

Genotoxic and Cytotoxic Effects of *Salvia officinalis* Extracts on Rat Bone Marrow

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Abstract : *Salvia officinalis* is an aromatic plant member of the mint (Labiatae) family. It is popular kitchen herb. Not surprise to find that the name of this herb related to cure, in Latin language *Salvia* means to cure where *officinalis* means medicinal which answer why the sage has a top place in the list of medicinal plants. The aim of the present study was to assess the genetic damage and cytological changes caused by exposure of the test organism (*Rattusrattus*) to *Salvia officinalis*. For this purpose, adult female rats, weighing 200-250 g, were used as donors. A total of 36 adult Wister male rats were randomly assigned to five groups: the experimental groups (rats were intraperitoneally injected with *Salvia officinalis* pure extract at (0.1, 0.2, 0.5, 0.1mg/kg body weight, the same dose was administered once a day. Control group (rats were injected intraperitoneally physiological saline. And positive control were injected with Cyclophosphamide. On the 21st days following *Salvia officinalis* pure extract exposure, rats were sacrificed, and samples of bone marrow were collected. Following that, we performed a micronuclei (MN) test using MNNCE (Micro-nucleated normochromatic erythrocytes) and MNPCE (Micronucleated polychromatic erythrocytes), NDI (Nuclear division index), and cytological parameters using NDCI (nuclear division cytotoxicity index), necrotic, and apoptotic cells in rat's bone marrow samples. Results showed that there was a no significant increase in the frequency of micro-nucleatedas well as in cytological parameters in bone marrow cells. In light of these results, if *Salvia officinalis* pure extract may considered to be safe from the stand point of genotoxicity and cytotoxicity effects.

Keywords : *Salvia officinalis*, micronucleus, NDI, NDCI, toxicity, chromosomal aberrations

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