

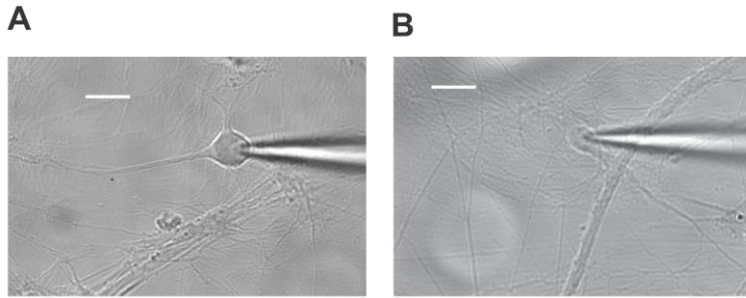
SUPPLEMENTAL FIGURES FOR:

***Scn2a* loss-of-function mutation decreases excitatory synaptic input and causes autism-associated behaviors**

Running title: *Scn2a* mouse model shows autism-associated behaviors

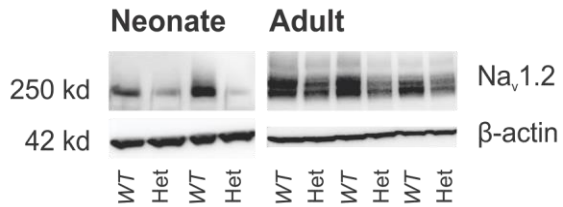
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Supplementary Figure 2



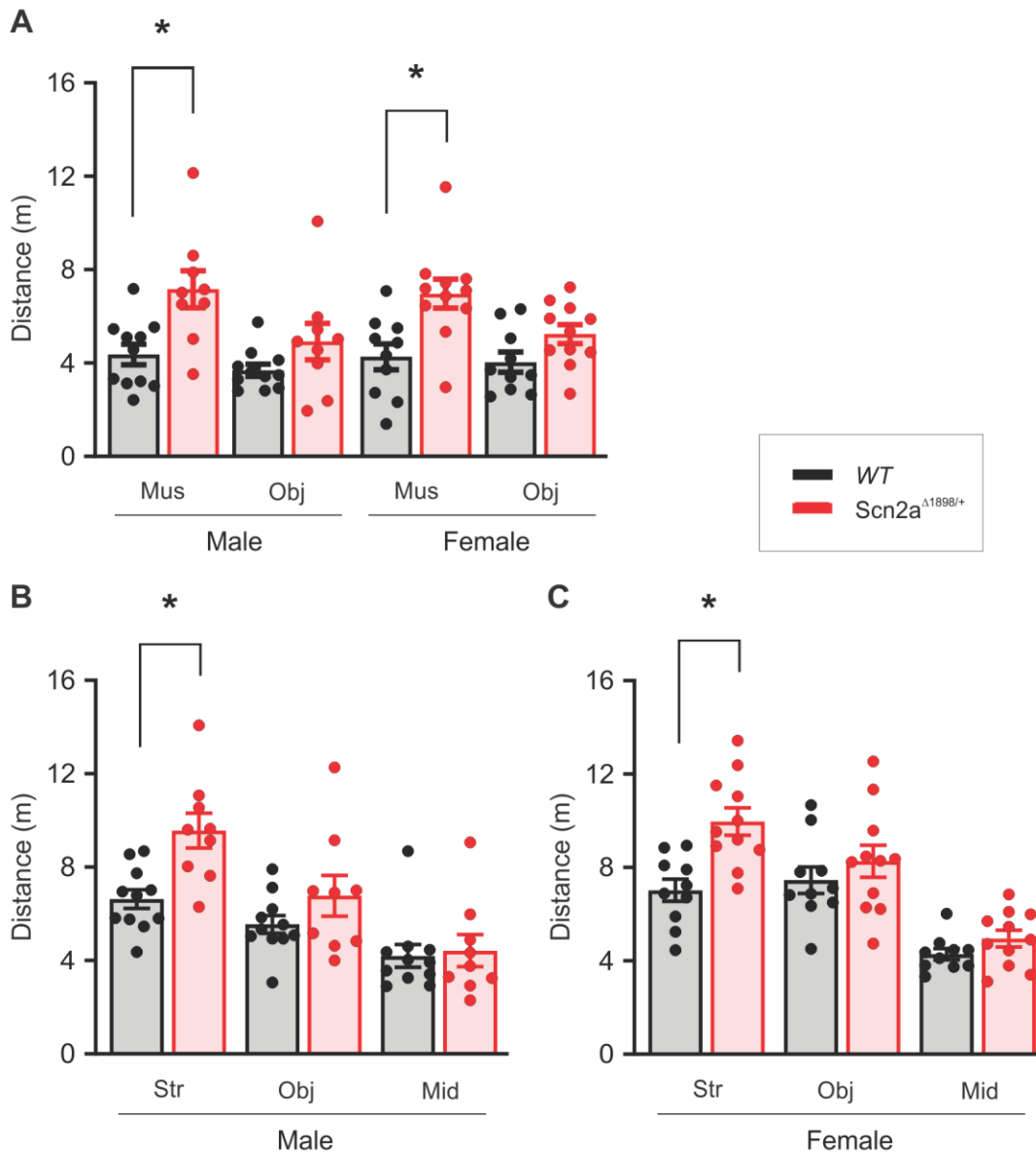
Supp. Figure 2. Pyramidal (*A*) and non-pyramidal (*B*) shape neurons in neuronal culture. Scale bar, 20 μm .

