

Kojic acid esters: comparative review on its methods of synthesis

ABSTRACT

In this paper, the syntheses of kojic acid esters via chemical and enzymatic methods are reviewed. The advantages and disadvantages of chemical process in term of process, safety and efficiency are discussed. In enzymatic process, the significant process parameters related to the synthesis of kojic acid esters such as the lipases, solvent, temperature and water content are highlighted. Possible enzymatic synthesis using solvent and solvent-free system taking into consideration of the difference in these systems involving cost, lipase reusability and efficiency is comparatively reviewed. The possible approach for large scale production using various enzyme reactor designs is also discussed and re-evaluated.

Keyword: Kojic acid derivatives; Organic synthesis; Solvent-free system; Biological reactors; Lipases