

Young post-doctoral researcher (2 years)

Optimizing the health effect of the bacterial component of fermented dairy products (OptiBac)

Location: STLO, INRAE, Rennes, France

Start: 1^{er} of September 2023

Length: 24 months

Contexte: Food bacteria used in dairy fermentation are most often selected on technological and/or technological criteria (acidification speed, aromatic capacity, resistance to bacteriophages). These bacteria can also have health effects. Within the PROLIFIC project, a multi-partner project, bringing together the dairy industrialists of Bba-Milk Valley® (<https://www.milkvalley.fr/>) and 6 academic partners from Brittany (including STLO) and Pays de Loire regions, several projects aim to show the health effect of different strains, particularly on the intestine-brain axis and digestive health. However, the health effect of bacteria may be closely linked to their physiological state, as demonstrated by certain studies carried out on probiotic bacteria, and consequently be influenced by the processes and technological itineraries implemented on an industrial scale. More information on PROLIFIC project: <https://www.inrae.fr/actualites/prolific-etudier-potentiel-sante-bacteries-lactiques>)

Job description : This post-doctoral fellowship will build on the results obtained during the PROLIFIC thesis. It aims to optimize the health effects of bacterial strains identified in these thesis, by determining the conditions that favor their health effect. Strains that have shown health effects on the gut-brain axis and/or digestive health will be selected. Strains with similar health effects will also be searched within the CIRM-BIA collection (<https://collection-cirmbia.fr>) to increase the pool of strains of interest. Bacterial effectors and genetic determinants involved in health effects will be investigated. The regulatory systems responsible for the modulation of health effects (environmental conditions, transcriptional regulators, ...) will be studied. Finally, the physiological state favorable to the targeted health effect will be determined. All this work will allow to adapt the process and to maximize the health effects of the strains when they are used in fermented dairy products. The health effects of these new products will be validated in vivo.

The person recruited will be hosted in the STLO laboratory, INRAE, Institut Agro (140 people) in Rennes. The research group in which he/she will work is composed of 25 permanent staff (scientists, engineers and technicians) and 10 to 15 temporary staff (CDD, master, PhD, post-doc). The STLO hosts a dairy platform where all kinds of dairy products can be produced under highly controlled conditions. It is also equipped with a mass spectrometer (Orbitrap), dynamic digestion simulators and confocal microscopy. The group has a recognized expertise in food fermentation, molecular microbiology, milk biochemistry, cell biology, proteome and volatilome, transcriptome, microscopy and genomics (diversity, function) of dairy bacteria.

Candidate profile: competences in Microbiology, Fermentation, Genomics, molecular biology, Food technology.

Mode of application: For more information, please contact Eric Guédon (eric.guedon@inrae.fr) or Stéphanie Deutsch (stephanie.deutsch@inrae.fr) for an informal chat. To apply, please send an email containing a short letter of motivation, a detailed CV (including a brief description of research interests, previous employments, and publication list), and contact details of at least two references. Deadline of submission: 30th June of 2023.

la science pour la vie, l'humain, la terre

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