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

SEP 25 1984

MEMORANDUM

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: LINDANE: Review of Mutagenicity Data in response to Lindane PD-4 and 3(c)(2)(B) letter of June 6, 1984.

Accession #253997/EPA Reg. Nos.: 359-686, 359-687, 21137-3 and 40083-1. Caswell No.: 527

TO: G. LaRocca, PM#15  
Registration Division (TS-769C)

FROM: Irving Mauer, Ph.D.  
Geneticist, Section VI  
Toxicology Branch/HED (TS-769C)

THRU: Laurence D. Chitlik, DABT  
Section Head, Section V & VI  
Toxicology Branch/HED (TS-769C)  
and  
William L. Burnam, Chief  
Toxicology Branch/HED (TS-769C)

*Irving Mauer*  
9-24-84  
*DC*  
9/24/84  
*WLB*  
9/25/84

Registrant: CIEL, Brussels

Action Requested: Evaluate the following mutagenicity assay submitted by Centre International d'Etudes du Lindane (C.I.E.L.), Brussels (Monitoring Scientists: Dr. N. Wilhelm, Celamerck, D-6507 Ingelheim am Rhein):

"Mammalian Cell (V79) Mutagenicity Test on Lindane," (Report #SP 540-VT21), performed by Franz Oesch, Ph.D., Professor of Toxicology, Director, Institute of Toxicology, University of Mainz, Obere Zahlbacher StraBe 67, D-6500 Mainz.

TB Evaluation: The study is judged UNACCEPTABLE (see Data Review attached to this memo).

TOXICOLOGY BRANCH: DATA REVIEW

CHEMICAL: Lindane

Caswell: 527  
EPA Chem.: #009001

STUDY TYPE: Mutagenicity: in vitro gene mutation in mammalian cells.

CITATION: Mammalian Cell (V79) Mutagenicity Test on Lindane

ACCESSION NO./MRID No.: 253997/NA

SPONSOR/TESTING LAB.: Centre International d'Etudes du Lindane (C.I.E.L.), Brussels/Franz Oesch, Ph.D., Professor of Toxicology, Director, Institute of Toxicology, University of Mainz, Obere Zahlbacher StraBe 67, D-6500 Mainz.

STUDY No./DATE: SP 540-VT21/May 28, 1984

TEST MATERIAL: Lindane technical (Batch No. 111-1), 99.8% a.i., dissolved in dimethylsulfoxide for testing.

PROCEDURES: Satisfactory as given in the attached M&M from the report, but noting the following exceptions to the agreed protocols, (6/6/83): (1) Hepatic microsomes should have been prepared from male CF-1 mice, not the reported CD-1's, since the increased tumor frequencies reported in the Thorpe & Walker study (1973) occurred in the former; (2) if the first assay is negative, a repeat experiment is required.

Results and Conclusions: Based upon data showing no increase over DMSO controls in mutant frequency (mutation to HGPRT deficiency) in either (repeated) activated or (single) non-activated cultures exposed to the test substance up to the level of toxicity and solubility, and the report states that "... lindane was completely negative in the V79 mammalian cell mutagenicity test under conditions where the positive controls clearly indicated mutagenicity."

However, as indicated above, the appropriate metabolic activation (S-9) preparation was not utilized, and hence the study is deficient in this respect.

TB EVALUATION: Unacceptable.

M & M  
(attach!)

CELAMERCK  
**CIV**

Document No.

111AC-457-019

Franz Oesch, Ph. D.  
Professor of Toxicology,  
Director, Institute of Toxicology  
University of Mainz  
Obere Zahlbacher Straße 67  
D-6500 Mainz

MAMMALIAN CELL (V79) MUTAGENICITY TEST

ON

LINDANE

Study Director: Dr. H.R. Glatt

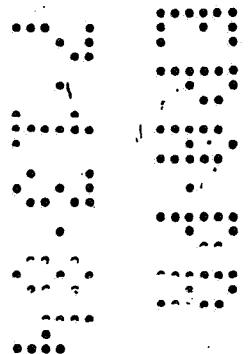
Report No. SP 540-VT21 (13 pages)

Report Date: May 28, 1984

Sponsor Centre International d'Etude du Lindane (C.I.E.L.), Brussels

Monitoring Scientist: Dr. N. Wilhelm, Celamerck,

D-6507 Ingelheim am Rhein



Lindane toxicology review

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Pages 4 through 7 are not included in this copy.

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