UNIVERSITI TEKNOLOGI MARA

MICROBIAL TRANSFORMATION OF CEDRYL ACETATE

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ABSTRACT

Biotransformation is the process which produces new derivative compounds with altered chemical structure by using biological system consisting microorganisms. Biotransformed products have biological interests which give benefits especially in pharmaceutical, chemical and agrochemical industries. In this study, cedryl acetate which is a sesquiterpene was used to undergo biotransform process by using *Absidia coerulea, Beauveria bassiana* and R3-2sp17. Method used were preparation of media, inoculation of fungi, and inoculation of substrate, incubation for 5 days and ten days, as well as extraction of fermented cedryl acetate extracts. Lastly, the extracts were analysed by using HPLC in order to identify any biotransformation products. Based on the results, cedryl actate yield biotransformation products by using all of the selected fungi. However, there was a possibility that the peaks appeared in the HPLC chromatogram were the secondary metabolite of the fungi.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The issue of drug discovery and development are increasingly over years throughout worldwide. There are many papers reported regarding new development of a drug. Besides, people nowadays easily to get diseases and dependent on the drug in order for them to increase quality of life and improve their health condition. Thus, many scientists tend to find a tool to develop a new effective and improve efficacy of the drug.

There are many methods to synthesis a new drug for specific desired biological activity. One of them is biotransformation which is also known as microbial transformation. It can be define as the process that produces new derivative compound with altered chemical structure by using biological system consisting microorganism like endophytes or fungi (Kebamo, Tesema, & Geleta, 2015). The modifications of the structure of fermented compound lead to many benefits especially in pharmaceutical, chemical and agrochemical industries. This is because biotransformation more likely to produce compound with various biological interests. Besides, microorganisms have ability to alter chemical structure compared to other living organisms.