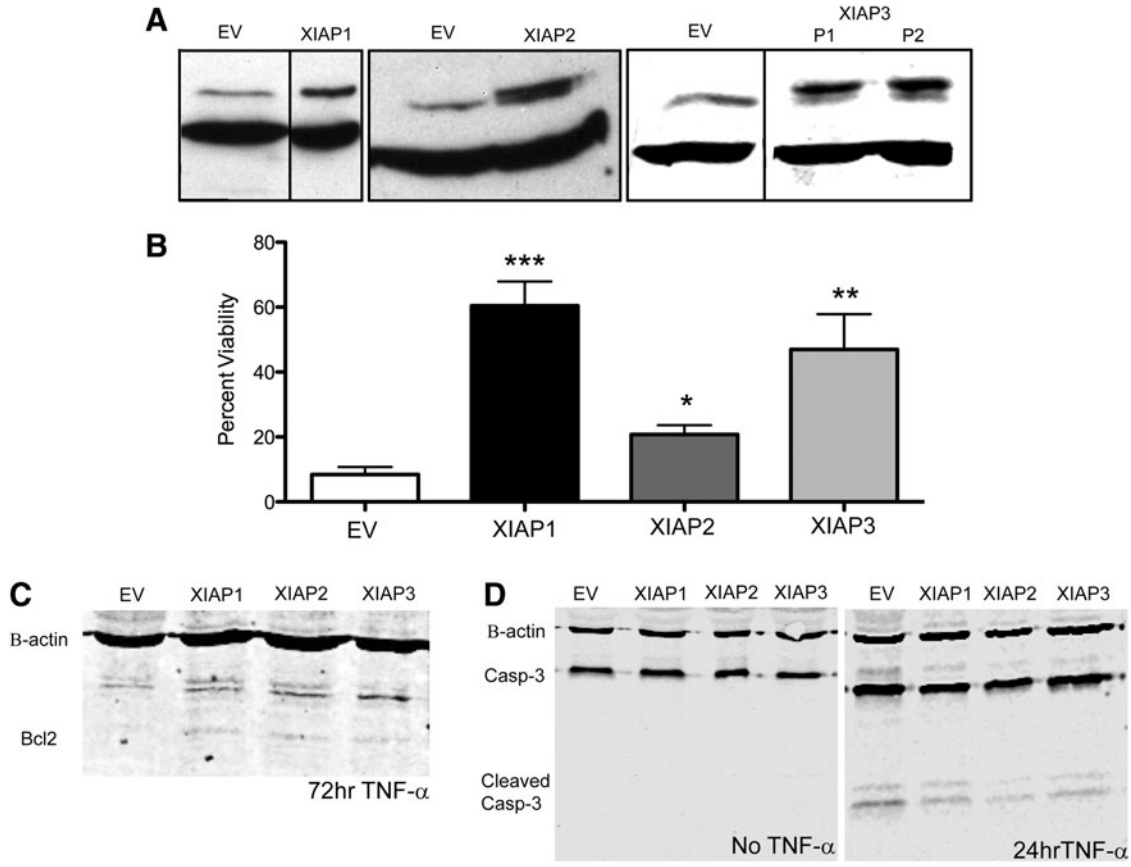
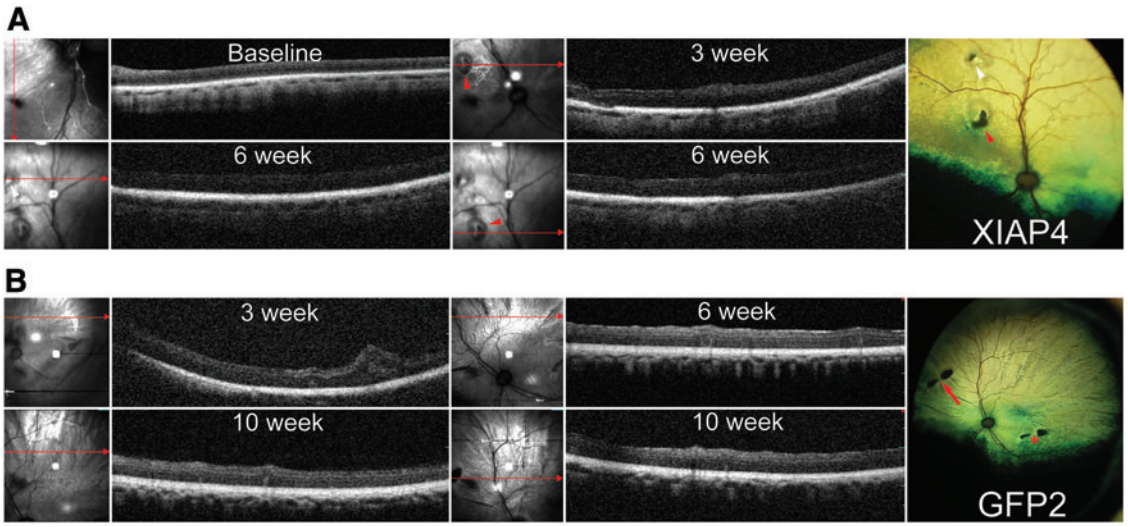
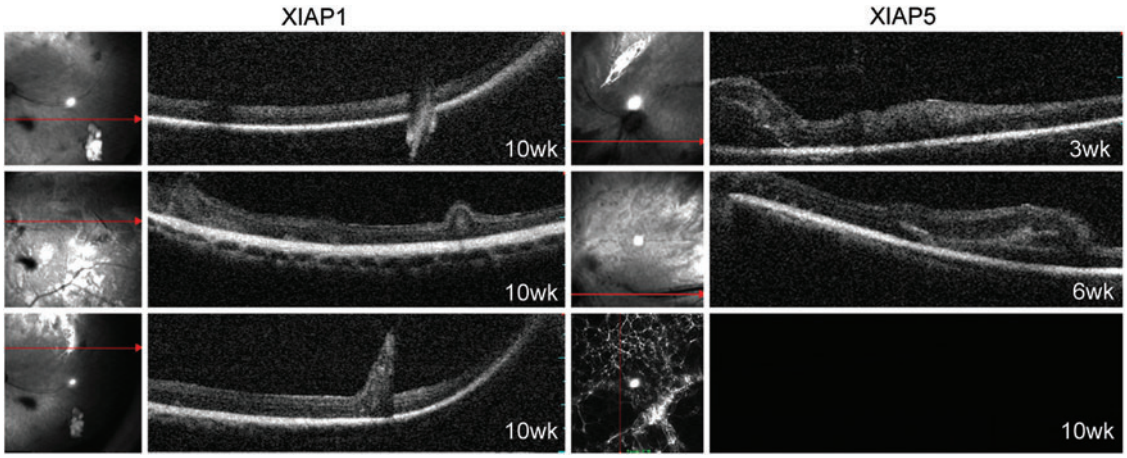
Supplementary Data



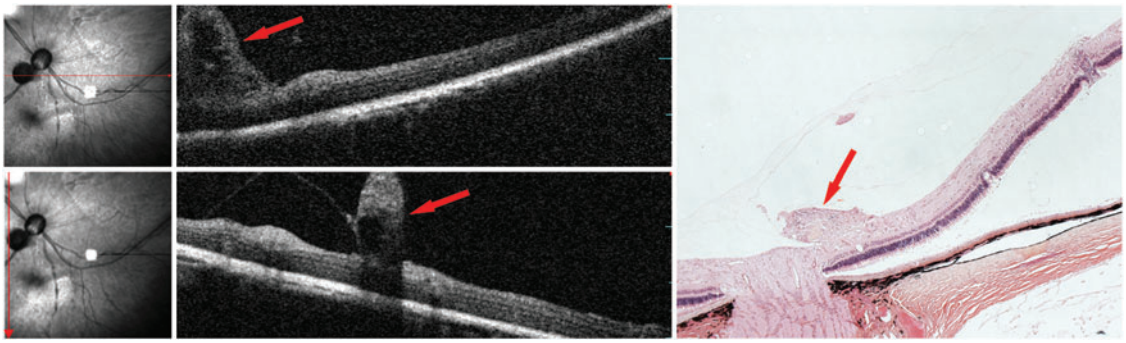
Supplementary Figure S1. XIAP overexpressing cells protect 661W cells from TNF-α. (**A**) Western blot showing protein overexpression in three 661W cell lines (XIAP1–3). β-actin (*lower band*) is used as the loading control. EV, empty plasmid vector; P1, P2, passages 1 and 2. (**B**) All XIAP-transfected cell lines exhibited protection after a 4-day treatment with 5 ng/mL of TNF-α, with XIAP1 providing the best protection (***$p < 0.0001$, **$p < 0.001$, *$p < 0.01$, by Student's *t*-test). Error bars represent SEM. (**C**) Following 72 h of TNF-α treatment, XIAP overexpressing cell lines have increased levels of Bcl2. (**D**) Following a 24-h treatment with TNF-α, XIAP overexpressing cell lines have reduced levels of activated caspase-3.



