



Enriqueta **GARCIA GUTIERREZ**

Technology Centre: Food for Health Ireland (FHI)
Academic Mentor: Prof. Paul Cotter
Company Partner: Carbery Group Ltd.
Company Mentor: Dr. Kevin Turner

Enriqueta received her bachelor's degree in Biology from University of Alicante, Spain, in 2010. In 2012, she obtained her master's degree in Biomedicine focusing on the CRISPR content in *Escherichia coli* and its potential relationship with its pathogenicity. In 2020, Enriqueta received her Doctoral degree from University of East Anglia, UK, doing research on new antimicrobials to target gut and food pathogens.

Professor Paul Cotter

Prof. Paul Cotter is a leading expert in the study of the interactions between human and animal microbiota and health, microbiome of foods and the food chain, including fermented foods, dairy powders and food processing environments. He has been appointed in the top 1% scientist in the world by the Web of Science Group. Currently, Prof. Paul Cotter is a Senior Principal Research Officer and the Head of Food Biosciences department. He is Principal Investigator for VistaMilk with the Science Foundation Ireland (SFI) and APC Microbiome Ireland, the coordinator of MASTER program H2020 and Platform Leader for Food Health Ireland and Adjunct Lecturer at Cork Institute of Technology. Prof. Cotter has extensive collaborations and experience with more than 20 non-academic organisations and companies, working with PepsiCo, Coca-Cola, Danone, Danisco, Alimentary Health Ltd., Atlantia CRO, Biomin, Carbery, Dairygold among others.

Dr. Kevin Turner

Dr. Kevin Turner joined Carbery Group in 2017 as R&D Innovation Project Manager. Kevin's current role involves using biotechnology platforms to look at new product development as well as using biotechnology as a means of adding value to existing product streams. He is also in charge of day to day mentoring of R&D staff as well as working in cross functional groups and leading projects with external research teams and customers. He has held numerous roles in the diagnostics, biopharmaceutical, industrial biotechnology and food industries as well as time spent in academia. This has included work with a variety of small entities, academic institutions in Europe and North America and with large multinationals in Ireland, Europe, Asia, Canada and USA.

Food for Health Ireland

Food for Health Ireland is a collaborative model that attempts to bridge the gap between research organisations and industry needs, providing a gateway to academic research in Ireland and supporting open innovation. Food for Health Ireland is developing research and technology that uncovers ingredients and foods that improve health and wellness, as well as human-intervention trials that are helping to understand and tackle health problems such as diabetes, obesity or heart health. Overall, Food for Health Ireland's vision is to support healthier ageing.

The Carbery Group Ltd is a Cork-based company, specialised in dairy products. The Carbery Group employs 700 people and has presence around the world, with facilities in Ireland, UK, Italy, USA, Thailand and Brazil. The Carbery Group heavily invests in Research and Development in three areas: nutrition, dairy technology and taste. Carbery Group is recognised as a leading international manufacturer of speciality food ingredients, flavouring systems and as an award-winning cheese producer.

Enriqueta's project

AHEAD: Novel Gut-on-a-chip Model To Assess Fermented Foods Potential in Health and Disease

There is increasing scientific evidence connecting alterations in the gut microbiota with complex diseases such as metabolic syndrome or colorectal cancer. These alterations are thought to be linked with changes in dietary patterns and the growing consumption of processed foods, which have redefined the Western diet. In the search for healthy food products, fermented foods have been studied extensively because their consumption has the potential to alleviate the effects of the altered gut microbiota and rebalance those changes. However, we still do not know the specific mechanisms by which fermented foods have these beneficial effects, because the models that have been used to perform the studies give limited or incomplete information.

The gut-on-a-chip will facilitate the recreation of disease conditions and the study of the effects that fermented foods can have on the human cells and gut microbiota at different levels. This information will be used later to develop fermented foods that can be healthier and can improve and maintain wellbeing and health.