



اَللّٰهُمَّ صَلِّ وَسَلِّمْ وَبَارِكْ وَسَلِّمْ
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**EVALUATION OF WOUND HEALING ACTIVITIES BETWEEN
MELASTOMA MALABATHRICUM LEAVES EXTRACT AND
CHROMOLAENA ODORATA LEAVES EXTRACT IN MALE *SPRAGUE
DAWLEY* RATS**

By

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DECLARATION

I hereby declare that this thesis is my original work and has not been submitted previously or currently for any other degree at UiTM or any other institutions.

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ABSTRACT

Melastoma malabathricum and *Chromolaena odorata* are traditional remedies used by Asian, generally to heal the wound. To date, no data on comparison of percentage wound healing between *Melastoma malabathricum* leaves extract and *Chromolaena odorata* leaves extract been studied. Current study was designed to compare wound healing activities between *M.malabathricum* leaves extract and *C.odorata* leaves extract *in vivo*. Phytochemical analysis for both herbal plants also had been done by using methanol solvent to determine concentration of flavonoid and tannin. Sixteen male *Sprague dawley* rats used as excisional wound model and wound was created with area 4cm² on their dorsal by using scalpel after acclimitized for two weeks. They were divided to four groups whereby each group was gave different treatment that were group I: gentamicin cream, group II: 10% *Melastoma malabathricum* ointment, group III: 10% *Chromolaena odorata* ointment and group IV: vaseline and in three days interval until fifteenth day percentage of wound area was measured and calculated. *M.malabathricum* leaves extract consist higher concentration of flavonoids and tannins compare to the *C.odorata* leaves extract and visually, *M.malabathricum* leaves extract accelerate wound healing faster than *C.ododrata* leaves extract, as the concentration of flavonoids and tannins were high. Statistically the result was not significant. In conclusion, *M.malabathricum* leaves extract and *C.odorata* leaves extract do show potential asset that can be used for development of alternative remedy.

Keywords: *Melastoma malabathricum*, *Chromolaena odorata*, wound healing, phytochemical analysis.

CHAPTER 1

INTRODUCTION

Wound can be defined as an injury to the skin due to cut, blow or others impact where by cause occurrence damage to the normal anatomical structure of living tissue and their function. Injury to the cell will cause the regenerate and repair of damage tissue. Generally, wound healing process take long time to repair by itself.

Numerous studies has been conducted to investigate effect of wound activity by using several remedies such as *Aloe vera*, *Azadirachta indica*, *Lantana camera*, *Chromolaena odorata*, *Melastoma malabathricum*, *Curcuma longa L.*, *Centella asiatica* and etc (Ukwueze, *et al.*,2013).However the most herbal plant used to heal the wound among Asian are *Melastoma malabathricum* and *Chromolaena odorata*.

In Malaysia, *Melastoma malabathricum* is one of the 12 species of Melastomataceae family used as remedy (Joffry, *et al.*,2012). *Melastoma malabathricum* is a small tree belongs to Melastomaceae family and known as Senduduk (Karupiah & Zhari, 2013). Based on the Rizal, *et al.*, (2014) stated that *M.malabathricum* is a traditionally medicine that commonly used by Asian to heal the minor wound. Other than that, it can also use as anti-inflammatory, antidiarrheal cytotoxic and anti-oxidant activities to treat diarrhoea, dysentery, haemorrhoids and toothache (Joffry, *et al.*,2012). This plant has potential to treat several disease because of its phytochemical components (Nurdiana, & Marziana, 2013).

Chromolaena odorata is also used by Malaysian as traditional medicine to treat several of disease.*Chromolaena odorata* is a remedy from Asteraceae family that is sunflower family (Chakraborty, *et al.*,2011).Commonly in tropical countries, this plants called as Siam weed, Christmas Bush, and Common Floss Flower but in Malaysia, it known as Kapal terbang leaves. It has been used in many tropical countries traditionally to treat variety of disease, especially in wound healing (Pandith, *et al.*,2013). Many researchers have investigated that *C.odorata* extract