

PhD Project Advertisement

Project title: A probiotic approach targeting the microbiota to improve Irritable Bowel Syndrome symptoms and associated low mood

Project No: FBS2024-004-Walton-rs

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Project description:

A probiotic approach targeting the microbiota to improve Irritable Bowel Syndrome symptoms and associated low mood

We all have billions of bacteria living within us, these microbial inhabitants break down left over foods and produce end products that can impact on our health. Irritable bowel syndrome (IBS) is a common gastrointestinal condition which effects an estimated 19% of the UK population. Low mood has been linked to IBS, both conditions can greatly affect quality of life, so finding ways to improve these symptoms is greatly important.

Links between the gut microbiota and both IBS and low mood have been observed, as such this means that by altering the microbiota maybe we can impact on both IBS symptoms and mood. Within this PhD project probiotics will be used as a tool for altering the microbiota, and increasing levels of microbial end products associated with improved mood. This CASE studentship supported by a Probiotics company, Optibac, will use in vitro models of the gut to determine microbial mechanisms at play in IBS and low mood, subsequently probiotics will be investigated for their ability to impact on these mechanisms.

Following on from in vitro work a human study will be carried out, this will use a probiotic combination that shows the best potential for interacting with mood and gut mechanisms. The plan is to determine whether the selected intervention can help improve gastrointestinal symptoms and mood.

As a case studentship the successful candidate will get the opportunity for a 3 month placement with the partner company Optibac, a Probiotics company committed to sustainable products that support health and wellbeing. By working closely with Optibac an Industrial perspective can be gained, and the successful candidate can see how their research can impact on product development.

This project is supervised by academics at University of Reading and University of Surrey, providing expert support in gut model systems, metabolite analysis, human trials, mood analysis and statistics. The team are well versed at supervising PhD students and this project will provide a unique experience in basic, translational and clinical research, in both academic and industrial environments.

Training opportunities:

Both University of Reading and University of Surrey offer a range of training opportunities for PhD students, including courses on how to manage your supervisor and how to write a thesis.

Further opportunities specific to this project include:

- in vitro gut modelling
- Metabolic profiling (gas chromatography, NMR, Liquid chromatography/mass spectroscopy)
- Microbial analysis
- Immunological analysis
- Human trials and ethical applications
- Good clinical practice
- Three months placement at Optibac probiotics company – working alongside a range of different teams learning about industry needs and how to take products forward.
- Doctoral training in psychological assessment at University of Surrey
- Statistical techniques

The successful candidate will also enter a program to promote development transferable skills. For example, in scientific communication skills (oral presentations, paper writing, thesis writing) in addition to interview skills, time management and other valuable skills required in future careers. will be provided in terms of in vitro gut modelling, SCFA analysis, bacterial sequencing, metabolomics, statistical analysis and psychological assessment training. The human trial will give the student a hands-on learning experience of project management, people and ethical considerations. Furthermore, there will be a chance to present at conferences and to get involved in organising symposiums.

Student profile:

We seek a student with a background in the following: microbiology, gut health or nutrition, with at least a BSc (2.1) in a closely related subject. Interest in psychology. Ideally (but not essentially) microbiology laboratory experience.

Due to the multidisciplinary nature of this program, we do not expect the successful candidate to have knowledge and experience in all relevant areas. Full support and training will be provided by experienced staff.

Stipend (Salary):

FoodBioSystems DTP students receive an annual tax free stipend (salary) that is paid in instalments throughout the year. For 2023/24 this is £18,622 and it will increase slightly each year at rate set by UKRI.

Equality Diversity and Inclusion:

The FoodBioSystems DTP is committed to equality, diversity and inclusion (EDI), to building a doctoral researcher(DR) and staff body that reflects the diversity of society, and to encourage applications from under-represented and disadvantaged groups. Our actions to promote diversity and inclusion are detailed on the [FoodBioSystems DTP website](#).

In accordance with UKRI guidelines, our studentships are offered on a part time basis in addition to full time registration. The minimum registration is 50% FT and the studentship end date will be extended to reflect the part-time registration.

For up to date information on funding eligibility, studentship rates and part time registration, please visit the [FoodBioSystems website](#).