**Project Title:**

Investigating the molecular mechanisms underlying cardiac fibrosis

**Description:**

In the vast majority of heart diseases, fibrosis is an indispensable part of the pathophysiological disease progression. For instance, development and progression of fibrosis in the atria is a hallmark of the structural remodeling considered a main substrate for atrial fibrillation. We hypothesize that the fibrotic processes in atrial fibrillation are orchestrated by intracellular signaling mechanisms in fibroblasts in the atria, that ultimately lead to a reprogramming of the fibroblasts to become activated, proliferate and cause fibrosis. In this project we will study the signaling mechanisms underlying the activation of fibroblasts. We will measure protein expression levels in cardiac fibroblasts and study how these are regulated upon activation. Protein expression will be analyzed using cutting-edge mass spectrometry technology. In collaboration with other members of our group, you will learn how to isolate and manipulate cardiac fibroblasts and to perform proteomics experiments.

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