

High performance enzymatic synthesis of oleyl oleate using immobilised lipase from *Candida antarctica*

ABSTRACT

High performance enzymatic synthesis of oleyl oleate, a liquid wax ester was carried out by lipase-catalysed esterification of oleic acid and oleyl alcohol. Various reaction parameters were optimised to obtain high yield of oleyl oleate. The optimum condition to produce oleyl oleate was reaction time; 5 min, organic solvents of $\log P \geq 3.5$, temperature; 40-50°C, amount of enzyme; 0.2-0.4 g and molar ratio of oleyl alcohol to oleic acid; 2:1. The operational stability of enzyme was maintained at >90% yield up to 9 cycles. Analysis of the yield of the product showed that at optimum conditions, >95% liquid wax esters were produced.

Keyword: Oleyl oleate, immobilised lipase, esterification, liquid wax ester