



Postdoctoral position available at the Centre of Immunology of Marseille-Luminy (CIML) on the Mechanisms of intestinal immune response initiation in Peyer's patches.

Project: The initiation of the mucosal immune response in Peyer's patch (PP) relies on the sampling, processing and efficient presentation of foreign antigens by phagocytes to effector cells. Our group recently provided a comprehensive analysis of PP phagocyte subsets, from their dual origin (i.e. monocytes vs common dendritic cell precursors), differentiation pathways and unique transcriptional profile to their functions, i.e. antigen sampling, innate defense and T cell priming. In the framework of the ANR project Phagomic, the successful candidate will be appointed with a two-year fellowship to investigate the role of Peyer's patch phagocytes at weaning time, when the change of microbiota induces a vigorous intestinal immune response known as "weaning reaction". Using different mouse models of phagocyte depletion, he/she will study the relationship between the weaning-induced microbiota reshaping, the immune functions of PP phagocytes and the development of the intestinal adaptive immune response. He/she will benefit from the excellent scientific environment of the CIML and its state of the art research facilities.

This project will require a wide variety of techniques including flow cytometry, scRNA-seq, spatial transcriptomics, microbiology, spectral confocal microscopy and animal experimentation.

Candidate qualification: We are seeking a highly motivated, creative and enthusiastic postdoctoral fellow, able to work independently with excellent communication skills. Applicants should have a PhD with at least one first-author publication in a major peer-reviewed international journal and a strong background in immunology. Basic knowledge of scRNAseq analysis is an asset but not requested.

Application: Candidates should send their application including CV, brief description of research accomplishments, list of publications, career objectives and contact for at least two referees into a single PDF file to Hugues Lelouard (lelouard@ciml.univ-mrs.fr). Selected candidates will be contacted for interview. The position has a flexible starting date from March 2021.

Selected publications from the host lab:

- 1- Wagner, C., Bonnardel, J., Da Silva, C., Spinelli, L., Arroyo Portilla, C., Tomas, J., Lagier, M., Chasson, L., Masse, M., Dalod, M., Chollat-Namy, A., Gorvel J.P. and Lelouard, H. (2020) Differentiation paths of Peyer's patch LysoDC are linked to sampling site positioning, migration and T cell priming. **Cell reports**. 31, 107479.
- 2- Wagner, C., Bonnardel, J., Da Silva, C., Martens, L., Gorvel, J.P., and Lelouard, H. (2018). Some news from the unknown soldier, the Peyer's patch macrophage. **Cell Immunol**. 330, 159-167.
- 3-Da Silva, C., Wagner, C., Bonnardel, J., Gorvel, J. P., and Lelouard, H. (2017) The Peyer's Patch Mononuclear Phagocyte System at Steady State and during Infection. **Front. Immunol.** 8, 1254.
- 4-Bonnardel, J., Da Silva, C., Wagner, C., Bonifay, R., Chasson, L., Masse, M., Pollet, E., Dalod, M., Gorvel, J. P., and Lelouard, H. (2017) Distribution, location, and transcriptional profile of Peyer's patch conventional DC subsets at steady state and under TLR7 ligand stimulation. **Mucosal. Immunol.** 10, 1412-1430.
- 5-Bonnardel, J., Da Silva, C., Henri, S., Tamoutounour, S., Chasson, L., Montanana-Sanchis, F., Gorvel, J.P., and Lelouard, H. (2015) Innate and Adaptive Immune Functions of Peyer's Patch Monocyte-Derived Cells. **Cell reports** 11, 770-784.
- 6-Lelouard H., Fallet M., de Bovis B., Meresse S., Gorvel J.P. (2012) Peyer's Patch Dendritic Cells Sample Antigens by Extending Dendrites Through M Cell-Specific Transcellular Pores. **Gastroenterology**, 142: 592-601.