Abstract
The present study reports the antioxidant activity of flaxseed as measured by feeding weanling albino rats with 5.0% and 10.0% of flaxseed (constituting approximately 0.75 and 1.5 g kg\(^{-1}\)) for 14 days followed by challenging animals with 2.0 g kg\(^{-1}\) b.w. CCl\(_4\) as toxin. Activity was assessed by measuring hepatic marker enzymes like catalase, superoxide dismutase (SOD), and peroxidase and comparing with those from the normal group and from a group receiving toxin without flaxseed.

Treatment of CCl\(_4\) at dose of 2.0 g kg\(^{-1}\) b.w. decreased the activities of various antioxidant enzymes such as catalase, superoxide dismutase (SOD), and peroxidase by 35.6%, 47.76%, and 53.0%, respectively, compared to the control group, and the lipid peroxidation value increased nearly 1.2-fold compared to that of the group treated with toxin without flaxseed. Pretreatment of rats with 5.0% flaxseed followed by CCl\(_4\) treatment caused restoration of catalase, SOD, and peroxidase by 39.7%, 181.42%, and 123.7%, respectively, as compared to control. The group treated with 10.0% flaxseed has shown the restoration of 95.02%, 182.31%, and 136.0% of catalase, SOD, and peroxidase. In the case of the group treated with toxin without flaxseed, the level of superoxide dismutase and the catalase value decreased 91.4% and 55.33%, respectively, in comparison with the control group. These results clearly indicate the beneficial effect of flaxseed components as an antioxidant as seen by restoration of hepatic enzymes, which were varied from normal to one due to toxicity induced by toxin (CCl\(_4\)). Owing to this property, the flaxseed known for its functional properties can be further extended to exploit its possible application for various health benefits as nutraceuticals and food ingredient.