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

JAN 23 1997

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OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: VINCLOZOLIN--Tox. Data Submitted Under MRID Nos.  
41471005 and 92194019; TRID No. 470148-002

*Tox Chem. No. 313C*  
Chemical: 113201  
RD Record: [Not provided]  
HED Project: D222318 F.S.  
(DP Barcode):

FROM: Irving Mauer, Ph.D., Geneticist  
Toxicology Branch-I  
Health effects Division (7509C)

*J. Mauer*  
*03-27-90*

TO: Barry O'Keefe  
Special Review and Reregistration Division (7508W)

THRU: Karen L. Hamernik, Ph.D., Head, Section III  
Toxicology Branch-I  
Health effects Division (7509C)

*for Bidd*  
*1/27/97*  
*KLB*

Registrant: BASF, RTP (NC)

Request: Review and evaluate the following mutagenicity assay  
(an Ames Test):

(84-2) Report on the Study of Vinclozolin (Reg. No. 83/258) (ZNT Test Substance 82/370) in the Ames Test, performed at BASF Laboratories in Ludwigshafen (West Germany), Reg. Doc. No. 83/0228, Final Report dated November, 1983. (MRID 41471005). UNPUBLISHED.

[NB: Two other documents were submitted with this study:

- (1) "Report on the Study of Vinclozolin (Reg. No. 83-258) (ZNT Test Substance: 82/370) in the Ames Test", BASF Nov. 14, 1983. (TRID No. 470-148-002), which is an exact duplicate of the above study, and will not be separately reviewed.

- (2) Phase 3 Summary of MRID 41471005 (the subject study), MRID 92194-019, which also will not be separately reviewed.]

TB CONCLUSION: This Ames Test (MRID 41471005) is ACCEPTABLE, in demonstrating Vinclozolin was negative for induced mutagenicity (reverse mutation) in Ames Testing, and thus satisfies data requirements for FIFRA Test Guideline 84-2a for this type of mutagenicity study.

(ATTACHMENT) DER

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VINCLOZOLIN

SALMONELLA/MAMMALIAN ACTIVATION; GENE MUTATION (84-2)2

EPA Reviewer: Irving Mauer, Ph.D. *I. Mauer*, Date 2/29/96  
Review Section 3, Toxicology Branch I (7509C)  
EPA Secondary Reviewer: Karen L. Hamernik, Ph.D. *K. Hamernik*, Date 1/7/97  
Review Section 3, Toxicology Branch I (7509C) *for Budd*

DATA EVALUATION RECORD

STUDY TYPE: Salmonella/Reverse Gene Mutation Assay (Ames Test)  
OPPTS 870.5265 [§84-2]

DP BARCODE: D222318      SUBMISSION CODE: [Not provided]  
P.C. CODE: 113201      TOX. CHEM. NO.: 323C

TEST MATERIAL (PURITY): Vinclozolin (98.1% a.i.)

SYNONYMS: RONILAN

CITATION: H. P. Gelbke and G. Engelhardt (1983). Report on the study of Vinclozolin (Reg. No. 83/258) (ZNT Test Substance No. 82/370) in the Ames Test, performed at the BASF Aktiengesellschaft, Department of Toxicology, Ludwigschafen, West Germany. Doc. No. 83/0228, Final Report dated November 1983. MRID 41471005. Unpublished.

SPONSOR: BASF Corporation, RTP (NC).

EXECUTIVE SUMMARY: In a bacterial reverse gene mutation (Ames) assay (MRID 41471005), multiple cultures of Salmonella typhimurium TA strains (TA 1535, 1537, 1538, 98, 100) were exposed to test article in both the standard plate assay (all strains) and by pre-incubation (only TA 100) at concentrations up to 10,000 ug/plate.

No cytotoxicity was observed in any strain tested up to the HDT, and incomplete solubility was evident at 5000 ug/plate and above. No increased incidence of reverse mutation (revertant colonies) over DMSO (solvent) controls was found.

This assay is considered ACCEPTABLE in demonstrating no mutation in Salmonella TA strains, and satisfies data requirements for FIFRA Test Guideline 84-2a for this type of mutagenicity study.

