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Supplementary Materials for

Essential roles of AMPA receptor GluA1 phosphorylation and presynaptic HCN channels in fast-acting antidepressant responses of ketamine

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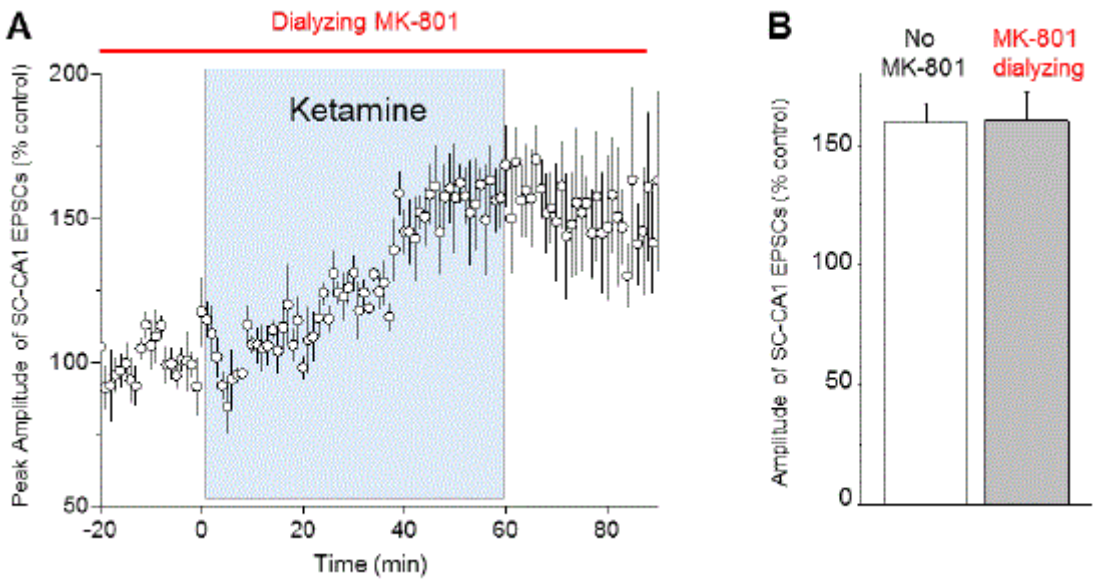

Fig. S1. Blocking postsynaptic NMDARs does not occlude ketamine-induced potentiation of SC-CA1 synaptic transmission. (**A**) Time course of SC-CA1 EPSCs shows that blocking NMDA receptors on postsynaptic CA1 cells by dialyzing MK-801 (1 mM) did not occlude the effect of ketamine on SC-CA1 EPSCs in hippocampal slices. (**B**) Data summary (MK-801 in pipette: 159.3 ± 11.9% of before ketamine, n=4 cells; control internal solution: 157.2 ± 6.1%, n=11 cells).

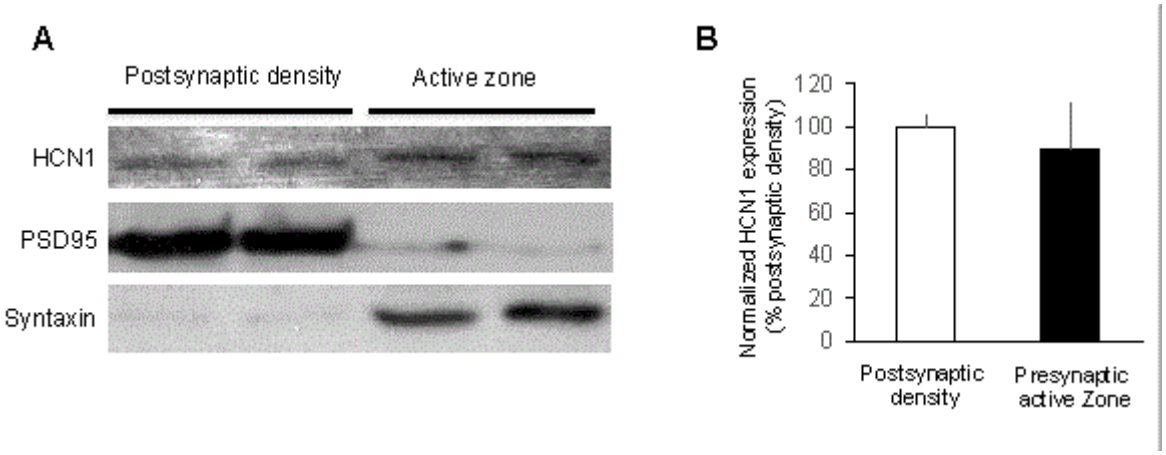

Fig. S2. HCN1 channels are expressed on presynaptic active zone in stratum radiatum of CA1. **Left**: presynaptic active zone and postsynaptic density were separated from synaptosome with solubilization buffer at pH=8.0. The representative blots from three Western blot experiments show HCN1 subunit-containing HCN channels are present both at presynaptic active zone and at postsynaptic density. **Right**: Data summary of three independent Western blot experiments.