

**Supplementary Fig. S1** Colocalization analysis of Drp1 and TOMM20 immunostaining in control and injury conditions. Axons protruding from hippocampal organotypic slices cultured in microfluidic devices were injured with application of 15% strain and fixed 5min post-injury. **a**. Representative fluorescence micrographs displaying Drp1 and TOMM20 immunostaining in axonal processes in control and injury conditions. White arrows indicate regions of colocalization. **b**. Analysis shows increased colocalization of Drp1 and TOMM20 following axonal stretch injury. Results obtained from three microfluidic device cultures per condition (separate donor animals used for each device), n = 3. \*p < 0.05 as determined by Student's *t*test. Error bars are s.e.m. Scale bars, 5µm.