

Immobilization and Stabilization of Lipase in Polyaniline Nanofibers for Esterification of Racemic Ibuprofen

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Lipase is one of useful enzymes in various fields such as food, oil and fat, detergent, cosmetics and pharmaceutical industries. Lipase from *Candida rugosa* has been proven to selectively esterify the S-form of ibuprofen to ester form. In this paper, we employed the method of enzyme adsorption, precipitation and crosslinking (EAPC) to enhance the lipase stability and loading in the polyaniline nanofibers (PANF) when compared to the approaches of enzyme adsorption (EA) and enzyme adsorption and crosslinking (EAC). EAPC showed 5 times higher activity than EA and EAC. After incubation under shaking at room temperature for 84 days, EA, EAC and EAPC retained 11%, 24% and 74% of initial activities, respectively. EAPC method has been proven to increase both stability and loading of enzymes, which can be used in various fields of enzyme applications.