

Functional expression of CalB(*Candida antarctica* lipase B) in *P. pastoris* and its application for the synthesis of glycerol carbonate

김현숙, 박혜정, 정광섭¹, 김상철², 김용환*
광운대학교 화학공학과; ¹GS칼텍스; ²한국화학연구원
(metalkim@kw.ac.kr*)

Candida antarctica lipase B (CalB) is an efficient biocatalyst for many organic synthesis reactions. We found that CalB catalyzed the synthesis of glycerol carbonate from glycerol and dimethyl carbonate through transesterification. Glycerol carbonate is a useful compound as solvent, additive, monomer, and chemical intermediate. Glycerol is produced as by-product in large amounts during the production of biodiesel. To obtain the optimized CalB for the synthesis of glycerol carbonate, recombinant CalB was expressed in the methylotropic yeast *Pichia pastoris*. In addition, CalB were immobilized on PMMA macroporous carrier supports for the synthesis of glycerol carbonate.