Supplementary Figure 3



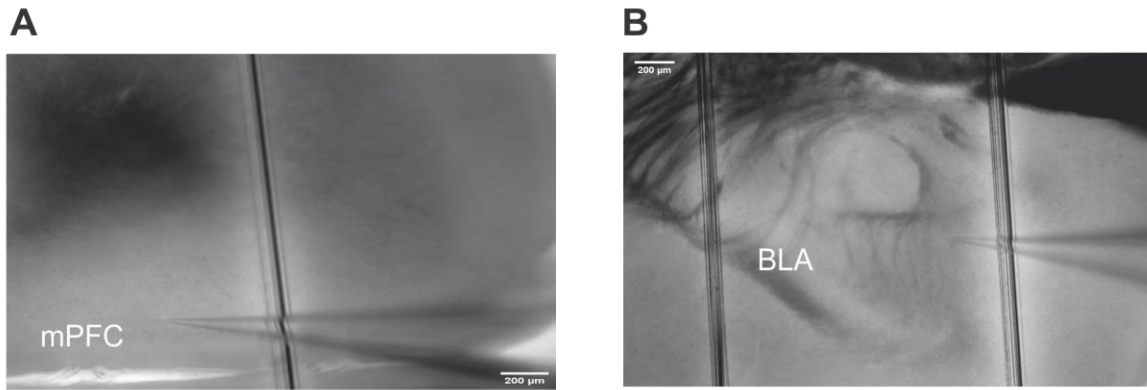
Supp. Figure 3. Cortices from *Scn2a*^{Δ1898/+} mice have less Nav_v1.2 voltage-gated Na⁺ channels. Immunoblot for Nav1.2 Na⁺ channel (anti-Nav1.2, recognizes an epitope in the I-II intracellular loop) in brain cortex lysates from P6 or adult (~5 month) *WT* or *Scn2a*^{Δ1898/+} (*Het*) mice. Molecular weights are shown on the left. For both blots, β-actin serves as a loading control.

