CaMKIIβ is localized in dendritic spines as both drebrin-dependent and drebrin-independent pools

Hiroyuki Yamazaki, Yoshio Sasagawa, Hideyuki Yamamoto, Haruhiko Bito and Tomoaki Shirao

Supplementary Figures

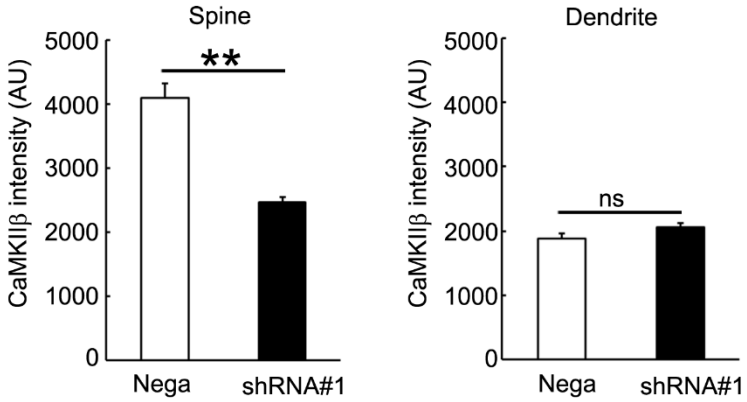

Figure S1. The immunofluorescence intensity of CaMKIIβ was decreased in dendritic spines but not in dendritic shafts in drebrin-KD neurons. AU, Arbitrary units. Data are presented as means ±SEM (**$p < 0.01$, Welch's *t*-test).

