

Χρηματοδότηση της Βασικής Έρευνας (Οριζόντια υποστήριξη όλων των Επιστημών), Εθνικό Σχέδιο Ανάκαμψης και Ανθεκτικότητας (Ελλάδα 2.0)

Τίτλος έργου: AXHELERATE: A novel role for axial progenitors in heart development and regeneration

Διάρκεια Υλοποίησης: 24 μήνες

Συνοπτική Περιγραφή:

AXHELERATE is a 24-month project that brings together a strong interdisciplinary team of collaborators with complementary expertise to address this challenge by testing the hypothesis that, like zebrafish, the human heart is invested with a regeneration-competent cardiomyogenic program that is developmentally linked to a previously unknown fetal mechanism that generates trabecular CMs from trunk NCs of NMP origin. The hypothesis is based on recent work of our lab demonstrating a novel bipotent NC lineage in the human and mouse venous/inflow tract as a source of highlyproliferative trabecular CMs³, as well as on preliminary data demonstrating the full cardiomyogenic capacity of human PSC-derived trunk/NMP organoids. Specifically, AXHELERATE will deploy an array of orthogonal, cutting-edge lineage tracing approaches including singlecell transcriptomics coupled with human (h) and mouse (m) NC reporter PSC organoids³, to elucidate if NMPderived trunk-NCs contribute to the development and regeneration of mammalian CMs. To gain mechanistic insights, AXHELERATE's engineering team build a cost-effective, multi-well bioreactor with multiple realtime monitoring metabolite biosensors that allows medium-throughput organoid development and drugscreening workflows. The new bioreactor will then be exploited to test the hypothesis that a HIF1 α -mediated metabolic program controls the development and proliferative capacity of NMP-derived NC-CMs.

Προϋπολογισμός ΕΚΕΤΑ : 135.604,00 €

Το έργο υλοποιείται στο πλαίσιο του Εθνικού Σχεδίου Ανάκαμψης και Ανθεκτικότητας «Ελλάδα 2.0», με τη χρηματοδότηση της Ευρωπαϊκής Ένωσης – NextGenerationEU (Φορέας Υλοποίησης: ΕΛ.ΙΔ.Ε.Κ.)