

## **The effects of Safranal, a constituent of *Crocus sativus* (saffron), on increased biomarkers of oxidative stress in diabetic rats' lung**

**S. Farahmand<sup>1</sup>, S. Samarghandian<sup>2,\*</sup>**

<sup>1</sup>*Neyshabur Faculty of Medical Sciences, Neyshabur, I.R. Iran.*

<sup>2</sup>*Department of Physiology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, I.R. Iran.*

We investigated the effects of antioxidant activity of safranal against oxidative damage in diabetic rats' lung. The rats were divided into the following groups of 8 animals each: control, diabetic, three diabetic + safranal – treated (0.25, 0.50, 0.75 mg/kg/day) groups. Diabetes was induced by streptozotocin (STZ) in rats. STZ was injected intraperitoneally at a single dose of 60 mg/ kg for diabetes induction. Safranal (intraperitoneal injection) was administered from 3 days after STZ administration; these injections were continued to the end of the study (for 4 weeks). At the end of the 4-week period, malondialdehyde (MDA), nitric oxide (NO) and reduced glutathione (GSH) contents were measured to assess free radical activity in the BALF and lung tissue.). Superoxide dismutase (SOD) and catalase (CAT) were also determined.

A significant dose-dependent decrease in the BALF supernatant and lung homogenate levels of MDA, NO with increase GSH level and CAT and SOD activity were observed in the diabetic safranal – treated groups compared with the diabetic groups. ( $p < 0.05$  to  $p < 0.001$ ). Thus, Safranal may be effective to prevent lung damage due to oxidative damage after in experimentally induced diabetes.

**Keywords:** Saffron; Oxidative stress; Diabetic; Rat