

UNIVERSITI TEKNOLOGI MARA

**CULTURE OF *PENICILLIUM* SP STRAINS F23
WITH AND WITHOUT DMSO AND ISOLATION
OF ITS SECONDARY METABOLITES**

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Abstract

The study is done to investigate the effect of volatile toxic compound which is Dimethyl Sulfoxide (DMSO) on the production of secondary metabolite of *Penicillium* isolated from soil with DMSO. The study was done by growing the fungi in the presence and absence of DMSO. The cultures were incubated for a two-week period at room temperature and extraction of the fungi metabolites were performed using ethyl acetate. High performance liquid chromatography (HPLC) analysis was performed on the extracts. The chromatograms were compared between samples obtained in the presence and absence of DMSO. 10 peaks that showed higher concentration were collected. The 10 collected peaks will be further studied by post-graduate students to determine the structure elucidation by using various spectroscopy analysis such as Nuclear magnetic resonance (NMR), Liquid chromatography–mass spectrometry (LC-MS) and Infrared radiation (IR).

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Microorganisms possess certain unique features which make them important sources of bioactive natural products. Microorganisms can be classified to two types which are eukaryotes and prokaryotes. Fungi are being categorised under eukaryotes.

Fungi belong to the kingdom of eukaryote and are an immensely diverse group of organisms, encompassing a huge range of forms from microscopic single celled yeasts to large macrofungi. They are mainly multicellular organisms composed of long and thread-like cells that are connected end-to-end called hyphae which in mass constitute the mycelium. Their cell walls are rigid and largely composed of chitin. About 70,000 species of fungi have been described, however, some has suggested that 1.5 million species may exist (Hawksworth et al, 1995). Fungi are non-motile and reproduce by means of spores. Fungi are remarkable organisms that readily produce a wide range of natural products often called secondary metabolites.