



The Dupré Group at LBI-RUD, the Ludwig Boltzmann Institute for Rare and Undiagnosed Diseases in Vienna, seeks to fill the open position of a:

PREDOCTORAL FELLOW / PhD STUDENT

*LBI-RUD, a young and innovative institute pursuing basic and translational research on rare genetic diseases, is looking for a highly motivated candidate to take part in an exciting project within the "Immune Cell Imaging" group of Dr. Loïc Dupré.*

The group focus

Our group focuses on deciphering how immune cells remodel their actin cytoskeleton to migrate, interact with other cells, and execute their function. Our long-term goal is to identify the molecular network that sustains actin cytoskeleton dynamics upon the many steps of immune cell life cycle. Using rare congenital immunodeficiencies as natural models of cytoskeleton defects and combination of high-resolution and high-content microscopy methods we attempt to characterize structural, morphological and functional impairments in patient-derived primary cells. For further insight into our current work, see the following publications:

*Houmadi R, Guipouy D, Rey-Barroso J, Vasconcelos Z, Cornet J, Manghi M, Destainville N, Valitutti S, Allart S & Dupré L. The Wiskott-Aldrich Syndrome Protein contributes to the assembly of the LFA-1 nanocluster belt at the lytic synapse. Cell Rep., 2018, 22:979.*

*German Y, Vulliard L, Kamnev A, Pfajfer L, Huemer J, Mautner A-K, Rubio A, Kalinichenko A, Boztug K, Ferrand A, Menche J & Dupré L. Morphological profiling of human T and NK lymphocytes by high-content cell imaging. Cell Rep., 2021, 36:109318.*

*Dupré L, Boztug K & Pfajfer L. Actin dynamics at the T cell synapse as revealed by immune-related actinopathies. Front. Immunol., 2021, 9:665519.*

#### *PhD Project Description*

The overall aim of the project is to decipher the tuning of CD8+ cytotoxic T cell activation and function via the co-engagement of the T-cell receptor and pro-adhesive co-receptors such as LFA-1. The selected candidate will implement a combination of highly quantitative microscopy approaches to investigate the topological organization of receptors at the immunological synapse and the graduation of T cell activation and cytotoxic activity as a function of co-receptor engagement and stimulation strength. The gained fundamental knowledge will then be applied to better characterize the dysfunction of cytotoxic T cells derived from patients with rare immunodeficiencies related to actin cytoskeleton defects.

### Requirements and desired qualifications

- Master's degree in Life Sciences
- Experience in cellular immunology
- Experience in molecular biology and CRISPR/Cas9 gene editing
- Experience in microscopy techniques and image analysis
- Background in large data processing tools
- Precise and detail-oriented working style
- Team-orientated personality
- Very good command of the English language both written and verbal

### We offer

- A fully-funded PhD position for 4 years in a meaningful, inspiring, productive, friendly setting
- Training in various wet-bench techniques, opportunity to attend weekly lab meetings, other departmental scientific meetings, seminars, symposia...
- Guidance in completing the research requirement for a PhD
- Opportunity to perform dedicated experimental work at the branch of our lab in Toulouse, France
- Opportunity to contribute to exciting and cutting-edge collaborative research projects
- An excellent work climate

### The Institute

Our lab, as part of the Ludwig Boltzmann Institute for Rare and Undiagnosed Diseases (LBI-RUD), is strategically situated in the Dermatology Department of the Vienna General Hospital, one of Europe's largest university hospitals in the heart of the city. We have access to state-of-the-art technology platforms, close collaborations with clinicians as well as basic researchers, particularly in our renowned partner institutions, namely the CeMM Research Center for Molecular Medicine of the Austrian Academy of Sciences, the Medical University of Vienna, and the St. Anna Children's Cancer Research Institute (CCRI). We are committed to creating a diverse environment. All qualified applicants will receive consideration for employment without regard to race, color, religion, gender, gender identity or expression, sexual orientation, national origin, genetics, disability, and age.

### Application

Please submit a cover letter (describing your career goals and explaining why you are the ideal candidate for this position), a curriculum vitae and name and contact details of two referees, as a single PDF file to: [application@rud.lbg.ac.at](mailto:application@rud.lbg.ac.at) using the reference code #PHD\_LDFWF2021. Deadline is September 6th.