ANTIOXIDANT AND ANTIDIABETIC PROPERTIES OF *TAMARINDUS INDICA* LEAF ETHANOLIC EXTRACT FROM MALAYSIA

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Abstract. *Tamarindus indica* (*T. indica*; Family Leguminosae) is widely used in various traditional medicine and food preparations. Antioxidant and antidiabetic activities of *T. indica* leaf extracts from Malaysian macerated (TIME) and Soxhlet (TISE) were investigated. In TIME and TISE, total phenolic (TP) content was 1.80 mg gallic acid equivalent (GAE)/g and 1.01 mg GAE/g respectively, and total flavonoid (TF) content 1.44 mg rutin equivalent (RUE)/g and 1.04 mg RUE/g respectively. TIME was selected for further studies due to its higher TP and TF contents. Using 2,2-diphenyl-1-picrylhydrazyl and 2,2′-azino-bis-3-ethylbenzothiazoline-6-sulphonic acid radical scavenging assays, TIME radical scavenging capacity was 1.42±0.3 μg/ml and 1.62±0.66 μg/ml, respectively; and employing α-amylase and α-glucosidase inhibition assays, TIME *in vitro* antidiabetic ability was 2.24±0.07 μg/ml and 2.26±0.07 μg/ml. Acute oral toxicity study in rat revealed TIME was safe up to 2,000 mg/kg body weight (BW), and treatment with 200 mg/kg BW TIME significantly lowered elevated blood glucose levels to those of glucose-loaded normoglycemic and streptozotocin-induced diabetic rats. The results suggest TIME from Malaysia has therapeutic potential as a natural product antioxidant and antidiabetic.

Keywords: *Tamarindus indica*, antidiabetic, antioxidant, polyphenol, streptozotocin

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