

Supplementary figures and tables

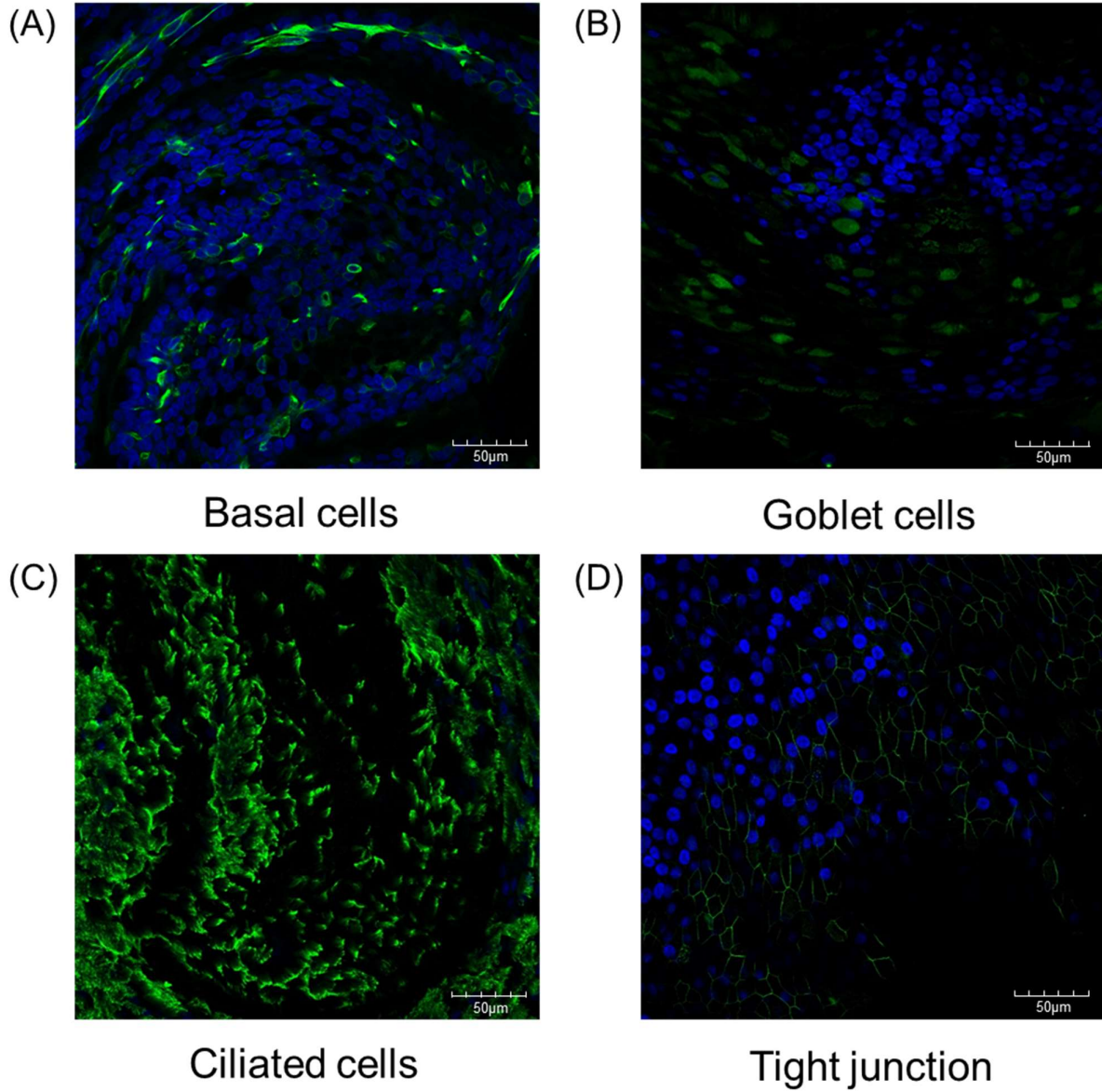


Figure S1. Images present the cell types in differentiated epithelia cultured at ALI. Immunostaining was used to detect basal cells, CK5 (A), goblet cells, MUC5B (B), ciliated cells, acetyl- α -tubulin (C) and tight junction, ZO-1/TJP1 (D). (Green indicates each cell type; Blue: Hoechst 33342 staining the nuclei). The scale bars represent 50 μ m.

