

**Project Title**

Atypical myeloid cells emerging during the recovery phase of respiratory viral infections: origin, identity, functions and regulation by tissue cues, host risk factors and chronic stress.

**Acronym:** MotroRepair

**Short CV** (72 words)

Thomas Marichal is trained as a Doctor in Veterinary Medicine (DVM) and obtained a PhD in Immunology in 2011 from the University of Liège, Belgium. He is currently a Research Professor at the GIGA Institute of the University of Liège, where he leads the laboratory of Immunophysiology. He is also appointed as an Associate Professor of Physiology at the Faculty of Veterinary Medicine of the University of Liege since 2019.

**Achievements and Research Project** (312 words)

The lung is a vital organ that contributes to gas exchanges. It is particularly exposed to external threats, such as respiratory pathogens, pollutants and other airborne particles. Thus, the lung immune system needs to cope with those threats in order to protect the host and maintain the organ structure and function. Sometimes, aberrant immune responses can occur and trigger the development of disorders such as asthma or severe forms of respiratory infections. Thomas Marichal has always been passionate about understanding the innate immune mechanisms involved in the maintenance of lung tissue homeostasis and in the regulation of immune-mediated respiratory diseases. By employing relevant disease models and human samples, he has discovered key drivers of asthma, as well as important innate protective cells that prevent development of asthma in healthy individuals. His work has been published in the most prestigious journals in the field of Immunology and Medicine and he has already obtained an impressive number of "excellence" labels for his achievements, including the Acteria Early Career Research Prize in Allergology (2015) and the Astra Zeneca Foundation Asthma Award (2018). Building on his expertise in the biology of myeloid cells (a lineage of innate immune cells), he is now using the most advanced tools and technologies to understand how myeloid cells interact with other tissue cells and what drives myeloid cell diversity and functional specificity, a prerequisite to elaborate novel therapeutic strategies for respiratory diseases. In this regard, the project supported by the Baillet Latour Biomedical Award 2022 aims to understand the host mechanisms regulating tissue repair and immunopathological responses upon respiratory viral infections. Specifically, it will investigate the biology of an as-yet-unknown cell entity that emerges during the recovery phase of influenza and Covid-19 infections and likely orchestrates key immune and tissue repair responses, with the goal to provide solid foundations for novel myeloid cell-targeted approaches promoting health and preventing severe disease phenotypes.