Press release

# ERC Synergy Grant 2023 for Immunotherapy of liver metastases

**An international team of four distinguished immunologists, including Professor Eric Vivier of the Centre d'immunologie de Marseille-Luminy (CNRS/Inserm/AMU) has been awarded one of the most generously funded research grants from the EU: the ERC Synergy Grant. Leading in their respective fields of research, they aim to combine their expertise to explore new avenues for immunotherapy of liver metastases – a condition that affects approximately half of all cancer patients.**

**Marseilles, 26.10.2023** - A significant proportion of cancer patients do not succumb to the initial tumor but rather to the resulting metastases. The growth of these secondary cancer sites is often challenging to curb with conventional therapies. Colorectal tumors, as well as many other types of tumors, frequently metastasize to the liver. Therefore, new treatment approaches are urgently needed and would benefit many patients.

*"We aim to combine our expertise and techniques to investigate the local immune system of the liver: how do various cell types communicate and function in the healthy organ, and how do they change in the diseased tissue. The goal is to develop new strategies to harness the potential of innate immune cells in the liver for the treatment of metastatic diseases,"* summarizes immunologist Georg Gasteiger of the Max Planck Research Group for Systems Immunology at Würzburg University and the team's principal investigator.

**A fourth ERC Grant!**

This ERC Synergy Grant is the fourth European Research Council grant won by Prof. Eric Vivier's team.

They had already won two ERC Advanced Grants in 2010 and 2015, as well as an ERC Proof of Concept in 2019.

An approach that the European Research Council sees great potential in: Synergy Grants exclusively support highly innovative, potentially groundbreaking research approaches that could set new global standards. The team convinced an international panel of experts with their scientific proposals and has been awarded the maximum amount of 10 million EUR for a 6-year period.

## Newly developed molecules as a therapeutic approach

The four scientists conduct research in Italy, France, and Germany. They are each regarded as leaders in their respective fields: Valeria Fumagalli specializes in liver immunology and works with tissue samples from cancer patients at San Raffaele Hospital in Milan. Florent Ginhoux is an expert in the biology of myeloid cells and their function in healthy versus diseased tissues. Georg Gasteiger's work focuses on lymphocytes of the innate immune system, including "Natural Killer" or NK cells, and their development and function in various body tissues. Eric Vivier, NK cell expert in Marseille, has already developed several molecules that can activate these cells to fight against tumors and has successfully brought them into clinical trials with patients. Drawing from these experiences, the team aims to develop new approaches to immunotherapy.

The scientists will examine tissue and tumor samples from patients using state-of-the-art, high-resolution single-cell and spatial transcriptomics. Their aim is to elucidate the communication and interactions among immune cells themselves and with various liver cells, and how these change during the disease. The goal is to identify key molecules and checkpoints in complex cellular interaction networks, and to leverage them for the restoration of immune control in metastatic lesions. *We plan to develop new molecules can regulate cellular interactions. These molecules will then be tested on patient tissue samples to explore new therapeutic approaches for this devastating disease* says Eric Vivier. *We hope that such approaches for modulating the local immune system can be applied to or further developed for other diseases and tissues in the future*, adds Georg Gasteiger.


*Picture: An international team of four renowned immunologists aims to explore immunotherapy for liver metastases. From left to right: Eric Vivier (Aix-Marseille Université, France), Valeria Fumagalli (San Raffaele Hospital, Italy), Georg Gasteiger (Max Planck Research Group at the University of Würzburg), Florent Ginhoux (Gustave Roussy Cancer Campus, France) © Eric Vivier.*

## ERC Synergy Grants for Groundbreaking Research

The European Research Council (ERC) is the primary European funding organization for pioneering research. It supports creative researchers from all disciplines, nationalities, and age groups who conduct projects across Europe. Established by the European Union in 2007, it is part of the "Horizon Europe" program. Its total budget for the period from 2021 to 2027 amounts to over 16 billion EUR.

Synergy Grants are awarded for projects that bring together the expertise of various experts, thereby enabling significant advances at the frontiers of knowledge. These advances may build on promising new research findings or methods and techniques, including unconventional approaches and investigations at the intersection of established disciplines. The transformative research supported by Synergy Grants should have the potential to set new global standards. Synergy Grants can be awarded for a maximum amount of 10 million EUR over a period of 6 years.

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