

Invited Speaker Abstract

Author

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Title

Gut microbiota and health promotion; current understanding and future hopes.

1. Abstract

Interactions between food constituents, microbes and the human host derive from a long co-evolution that resulted in a mutualistic association. The current view is that of an intimate symbiosis linking the microbiota and the host with marked implications in terms of ecological dynamics but also monitoring and modulation. Investigations into the human intestinal metagenome, i.e. combined genomes of all dominant microbes, have delivered an extensive gene repertoire representative of its functional potentials. The most redundant genomic traits of the intestinal microbiota were identified. It also delivered an unprecedented view of specificities of the microbiota associated with chronic immune-mediated diseases that have kept increasing in incidence for the past 60 years, as a likely consequence of disregard towards our symbiosis. The newest view of durably altered symbiosis as a potential outcome of immune alterations stresses the importance of designing and implementing holistic strategies. Nutrition via plant-derived bioactives and live microbes will offer a range of disease mitigating triggers applicable in a personalized way. Beyond nutritional prevention, microbiotherapy approaches with Live Biotherapeutic Products and fecal microbiota transfer will also be illustrated as they provide new insights for the restauration of a healthy host-microbes symbiosis. The intestinal microbiota should hence be regarded as a true organ interacting with all other organs of the human body and amenable to rationally designed nutritional modulations for the preservation of health.

2. key references:

- Larraufie P, de Wouters P, Potocki-Veronese G, Blottière HM, Doré J. 2015. Functional metagenomics to decipher food–microbe–host crosstalk. *Proceedings of the Nutrition Society*. 74:1–4.
- Dore, J and Blottiere, H. 2015. The influence of diet on the gut microbiota and its consequences for health. *Curr Opin Biotechnol.* 32:195-199
- Calder PC, Bosco N, Bourdet-Sicard R, Capuron L, Delzenne N, Doré J, Franceschi C, Lehtinen MJ, Recker T, Salvioli S, Visioli F. 2017. Health relevance of the modification of low grade inflammation in ageing (inflammageing) and the role of nutrition. *Ageing Research Reviews* 40:95–119.

3. key messages:

- The microbiota .
- Dysbiosis in immune mediated diseases comes with concomitant alteration of the microbiota and host intestinal features including leaky-gut, inflammation and oxidative stress.
- Dietary fibers, polyphenols and live microbes may be key ingredients to preserve host-microbes symbiosis.