Postdoctoral Position in the Field of Molecular Immunology

The Institut de Génétique et de Biologie Moléculaire et Cellulaire (IGBMC) in Strasbourg, France, invites applications for a Postdoctoral Position in the Laboratory of Dr. Bernardo Reina-San-Martin. The IGBMC is one of the leading European centers of biomedical research. The institute provides access to state-of-the-art infrastructure and platforms, including transgenesis, next-generation sequencing, mass spectrometry, flow cytometry, imaging, high-throughput screening, etc.

The Reina lab is seeking a highly motivated and experienced postdoctoral fellow to study the molecular mechanisms driving B cell receptor diversification during immune responses, with a particular focus on immunoglobulin class switch recombination (CSR). CSR modulates antibody effector functions by replacing the isotype expressed (from IgM to IgG, IgA or IgE) through a DNA recombination reaction (occurring at the IgH locus) that requires double stranded DNA break (DSBs) intermediates induced by activation-induced cytidine deaminase (AID). These DSBs activate DNA damage response proteins to promote appropriate repair and long-range recombination. While on-target lesions are crucial for antibody diversification, off-target lesions contribute to malignant cell transformation and AID has been implicated in the initiation of cancer. Despite the significant potential of AID to inflict collateral DNA damage, most B cells expressing AID do not suffer widespread mutation or chromosome instability. Therefore, it appears that specific regulatory mechanisms actively restrict AID's oncogenic potential. The selected postdoctoral fellow will build on the expertise of the lab, in particular in genome editing using the CRISPR/Cas9 system, to investigate the molecular mechanisms that control the function of AID during CSR and that limit its oncogenic potential.

Applicants should have a PhD or equivalent doctoral degree with at least 3 years of proven research experience in Molecular Biology, Immunology or Biochemistry. Candidates should have a good publication record and should be fluent in English. Good communication skills (oral and written) and the ability to work in a team are essential.

Applications should be addressed by e-mail to Dr. Bernardo Reina-San-Martin and include a *curriculum vitae* with a short statement of research interests and the contact information of at least two referees.

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Selected Lab Publications:

- Robert, I.*, et al.* Robust immunoglobulin class switch recombination and end-joining in Parp9-deficient mice. ***Eur J Immunol*** (2017).

- Tsouroula, K.*, et al.* Temporal and Spatial Uncoupling of DNA Double Strand Break Repair Pathways within Mammalian Heterochromatin. ***Mol Cell*** 63, 293-305 (2016).

- Thomas-Claudepierre, A.S.*, et al.* Mediator facilitates transcriptional activation and dynamic long-range contacts at the IgH locus during class switch recombination. ***J Exp Med*** 213, 303-312 (2016).

- Robert, I.*, et al.* Parp3 negatively regulates immunoglobulin class switch recombination. ***PLoS Genet*** 11, e1005240 (2015).

- Thomas-Claudepierre, A.S.*, et al.* The cohesin complex regulates immunoglobulin class switch recombination. ***J Exp Med*** 210, 2495-2502 (2013).

- Willmann, K.L.*, et al.* A role for the RNA pol II-associated PAF complex in AID-induced immune diversification. ***J Exp Med*** 209, 2099-2111 (2012).

- Jeevan-Raj, B.P.*, et al.* Epigenetic tethering of AID to the donor switch region during immunoglobulin class switch recombination. ***J Exp Med*** 208, 1649-1660 (2011).

- Robert, I., Dantzer, F. & Reina-San-Martin, B. Parp1 facilitates alternative NHEJ, whereas Parp2 suppresses IgH/c-myc translocations during immunoglobulin class switch recombination. ***J Exp Med*** 206, 1047-1056 (2009).

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