Selvaraj et al., http://www.jcb.org/cgi/content/full/jcb.201203109/DC1

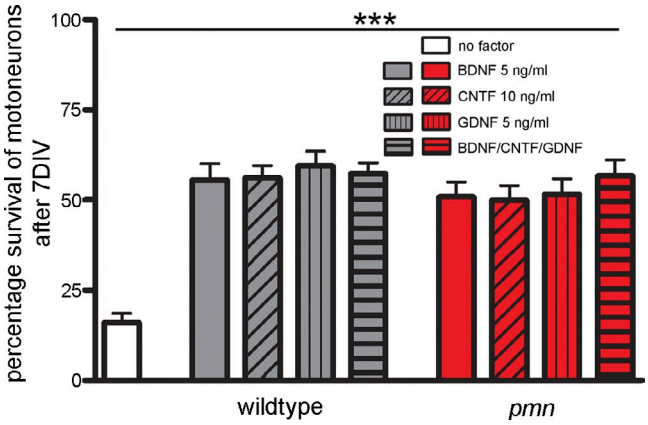

Figure S1. **Survival of motoneurons with various neurotrophic factors.** Motoneurons were grown for 7 DIV with 5 ng/ml BDNF, 10 ng/ml CNTF, 5 ng/ml GDNF, and a combination of these three neurotrophic factors. Survival is shown as percentage relative to originally plated cells. Error bars shown represents means ± SEM from three independent experiments. Statistical analysis: ***, P < 0.001; ANOVA with Bonferroni posthoc test.

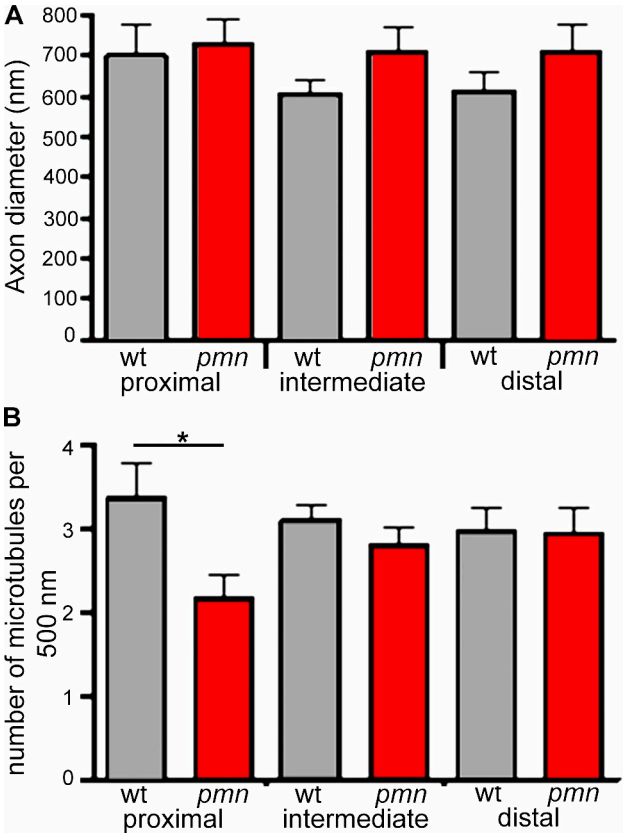

Figure S2. **Ultrastructural analysis of pmn mutant motoneurons.** (A) Quantification of axonal diameter of wild-type and *pmn* mutant motoneurons showed no significant difference in proximal, intermediate, and distal axons. (B) MT density was significantly reduced in the proximal part of axons in *pmn* mutant motoneurons when compared with wild type. Intermediate and distal parts of axons showed no significant difference. Error bars shown represent means ± SEM; *n* = 3 independent experiments. *, P < 0.05; Student's *t* test (wild type = 15 motoneurons and *pmn* mutant = 22 motoneurons). wt, wild type.

