



Supplemental Figure S1: TUBB3+ cells undergo apoptosis with induced HDAC3-mCherry expression. Retinas were harvested at 5 days after crush and stained for TUBB3 and HDAC3-mCherry, and counterstained with DAPI. (A-D) Nuclei in TUBB3-staining cells with features of apoptosis, such as condensed and/or fragmented nuclei (arrows) were counted. Cells with fragmented nuclei often exhibited reduced levels of the HDAC3-mCherry fusion protein (asterisk). Size bar = 10  $\mu$ m. (E) Graph showing the quantification of TUBB3 positive cells with apoptotic nuclei. Retinas transduced with HDAC3-mCherry contain a significantly higher percentage of cells exhibiting apoptosis (\*P = 0.037). (F) Graph showing the change in TUBB3 positive cell density (as a percentage of density in contralateral control retinas) in transduced eyes 5 days after optic nerve crush. Retinas transduced with HDAC3-mCherry exhibited significantly more cell loss than retinas transduced with the control vector (\*P = 0.036).