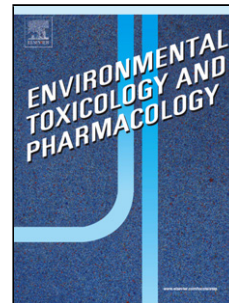


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## Effect of blueberry pretreatment on diethylnitrosamine-induced oxidative stress and liver injury in rats

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### Highlights

Rats were fed with 5 % and 10% blueberry (BB) containing diet for six weeks.

N- diethylnitrosamine was applied two days before the end of this period.

Oxidative and nitrosative stress were evaluated in the liver of DEN-treated rats.

Dietary BB decreased hepatic lipid and protein oxidation in DEN-treated rats.

Dietary BB reduced apoptotic, necrotic and proliferative changes in the liver

### Abstract

Diethylnitrosamine (DEN) treatment increases the generation of reactive oxygen species (ROS), apoptosis, necrosis and proliferation in the liver. Blueberries (BB; *Vaccinium corymbosum L.*) contain polyphenols and other active components and have high antioxidant capacities. We investigated the effect of BB pretreatment on DEN-induced liver injury and oxidative and nitrosative stress in male rats. Rats were fed with 5 % and 10% BB containing diet for six weeks and DEN (200 mg/kg; i.p.) was applied two days before the end of this period. Liver function tests were determined in serum and histopathological evaluation was performed in the liver tissue. Apoptosis-related proteins, Bax and B cell lymphoma-2 (Bcl-2) and proliferating cell nuclear antigen (PCNA) expressions were also examined. Oxidative and nitrosative stress were evaluated in the liver by measuring thiobarbituric acid reactive substances, diene conjugate, protein carbonyl and nitrotyrosine levels, and glutathione levels and glutathione peroxidase, superoxide dismutase and glutathione transferase (GST)

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