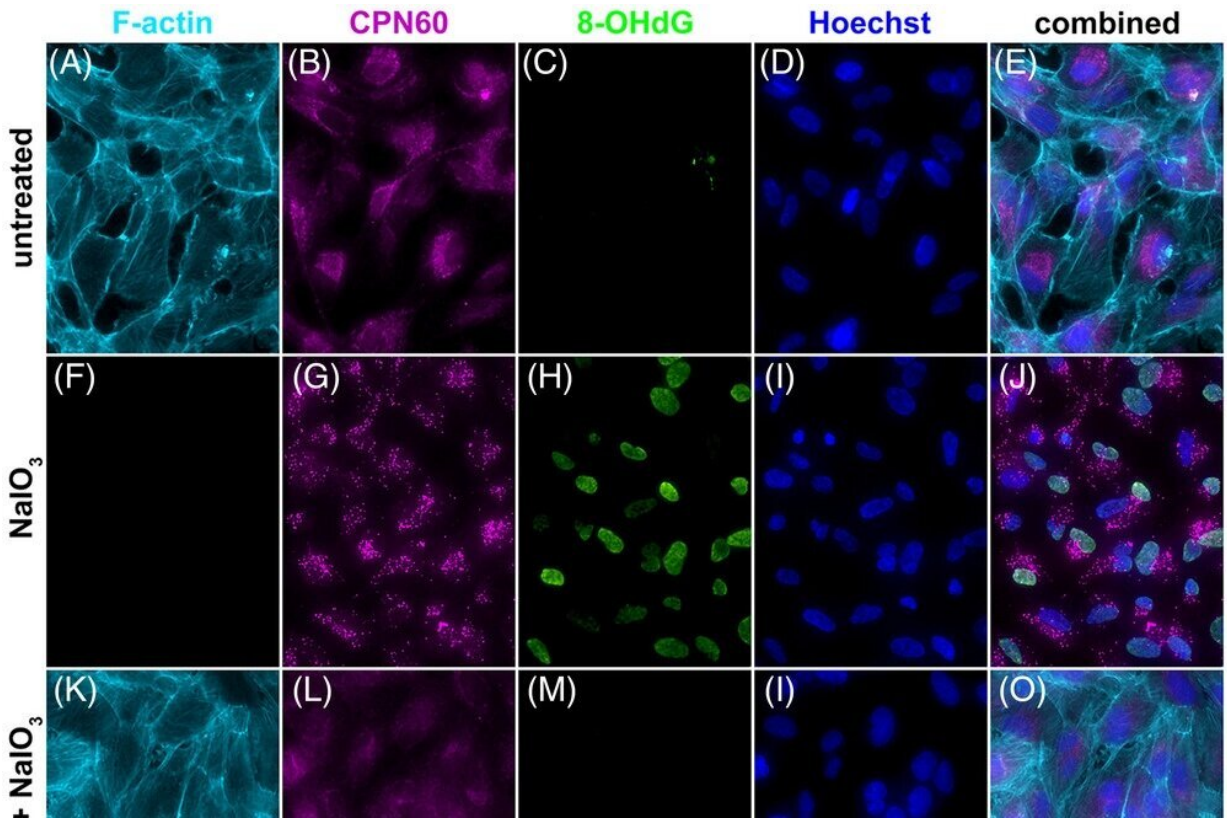
New gene therapy shows promise for treating age related macular degeneration

August 25 2022



Rescue of ARPE19 cells insulted with $NaIO_3$. 5.0×10^4 ARPE19 cells were transduced with AAV2/8-ophNdi1 5-h post-seeding; MOI = 5.4×10^5 (K–O). Twenty-eight-hour post-transduction cells were insulted with 5-mM $NaIO_3$ (F–O) and 24-h post-insult cells were fixed and stained with Phalloidin-iFluor 647 (F-actin, light blue), and CPN60 (mitochondrial marker, magenta) and 8-OHdG-Alexa Fluor 488 (oxidative stress marker, green) immunocytochemistries; nuclei were counterstained with Hoechst (nuclear stain, dark blue). AAV2/8-ophNdi-treated and $NaIO_3$-insulted cells (K–O) were

compared to untreated (A–E) and untreated and $NaIO_3$-insulted cells (F–J). Expression of ophNdi1 provides clear rescue as the insulted cells treated with the virus have a similar phenotype to untreated control cells. Scale bar (O): 25 μm. (P and Q) 5.0×10^4 ARPE19 cells were seeded into XFe96 Seahorse plates (n = 3). The following day a minimum of five wells were transduced with AAV2/2-ophNdi1 (MOI = 3.4×10^5). Twenty-eight-hour post-transduction transduced cells and a minimum of 16 wells of untransduced cells were insulted with 5-mM $NaIO_3$ and 12 h post-insult cells underwent a mitochondrial stress test using an XFe96 Seahorse. (P) Basal and maximal oxygen consumption rates (OCRs), spare respiratory capacity (SRC) and ATP production are indicated. (Q) Rescue of OCR by AAV2/2-ophNdi1 post-rotenone treatment is also indicated. OCRs are normalized to protein. $NaIO_3$ insult reduced basal OCRs, maximal OCRs, SRC and ATP production significantly compared to cells that received no insult (by 66.0%, p