

UNIVERSITI TEKNOLOGI MARA

**EVALUATION OF *MITRAGYNA SPECIOSA*
ANALGESIC ACTIVITY IN MICE**

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ABSTRACT

The leaves of *mitragyna speciosa* (Rubiaceae) have been traditionally used as substitute for opium. Mitragynine is a major alkaloid constituent that is known to produce opioid like action when smoked, chewed or drunk. This study is done to evaluate analgesic properties of *mitragyna speciosa* in mice. Investigation of the antinociceptive activity of intraperitoneal (i.p) injection of saline, *Mitragyna speciosa* extract (15mg/kg, 25mg/kg and 35mg/kg) and acetaminophen (35mg/kg) was done by using hot-plate test. The mice was placed on a metal plate maintained $55 \pm 0.5^{\circ}\text{C}$ and latency to show nociceptive responses such as hind paw licking, hind paw flicking or jumping was measured 5 minutes prior dosing and every 10 minutes over 80 minutes after dosing. *Mitragyna speciosa* showed increase in latency reaction compare to saline (control). However the results were not statistically significant .The test did not exhibit a dose dependent pattern. The latency time of mitragyna speciosa 15mg/kg was longer than *Mitragyna speciosa* 35mg/kg. *Mitragyna speciosa* may be a potential new analgesic. Nevertheless further studies need to be carried out in future to more understand its pharmacological properties.

CHAPTER 1

INTRODUCTION

1.1 Introduction

The definition of pain, according to the International Association for the Study of Pain (IASP), is “an unpleasant sensory and emotional experience associated with actual or potential tissue damage and described in terms of such damage. It can be divided into two types, acute pain and chronic pain. Acute pain serves as a warning system to remove oneself from particular pain stimuli. Chronic pain can exist for undefined times and undefined reasons and seems to serve no clear purpose. Treatment of chronic pain is a major problem due to the use of available medications and their undesirable side-effect profiles. The side effects of currently used pain medications vary based on the class of agent used however, most medical personnel are concerned with addiction, tolerance, gastrointestinal effects, and abuse (McCurdy et al., 2005).

Pain management generally benefits from a multidisciplinary approach- pharmacological measures, non-pharmacological measure and psychological measures. In pharmacological measures have two classes of analgesics uses- non opioid i.e. acetaminophen and NSAID and opioids i.e. morphine and heroin, both of these classes have critical liabilities and limitations.