

UNIVERSITI TEKNOLOGI MARA

**MALAYSIAN TRADITIONAL HERB:
CYP – HERB INTERACTION
ON CYP1A2 ENZYME**

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ABSTRACT

Malaysian traditional herbs had been observed to be more popular among Malaysian populations. People believe that traditional herbs is more curative than modern medicine without notice that herbs also contains constituents that can undergo some effect on metabolizing enzyme inside human body. This experiment will evaluate the interactions of 56 species of Malaysian traditional herbs with CYP1A2 enzyme. In human liver, CYP1A2 enzyme consists of about 10–15% of the total CYP content of human liver. This assay had used Vivid[®] CYP450 Screening Kits which designed to assess metabolism and inhibition of the predominant human P450 isozymes involved in hepatic metabolism. By using this kits, interactions of 56 species of Malaysian traditional herbs, α -naphthoflavone (positive control) and dimethyl sulfoxide, DMSO (solvent control) at CYP1A2 enzyme were analyzed through intensity of fluorescent. Based on this study, it is showed that DMSO (solvent control) has higher fluorescent intensity. This means that it has no inhibition at CYP1A2 enzyme. A-naphthoflavone (positive control) had showed inhibition at CYP1A2 enzyme as low fluorescent intensity was observed. Meanwhile, among 56 species of these Malaysian traditional herbs, 18 samples of these herbs, including misai kucing, pegaga, pinang and tongkat ali had showed positive inhibition at CYP 1A2 enzyme.

CHAPTER 1

INTRODUCTION

1.1 Research background

Herbs are plant-derived materials that have been used for thousands of years to improve human health. Some parts of the plant can have show the beneficial usage, like senduduk, its root, fruit and even its leaves can have their own usage toward the human health (Hanum and Hamzah 1999). Herbs had been used as a medicine treatment or therapy for human's health from a long time ago. People had relied on natural plants for curing the simplest illness like cough, headache and sore throat until the chronic conditions like malaria and tuberculosis (Chevallier, 2001).

Malaysian herbs had already being used traditionally from about decades ago. According to Hanum and Hamzah (1999), they found that the parts of leaves on roots and bark of Putat was used for itch and chicken pox, meanwhile fruits of Senduduk can be used to treat small wound. Others, Halia bara also was used to treat stomach-ache, rheumatism and headache.

The cytochromes P450 (CYP) are a superfamily of heme-containing enzymes that are involved in the metabolism of the majority of drugs on the market today. CYP3A4/5, CYP1A2, CYP2C9, CYP2C19 and CYP2D6 are major CYP enzymes that play a role in