



3 years post-doctoral position available in January 2022

GReD Institute, CNRS UMR 6293, INSERM U1103, University Clermont Auvergne. Team: Molecular Pathophysiology of Adrenal and Endocrine Tissues, Dr Pierre VAL.

The project: Regulation of adrenal homeostasis by macrophages (ADREMAC)

The Molecular Pathophysiology of Adrenal and Endocrine Tissues (MOP@ET) team at the GReD institute (CNRS UMR 6293, INSERM U1103, University Clermont Auvergne) is seeking a talented and highly motivated post-doctoral research associate to elucidate the role of macrophages in adrenal cortex differentiation and function.

The adrenal cortex is a major regulator of body homeostasis through secretion of glucocorticoids and mineralocorticoids. Deregulation of its endocrine activity is associated with deregulation of glucose and lipid metabolism, immunosuppression and hypertension. Proper control of endocrine activity relies on differentiation of functional zones, constant renewal of the cortex and clearance of dead cells. However how this is achieved is unclear. Beyond their role in innate immunity, macrophages (M ϕ) play key roles in tissue patterning and stem cell homeostasis. M ϕ are the most abundant immune cell type in the adrenal cortex and are localized in areas of progenitor recruitment, intense tissue remodelling and cell death. Using a combination of elaborate genetic models and state of the art transcriptomic approaches, ADREMAC will investigate the role of M ϕ in coordinating adrenal cortex renewal and differentiation, which are necessary for the maintenance of endocrine and body homeostasis.

This project is part of an ANR grant coordinated by Dr Pierre VAL (iGReD), in collaboration with Dr Marc Bajénoff (CIML, Marseille). Dr Val's team has long-standing experience in the field of mouse models of adrenal pathophysiology, which is complemented by Dr Bajénoff's expertise in the field of murine stromal cell biology and M ϕ biology. Dr Val's group has long lasting collaborations with international leader labs in the field of adrenal physiology and disease in France (Pr Bertherat, Cochin), the USA (Dr Hammer, Michigan; Dr Basham, Utah; Dr Stratakis, Bethesda) and Germany (Pr Fassnacht, Würzburg).

The position and environment: The postdoctoral researcher will be recruited in January 2022 for a 36-month contract with CNRS. The GReD institute is a highly dynamic workplace, setup in a brand-new building hosting state of the art facilities (automated histopathology, high-end confocal and brightfield microscopy, high-capacity mouse facilities, bioinformatics, tissue culture...). The 15 research teams at iGReD (170 employees) aim at understanding the genetic and epigenetic programs associated with development, reproduction, health and disease. Our friendly and international team is part of the Endocrinology, Signalling and Cancer department.

The institute is located in Clermont-Ferrand, a young and vibrant university city (>35 000 students at University Clermont Auvergne) surrounded by the volcanoes of Auvergne (UNESCO world Heritage), providing a perfect mix between the intensity and dynamism of a metropolis (urban area of 500 000 inhabitants) and the serenity of nearby wide-open wild spaces.

Duties and responsibilities: You will work in an organised manner to produce independent and original research within the lab. You should design and conduct experiments, analyse data and report to the supervisor. You will present your work at lab meetings and national/international conferences. You will be involved in the submission of publications to refereed journals. You should participate, with other lab members, in the day-to-day running of the team projects, in particular by supporting more junior members of the group.

The candidate: You should be highly motivated, committed and have clear career goals. You must hold (or be close to completion of) a PhD in biology with experience in either immunology or physiology/endocrinology and have at least one first-author publication published in a respected journal. Experience working with mouse models (preferably genetically engineered models) is mandatory. You should be proficient with basic molecular biology techniques, histological analyses and flow cytometry. Experience with OMICs, single-cell approaches and bioinformatic analyses would be a plus.

Application procedure: Interested candidates should send a cover letter describing their research activities, training, career goals and motivation for the position (maximum 2 pages), a full CV with list of publications and communications as well as 2-3 references to Dr Pierre Val: pierre.val@uca.fr. Pre-application enquiries are welcome. Applications are due before 15/10/2021. Interviews will be held in late October.

Major publications:

[A ZNRF3-dependent Wnt/ \$\beta\$ -catenin signaling gradient is required for adrenal homeostasis.](#) Basham KJ, Rodriguez S, Turcu AF, Lerario AM, Logan CY, Rysztak MR, Gomez-Sanchez CE, Breault DT, Koo BK, Clevers H, Nusse R, Val P, Hammer GD. **Genes Dev.** 2019 Feb 1;33(3-4):209-220.

[Steroidogenic differentiation and PKA signaling are programmed by histone methyltransferase EZH2 in the adrenal cortex.](#) Mathieu M, Drelon C, Rodriguez S, Tabbal H, Septier A, Damon-Soubeyrand C, Dumontet T, Berthon A, Sahut-Barnola I, Djari C, Batisse-Lignier M, Pointud JC, Richard D, Kerdivel G, Calm ejane MA, Boeva V, Tauveron I, Lefran ois-Martinez AM, Martinez A, Val P. **Proc Natl Acad Sci U S A.** 2018 Dec 26;115(52):E12265-E12274.

[PKA inhibits WNT signalling in adrenal cortex zonation and prevents malignant tumour development.](#) Drelon C, Berthon A, Sahut-Barnola I, Mathieu M, Dumontet T, Rodriguez S, Batisse-Lignier M, Tabbal H, Tauveron I, Lefran ois-Martinez AM, Pointud JC, Gomez-Sanchez CE, Vainio S, Shan J, Sacco S, Schedl A, Stratakis CA, Martinez A, Val P. **Nat Commun.** 2016 Sep 14;7:12751.