URN etd-0407109-183721-1718
Author Pei-Lin Wu
Author's Email Address No Public.
Statistics This thesis had been viewed 47 times. Download 47 times.
Department
Year 2004
Semester 1
Degree Master
Type of Document Master's Thesis
Language zh-TW.Big5 Chinese
Title The synthesis of triphenylalkyl ester prodrug of glycerol via lipase
Date of Defense 0000-00-00
Page Count 100

Keyword
lipase
prodrug
phenyl alkanoic acid

Abstract
A highly efficient synthesis of homogeneous triglycerides of phenyl fatty acid by an immobilized lipase from Candida antarctica is described. Esterification and alcoholysis of glycerol with phenyl alkanoic acid and phenyl alkanoic ester were performed, respectively.
In an open and solvent-free system, the esterfication of glycerol with phenyl alkanoic acid was catalyzed by Novo 435 lipase, the equilibrium conversion of glyceryl triphenylbutyrate reached 74% under the optimal condition. The co-product of water was removed by the closed system with molecular sieves, thus shifting the equilibrium conversion toward 98%.
Alcoholysis of glycerol with phenyl alkanoic ester was catalyzed by Novo 435 lipase in an open and solvent-free system, glyceryl triphenylbutyrate equilibrium conversion reached 80% under optimal reaction condition. In the initial stage, the side reaction of hydrolysis was inhibited by the closed system with molecular sieves, and then the volatile co-product of 2,2,2-trifluoroethyl ethanol were remove by vacuum, thus shifting the equilibrium conversion toward 97%.
The extraction purification in two-phase immiscible system was used for the desired product, where the purity of glyceryl triphenylbutyrate was 99%, with the yield of 84%.
Advisory Committee Chun-Sheng Chang - advisor

Files etd-0407109-183721-1718-001.pdf

indicate access worldwide
Date of Submission 2005-08-08