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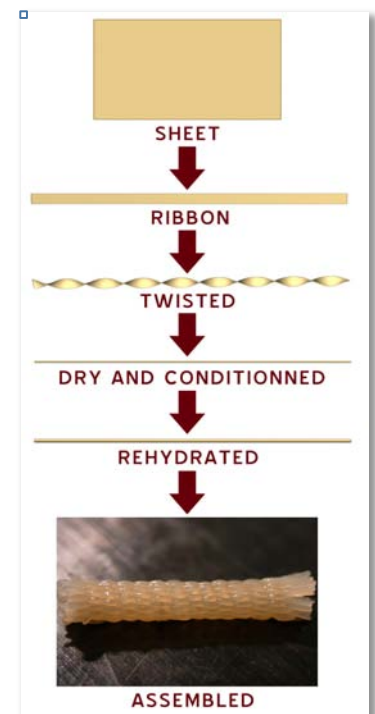
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Research Interests:

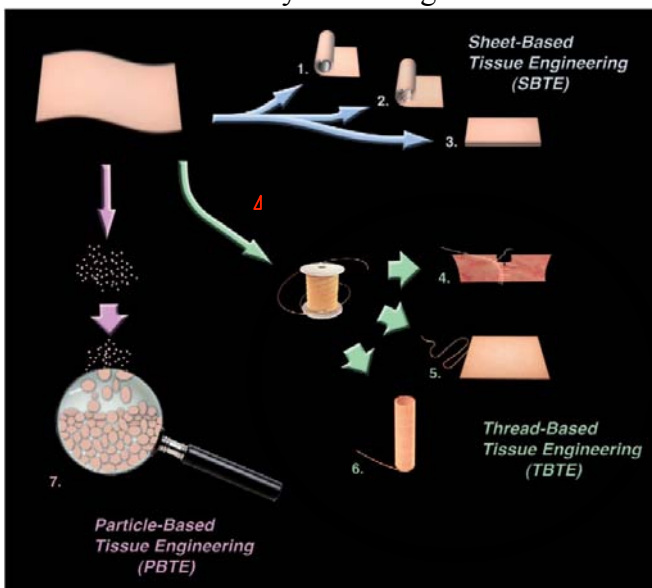
In France, 40.000 patients need haemodialysis access grafts to live every year and 18.000 bypass surgeries are realized annually. Nowadays, the reference treatment in terms of efficacy and cost is the use of a patient's own vessel. However, when they are not available because of diseases or previous harvests, the use of prosthetic grafts is required in spite of their poor patency rates. Hence, there is a critical need for readily available small-calibre vascular grafts. Tissue engineering (TE) could meet the needs aiming to develop new vascular access grafts.

This tissue-engineered blood vessel is a completely biological biomaterial based on cells and extracellular matrix (ECM) called CAM for cell-assembled matrix.

It relies on ECM production by skin fibroblasts which will lead to mechanically strong sheets. Thus, they can be cut into ribbons and then twisted to produce threads. These threads are used to produce a small caliber blood vessel by a weaving method.



Cell-Assembled Matrix
(Peck 2011)



The aim of this project is to develop a new animal model of tissue-engineered blood vessels (TEBV) obtained by an innovative textile-inspired assembly method. This will allow the study of the long-term remodeling of the TEBV in an immunocompetent animal, which is more representative of the clinical situation and will allow us to answer key immunologic questions.

Keywords/expertise:

- Animal cell culture
- Bioengineering
- Biomaterials
- Cellular biology
- Collagen
- Confocal microscopy
- Electron microscopy
- Extracellular matrix
- Fibroblasts
- Histology
- Immunofluorescence
- Laser-assisted bioprinting
- Multiphoton microscopy
- Second generation harmonic
- Tissue-engineering
- Vascular graft

Education :

2016 – presently : PhD student in Tissue Engineering Université de Bordeaux, France

2015 – 2016 : Master's degree (BioSan) Biomaterials and Health Université de Cergy-Pontoise, France

Links:

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