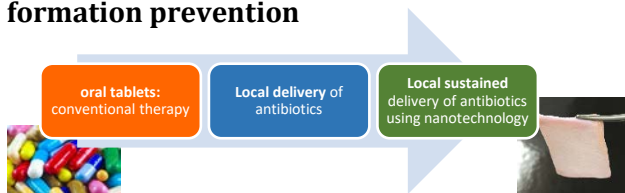


Master project

Coating of prosthetic grafts by antibiotic-loaded polymeric thin films for biofilm formation prevention



Biofilms are a serious cause for healthcare-acquired infections, since an estimated 65% of all hospital infections are of biofilm origin. Increasing bacterial resistance calls for smart pharmaceutical carriers for simultaneous delivery of multiple antibiotics. Designing a carrier that is able to incorporate several drugs with different physicochemical properties in a simple construct is the main aim of this study.

In this project, we will study biofilm formation prevention on different surfaces of non-coated plastic (the prosthetic graft), and coated plastic with dual antibacterial agents for investigating their antimicrobial efficacy against a biofilm. During this project, you learn:

1. How to make a thin layer construct loaded by different antibacterial agents and corresponding release studies
2. Optimization of the polymeric layer in term of adhesion to the graft and further characterizations
3. How to establish bacterial biofilms in the laboratory and monitor formation and treatment efficacy using confocal microscopy

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About IDUN

IDUN is a center of excellence funded by the Danish National Research Foundation and the Villum Foundation. The center is divided into two parts: IDUN Drug and IDUN Sensor, focusing on drug delivery and nanomechanical sensors, respectively.