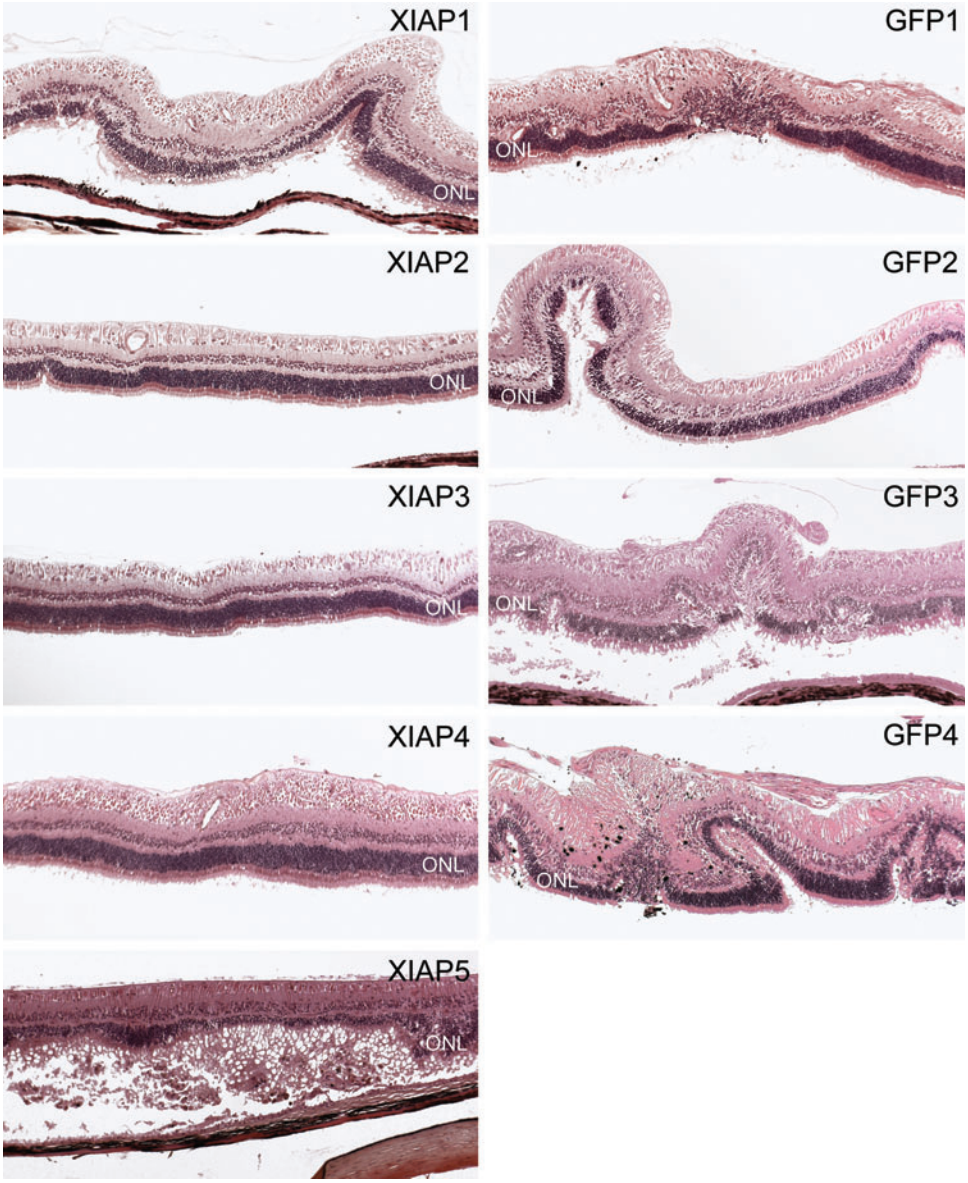
Supplementary Figure S2. OCT shows reattachment of retinas 3–6 weeks after retinal detachment. (**A**) OCT at baseline (prior to virus or gas injection) and at 3 and 6 weeks following detachment in a XIAP-treated retina. At 6 weeks, imaging through both the plane of the viral injection and the plane of the gas injection shows a quiet normal-appearing retina that has completely reattached. (**B**) OCT at 3, 6, and 10 weeks in a GFP-treated retina shows some puckering at 3 weeks, suggesting that the retina has not completely reattached yet, but this completely disappears at 6 and 10 weeks, suggesting that the detachment has completely resolved.



