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DATA EVALUATION RECORD

TRICHLORFON

Chromosomal Aberrations in Mice (Dominant Lethal Test)

CITATION: Epstein SS, Arnold E, Andrea J, Bass W, Bishop Y. 1972. Detection of chemical mutagens by the dominant lethal assay in the mouse. Toxicol. Appl. Pharmacol. 23(2):288-325.

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DATA EVALUATION RECORD

STUDY TYPE: Chromosomal aberrations in mice (dominant lethal test).

CITATION: Epstein SS, Arnold E, Andrea J, Bass W, Bishop Y. 1972. Detection of chemical mutagens by the dominant lethal assay in the mouse. Toxicol. Appl. Pharmacol. 23(2):288–325.

ACCESSION NUMBER: Not available.

MRID NUMBER: 05016869.

LABORATORY: Children's Cancer Research Foundation, Inc., Harvard Medical School, and Harvard School of Public Health.

TEST MATERIAL: Dylox (trichlorfon) from Chemagro [purity not stated].

PROTOCOL:

1. ICR Ha Swiss mice (8–10 weeks old) from Charles River Breeding Labs were used. A distilled water or tricaprylin solution of trichlorfon [174 chemicals tested and specific solvent not stated; presumably distilled water for trichlorfon] was administered intraperitoneally once to each mouse at one of two doses: 56 mg/kg to 7 males and 28 mg/kg to 9 males (corresponded to LD_{25} and LD_5, respectively). Trichlorfon was also administered orally (gavage) for 5 successive weekdays at 360 mg/kg to 10 males.

   Subsequent to treatment, each male was caged with three untreated virgin females for one week. Concurrent controls utilized 10 males. Females were replaced weekly for 8 weeks. Females were sacrificed 13 days following midweek of their mating period. Each female was examined for pregnancy and number of implants (live implants, early fetal deaths, and late fetal deaths).

   Criteria for judging positive response was established as follows:

   a. Standard criteria:

   o At least one weekly mean number of early fetal deaths per pregnancy exceeding 1.00, with 55 percent or more of the pregnant females having early deaths.

- o At least one weekly mean number of total implants per pregnancy of less than 8.

- o At least one weekly mean pregnancy rate of less than 30 percent.

b. Less rigid criteria (to eliminate false-positives):

- o At least one weekly mean number of early fetal deaths per pregnancy of 0.90 or greater.

- o At least one week with 55 percent or more of the pregnant females having early deaths.

- o At least one weekly mean number of total implants per pregnancy of less than 9.

Positive controls were not expressly included in the protocol, [however numerous chemicals were screened, some of which are known mutagens or carcinogens; e.g., EMS and TEM].

RESULTS:

Trichlorfon produced borderline effects, detected only by the less rigid criteria described. The effects produced were not statistically significant when tested by analyses of variance. The only result reported was at the lowest dose tested (56 mg/kg) where 1.31 early deaths were recorded per pregnancy in the 4th week of mating. Ethyl methanesulfonate (EMS), triethylene melamine (TEM), and several other compounds caused significant reductions in total implants and/or increases in early deaths.

CONCLUSIONS:

The authors did not make conclusions regarding nonsignificant results. No conclusions can be drawn because detailed data were not presented for trichlorfon.

CORE CLASSIFICATION: Unacceptable.

The following deficiencies were noted:

- o The purity of the test material was not stated.

- o Only qualitative results were presented.