

Projekttitlel: ZIM MadTex - Development of an innovative procedure for the functionalization and coating of novel textile wound dressings with a protein-based active ingredient.

Partner: Alpha-Biocare GmbH, Universitätsklinikum Düsseldorf, Institut für Textiltechnik der RWTH Aachen

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Mission Statement

According to the Primary Medical Research Group (PMV), up to 2.7 million people in Germany were affected by acute and chronic wounds in 2015. Of these, 890,000 patients alone suffer from chronic wounds. The primary goal of the therapy of chronic wounds is the healing or at least palliative stabilization of the wound. Modern wound healing products are used to shorten the treatment period and improve wound healing. This can prevent serious consequential damage such as amputations. So far, however, these goals can only be achieved as long as the wound can be kept free of bacteria. The healing tendency of chronic wounds is drastically reduced if a long-term infestation with bacteria and the typical side effects of biofilm formation are detected. Innovative therapy concepts and products are needed to achieve this goal.

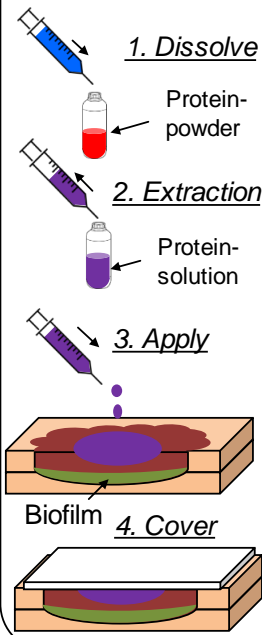
Solution Approach:

The aim is to develop an innovative procedure for coating a wound dressing with a protein-based active complex. A particular challenge lies in the coating of the wound dressing with the protein biomolecule, which is characterized by increased sensitivity to heat and chemicals. Therefore, the limited stability of this biomolecule against temperatures of > 60°C as well as chemicals in the process development is particularly considered in order not to impair the function of the biomolecule. In this project, the process to be developed will be upscaled to the pre-production range.

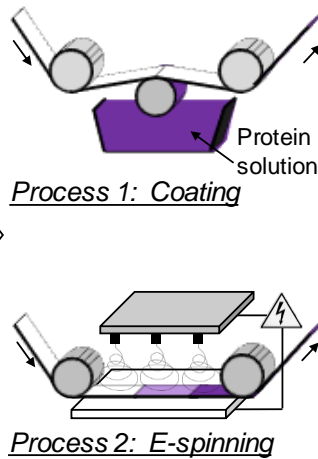
State of the art & deficit:

- Biofilm on chronic wounds prevents wound healing and treatment with wound healing agents
- Surgical wound debridement leads to destruction of the wound environment

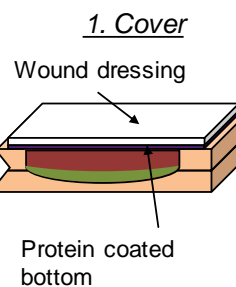
Complicated protein application (4 Steps)



Development: Coating procedure for the protein solution



Objective: Simple Application (1 Step)



Relevanz:

- 2012: 1.7 million patients with chronic wounds in Germany
- Costs for treatment of chron. Wounds: 2-4 billion euros; thereof 360-720 million euros for wound treatment products

Acknowledgement

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