

Novel sol-gel entrapment of lipase employing hydrophobic precursor

이고운, 박경문¹, 유영제*
서울대학교; ¹홍익대학교
(yjyoo@snu.ac.kr*)

Lipases are enzymes that catalyze a variety of reactions, such as esterification, interesterification and hydrolysis. Because of their multiple reactions, lipases find a broad variety of industrial applications, such as food, detergent, pharmaceutical, and so on. To further expand their utility in industry, efficient methods of immobilization for lipases are needed as immobilization promotes enzyme reuse and thus reduces overall process cost. Several methods have been reported for immobilization of lipase, such as covalent binding, entrapment within a polymer matrix. Sol-gel entrapment is simple and effective procedure, which give greatly improved activity and stability. In this research, hydrophobic precursors were used to improve the activity and stability on sol-gel entrapment of Candida Antarctica lipase B(CALB). The effect of water and additives to activity during sol-gel entrapment of CALB were observed. Lipase showed higher activity in hydrophobic environment than in hydrophilic environment of sol-gel entrapment.