Developmental plasticity of pituitary stem cells -an interdisciplinary approach

We are seeking for a motivated and ambitious postdoc who would be interested in developing a proposal to investigate the developmental plasticity of pituitary stem cells in the model fish medaka (Oryzias latipes). We engage ourselves in helping the candidate to write the application for the Marie Curie postodoctoral fellowship (deadline: September 2021). If granted, the funding will provide salary to the applicant for **two years at the Norwegian University of Life Sciences** (Ås, Norway). This project is expected to include among others, bioinformatics (transcriptome analysis), RNAscope (multiplex fluorescent in situ hybridization), immunofluorescence and advanced imaging techniques. This work will be done under the supervision of **Dr. Romain Fontaine** and **Dr. Christiaan Henkel**, in the laboratory of **Prof. Finn-Arne Weltzien** (international environment) that is located in the brand-new veterinary faculty building with a new state of the art model fish facility.

The pituitary, a vertebrate endocrine gland involved in many essential physiological functions, is a plastic organ capable of adapting hormone production to changing biological needs over the lifetime of an animal. Using the fish model medaka, our group recently made the exciting discovery that this plasticity involves mechanisms such as mitosis and phenotypic conversion of fully differentiated endocrine cells. In addition, we just identified a stem cell population in the adult pituitary and are currently in the process of publishing the first teleost pituitary 3D atlas and single-cell transcriptome. Together, these new findings open up a new field of research on the plasticity of the vertebrate endocrine system and the role that stem cells play in this process.

For this project, we propose to take advantage of the innovative tools developed in our laboratory to investigate the developmental plasticity of the endocrine cells in medaka. Those include the available single-cell RNA-seq data and next generation bioinformatics methods to chart cellular development. They will be combined with *in vitro* and *in vivo* experiments investigating the role of environmental factors in pituitary stem cell proliferation and differentiation. With relatively low risk, as most of the tools are already present in the lab, this project is expected to produce high impact publications thanks to the hot topic of pituitary plasticity and stem cell biology.

For any further information or question, please contact Dr Fontaine:
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