UNIVERSITI TEKNOLOGI MARA

EFFECT OF VARIOUS WATER ON GROWTH AND SECONDARY METABOLITES OF 3PR3 AND HAB10R12 FUNGI

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~God promise a safe landing, but not a calm passage. ~ Bulgarian proverb

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~ Feeling gratitude and not expressing it is like wrapping a present and not giving it.~

William Arthur Ward

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ABSTRACT

The objective of this study was to determine the effect of minerals from different types of water and effect of different media on growth and production of secondary metabolites produced by two fungi strains; HAB10R12 and 3PR3. The study was performed by growing the pure culture of HAB10R12 and 3PR3 in both PDA and PDB by using four types of water; ultra purified water, Evian mineral water, TY Nynt mineral water and Sole mineral water for duration of three weeks and four weeks. Then, the myceliums of both strains were subjected to extraction process. The extracts obtained will be analyzed by using HPLC and the biological activity of the extracts will be determined by using disc diffusion method. From HPLC chromatogram analysis, both strains produced new secondary metabolites under the stress media. The extracts produce by both strains show negative antifungal activity against *C.albican* but show some positive antimicrobial activity against *E.coli*

CHAPTER 1

INTRODUCTION

1.1 General introduction

Fungi are one of the important organisms that are available on the earth. Fungi refer to eukaryotic, heterotrophic, and osmotrophic organisms. Most of the fungi reproduced by means of spores. Fungi provide an important part of nature's continuous rebirth as they recycle dead organic matter into useful nutrients (Burnett J., 2003).

Fungi do contribute a lot in human daily activities especially in medical field. Thus, fungi have been a source to produce several drugs for treating various diseases. Filamentous fungi such as *Aspergillus, Fusarium*, and *Penicillium* produce some of the most well known significant microbial natural products. This include pharmaceutically related compounds such as the antibacterial penicillin produced by the *Penicillium chrysogenum*, the cholesterol-lowering mevinolin produced by various *Aspergillus* species, and the antifungal and anticancer compound griseofulvin (Colegate and Molyneux, 2007).