

UNIVERSITI TEKNOLOGI MARA

**MALAYSIAN TRADITIONAL HERBS:
CYP-HERB INTERACTION FROM THE
PERSPECTIVE OF CYP3A4 INHIBITION**

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ABSTRACT

The use of vitamins and herbal supplements has spread over the nation vastly among the population, with the primary factor being to manage the side effects of drugs or to improve overall physical and mental health. The active ingredients of a single herb may exhibit some degree of pharmacological effects, which may be the inhibitory or inducing to the chemical components of an allopathic medicine (Miller, 1998). The purpose of the study is to identify potential herb-drug interactions between 56 local herbs and allopathic medicines by looking at the activity of cytochrome P450 3A4 (CYP3A4). This study was conducted on 56 Malaysian traditional herbs using Invitrogen CYP3A4 Screening Kit (Invitrogen Corp., USA). Data were gathered and analysed, from the results obtained, it was found that 17 herbs showed positive inhibition on CYP3A4 activity, while 49 herbs showed no inhibition towards the activity of CYP3A4. The study also revealed that positive inhibition of CYP3A4 activity may consequently affect the metabolism of concomitant drug intake which are the substrates of CYP3A4 and may cause prolonged effect of drug and also drug-induced toxicity. Based on the study some recommendations on further assessment of the herbs are put forward in the final section of this paper.

CHAPTER 1

INTRODUCTION

The use of vitamins and herbal supplements has spread over the nation vastly among the population, with the primary factor being to manage the side effects of drugs or to improve overall physical and mental health. Saint John's wort (*Hypericum perforatum*) is popular among the HIV patients to overcome the depression (Madabushi et al., 2006), while *ginkgo biloba* is the top choice among the elderly to help cope memory loss (Miller, 1998).

A finding by Pal and Mitra (2006) tells that herbs are very often self-administered concomitantly with therapeutic drugs. Such concomitant use of herbal supplements with allopathic medicines happens because herbs are generally considered as traditional health aid which does not require stringent preclinical and clinical assessments by appropriate regulatory agencies. Consumption of these herbal supplements may be due to the thought of herbal supplements being free from side effects and drug interactions, solely because these products originated from the nature.