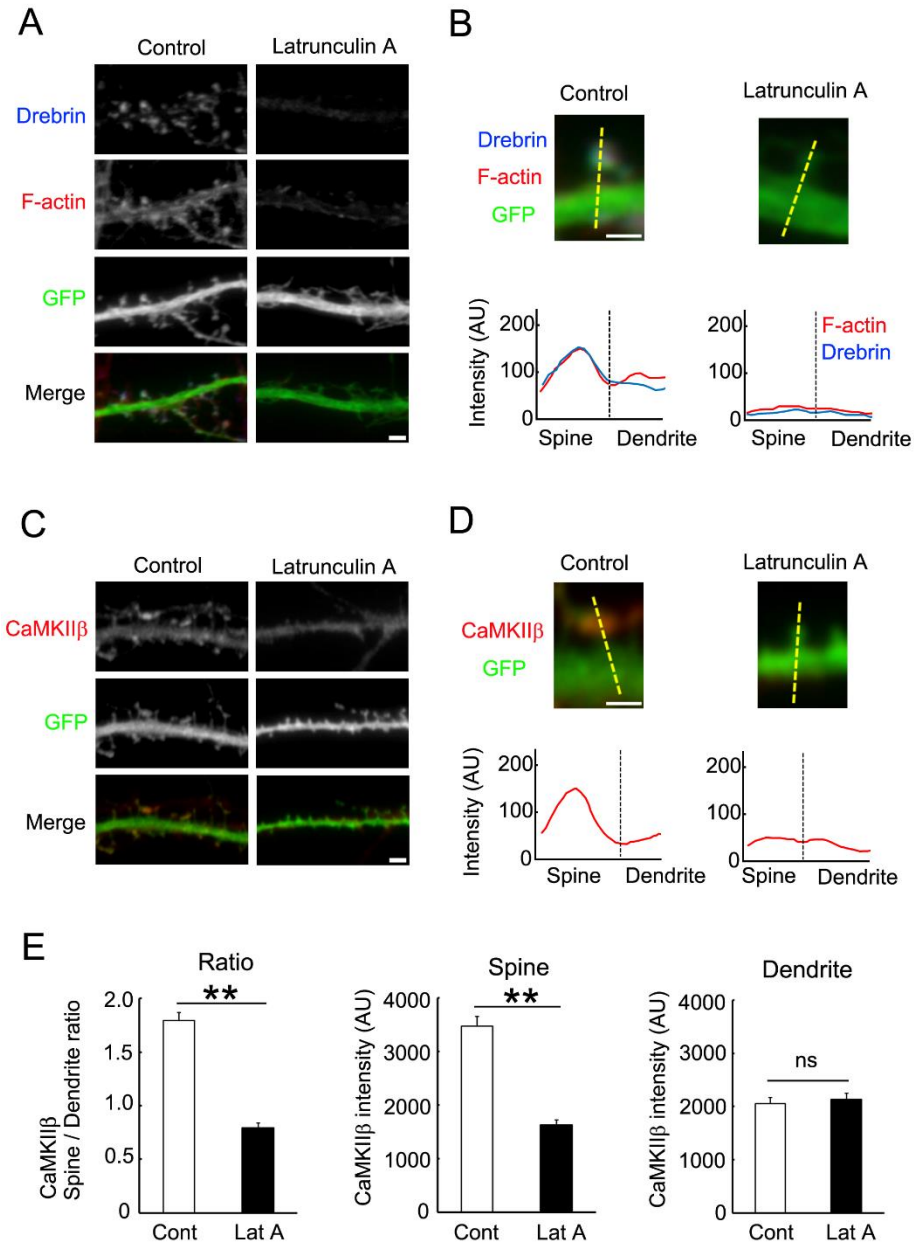

Figure S2. F-actin disruption decreased drebrin and CaMKIIβ from dendritic spines. (A) Cultured neurons were treated with 5 μM-latrunculin A for 10 min. Latrunculin A treatment abolished drebrin cluster from dendritic spines. Scale bar, 2 μm. (B) Enlarged images of the dendritic spines of control and latrunculin A treated neurons. The line scans show drebrin (blue) and F-actin (red) pixel intensities across the spine and dendrite. Scale bar, 1 μm. (C) Latrunculin A treatment decreased the immunofluorescence intensities of CaMKIIβ in dendritic spines. (D) The line scans show CaMKIIβ pixel intensities across the spine and dendrite. Scale bar, 1 μm. (E) Quantifications of the intensity of CaMKIIβ

in dendritic spine and dendritic shaft of control and latrunculin A treated neurons. Data are presented as means ±SEM (n = 31 for control and n = 16 for Latrunculin A treatment, $^{**}p < 0.01$, Welch's *t*-test).

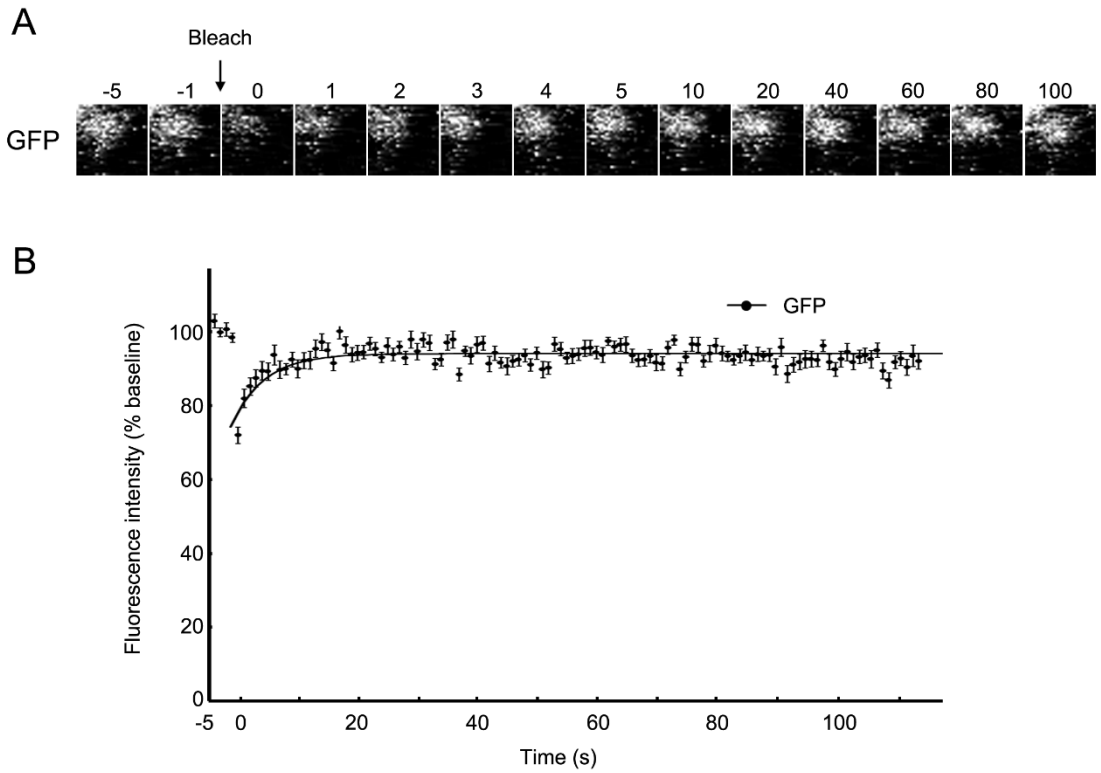

Figure S3. FRAP analysis of GFP in dendritic spines. (A) Cultured neurons were transfected with GFP and imaged at 15 – 16 DIV. Live confocal images of GFP were captured every 1 s for 120 s. Photobleaching was performed at the time point before 0 s. (B) The FRAP curve shows the average normalized fluorescence intensity of 26 spines measured. Error bars represent standard error of the mean. The solid line is the fit with single exponential recovery.