



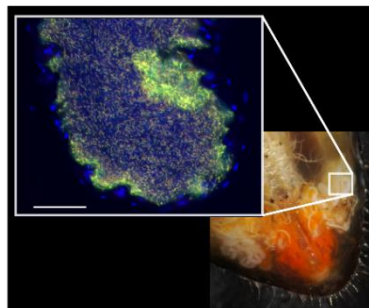
Master Sc. - Thesis:

“Comparative genomic analysis of defensive bacterial symbiont strains of Lagriinae beetles”

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The Lagriinae-*Burkholderia* symbiosis

Beetles within the Lagriinae subfamily live in association with *Burkholderia gladioli*, a bacterial group known for its plant pathogenic traits, as well as its high potential for the production of bioactive compounds. In one of these beetle species, we have discovered that multiple symbiotic strains can protect the eggs from antagonistic fungi by producing antibiotics. Also, we know that the bacteria can be transmitted both from mother to offspring and via plants in the environment. Our current research focuses on the mechanistic basis of symbiont-mediated protection, symbiont transmission and symbiont strain co-existence, aiming to better understand the evolution and chemical ecology of defensive symbiosis between insects and microbes.

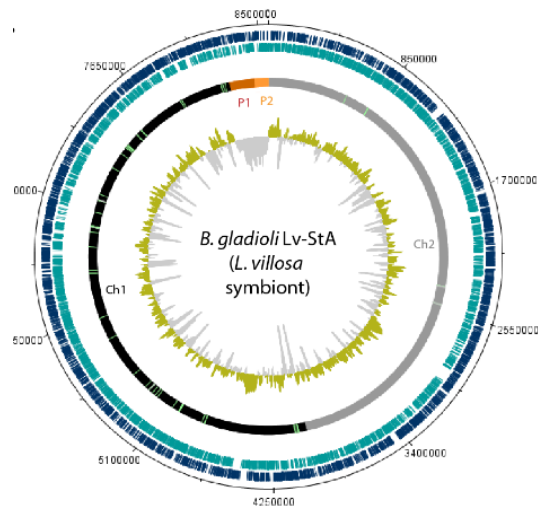


Main aims of this project:

- a. Comparatively analyse the genomes of *B. gladioli* symbiont strains of *Lagria villosa* and *Lagria hirta* beetles.**
 - What are the differences between culturable and unculturable *B. gladioli* symbiotic strains at the genomic level? (i.e. which specific functions have been lost?)
 - What are there genomic features that distinguish all *B. gladioli* symbionts from other closely related *Burkholderia*?
- ➔ Methods: genome annotation and description, analysis of metabolic pathways, genome data visualization.

b. Evaluate the presence of genes encoding for the defensive antibiotic Lagriamide across the bacterial symbionts of six different *Lagria* species

➔ Methods: primer design, (insect dissection, DNA extraction), PCR.



Starting date: September to early October, but flexible