Post-Doctoral position on pathophysiology of *Amelogenesis Imperfecta* due to Claudin Tight Junction protein disruption, at Paris Descartes University, France

A post-doctoral position funded for 18 months by the French National Agency of Research (ANR) is available by the end of 2018 / early 2019 for a talented and highly motivated post-doc fellow to study the link between tight junction and amelogenesis. The Chaussain's lab focuses on the study of impaired mineralization process in the context of genetic diseases affecting mineral metabolism. We recently demonstrated the expression of claudin-16 and -19 in the ameloblast TJ of murine tooth germs and showed that loss-of-function mutations in these genes resulted in *Amelogenesis Imperfecta* (AI) in patients with Familial Hypomagnesemia with Hypercalciuria and Nephrocalcinosis (FHHNC) in humans[1,2]. Both *Amelogenesis Imperfecta* and nephrocalcinosis are abnormal mineralization processes (mineralization defects *vs* ectopic calcification), illustrating the complex relationship that exists between TJ defects and composition of the mineralizing compartment (enamel matrix or renal interstitium, respectively). We aim to understand how claudin deficiency leads to mineralization defects. The objective of the post-doctoral project is to investigate whether claudin disruption i) alters enamel matrix pH via altered expression of acid and/or base transporters by epithelial cells; ii) alters the enamel matrix content in mono- and divalent ions; iii) affects cell synthesis of mineralization inhibitors or promoters.

Context: The successful candidate will join the Chaussain's laboratory in the Dental school of Paris Descartes University at Paris, France. She/he will be part of the T-JUST ANR project and will benefit from a highly dynamic and collaborative environment, participating to an interdisciplinary research program between the Labs of Pascal Houillier (CRC, INSERM UMR-S1138, Paris) and André Le Bivic (IBDM, CNRS/AMU UMR 7288, Marseille).

Profil: The successful applicant will use a broad range of technics. Extensive training in murine studies and histology as well as a background in calcification/mineralization, molecular biology, cell biology, and organ physiology are required. The successful applicant will work on the relationship between structure and function of the tight junction, and the *in vivo* and *ex vivo* characterization of relevant animal models. Experiments will be carried out using 3 murine lines. Candidates are expected to be autonomous, enthusiastic, and able to work in a collaborative team. The position is funded for 18 months and salary will be based on experience. Applicants must hold a PhD degree in biology and should send a letter of scientific achievements and of their interest in this project, a CV with list of publications, and contact information of 2 referees to claire.bardet@parisdescartes.fr and catherine.chaussain@parisdescartes.fr

Starting: October 2018 to March 2019

1. Bardet et al. JMBR. 2016 ; 2. Yamaguti et al. J Med Genet. 2017

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