



**ANTIDEPRESSANT-LIKE EFFECTS OF *Centella asiatica* (PEGAGA) FRESH  
EXTRACT ON DEPRESSION-INDUCED 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 degree at UiTM or any other institutions.

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## ABSTRACT

### ANTIDEPRESSANT-LIKE EFFECTS OF *Centella asiatica* (PEGAGA) FRESH EXTRACT ON DEPRESSION-INDUCED RATS

*Centella asiatica* is an herbaceous plant from family of Apiaceae which has been used worldwide as medicine and consumed as traditional vegetables. *Centella asiatica* is reported to be useful for medicinal used such as memory enhancement, antidiabetic, antioxidant and antitumor. However, there is lack of studies done on effect of fresh *Centella asiatica* extract as an antidepressant agent with two types which are small type and big type. Therefore, this study was conducted to determine the antidepressant-like effect of fresh *Centella asiatica* (small type and big type) extract on depression induced rats in tail suspension test (TST) and forced swimming test (FST) through 14 days of orally administration. 42 male Wistar rats were divided into four groups (one control group and three treatment group) with six rats in each group for both types of *Centella asiatica*. All groups were kept under similar condition. Fresh *Centella asiatica* extract were prepared in doses of 50, 100 and 200 mg/kg and administered orally for 14 consecutive days. Control group were being administered with distilled water. At the end of experiment, behaviour studies of rats models were observed. All three doses of fresh *Centella asiatica* extract for both types in treatment group (50 mg/kg, 100 mg/kg and 200 mg/kg) were significantly reduced in immobility time in TST and FST as compared to the control group. However, the swimming and climbing duration for both types are significantly decreased as compared to control group which could provide false positive result in FST due to several factors such as depth of water level, strain of the animals and height of the tank. In a conclusion, *Centella asiatica* (small type and big type) may possess antidepressant properties and can be used for anti-stress supplement.

**Keyword:** *Centella asiatica*, antidepressant, depression

# CHAPTER 1

## INTRODUCTION

### 1.1 Research Background

#### 1.1.1 General story about plant

Recently, people worldwide including Malaysian using numerous herbal plants as an alternative and complementary medicine. This is because plants are believed to prevent and cure various disease among people. Many countries such as Egypt, China and India using herbaceous plants as the main basic in traditional medicine (Saha *et al.*, 2013). People tend to use natural products as curing agent for various disease since synthetic drugs may cause adverse effects to health.

Most world health market nowadays also using herbaceous plants as the source of ingredients in producing health care products as they believed that the secondary metabolites from the plants have benefits in health care since they are important source of various phytochemicals (Joshi & Chaturvedi, 2013). Most herbaceous plants were being consumed as traditional vegetables and people in Malaysia used some famous plants such as *Centella asiatica* or pegaga, garlic, ginger, *Aloe vera* and other as a medicine to treat any disease. Apart from that, herbaceous plants can also been used as a supplement for beauty care, memory enhancement, emotion, fertility or any related problem. World Health Organization (WHO) estimated that 80% of world population depend mainly on traditional medicine for the primary health care (Saha *et al.*, 2013).