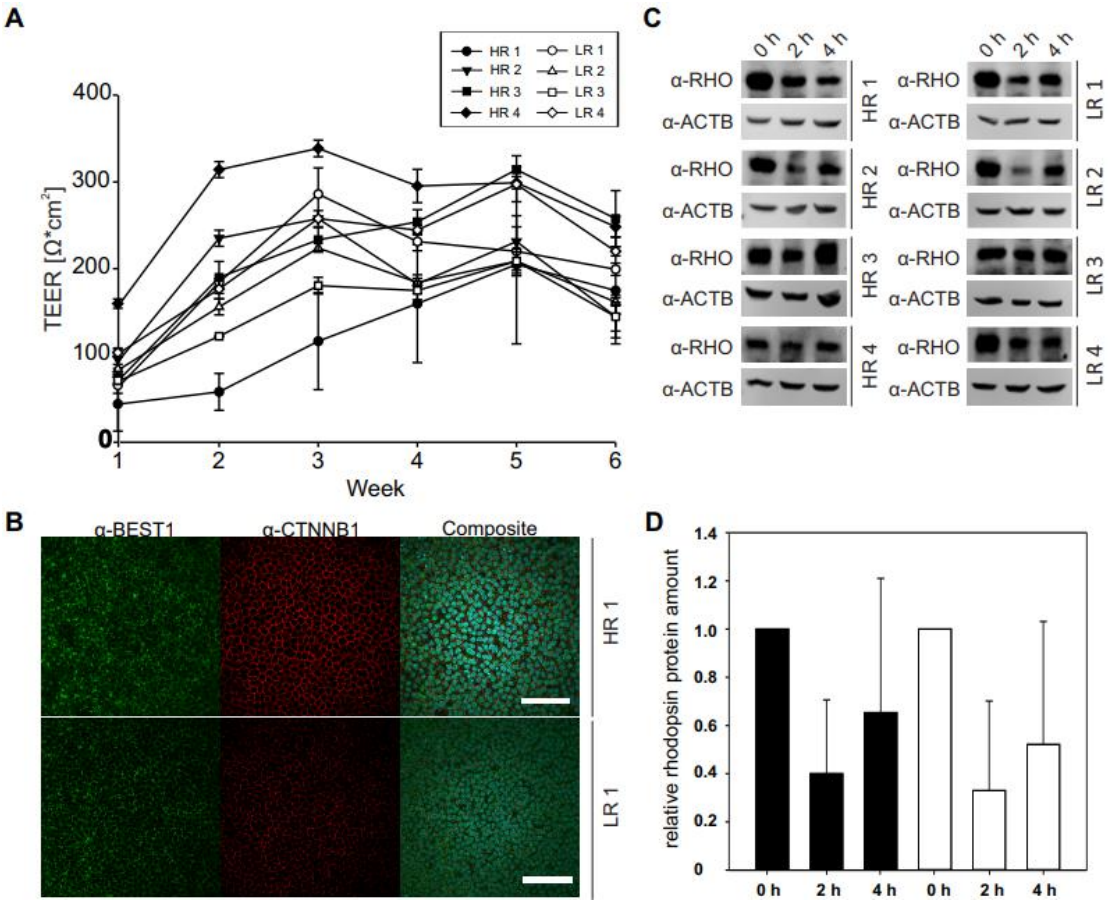
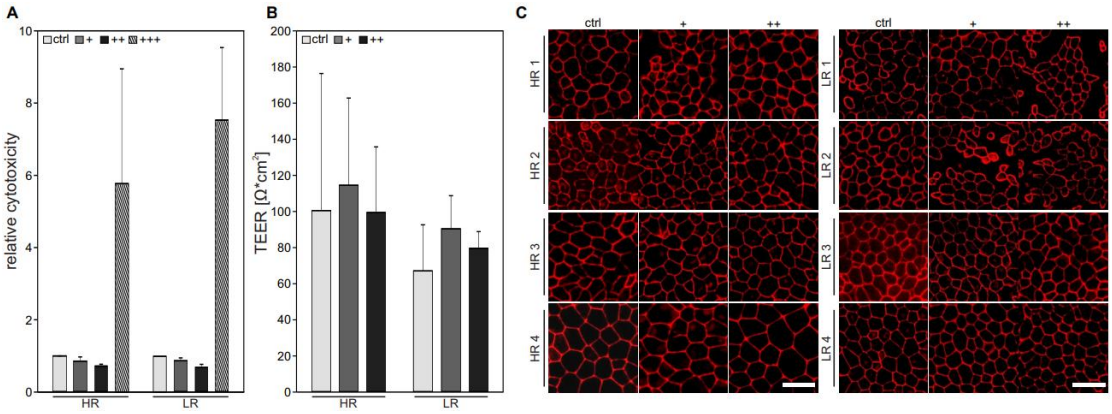


Supplementary Figure 1. Characterization of iPSC-RPE cells. (A) TEER (transepithelial resistance) was measured once a week while iPSC-RPE cells matured on Transwell inserts and reached a stable plateau after week 2. (B) iPSC-RPE morphology was assessed by immunocytochemistry with antibodies against BEST1 and ZO-1. Representative cell lines HR1 and LR1 are shown to demonstrate that staining intensities and cell morphology were uniform over larger areas of the filter (4096 × 4096 pixels, scale bar: 80 µm). (C) POS phagocytosis was followed by an uptake and degradation assay. Successful uptake of POS by iPSC-RPE cells is indicated by prominent rhodopsin staining (RHO) (37 kDa) at 0 h of degradation, and efficient protein degradation can be seen after 2 and 4 h. ACTB served as a loading control in Western blot analyses of POS phagocytosis. (D) RHO signal intensities were quantified using the Image Studio Software, normalized against the ACTB loading control and calibrated against the 0 h time point (n = 4 for HR and LR, respectively).



Supplementary Figure 2. Establishing a 72 h SI-induced oxidative stress model. (A) iPSC-RPE cultured in 96-well plates for four weeks were subjected to 24 h treatment with 0.5 or 3 mM SI. Relative cytotoxicity in relation to untreated cells was determined using an LDH release assay and was not increased upon treatment with 0.125 mM SI (+) or 0.25 mM SI (++) but did increase upon treatment with 1.5 mM SI (+++), which served as a positive control. Data are presented as means + standard deviation (SD) (n = 4). (B) TEER (transepithelial resistance) measurements were performed to confirm monolayer integrity and showed no SI treatment-dependent changes on HR or LR cell lines (n = 4). Statistical significance was tested using a Mann-Whitney U-test. (C) ZO-1 staining was used to visualize iPSC-RPE monolayer integrity after treatment with 0.125 mM SI (+) or 0.25 mM SI (++) for 72 h and showed no negative impacts of the treatment on monolayer integrity and cell morphology (scale bar: 20 µm).