

UNIVERSITI TEKNOLOGI MARA

**ASSESSMENT OF FREE RADICAL AND NITRIC
OXIDE SCAVENGING ACTIVITIES OF BACOPA
MONNIERI EXTRACT**

ANIS NADHIRA BINTI AZIRAM

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ABSTRACT

Bacopamonnier is a plant with many benefits. *B.monnier* has been known as antioxidant that is used for memory enhancer, improve learning ability and showed improvements in neurodegenerative disease such as Alzheimer's disease. Its ability to scavenge free radical made it so well known as antioxidant. To detect the free radicals scavenge activity by *B.monnier*, 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay was conducted. Moreover, additional evaluation was also conducted to determine nitric oxide scavenge activity of *B.monnier* by using nitric oxide scavenging assay (NO) assay. These results demonstrated that inhibition for both free radicals and nitric oxide by *B.monnier*.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

1.1.1 *BACOPA MONNIERI*

Bacopa monnieri or also known as Brahmi is a plant has been used in ayurvedic medication for decades. This plant is very popular because their effects in enhancing brain function. Several studies has been conducted and proved the beneficial effects of *B.monnieri*. It extensively used for treatment of epilepsy, insomnia, anxiety and memory enhancer and displays antioxidant, anticonvulsive and memory enhancer in most experimental animals. The major constituents in *B.monnieri* such as alkaloids, saponins, sterols and bacosides have roles in pharmacological effects. For example, bacosides A can alleviate amnesic effects of scopolamine in mice which prevent amnesia or loss memory(Shinomol & Muralidhara, 2011). Besides that, bacosides also has been reported in repairing neurons damage by enhancing kinase activity

B.monnieri is very well-known for their antioxidant properties and a study has shown that *B.monnieri* may offer protection from free radicals damage and alleviate oxidative stress in flies. Phytochemicals present in *B.monnieri* including alkaloids, saponins, sterols and bacosides act as effective antioxidant(Subramanian, Prasanna, Jayapalan, Abdul Rahman, & Hashim, 2014). *B.monnieri* may able suppress oxidative