

Lcr35® live biotherapeutic microorganism mechanism-of-action on *Candida albicans*

BIOSE is a French company, expert in the development and exploitation of innovative Live Biotherapeutic Products (LBP), and commercializing formulations of *Lactobacillus rhamnosus* (Lcr35®) for vaginal and intestinal applications. Biose's expertise is in the fields of transcriptomics, metabolomics and immune-profiling in *ex vivo* and *in vivo* models and in LBP formulation.

The current project is in the framework of FunHoMic: "Deciphering the fungus-host-microbiota interplay to improve the management of fungal infections" a MSCA European Innovative Training Network (ITN) which started on the 1st of January 2019. www.funhomic.eu

Project background

Fungal infections have a major impact on human health, infecting about 2 billion people and killing more people each year than malaria or breast cancer. In particular, *Candida* species impose a high clinical and economic burden upon the European population. Most women have suffered an episode of vulvovaginal candidiasis, with ~8% enduring recurrent infections. The initiation and severity of a *Candida* infection depends on an intricate interplay between the infecting fungal strain and the individual's immune status and microbiota, all of which can display significant variability. Currently traditional antifungal drugs contribute to therapeutic failure of invasive fungal infections. *Lactobacillus rhamnosus* (Lcr35®) *in vitro* and *in vivo* anti-*Candida* activities are well-demonstrated, but the mode-of-action is ill-defined. The probiotic properties of the bacterial strain are modulated by the industrial process. However, the mechanisms by which different formulations exert the anti-*Candida* activity of Lcr35® are unknown.

In this project, the applicant will characterize the mode-of-action of Lcr35® formulations and use this knowledge to develop improved formulations. The objective of this project is to develop a new LBP optimizing the anti-*Candida* activity for intestinal, vaginal and other applications (topic, systemic).

Eligibility criteria

Applicants must be early-stage researchers of any nationality in the first four years of their research career and must not have been awarded a PhD. They are required to undertake transnational mobility and must not have resided or carried out their main activity (work, studies, etc.) in France for more than 12 months in the 3 years immediately prior to recruitment.

Candidate's profile

We expect a Master's degree (or equivalent) in Life Sciences (e.g. Biology, Biotechnology, or Microbiology). Practical experiences in one or more of the following subjects are beneficial: Microbiology, Molecular Biology, Omics. Practical experience in Statistics, MS and NMR technics, and some knowledge of French is an advantage but not essential.

Our offer

The successful candidate will be hosted at the University Clermont Auvergne (Institut Universitaire Technologique Génie Biologique) and at the biose society in Aurillac, France. The institute and biose are embedded in the scientific environment of the Aurillac Campus providing state-of-art research facilities with very good technical facilities and a strong network of collaborations. The position will be part of a dynamic and committed team.

Furthermore, the successful candidates will pursue an exciting, challenging research project at the forefront of modern medical mycology and will gain in-depth interdisciplinary training through network-wide collaborations, inter-sectoral mentoring and secondments, summer schools and webinars.

We offer a doctoral researcher position for at least 36 months in biose which is an equal opportunity employer. Salary is paid according to the regulations of the Marie Skłodowska-Curie Actions and the successful candidate will benefit from a work contract in line with national regulations.

Contact

Please contact Caroline DAUSSET | c.dausset@biose.com

Complete applications in English should include a CV, a brief statement of research experiences, the addresses of two possible referees, and should be submitted by **31.04.2019**.