SUPPLEMENTAL INFORMATION

Supplemental Video Legend:

Video S1. Dynamics of Mitochondrial Internalization. In this video clip, dynamics of mitochondrial internalization is visualized. The isolated mitochondria labeled with pHrodo Red Succinimidyl Ester (SE) are being internalized into the rat H9c2 cardiomyocytes through co-incubation. The pHrodo Red SE label is sensitive to pH drop and fluoresces as endocytosed by the cell. The lack of fluorescence outside of the cell eliminates any doubt about the specificity of the detected signal. At around hour 5, the first instance of mitochondrial internalization is observed. The fluorescence intensity progressively decreases as the dye is segregated between the new daughter mitochondrion with each round of fission. Occasionally the fluorescence intensity increases locally, indicating new instances of mitochondrial internalization in those areas. With passing time, the pHrodo Red SE signal propagates through the entire cell, perhaps due to mitochondrial fission and fusion events between the transplanted and host mitochondria. The cell remains viable for the duration of the time-lapse study. Best viewed with Windows Media Player.