

PhD Position in Cardiovascular Research

The IMCAR institute, headed by Prof. Dr. Joachim Jankowski, is located within the University Clinic of Aachen, and has a longstanding reputation in cardiovascular research. We are currently looking for motivated PhD students.

Project description: Pathological mechanisms underlying atherosclerosis

Coronary artery disease arising from atherosclerosis is a leading cause of death and morbidity worldwide. The underlying pathogenesis of atherosclerosis involves an imbalanced lipid metabolism and a maladaptive immune response entailing a chronic inflammation of the arterial wall. Oxidized lipids trigger the expression of adhesion molecules and the secretion of chemokines by the endothelial cells of the vessel wall, which drives intimal immune cell infiltration. The recruited leukocytes then further promote the development and progression of atherosclerotic lesions by sustaining and amplifying the ongoing inflammatory processes (*Weber and Noels, Nat Med 2011*).

In our institute, we aim to clarify underlying mechanisms of atherosclerosis. For example, we recently showed that the CXCL12/CXCR4 axis is atheroprotective in endothelial cells in the context of injury-induced lesion formation, by promoting recovery of the endothelial cell layer after endothelial denudation (*Noels et al, ATVB 2014; Döring et al, Front Physiol 2014*). Furthermore, we revealed that posttranslational sialylation of receptors for the chemokine Ccl5 are required for efficient Ccl5 binding, and for efficient Ccl5-induced recruitment and arrest of leukocytes to inflamed endothelium. As result, deficiency of the sialyltransferase St3Gal4, an enzyme mediating protein sialylation, resulted in a drastic reduction of atherosclerosis (*Döring et al, Circ Res 2014*).

Within this project, we aim to further clarify the underlying mechanisms of atherosclerosis on a cellular as well as molecular level.

Methods

in vivo: mouse models of atherosclerosis, organ and cell isolation

In vitro: molecular techniques (DNA/RNA/protein work), cell culture, flow cytometry, immunofluorescence, immunological methods

PhD Studentship

The PhD student will be embedded in a research group within the IMCAR institute, ensuring optimal transfer of theoretical and technical expertise. Ongoing collaborations with other research groups within and outside Germany will provide excellent opportunities for networking and options for short-term study visits abroad.

We offer:

- Salary: 65% TVL-E13
- Intensive guidance
- Well-established methods
- An excellent working atmosphere
- Intensive cooperations with other PhD students within IMCAR and other laboratories within the University Hospital of Aachen

Requirements

Successful candidates are expected to demonstrate outstanding academic performance and scientific excellence in life sciences.

Please send your application including a CV, bibliography and references to:

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