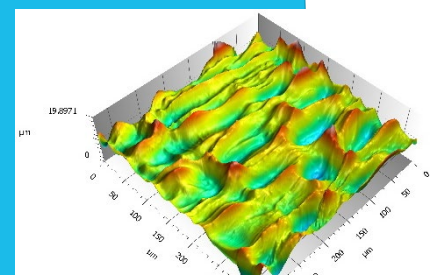
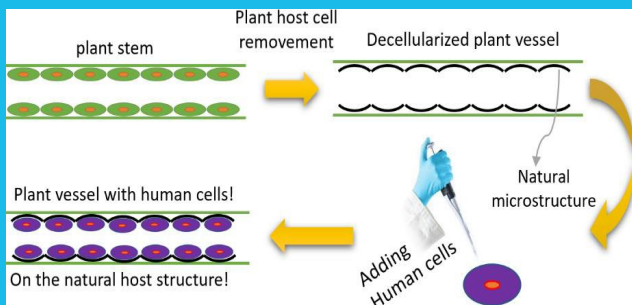


Background:

Plant scaffolds as natural, cost-effective, non-toxic substrates with available microstructure for the proliferation of human cells could be promising alternatives for intravascular implants. Plants own uniform surface microstructure which makes them a suitable host for cells to adhere to and proliferate on. However, the production of biologized (endothelialized) vessel models that mimics the biological properties of human natural vessels is still an important aim of researchers. Tubular plants could be utilized as promising materials to produce vascular models.

Project description:

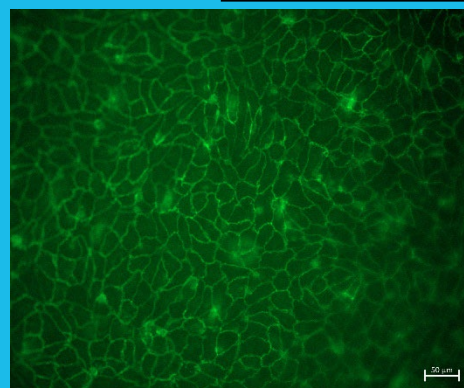
Based on our previous study on the microstructural and mechanical investigation of tubular plants, three plants will be decellularized to remove plant host cells to prepare vascular models. Following last project at BMT, where interaction of human umbilical endothelial cells (HUVEC) with these plant scaffolds was studied, here development of coating method and definition of a protocol to achieve complete endothelialization with a monolayer of endothelial cells on the scaffolds will be explored.



Confocal 3D view image of a decellularized plant stem



Cross-sectional images of the selected plants



Human endothelial cells on the surface of decellularized plant

Project Announcement

Cultivation of human cells on coated plant-based scaffolds to prepare biologized biomaterials