Supplementary Figure S1. Identification of retinal cells in culture. (A) Light microscopy of retinal cells in culture, demonstrating RGC with neurite (long arrow) and RGC without neurite (short arrow). (B) Higher magnification of light microscopy image shown in (A). (C) Fluorescence microscopy image of retinal cells in culture (note: a different field compared to (A) and (B)), demonstrating βIII-tubulin⁺ RGC with neurite (long arrow) and without neurites (short arrow), with DAPI as a nuclear counterstain. (D) Higher magnification view of image shown in (C). (E) Fluorescence microscopy image of glial-activated retinal cultures, demonstrating the presence of βIII-tubulin⁺ RGC (arrow) and GFAP⁺ activated glial cell (astrocyte/Müller cell). Scale bar = 20μm in all images.
**Supplementary Figure S2.** Lack of induction of non-specific pro-inflammatory effects of siRTP810 in the retina after intravitreal injection. Lack of expression of interferon-responsive genes, IFIT and OAS1, in the retina and choroid of rat eyes after intravitreal siRTP801 injection. Poly I:C is a positive control Toll-like receptor (TLR)-3 activator, and siRTP801 is in a ~30-fold molar excess compared to Poly I:C.
Supplementary Figure S3. Abolition of pS6 expression in retinal cells by Rapamycin treatment. Retinal cells immunostained for βIII-tubulin (green) and pS6 (red) in glial-activated retinal cultures, 3d after treatment with either sNBA culture medium alone, siEGFP or
siRTP801, in the presence and absence of Rapamycin (10nM). DAPI (blue) was used as a nuclear counterstain. Scale bar = 20µm. Note the abolition of mTORC1 activity (pS6 detection) in the presence of Rapamycin, without inducing βIII-tubulin+ RGC toxicity.