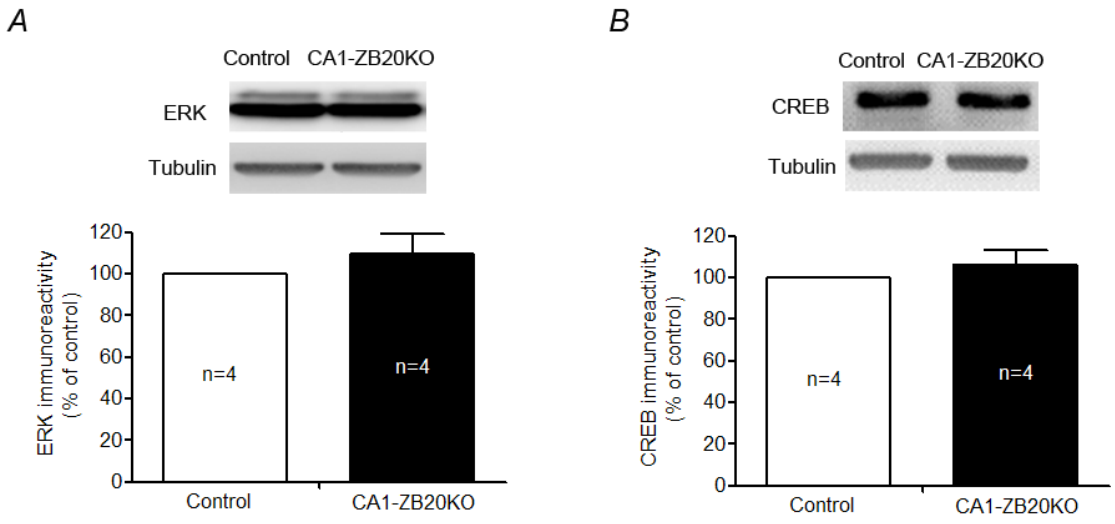

Figure S7. Normal expressions of ERK and CREB in the hippocampal CA1 of CA1-ZB20KO mice. *A,* Western blotting showed that ERK protein levels were not significantly changed in the CA1 region of the mutant hippocampus. *B,* Western blotting showed that CREB protein levels were not significantly changed in the CA1 region of the mutant hippocampus.

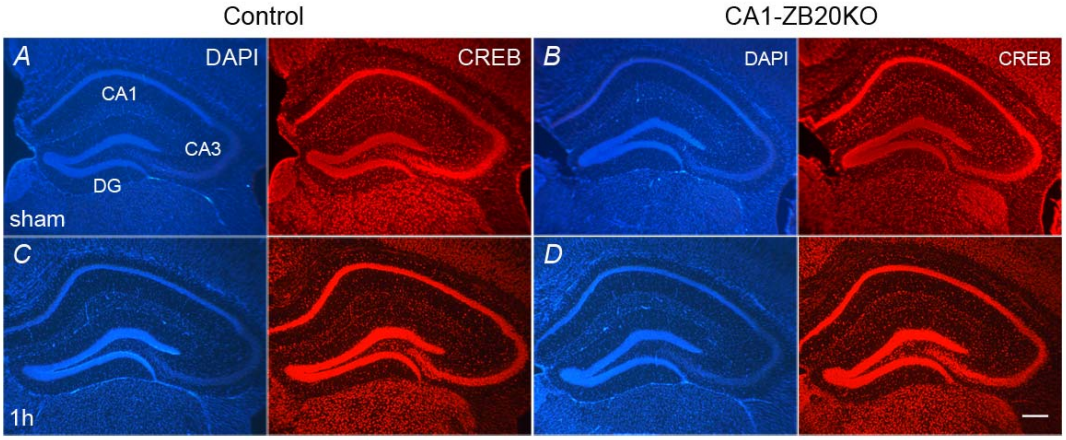

Figure S8. Normal expression of CREB in the hippocampus of CA1-ZB20KO mice. Immunohistochemistry was used to detect CREB expression on coronal forebrain sections. *A,B*, CREB expression was not different between sham foot shocked control and CA1-ZB20KO mice. *C,D*, CREB expression was not different between control and CA1-ZB20KO mice 1hr after foot shock.