UNIVERSITI TEKNOLOGI MARA

SUB-ACUTE TOXICITY OF *EUGENIA POLYANTHA*

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ABSTRACT

The sub-acute toxicity of the aqueous extract of *Eugenia polyantha* (Myrtaceae) was studied in mice. In sub-acute toxicity studies, oral administration of 0.5 g/kg of *Eugenia polyantha* produced neither mortality nor changes in behaviour or any other physiological activities. No mortality was observed when a dose of 0.5 g/kg/day of aqueous extract of *Eugenia polyantha* extract were administered orally for a period of 28 days. In the blood chemistry analysis, no significant changes occurred in creatinine, blood urea nitrogen (BUN), aspartate transaminase (AST), alanine transaminase (ALT), total billirrubin, cholesterol, low density lipoprotein (LDL), triglycerides, cholesterol, creatinine kinase, total prothrombin and uric acid. Hematological analysis showed no differences in any of the parameters examined: white blood cell count (WBC), red blood cell count (RBC), haemoglobin concentration, mean corpuscular volume (MCV), mean corpuscular hemoglobin concentration (MCHC), neutrophils, lymphocytes, monocytes, eosinophils, basophils and thrombin in either the control or treated group. There were no significant difference in TBARS values in lung, liver, heart and kidneys of the mice in both control and treated groups. There were no significant differences in the body weight and relative organ weights between controls and treated animals.

Keywords: Eugenia polyantha; Sub-acute toxicity; 4-weeks oral administration; blood chemistry analysis; haematological analysis; TBARS analysis; Mice

CHAPTER 1

INTRODUCTION

Eugenia polyantha, known locally as daun salam, belongs to the Myrtaceae family (W.C. Evans) and is placed within the order Myrtales (Christophe Wiart). Other common names include daun salam, kelat samak, or serah (Malay); daeng klua, dokmaeo, mak, or proh hom (Thai); Indonesisch laurierblad (Dutch); manting (Indonesian); san thuyen (Vietnamese). Indian bay leaf: Cassia leaves; cinnamon leaves; laurier des Indes (French); talishapattiri (Tamil); tamaal patra (Gujarati); tejpat (Hindi); thitchabo (Burmese) (http://www.quirkbooks.com/). The trees grow widely in the tropics and subtropics, including Southern Asia and China and are distributed in different areas, either in high or low lands (Mardisiswojo dan Radjakmangunsudarso, 1968; Heyne, 1987). The trees are woody and have spots of black colour at the back of its leaves, with white flowers (Kamarudin Mat-Salleh, A. Latiff). In Malaysia, *Eugenia polyantha* can be found in Melaka, Pahang, Selangor, Ulu Perak, and Kedah (Kamarudin Mat-Salleh, A. Latiff). In Indonesia, *Eugenia polyantha* commonly grows in the high lands, but some people tend to grow it themselves as shelters from hot weathers (Mardisiswojo dan Radjakmangunsudarso, 1968; Heyne, 1987). *Eugenia polyantha*, in addition to providing shelter, is also used for treatment of diarrhoea, stomach ache and nausea (Mardisiswojo dan Radjakmangunsudarso, 1968; Heyne, 1987). *Eugenia polyantha* is commonly used as a spice in Indonesian curries to impart a unique flavour (Charmaine Solomon's Encyclopaedia of Asian Food).