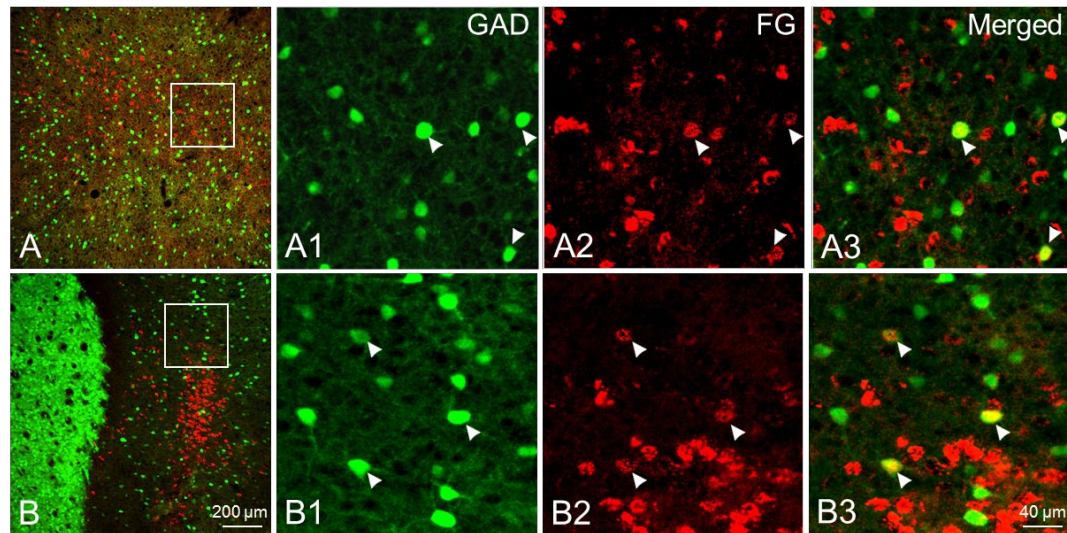


Supplementary Fig. 1. GAD immunohistochemical staining confirms specific labeling of GABAergic neurons in the cerebral cortex of GAD-GFP mice. Low-magnification micrographs (A and B) show the distribution of GFP⁺ (green) neurons in cortical regions of GAD-GFP mice. The white boxes in (A and B) indicate the areas magnified in A1–A3 and B1–B3. A1 and B1 display GFP fluorescence (green). A2 and B2 show GAD immunostaining (red). A3 and B3 are merged images, demonstrating the colocalization of GFP and GAD signals (yellow), which confirms the specific labeling of GABAergic neurons by the GAD-GFP mouse.



Supplementary Fig. 2. Colocalization of cortical GAD⁺ neurons with Fluoro-Gold (FG)-labeled neurons in GAD-GFP mice following FG injection into the MDTN. Low-magnification micrographs (A and B) depict the distribution of GAD⁺ (green) and FG⁺ (red) neurons in cortical regions of GAD-GFP mice after FG retrograde tracing from the MDTN. The white boxes in (A and B) indicate the areas magnified in A1–A3 and B1–B3. A1 and B1 show GAD immunofluorescence (green). A2 and B2 display FG labeling (red) in neurons projecting to the MDTN. A3 and B3 are merged images, where arrowheads point to neurons with colocalized GAD and FG signals (yellow), demonstrating cortical GABAergic neurons that project to the MDTN.