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Embryo-Fetal Development Study of 2-Bromopropane in Rats

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The present study was conducted to investigate the potential embryo-fetal toxicity of 2-bromopropane(2-BP) in rats. The test agent was subcutaneously administered to pregnant rats from gestational day 6 to 19 at dose level of 0, 500, 1000, 1500 mg/kg. The dams were subjected to necropsy and caesarean section on day 20 of gestation. The maternal body weights were significantly decreased in a dose dependent manner in the 1000 and 1500 mg/kg groups when compared with those of the control group. The food consumption of the 1500 mg/kg group was significantly decreased in comparison with that of the control group. The number of fetal deaths and postimplantation loss in the 1000 and 1500 mg/kg groups were significantly higher than those of the control group. Approximately 55% and 90% of the implants were dead or resorbed. The number of live fetuses per litter in the 1000 and 1500 mg/kg groups were significant decreased when compared with those of the control group. The body weights of male and female fetuses in the highest dose group were significantly less than those in the control group. A high incidence of skeletal retardation was observed in the fetuses of 1500 mg/kg group. There were a statistically significant decrease in the number of sternebra, metatarsals in both hindlimbs and sacrocaudal vertebra of the 1000 and 1500 mg/kg groups.

These results indicate that 2-BP is embryotoxic at maternally toxic dose in rats. The no-observed-adverse-effect level (NOAEL) of the 2-BP is considered to be 500 mg/kg/day for dams and embryo-fetal development.

Keyword : Embryo-fetal development study, 2-Bromopropane, Rats