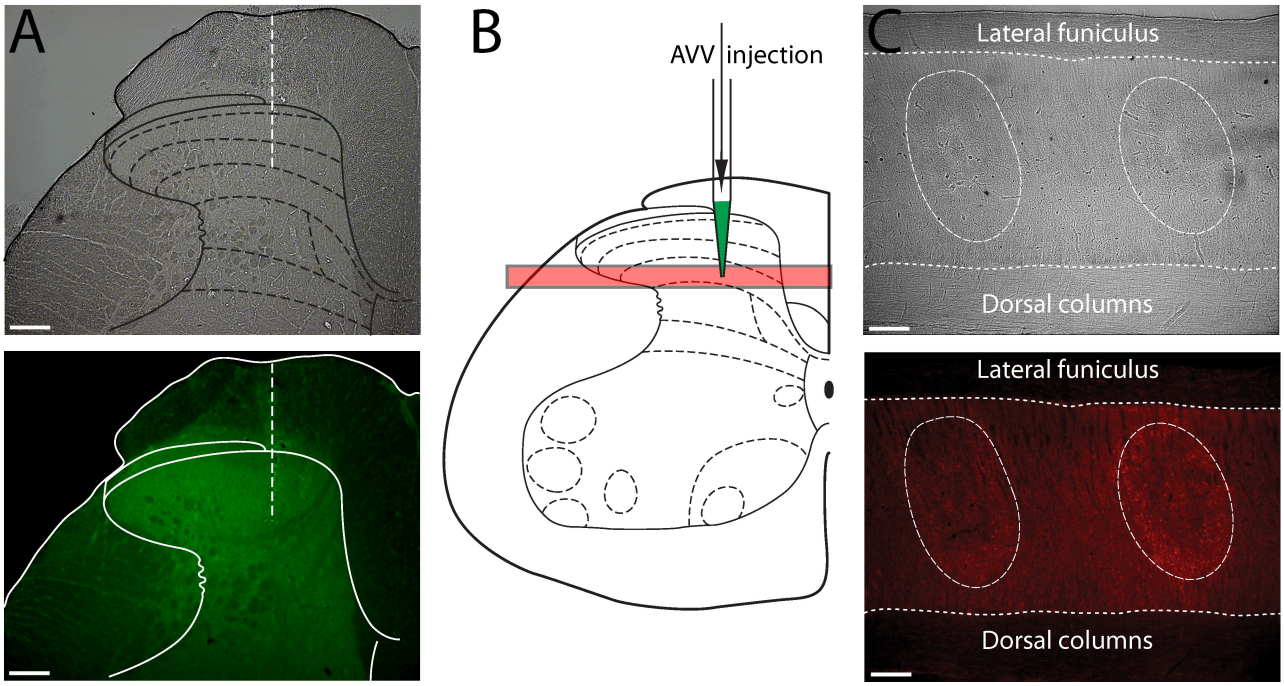
Supplemental Figure 1



AVV injection sites in the lumbar dorsal horn

Injections of AVV were made into the lumbar dorsal horn at L4-L5 level. Each animal received 2 pairs of AVV injections bilaterally (500nl), located 400 µm lateral to the midline and 500 µm deep to the dorsal surface using a micro-capillary pipette. Histological sections were made at the end each experimental protocol to verify correct injection placement (2-3 weeks after AVV injection)

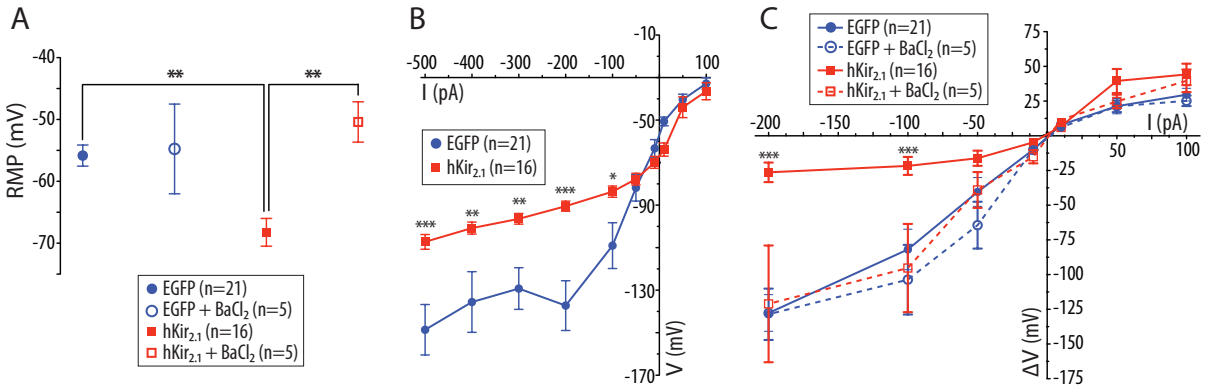
A) Transverse section through the L4 dorsal horn showing the injection site and pipette track (dashed line). The lower fluorescence image (GFP filter set) shows the scattered autofluorescence along the injection track delineating the limited area of reactive scarring.

B) Schematic of injection site showing transverse plane of section for (C) in red (section from Paxinos and Watson, 2005.)

C) Longitudinal section of spinal cord showing two injection sites (dotted lines demarc boundaries). Immunocytochemistry for hexon protein (a component of the AVV coat, 1:2000 anti-hexon (Biodesign International, MA), revealed with Cy3 secondary) shows a faint halo of immunoreactivity surrounding each injection site. Note the extent of vector spread is more restricted than that seen at earlier time points (see Howorth et al, 2009) reflecting the clearance of the replication deficient vector over time.

(All scale bars = 100 µm)

Supplemental Figure 2



Expression of $hKir_{2.1}$ in PC12 cells produces a barium sensitive inward rectification

PC12 cells were transfected with plasmids expressing either EGFP alone or $hKir_{2.1}$ and EGFP under the control of the PRS promoter. Subsequent whole cell current clamp recordings were made from EGFP positive cells at room temperature.

A) PC12 cells expressing $hKir_{2.1}$ had a more hyperpolarized resting membrane potential (RMP), which was returned to control levels by the addition of extracellular barium (100μM).

B) The current-voltage relation (in response to injection of current pulses) showed the presence of a strong inward rectification in cells expressing $hKir_{2.1}$.

C) This inward rectification was blocked by barium in cells transfected with $hKir_{2.1}$ (100μM).

Data analyzed using one-way ANOVA (RMP) and two-way ANOVA (current-voltage relationship)

(*-P<0.05, **-P<0.01, ***-P<0.001).