



**SUPPLEMENTARY FIG. S2.** Live cell tracking and controlled coculture of the coronary artery tissue-flap model II. Coronary artery seeding of endothelial cells (HUVECs,  $5 \times 10^5$  cells  $\text{mL}^{-1}$ ) and surface seeding of primary cardiac cells ( $2 \times 10^5$  cells  $\text{mL}^{-1}$ ) led to a controlled coculture of both cell types in respective tissue flaps, with endothelial cells inside the vessel system and cardiac cells in the surrounding tissue. Although after 24 h of cultivation, only inhomogeneous cell distribution of surface-seeded cells could be observed by live confocal imaging, with the extravessel repopulation starting from the seeding surface and with only partial tissue penetration. **(A–D)** Representative orthogonal projections of 3D z-stack reconstructions (ranging from  $z=60$  to  $100 \mu\text{m}$ ) recorded by live confocal imaging, showing surface-seeded cardiac cells and underlying endothelial cells. Green, cytoskeleton of CMFDA-labeled HUVECs; red, cytoskeleton of CMPTX-labeled primary isolated cardiac cells.