

ABSTRACT

**THE EFFECTS OF *CURCUMIN* ON THE LEVEL OF GSH AND GSSG ON
THE LENS OF HYPERGLYCEMIA MODEL RATS
(Experimental Research On Wistar Rats)**

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Objective : To evaluate the effect of curcumin on the level of reduced glutathione (GSH) and oxidized glutathione (GSSG) on the lens of diabetic model rats.

Methods : Forty five Wistar rats were selected and divided into 3 groups. Control group (group I) received only vehicle, group II was induced diabetic by streptozotocin (45 mg/kg body weight) in a single intraperitoneal injection and group III was induced by streptozotocin then the rats were treated by orally administration of curcumin suspension (1 g/kg body weight) for 6 weeks. At the end of 6 weeks, rats were killed and components involved in the diabetic cataract such as GSH and GSSG were investigated in the lens extracts. Blood glucose, body weight and lens weight were also determined.

Result : The result of the statistical analysis showed that with the administration of curcumin there is an increase of GSH level in group III compared with group II, although it was not significant ($p=0.374$). The administration of curcumin lowered significantly GSSG in group III compared with group II ($p=0.05$).

Conclusion : Based on the above results, it may be concluded that the administration of curcumin may reduced oxidative stress caused by hyperglycemia induction due to the changes on antioxidant activities such as GSH and GSSG.

Keywords : reduced glutathione, oxidized glutathione, curcumin, diabetic cataract, streptozotocin