

Fig. S1. Increased proliferation in the hippocampus of GABA_{B1} deficient mice. (A, B) Representative images of mitotic pH3⁺ cells in GABA_{B1}^{-/-} and wild-type control mice. (C) The density of pH3⁺ cells is increased in mutant mice (control 4.7±0.22; GABA_{B1}^{-/-} 11.8±1.8; n=8). GrL, granule cell layer. t-test: **p<0.01. Error bars indicate SEM. Scale bars, 50 μm

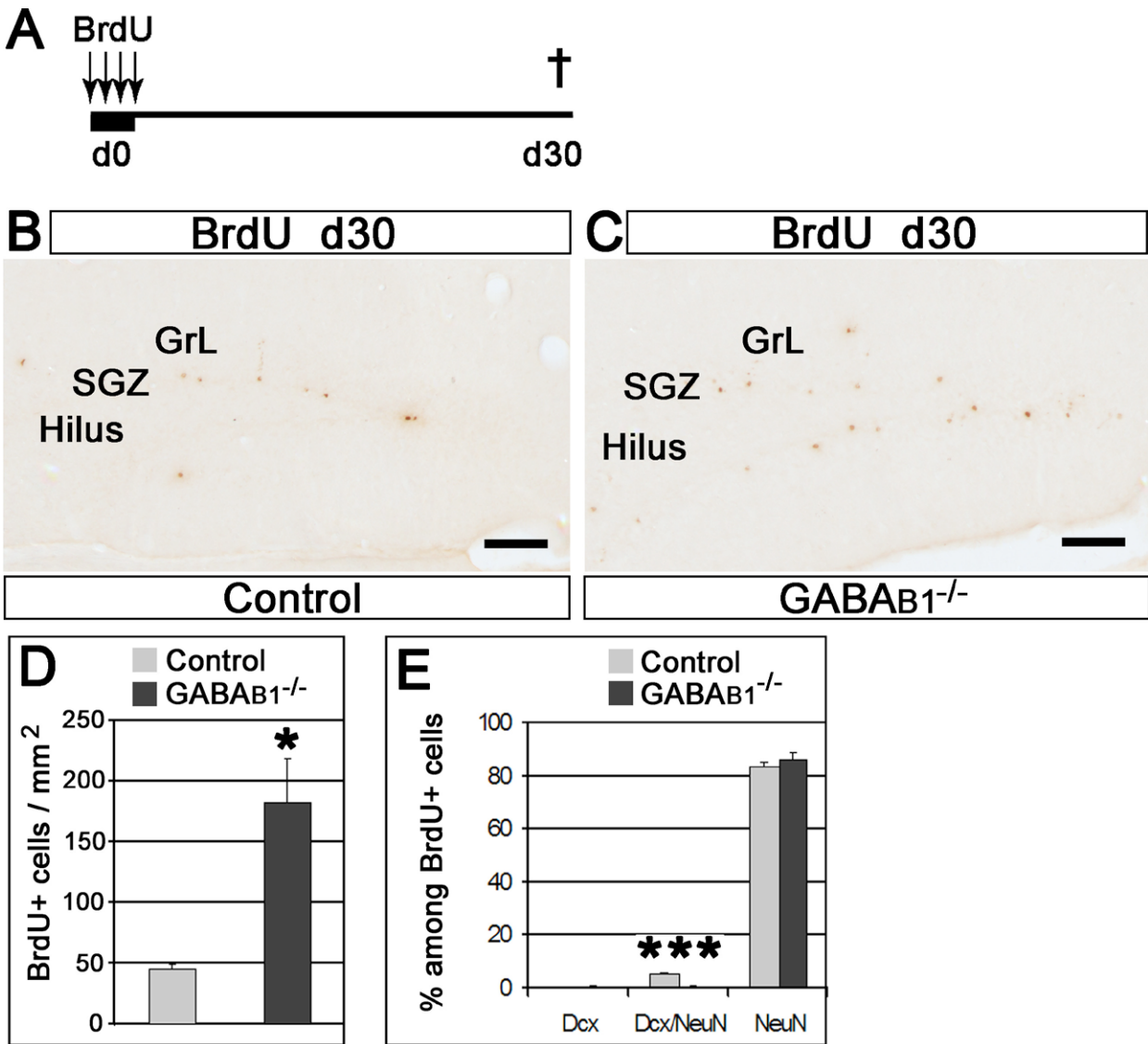


Fig. S2. Increased neurogenesis in the hippocampus of GABA_{B1} deficient mice. (A) BrdU was injected intraperitoneally four times a day 0 (d0) to label newly generated cells and the mice were killed (†) 30 days later (d30). (B, C) Representative images of BrdU⁺ newly generated cells in the adult hippocampus of GABA_{B1}^{-/-} and control mice at day 30. (D) The density of long-term surviving BrdU⁺ newborn cells is increased 4-fold in GABA_{B1} mutant mice (control 46±3.2; GABA_{B1}^{-/-} 183±36; n=5). (E) Thirty days after BrdU injection, most labeled-newborn cells terminally differentiated into NeuN⁺ neurons. A few BrdU⁺ cells still expressed Dcx in control, but not in GABA_{B1} mutant mice (control 5.2±0.49; GABA_{B1}^{-/-} 0.55±0.6; n=5). SGZ, subgranular zone; GrL, granule cell layer. t-test: *p<0.05, ***p<0.001. Error bars indicate SEM. Scale bars, 100 μm.

