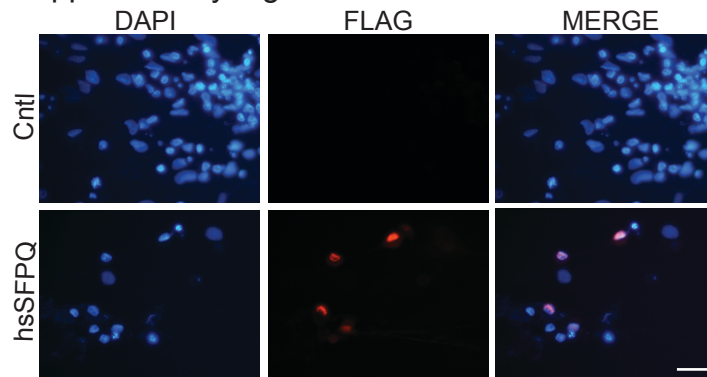
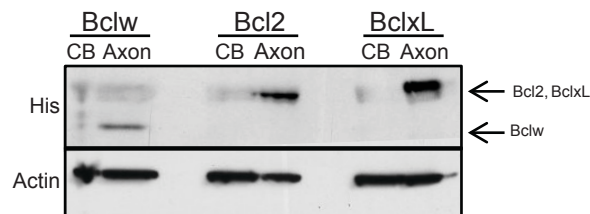


Supplementary Figure 1



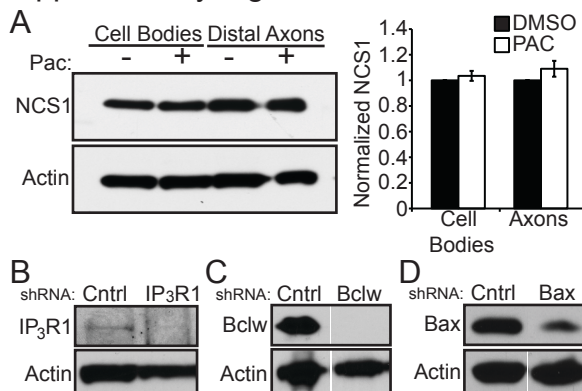
**Figure S1. SFPQ lentiviral expression, related to Figure 3.** Anti-FLAG immunostained images of cell bodies of DRGs infected with a FLAG-tagged human SFPQ (hsSFPQ) or control (Cntl) virus and counterstained for DAPI. SFPQ protein is preferentially localized to the nucleus, but also localizes to the cytoplasm (Cosker et al., 2016); scale bar = 20  $\mu$ m.

Supplemental Figure 2



**Figure S2. Bcl2 family protein transfection into axons, related to Figure 4.** Western blot with anti-His showing cell body and axon lysate from compartmented cultures; axons transfected with full-length His-tagged Bclw, Bcl2, or Bclx<sub>L</sub> proteins.

