

25th European

Nutrition and Dietetics Conference

April 22-23, 2019 | Rome, Italy

The prevention of inflammaging by improving nutraceuticals' content in food. The role of biosensors in monitoring bioactive compounds

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Neurodegenerative diseases are becoming more frequent and an economical problem to the health-care system. Increased oxidative stress and mild chronic inflammation have been identified as predominant causes that determine the occurrence of several pathologies, among them neuronal disorders [2,3]. The current pharmacotherapy of such kind of diseases is mainly symptomatic, and more the major pharmaceutical companies have decided to abandon the research related to drugs for the treatments. So, coadjutant strategies, including nutraceuticals-based and other cost-effective therapies are extensively explored. Nowadays, the nutritional neuroscientists are increasingly interested in connecting neurodegenerative diseases and the role of the diet on fighting the onset of these pathologies. So, it has become extremely important to consider complex foods and nutraceuticals as supportive therapy and not only as nutritive sustenance. Lots of studies have been led to identify and quantify nutritional compounds in food exploiting the most common analytical techniques, as high-performance liquid or gas chromatography. Now, it is increased the need for a reliable, fast, possibly low-cost devices to measure the quality and the content of food nutrients, but also additives, and their association with health claims. Within this picture, the biosensors (Fig 1) fit perfectly because they allow monitoring, in different matrices, a wide variety of nutraceuticals, among them sugars, vitamins, folic acid, micronutrients, ethanol but also phytochemicals, as polyphenols.

Biography

Gaia Rocchitta graduated in chemistry in 1999 with a thesis about polyphenols in red wines and then she completed her PhD in Neuroscience at School of Medicine of Sassari University (Italy) in 2004. She was a Postdoctoral fellow at School of Chemistry & Chemical Biology, University College, Dublin (Ireland) in 2006, working on the development of amperometric biosensors for in vivo-monitoring of neurochemical compounds. She currently is a tenured researcher and lecturer in Pharmacology and Nutraceutical at School of Medicine of Sassari University (Italy). She has published more than 50 papers in peer-reviewed journals.

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