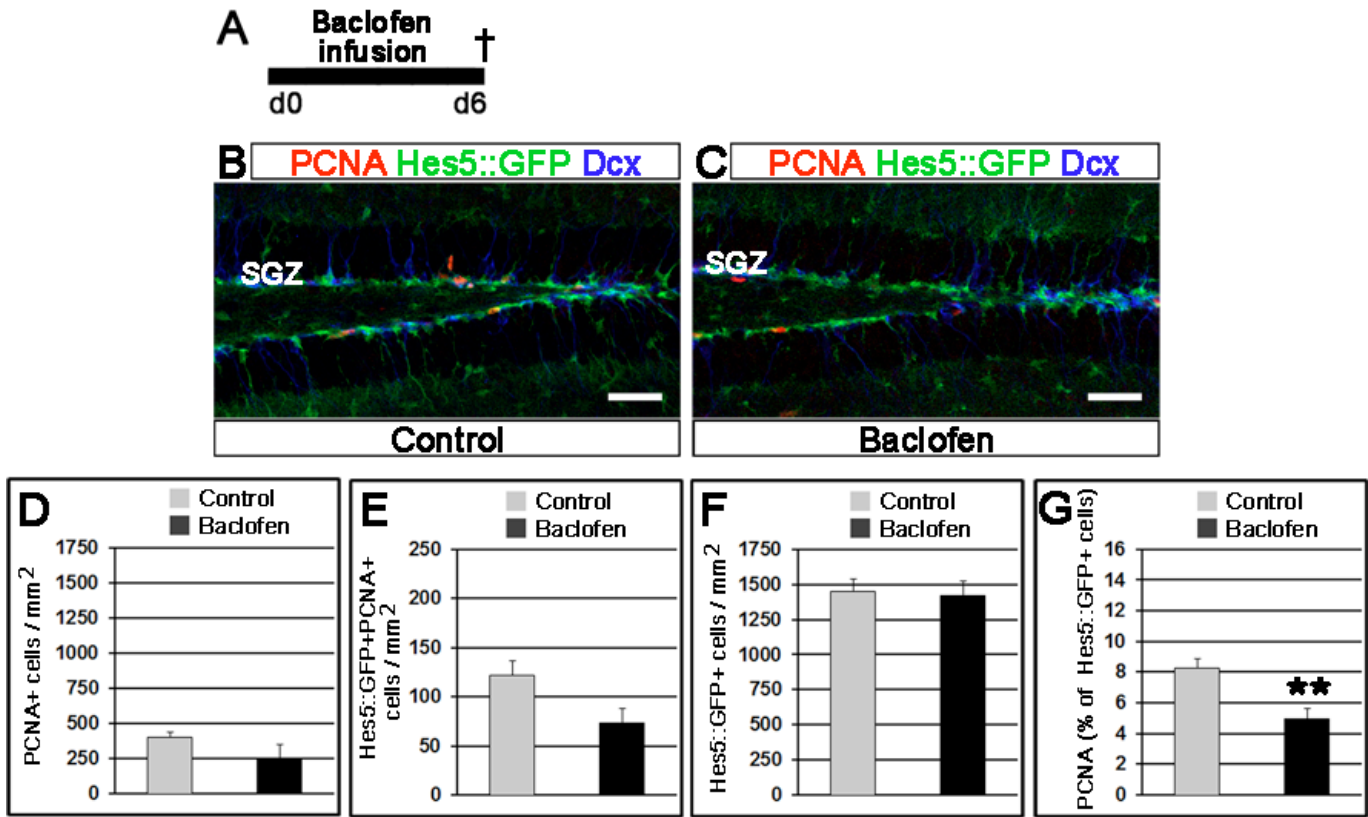


Fig. S3. Infusion of GABA_B agonist inhibits adult hippocampal NSC proliferation. (A) GABA_B agonist induction regime. Baclofen was infused for six days into the hippocampus of adult *Hes5::GFP*⁺ mice. The mice were killed (†) at day 6 (d6). (B, C) Representative images of proliferating cells (PCNA⁺), neuroblasts (Dcx⁺) and NSCs (*Hes5::GFP*⁺) in the SGZ of Baclofen and control (saline) infused mice. (D) The density of PCNA⁺ proliferating cells is not significantly changed in Baclofen-treated mice (control 398±37; CGP 255±94; n=5). (E) The density of proliferating (PCNA⁺) *Hes5::GFP*⁺ cells is slightly but not significantly decreased in Baclofen treated mice (control 121±15; Baclofen 73±16; n=5; p=0.057). (F) The *Hes5::GFP*⁺ population does not change in size after Baclofen treatment (control 1451±87; Baclofen 1418±105; n=5). (G) The proportion of *Hes5::GFP*⁺ cells that proliferate (PCNA⁺) decreases after Baclofen treatment (control 8.2±0.6; Baclofen 4.9±0.7; n=5). SGZ, subgranular zone. t-test: **p<0.01. Error bars indicate SEM. Scale bars, 50 μm.