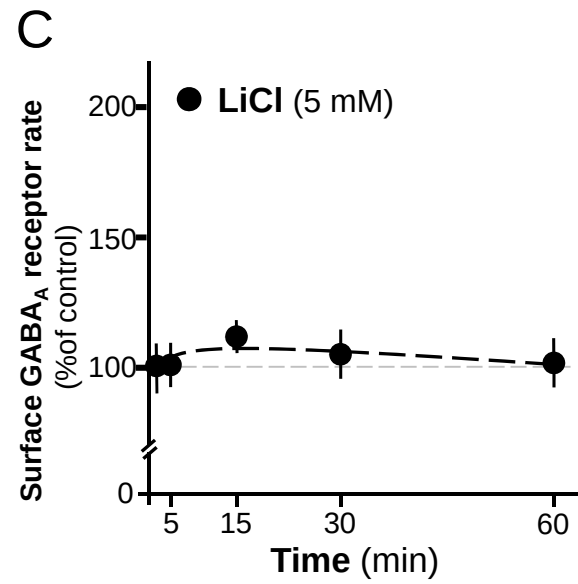
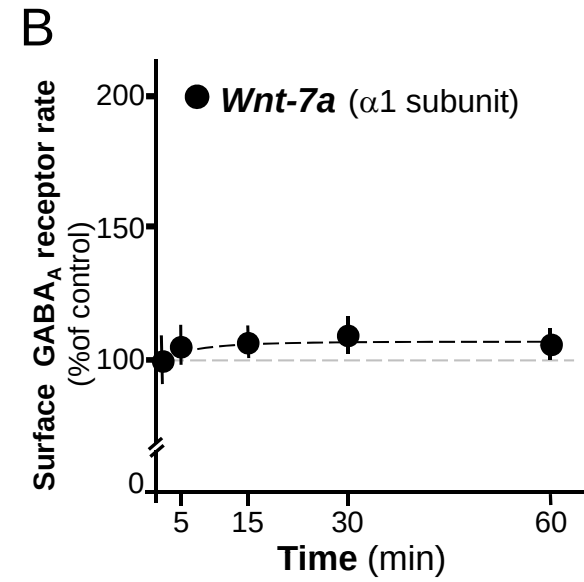
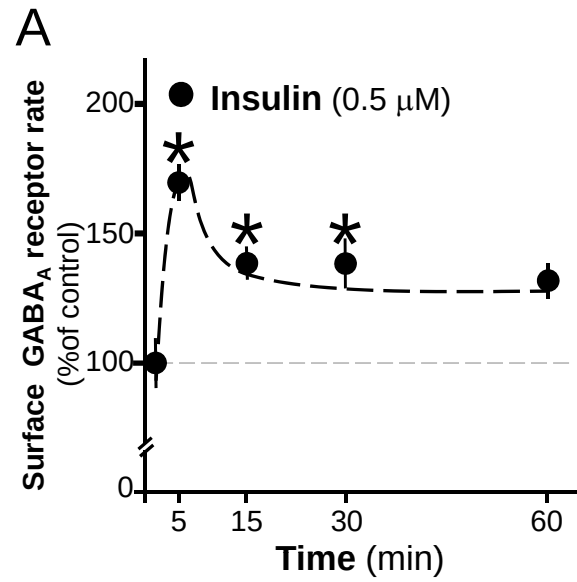


Supplemental Material.