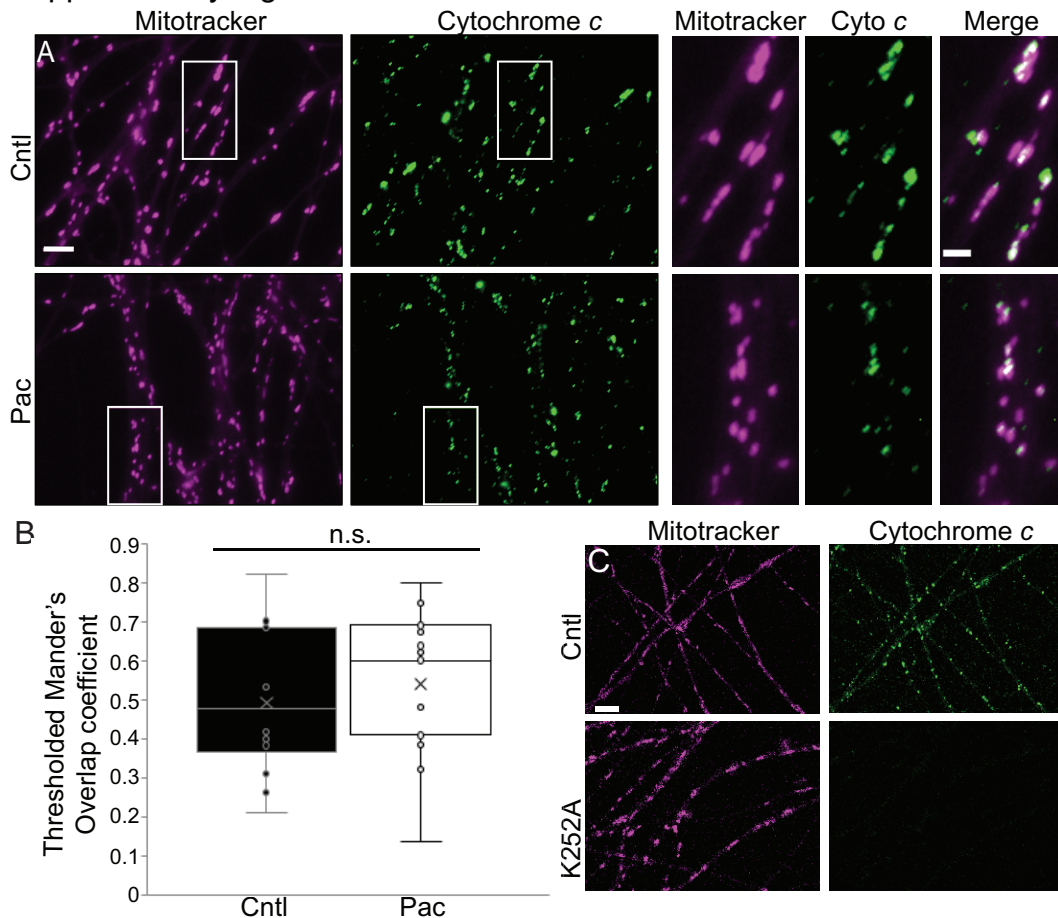
Supplementary Figure 3



**Figure S3. NCS1 western blot and quantification; verification of IP<sub>3</sub>R1, Bax and Bclw shRNA knockdown, related to Figure 6.** (A) Western blot and quantification showing NCS1 levels before and after paclitaxel treatment in both cell bodies (CB) and

distal axons (DA), with actin as the loading control; data represent mean  $\pm$  SEM. (B) Western blot showing IP<sub>3</sub>R1 levels of DRG sensory neurons after infection with lentivirus expressing IP<sub>3</sub>R1-targeting shRNA or RFP-targeting control shRNA (Cntrl), with actin loading control. (C) Western blot showing Bclw levels of DRG sensory neurons after lentiviral knockdown with an shRNA targeting Bclw or RFP-targeting control shRNA (Cntrl), with actin loading control; samples run on same gel and from the same exposure. (D) Western blot showing Bax levels of DRG sensory neurons after infection with lentivirus expressing Bax-targeting shRNA or RFP-targeting control shRNA (Cntrl), with actin loading control; samples run on same gel and from the same exposure.

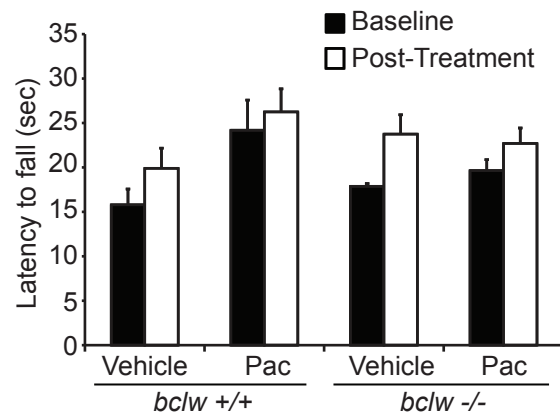
#### Supplementary Figure 4



**Figure S4. Paclitaxel does not cause cytochrome c release from axonal mitochondria, related to Figure 6.** (A) Anti-cytochrome c immunostained axons with MitoTracker-labeled mitochondria after 60 nM paclitaxel (Pac) or DMSO vehicle control (Cntrl) to axons for 48 hours (left; scale bar = 5 $\mu$ m) and increased magnification of indicated white box (right; scale bar = 2 $\mu$ m). (B) Quantification of thresholded Mander's Overlap Coefficient of cytochrome c overlapping mitochondria; n.s. = not significant by Student's *t*-test; n=14-15 images across 3 experiments; data represent range from first to third quartiles  $\pm$  range of data; x indicates mean; line indicates median. (C) Anti-cytochrome c immunostained axons with MitoTracker-labeled mitochondria after 48 hours Trk inhibitor K252A treatment; scale bar = 5 $\mu$ m.



Supplementary Figure 5



**Figure S5. Paclitaxel does not alter motor performance, related to Figure 7.** Latency to fall off an accelerating RotaRod of mice treated with paclitaxel or vehicle control, before (Baseline) and ten days after the final injection (post-treatment); n=4-7 mice; data represent mean + SEM.