

## Postdoctoral position available for up to 3 years in PARIS, FRANCE

at the Research Center of Inflammation (CRI) (INSERM, Université Paris Cité)

### Targeting the Adapted colonic Microbiota for a better recovery after Intestinal Resection (AdMIR)

**Employer:** A Post-doctoral position is available in the **PIMs team** at the Research Center of Inflammation, **U1149-INSERM**, in PARIS (<https://cri1149.fr/en/equipes/le-gall-bado>). PIMs team focus on the contribution of the gastrointestinal tract to nutritional pathologies from obesity to undernutrition, in particular **short bowel syndrome (SBS)**. Our team gathers physiologists of the gastro-intestinal tract, basic scientists and clinicians (digestive surgeons, gastroenterologists and nutritionists) to develop basic and translational research to study gastrointestinal adaptations in response to surgical remodeling. We set up unique rat models of bariatric surgeries and short bowel syndrome and combine experimental research in these preclinical models with clinical studies.

**Scientific goal:** Short bowel syndrome (SBS), a rare disease, is the main cause of intestinal failure. SBS results from an extensive intestinal resection leading to malabsorption and wasting conditions. Physiological adaptations improving nutrient absorption capacities appear spontaneously over time in SBS patients. Oral nutrition and presence of the colon are two major positive drivers for these adaptations. Microbiota dysbiosis ("lactobiota"), modifications of intestinal epithelium (colonic and jejunal hyperplasia, increased levels of distally produced gut hormones such as GLP-2...) and hyperphagia, altogether contribute to energy and hydroelectrolytic recovery although underlying mechanisms are unknown.

The SBS lactobiota is thought to be a reservoir of multiple and complex signals driving hyperphagia, hyperplasia and hormone (GLP-2...) secretions in the colon that could contribute to post-resection adaptive mechanisms<sup>(1,2,3,4)</sup>.

**AdMIR project questions how microbiota improves intestinal malabsorption over time in SBS subjects.** The ultimate goals are to accelerate and drive better jejunal absorption by promoting and targeting colonic adaptation. The project will be conducted using our preclinical model mimicking adult SBS and combined with a pilot clinical study<sup>(1,2,3,4)</sup>. Two main objectives are proposed:

- To determine the role and specificity of the SBS microbiota, identify specific contribution of microbiota strains or metabolites involved in the mechanism by which this microbiota improves intestinal adaptation and recovery during SBS.
- To assess the impact of GLP-2 signalling in relaying, totally or partially, the microbiota effects on adaptation and recovery during SBS.

**Candidate profile/Required skills:** We are looking for a **rigorous candidate** with creative and collaborative spirit. She/He must be **autonomous** and able to adapt quickly to different lab/team settings. The project will require a wide variety of techniques in different fields including intestinal homeostasis, nutrition, microbiology and cell culture (organoids). The candidate should have a recent PhD /1st postdoc experience. **Knowledge in intestinal physiology, microbiota and/or expertise in intestinal organoid culture is recommended to apply.** It would be highly valuable that the candidate has **the required authorization for animal experiments and good experience of in vivo approaches using rats.** Bioinformatics skills would be a plus.

**Research environment:** The position is funded by an **ANR grant** (AdMIR project). The postdoctoral scientist will work with the **PI Johanne Le Beyec-Le Bihan** in the **PIMS team** head by Maude le Gall & André Bado at **Centre de Recherche sur l'Inflammation (Paris)** and collaborate with a graduate student and an assistant engineer. The successful candidate will be required to work with the partners of the project: the Probiote Team (Dr. Muriel Thomas) at **MICALIS INRAE(Jouy-En-Josas)**, the laboratory of **Functionnal Coprology** (Pr. Nathalie Kapel) at Pitie-Salpetrière Hospital APHP(**PARIS**), the laboratory of drug metabolism (Dr François Fenaille) at CEA (Saclay) and the Gastroenterology and Nutrition Support department (Pr. Francisca Joly).at Beaujon Hospital APHP (Clichy).

#### **Application process:**

Highly motivated candidates can send a **cover letter** with motivations, a **short summary of achievements** and mastered techniques, a **curriculum vitae** with publication and communication list, and the **names of two referees.**

**Applications should be sent by email** to [johanne.le-beyec@inserm.fr](mailto:johanne.le-beyec@inserm.fr) before **mai 2023**.

Please indicate "**Post-doc AdMIR Application**" in the title of the email.

1- Gillard, L. et al. (2016). Sci. Rep. 6, 28345 ;doi: 10.1038/srep28345.

2- Gillard et al.(2017). Front. Physiol. 8:224. doi: 10.3389/fphys.2017.00224

3- Le Beyec et al (2020). Annu. Rev. Nutr. 40:299–321. doi.org/10.1146/annurev-nutr-011720-122203

4- Fourati S, et al. J (2023) Front. Cell. Infect. Microbiol. 13:1023441. doi: 10.3389/fcimb.2023.1023441