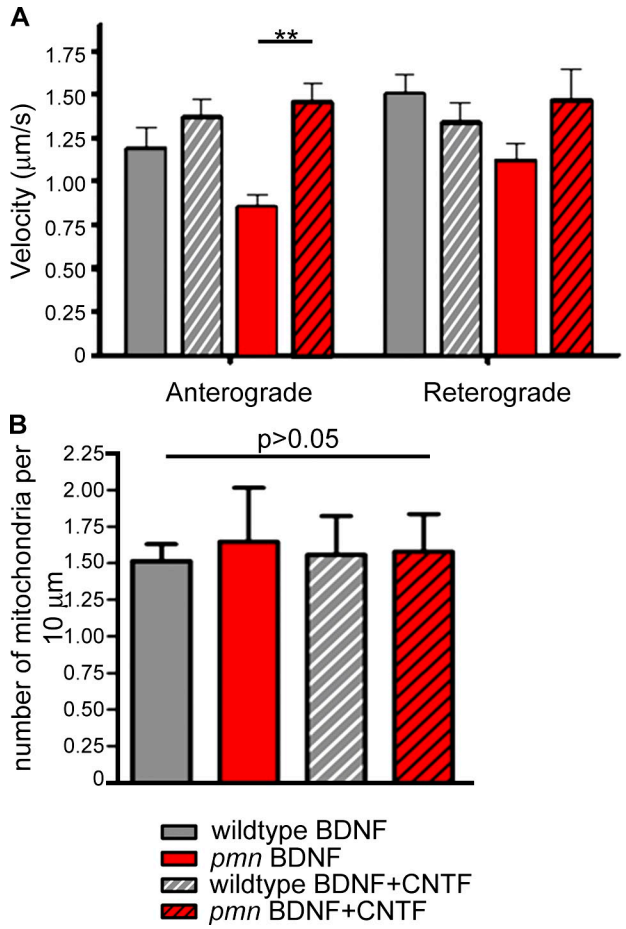

Figure S3. **Axonal transport of mitochondria in *pmn* mutant motoneurons.** (A) Velocity of anterograde-transported mitochondria was significantly reduced in *pmn* mutant motoneurons. Addition of CNTF increased the velocity. No significant difference was observed in retrogradely moving mitochondria. Numbers of cells investigated (*pmn*: 54 cells with 5 ng/ml BDNF and 19 cells with 10 ng/ml BDNF + CNTF; wild type: 28 cells with BDNF and 12 cells with BDNF + CNTF). **, $P < 0.01$; ANOVA with Bonferroni posthoc test ($n = 6$ independent experiments). Error bars shown represents means ± SEM. (B) Number of mitochondria present per 10-µm segment was not significantly different between wild-type and *pmn* mutant motoneurons.

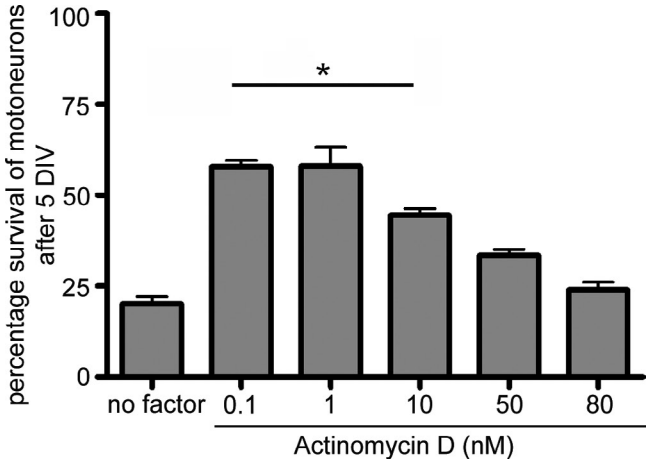

Figure S4. **Survival of motoneurons upon actinomycin D treatment.** Motoneurons cultured for 5 DIV with 5 ng/ml BDNF and treated with actinomycin D from day 3 to day 5 at various concentrations as indicated. Bars show the percentage of survival of motoneurons relative to originally plated cells. Data represent means ± SEM; $n = 2$. *, $P < 0.05$; ANOVA with Bonferroni posthoc test.

