

**UNIVERSITI TEKNOLOGI MARA**

**ANTI-STRESS ACTIVITIES OF ACACIA HONEY  
ON CHRONIC UNPREDICTABLE MILD  
STRESSED ANIMAL MODEL**

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## **ABSTRACT**

The effects of Acacia honey as an anti-stress were evaluated using Chronic Unpredictable Mild Stress (CUMS) method on 12 male Sprague Dawley rats. The rats were randomly divided into 3 groups with 4 rats per group. Rats were given treatment with Acacia honey orally before inducing stress. In CUMS, rats were induced with variety types of stressors which include food and water deprivation, overnight illumination as well as swimming in cold water. These stressors were given randomly each day for 28 days. Anti-stress activities of Acacia honey were evaluated based on rats physical and behavioral changes. Physical changes that were evaluated include weight changes and food intake. Behavioral analysis of rats were conducted using Anymaze software. The parameters include number of grooming, climbing, mobility and immobility. As the result, stressed group treated with Acacia honey have an increase open field test activities as well as have a better food efficiency in term of sustained weight increase. This shows that Acacia honey could alleviate stress disorder.

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Background of Study**

Stress related disorders in today's community, increase day after day as this disorder affects human attitudes, behavior and also their interpersonal relationship. In Malaysia, 5% of the population are having mental illness in which a third of them were caused by stress disorder (Institute for Public Health, 2011). Stress is defined as the body reaction towards the changes that require physical and mental response and is usually associated with variety of ailments (Laal, 2013). Stress is largely regulated by a region near the brain stem which is recognized as limbic hypothalamic system (LHS) that deals with emotional memory and the hypothalamus, which influence the metabolic process of body system (Patching & Best, 2014). Stressors may trigger a neuronal, endocrine as well as behavioral responses that promote body homeostatic adaptation to threatening conditions (Enman, Sabban, McGonigle, & Van Bockstaele, 2015). Thus, managing stress is important, which can be managed by using therapeutic and non therapeutic strategies rather than just one strategy (Laal, 2013). One of the alternative that can be used to treat stress besides medication and health supplement is by using natural product such as honey which have many nutritional value and suitable for medication (Bogdanov, 2014).