

Special Issue

Polyphenols: Nutrition, Physiology, Metabolism and Health Benefits

Message from the Guest Editors

Most polyphenols cannot be absorbed as such, and need some structural modification prior absorption. The absorption of a minimal part of the ingested polyphenols occurs in the first gastro-intestinal tract, whereas the largest part reaches the colon, where polyphenolic compounds are metabolized by the host microbiota. In the large intestine, the unmetabolized polyphenols undergo ring fission, leading to the production of smaller molecules, which in turn can be subject to reduction, decarboxylation, demethylation and dehydroxylation reactions, prior to efficient absorption. The understanding of the absorption efficacy, the polyphenol–gut microbiota interactions and the gut microbial bioconversion capability could provide more insight into the human metabolism and the bioavailability of bioactive polyphenols and represent a necessary step to further elucidate the potential health effects of polyphenols and their derived metabolites. Moreover, the inter-individual variability in the production of specific metabolites also highlights the need for more efforts in this research field.

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Deadline for manuscript submissions

closed (30 November 2018)



International Journal of Molecular Sciences

an Open Access Journal
by MDPI

Impact Factor 4.9
CiteScore 9.0
Indexed in PubMed



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Molecular Sciences*
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