Consecutive Reaction Model For Triglyceride Hydrolysis using Lipase

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Abstrak

A large number of studies have been made on the triglyceride hydrolysis using lipase. However, the kinetics of the formation behavior of the intermediates, such as the diglyceride and monoglyceride, is still not clear, Triolein was hydrolyzed by Candida rugosa lipase in the biphasic oil-water system having a definite interfacial area. The ejects of the operating factor, such as the oil-water interfacial area and the initial enzyme concentration, on the consecutive hydrolysis behavior were investigated The kinetic model was proposed by considering a Langmuir adsorption isotherm of lipase in the bulk of the water phase on the oil-water interface and an irreversible pseudo first order consecutive reaction mechanism. The model well described the ejects of the initial enzyme concentration and the interfacial area on the consecutive triolein hydrolysis for not only the end product bitt also the intermediate products.