Clastogenic potential of Ruta graveolens extract and a homeopathic preparation in mouse bone marrow cells.


Source

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Abstract

Ruta graveolens belonging to family Rutaceae has long been traditionally used as a medicinal plant as well as a flavoring agent in food. However, very little data are available on the toxicity of the plant. This report presents evidence on the genotoxic and clastogenic potential of an extract of Ruta graveolens and Ruta 200C, a homeopathic preparation. Various types of chromosomal aberrations were noted in bone marrow cells after treatment. The percentage of aberrated cells in the 400mg/kg.b.wt extract administered group was found to be 21% and with 1,000 mg/kg.b.wt it was 31%. The value for the Ruta 200C treated group was also elevated to 23% as compared to the 3% for untreated animals. In addition, bone marrow cells had higher incidence of micronuclei induction when treated with the extract (400 mg and 1,000 mg/kg body weight) and Ruta 200C for 30 days. Administration of the extract (1,000 mg/kg.b.wt) over a period of 30 days also resulted in damage to cellular DNA as evidenced by comet formation where the comet parameters such as percentage DNA in tail, tail length, tail moment of the bone marrow cells were increased several fold over control values. The comet tail moment of the bone marrow cells increased from 4.5 to 50.2 after the extract treatment. Administration of Ruta 200C for 5 consecutive days increased the tail moment to 11.7. These results indicate that Ruta graveolens and Ruta 200C may induce genotoxicity in animals.

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