Supplemental data

AMPAR endocytosis is critical for LTP decay and memory loss

Zhifang Dong[1*], Huili Han[1], Hongjie Li[1], Yanrui Bai[1], Wei Wang[1], Man Tu[1], Yan Peng[1], Limin Zhou[1], Wenting He[1], Xiaobin Wu[1], Tao Tan[1], Mingjing Liu[1], Xiaoyan Wu[1], Weihui Zhou[1], Wuyang Jin[2], Shu Zhang[2,3], Todd Charlton Sacktor[4], Tingyu Li[1*], Weihong Song[1,2*], Yu Tian Wang[1,2,3*]

[1]Ministry of Education Key Laboratory of Child Development and Disorders, and Chongqing Key Laboratory of Translational Medical Research in Cognitive Development and Learning and Memory Disorders, Children's Hospital of Chongqing Medical University, Chongqing 400014, PR China;

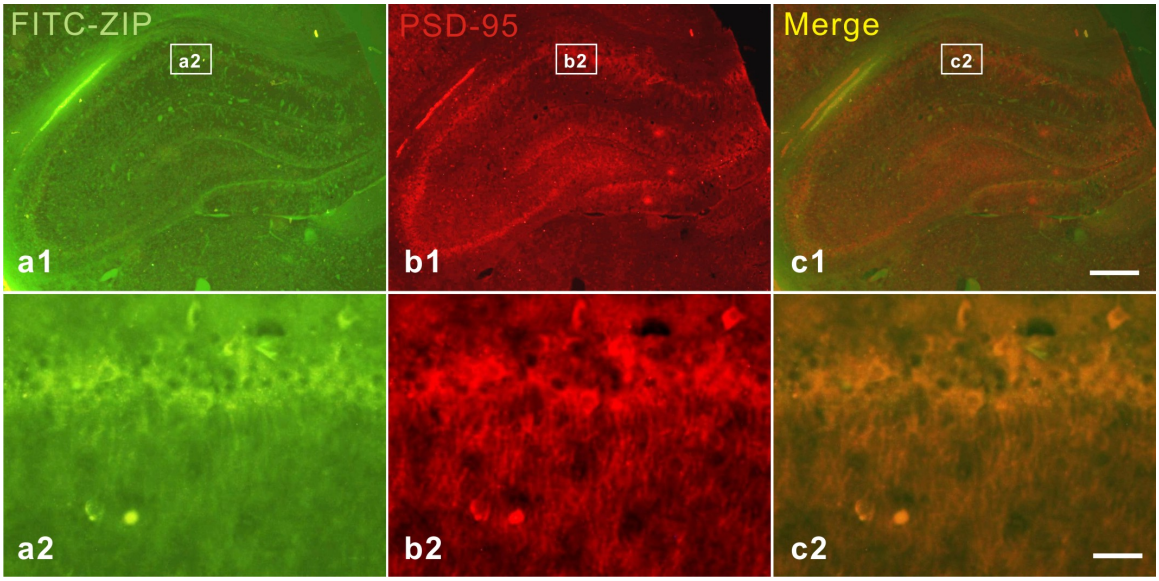
[2]Brain Research Centre, University of British Columbia, Vancouver, BC V6T 2B5, Canada;

[3]Graduate Institute of Immunology, China Medical University and Translational Medicine Research Center, China Medical University Hospital, Taichung;

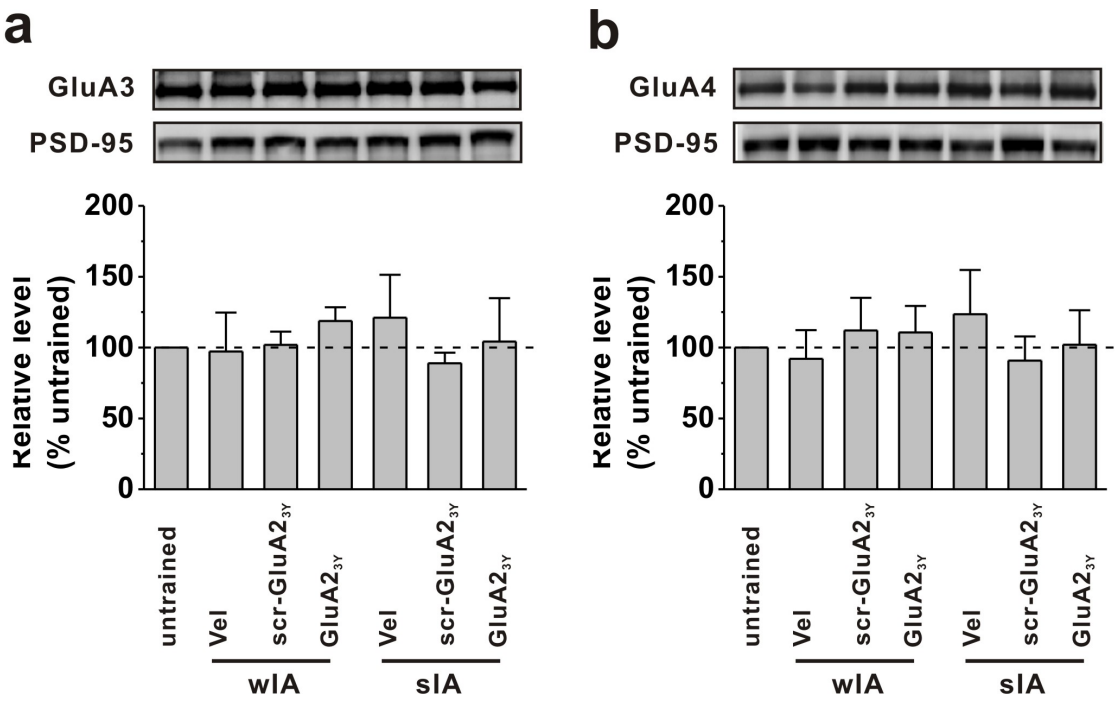
[4]Departments of Physiology and Pharmacology, and of Neurology, The Robert Furchgott Center for Neural and Behavioral Science, SUNY Downstate Medical Center, Brooklyn, New York, USA.

* Correspondence to: zfdong@cqmu.edu.cn (Z.D.), tyli@vip.sina.com (T.L.), weihong@exchange.ubc.ca (W.S.) or ytwang@brain.ubc.ca (Y.T.W.)

Supplemental Figures 1-2



Supplemental Figure 1. Distribution of ZIP peptide after intracerebroventricular (i.c.v.) injection. Two hours after i.c.v. injection of FITC-ZIP (25 nmol in 5µl), the brain was fixed and sectioned. Coronal sections were then immnoflouroscently stained with primary anti-PSD antibody and Texas Red-conjugated secondary antibody. Localization of FITC-ZIP (a1 and a2; green) and PSD-95 (b1 and b2; red) were visualized under microscopy at 40X **(a1-c1)** and 400X **(a2-c2)** magnification. Co-localizations of FITC-ZIP and PSD95 in merged images (c1 and c2) indicate a successful diffusion of ZIP to excitatory synapses, the sites of action of the peptide. Bars: 500 µm for the top panel and 50 µm for the bottom panel.



Supplemental Figure 2. Synaptic GluA3 and GluA4 expression in rats subjected to wIA or sIA training. Synaptosomal fractions of the hippocampal tissue collected from animals in **Fig. 3a** and **3b** immediately after memory tests were immunoblotted for GluA3 and 4. Neither wIA nor sIA has any effect on the expression of GluA3 **(a)** or GluA4 **(b)** in these fractions. n = 5 in each group.