

**Suppl. Fig. 1 Differential expression of GAD67-GFP in GCs and short-axon cells**

Photomicrograph of the GCL in a GAD67-GFP mouse, illustrating the low expression of eGFP in GABA<sub>A</sub>R  $\alpha$ 1 subunit-positive short-axon cells (red), as seen by immunofluorescence staining. The boxed area is enlarged at the bottom and shown as compound image and eGFP-only channel to clearly demonstrate the low eGFP signal in short-axon cells (\*) compared to the strongly labeled GCs. The  $\alpha$ 1 subunit also labels mitral cell bodies and dendrites. Abbreviations: MCL, mitral cell layer; IPL, internal plexiform layer; scale bar, 100  $\mu$ m.

**Suppl. Fig. 2 Apposition of pre- and postsynaptic markers of GABAergic synapses in newborn GCs**

Double Immunofluorescence staining depicting VGAT-positive axon terminals (red) apposed to gephyrin-positive clusters (blue) on the dendrite of an eGFP-positive neuron at 4 dpi. Sites of colocalization between VGAT and eGFP are indicated in yellow. This maximal intensity projection image is shown in the three Cartesian planes to emphasize the presence of a presumptive synapse on a spine (star). Arrows point to two presumptive synapses on the dendrite, and the arrowhead indicates a VGAT cluster located inside the eGFP-positive dendrite. Scale bar, 10  $\mu$ m.

**Suppl. Fig. 3 Apposition of pre- and postsynaptic markers of glutamatergic synapses in newborn GCs**

Double immunofluorescence staining depicting numerous vGluT1-positive axon terminals apposed to PSD-95-positive clusters on the soma and apical dendrite

(arrow) of an eGFP-positive neuron at 3 dpi. This maximal intensity projection image is shown in the three Cartesian planes. Scale bar, 5  $\mu\text{m}$ .

**Suppl. Fig. 4 Distinct functional properties of distal and proximal GABAergic synapses**

Comparison of functional properties (rise time constant, decay time constant, amplitude, success rate, paired-pulse ratio) of GABAergic synaptic currents recorded from newborn (eGFP-positive) and mature (eGFP-negative) GCs and blocked by gabazine application in the GCL and EPL, respectively.