

Increase of gut-protection bioactivity induced by wild strawberry after in-vitro digestion

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Abstract

Berries are among the most consumed polyphenols sources, and wild strawberries are one of the most valuable sources of anthocyanins and ellagitannins. However, most of the bioactive compounds present in these fruits are not efficiently absorbed in the small intestine, and a solid amount pass through it reaching the colon where the human gut microflora catabolizes them. Ileostomy studies provide a unique insight into digestion of food, allowing identification of physiologically relevant dietary phytochemicals and their metabolites important to gut health. Five ileostomies completed a feeding study with Italian wild strawberry (*Fragaria vesca*). Ileal fluids samples and two strawberry extracts, obtained simulating *in vitro* digestion, were compared after subsequent faecal fermentation, using a batch culture colonic model (pH 5.5–5.9, 37 °C). Fecal microbiota composition was measured by 16S rRNA gene Illumina MiSeq sequencing (V3-V4 region). Microbial end-products such as phenolic metabolites were determined using an UHPLC-ESI-MS/MS system, whereas cytotoxicity and genotoxicity was performed to detect DNA damage.

Speaker Publications:

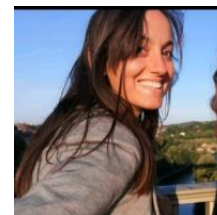
1. “Measuring phenolic compounds in Mankai: a novel polyphenol and amino rich plant protein source”

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Biography:

Camilla Diotallevi is a PhD student in Food Engineering and Biotechnology at Fondazione Edmund Mach, a research institute located by Trento (Italy). She obtained an MSc in Biological Sciences, curriculum “Nutrition and functional food” from University of Camerino. Most of her research work is involved in the DIRECT-PLUS trial which aims to compare the effect of physical activity (PA), + Mediterranean (MED) diet, or PA + green-MED diet (enriched in polyphenol foods) on the gut-fat-brain axis. Moreover, she investigates the impact of polyphenol-enriched foods on gut microbiota and human metabolism using *in-vitro* batch culture.