UNIVERSITI TEKNOLOGI MARA

EFFECTS OF CO-CULTIVATION OF HAB10R12 WITH OTHER MICROORGANISMS ON THEIR SECONDARY METABOLITES PRODUCTION

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Dissertation submitted in partial fulfillment of the requirement for the Bachelor of Pharmacy (Hons)

Faculty of Pharmacy

November 2009

ACKNOWLEDGEMENT

First and foremost, Alhamdulillah, thank you Allah for giving me the chance to conduct this study successfully. With His helps and blessings, I am able to complete this study within the time.

I would also like to express my gratitude to my supervisor, Dr. Sadia Sultan who has been giving me useful advices and guidance throughout this study. Thank you for spending so much time to guide me and for the endless encouragement throughout this study.

I would also like express my gratitude to my co-supervisor, Professor Dr. J.F.F. Weber Abdullah for his advices and guidance throughout this study.

A special thank to Miss Norhasimah Ali @ Yaakob, Mr Zaimi Mohd Nor, and Miss Siti Hajar Sadiran for spending their time to supervise me in the lab to do this study. And also a special thank to the other staffs of IKUS for teaching me a lot.

Last but not least, I would like to say my gratitude to my beloved dad, Tuan Hj Mat Nor Abdullah, and also my mum, Puan Hjh Raguan Rejab, and my family members for their endless love and support. Not to be

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ABSTRACT

Co-cultivation of fungi means cultivation of two different fungi on the same medium. In this study, many different types of fungi had been co-cultivated together in order to determine whether this kind of method could be used to produce unique secondary metabolites that could have importance in the pharmaceutical industry. Previously, it was unknown whether competition has any effects on the production of secondary metabolites. In this study, the fungi were co-cultivated together and they were incubated for 2 weeks and 4 weeks. The co-cultivated fungi were then being extracted and the extract were analyzed by HPLC. The extracts produced were also used in biological activity test against *E.coli* and *Candida albicans*. From the result obtained, there were a few of new peaks obtained in HPLC and there were two distinct extracts which had activity against *E.coli*. These findings indicate that the co-cultivation pf the fungi could be a very promising method for inducing novel secondary metabolites.

CHAPTER 1

INTRODUCTION

1.1 General introduction

In ecosystem, there are various microorganisms that occupy the same habitat and they are coexisting. Microbial interactions can be mutual, parasitic or competitive. According to Wilson (1995), as for endophytes, they reside in the living tissues of the host plant without causing any visible infectious symptoms. This unique mutual relationship between endophytic microorganisms and their host plants is now extensively being stidued (Firáková *et al.*, 2007). This study might give exciting possibilities in pharmaceutical industry since endophytes have emerged as potentially new natural sources of novel bioactive compounds.

1.2 Significance of study

This study is conducted in order to identify whether any modification will occur in the secondary metabolites production of selected endophyte (HAB10R12) after being co-cultivated with the other four strains of fungi (3PR3, MB14, B20, and Seaweed) and a strain of bacteria (*Red actinomycetes*).