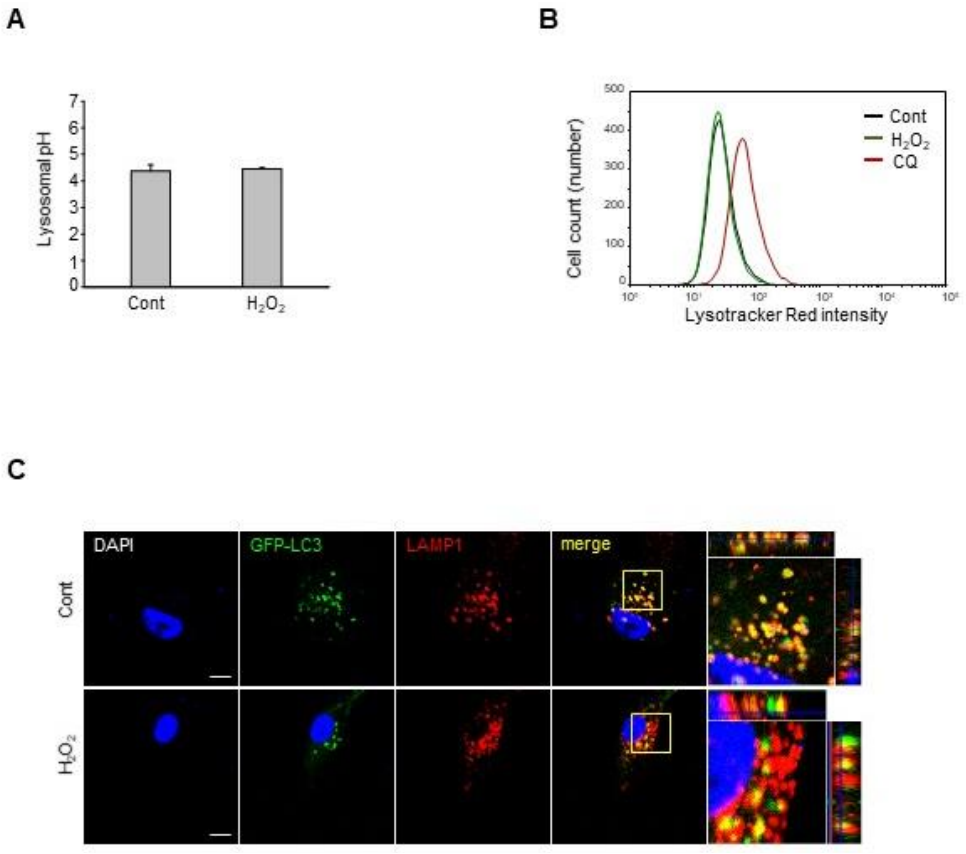
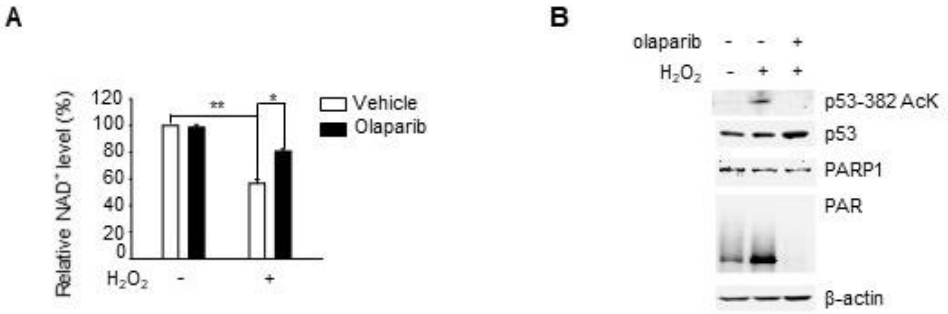


Supplementary Fig. S1. H_2O_2 inhibits autolysosome fusions, but does not affect lysosomal pH or integrity. (A) ARPE-19 cells were treated with 0.5 mM H_2O_2 for 6 h. Lysosomal pH was measured by LysoSensor Yellow/Blue DND-160 staining and using a microplate reader. The data in the graph are expressed as the mean ± SD from three independent biological replicates. (B) ARPE-19 cells were treated with 0.5 mM H_2O_2 or 100 μM chloroquine for 6 h. The cells were stained with 2.5 μM LysoTracker Red DND-99 and then harvested for analysis of red color intensity. The graph shows the red color intensity measured by flow cytometry. (C) ARPE-19 cells were transfected with GFP-LC3. At 48 h after transfection, the cells were seeded on poly-D-lysine-coated coverslips. Next, the cells were treated with 0.5 mM H_2O_2 for 6 h and immunostained with an anti-LAMP1 antibody. The LAMP1 is shown in red. The nuclei were stained with 4′,6-diamidino-2-phenylindole (DAPI). Scale bars = 10 μm.

Supplementary Fig. S2. AIF is dispensable for autophagy impairment upon H_2O_2 treatment in ARPE-19 cells. ARPE-19 cells were transfected with scrambled siRNA (scRNA) or AIF targeting siRNA for 48 h and then treated with 0.5 mM H_2O_2 for 6 h. The cells were harvested and the lysates were immunoblotted with the indicated antibodies. The LC3-II/-I ratio and relative p62 levels were quantified by densitometric analyses (ImageJ software).



Supplementary Fig. S3. Olaparib protects SIRT1 activity via preservation of cellular NAD^+ upon H_2O_2 treatment in ARPE-19 cells. (A and B) ARPE-19 cells were treated with 0.5 mM H_2O_2 in the presence or absence of 10 μM olaparib for 1 h. (A) The cellular level of NAD^+ was determined using a microplate reader. (B) Cell lysates were immunoblotted with the indicated antibodies. The data in the graph are expressed as the mean ± SD from three independent biological replicates. Statistical analysis was performed by Student's *t*-test. $*P < 0.05$, $**P < 0.01$.