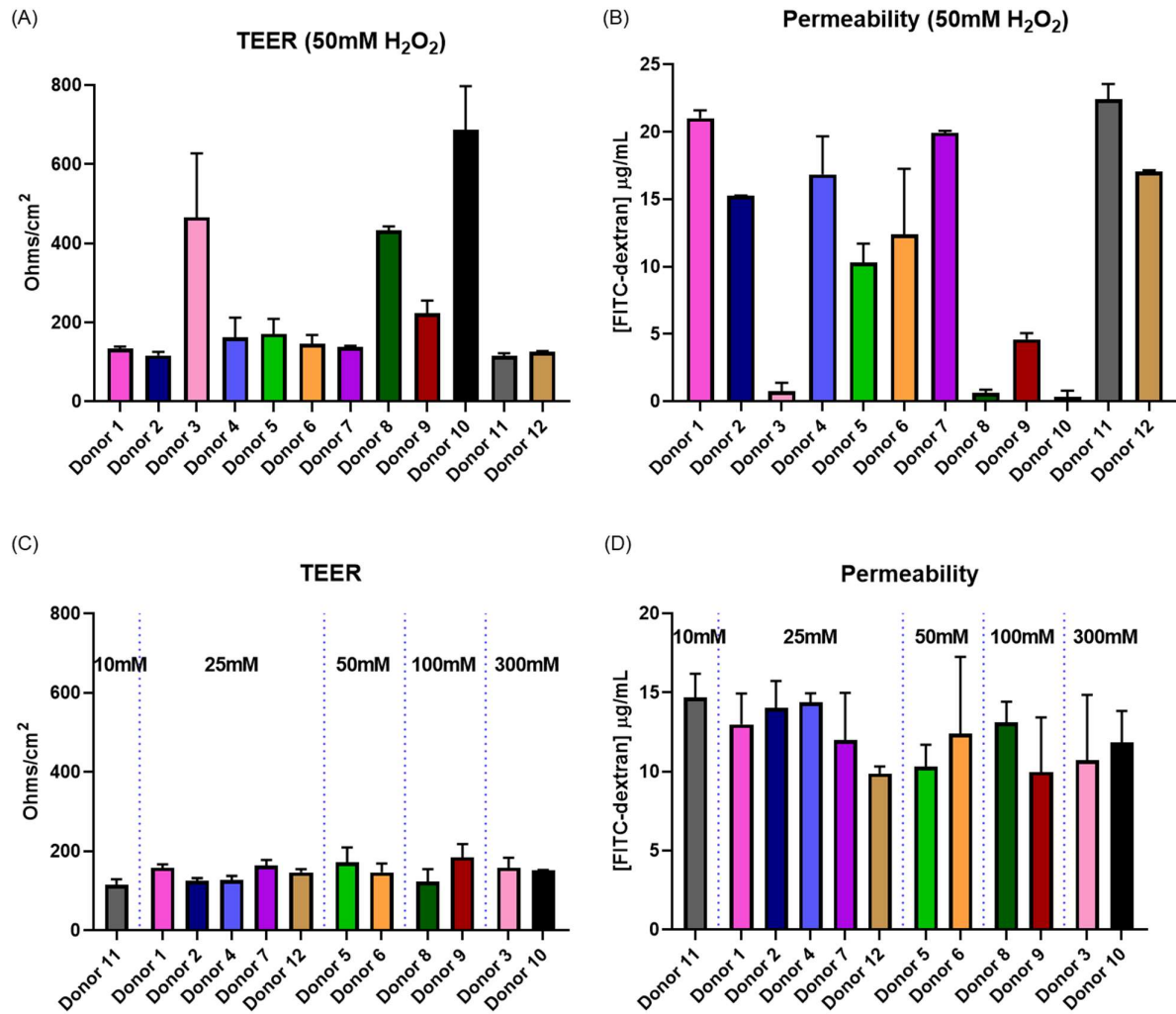


Figure S2. Donor variability as seen in TEER and permeability measurements. A permeability assay and TEER measurements were performed at 4-hour post 50mM H_2O_2 exposure and reproducible donor to donor variability were observed in response to oxidant exposure (A, B). Different H_2O_2 concentrations were used in each donor to achieve comparable baseline responses (C, D). The H_2O_2 concentration for each donor was chosen when the FITC-dextran concentration reaches 10 μg/ml in permeability assay.