Supplementary Figure 4



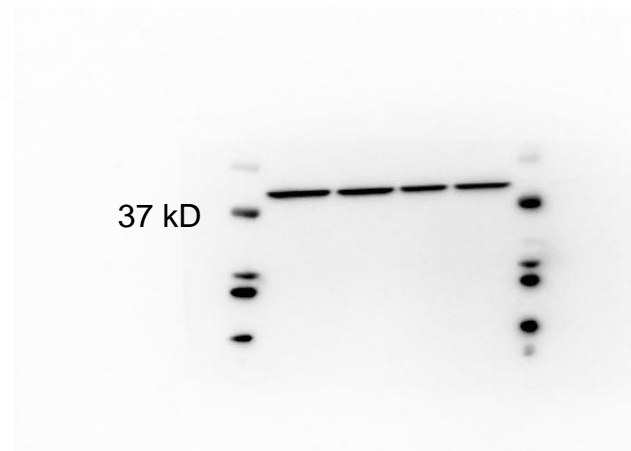
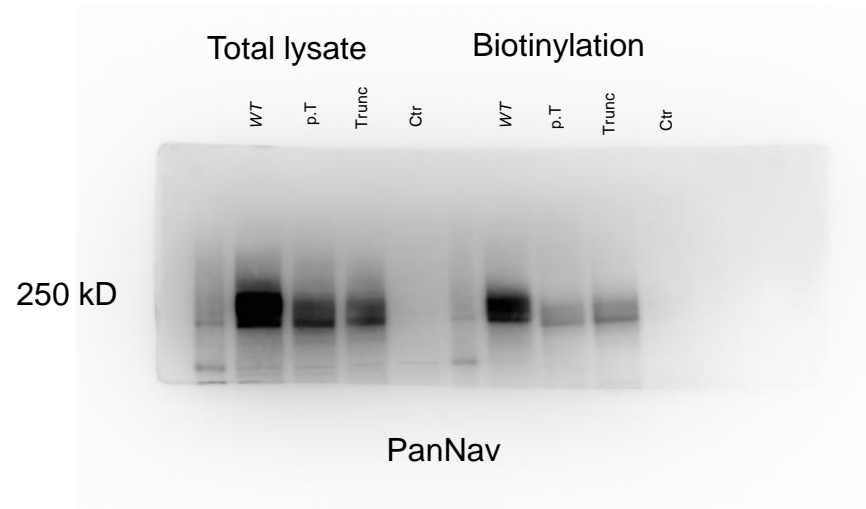
Supp. Figure 4. *Scn2a*^{Δ1898/+} mice traveled more in the zone around novel mouse and chamber with novel mouse. **A**, Distance traveled in the zone around novel mouse (Mus) or object (Obj) (male: *WT*, n=11 and *Scn2a*^{Δ1898/+}, n=9; female: *WT*, n=10 and *Scn2a*^{Δ1898/+}, n=11). *, unpaired *t* test, $t(18)=3.214$, $p=0.0048$ for male; $t(19)=3.248$, $p=0.0042$ for female. **B**, **C**, Distance traveled in the stranger (Str, with novel mouse), object (Obj, with object) and middle (Mid, between stranger and object) chambers. *, unpaired *t* test, $t(18)=3.618$, $p=0.002$ for male; $t(19)=3.861$, $p=0.001$ for female.

