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Identification of lipid biomarkers of atopic skin by normal phase chromatography/high resolution mass spectrometry

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The strategy used to determine the lipid biomarkers involve lipidomics analysis of normal and atopic skin. In the case of skin called atopic, permeability of the epidermis or the stratum corneum is a problem. Stratum Corneum has been described as a type of "brick and mortar", in which the corneocytes are bricks. Extracellular spaces are filled with lipids that are divided into three main classes: ceramides, fatty acids and cholesterol. Ceramides constitute a major class of lipids and are composed of a sphingoid and a fatty acid moiety. They play a major role in skin permeability. Their organization is essential to maintenance of the barrier function. Lipidomics offers a unique opportunity to analyze the complex role of lipids in cellular processes. The first step focuses on the development of a method for separation and detection of lipid classes' molecular species using (Normal Phase) LC/MS in high resolution. Different ionization modes have been tested between APPI and APCI. The main goal is to collect information from all detected peaks; the profile of the sample provides the relative distribution of species and the molecular mass of each. Statistical comparison of the profiles obtained for several samples of both populations reveal the characteristic signals of over/under expressed signals in each group. In the end, we characterize and identify biomarker by MS/MS.

Biography

Libong Danielle has completed her PhD from Ecole Polytechnique of Palaiseau (France). She is senior lecturer in the Interdisciplinary Academic Unit Lip(Sys)² Lipids (Analytical and Biological Systems) of the School of Pharmacy of Paris-South University. Lip(Sys)² is a research team in analytical chemistry with an important experience in lipid analysis by chromatographic, hyphenated methods and optical spectroscopy. She has published more than 25 papers in reputed journals.

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