

UNIVERSITI TEKNOLOGI MARA

**EFFECTS OF AQUEOUS *Myrmecodia platytyrea* EXTRACT ON  
ACTIVITY OF BRAIN ACETYLCHOLINESTERASE IN  
SWISS MICE.**

**NURUL HAFIZA BINTI MOKHTAR**

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## ABSTRACT

*Myrmecodia platytyrea* is locally known as “pokok sarang semut”. It is believed to have antioxidant properties. This research was conducted in order to check the potential of *Myrmecodia platytyrea* in reversing galactose-induced neurodegeneration. In this research, over a treatment period of 21 days, mice were randomly divided into six groups (each consists of 6 animals). They were given different types of treatments. Group 1 which acts as vehicle control were administered 0.9% normal saline subcutaneously, group 2 were administered 500 mg/kg of *Myrmecodia Platytyrea* per oral, group 3 were administered D-galactose subcutaneously and 500 mg/kg of *Myrmecodia Platytyrea* per oral, group 4 which acts as negative control were administered D-Galactose subcutaneously, group 5 which acts as positive control were administered vitamin C per oral and group 6 were administered D-Galactose with vitamin C. After completing the treatment period, all of the mice were be sacrificed, brain tissue collected and AChE test was done in order to check the AChE activity in all groups of mice. All the data were statistically analyzed by using turkey comparison tests. The results show that  $p > 0.05$  between all groups of mice. This indicated that the levels of Acetylcholinesterase activity in all six groups of mice are not statistically different.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the study

Alzheimer disease is a fatal progressive neurodegenerative illness and the most common form of dementia. Alzheimer disease, front temporal dementia, dementia with Lewy bodies, and dementia in Parkinson disease are the four most common neurodegenerative disorders that have different underlying etiologies and pathogenetic mechanisms (Kadir and Nordberg , 2010). The prevalence of dementia is increasing affecting the lives of millions of people across the regions. Alzheimer's disease patients worldwide will increase from 26.6 million in 2006 to 106.8 million in 2050 (Kadir and Nordberg , 2010).

This disease largely affects older people aged more than 65, but there are approximately 2% of younger patients who experienced this disease. After the age of 65, the overall prevalence for males and females doubles for every five years increase in age (Akter et al., 2012).

The accumulation of beta ( $\beta$ )-amyloid is related to the pathogenesis of Alzheimer's disease. In neuronal cell,  $\beta$ -amyloid induces oxidative damage. This damage is due to the oxidative stress which occurs when there is an imbalance between antioxidants