

In vivo Evidence of Protective Effect of Hyparrhenia Hirta against Nitrate-Induced Genotoxicity

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Abstract : The present study was performed to evaluate the potential protective effect of Hyparrhenia hirta methanolic extract in NaNO₃-induced genotoxic and hematotoxic effects. Male Wistar rats were randomly divided into three groups: a control group and two treated groups during 50 days with NaNO₃ administered at a dose of 400 mg kg⁻¹ bw either alone in drinking water or co-administered with Hyparrhenia hirta at a dose of 200 mg kg⁻¹ bw. NaNO₃ treatment showed a significant increase in the frequencies of total chromosomal aberrations, aberrant metaphases and micronucleus in bone-marrow cells. In parallel, the NaNO₃-treated group showed a significant decrease in red blood cell count, hemoglobin and hematocrit and a significant increase in total white blood cell, in neutrophil and eosinophil counts. Platelet count, mean corpuscular volume, mean corpuscular hemoglobin, and mean corpuscular hemoglobin concentration remained unchanged in treated groups compared to those of controls. Hyparrhenia hirta methanolic extract appeared to be effective against genotoxic and hematotoxic changes induced by nitrate, as evidenced by the improvement of the markers cited above.

Keywords : Hyparrhenia hirta, sodium nitrate, erythrocytes, genotoxicity

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