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### INHIBITORY ACTIVITY OF FLAVONOIDS ON THE LENS ALDOSE REDUCTASE OF HEALTHY AND DIABETIC RATS

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#### Abstract:

Aldose reductase is a critical enzyme in the polyol pathway that plays an important role in diabetes mellitus. Inhibition of the activity of this enzyme can prevent cataract in diabetic patients' lenses. In this study the inhibitory effect of two flavonoids, quercetin and naringin, in the activity of aldose reductase in streptozotocin-induced diabetic and healthy rats were investigated. Thirty male rats were divided in six groups. The first, second and third group were healthy rats that received water, quercetin and naringin, respectively. The fourth, fifth and sixth groups were streptozotocin-induced diabetic rats that received water, quercetin and naringin, respectively. These rats were fed orally in a definite dose from each substance for 12 days. After this period rats were sacrificed and their lenses were separated and homogenized. The activity of aldose reductase was measured in each homogenized sample separately. The effect of feeding of these substances in blood sugar was also determined. Aldose reductase activity was reduced 73 and 69 percent in diabetic rats fed by quercetin and naringin, respectively, and the difference compared to control group was significant. In healthy rats this reduction was 63 and 59 percent, respectively, and the difference was significant compared to those who did not receive flavonoids. It was concluded that these substances were effective in reduction of aldose reductase activity in vivo and consequently could delay the progress of cataract.

#### Keywords:

[naringin](#) . [quercetin](#) . [aldose reductase](#)

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