

# FUNDING PROGRAM FOR NEXT GENERATION WORLD-LEADING RESEARCHERS

**Project Title:** Identification of the tissue specific therapeutic targets for cardiovascular disease and their clinical applications

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## 1. Background of research

Following the increase of elderly population, the patients of heart failure are also rapidly increased and that causes the social and economical issues to solve. This program is designed to discover the novel target molecules which lead to the therapy of cardiovascular disease.

## 2. Research objectives

First we try to clarify the mechanism of cardiovascular disease by identification the molecules which determined the specific character of cardiovascular organs. Then we further precisely examined the biochemical and pathophysiological roles of these molecules. Final object is to discover the target compound for these molecules and perform the pre-clinical for cardiovascular disease.

## 3. Research characteristics (incl. originality and creativity)

I have a deep background for the purification of certain protein using multiple step of columns. And in that process, I have developed the novel methods and assay systems to efficiently identify the functional molecules by de novo screening methods. In this program I also applied these skills to identify the new therapeutic target of cardiovascular disease by focusing their tissue specific characters. I have also developed unique assay method of zebrafish especially using fluorescent indicator to assay the in vivo metabolism of cardiovascular system. This in vivo assay system is plan to fully apply to functional assessment of target molecules. These two points are the priorities of this project.

## 4. Anticipated effects and future applications of research

I have already identified the several novel molecules those play important roles in cardiovascular physiology. And the target compound of one of these molecules is already in phase I trial for human. In this program I will further challenge to find the novel molecule which play a important role in the cardiovascular pathophysiology. Identifying these molecules leads to the new discovery of therapeutic target for cardiovascular disease and would contribute to "Life Innovation" which is the main theme of this program.