

## عنوان مقاله:

Histopathological Changes and Antioxidant Enzymes Status in Oxidative Stress Induction Using Sodium arsenite in Rats

## محل انتشار:

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## خلاصه مقاله:

**Introduction:** Arsenic toxicity has posed troublesome health concerns in the world and many of the toxic effects of arsenic are related to its effect on oxidative stress. The aim of the present study is to evaluate histopathological and antioxidant enzymes changes in oxidative stress status induced by sodium arsenite in rats. **Materials and Methods:** All experiments were carried out in male Wistar rats. Animal were divided into 2 groups of eight animals in each: Rats consumed distilled water (control group). Group 2: Rats consumed a solution of sodium arsenite (100 ppm) daily (arsenic group). At the end of day 28 arsenic exposure, the enzyme level in rat liver and kidney tissues was measured using the assay kits. The remaining liver, kidney, and heart tissue were fixed in 10% neutral-buffered formalin and used for histological observation. **Results:** The results showed a significant decrease in values of glutathione peroxidase (GPx), superoxide dismutase (SOD), total antioxidant capacity (TAC) and catalase (CAT) in serum and tissue in kidney and liver rat ( $P < 0.05$ ). But, malondialdehyde (MDA) levels were increased significantly ( $P < 0.05$ ). Arsenic caused severe degenerative changes in tubular cells and acute tubular necrosis, hepatocyte cell degeneration, severe hemorrhage, and infiltration and formation of Kupffer cells nodules, fragmentation, and degeneration of muscle fibers with pyknotic nuclei in heart tissue. **Conclusions:** The finding of the present study revealed that the administration of Sodium arsenite caused significant oxidative stress, decreased antioxidant enzymes activity and severe tissue damage.

## کلمات کلیدی:

histopathology, Antioxidant enzymes, Sodium arsenite, Arsenic Toxicity

## لینک ثابت مقاله در پایگاه سیویلیکا:

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