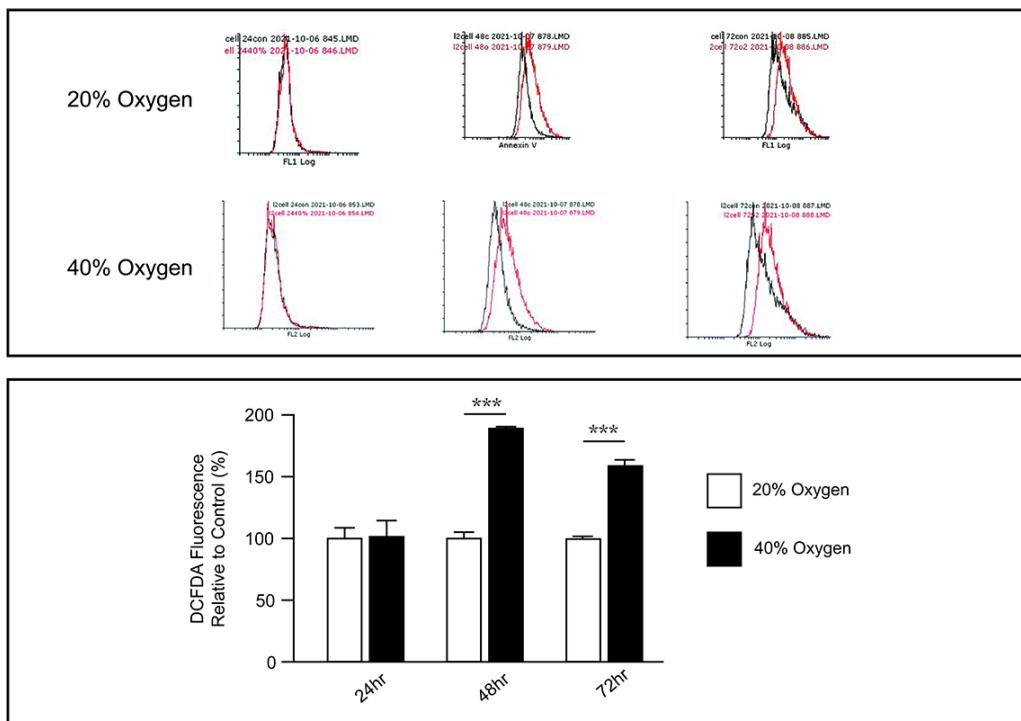


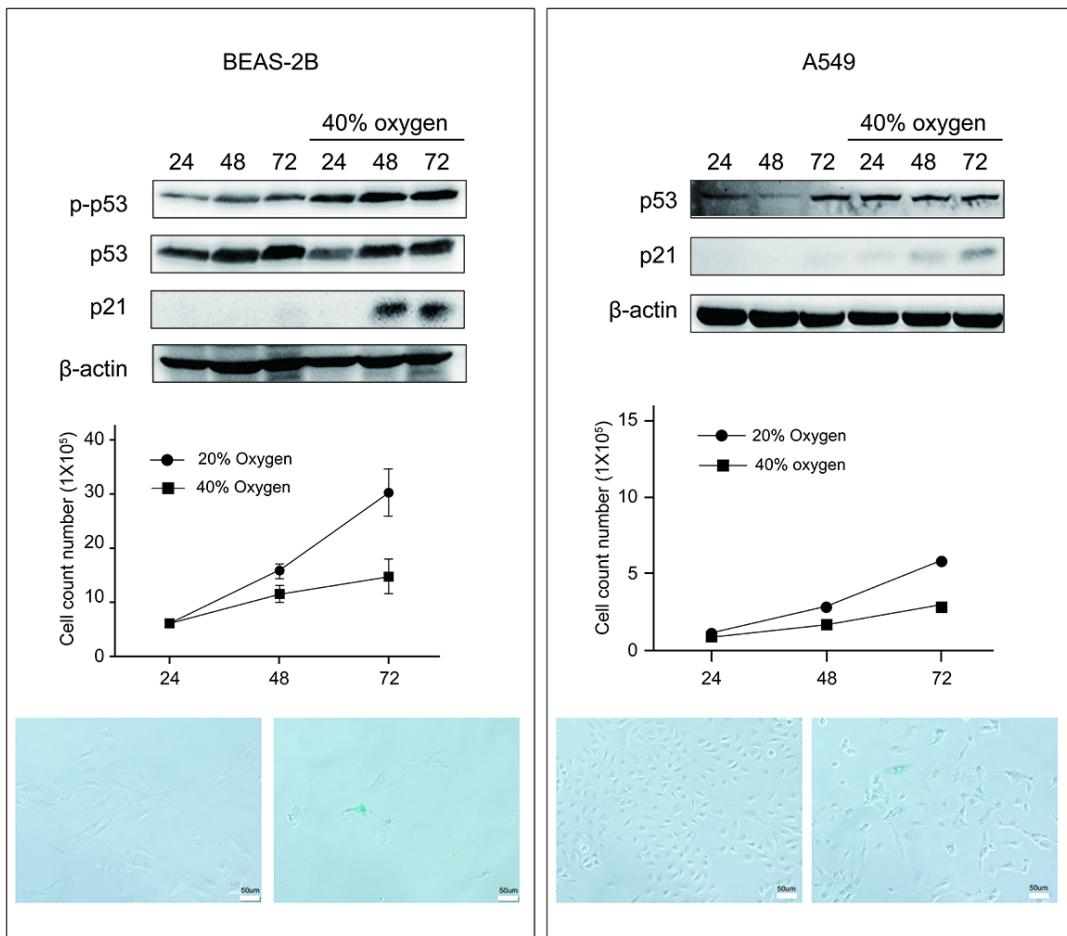
Supplemental figure 1



**Supplemental Figure 1. Forty percent oxygen exposure induced oxidative stress in L2 cells.**

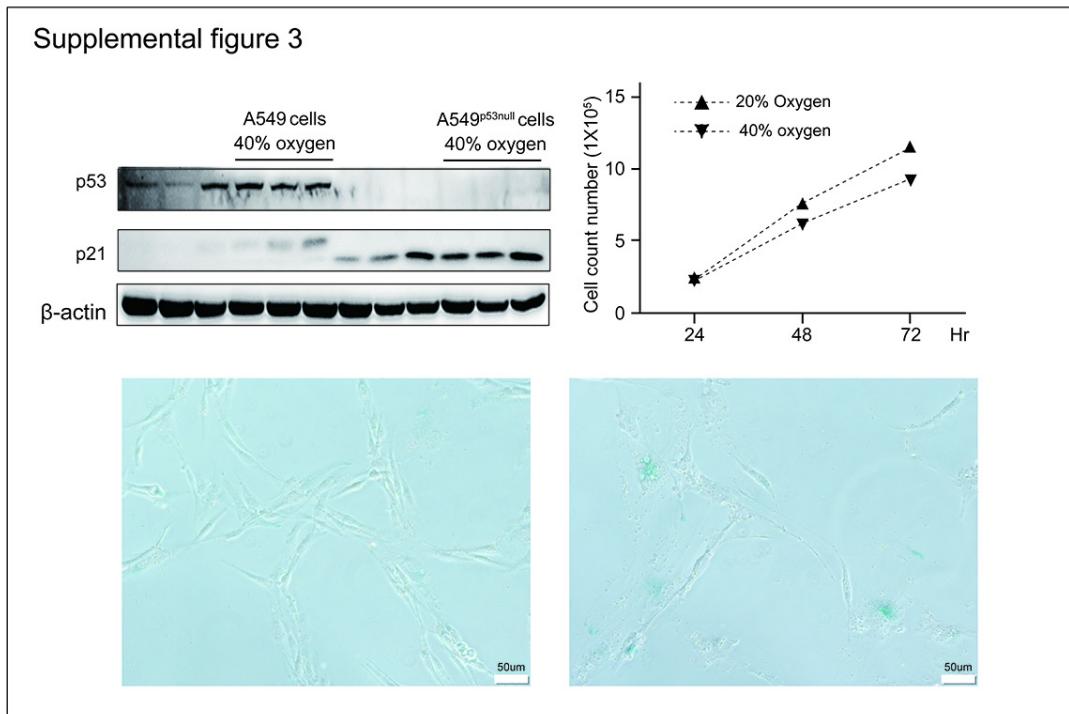
Intracellular ROS were detected using CM2-DCFDA fluorescence in L2 cells following 40% oxygen exposure for durations ranging from 24 to 72 hours. Data are shown as mean  $\pm$  SEM from three independent experiments. Statistical significance is indicated by asterisks: \*P < 0.05, \*\*p < 0.01 and \*\*\*p < 0.001.

Supplemental Figure 2



**Supplemental Figure 2. Forty percent oxygen exposure induced senescence in BEAS-2B cells and A549 cells.** The upper panel shows a representative western blot analysis indicated protein expression under 20% and 40% oxygen concentrations and various exposure durations. The Middle panel displayed cell counting data of BEAS-2B cells and A549 cells in various treatment groups. The lower panel illustrates senescent cells of BEAS-2B cells and A549 cells are detected by  $\beta$ -galactosidase staining under 40 % oxygen exposure.

Supplemental figure 3



**Supplemental Figure 3. A549  $p53^{null}$  cells exhibited senescence following forty percent oxygen exposure.** The upper-left panel displays a representative western blot analysis indicated protein expression in A549<sup>p53</sup> null cells under 20% and 40% oxygen concentrations and various exposure durations. The upper-right panel presents the corresponding cell counting data for A549<sup>p53</sup> null cells under the same 20% and 40% oxygen exposures and durations. The lower panel illustrates the detection of senescent A549<sup>p53</sup> null cells via  $\beta$ -galactosidase staining following exposure to both 20% and 40% oxygen.