

## Activity of Resveratrol on the Influence of Aflatoxin B1 on the Testes of Sprague Dawley Rats

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**Abstract :** Twenty-eight male Sprague Dawley rats (aged 3 months) were used in the study. The animals were given feed and water as ad libitum. Sprague Dawley rats were randomly divided into 4 groups as 7 rats in each group. Aflatoxin B1 (7.5 µg/200 g), resveratrol (60 mg/kg) was administered to rats in groups other than the control group. At the end of the 16th day, blood, semen and tissue specimens were taken by decapitation under ether anesthesia. The effects of aflatoxin B1 and resveratrol on spermatological, pathological and biochemical parameters were determined in rats. When we evaluate the spermatological parameters, it is understood that resveratrol has a statistically significant difference in terms of sperm motility and viability (membrane integrity) compared to the control group and aflatoxin B1 administration groups, indicating a protective effect on spermatological parameters (groups: control, resveratrol, aflatoxin B1 and Afb1 + res; respectively, values of motility: 71,42 ± 0,52b, 72,85 ± 1, 48c, 60,71 ± 1,30a, 57,14 ± 2, 40a; values of viability: 63,85 ± 1,33b, 70,42 ± 2,61c, 55,00 ± 1,54a, 56,57 ± 0,89a. In terms of pathological parameters -histopathological examination- in the control and resveratrol groups, seminiferous tubules were observed to be in normal structure. In the group treated with aflatoxin, the regular structure of the spermatogenic cells deteriorated, and the seminiferous tubules became necrotic and degenerative. In the group treated with Afb1 + res, the decreasing of necrotic and degenerative changes were determined compared with in the group treated with aflatoxin. As immunohistochemical examination, cleaved caspase 3 expression was found to be very low in the control and resveratrol groups. Cleaved caspase 3 expression was severely exacerbated in seminiferous tubules in aflatoxin group but cleaved caspase 3 expression level decreased in Afb1 + res. In the biochemical direction, resveratrol has been shown to inhibit the adverse effects of aflatoxin on antioxidant levels (GSH-mmol/L, CAT-kU/L, GPx-U/mL, SOD-EU/mL) and to show a protective effect. For this purpose, the use of resveratrol with antioxidant activity was investigated in preventing or ameliorating damage to aflatoxin B1. It has been concluded that resveratrol effectively prevents the aflatoxin-induced testicular damage and lipid peroxidation. It has also been shown that resveratrol has protective effects on sperm motility and viability.

**Keywords :** Aflatoxin B1, rat, resveratrol, sperm

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