The aim of the study was to investigate the effect of N. sativa on bleomycin-induced fibrosis.

All study groups included 8 rats. Intratracheal (IT) saline or N. sativa were given to two control groups. A single dose of IT bleomycin was administered to the bleomycin group (BG) as well as the treatment groups on day 0. N. sativa oil was given by oral gavage between days 0–16 in one treatment group and between days 8–16 in the other. At the end of the study, the lung tissues of all rats were investigated histopathologically; GSH, GSH-Px, SOD enzyme activities as well as TGF-β and MDA levels were measured in lung tissues and BAL fluids.

On histologic examination, the ratio of inflammation was observed as 45.6%, 19.3% and 14.1% in the BG, long and short treatment arms, respectively; the difference between treatment arms and BG being statistically significant (p=0.019; p=0.003, respectively). The fibrosis score of the BG, long and short treatment arms were calculated as 1.6, 0.78 and 0.35, the difference being also statistically significant (p=0.004; p=0.0001, respectively).

The IT administration of bleomycin resulted in a statistically significant decrease in the GSH-Px and GSH activities and increase in MDA levels of the lung tissue and BAL fluid in comparison with the control group. The enzyme activities in both tissue and BAL samples of both treatment arms were high with respect to the BG, the difference being statistically significant for GSH-Px enzyme activity of the BAL fluid (p<0.01).

Oral administration of N. sativa oil resulted in both a decrease in inflammation-fibrosis and an increase in the antioxidant enzyme activities in the rat model.