

# **Histopathologic changes in liver and kidney tissue from chronic unpredictable mild stress-induced stress-depression male Sprague-Dawley rats supplemented with Acacia honey**

## **ABSTRACT**

Stress-depression disorder comprised of 29 % and 12 % among adults and children in Malaysia, respectively. It involves a series of pathological stages associated with weight loss and anhedonia. Previous studies on stress-depression model mainly focused on changes at molecular level. Therefore, this study aims to investigate the sucrose preference activity, body weight changes and histopathological changes in kidney and liver of stress-depression disorder induced-rats by chronic unpredictable mild stress (CUMS) model supplemented with acacia honey (AH). Eighteen male Sprague-Dawley rats were divided into three groups [(1) normal control (NC), (2) CUMS-induced stress-depression and (3) CUMS supplemented with AH] and were subjected to sucrose preference test (SPT). The body weight was recorded weekly whereas the liver and kidney were collected at the end of the experiment. The results showed CUMS-induced stress-depression rats ( $28.60 \% \pm 1.86$ ) had a significant decrease in the percentage of body weight whereas CUMS supplemented with AH demonstrated no significant changes ( $31.34 \% \pm 1.88$ ,  $p > 0.05$ ) compared to NC ( $38.60 \% \pm 2.67$ ). SPT demonstrated a significant increase in the sucrose preference ratio for CUMS supplemented with AH group ( $83.67 \% \pm 1.20$ ) compared to CUMS-induced rats ( $44.33 \% \pm 12.17$ ). CUMS-induced rats had abnormal histopathology for kidney and liver compared to NC and AH supplemented groups. In conclusion, AH improved body weight, sucrose preference ratio and protect the liver and kidney of the stress rats against abnormal histopathological changes.

**Keyword:** Acacia honey; Histopathology; CUMS-induced stress-depression mode