

UNIVERSITI TEKNOLOGI MARA

**THE ANTIMICROBIAL ACTIVITY OF
ENDOPHYTES EXTRACT FROM MAS COTEK
(*FICUS DELTOIDEA*)**

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ABSTRACT

This study was done to explore the antimicrobial activity of endophyte extract of Mas Cotek (*Ficus deltoidea*). The high demand of endophyte study has brought this study to investigate the antimicrobial property of Mas Cotek endophytes. The design of this study was successfully divided into four major steps. The first part involves the subculture of the endophytes of *Ficus Deltoidea* plant. The endophytes were labeled as SR4, MR3, MR5, MR11, and BR 12. These endophytes were isolated from the roots of the plant. Then this step is followed by the extraction of the endophyte on the media for two weeks. The next step comprises the antimicrobial activity where the renowned and common technique used for antibacterial susceptibility testing (disk diffusion test) was used to obtain the zone of inhibition of these strains. This antimicrobial activity was tested against selected bacteria and fungi. Remarkably SR4 and MR3 appeared to have a zone of inhibition towards *S.aureus*. The minimum inhibitory concentration (MIC) for the resulting extract was 1.56 mg/ml for SR4 and 4.17 mg/ml for MR3 respectively. The result obtain suggest that SR4 and MR3 need to obtain a high level of concentration before being able to give off the antimicrobial effect.

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CHAPTER 1

INTRODUCTION

1.1 CURRENT CONDITION

Healing power is an ancient idea. The application of many thousands of millions of traditional plants has been exploited in human daily life. Currently, traditional plants have attracted many leading pharmaceutical industry. This has even increased drastically when the findings of antimicrobial properties are found in the plants extracts.

The continual search by both pharmaceutical and agricultural industries for new and natural product has been found to be greater in the combinatorial for discovering novel substances that have the potential to be developed into new industrial products (Schulz et. al., 2005). Basically in today's arena, infectious disease is becoming an increasing trend in the world. It's been said that the scarcity of disease in wild plants indicates that the success of plant defense mechanisms in combating pathogen infection rivals that of mammalian immune system (Kim et al., 2006). The search for novel secondary metabolites should be done with concentrating on organism that inhabits endophytic fungi seeing as the natural products are adapted to a specific function in nature (Schulz et al., 2005).