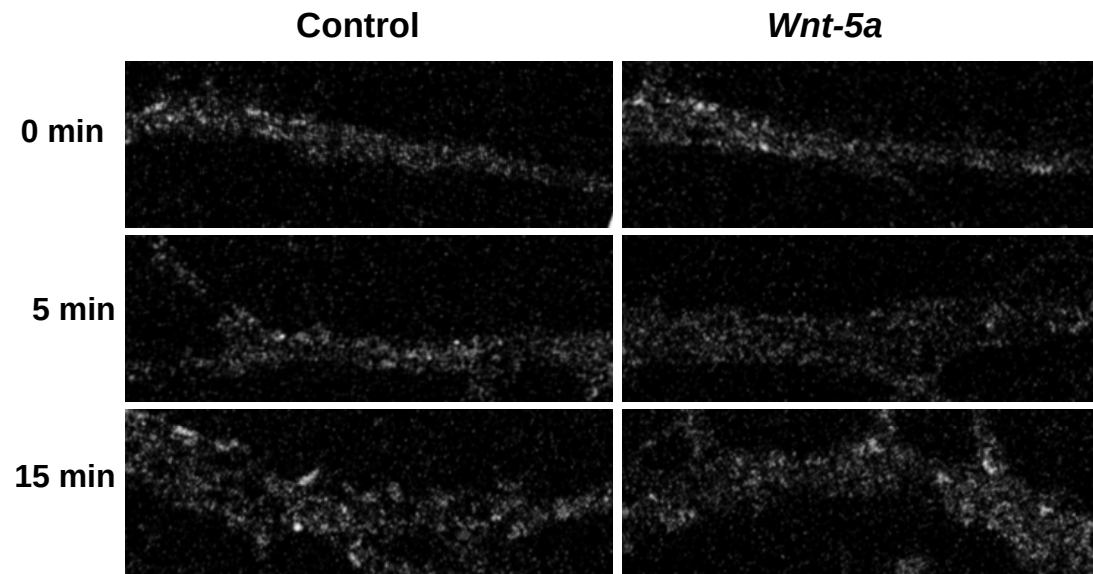
Supplemental Figure S1: Insulin but not the activation of the canonical *Wnt* pathway regulate the surface expression of the GABA_A-Rs. Hippocampal neurons 15 DIV were incubated at 37°C with (A) Insulin (0.5 μM); (B) *Wnt-7a* ligand and (C) LiCl (5 mM). Neurons were labeled with an antibody against GABA_A-R (α1 subunits, extracellular epitope). The ABC system was used with TMB as substrate, the final reaction measured at 450 nm. Error bars indicate standard error of the mean (n=4). *p< 0.05

Supplemental Figure S2: Treatment with *Wnt-5a* did not affect the localization, clustering or total level of gephyrin. (A) Gephyrin staining of neurites showed in Fig. 6C. (B) Neurons were treated with *Wnt-5a* for 0, 5 and 15 min. The total levels of gephyrin were analyzed using SDS-PAGE and western blot. Representative blot for gephyrin and tubulin is showed.

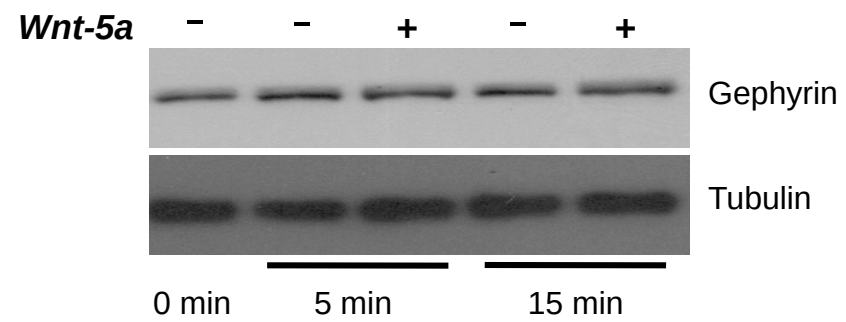
Supplemental Figure S3: Inhibitors of the non-canonical *Wnt* pathways do not affect the GABA_A-R clusters number on cell surface on 18-DIV hippocampal neuron. (A) Representative neurite images of hippocampal neurons incubated with the inhibitors indicated for 15 min. (B) Quantification of γ2-GABA_A-R clusters number/20 μm neurite. (n=4). (C) Quantification of average amplitude of eIPSCs in presence of Foxy-5 or co-incubated with the inhibitors indicated, for 15 min. (D) Quantification of the average amplitude of eIPSCs in presence of the inhibitors alone, for 15 min. The inhibitors were injected by the patch pipette (n=6). Error bars indicate standard error of the mean. *p< 0.05



