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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 28 1984

MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT Evaluation of the CIPC L5178Y TK+/- Mouse Lymphoma Mutagenicity Assay

TO: Robert J. Taylor, PM#25
Registration Division (TS-767c)

FROM: John E. Whalan, Toxicologist
Section II, Toxicology Branch
Hazard Evaluation Division (TS-769c)

THRU: Albin B. Kocialski, Acting Section Head
Section II, Toxicology Branch
Hazard Evaluation Division (TS-769c)
and
William Burnam, Chief
Toxicology Branch HED (TS-769c)

Acc. No. 250808

Tox. Chem. No. 510A

The Microbiological Associates study report (Report No. T1890.701 - 2-25-83) entitled "L5178Y TK+/- Mouse Lymphoma Mutagenesis Assay" for CIPC has been reviewed by William Dykstra, Ph.D. of the Toxicology Branch. His review is attached but it is not official because it has not been signed-off by the Section Head.

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

TO: Robert Taylor, Product Manager No. 25
Registration Division (TS-767)

THRU: Christine F. Chaisson, Ph.D.
Head, Review Section No. 4
Toxicology Branch
Hazard Evaluation Division (TS-769C)

SUBJECT: EPA Reg. No.: 748-161; 748-163; Mutagenicity Data on CIPC; Miscellaneous Data.

Recommendations:

1. CIPC was not mutagenic in this assay. The study is acceptable to Toxicology Branch.

Review:

1. L5178Y TK + /- Mouse Lymphoma Mutageniesis Assay (Microbiological Associates No. T1890. 701; 2/25/83).

Test Material: CIPC; Lot No.: 237-2778.

Methods

The mutation assay was based on a laboratory procedure for determining specific locus mutations at the TK locus in culture L5178Y mouse Lymphoma cells (Mutation Research 31: 17-29, 1975. The following criteria were used as a basis for assessing the significance of the test material in this system:

Positive - if there is a positive dose response and one or more of the three highest doses exhibit a mutant frequency which is two-fold greater than the background level.

Equivocal - if there is no dose response but any one or more doses exhibit a two-fold increase in mutant frequency over background.

Negative - if there is no dose response and none of the test cultures exhibit mutant frequencies which are two-fold greater than background.

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The test material was tested in the mutagenic assay at dosages of 0.01-10,000 ug/ul.

Results:

Complete toxicity growth inhibition was noted at 1000 and 10,000 ug/ul both with and without S-9 activation.

Based on these results, the test material was evaluated for mutagenicity over a range of concentrations from 13 ug/ml to 100 ug/ml for both the non-activated and 5-9 activated cultures.

After a two day expression period, seven nonactivated and eight S-9 activated cultures were cloned based on their degree of toxicity. The nonactivated cultures that were cloned was treated with 75, 56, 42, 32, 24, 18 or 13 ug/ml test material. These concentrations produced a range in Suspension Growth of 41% to 100%. The S-9 activated cultures that were cloned were treated with 100, 75, 56, 42, 32, 24, 18 or 13 ug/ml test mateial. These concentrations produced a range in Suspension Growth of 8% to 52%.

No statistically significant increase in mutation frequency /10^4 survivors based on the criteria of the study was noted in ranges of 33-94% total growth without activation and 6-42% total growth with activation. Positive control for without activation was Ethyl Methane Sulfonate and with activation was 7,12-Dimethylbenz (a) anthracene which both exhibited increases in mutation.

Conclusion: CIPC was not mutagenic in this test system.

Classification: Acceptable.

William Dykstra

William Dykstra, Ph.D.
Toxicology Branch
Hazard Evaluation Division
(TS-769C)