

Isolasi dan elusidasi struktur kimia senyawa hasil fermentasi mikroba endofit dari tanaman cinchona pubescens, vahl.

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Abstrak

The higher plants are hospes for one or more endophytic microbes. Microbes can make one or more biological compounds that predicted as a consequence from coevolution or transferred genetic to microbes in the mutualism symbiosis to parasitism. Microbes can also produce secondary metabolites similar with their hospes. Endophytic microbes have been known to be potential as the sources of active compound for medicines by growing in Phoma media. In the future, prospectively the active compound for medicines not have to extract from the tree or chemical synthesis. Khamir isolated (Fn) from Cinchona pubescens, Vahl had been identified as Sporidiobolus salmonicolor will produce the active compounds similar to their hospes. This study was aimed to isolate and elucidate the chemical structure of cinchona alkaloid from the fermentation product of endophytic microbes in Phoma media. The study has been carried out at Natural Product Laboratory, Research Centre for Biotechnology, Indonesian Institute of Sciences, Cibinong, Bogor from March - December 2002. The isolated the khamir (Fn or Sporidiobolus salmonicolor) was incubated in Phoma media for 14 days. The fermentation culture was separated between biomass and supernatant and extracted with CHCl₃ and dried. Purification carried out by column chromatography (SiO₂, CHCl₃ - CH₃OH), and the obtained cinchona alkaloid was identified by HPLC. Determination of chemical structure was based on Ultraviolet-visible (UV-VIS) spectra, Fourier transform Infra red spectrometry (FTIR), Gas chromatography-mass spectrometric (GC-MS) and data Nuclear magnetic resonance spectra (¹H and ¹³C-NMR, DEPT, ¹H-¹H COSY ; COSY). The Fermentation results that production of cinchona alkaloids optimal at eighth days and yielded cinchona alkaloids 32,81 mg/L.