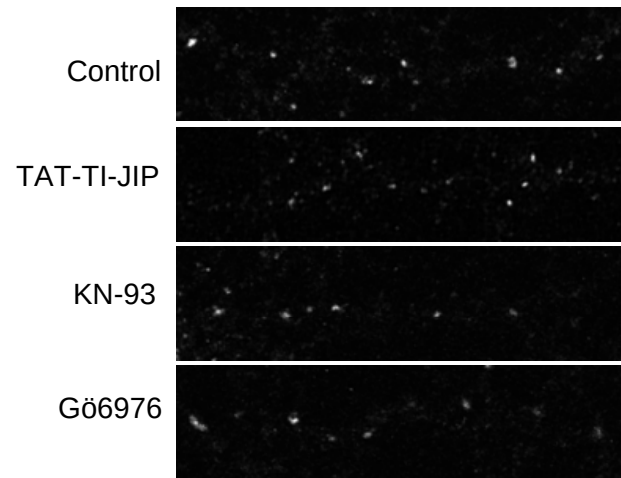
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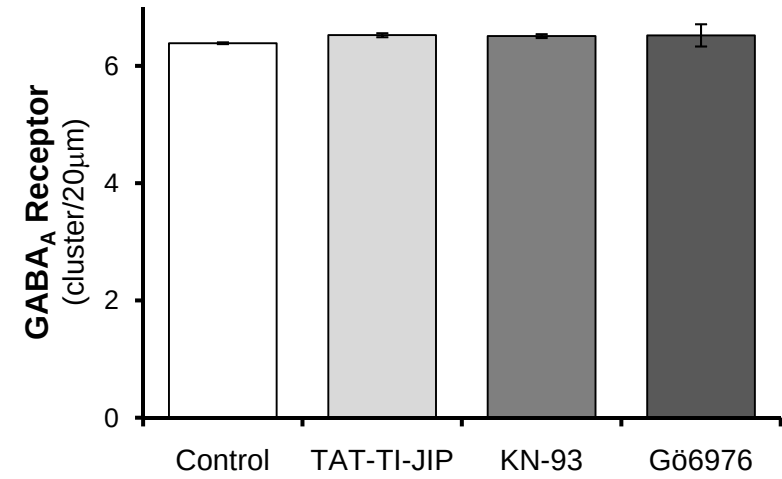
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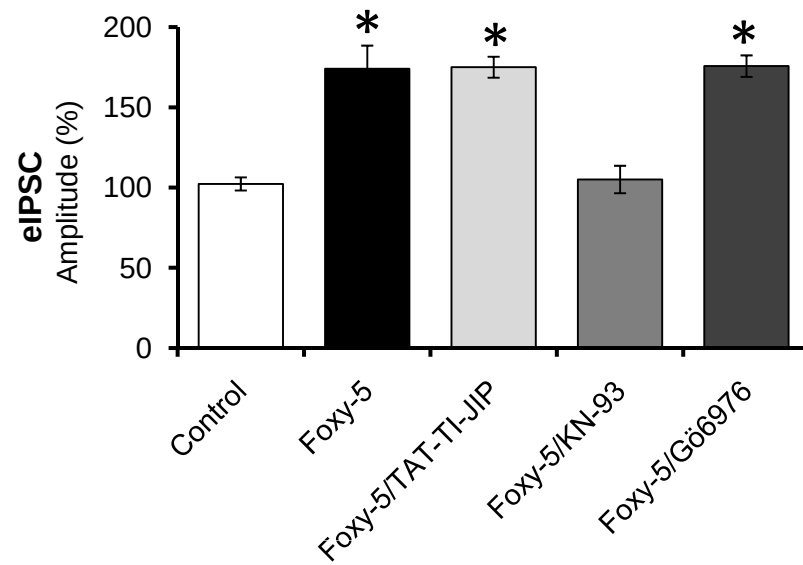
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B



C



D

