

UNIVERSITI TEKNOLOGI MARA

**SUBACUTE TOXICITY STUDY OF
Hibiscus rosa-sinensis L. LEAVES WATER EXTRACT
IN BALB/c MICE:
BIOCHEMICAL ANALYSIS ASSESSMENT**

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ABSTRACT

Hibiscus rosa-sinensis L. is a plant which has been studied for its pharmacological used for a variety of treatment. However, evidence in safety of consumption of this plant is still lacking. This study aimed to investigate the subacute toxicity of *H. rosa-sinensis L.* Leaves water extract in BALB/c mice by biochemical assessment as per OECD 407 guidelines. In subacute toxicity study, the extract was dosed at 50, 300 and 2000 mg/kg in both genders for 28 days in 24 mice. Six mice per group consist of three female and three male. For the control group, tap water was given. After 28 days of treatment, the body weights increased in all experimental groups, while for the food consumption was approximately same taken by all the groups within the 28 days. There was no significant different in body weight gain and the food consumption between all groups. Biochemical analysis of hepatic enzymes showed no significant different in aspartate transaminase (AST) and alanine transaminase (ALT). In conclusion, the result indicates no toxicity observed. It suggests that repeated administration of *H. rosa-sinensis* leaves water extract to the highest dose 2000 mg/kg is safe to consume orally by mice for 28 days.

CHAPTER 1

INTRODUCTION

1.1 Background of study

Source of medicine can come from natural, semi-synthetic and synthetic products. The use of natural products that contain therapeutic elements are already practiced for a long time. Mineral, plant and animal products are the main sources of drugs. A remarkable number of drugs have been derived from natural source, about 25% of the drugs prescribed worldwide come from plants (De Pasquale, 1984).

In recent decades, there has been a growing interest in alternative treatment and the use of natural products with therapeutic properties, especially from plant-derived natural products (Goldfrank, 1989). There is an interest in plant origin drugs is due to conventional medicine inefficiency, misuse of synthetic drugs and no access to conventional pharmacological treatment by some large world's population (Rates, 2000). Malaysia is a developing country in Southeast Asia region which blessed with rich in biodiversity that can lead to complement the herbal treatment needs. *Hibiscus rosa-sinensis* L is a decorative plant often a hedge or fence plant that can be found widely in Malaysia. This plant has varying colours of flowers. This is a national