

# PhD student – Epigenetic and metabolic regulation of macrophages in atherosclerosis

## Department

Within the Academic Medical Center (AMC) in Amsterdam, our group investigates the molecular mechanisms of atherosclerosis and focusses on the main inflammatory cells in atherosclerotic lesions: macrophages and its precursors monocytes. We study the regulation of macrophages both at the pathophysiological as well as at the cell biology and molecular level. With our research we contribute to a better understanding of the mechanisms that drive disease and to the development of innovative novel approaches for treatment and diagnosis of cardiovascular disease.

The PhD student will work at the department of Medical Biochemistry under the supervision of Jan Van den Bossche in the group of professor Menno de Winther.

## *Recent references*

Van den Bossche J, Neele AE, Hoeksema MA, de Winther MPJ. Macrophage polarization: the epigenetic point of view. *Current Opinion in Lipidology*. 2014 Oct;25(5):367-73

Hoeksema MA, Gijbels MJJ, Van den Bossche J, van der Velden S, Sijm A, Neele AE, Seijkens T, Stöger JL, Meiler S, Boshuizen MCS, Boon L, Mullican SE, Spann NJ, Cleutjens JP, Glass CK, Lazar MA, de Vries CJ, Biessen EAL, Daemen MJAP, Lutgens E, de Winther MPJ. Targeting macrophage Histone deacetylase 3 stabilizes atherosclerotic lesions. *EMBO Molecular Medicine*. 2014 Jul 9;6(9):1124-32.

## Job description

While it is well-established that macrophages determine the outcome of atherosclerosis, the pathways that regulate their atherogenic functions within the plaque remain ill-defined. Recent data shows that specific epigenetic and metabolic pathways are critical regulators of macrophage subsets and their functioning in disease.

The PhD student will test the hypothesis that modulating epigenetic and metabolic mechanisms in macrophages can be used to control macrophage function and could be applied for atherosclerosis treatment. Hereto, he/she will work with both in vitro tools and in vivo mouse models for atherosclerosis. A broad range of molecular and cellular techniques will be applied during this study.

## Requirements

We are looking for a highly talented and dedicated student with a Master's degree in a field related to biomedical sciences or (medical) biology with an affinity for immunity, molecular biology, metabolism, epigenetics and cardiovascular biology. Experience in animal experiments (article 9) is a plus. Applicants should have excellent (English) written and oral communication skills and a high motivation.

## Further details

If you want to apply or need further information regarding the project and the position, you can contact Dr. ir. Jan Van den Bossche ([j.vandenbossche@amc.uva.nl](mailto:j.vandenbossche@amc.uva.nl)) and Prof. Menno de Winther ([m.dewinther@amc.uva.nl](mailto:m.dewinther@amc.uva.nl)).