

## **Genotoxicity Evaluation of Haloperidol on Human Lymphocytes *in vitro***

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**ABSTRACT** Haloperidol, a butyrophenone antipsychotic drug, was evaluated for its cytogenetic effects *in vitro* on human lymphocytes. Peripheral blood cultures were set up from three normal healthy donors for 72 hours. Haloperidol was added at the start (72 hr exposure), 24 hour (48 hr exposure) and 48 hours (24 hr exposure) after initiation of cultures. The concentrations tested at each exposure time corresponded to the plasma levels (5 and 25 ng/ml) after therapeutic dose and higher than that (100 and 500 ng/ml). All treatments for a donor were given at the same time. Untreated cultures served as concurrent controls. The parameters assayed were chromosome damage, mitotic index, cell growth kinetics and sister chromatid exchanges. Haloperidol was found to have a significant genotoxic potential at concentrations corresponding to upper plasma level, and higher than that in the chromosome damage assay and at all concentrations in the mitotic index and SCE assay compared to the controls. However, it did not have any significant effect on the cell growth kinetics at any of the doses tested. The present study points to a genotoxic potential of Haloperidol. Therefore, this drug should be used with caution.