

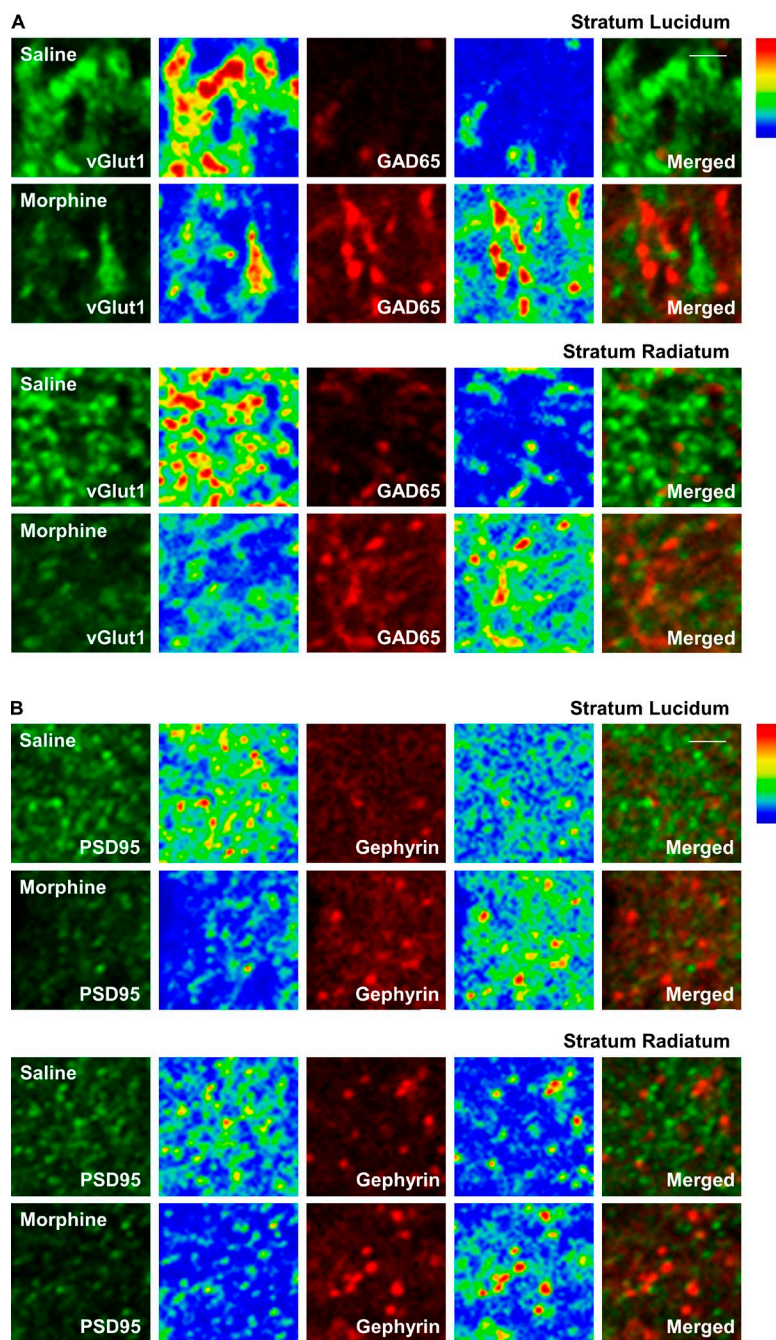
Cai et al., <http://dx.doi.org/10.1083/jcb.201605065>

Figure S1. **Morphine alters the densities of excitatory and inhibitory synapses in the hippocampus.** Representative confocal and pseudocolored intensity images of stratum lucidum and radiatum regions of mouse hippocampi immunostained with presynaptic excitatory and inhibitory markers vGlut1 and GAD65 (A) and postsynaptic excitatory and inhibitory markers PSD95 and gephyrin (B) from control and morphine-treated mice. Bars, 2 μ m.

