Falk Foundation/Guts UK Awards 2025

MEDICAL STUDENT PRIZE WINNER:
Symriti Kaur-Paneser

In Vitro Study of the Adsorption Capacity of the Enteroadsorbent Enterosgel for Cytokines, Enzymes and Drugs Relevant to Ulcerative Colitis

Ms Kaur-Paneser undertook this project whilst intercalating for an BSc in Gastroenterology and Hepatology in the Department of Metabolism, Digestion and Reproduction, Imperial College London. Ms Kaur-Paneser will return to her medical degree 5th year studies in July, at Imperial College London, School of Medicine.

Ms Kaur-Paneser explains:

'Faecal urgency affects up to 50% of patients with ulcerative colitis (UC), significantly impairing quality of life even in the absence of active inflammation. Further, functional bowel symptoms are often underappreciated by IBD clinicians, resulting in unnecessary escalation of advanced therapies which offer limited symptomatic relief, whilst exposing patients to potential adverse effects. Despite its prevalence, effective treatment options for faecal urgency in UC – even when in remission – are limited and have substantial side effect profiles – for example – constipation. Treatments for faecal urgency have been identified as one of the Top 10 research priorities for IBD research by the James Lind Alliance, highlighting the urgent need for new therapeutic options.

'Enterosorbents like Enterosgel offer a promising novel therapy. I was therefore incredibly excited to undertake this research project. Not only as an opportunity to immerse myself in the dynamic Neurological Pelvic Organ Physiology research group and experience life as an academic for the first time, but also to contribute to novel work which has the potential to improve the lives of patients with UC who are suffering from persistent faecal urgency.

'Enterosgel is believed to act by adsorbing small molecules in the gastrointestinal (GI) tract, with minimal systemic absorption or metabolism. It has shown efficacy in reducing urgency in patients with diarrhoea-predominant irritable bowel syndrome (IBS-D). However, the precise mechanism of action in this population remains unclear.

'We hypothesise that Enterosgel selectively adsorbs substantial cytokines and enzymes relevant to Ulcerative Colitis and that Enterosgel adsorbs a small proportion of drugs relevant to Ulcerative Colitis. Therefore the primary aim of the study is to probe the potential pharmacological utility of Enterosgel in adsorbing key pathogenic proteins and enzymes linked to UC, including Cytokines (TNF-a, IL-1β) and Enzymes (MMP-9), with a secondary aim of exploring the adsorption kinetics of Enterosgel in relation to key oral pharmaceutical agents utilised in ulcerative colitis

'By demonstrating adsorption of these molecules, and therefore providing a mechanistic rationale for its use, we hope to lay the foundation for further studies to explore its clinical utility as a targeted, non-systemic addition to UC management.

'Further, its potential to adsorb essential UC treatments, including biologics and JAK inhibitors, must also be carefully evaluated to ensure it does not interfere with their efficacy. Thus, understanding and evaluating the interactions between Enterosgel and essential UC treatments, will be crucial in determining the clinical utility of Enterosgel in UC management.

'This research will help determine whether Enterosgel is a viable treatment option for UC and serve as a foundation for the design of future clinical studies into the efficacy and safety profile of Enterosgel in UC patients.'

Ms Kaur-Paneser's Project Supervisor, Miss Emma Victoria Carrington, Clinical Senior Lecturer and Consultant Colorectal Surgeon, Translational Colorectal Research Laboratory, Imperial College London comments:

'During her BSc, Symi has demonstrated exceptional dedication, working tirelessly to master new techniques and integrating seamlessly into our department. Her remarkable aptitude for research is evident in her ability to construct, defend and thoughtfully critique ideas, consistently displaying intellectual curiosity and integrity. Her willingness to embrace feedback and her determination to improve have set her apart as a standout student with immense potential. Best of all, she has been a true pleasure to work with. Well done Symi, you absolutely deserve this award.'

Ms Kaur-Paneser states:

'Winning the Dr. Falk Guts award is an incredible honour and a powerful affirmation of my aspiration to pursue a career in academic medicine. The opportunity to explore the field of IBD and faecal urgency – building on research into disorders of gut-brain interaction and patient experiences within our group – has deepened my passion for translational gastroenterology. This recognition is not only a source of immense pride but also a strong motivation to continue contributing to research that directly improves patient care.'

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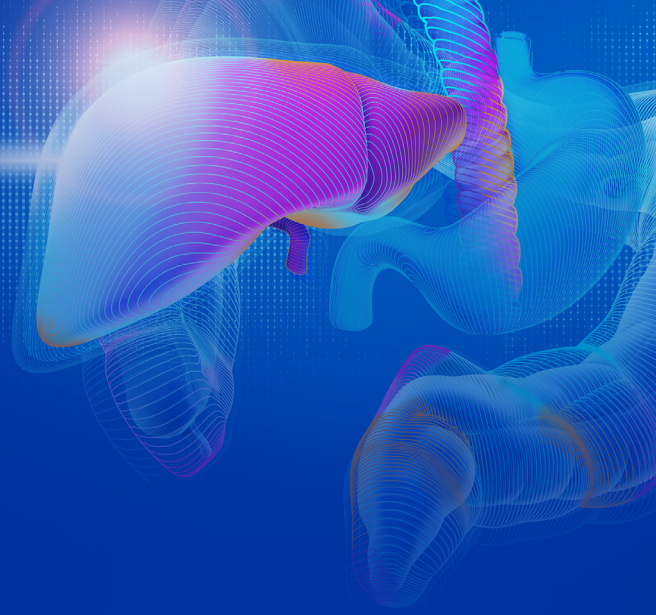

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