Post-Doc position for up to 2 years in Toulouse, France

in genetic and cell biology of genodermatoses

Date of publication: Sept 2022 **Starting date: Nov-Dec 2022**

A post-Doc position is available in the Team 2 "Epidermal barrier and keratinocyte differentiation" at the Toulouse Institute for Infectious and Inflammatory Diseases (Infinity, INSERM UMR1291/CNRS UMR5051/UPS) (www.infinity.inserm.fr), located at the Purpan hospital in Toulouse (south of France). Our team gathers academic scientists in cell and molecular biology and clinicians in dermatology to develop basic and translational research. We set up unique organotypic models of diseased epidermis using genome editing or primary keratinocytes from patients that we use to decipher pathophysiological mechanisms and develop preclinical therapeutic projects.

Scientific goals: The applicant will work on rare monogenic skin diseases called ichthyoses, due to mutations in genes involved in skin barrier. She/He will be funded by EuroNanoMed3 (LIPARCI project). The aim of this project is the preclinical development of a lipid nanostructured delivery system to rescue the skin barrier in patients with ichthyosis. The applicant will develop novel customized organotypic models of ichthyosis based on genome editing and CRISPR-Cas9 technology. She/He will then use those models to test the bioavailability and biological effectiveness in rescuing the epidermal barrier of different designed lipid nanostructures.

Candidate profile / Required skills: We are seeking a rigorous candidate with creative and collaborative spirit and a strong interest in skin biology. She/He will have a recent PhD/1st postdoc experience, with a strong background in cell biology (cell differentiation, cell organization, synthesis and metabolism of proteins and lipids). She/He must be autonomous and able to adapt quickly to different lab/team settings. The project will require a large variety of techniques in different fields including cell culture (primary cells, reconstructed epidermis), genome editing, transcriptomics, confocal microscopy, protein and lipid biochemistry and electron microscopy. Skills in bioinformatics would be a plus.

Relevant publications of the team:

1. Pichery M, Huchenq A, Sandhoff R, Roy M, Severino-Freire M, Zaafouri S, Opalka L, Levade T, Soldan V, Bertrand-Michel J, Lhuillier E, Serre G, Maruani A, Mazereeuw-Hautier J, Jonca N. PNPLA1 defects in patients with Autosomal Recessive Congenital Ichthyosis and KO mice sustain PNPLA1 irreplaceable function in epidermal ω-acylceramide synthesis and skin permeability barrier. Hum Mol Genet. 26:1787-1800, 2017
2. Zaafouri S, Pichery M, Huchenq A, Valentin F, Oji V, Mazereeuw-Hautier J, Serre G, Jonca N. Transcriptomic Analysis of Two Cdsn-Deficient Mice Shows Gene Signatures Biologically Relevant for Peeling Skin Disease. J Invest Dermatol. 138:1431-1435, 2018
3. Mazereeuw-Hautier J, Hernández-Martín A, O'Toole EA, Bygum A, Amaro C, Aldwin M, Audouze A, Bodemer C, Bourrat E, Diociaiuti A, Dolenc-Voljč M, Dreyfus I, El Hachem M, Fischer J, Ganemo A, Gouveia C, Gruber R, Hadj-Rabia S, Hohl D, Jonca N, …, Oji V. Management of congenital ichthyoses: European guidelines of care, part two. Br J Dermatol. 180:484-495, 2019
4. Mazereeuw-Hautier J, Severino-Freire M, Gaston V, Teixer H, Vincent M, Aubert H, Morice-Picard F, Jonca N. Identification of Mutations in SDR9C7 in Three Patients with Autosomal Recessive Congenital Ichthyosis. Acta Derm Venereol. 100:adv00047, 2020
5. Joosten M D W, Clabbers J M K, Jonca N, Mazereeuw-Hautier J, Gostyński A H. New development in the molecular treatment of ichthyosis: review of the literature. Orphanet J Rare Dis 17:269-283, 2022

Application process: Highly motivated candidates can send full curriculum vitae with a short summary of achievements and mastered techniques, a list of publications, a brief description of the research interest and the name of (at least) two referees.
Applications should be sent to nathalie.jonca@inserm.fr (please indicate "Post-doc LIPARCI" in the title of the email).