

Supplemental Figure 1. BpV(pic) application increases neurite outgrowth-additional analysis. (A-D) Summary plots in sham-injured neurons, number of primary neurites(A), length of the longest neurite(B), number of branches(C), and cell body area(D). (E-H) Summary plots in preconditioned-injured neurons, number of primary neurites(E), length of the longest neurite(F), number of branches(G), and cell body area(H). Asterisks indicate significant differences (One way ANOVA with Tukey posthoc analysis, $P < 0.05$, $n=3$). Error bars represent s.e.m.

Supplemental Figure 2. pAkt staining with application of 10 nM of PTEN inhibitor. (A) pAkt staining in a cultured injured DRG neuron without inhibitor. The neuronal soma is outlined. (B) pAkt staining in a cultured injured DRG neuron with 10 nM of bpV(pic). (C) pAkt and DAPI staining in control injured neuron. DAPI labels both neuronal (arrowhead) and support cell nuclei (arrows). (D) pAkt and DAPI staining in injured DRG neuron with 10 nM of inhibitor. (E) pAkt, DAPI and NF200 staining in control injured DRG neuron. (F) pAkt, DAPI and NF200 staining in injured DRG neuron with 10 nM of inhibitor. Scale bar is 50 μm in all panels.

Supplemental Figure 3. Rapamycin (50 nM) application does not alter branch number or neurite length in sham-injured or preconditioned-injured neurons. (A-B) Summary plots in sham-injured neurons, number of branches(A) and length of the longest neurite(B). (C-D) Summary plots in injured neurons, number of branches(C) and length of the longest neurite(D). Asterisks indicate significant differences (One way ANOVA with Tukey posthoc analysis, $P < 0.05$, $n=3$). Error bars represent s.e.m.

Supplemental Figure 4. PTEN siRNA application increases neurite outgrowth-additional analysis. (A-D) Summary plots in sham-injured neurons, number of primary

neurites(A), length of the longest neurite(B), number of branches(C), and cell body area(D). (E-H) Summary plots in preconditioned-injured neurons, number of primary neurites(E), length of the longest neurite(F), number of branches(G), and cell body area(H). Asterisks indicate significant differences (One way ANOVA with Tukey posthoc analysis, * $P < 0.05$, ** $P < 0.001$ $n=4$). Error bars represent s.e.m.

Supplemental Figure 5. Verification that a second PTEN siRNA targeting a separate region of PTEN mRNA decreases PTEN expression and increases neurite outgrowth. (A-C) Immunocytochemistry in cultured DRG neurons with PTEN siRNA for NF200(A), PTEN(B) and merged(C). Arrows depict a neuron transfected with PTEN siRNA with decreased PTEN expression. Arrowheads show another neuron with high PTEN expression and limited neurite outgrowth. (D,E) Summary plots of neurite outgrowth in sham(D) and injured(E) cultures. Outgrowth was normalized to control cultures for each sample. Asterisks indicate significant differences (One-way ANOVA with Tukey posthoc analysis, * $P < 0.05$, ** $P < 0.001$, $n=3$, scale bars are 50 μm). Error bars represent s.e.m.