



Molecular mechanisms of predatory bacteria moving and feeding on other bacteria



Master Thesis Project

Motivation

Antibiotic resistance is one of the biggest threats to public health and alternatives to conventional antibiotics are urgently needed. An innovative way to kill pathogenic bacteria is to use their natural enemies like predatory bacterium *Bdellovibrio bacteriovorus* (orange, Fig. 1). Our lab investigates the molecular mechanisms of how this predatory bacterium moves and feeds on the Gram-negative prey bacterium.

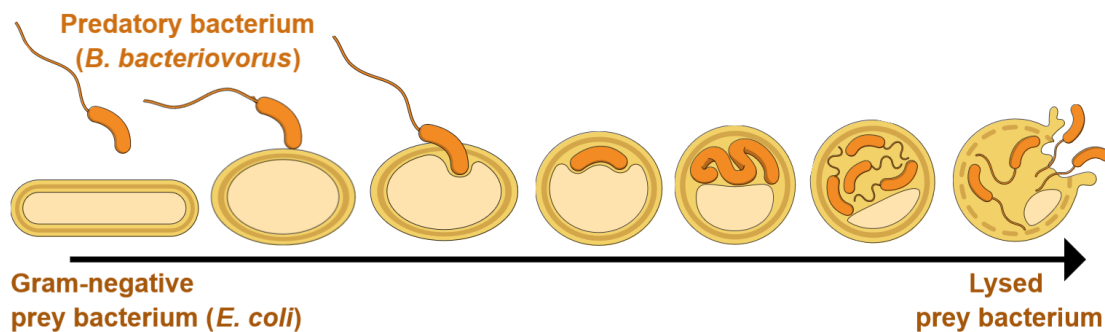


Fig. 1: Predatory life cycle: Predatory bacterium *Bdellovibrio bacteriovorus* (orange) killing, feeding on and lysing the Gram-negative prey bacterium *Escherichia coli* (brown).

Project Aim

This Master thesis project aims to determine what components are involved in moving within and out of the prey bacterium. Further, it will be investigated what mechanisms are involved to feed on and degrade and damage the prey.

Methods you will learn

Laboratory cultivation of predatory bacterium *Bdellovibrio bacteriovorus* and *Escherichia coli* (as prey bacterium). Lab work includes a range of techniques, including microscopy, "killing assays" in 96-well plate reader based on optical density and fluorescence, flow cytometry, likely RNA extraction, qPCR or semiquantitative RT-PCR and cloning work.

Start date

Upon agreement. The earlier the better, from 16th January 2025 on.

Contact

Interested? So are we. Please get into contact via email with Dr. Simona Huwiler (simona.huwiler@uzh.ch) to discuss further details.

Lab homepage:

