



## **TITLE: Investigating the Role of Food Bioactives in Intestinal Inflammation**

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### **ABSTRACT (up to 300 words)**

Inflammatory Bowel Disease (IBD) is a group of chronic inflammatory conditions including Crohn's disease (CD) and ulcerative colitis (UC), which affects 6-8 million people worldwide. The debilitating nature of the condition translates into a lifetime of medication and increases the risk of developing other diseases, such as colorectal cancer.

Dietary habits have recently taken centre stage as factors modulating the risk of IBD. This is primarily due to the close association between IBD and gastrointestinal symptoms, as well as the high concentration of IBD cases in industrialised countries, where the Western diet prevails.

Recent studies showed that mice exposed to a high-fructose diet had worse colitis, increased expression of pro-inflammatory cytokines, and a higher risk of colorectal tumour formation. Opposite effects were shown with resveratrol, which ameliorated colitis by promoting the expression of intestinal epithelial junctions. To explore the effects of pro- and anti-inflammatory dietary compounds, we investigated cell viability on fibroblasts and colon epithelial cells, the most abundant components of the intestinal wall. Treatments at 48 and 120 hours with fructose and resveratrol showed no significant change in metabolic rate as assessed by CCK8, a proxy for cell viability.

To investigate the transcriptional changes driven by dietary bioactives, transcriptome profiles were

generated for all cell types and treatments at different time points (1 hour, 24 and 48 hours). This work aims to gain insights into the molecular mechanisms by which dietary habits influence IBD inflammation, providing feedback for cancer-preventive measures.

### **BIOGRAPHY (up to 200 words)**

Aurora Vilardi is completing her PhD at the University of Leicester (UK) under the supervision of [Dr Cristina Tufarelli](#). Her research interests include the role of lifestyle habits in gut health, cancer prevention and brain functions. Keen on communicating science, she has started [The Gut Scientist](#), a platform to share research insights with everybody, especially non-scientists. Outside the lab, she loves cooking, reading, training, and enjoying nature.

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