Cholesterol and oxysterol sulfates: Physiological roles and analytical challenges

Lorena Diaz Sanchez[1], Lorenzo Pontini[2], Maura Marinozzi[2], Lissette Sanchez-Aranguren[1], Ana Reis[3], and Irundika Dias[1]

[1]Aston University
[2]University of Perugia
[3]University of Porto

April 28, 2020

Abstract

Cholesterol (Chol) and oxysterol sulfates are important regulators of lipid metabolism, inflammation, cell apoptosis, and cell survival. Among the sulfate-based lipids, cholesterol sulfate (CS) is the most studied lipid both quantitatively and functionally. Despite the importance, very few studies have analysed and linked the actions of oxysterol sulfates to their physiological roles. Over expression of sulfotransferases confirmed the formation of a range of oxysterol sulfates and their antagonistic effects on liver X receptors (LXRs). It is therefore important to understand how further changes to oxysterol/oxysterol sulfate homeostasis can contribute to LXR activity in the physiological milieu. Here, we aim to bring together evidences for novel roles of oxysterol sulfates, the available techniques and the challenges for analysing them. Understanding the oxysterol/oxysterol sulfate levels and their physiological mechanisms could lead to new therapeutic targets for metabolic diseases.

Hosted file

`Diaz et al final_main document.docx` available at https://authorea.com/users/314882/articles/445258-cholesterol-and-oxysterol-sulfates-physiological-roles-and-analytical-challenges