

Project Title : Screening for Microorganisms Capable  
to Transform Lithocholic Acid into  
Useful Bile Acids.

Name of the Investigator : Associate Professor Dr. Naline Nilubol  
Associate Professor Dr. Songsri Kulpreecha  
Miss Oytip Kanjanapanjapol  
Miss Sunanta Cajesanun

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#### Abstract

Out of 217 fungal isolates, Absidia sp. strain BA16 was found to be able to convert lithocholic acid into a derivative which had similar characteristics on thin layer chromatography plate to those of ursodeoxycholic acid and chenodeoxycholic acid, the two bile acids which possess the property of solubilizing cholesterol gallstone.

The morphological and cultural characteristics of Absidia sp. BA16 was studied in comparison with two reference strains, Absidia corymbifera IFO 4009 and Absidia butleri (Gongronella butleri) IFO 8080. Though some characteristics of the strain BA16 were resembled to the reference strains, other different characteristics were also observed. Therefore, Absidia sp. BA16 might be a new species of the genus "Absidia".

The derivative of lithocholic acid produced by strain BA16 was extracted from the culture broth with ethyl acetate and chromatographed on silica gel column. Then it was crystallized by

adding the mixture of ethyl acetate and hexane. The product was identified as  $3\alpha$ ,  $15\beta$ -dihydroxy- $5\beta$ -cholanic acid on the basis of elemental analysis, IR,  $C^{13}$ -NMR,  $H^1$ -NMR.

The optimal conditions for the product formation in the fermentor were the production medium containing 40 g/l casava starch and 5 g/l sodium nitrate as carbon and nitrogen sources, cultivation temperature at  $30^{\circ}C$ , initial pH at 6.5 without pH control during cultivation, agitation speed at 300 rpm/min., aeration rate at 1.2 vvm, feeding lithocholic acid in 1% dioxane after 56 hour of cultivation followed by the addition of lithocholic at 72 and 84 hour. The maximal yield obtained under these conditions was 2.87 g/l at 90 hour of cultivation.