

Development and characterization of coatings on tubular structures to improve mechanical and chemical properties

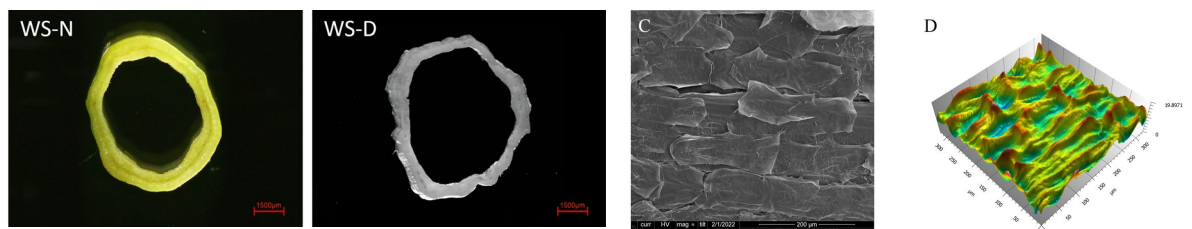
Open Project

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 have similar mechanical properties to human vessels and are stable and leakage free under connection to a fluid is still a challenge in tissue engineering.

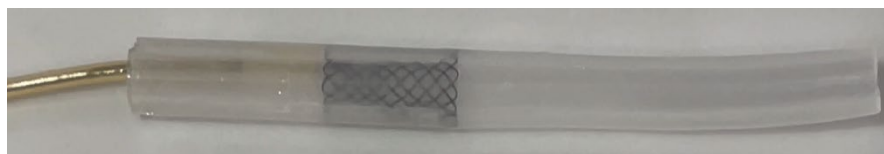
Aim of the project:

In this project, a natural plant-based material that has a tubular structure will be investigated in order to improve the mechanical properties when are under luminal pressure with a stent or fluid with a flexible and biocompatible coating. Furthermore, the inner surface of this tubular structure needs to be coated homogeneously with a natural protein to improve surface attraction. Finally, the presence and function of the coatings will be characterized and possible influence on the mechanical properties will be studied by a tensile test.



Cross-sectional image of the tubular structure

2D and 3D microscopy of the surface



For more information contact us!

Start:

Immediately!

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