



SFB1425 - Heterocellular Nature of Cardiac Lesions: Identities, Interactions, Implications

## P04: Post-doc Project

based at the

# MPI of Immunobiology and Epigenetics

### *Cardiomyocyte-Specific MOF Depletion: Heterocellular Effects Driving Cardiac Fibrosis*

#### Background

The histone acetyltransferase MOF is essential for heart function. Knockout mice with cardiomyocyte-specific deletion of *Mof* die of heart failure at around postnatal day 17 and show cardiomyopathy and fibrosis. Endogenous expression of *Mof* begins at the blastocyst stage, which means it could play an instructive role in embryonic heart development. We plan to characterise the contribution of MOF to patterning the chromatin environment during cardiomyogenesis.

#### Project Description

We are looking for a postdoc to work on molecularly dissecting MOF's cardiac function. This project will address how MOF coordinates cell-cell communication and tissue remodeling in mouse hearts using single-cell RNA-sequencing. We plan to complement these transcriptomic analyses with spatial information gained through whole-organ imaging. Furthermore, we will study how MOF influences the dynamic chromatin landscape during heart development through comprehensive ChIP-sequencing analyses in a combination of *in vivo* and *in vitro* models of cardiomyocyte differentiation. We will also translate our findings to human hearts.

#### Qualifications and Requirements

- PhD in a relevant field
- A strong publication record
- Background in epigenetics or cardiac biology
- Prior experience in the handling mice and culture of primary cells
- Knowledge of German is not necessary as English is the working language at the institute: English language proficiency at level B2 or higher

#### Research Areas

Epigenetics, Chromatin, Transcription, Differentiation, Cardiogenesis

#### Experimental Tasks

- scRNA-sequencing
- ChIP-sequencing
- Light sheet fluorescence microscopy of X-CLARITY-cleared samples
- *In vitro* differentiation of mouse ES and human iPS cells to cardiomyocytes

#### Background

Biology, Biochemistry, Genomics, Physiology

#### Starting Date

from 01/07-2020

#### Advisor

Asifa Akhtar, Director, Max Planck Institute of Immunobiology and Epigenetics, Freiburg  
[akhtar@ie-freiburg.mpg.de](mailto:akhtar@ie-freiburg.mpg.de)

#### Contact

[info@sfb1425.uni-freiburg.de](mailto:info@sfb1425.uni-freiburg.de)

#### Applications via

[info@sfb1425.uni-freiburg.de](mailto:info@sfb1425.uni-freiburg.de)



Max Planck Institute of  
Immunobiology and Epigenetics

Max-Planck-Institut für Immunbiologie und Epigenetik