

Effect of dietary supplementation of Padauk (*Pterocarpus soyauxii*) leaf on high fat diet/streptozotocin induced diabetes in rats' brain and platelets

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Abstract

Background

This study investigated the effects of Padauk leaf on brain [malondialdehyde](#) (MDA) content, [acetylcholinesterase](#) (AChE) activities, ectonucleotidases and [adenosine deaminase](#) (ADA) activities in the platelet of [high fat diet](#) and [streptozotocin](#) (STZ)-induced diabetic rats.

Methods

The animals were divided into six groups ($n = 7$): normal control rats; diabetic rats + high fat diet (HFD); diabetic rats + HFD + [Metformin](#); diabetic rats + HFD + [acarbose](#); diabetic rats + HFD + 10% Padauk leaf; normal rats + basal diet + 10% Padauk leaf. After 30 days of experiment comprising of [acclimatization](#), dietary manipulation, pre-treatment with STZ and supplementation with Padauk leaf, the animals were sacrificed and the rats' brain and blood were collected for subsequent analysis.

Results

The results demonstrated that the elevated MDA content and AChE activity in the diabetic rats were significantly reduced when compared with the control rats. Furthermore, the increased NTPDases, [5'-nucleotidase](#) and ADA activities in the diabetic rats were significantly reduced when compared with the control rats.

Conclusion

This study demonstrated that Padauk leaf exhibited modulatory effects on purinergic and **cholinergic** enzymes involved in the prevention of platelet abnormality and consequent vascular complications in diabetic state.

Keywords: Padauk leaf, Diabetes mellitus, Cholinesterases, Ectonucleotidases
Adenosine deaminase

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