Supplementary Figure 5

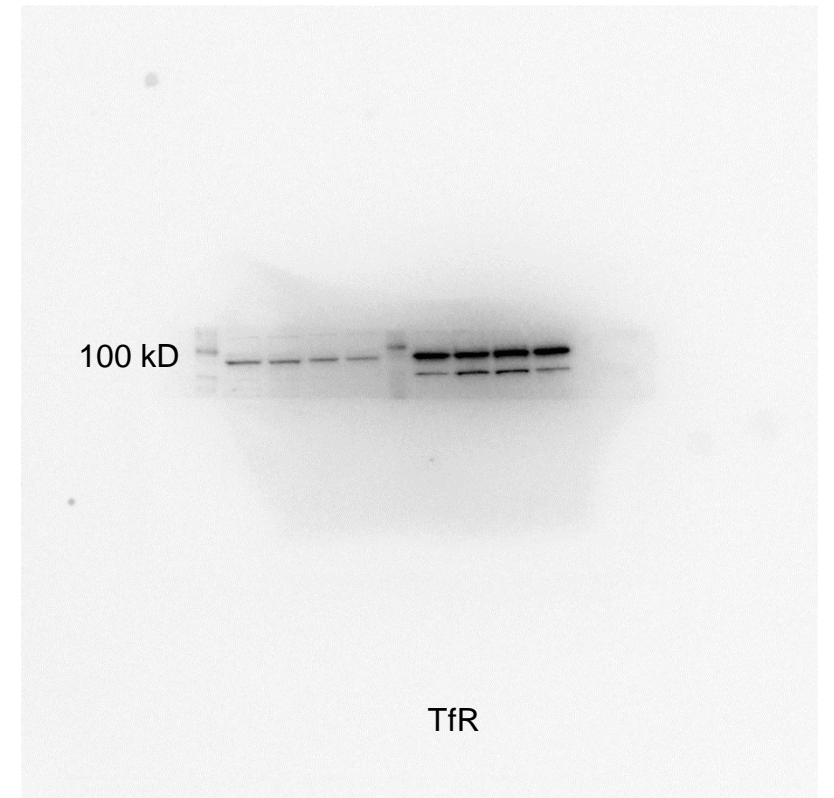


Supp. Figure 5. Micrographs showing brain slices with inclusion of mPFC (A) or BLA (B) from which sEPSCs and sIPSCs were recorded in pyramidal neurons. Scale bar, 200 µm.

Fig. 1E



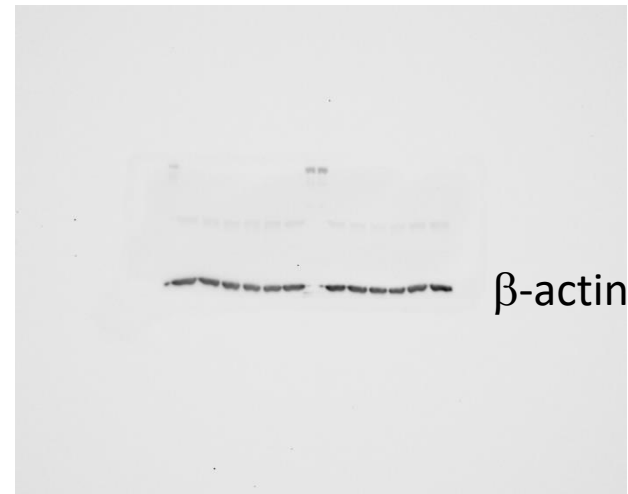
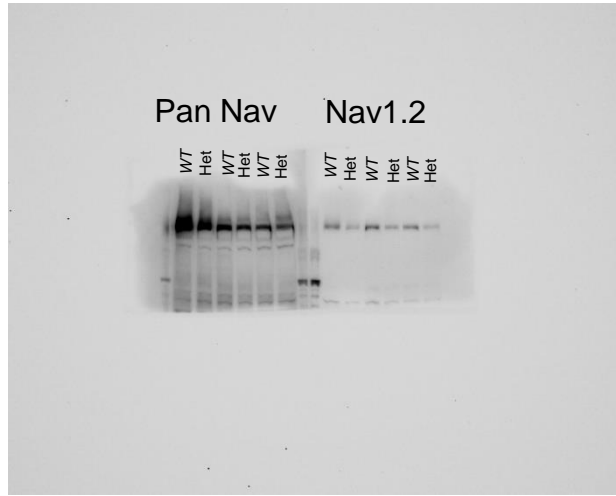
β -actin



