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## **The histopathological examination of the effects of diazepam as a sedative on respiratory system of pigeon**

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Diazepam is a benzodiazepine derivative that is appeared to exert its sedative effect by suppressing the thalamus and hypothalamus of the brain and produce sedation in animals and birds. The aim of this study is to evaluate does intranasal administration of diazepam could irritate the upper respiratory system in pigeon or no? In this research, twelve pigeons were randomly divided in two equal experimental group and control groups. In experimental groups pigeons received diazepam in 7 mg/kg dosage with using a micropipette intranasal. In control group 0.9% normal saline (in equal volume of diazepam) was administered intranasally. The average time for appearing sedative effects in experimental group was two minutes after intranasal administration of diazepam. Acute respiratory signs such as wheeze appeared thirty minutes after drug administration. One day after signs appearance, the pigeon euthanized and total internal organ were collected and referred for histopathological evaluation in 10% buffered formalin. In experimental group gross lesions included: pulmonary congestion, hemorrhage and edema. In control group microscopical evaluation revealed acute congestion of pulmonary capillary, pulmonary edema, presence of mucosal fluid in the lumen of parabronchus and atrium, dilation of paprabronchial lobule septum and perivascular space, while no lesion observed grossly and microscopically in control group. The results of this study showed that side effects of diazepam must be noticed, when it is used as a sedative agent in pigeon.

**Keywords:** Diazepam, Pigeon, Respiratory system

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## **Study of Antioxidant and analgesic effects of Colchicines' extract in vivo and in vitro approaches**

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Colchicines extract (CE) is known as a herbal remedy choice in treatment of gouty arthritis. Moreover, other therapeutic properties including anticancer, cathartic and emetic effects also have been described for this extract. As other herbal remedies, recently more attention has been put on other potential therapeutic properties of mentioned compounds. Both in vitro and in vivo assays for measurement of total antioxidant power of CE have been conducted according to ferric reducing antioxidant power method (FRAPA). In order to evaluate the in vivo antioxidant effect, 12 mice were treated either with different concentrations of CE or saline normal as control for 7 days. During the period of treatment and 45 minutes after administering of CE every second day, the possible analgesic effect of extract was assessed by tail-flick method. At the end of treatment period serum samples were taken and subjected to further analysis including FRAPA and total thiol molecules measurement. Both in vivo and in vitro studies showed that CE exerts antioxidant effect is concentration-dependent. More interestingly we found that the in vivo antioxidant power of extract was 3 to 4-folds higher than that in vitro. In parallel to all three antioxidant assays, tail-flick test also showed a dose-dependent analgesic effect of extract. Our data suggest that analgesic effect of CE might be modulated partly by remarkable antioxidant power of studied extract.

**Keywords:** Colchicine Extract; Antioxidant; Analgesic; Thiol Molecules