MSc-project

Title: Epigenetic mechanisms associated with atrial fibrillation

Description: Atrial Fibrillation (AF) is the most common form of cardiac arrhythmia. It affects 5% of the population above 65 years of age. This disease is characterized by rapid electrical discharges in the atria that lead to an increased and irregular heart rhythm. Absence of P waves and sporadic irregular ventricular rate are the typical electrocardiogram (ECG) characteristics of AF. However, the molecular and electrophysiological mechanisms leading to AF are poorly understood. Recent evidence indicates that epigenetic mechanisms are involved in AF pathogenesis.

In this project, we aim on evaluating how changes in epigenetic mechanisms, such as microRNAs and DNA methylation, influence the gene expression and biological pathways leading to AF using computational biology. Taking advantage of our RNA-seq and microarray data, you will be using your computational analysis skills together with your knowledge of biology to assess the role of microRNAs in AF. Pathway prediction and modelling of molecular mechanisms will be employed in this process. Furthermore, analysis of ECGs will be used to evaluate AF in different animal models.

Required qualifications: You should be interested in doing your thesis in the fields of computational biology and cardiac disease. We expect you to be highly motivated, ambitious and able to work independently. Also, since this project is part of a larger study, you should be a responsible team player.

Responsible institution: University of Copenhagen, Faculty of Health and Medical Sciences (SUND), Dept. of Biomedical Sciences (BMI)

Contact information:
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Allowed no of students per report: 1

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