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Resumo	Several studies have described important biological activities of flavonoids such as coronary heart disease prevention, hepatoprotective, anti-inflammatory and anticancer activities, enzyme inhibition activity, and antibacterial, antifungal, and antiviral activities. Flavonoids show promising activity as natural plant-based antioxidants due to their antioxidant and free radical scavenging properties. However, their primary applications as antioxidants in the pharmaceutical, cosmetic, and food industries are limited because of their moderately hydrophilic nature. Enzymatic acylation of natural polyphenols with fatty acids or other acyl donors has been suggested for improving the lipophilic nature of the glycosylated flavonoids. This approach increases flavonoid solubility and stability in lipophilic systems. Acylation of flavonoids with different acyl donors may also introduce beneficial properties to the molecule, such as penetration through the cell membrane and improved antioxidant, antimicrobial, anti-inflammatory, antiproliferative, cytogenetic, and enzyme inhibition activities. Chemical methods for the synthesis of flavonoid esters lead to the formation of side products and the simultaneous decomposition of the flavonoids due to harsh reaction conditions. In contrast, biocatalytic acylation of flavonoids by lipases offers advantages associated to the wide availability of these enzymes, their low cost, chemo-, regio-, and enantioselectivity, mild condition processing and non-requirement of cofactors. This article is focused on the recent development of lipase-catalyzed synthesis of flavonoid esters and the impact of the acylation reaction on their biological activities.
Fomento	