Molecular Analysis of Gene Regulatory Networks during the Embryonic Development of Zebrafish

Project Leader
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1. Objective
This project is aimed at improving our understanding of gene regulatory networks in the developmental processes of zebrafish embryos, with an emphasis on transcriptional regulation in the context of cell differentiation and tissue development. The project particularly focuses on the functional roles of the Sox transcription factor family (e.g., Sox2, Sox11) during development of the central nervous system and sensory organs. Successful applicants will work toward uncovering and studying novel regulatory networks involving the Sox transcription factors by combining molecular biology, genomics technologies, bioinformatics and zebrafish genetics.

2. Project Outline
To that end, the project will consist of the following phases:
(a) Generation of genome-edited zebrafish to investigate the function of the Sox genes
(b) Analysis of the genome-edited zebrafish embryos
(c) Analysis of gene regulatory networks

3. Expected Performance
In this project, the successful candidate would be expected to:
(a) Play a significant role in the research project
(b) Work actively and collaboratively with other members of the research group
(c) Contribute to the maintenance of the fish facility

4. Required Skills and Knowledge
The successful candidate for this project will have the following knowledge and skills:
(a) A solid understanding of molecular and cellular biology
(b) An understanding of developmental biology (preferred)
(c) General molecular biology skills

References

See our admission guidelines:
https://www.kochi-tech.ac.jp/english/admission/ssp_aft19oct/ssp_application_guideline.html
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