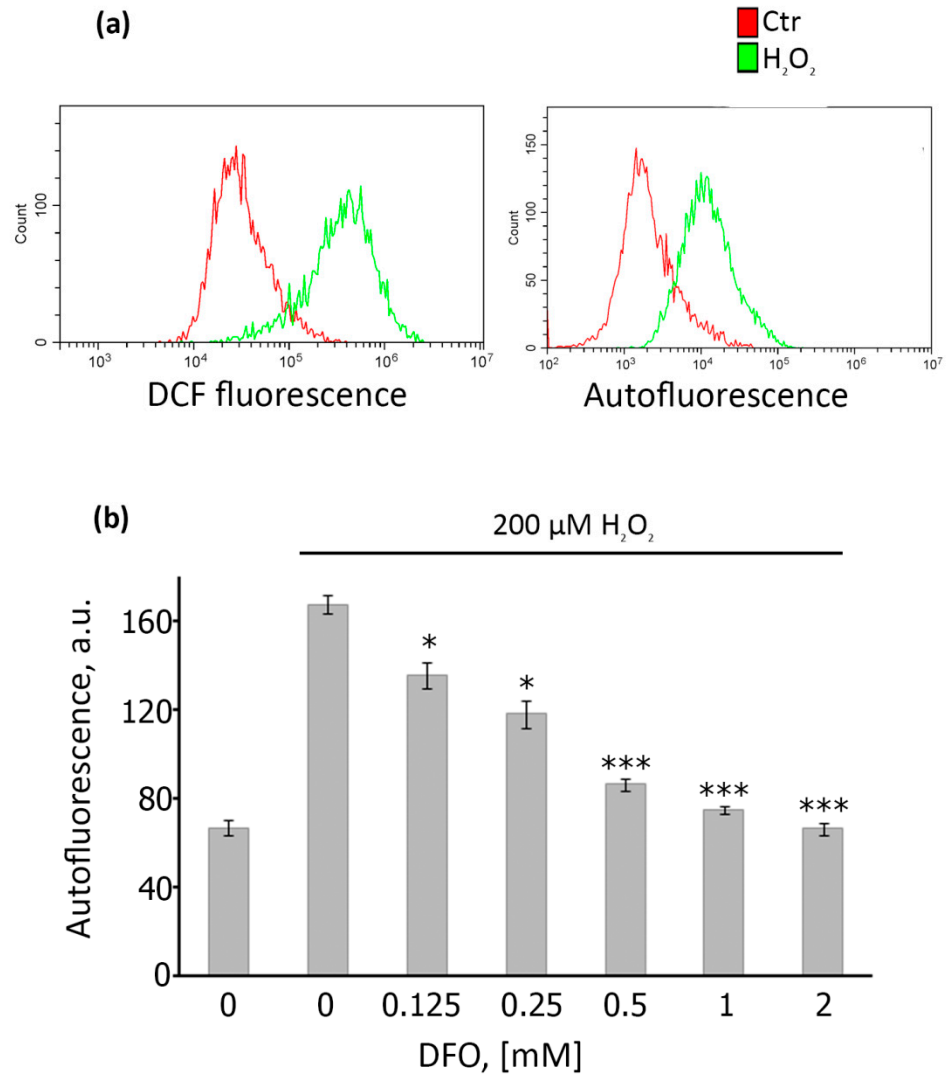
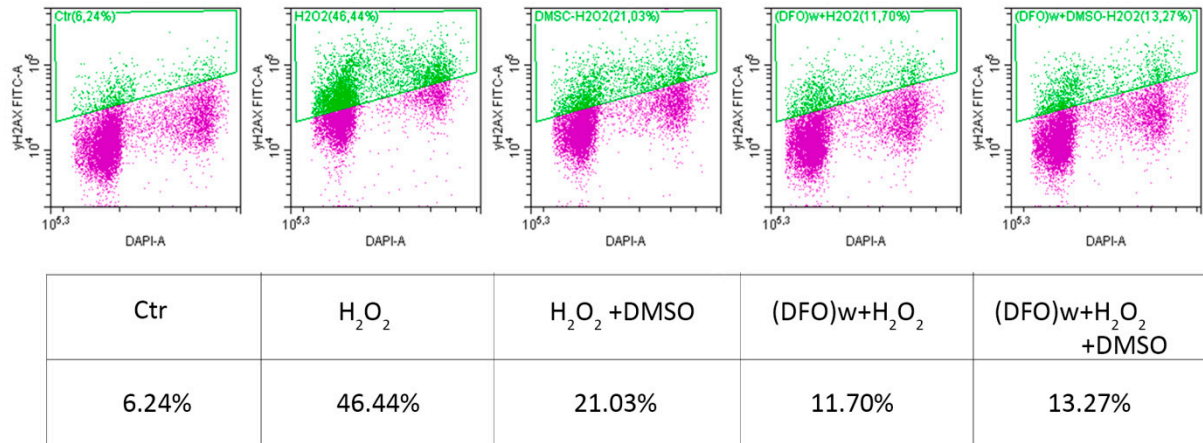


