

UNIVERSITI TEKNOLOGI MARA

**EFFECTS OF INDIGENOUS PLANT *EUGENIA*
POLYANTHA EXTRACT ON BLOOD
PARAMETERS IN RATS**

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TABLE OF CONTENTS

	Page
TITLE PAGE	
APPROVAL FORM	
ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF ABBREVIATIONS	vii
ABSTRACT	viii
CHAPTER ONE (INTRODUCTION)	1
CHAPTER TWO (LITERATURE REVIEW)	4
2.1 Medicinal plants	4
2.2 Plant description	4
2.2.1 Morphology	4
2.2.2 Plant distribution	5
2.3 Chemical constituents	5
2.4 Medicinal uses	6
2.4.1 Hypoglycemic effect	6
2.4.2 Antinematodal activity	7
2.4.3 Anti-tumor promoting activity	7
2.4.4 Other uses of <i>Eugenia polyantha</i>	8
2.5 Toxicology studies	8
2.5.1 Acute toxicity	9
2.5.2 Subacute toxicity	9
2.6 Hematology parameters	9
2.6.1 Red blood cell	10

ABSTRACT

Eugenia Polyantha (EP) belongs to *Myrtaceae* family that is widely distributed in Burma, Indo-China, Thailand, Malaysia, and Indonesia (Java, Sumatra, and Kalimantan). It is known for its traditional uses amongst Indonesians in the treatment of high cholesterol, diabetes, high blood pressure, stomach disorder, and diarrhea. There are studies which reported on its hypoglycemic effect, antiparasitic activity and anti-tumor promoting activity. The leaves is said to contain essential oils, flavonoids, tannins, saponin, steroid, terpenoid and alkaloids. This study was to conduct an acute toxicity test and a subacute toxicity test to identify the effects of *Eugenia polyantha* extract on the blood parameters in rats. Mortality and clinical signs of toxicity were also monitored. In the acute toxicity study no changes in the blood parameters were observed. Neither mortality nor toxicity effect were observed. In the subacute study, some mortality and signs of mild toxicity were observed in treated rats. The differential count of lymphocytes was significantly increased, while that of neutrophils was significantly reduced in the treatment group. This represented a shift in the immune response. Significant increase in ALT and significant decrease in albumin level in the treatment group could suggest impairment of liver function. In conclusion, the acute dose of *Eugenia polyantha* extract did not result in changes in the blood parameters and no clinical signs of toxicity were observed. However, the subacute dose did result in mortality, a shift in the response of the immune system and impairment of liver functions.

CHAPTER 1

INTRODUCTION

Approximately sixty to 80 percent of the world's population still depends on traditional medicines for the treatment of common ailments and diseases. In the past, the medicinal values of herbs were based on tradition and accidental discovery. There are many herbal preparations that are safe and may help ease minor ailments. A few are potent and dangerous to use. Some medicinal plants that are widely available are not to be taken internally because the safety of their prolonged use is still not defined.

A wide range of herbs has been used in traditional medicines. There has been an unfortunate tendency to consume these herbs regularly and this over-frequent use can result in serious unwanted side effects as herbs may contain pharmacologically active compounds of great potency and toxicity. This is where studies to document a herb's toxicity are important in order to detect its potential toxicity and the harm it can cause in its usage as a traditional medicine.