

Genotoxic Effect of Epirubicin in Mouse Bone Marrow *in vivo*

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The genotoxic effect of epirubicin, a semisynthetic anthracycline antibiotic which has been used as an anticancer drug, was investigated *in vivo* on bone marrow cells of Swiss albino mice using the micronucleus test. To determine the incidence of micronuclei, mice were injected intraperitoneally with the drug at single doses of 4, 6, 8, and 10 mg/kg body weight. Then, bone marrow was sampled 18, 24, 36, and 48 h after the treatment. Polychromatic and normochromatic erythrocytes were examined for the presence of micronuclei. Epirubicin significantly increased the frequency of micronucleated polychromatic erythrocytes (MNPCEs) for all treatment periods compared with the negative control ($P < 0.001$). The frequency of MNPCEs increased with the dose, but at the highest dose used (which is considered to be quite toxic), the frequency of MNPCEs was rather lower. Epirubicin also decreased the ratio of polychromatic to normochromatic erythrocytes (PCE/NCE) for all sampling intervals, which is indicative of bone marrow cytotoxicity. It can be concluded from the present study that the anticancer drug epirubicin has genotoxic effects on mouse bone marrow cells.

Key words: Epirubicin, Micronucleus, Genotoxicity