Instituto de Medicina Molecular João Lobo Antunes

Master Project Proposal

Title: Cardioids as disease models for inherited cardiomyopathies

Synopsis:

The Carmo-Fonseca lab studies RNA splicing using a combination of cutting-edge cell imaging and genome-wide approaches. The vision of the research group is to understand how RNA molecules, with their ability to both encode information and exert catalytic activities, contribute to the regulation of gene expression and how this knowledge can be translated into novel disease biomarkers and therapies.

A subset of inherited cardiomyopathies are caused by mutations that interfere with splicing and could, in principle, be treated by splice-switching antisense oligonucleotides (ASOs).

This project aims to optimize protocols to generate human cardioids and determine whether this in vitro system can be used to model the disease and screen for therapeutic ASOs.

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Webpage of the group

Bibliography:

Cardioids reveal self-organizing principles of human cardiogenesis. Cell. 2021 Jun 10;184(12):3299-3317.e22. doi: 10.1016/j.cell.2021.04.034.