

Special Issue on

Gut Microbiome and Chronic Diseases: Does a Natural Product-Rich Diet Matter?

CALL FOR PAPERS

Most of the human adult microbiota lives in the gut and its composition changes throughout life. Its composition is related to ageing, environmental factors (diet, physical activity, etc.), and pathological conditions. It is been estimated that the human gut microbiome has more than 5 million different genes and it is composed by over 1,000 different species. Given this high variability in composition, a core gut microbiome shared by healthy adults has been identified, suggesting an important role in the maintenance of health status.

In healthy conditions, microbial diversity and richness increase with age, reaching their highest complexity during adulthood. Children and elderly have a more unstable gut microbiome and a lower diversity comparing to adults.

Antibiotic administration, while facilitating clearance of targeted infections, also perturbs commensal microbial communities and decreases host resistance to antibiotic-resistant microbes. Following perturbations by antibiotics, diet, immune deficiency, or infection, this ecosystem can shift to a state of dysbiosis.

The evidence of intestinal microbiota dysbiosis involvement in disease is strongest for disorders of the gastrointestinal tract. However, there are also evidences that strongly suggest their causal influence on development or progression of nonintestinal diseases, such as diabetes, obesity, metabolic syndrome, asthma, cardiovascular disease, atopy, and aging-related neurodegenerative diseases. This suggests that alterations of the human gut microbiome can play a role in disease development.

There is growing recognition that gut microbiome health relies on a healthy dose of activity and a nutrient-rich, plant-based diet. Natural products provide a critical source of potential drug leads from which, over the millennia, humankind has identified not only phytochemicals and herbal remedies, but also most of our current antibiotics and anticancer drugs. Today, microbial, plant, and marine extracts are widely used to screen for new drug leads. Indeed, 61% of the new small-molecules, and chemical entities introduced as drugs worldwide from 1981-2002, were derived from natural products. Natural products have traditionally been used since antiquity for their biological properties: bactericidal, fungicidal, virucidal, antiparasitical, insecticidal, and anti-inflammatory and they certainly play an important role in gut microbiome equilibrium.

In this call for papers, we invite authors to contribute original experimental as well as review articles that will illustrate the influence of a natural product-rich diet in gut microbiome and consequently the impact in examples of chronic diseases.

Potential topics include but are not limited to the following:

- ▶ Evidence-Based influence of natural products consumption in a healthier gut microbiome
- ▶ Natural products as chemopreventive agents in gastrointestinal diseases
- ▶ Improvement of the pathogenesis of prediabetes and diabetes through the influence of natural products in gut microbiome
- ▶ Gut microbiota and aging-related diseases: the role of natural products
- ▶ Gut microbiota as a nutraceutical target
- ▶ Targeting gut microbiota with natural product-rich diets to prevent or revert cardiometabolic and cardiorenal disorders
- ▶ Natural product delivery: innovative strategies to intestine targeting

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/ecam/gmc/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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