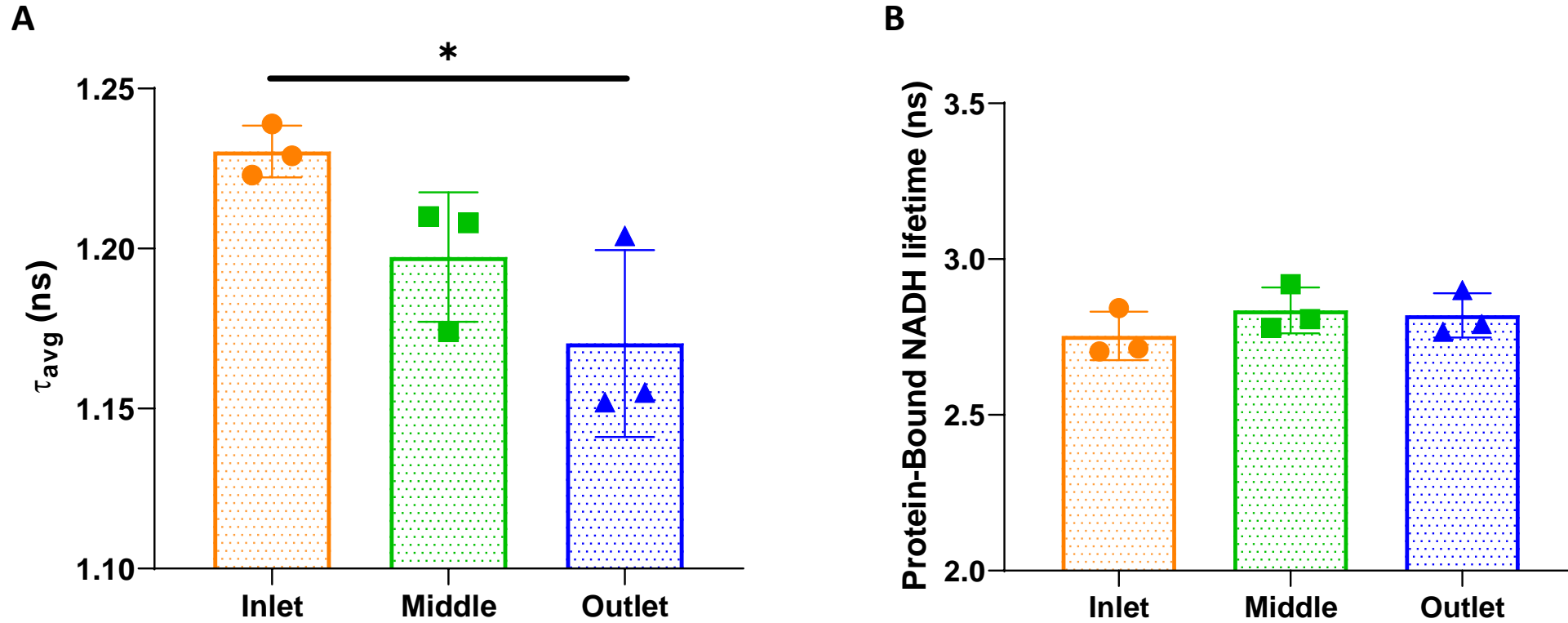
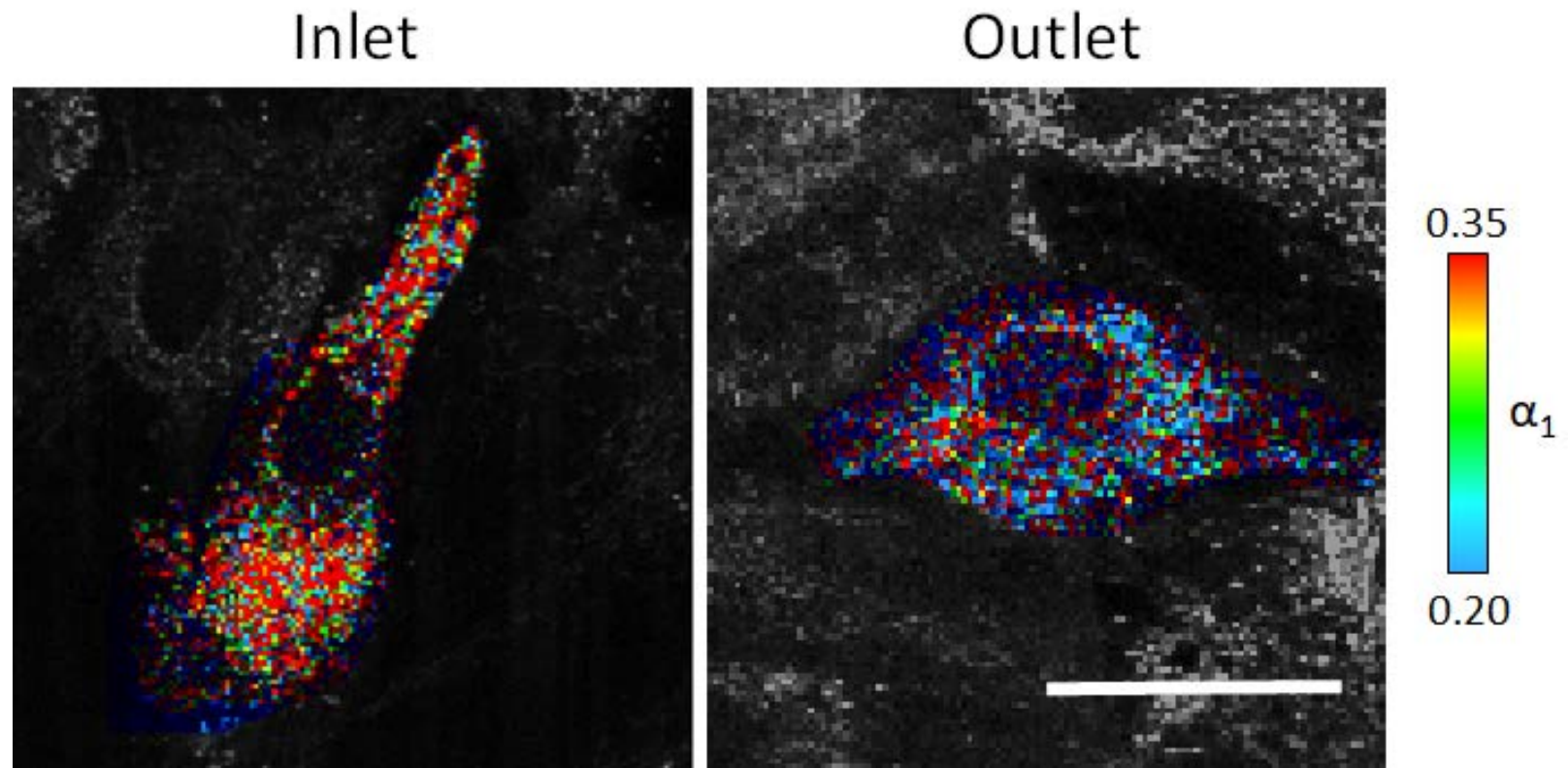


Supplemental Figure 1 – Fluorescence intensity measurements of intracellular oxygen. A) Representative images of hMSC acquired in Normoxia (21%) and Hypoxia (0%) conditions. B) Linear regression and coefficient of determination calculated for the 630/460 ratio measured from ROI areas (n=3). At least 3 images for each n-value were obtained.



Supplemental Figure 2 – 2P-Photon FLIM of NAD(P)H of hMSC cultured in the MOAB with $5\mu\text{L min}^{-1}$. A) Calculated average fluorescence lifetimes for the inlet, middle and outlet region. B) Protein-bound lifetimes measured for the inlet, middle and outlet region. $n=3$. One-Way ANOVA was used to verify statistical difference with $p\text{-value} < 0.05$



Supplemental Figure 3 – Single-cell 2P-Photon FLIM of NAD(P)H of h-MSCs cultured in the MOAB at 5 $\mu\text{L min}^{-1}$ flow rate. Representative comparison between the α_1 parameter in single cells analysed at the inlet (right) and outlet (left) respectively. Scale bar: 50 μm .