

EVALUATION OF GENOTOXICITY OF SUVARNA BHASMA USING IN-VIVO AND IN VITRO ASSAY

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ABSTRACT

Objective: The aim of present study was to determine the genetic toxicity and mutagenicity of suvarna Bhasma in Swiss albino mice.

Material and Method: Genetic toxicity and mutagenicity of Suvarna Bhasma (SB) was determined using a battery of tests. The results of In-vivo micronucleus assay, COMET assay did not reveal any significant increase in % Micronucleus frequency (MN) in bone marrow cells of mice and DNA damage in blood lymphocytes respectively after the oral administration of SB at various concentrations (3,30 mg/kg bw) in treated animals as compared to vehicle control in either sex. The in-vitro chromosome aberration (CA) assay carried out with or without metabolic activation at different concentrations of SB in human lymphocyte culture did not cause any effect on structural or numerical chromosome aberrations. Suvarna Bhasma did not induce any mutagenic activity in presence and absence of S9 fractions in Ames assay employing three strains of salmonella typhimurium TA98, TA100 and TA102. These results documented that Suvarna Bhasma preparation evaluated in this study is not genotoxic and mutagenic at the concentrations tested under the experimental conditions.

Conclusion: The results of present study documented the safety of Suvarna Bhasma in terms of genotoxic and mutagenic activity. The Suvarna Bhasma preparation evaluated in this study is not only safe well within the human therapeutic dose but also at 10times higher than the TD. Therefore, this Suvarna Bhasma preparation can be utilized safely in humans for its therapeutic benefits without any genotoxic effects.

Keywords: Suvrna Bhasma, Genotoxicity, Mutagenicity, Micronucleus Assay, COMET Assay, Chromosome Aberration Assay, Ames Assay.
