UNIVERSITI TEKNOLOGI MARA

INVESTIGATION OF THE SECONDARY METABOLOME OF FUNGI FROM SVALBARD ISLAND

[USAGE OF EPIGENETIC ELICITOR IN FUNGI CHEMISTRY]

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ABSTRACT

Eight types of psychrophilic fungi were isolated from Svalvard Island, Norway which is in an extreme low temperature those are A2C2, B1C1, C1C2, DICD11, D1CD12, E1C1 and E3CD. These fungi were then undergoing several steps to investigate their secondary metabolites in two different of incubation times as these psychrophilic fungi were capable to grow their secondary metabolites in extreme low temperature. We investigated the secondary metabolites that produced by these fungi in 10°C within two different incubation times of 3 weeks and 5 weeks. These fungi then extracted and the crude extracts were proceeded to HPLC profiling. After comparing each secondary metabolites that were produced by these fungi we found that difference fungi produced their interesting metabolites when grow in low temperature. Further investigation is needed for identification of interesting compound in each secondary metabolites that produced by these fungi.

CHAPTER 1

INTRODUCTION

1.1 Background

Nature of fungi is very important as it gives us a necessity of our daily life. It cleans the air that we breathe and provides us the materials, medicines and foods for our life. This nature of fungi has its own impact and it shows the advantages that should be explored as it is influencing the human life. The developments and improvements of fungi are very useful and provide the significances for the natural product to control the biosynthetic pathways and create new advancements for small molecular discoveries (Williams, Henrikson, Hoover, Lee, & Cichewicz, 2008). Hence, scientists should begin to understand the inner working of human diseases at a molecular level as it may be useful in generating the discovery of new drugs by synthesizing the hidden small molecule in fungi.

Fungi are very talented living that they produce specific small particles which are very important in targeting the secondary metabolite of fungi (Williams et al., 2008). It is a type of heterotrophic and needs the source of organic nutrient to support its biochemical functions (Takahashi, Teles, Bracarense, & Gomes,. 2013.). It is encouraged to express