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Steryl glycosides: The emerging bioactive glycolipids of olive oil

Raquel B Gomez-Coca, M^a del Carmen Pérez-Camino and Wenceslao Moreda
Instituto de la Grasa-CSIC, Spain

Plant sterols have been used as cholesterol-lowering agents in humans for a very long time. Within this group of compounds, steryl glycosides (SG) considered as non-nutrients plant-secondary metabolites are separately categorized as glycolipids thanks to both the sugar molecule(s) bound to the 3-C atom of the sterol backbone and to their favorable effect in human health. Different sources of SG have been identified, being olive oil (OO) the most recent one. To this respect some considerations should be taking into account. First of all, from the analytical point of view one must realize that the European Commission official method for sterol analysis in OO overlooks the presence of SG, causing underestimations when reporting on total phytosterol concentration. Furthermore, it is important to provide data also on the SG profile, since it has been pointed out that different species may have dissimilar biological effects. Under this perspective the development of a proper analytical approach prevailed and new procedures to determine these sterol derivatives in OO are have been developed. Secondly, OO production and consumption is no longer restricted to the Mediterranean basin, which have resulted on an increasing competitiveness, lack of a centralized databank for validated methods of analysis, absence of harmonization, etc., driving to a significant weakness in the OO production and supply chain, which is nowadays being exploited by counterfeiters. Our purpose here is to present the information available on the field of SG, giving an overview of what these molecules are and of what has been done in different fields of research. Furthermore, we will comment on one of our specific objectives in the European OLEUM project: The search for novel markers focused on the development and validation of innovative analytical solutions to solve part of the OO fraud problems presently under the microscope of the international community.

Biography

Raquel B Gomez-Coca has studied Pharmacy at the University of Seville, Spain. She did experimental part of her PhD work at the University of Basel, Switzerland and obtained her European Doctor degree. After several years in the private sector, in 2009 she started working as a Postdoctoral Researcher at the Spanish National Research Council. Presently she is part of the Department of Characterization and Quality of Lipids of the Instituto de la Grasa, where she is devoted to the development of analytical methods focused on olive oil quality, purity and fraud detection.

raquel.coca@ig.csic.es

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