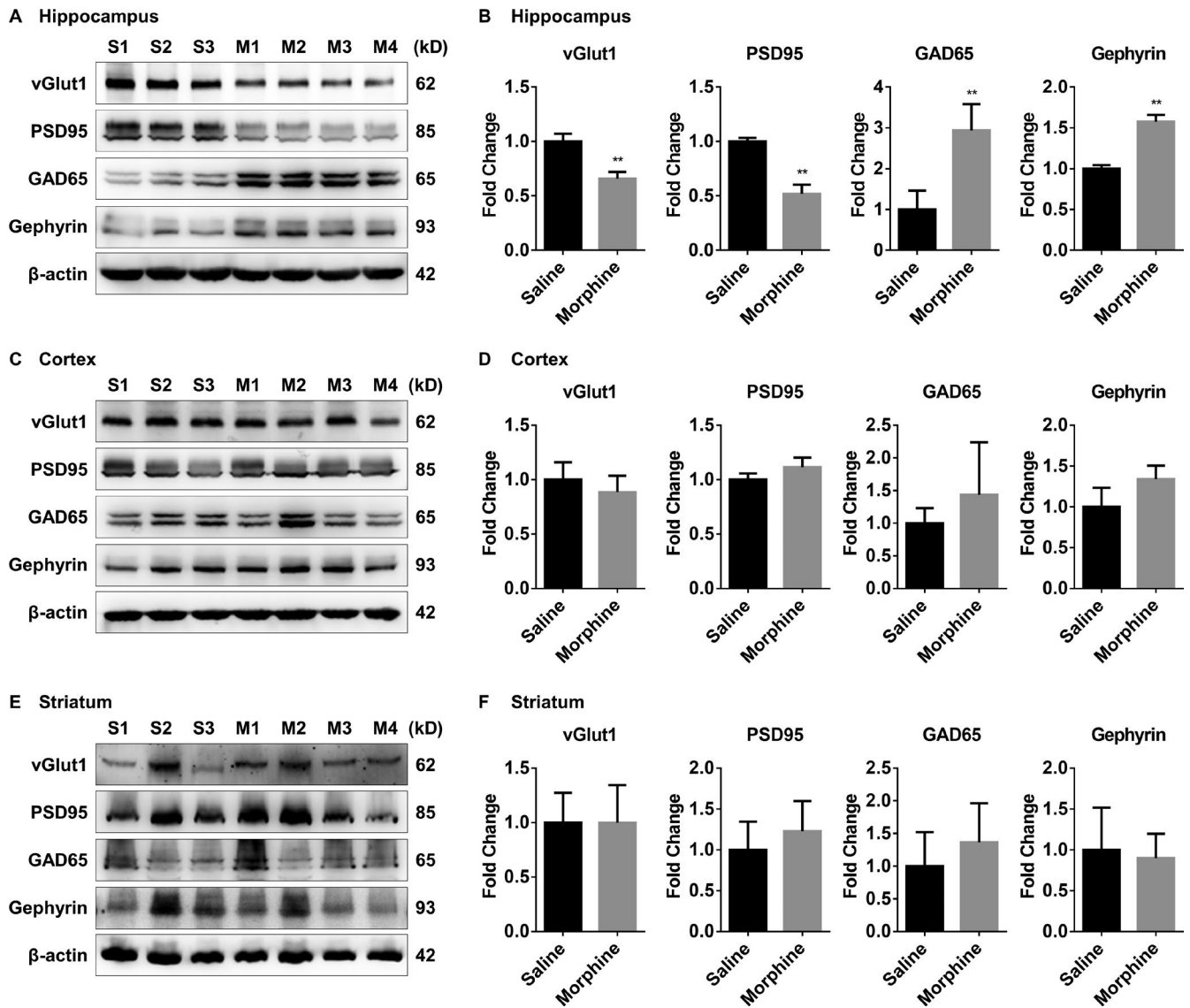


Figure S2. **Morphine-mediated alterations of synaptic proteins in the brain.** Representative Western blot (A) and quantification of synaptic proteins (vGlut1, PSD95, GAD65, and gephyrin) in the hippocampal lysates (B), cortical lysates (C and D), or striatal lysates (E and F) from control or morphine-treated mice. All data are presented as mean \pm SD; $n = 3$ to 4 /group. **, $P < 0.01$ versus control group using Student's t test.

