

Opportunities to collaborate with Ghent University (Belgium) in the field of antimicrobial evaluation of test compounds against biofilms- *in vitro* and *in vivo* models



Laboratory of Pharmaceutical Microbiology (LPM)

1. Background

- The LPM carries out basic and applied research in the field of sociomicrobiology, i.e. research concerning group behavior of micro-organisms in biofilms.
- Biofilms are estimated to play a role in 80% of microbial infections.
- Cells in biofilms are more resistant towards antimicrobial agents, often resulting in therapy failure and novel therapies should address biofilms in infections.
- This requires use of appropriate model systems

2. Strengths of the LPM

- We conduct research in the biofilm-field at an internationally recognized level.
- We have a long tradition in providing service to and collaborating with industrial partners.
- We use state-of-the-art systems that allow medium-throughput analysis of the antimicrobial activity of almost every type of compound and/or material against bacterial and fungal biofilms.

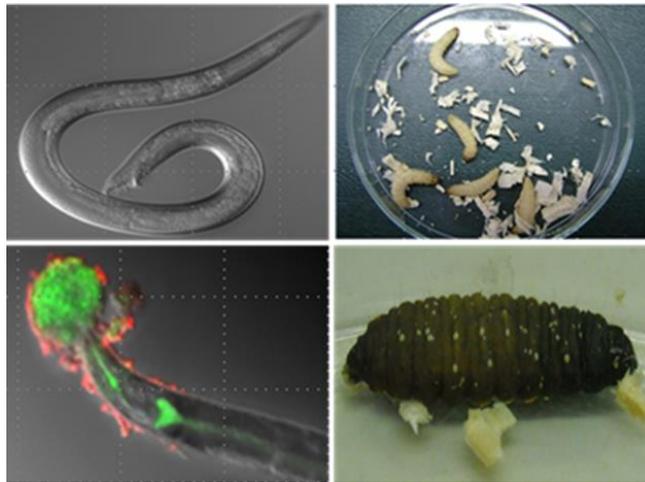
3. We offer

- A wide range of *in vitro* biofilm model systems, including in-house designed specific biofilm model systems, allowing evaluation under various conditions
 - Static biofilm models include various microtiter plate – based systems
 - Dynamic biofilm models including CDC-biofilm reactor and the Modified Robbins Device
 - Specific biofilm models including chronic wound biofilm models, Reconstructed Human Epithelium and a root canal infection biofilm model



3. We offer

- *In vivo* biofilm and virulence models including the *Caenorhabditis elegans* nematode model and the *Galleria mellonella* waxmoth larvae model



- Advanced quantification and visualization techniques to evaluate the effect of a treatment
- Susceptibility testing of bacteria and fungi (determination of minimal inhibitory concentration)
- Ph. Eur. test (including analysis of non-sterile products and preservative efficacy testing)

4. Recent success stories as an example of what we can do for you

- **Development of novel pharmaceutical formulations with increased antimicrobial properties**
 - The molecule hamamelitannin (HAM) increases the activity of a wide range of antimicrobial agents against bacterial biofilms
 - More active HAM-derivatives were developed and their activity was confirmed using a wound-biofilm model system.
 - We offer the possibility of combining novel and more active HAM-derivatives with existing or novel products (including dressings) to increase their anti-biofilm activity.
 - Depending on the type of product, HAM can be combined with or incorporated in dressing.
- **Comparing your product with competing products:**
 - We developed a rapid quantification approach to investigate the efficacy of wound care products on wounds infected with *Staphylococcus* spp. This model was used to compare the efficacy of commercially available wound care products against bacterial biofilms
 - We can compare the efficacy of your product with those of your competitors

5. More information/Contact:

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