COMPLIANCE: Signed and dated GLP, Quality Assurance, Data Confidentiality, and Flagging statements were provided.

I. MATERIALS AND METHODS

A. MATERIALS

1. Test Material: Vinclozolin

Description : White powder  
 Lot/Batch #: 82/370  
 Purity: 98.1% a.i.  
 Stability of compound: Said to be stable in solvent at 4°C.  
 CAS #: 50471-44-8  
 Structure: 3-(3,5-dichlorophenyl)-5-ethenyl-5-methyl-2,4-oxazolidinedione  
 Solvent used: Dimethylsulfoxide (DMSO)  
 Other comments: Test article precipitates out at 5000 ug/plate and above.

2. Control Materials:

Negative: None  
 Solvent/final concentration: 1%  
 Positive: Nonactivation:

4-Nitro-o-phenylenediamine, 10 ug/plate for TA 98 and TA 1538  
 9-Aminoacridine, 100 ug/plate for TA1537  
 Other: N-methyl-N<sup>1</sup>-nitro-N-nitrosoguanidine (MNNG), 5 ug/plate for TA 100 and TA 1535.

Activation:  
 2-Aminoanthracene (2-anthramine), 10 ug/plate for all strains

3. Activation: S9 derived from

<input checked="" type="checkbox"/> Aroclor 1254	<input checked="" type="checkbox"/> induced	<input checked="" type="checkbox"/> rat	<input checked="" type="checkbox"/> liver
<input type="checkbox"/> phenobarbital	<input type="checkbox"/> non-induced	<input type="checkbox"/> mouse	<input type="checkbox"/> lung
<input type="checkbox"/> none		<input type="checkbox"/> hamster	<input type="checkbox"/> other
<input type="checkbox"/> other			<input type="checkbox"/> other

Describe S9 mix composition (if purchased, give details):

MgCl<sub>2</sub>-8mM  
 KCl-33mM  
 Glucose-6-PO<sub>4</sub>-5mM  
 NADP-4mM  
 PO<sub>4</sub>-buffer-100mM  
 S9-3 volumes

5

4. Test organisms: S. typhimurium strains (all his<sup>-</sup>):

TA97       TA98       TA100       TA102       TA104  
 TA1535       TA1537       TA1538; list any others:  
Properly maintained? Y  
Checked for appropriate genetic markers: Y

5. Test compound concentrations used:

Nonactivated conditions: 100-10,000 ug/plate (4 plates per dose)  
Activated conditions: 100-10,000 ug/plate (4 plates per dose)

B. TEST PERFORMANCE1. Type of Salmonella assay:

standard plate test, all strains  
 pre-incubation (8 minutes), TA 100 only  
 "Prival" modification  
 spot test  
 other (describe)

2. Protocol: Procedure for the standard plate test was based upon the method of Ames (1973, 1975); that for the pre-incubation assay on Yahagi et al. (1977) and Matsushima et al. (1980).C. REPORTED RESULTS:1. Preliminary cytotoxicity assay:

There was no cytotoxicity in any strain up to the HDT, 10,000 ug/plate, with/without S9-activation. Incomplete solubility was observed at concentrations of 5,000 ug/plate and above.

2. Mutagenicity assay: In neither plate assay with all strains with/without activation, nor in the pre-incubation assay with TA 100 ± S9 activation, was there any increase in his<sup>+</sup> revertant colonies over background (DMSO solvent control - Report Tables 1, 2 - attached here). In contrast, all positive control plates registered the appropriate increased revertents.

D. REVIEWER'S DISCUSSION/CONCLUSIONS: This assay was performed with conventionally recognized procedures to yield valid results. We agree with the investigators' conclusions that under the conditions this study, vinclozolin was not mutagenic in inducing reversions at the histidine locus of the Ames battery of TA strains.

E. Was test performed under GLPs (is a quality assurance statement present)? Y

F. Appendix attached? Y, Data Tables

VINCLOZOLIN

SALMONELLA/MAMMALIAN ACTIVATION; GENE MUTATION (84-2)

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Pages 9 through 10 are not included.

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- The product confidential statement of formula.
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- FIFRA registration data.
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