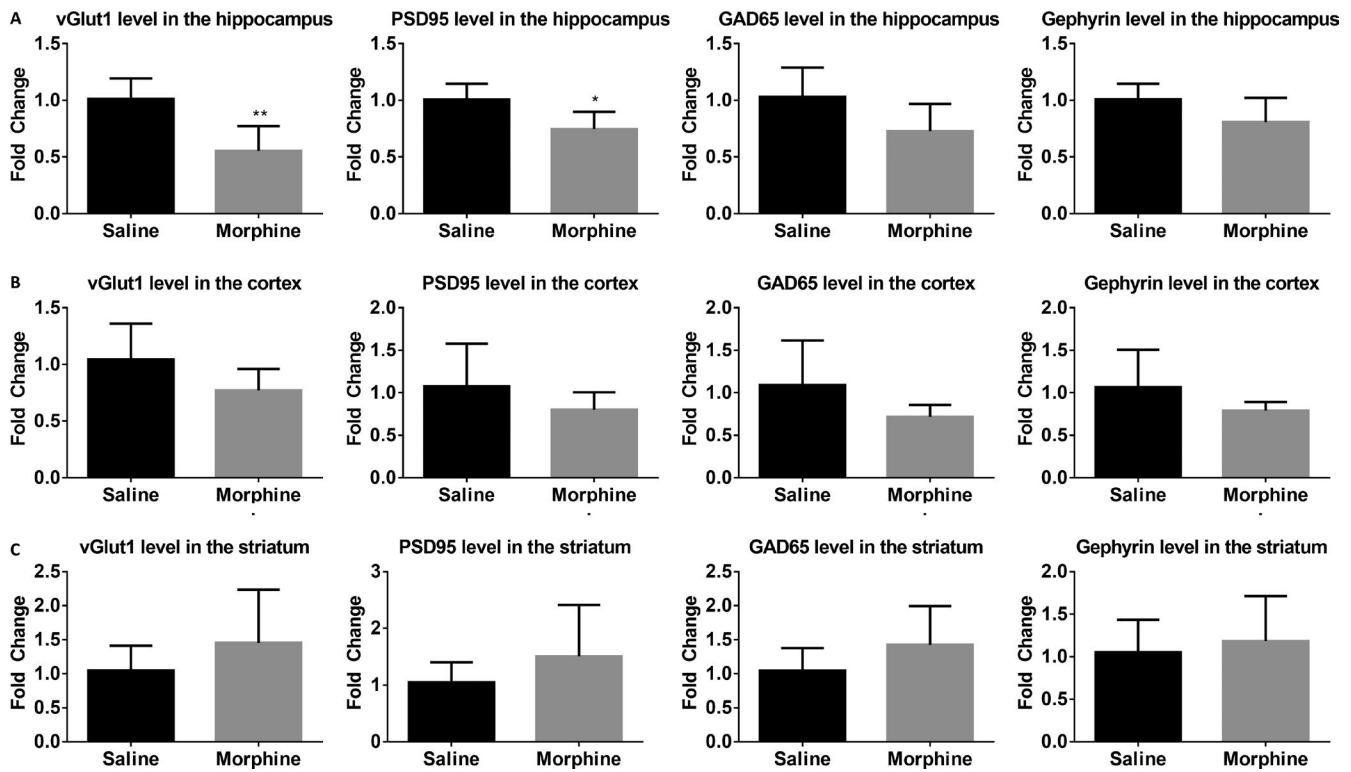


Figure S3. **Morphine-mediated transcriptional alterations of synaptic proteins in the brain.** Real-time PCR analysis for vGlut1, PSD95, GAD65, and gephyrin transcripts in mouse hippocampi (A), cortex (B), and striatum (C) from control and morphine-treated mice. All data are presented as mean \pm SD; $n = 5$ /group. *, $P < 0.05$; **, $P < 0.01$ versus control group using Student's t test.

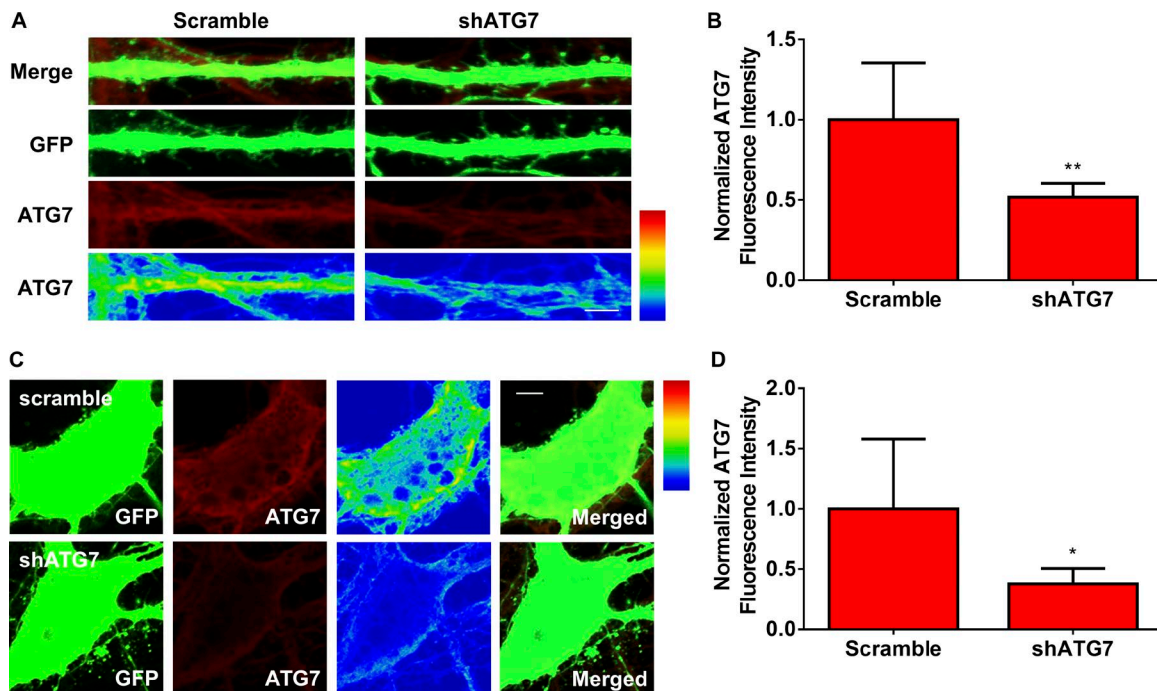


Figure S4. **PGK-GFP-shATG7 plasmids successfully knock down ATG7 expression level in primary hippocampal neurons.** Representative confocal images of cell bodies (A) and dendritic shafts (B) and quantitation of intensity of Atg7 staining in cell bodies (C) and dendritic shafts (D) in primary rat neurons (DIV20) expressing PGK-GFP-scramble or PGK-GFP-shATG7, immunostained with antibody to Atg7. Bars, 5 μ m. All data are presented as mean \pm SD. *, $P < 0.05$; **, $P < 0.01$ versus control group using Student's t test.