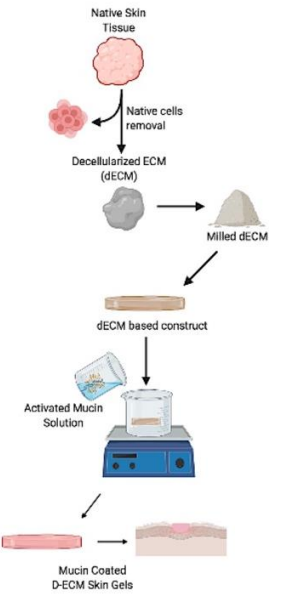


## Master Thesis Project: Mucin-Coated Decellularized Skin Scaffolds for Wound Healing

### Background:

'Wound healing' describes the ability of skin to repair damaged areas. Wound healing is a complex and dynamic process that involves many factors including cells and stimulating agents such as growth factors. There are several tissue engineering approaches for the repair of skin defects, and they mostly use natural or/and synthetic polymeric biomaterials. Decellularization is one of the key techniques for tissue engineering and regenerative medicine, aiming at obtaining/preserving the extracellular matrix of the tissue while removing all cellular and nuclear residues.

	<p><b><u>Thesis project:</u></b></p> <p>Here, the idea is to construct a viscoelastic matrix material that combines decellularized skin tissue and activated mucin glycoproteins. As mucins have a broad range of beneficial properties helpful for wound healing (anti-bacterial/anti-viral/anti-inflammatory properties), the combined construct should improve the regeneration of wounded tissue and accelerate skin remodeling.</p> <p>The project involves applying a typical tissue decellularization process, handling and modification of the obtained materials, as well as material testing in terms of its viscoelasticity. Basic cell-material interaction studies may be included as well. Experience with experimental lab work is required.</p>
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If you are interested in this project, please contact Prof. Lieleg at: [bme.mw@tum.de](mailto:bme.mw@tum.de)