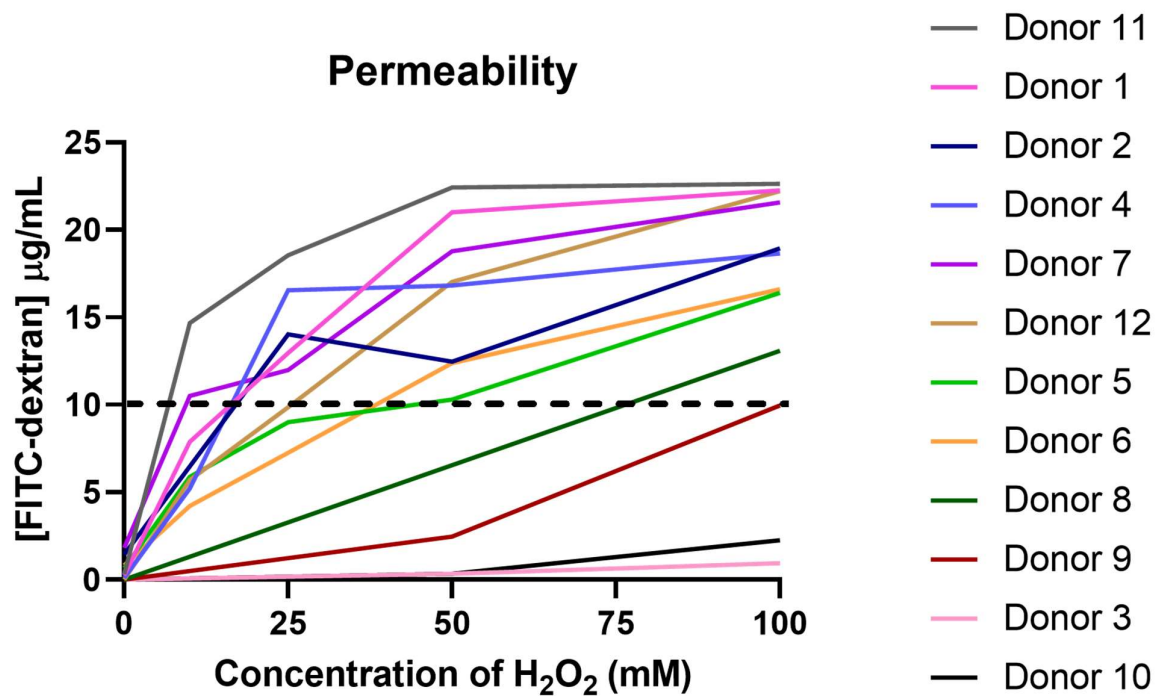
