UNIVERSITI TEKNOLOGI MARA

CO-CULTURE OF FUNGI AND BACTERIA

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ABSTRACT

The aim of this study is to investigate the modulation of secondary metabolism of given the bacteria and fungi. Eleven species of fungi were selected based on their chromatogram profile as showed in the preliminary study. The fungi were GM29, CI08.3, CM01, ME17, GS41, GS38, GM33, GS47, CR25, CM20 and CR15.2. Meanwhile the bacteria were collected from the frezer at RiND which has been identified by the researchers. The bacteria were *Pantoea agglomeraus* (1. Eg. 16), *Klebsiella oxytoca* (10. P1. 3), *Cronobacter sakazakii* (1. Tp. 5), *Pseudomonas putida* (1. Eg. 6), *Bacillus subtillis* (1. B2. 2), *Acinetobacter calcoaceticus* (6. Lc. 4) and *Bacillus cereus* (1.Eg. 17). These fungi were studied for their bio-activities when being cultured together with several species of bacteria in the MTP plate. The MTP plate was incubated for two weeks which later on proceeded with HPLC profiling. Based on the HPLC analysis, it showed that some of the selected fungi have a potential in eliciting the secondary metabolite compounds through the co-culture with bacteria. However the identification of the compounds had not yet completed.

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This chapter provides an introduction for the research. The introduction includes the background of the study, research question, objectives, hypothesis, significance and the limitation of study.

1.2 BACKGROUND OF THE STUDY

The history of drug discovery and development has begun since dawn of human civilization. Initially, drugs were not only used for physical remedies, but also for religious and spiritual healing. Over the centuries, drug discovery mainly originated from the study of organic plant products and also by animal products and minerals. The discovery went through a combination of trial and error experiments and tested on animals and humans to observe the effect.

The development of drugs went through continuous improvement. In late 1800s, the process has started to follow the scientific techniques. Since then more drugs have been discovered and produced at larger scale for manufacturing (Rishton, 2008).In the modern age, the process is subdivided into pre-clinical and clinical components. Compounds with a combination of promising potency and efficacy are tested in pre-clinical disease models. This compound is essential for subsequent cycles of chemical