P32 & FP – **Is microbiota linked to bergamot cardiovascular protection?**

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Background: One of the most popular teas in the world, Earl Grey, is scented by bergamot essential oil, extracted from *Citrus bergamia* Risso et Poiteau, an endemic plant of the Calabria. The traditional use of bergamot is currently being rediscovered due to its characteristic pattern of polyphenols almost unique in nature. This peculiar composition revealed antioxidant, hypoglycemic and hypolipidemic activities, with positive modulation of Metabolic Syndrome (MetS) and protection against cardiovascular disorders. We have now applied to bergamot polyphenolic extract our lecithin food-grade delivery system (phytosome®), a dispersed state of phytocomplex more readily absorbed.
Objective: exploration of Bergamot phytosome® (Vazguard™) on human microbiota in order to demonstrate the importance of microbiota modulation in cardiovascular health.
Methodology: A simulated gastric and duodenal human digestion of Bergamot phytosome® was performed in vitro before adding it to the batch culture system. Fecal samples were obtained from 3 healthy women aged 45–53 years. They had not used antibiotics in the previous 12 months. Fecal slurries (1% w/v) from each individual were used to inoculate the batch-culture system containing basal nutrient media and the digested Bergamot phytosome® (1000mg/L). Batch culture system without Bergamot phytosome® were also included in the experiment as controls. After 16h of incubation at 37°C in anaerobic condition samples were centrifuged and DNA was extracted. 16S Amplicon barcoded library were prepared and run on the MiSeq (Illumina Inc.). A paired t-test was used to compare microbial profiles in the batch culture systems.
Results: in this experimental model we have observed a significant increase of *Blautia* (a sp correlated with the improvements in glucose and lipid homeostasis, Tong 2018), and *Ruminococcus* (key symbionts of the gut ecosystem, La Reau 2018). In parallel, a significant decrease of *Corynebacterium* (nosocomial infections) was measured. Furthermore a decrease of *Desulfovibrio* (correlated with IBD, Lennon 2014) , and *Granulicatella* (correlated with MetS, Si J 2017) were registered with a trend that approached significance.
Conclusions: For the first time, the interaction with bergamot phytosome® and microbiota was addressed showing a possible link between positive modulation of microbiota and cardiovascular health.

References

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