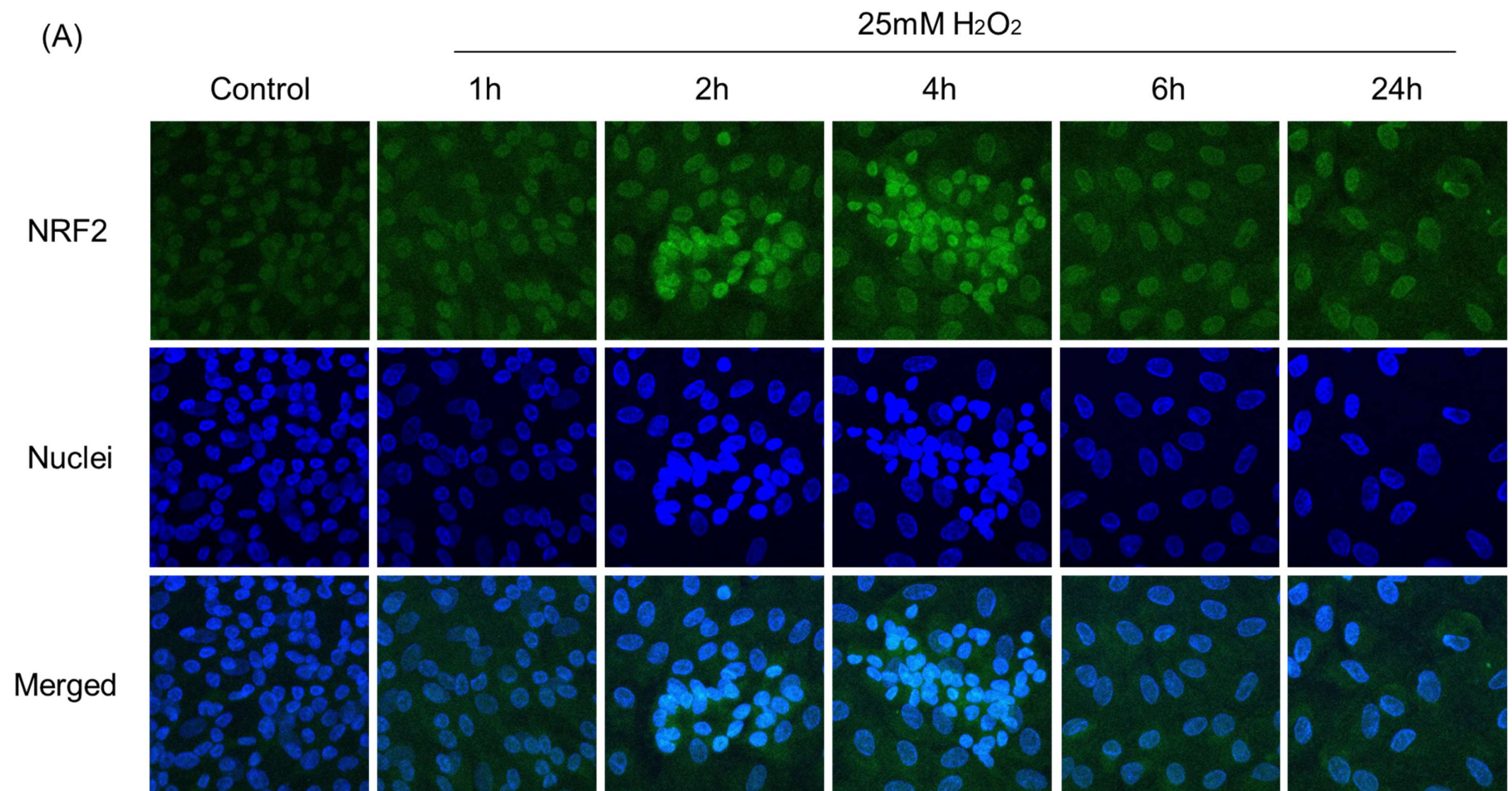


