

➔ **Creme Global**

Gut Microbiome

4th Floor, The Design Tower
Trinity Technology & Enterprise Campus
Grand Canal Quay, Dublin 2
Ireland, D02 P956

+353 (1) 677 0071
info@cremeglobal.com
www.cremeglobal.com

Gut Microbiome

Creme Global has considerable in-house scientific expertise, and also partners with expert organizations to ensure the excellence of our scientific approach and robustness of our models. For our work on the gut microbiome, we are collaborating with two organisations with internationally recognised, complementary expertise in this field. These are the Alimentary Pharmabiotic Centre (APC) and the Quadram Institute.

APC

<http://apc.ucc.ie/>

The Alimentary Pharmabiotic Centre (APC) is a globally leading research centre located in Cork, Ireland. They investigate the means by which intestinal microbiota influence health and disease and develop new therapies for lifelong debilitating gastrointestinal conditions such as inflammatory conditions of the gut, GI infections, cystic fibrosis, metabolic disorder. The APC has created a trans-disciplinary environment of clinicians, clinician-scientists and basic scientists from diverse backgrounds working in teams, sharing ideas and resources. The research into the microbiota is not only as a target for treatment and prevention of disease, it is seen as a repository for functional food ingredients and even new drugs and is a source of novel biomarkers of disease risk.



Prof Colin Hill

http://apc.ucc.ie/colin_hill/

In particular, Prof Colin Hill is internationally recognised as a leader in understanding the intersection between microbes, gut health and pharmabiotics. His main interest is in infectious disease, particularly in defining the mechanisms of virulence of foodborne pathogens and in developing strategies to prevent and limit the consequences of microbial infections in the gastrointestinal tract. Molecular Microbiology, particularly in issues involving infection. Bacteriophages, Bacteriocins (applied and fundamental aspects), Pharmabiotics (bioactives in gut health), Clostridium difficile, antibiotic resistant pathogens.

Quadram Institute

<https://quadram.ac.uk/>

The Quadram Institute is a leader in the field of gut microbiome research. Creme Global has established relationships with the Quadram. The Institute Director Prof Ian Charles was an external advisor in the development and construction of the 3-year microbiome project that resulted in the predictive model for the microbiome, called "SAFE".

The interdisciplinary team of researchers within the Quadram Institute is at the cutting edge of microbial cell biology, genomics, metagenomics, modelling and bioinformatics. Microbes in the food chain represent a major global challenge to health and the economy, through foodborne infections and through their contribution to the problem of antimicrobial resistance. The aim is to reduce the problems caused by microbes in the food chain by delivering an enhanced understanding of ecology, evolution and survival strategies of pathogens in the food chain, including the drivers of

antimicrobial resistance, to improve human health. Primary focus is on E. coli, Salmonella, Listeria and Campylobacter, as the major causes of foodborne illness. This involves gathering isolates from across the whole of the food chain, including soil, water, farms, animals, processing factories and humans, to get the fullest possible picture of the genomic epidemiology of these bacteria. Whilst many human isolates have been catalogued, comparatively few have been taken from the food chain environment, so completing this dataset will enable identification of where foodborne pathogens arise from, and which are the major locations for bacterial communities that potentially could impact health.

This information is used to help parameterize the algorithms used in the Creme Global predictive model for the microbiome



Prof Ian Charles

<https://quadram.ac.uk/people/ian-charles/>

Prof Ian Charles Director of the Quadram Institute. His research interests are in the area of infectious diseases, the microbiome, and its impact on health and wellbeing. He is particularly interested in harnessing 'omics technologies to understand how microbes evolve, spread, survive and compete in the food chain to reduce foodborne illness and to counter antimicrobial resistance.

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