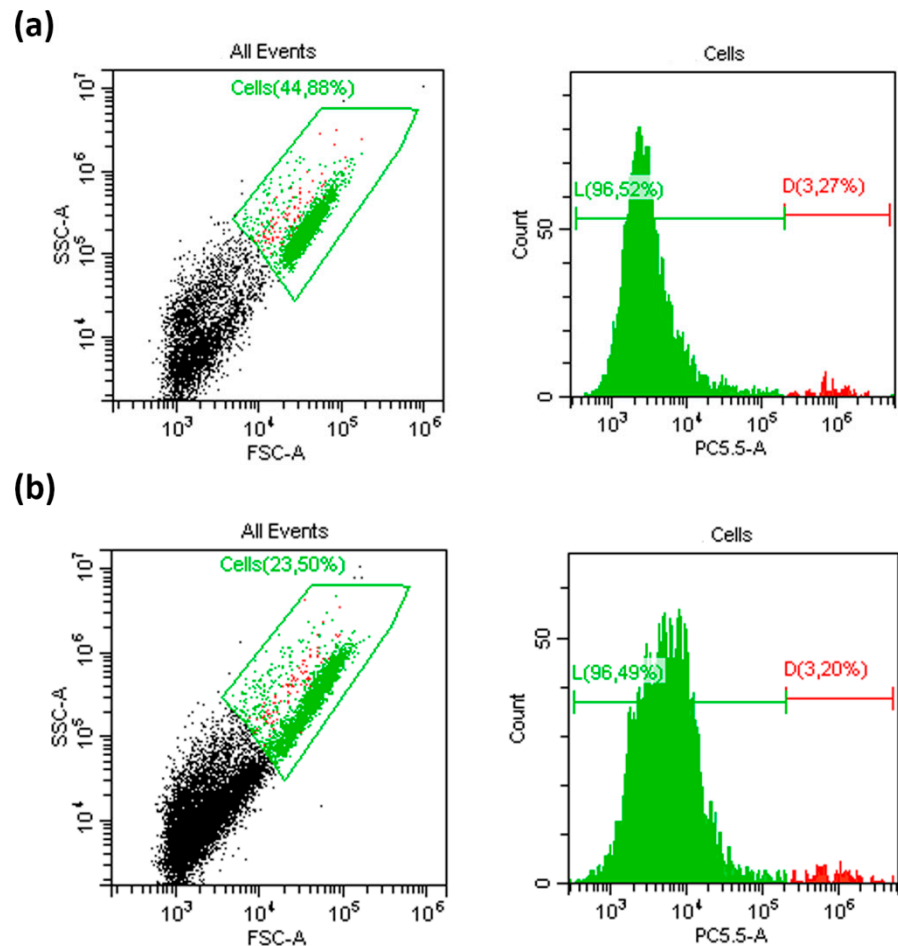
## Supplementary Materials



**Figure S1.** (a) The augmentation in ROS production is accompanied by the accumulation of lipofuscin in hMESC during the stress-induced premature senescence progression. Cells were exposed to 200  $\mu$ M of H<sub>2</sub>O<sub>2</sub> for 1 h, washed from peroxide and cultivated for additional five days; FACS histograms of fluorescence intensity of hMESC are presented – cells were stained with DCF fluorescent probe (on the left) or unstained (on the right). (b) Dose-dependent effect of DFO on stress-induced accumulation of lipofuscin. Cells were pretreated with DFO (DFO concentration varied from 125  $\mu$ M to 2 mM) for 2 h, then washed from DFO and subjected to oxidative stress with 200  $\mu$ M of H<sub>2</sub>O<sub>2</sub> for 1 h. Upon completion of oxidative stress, cells were washed from peroxide and cultured in the fresh complete medium for an additional five days. Using FACS, we assessed autofluorescence as a measure of lipofuscin accumulation. Data are shown as Mean  $\pm$  SD, n=3; \*\*\*p<0.005, \*\*p<0.01, \*p<0.05.



**Figure S2.** representative FACS dotplots of samples stained with  $\gamma$ H2AX antibodies are presented: 1 – untreated cells (Ctr); 2 – cells exposed to 200  $\mu$ M of H<sub>2</sub>O<sub>2</sub> for 1 h; 3 – cells exposed to 200  $\mu$ M of H<sub>2</sub>O<sub>2</sub> for 1 h in the medium supplemented with 5% DMSO; 4 - cells pretreated with 1mM of DFO for 2 h, washed and exposed to 200  $\mu$ M of H<sub>2</sub>O<sub>2</sub> for 1 h; 5 - cells pretreated with 1mM of DFO for 2 h, washed and exposed to 200  $\mu$ M of H<sub>2</sub>O<sub>2</sub> for 1 h in the medium supplemented with 5% DMSO for 1 h.



**Figure S3.** Flow cytometry gating strategy, related to the Figures of the main text. Elimination of debris measurements identified as FSC-A low and SSC-A low and one-parametric histogram reflecting viable and dead cells based on the PI (PC5.5-A) fluorescence intensity provided for young (a) and senescent (b) cells.