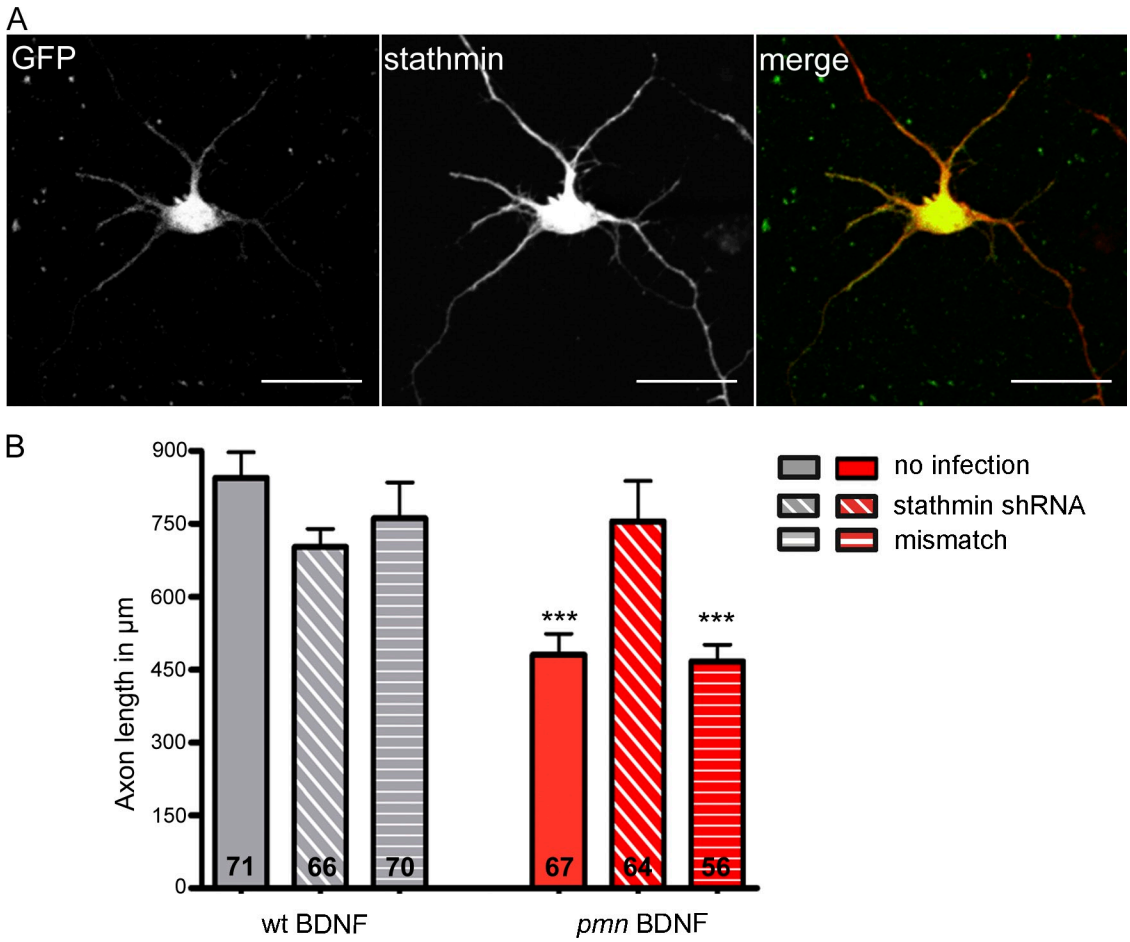

Figure S5. **Stathmin knockdown rescues axonal pathology in pmn mutant motoneurons.** (A) Representative image of a motoneuron after lentiviral STAT3-EYFP transduction. Stathmin (red) and STAT3-EYFP (green) colocalize in dendrites and the cell body. Bars, 25 µm. (B) Axon length is restored in *pmn* mutant motoneurons after lentiviral stathmin knockdown. Wild-type and *pmn* mutant motoneurons were cultured for 7 DIV. Stathmin knockdown, but not the mismatch control virus, rescues axon length in *pmn* mutant motoneurons. Numbers in bars represent cells measured. Data shown represent means ± SEM; n = 3 independent experiments. ***, $P < 0.001$; ANOVA with Bonferroni posthoc test. wt, wild type.