**Project Title:**

Building a screening platform to evaluate cardiac phenotypes by genetic knockdowns in zebrafish.

**Description:**

In our research group, we work with ‘omics’ datasets to identify novel genes and proteins involved in cardiac disease. A major challenge is how to prioritize the candidates identified from omics datasets for in-depth functional studies. In this project, you will contribute to developing a functional screening platform that can determine the contribution to cardiac disease of approximately 100 genes within a 6-month period. You will contribute to developing a medium-throughput screening platform using zebrafish as a model organism to evaluate cardiac function subsequent to CRISPR/Cas-mediated knockdown of genes. You will either perform experimental or computational work. The project involves establishing efficient genetic knockdown of cardiac disease genes by CRISPR/cas9 approaches, performing optogenetics measurements of cardiac electrophysiological properties and development of an automated image analysis pipeline. Establishing this platform will ultimately allow us to identify novel proteins in cardiac arrhythmia.

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