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FINAL

DATA EVALUATION REPORT

CAPTAN

Study Type: Mutagenicity: Multiple In Vitro Genetic Toxicology Studies

Prepared for:

Health Effects Division
Office of Pesticide Programs
Environmental Protection Agency
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Contract Number: 68D10075
Work Assignment Number: 1-05
Clement Number: 91-51
Project Officer: James Scott

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GUIDELINE SERIES 84: MUTAGENICITY
MULTIPLE GENETIC TOXICOLOGY STUDIES

MUTAGENICITY STUDIES

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EPA Section Head: Joycelyn Stewart, Ph.D. Signature:
Review Section II, Toxicology Branch ( I )/HED Date: 11/14/93

DATA EVALUATION REPORT

STUDY TYPE: Mutagenicity: Multiple in vitro genetic toxicology studies

EPA IDENTIFICATION Numbers:

Tox Chem. Number: 159

MRID Number: 00124901

TEST MATERIAL: Captan

SYNONYMS: cis-N-trichloromethylthio-4-cyclohexene, 1,2-dicarboximide

SPONSOR: U.S. Environmental Protection Agency, Research Triangle Park, NC/ICI Americas Inc., Wilmington, DE

STUDY NUMBER: EPA Study No. 600/1-77-028; Contract No. 68-01-2458

TESTING FACILITY: SRI, Menlo Park, CA

TITLE OF REPORT: Evaluation of Selected Pesticides as Chemical Mutagens In Vitro and In Vivo Studies

AUTHORS: Simmon, V.F., Mitchell, A.D., Jorgenson, T.A.

REPORT ISSUED: May 1977

CONCLUSIONS--EXECUTIVE SUMMARY: As part of a screening program of 20 pesticides, captan was evaluated for genotoxic effects in the following battery of short term in vitro assays:

- Reverse gene mutations in bacteria (Salmonella typhimurium strains TA1535, TA1537, TA1538, and TA100 and Escherichia coli strain WP2). Assays were performed with and without S9-activation.
- Unscheduled DNA synthesis (UDS) in WI-38 human fibroblasts with and without S9-activation.
- Mitotic recombination in Saccharomyces cerevisiae strain D3 with and without S9-activation.

- DNA damage/repair in E. coli strains W3110 (poL $A^+$) and p3478 (poL $A^-$) and in Bacillus subtilus strains H17 ($rec^+$) and M45 ($rec^-$) with and without S9-activation.

Neither protocols nor a quality assurance statement were provided. No information on captan purity, stability, storage conditions, or other information that defined the test material were reported. Similarly, neither the concentration(s) used in the test battery nor any information on the test material solvent were furnished. The qualitative data that were presented indicated that captan yielded the following results:

1. Mutagenic both with and without S9-activation in S. typhimurium (strains not specified) and E. coli WP2.

2. Genotoxic in WI-38 human fibroblasts in the presence of S9-activation.

3. Positive in S. cerevisiae D3 with and without S9-activation.

4. Genotoxic in E. coli and B. subtilis DNA-repair deficient strains p3478 and M45, respectively, with and without S9-activation.

Captan was subsequently evaluated in the mouse dominant lethal assay. The outcome was negative; however, no details relative to the test material doses, purity, or route of administration were provided by the investigators. Similarly, procedures for the dominant lethal assay were not presented. The negative results in the dominant lethal test prompted the performance of a mouse heritable translocation assay (see MRID No. 00131710; Data Evaluation Record 91-50).

We assess that there was insufficient information to evaluate any phase of the screening program conducted with captan. In addition, the lack of procedural information and quantitative data renders the study unacceptable as an individual data source. The study, therefore, does not satisfy Guideline requirements for genetic effects, Category I, Gene Mutations; Category II, Structural Chromosome Aberrations; or Category III, Other Mutagenic Mechanisms.

STUDY CLASSIFICATION: The study is unacceptable for regulatory purposes; however, the qualitative results can be used to support the findings of other genetic toxicology assays.

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