

## ABSTRACT

### **The Embryotoxic and Teratogenic Effects of Diethyltoluamide (DEET) on the Development of Embryo Balb/C Strain Mice ( *Mus musculus* )**

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The study was aimed to identify the effect of DEET on reproductive capabilities female Balb/C strain mice, fetal external abnormalities, skeletal and internal organ. Thirty five female Balb/C strain mice were used in this study. The female mice were mated with male mice used one mating method. Mice in treatment group were administered dermally with 281,25; 562,5; 1125 and 2250 mg/kg BW DEET dissolved in ethanol at gestation day of 6 to 15, while mice in control were administered with ethanol. Mice in group were repeated seven times.

At gestation day 18, the mice were sacrificed and external abnormalities were observed. A half of living fetuses were immersed in Bouin's solution to observe their internal organs, while another half were immersed in 95% ethanol. Bone staining subsequently was done by using Alizarin Red S. Results were analyzed by using SPSS program version 11 for personal computer, one-way ANOVA and multiple comparison test with significance level of 0.05.

Maternal bodyweight, number of living fetus, fetal bodyweight, fetal length and reabsorption embryo showed non significant. Fetal death were not found in all doses, so that it could be inferred that DEET was not embryotoxic.

External abnormalities such as abnormality in extremities, tails, eyes, external sexual organs, palatum, lip and hematoma were not found in all doses used. Skeletal abnormalities such as supraoccipital, sternal, vertebral, sacrocaudal, and phalanx were not found in all doses administered. Internal organs were observed, however there were no effects of DEET in the brain and kidney.

From these experiment we suggested that DEET has no effects in reproductive capabilities of female Balb/C strain mice such as the maternal bodyweight, total number of living fetus, fetal bodyweight, fetal length, and intrauterine death. DEET has no effects in external abnormalities such as abnormality in extremities, tails, eyes, external sexual organs, palatum, lip and hematoma. DEET has no effects in skeletal abnormalities such as supraoccipital, sternal, vertebral, sacrocaudal and phalanx. DEET has no effects on internal organ abnormalities in mice fetus such as brain and kidney. We concluded that DEET has no effects of embryotoxic and teratogenic in mice strain Balb/C, when administered on gestation day of 6 to 15.

Keywords: DEET effect, development of mice embryo.