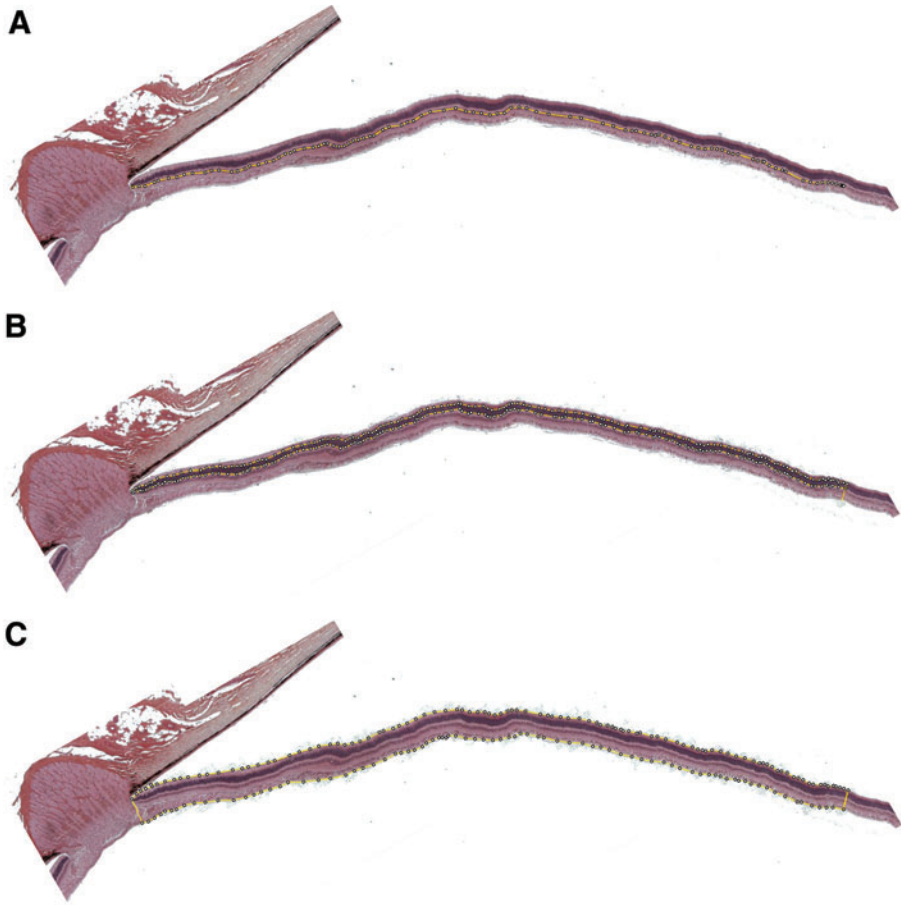
Supplementary Figure S3. OCT in two XIAP-treated animals showing incomplete reattachment of the retina. XIAP1 shows retinal puckering and incomplete attachment at 10 weeks, possibly explaining the retinal damage seen in the histology. XIAP5 presents with possible subretinal hemorrhage at 3 and 6 weeks, and a clear vitreal hemorrhage at 10 weeks, which prevents the acquisition of an OCT image.



