

Enzymatic production of biodiesel and glycerol carbonate by lipase

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Biodiesel (BD) and glycerol carbonate (GC) were produced by transesterification reaction of soybean oil and dimethyl carbonate (DMC) by *Candida antarctica* lipase B (Novozym 435) in solvent-free system. DMC could be used instead of alcohol and it has several advantages which are non-corrosive and exhibits good solvent properties. GC as value-added product can be used for many applications: emulsifier for cosmetics, additives in lithium battery, liquid membrane. In this study, the effects of enzyme amount and reaction temperature on the production of BD and GC were investigated. Enzyme amount was tested in the range of 5-40% based on oil weight. Experiments were also carried out in the range of 40-70°C in solvent-free system.