

3 years of Ph.D. position at the interface of xenobiotics and gut microbial ecology

Nutritional modulation of endocrine disrupting chemical ecotoxicity on the human gut microbiome and gut epithelia function

Duration: 36 months

Starting Date: 01/10/2023

Lab: The position is located at the MICALIS Institute, INRAE (Institut national de recherche pour l'agriculture, l'alimentation et l'environnement) in Jouy en Josas, France and part of AgroParisTech and Université Paris Saclay. The candidate will join the research team 'PhylHom : Physiology and phylogeny of the Human Microbiome' focusing on therapies, contaminants and the microbiome. The PhD position is financed by the INRAE.

DESCRIPTION OF THE PROJECT

Emerging contaminants, particularly endocrine-disrupting chemicals (EDCs) have been increasingly detected in the environment and the organisms. The interactions between EDCs and the human gut microbiome --- a modulator of host health that is composed of microorganisms along with their genes --- are largely unknown. Uncovering multifaceted EDC ecotoxicity will expand the knowledge on their long-term harmful impacts on humans as super-organisms with their microbiome. Without establishing this critical link, the detrimental impacts of EDCs on public health would remain partially described. The proposed PhD project aims to develop nutritional strategies that may have the potential to protect the gut microbiome from EDC toxicity.

Keywords: Microbiome, emerging contaminants, one health, anaerobic biochemistry, cell biology, exposome

ENVIRONMENT

INRAE's quality of life: - until 30 days of annual leave + 15 days "Reduction of Working Time" (for a full time); - parenting support: CESU childcare, leisure services; - skills development systems: training, career advice; - social support: advice and listening; - holiday and leisure services: holiday vouchers, accommodation at preferential rates; - sports and cultural activities; - collective catering.

ACTIVITIES and RESPONSIBILITIES

- Carry out independent research activities under supervision to evaluate the impact of EDC exposure on anaerobic synthetic microbial communities, identify genes and enzymes involved in EDC metabolism, screen food components that modulate EDC-microbiome-host tissue function interactions.
- Write high impact research articles and disseminate knowledge in scientific conferences.
- Mentor M2 internship students.

PROFILE and SKILLS REQUIRED

We are looking for a self-motivated candidate passionate about microbial ecology and biochemistry of contaminants. The candidate must have a Master 2 university degree (or equivalent) with a specialization in microbiology, physiology, or pharmacology, biochemistry, or any relevant field.

Organization skills and ability to work independently but also in teams is necessary. The candidate must be able to manage their project (bibliographical research, protocol development, data acquisition, etc.). Creativity and curiosity are essential assets. A good level of spoken and written English is required. Fluency in French is an advantage.

Previous knowledge or hands-on experience in either microbial ecology approaches, cell culture techniques, multi-omic data analysis, computational and statistical techniques is preferred.

HOW TO APPLY

Please send your letter of motivation, CV, results or classification to Master (or equivalent) as well as Letter of recommendation or contact details (name and e-mail) of two references as a single PDF-file to: Zehra Esra Ilhan (zehra-esra.ilhan@inrae.fr) and Patricia Lepage (patricia.lepage@inrae.fr)

Include 'EndoBiome PhD application' on the e-mail title.

Deadline for the application: June 30th 2023.