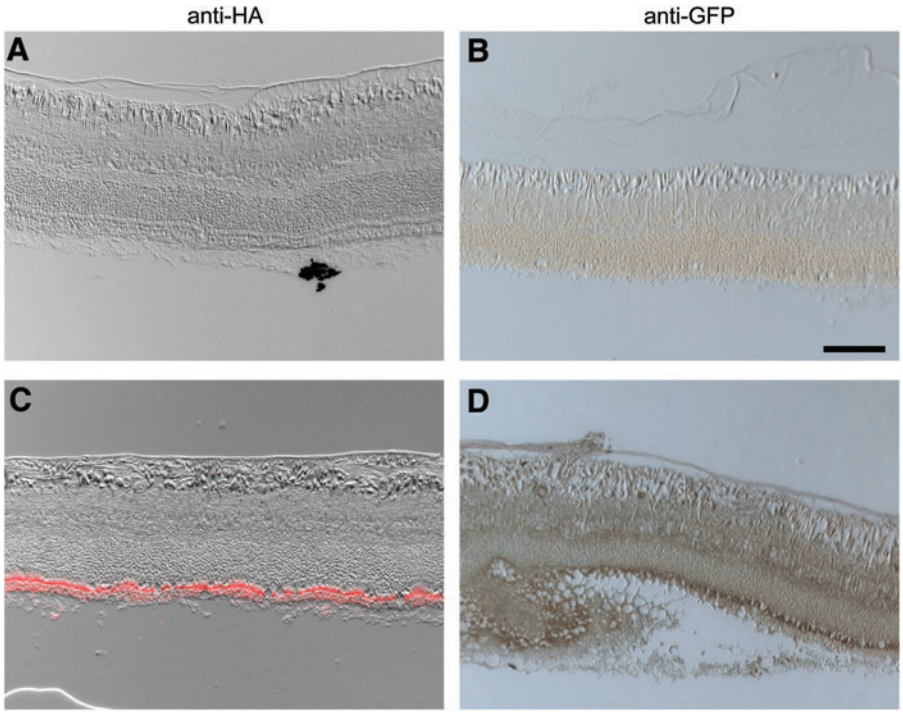
Supplementary Figure S4. Abnormal OCT in a GFP-treated animal. GFP1, which appears to have a solid detachment based on fundus imaging, shows a clearly abnormal OCT with an unexplained protrusion (*arrow*) that is also evident in the histological section (*right panel*).



Supplementary Figure S5. Histological sections in the sagittal plane nasal to the optic nerve. Three of the five XIAP-treated eyes (XIAP2, 3, and 4) show perfect histology of the outer nuclear layer, suggesting optimal protection of photoreceptors following retinal detachment. All of the GFP-treated retinas show damage resulting from the retinal detachment.



Supplementary Figure S6. Sample ONL area analysis. (**A**) The retinal section was imported into ImageJ, and a distance of 8,800 μm was measured from the optic nerve toward the periphery (*yellow line*). (**B**) The ONL was outlined from the optic nerve to end of the line in (**A**), and the ONL area was calculated. (**C**) The whole retina was outlined from the optic nerve to the end of the line in (**A**), and the total retinal area was calculated. The ratio of the areas in (**B**) and (**C**) were used to generate Fig. 6A.



Supplementary Figure S7. Immunohistochemistry shows XIAP and GFP expression resulting from the vector injection. (**A**) and (**B**) No primary antibody controls for the HA-tag and GFP, respectively. (**C**) The HA-tagged XIAP protein is detected in the inner and outer segments of the photoreceptors using an anti-HA antibody and a Cy3 secondary fluorophore. (**D**) Due to autofluorescence of the feline retina in the green channel, immunofluorescence detection of the GFP was not possible. A colorimetric peroxidase-based assay was used to localize GFP protein to the photoreceptor segments.