Figure S3. Individual H_2O_2 dose-response in permeability. The H_2O_2 concentration that caused the FITC-dextran concentration measured greater than 10 $\mu\text{g/mL}$ was selected as the H_2O_2 exposure concentration. 25mM H_2O_2 was used in the top 6 donors (sensitive) and 50mM H_2O_2 was used in the bottom 6 donors (resistant). These concentrations were sublethal and were able to investigate the cellular responses.

	Sex	Age	Ethnicity	Education level	Smoking status
Sensitive					
Donor 11	M	24	Caucasian	Bachelor	no
Donor 1	F	38	Caucasian	Doctoral	no
Donor 2	M	38	Asian	Doctoral	no
Donor 4	M	27	Caucasian	Bachelor	no
Donor 7	F	26	Asian	Bachelor	no
Donor 12	F	40	Caucasian	Bachelor	no
Resistant					
Donor 5	F	30	Caucasian	Doctoral	no
Donor 6	F	31	Caucasian	Bachelor	quit for 9 years
Donor 8	M	22	Caucasian	Bachelor	quit for 2 years
Donor 9	F	21	Caucasian	Bachelor	No
Donor 3	F	26	Caucasian	Bachelor	no
Donor 10	F	25	Caucasian	Bachelor	no

Table S1. Donor background



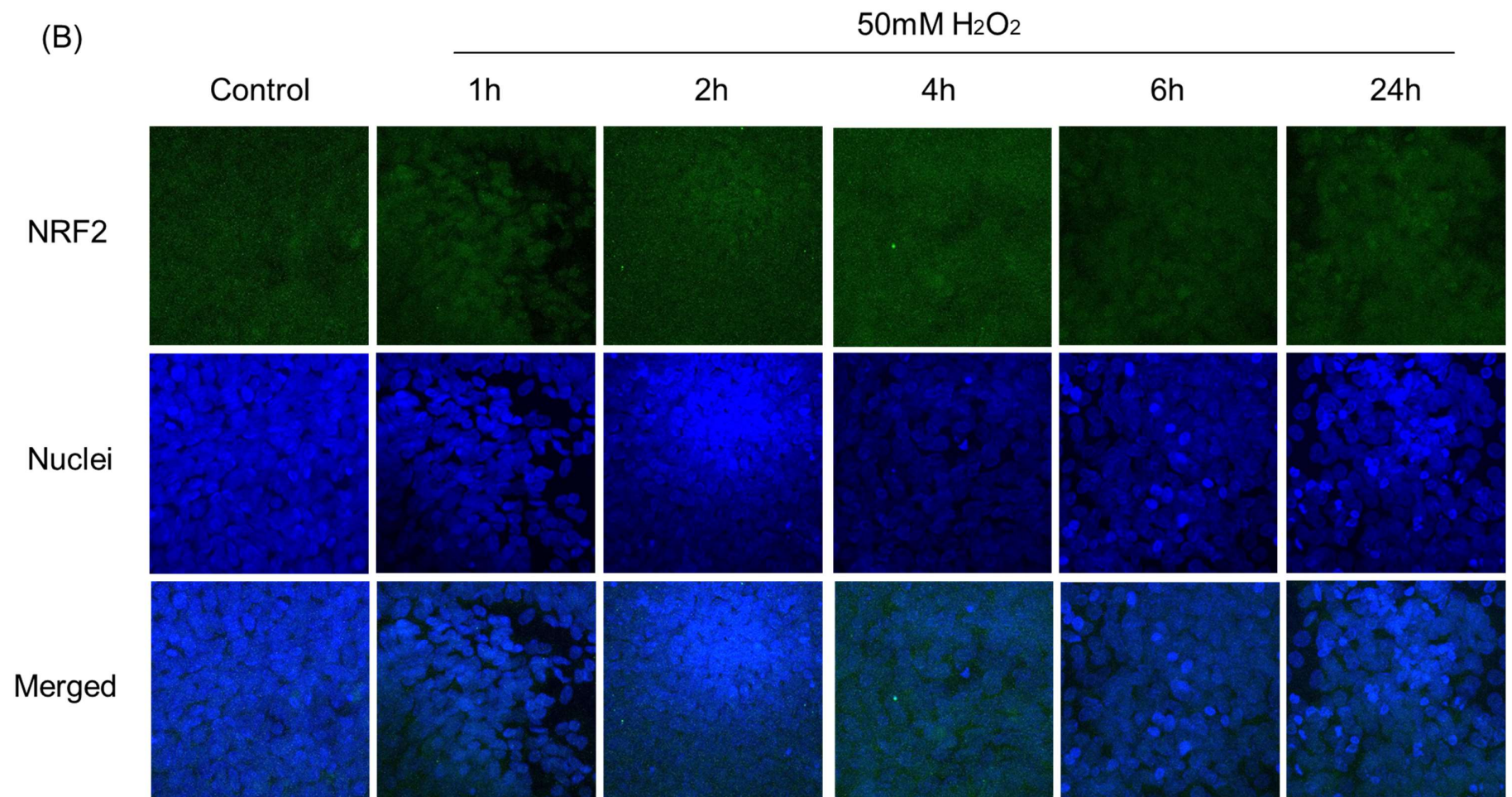


Figure S4. The effect of oxidant exposure on nuclear NRF2 translocation. Following one-hour H₂O₂ exposure confocal images were taken. Images of a representative sensitive individual (A) and of a representative resistant individual (B). Grouped data are shown in Figure 6G, H.