Marc Dalod, PhD
Team leader « Dendritic cells and antiviral defenses »
Tel: + 33 (0)4.91.26.51
dalod@ciml.univ-mrs.fr

Marseille, August 30th 2023,

Post-doctoral position in Immunology,
available in France in the teams of Marc DALOD and Sandrine ROULLAND,
at Centre d'Immunologie de Marseille-Luminy (CIML), Marseille.

Provisional start date: 01/02/2024; contract duration: up to 4 years (48 months)

The CIML (Centre d'Immunologie de Marseille-Luminy, AMU UM2, CNRS UMR7280; Inserm U1104), is a dynamic research center located in Marseille that comprises internationally recognized groups focusing on Immunology.
The team of Marc Dalod has made major contributions in the identification and functional study of mouse and human dendritic cell types (http://www.ciml.univ-mrs.fr/science/lab-marc-dalod/experts). The team of Sandrine Roulland has made major contributions in the early diagnosis of follicular lymphoma and in the understanding of the molecular mechanisms promoting its development (http://www.ciml.univ-mrs.fr/science/lab-bertrand-nadel-sandrine-roulland/genomic-instability-and-human-hemopathies-0).

We seek to hire a highly motivated postdoctoral fellow to implement a novel genetic screening approach to identify regulators of the biology of distinct types of human dendritic cells.

The applicant will work under the joined supervision of Drs. Marc Dalod and Sandrine Roulland. Vertebrate resistance to viruses and cancers relies on both innate and adaptive immunity. Dendritic cells (DCs) play a crucial role in this process. They are able to sense infections to initiate innate immune responses, and then to orchestrate the transition towards the activation of adaptive immunity. DC constitute a heterogeneous cell population, defined by distinct cell types endowed with different functions. Studies in mice have demonstrated the crucial role of conventional type 1 dendritic cells (cDC1s) and plasmacytoid dendritic cells (pDCs) in antiviral or anti-tumor immunity. However, knowledge on the functional specialization of DC types and its molecular regulation is still largely incomplete, especially in humans, in a large part due to the rarity of cDC1s and pDCs, their fragility and their resistance to lentiviral transduction. To overcome these technical barriers and allow the identification of key regulators of human cDC1 and pDC development or functions, the applicant will develop a novel genetic and pharmacological screening approach, harnessing the expertise of the Dalod team in the generation of human cDC1s/pDCs in vitro from hematopoietic progenitors and their functional study, and of the Roulland team on the design, implementation and analysis of CRISPR/Cas9-based genetic screens in immune cells. This approach will accelerate our fundamental understanding of the biology of human cDC1s and pDCs, and open novel avenues to manipulate these key immune cell types for enhancing existing vaccinations or immunotherapies to improve the management of viral infections or cancer.

Benefits
The project will be performed at CIML in close collaboration between the laboratories of Marc Dalod and Sandrine Roulland. The project benefits from funding by A*MIDEX for 4 years, from February 1st 2024 until January 31st 2028, including the salary for the post-doctoral researcher. The applicant will benefit from a highly collaborative environment and state-of-the-art technological platforms. In 2024, the CIML (http://www.ciml.univ-mrs.fr) will be composed of 14 research teams, 6 core facilities, administration and technical services. The CIML is located on the Luminy campus regrouping fundamental research laboratories in all disciplines of life sciences, in informatics, physics, chemistry and mathematics, and biotech start-up companies, including several that emerged from CIML work: Innate Pharma, Immunotech, Veracyte and Oz Bioscience. The teams also belong to the CenTuri Institute (http://centuri- livingsystems.org/) that fosters tight collaborations between biologists, mathematicians, physicists and bio- informaticians to understand how biological function emerges from the organization and dynamics of living systems.

Eligibility criteria
The applicant must have a Ph.D. in Molecular Biology or Virology and a documented positive experience in performing genetic screens in primary cells, or a Ph.D. in Immunology and a documented positive experience in studying human primary immune cells in vitro. Excellent communication skills and team spirit are essential.

Publications related to the project:

Silvin et al., Science Immunology 2017. doi: 10.1126/sciimmunol.aai8071.
Balan et al., Cell Reports. 2018. doi: 10.1016/j.celrep.2018.07.033.
Luo et al., bioRxiv. 2023. doi: https://doi.org/10.1101/2023.05.16.540909.
Phelan et al., Nature. 2018. doi: 10.1038/s41586-018-0290-0.
Webster et al., Methods Mol Biol. 2019. doi: 10.1007/978-1-4939-9151-8_16.

REQUIRED EDUCATION LEVEL

Biological sciences: PhD in Molecular Biology, Virology or Immunology

REQUIRED LANGUAGES

FRENCH: Basic
ENGLISH: Excellent (strong writing and oral communication skills in English will be needed).

Skills/Qualifications

The applicant must have:
*a PhD in Molecular Biology, Virology or Immunology,
*Proficiency in mammalian cell culture and genetic engineering of mammalian cells,
*Skills in high content flow cytometry,
*Ability to work in a BSL3 environment,
*Excellent communication skills, ability to communicate and present his/her work in English and team spirit.

Application process:

Please send by email to dalod@ciml.univ-mrs.fr and roulland@ciml.univ-mrs.fr:

1) a curriculum vitae with a brief summary of professional experience, education, key qualifications, awards,
2) a complete list of publications,
3) a short description of previous research projects and experience,
4) the contact information for two professional referees, including the PhD mentor, and a senior researcher or a professor who tightly collaborated with you and/or mentored you during or after your Master 2 studies,
5) a motivation letter.

Deadline for application

31/10/2023

Centre d'Immunologie de Marseille-Luminy
CNRS UMR 7280 - INSERM U 1104 - Aix-Marseille Université UM2
Parc Scientifique & Technologique de Luminy – Case 906 – F-13288 Marseille Cedex 09
Tel: +33 (0)4 91 26 94 00 - Fax: +33 (0)4 91 26 94 30
www.ciml.univ-mrs.fr