LIÈGE université
GIGA institute

PhD fellowship from Televie.

Characterization of the different steps of pancreatic cancer progression in zebrafish by scRNAseq and identification of molecular signatures by cross-species comparison

Laboratory of zebrafish development and disease model (ZDDM)

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https://www.gigazddm.uliege.be

Position : A phD fellowship from the Televie is available for a motivated scientist interested to decipher the different steps of the formation of pancreatic tumors in zebrafish by single-cell RNA-sequencing (sc-RNAseq). Comparison of these steps with those obtained in humans and mice will allow to identify the conserved elements, sign of an important role in the tumourigenesis. The temporal and spatial expression of the conserved factors will be analyzed by immunohistochemistry and/or RNAscope experiments carried out on zebrafish tumors at different stages. This analysis will be complemented by the same experiments carried out on mouse and/or human pancreatic tumors. Finally, their involvement in the tumorigenesis process will be tested by determining the influence of overexpression and/or the mutation of these factors on tumor progression.

The Laboratory of zebrafish development and disease model (http://www.giga.ulg.ac.be/zddm), due to its longstanding expertise in pancreas development, possesses all the tools (transgenic lines, immunohistochemistry…) know-how (FACS, RNAseq and scRNAseq, imaging, CRISP/cas9 mutagenesis…) and equipment to perform this study in an optimal environment.

Location : Our laboratory is located at the University of Liège (Belgium), in the GIGA institute (http://www.giga.ulg.ac.be/) that houses several high level research groups in the biomedical field. The institute provides 8 technical platforms (proteomic, transcriptomic, mouse and zebrafish facilities, Imagery and Flow Cytometry Platform, …) with state-of-the-art technology and equipment.

Profile : As part of the work consists on the analysis of scRNAseq data, a formation in bioinformatics is an asset or at least a formation in R software. However, Arnaud Lavergne, bioinformatician at the GIGA Genotranscriptomic platform and specialist in sc-RNAseq analysis, will help the phD student with the bioinformatics analyses. Furthermore, training courses are also given at GIGA such as training in R software and sc-RNAseq analysis.

Candidates should send a curriculum vitae, an application letter and the name, telephone number and e-mail address of one reference to mvoz@ulg.ac.be. Additional informations on the project can be also obtained upon request.