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Analysis of gut microbiota of normal weight and obese donors after fermentation of green tea

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Nowadays, there are many studies that relate the overweight and obesity with different gut microbiota populations. Lean and overweight people may present differences in the composition of their gut microbiota and several mechanisms could explain the correlation between intestinal flora and obesity such as energy production from fiber, bacterial lipopolysaccharide negative effects or gene regulation in energy homeostasis. Dietary changes are related with variations in gut microbiota over the most important phyla (*Firmicutes, Bacteroidetes and Actinobacteria*). Based on this, we propose that green tea could have effect in weight control and gastrointestinal satiety hormones release. In this work we have studied the effect of this plant extract over gut microbiota. For that, after gastrointestinal *in vitro* digestion of green tea, batch cultures fermentations were run using fecal material from six healthy donors (three normal weight's and three obese). Finally, aliquots at 0, 12, 24 and 48 hours were taken to analyze short chain fatty acids (SCFA) and microbiota evolution. Results showed no differences in the production of SCFAs between donors and between green tea and controls and this may be due to inter individual variability in the composition of the intestinal microbiota. RT-PCR analysis of microbial population showed a reduction of total bacteria with a higher decrease observed in the phylum *Firmicutes* and to a lesser extent in the genus *Bifidobacterium* indicating that, probably, a positive effect of green tea on intestinal microbiota is produced.

Biography

Teresa Sanchez Moya has completed her degree in Veterinary and Master in Nutrition Technology and Food Safety. She has also obtained an official Pre-doctoral Fellowship of the Education Ministry of the Spain Government and presently she is a PhD student in the official doctoral program in Food Technology, Nutrition and Food Science at the University of Murcia under supervision of Dr. Gaspar Ros Berruezo, Dr. Carmen Frontela Saseta and Dr. Ruben Lopez Nicolas.

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