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Developmental Toxicity Study of 2-Bromopropane in Icr Mice

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2-Bromopropane (2-BP), a halogenated propane analogue, is a substitute for chlorofluorocarbons (CFCs) which have a great potential to destroy the ozone layer and to warm the earth's environment. The present study was undertaken to evaluate the potential adverse effects of 2-BP on pregnant dams and embryo-fetal development after maternal exposure during the gestational days (GD) 6 through 17 in ICR mice. The test chemical was administered subcutaneously to pregnant mice at dose levels of 0, 313, 625 or 1250 mg/kg/day. All dams were subjected to caesarean section on GD 18 and their fetuses were examined for external, visceral and skeletal abnormalities. In the 1250 mg/kg group, maternal toxicity included an increase in the incidence of abnormal clinical signs and a decrease in the maternal body weight, body weight gain, and corrected body weight. Developmental toxicity included a decrease in the fetal body weight, a reduction in the placental weight, an increase in the fetal skeletal variation and ossification delay. There were no adverse effects on either pregnant dams or embryo-fetal development in the 313 and 625 mg/kg groups. These results suggest that a 12-day subcutaneous dose of 2-BP is embryotoxic at a maternally toxic dose (i.e., 1250 mg/kg/day) in ICR mice. In the present experimental condition, the no-observed-adverse-effect level of 2-BP is considered to be 625 mg/kg/day for dams and embryo-fetuses, respectively.

Keyword : 2-Bromopropane, Developmental toxicity study, Mice