

US EPA ARCHIVE DOCUMENT

DATA EVALUATION RECORD

TRICHLORFON

- Gene Mutations: 1. Salmonella typhimurium LT-2 Strains
2. Escherichia coli WP2 Strains

CITATION: Hanna PJ, Dyer KF, 1975. Mutagenicity of organophosphorus compounds in bacteria and Drosophila. Mut. Res. 28:405-420.

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DATA EVALUATION RECORD

STUDY TYPE: Gene Mutations: 1. Salmonella typhimurium LT-2 Strains
2. Escherichia coli WP2 Strains.

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ACCESSION NUMBER: Not available.

MRID NUMBER: 05014760.

LABORATORY: Department of Genetics, Monash University, Australia.

TEST MATERIAL: Trichlorphon, $(\text{CH}_2\text{O})_2\text{PO}-\text{CH}(\text{OH})\text{CCl}_2$, supplied by Farbenfabriken, Bayer A. G. [purity not stated].

PROTOCOL:

Salmonella typhimurium strain hisC117 was supplied by Dr. H. J. Whitfield. The S. typhimurium LT-2 strains supplied by Dr. B. N. Ames were: hisG46, hisD3052, TA1530, TA1531, TA1532, TA1534, TA1535, TA1536, TA1537, and TA1538. The Escherichia coli WP2 strains supplied by Dr. B. A. Bridges were: WP12, WP2 uvrA, CM561, CM571, CM611, WP67, and WP12. Spot tests with S. typhimurium and E. coli strains were conducted according to the methods of Ames et al. (1973. Proc. Natl. Acad. Sci. 70:782-786) and Bridges et al. (1973. Mut. Res. 19:295-303), respectively. A crystal or 5-10 μl of test material was added to the test system at an unspecified dose [several insecticides were screened, and manner in which trichlorphon was added was not specified]. The number of prototrophic revertants were compared between control and treated plates after 48 and 72 hours of incubation at 37°C.

RESULTS:

A "positive mutagenic response" was obtained with only E. coli strains WP2uvrA and WP67. "Negative" responses were obtained with all S. typhimurium strains [results not presented for strain his D3052]. Trichlorphon was incubated overnight in a saturated aqueous solution and spot tested again; a "positive" response was produced with strain TA1535. It was presumed, based on reported chemical properties of trichlorphon, that trichlorphon had degraded in solution to dichlorvos.

CONCLUSIONS:

This study cannot be adequately evaluated because the dose level and the manner in which trichlorophon was added to the plates (crystal or solution) were not stated. Furthermore, quantitative data were not reported, it was not stated how many dose levels were tested, and it was not determined if the dosage was toxic to the tester strains.

CORE CLASSIFICATION: Unacceptable.

The following deficiencies were noted:

- o The dosage(s) were not stated and the physical state of the test material (crystal or solution) was not specified.
- o Quantitative data were not reported; only "negative" and "positive" responses.
- o Positive controls were not included.
- o Tests for metabolic activation were not included.
- o Tests for toxicity to the tester strains were not described.