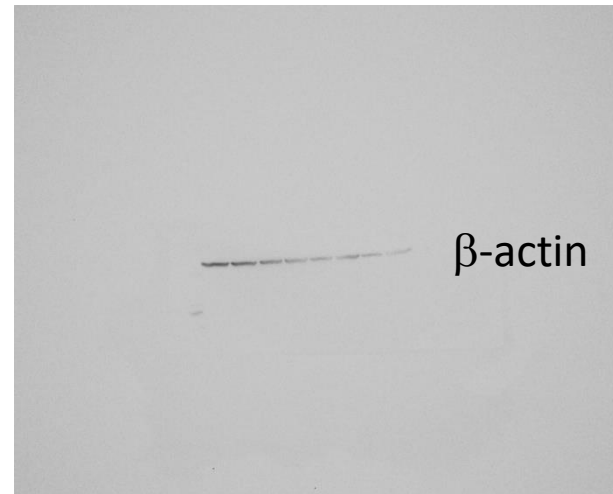
TfR

Fig. 2A

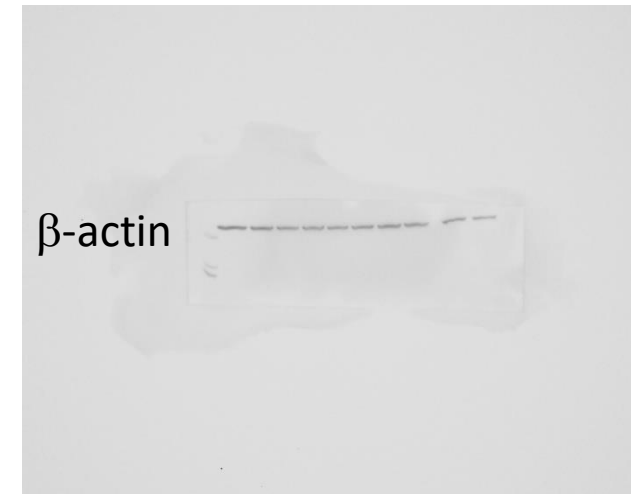
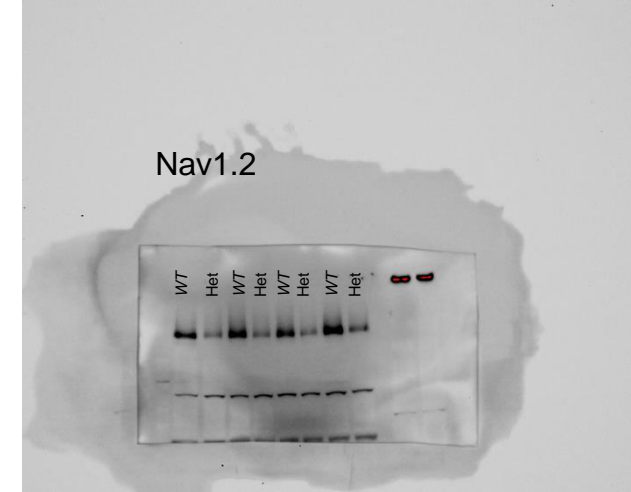
P6



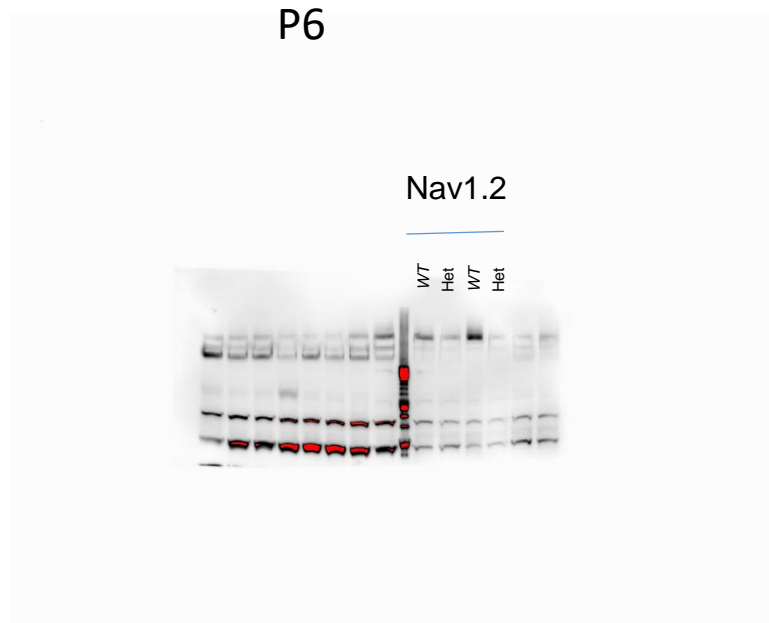
Adult



Adult



Supplemental Fig. 3



β -actin

Detailed description: This Western blot shows beta-actin protein levels at P6. It shows a single, consistent band across all lanes, serving as a loading control.

Adult

