
Characterization of nanoparticles in food and cosmetics

Catia Contado*^{†1}

¹University of Ferrara, Department of Chemical and Pharmaceutical Sciences – Italy

Abstract

Nanomaterials (NMs) are used in a wide range of daily products, such as cosmetics (e.g. UV absorbers in sunscreens), foods (enhanced flavor and texture, encapsulation of micronutrients), medical devices (diagnostics, drug delivery) and medicinal products. Because of their reduced sizes (between 1-100 nm according to the EC recommendation, (1)), nanoparticles interact with membrane cells of any living beings (plants, animals, humans). In order to promote studies on their potential risk, legislators who are dealing with health and consumer protection have asked to the scientific community to implement or set-up new analytical methods able to detect and characterize the nanoparticles contained especially in food and consumer products. This talk work will present examples of common NMs used in cosmetic and food, placing the accent on those considered persistent, such as SiO₂, silver, and ZnO, and so potentially dangerous for humans. Additionally, it will illustrate as some analytical techniques (e.g separation techniques, electron microscopy, scattering detectors, etc.), used in combination, might be useful to determine some of the physico-chemical parameters (e.g. particle size distribution, charge, etc) useful to characterize the NMs according to the requirements expressed by the European Commission (2).

Keywords: Nanomaterials, food, cosmetics, analytical techniques

*Speaker

[†]Corresponding author: kat@unife.it