Bachelor or Master thesis BIOVIT 2021/22

Topic/Title (Norwegian)

Topic/Title (English)

Functional characterisation of hydrogen sulphide responsive genes in Atlantic salmon

Picture

Summary (Describe the topic/thesis, type of thesis work: field work, laboratory work, literature study)

Mortalities associated with hydrogen sulphide (H2S) have become a serious concern in land-based Atlantic salmon production. In order to combat this problem, we need to have a better understanding of the fundamental processes involved in the interaction between fish and environmental H_2S. In particular, the molecular mechanism associated with H_2S sensing in salmon remains unexplored.

In this suggested thesis, the student will investigate the functional role of selected genes in the adaptation of salomon to an H_2S-enriched environment.

Some of the activities include:

- Isolate the full-length sequence of gene candidate(s) in salmon and characterise the gene(s) by a series of bioinformatics analyses.
- Isolate and culture cells from mucosal tissues for functional studies.
- Perform pharmacological studies to identify the functions of these genes in salmon. Crispr/Cas is also an alternative.
- Transcriptomics and proteomics.

Subject area (keywords)

gene expression, ecotoxicology, fish health, molecular biology, aquaculture

Language thesis (Norwegian and/or English)

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English

Bachelor or Master thesis

Credits

Project/company

Nofima

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