



In vitro static strategies to test nutraceuticals bioaccessibility

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ABSTRACT

Bioaccessibility and bioavailability of food components represent the main factors in the bioefficacy of ingested food. Considering these key points, in the last years many studies have been developed to test them using different approaches. In fact, many static and dynamic *in vitro* digestion methods simulating simil-physiological conditions have been developed. Static methodologies differ from the dynamic ones, but both have some advantages and disadvantages. The main advantages of the static (or biochemical) models are their broad applicability and the possibility to easy validate them. Conversely, dynamic models better reproduce similar physiological environments but have the disadvantage to be hardly reproducible.

In this keynote the application of the *in vitro* static simulated digestion methods as strategy to easy perform bioaccessibility studies in a short time will be shown, starting from COST Action Infogest standardized protocol stated in 2014. This procedure represents an international consensus about general guidelines to harmonize experimental conditions. In the following years, this protocol was differently implemented and modified (enzyme modification, different set up of digestion phases time, colon and jejunal phases addition, and adaptation to different age groups and pathological conditions). In the last years, a static digestion model has been frequently coupled with a cell-based system, to obtain complementary data. However, the application of cellular models lacks an international consensus.

BIOGRAPHY

Papetti Adele has completed her PhD and postdoctoral studies from University of Pavia, Italy. She is Associate Professor in Food Chemistry at the Department of Drug Sciences (University of Pavia), head of Nutraceutical & Food Chem Toxicol Analysis Laboratory, Academic Director of Master degree (NUTRIALIA), and member of the teaching board of PhD school in Chemical and Pharmaceutical Sciences and Related Industrial Innovation.

She is member of the Italian Chemical Society and Professional Member of the Institute of Food Technologists, and of SIFNut (Italian association of nutraceutical formulation development). She has published 86 papers in indexed journals and some book chapters and has been serving as an editorial board member of *Molecules*, *Applied Food Biotechnology*, *Current Research in Nutrition and Food Science*, *Journal of Food Research*, and *Frontiers in Chemistry and Frontiers in Nutrition-Food Chemistry Section*.

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