

Studies on the Teratology and Three Generation Reproduction of Taurine in Mice

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Administered taurine is readily absorbed from the intestinal tracts and easily exchanges for endogenous taurine. However, the excess is not accumulated in the body or any particular organs for a long duration but excreted into the urine and bile at a relatively rapid rate (Portman and Mann, 1955; Boquet and Fromageot, 1965; Wainer *et al.*, 1966; Minato *et al.*, 1969; Evered *et al.*, 1969).

The preceding papers from this laboratory showed that no particular observations regarding the toxicity and side effect of taurine were obtained in the long-term feeding experiment using either normal mice or rats (Fujihira *et al.*, 1970; Takahashi *et al.*, 1972).

The present paper deals with studies on the teratology and three generation reproduction of administered taurine in mice.

Key words: Taurine, Teratology, Three generation reproduction
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Experimentals

Teratologic Test:

Male and female ICR mice were obtained from SLC, Shizuoka, and used at 12 weeks of age for the experiment. They were housed in plastic cages with sterile wood shavings and allowed to stand in a thermostatically controlled room throughout the experimental period. A commercial diet (CLEA, CE-2) and water were permitted *ad libitum*. Virgin female mice were kept overnight with males and those with copulatory plugs were isolated the next morning as pregnant mice (1st day of gestation). Taurine, as an aqueous solution, was given orally to 9 pregnant mice at the daily level of 4 g/kg from the 7th to the 14th day of gestation. Seventeen control mice received distilled water during the identical period. On the 18th day, the animals were delivered by caesarean section under ether anesthesia.

Total implantations and numbers of living and dead fetuses were recorded. The living fetuses weighed, examined for external malformations, then fixed in 95% alcohol and stained with ali-

zarin red S in order to perform the examination for skeletal malformations.

Three Generation Reproduction Test:

A commercial, cubic diet (Oriental, NMF) was used as basal diet, to which taurine was added as 5% (w/w). The test was carried out as follows. Forty ICR mice of each sex were used at 5 weeks of age as parental generation (P) and divided into two groups. One group served as control and fed throughout the basal diet. Another group was free access to the taurine-added diet. After feeding for 7 weeks, pairs of male and female were made in each group, transferred to individual breeding cages and allowed to stand for mating. After one week, the male mice were picked out, sacrificed and autopsied macroscopically. While, the females were left in the cages, bred and allowed to nurse the offsprings (F_1) until weaning. The nursing period was until 3 weeks after breeding. Thereafter, the mothers were killed and autopsied. The first litter of each generation was used for the test. The weanlings (F_1) were free access to the diet of the same kind that the