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

JUN 14 1993

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Oxyfluorfen; Goal; Partial Fulfillment of Rat General Metabolism Study; Guideline Requirement 85-1

Tox.Chem No.: 188AAA
MRID No.: 42652401
DP Barcode No.: D188303
Submission No.: S435569

TO: Bruce Sidwell, PM #53
Reregistration Branch
Special Review and Reregistration Division (H7508W)

FROM: William Dykstra, Ph.D., Toxicologist *William Dykstra*
Review Section I *5/19/93*
Toxicology Branch I
Health Effects Division (H7509C)

THRU: Roger Gardner, Section Head, Toxicologist *Roger Gardner 5-19-93*
Review Section I *KAG 5/24/93*
Toxicology Branch I
Health Effects Division (H7509C)

ACTION REQUESTED: The Registrant, Rohm and Haas Company, has submitted a supplemental study report regarding the absorption, distribution, metabolism, and excretion of C¹⁴-oxyfluorfen as part of a rat general metabolism study. This report is supplemental to a pharmacokinetic study conducted on C¹⁴-oxyfluorfen in rats (Rohm and Haas Report No. 90R-193). The Registrant has submitted these studies in response to a FIFRA '88 DCI and intends these studies to fulfill the Guideline Requirement 85-1 for a rat general metabolism study. Toxicology Branch-I (TB-I) has been requested to review this supplemental study and determine if it fulfills the requirement for Guideline Requirement 85-1.



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CONCLUSIONS: This study alone does not satisfy the minimum requirements set forth under Guideline Series 85-1 for a rat general metabolism study. When data from Study Report 90R-193 (MRID No. 423742-01) is combined with the results of the present study, the toxicology data requirement for a rat general metabolism study is satisfied.

The absorption, distribution, metabolism, and excretion of oxyfluorfen were studied in groups of rats administered a single oral gavage dose of 4 or 320 mg/kg C¹⁴-oxyfluorfen, or 40 ppm (4 mg/kg/day) unlabeled oxyfluorfen in the diet for 14 days followed by a single oral gavage dose of 4 mg/kg C¹⁴-oxyfluorfen on day 15.

The study demonstrates that C¹⁴-oxyfluorfen is rapidly absorbed, distributed, metabolized, and excreted following oral administration in rats. Recovery of radioactivity was high for most groups (84.34-99.58% of administered dose). The feces was the major route of excretion. There appears to be a sex-related difference in oxyfluorfen excretion as evidenced by higher urinary elimination and slightly lower fecal elimination of radioactivity in females compared to males for all dose levels. The metabolism of oxyfluorfen appeared to be extensive with slightly dose- and sex-related differences in the metabolite pattern and amounts. The parent compound and about 19 metabolites were identified in the excreta. In the feces, the parent compound represented the highest amount of radioactivity. In the urine, most of the radioactive components were conjugates. A greater amount of the unmetabolized parent compound was detected in the feces of the high-dose group compared to the low-dose groups (single- and repeated-dosing). Three major pathways include O-deethylation, reduction of the nitro group, and diphenyl ether cleavage.

FINAL

DATA EVALUATION REPORT

OXYFLUORFEN

Study Type: Metabolism

Prepared for:

Health Effects Division
Office of Pesticide Programs
Environmental Protection Agency
1921 Jefferson Davis Highway
Arlington, VA 22202

Prepared by:

Clement International Corporation
9300 Lee Highway
Fairfax, VA 22031-1207

Principal Reviewer *Karen N. Gan* Date 5/6/93
Karen Gan, M.S.

Independent Reviewer *Sanji Diwan* Date 5/6/93
Sanji Diwan, Ph.D.

QA/QC Manager *William C. McLeellan* for Date 5/6/93
William McLeellan, Ph.D.

Contract Number: 68D10075
Work Assignment Number: 2-95
Clement Number: 252
Project Officer: Caroline Gordon

EPA Reviewer: Paul Chin, Ph.D.
 Review Section 2, Toxicology Branch I,
 Health Effects Division

Signature: Paul Chin
 Date: 5/14/93

Section Head: Marion Copley, DVM
 Review Section 4, Toxicology Branch I

Signature: Marion Copley
 Date: 5/17/93

DATA EVALUATION REPORT

R. J.
 5-19-93

STUDY TYPE: Metabolism in rats (Guideline Series 85-1)

EPA IDENTIFICATION NUMBERS:

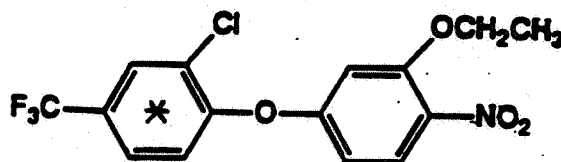
P.C. Code: 111601

Tox. Chem. Number: 188AAA

MRID Number: 426524-01

TEST MATERIAL: 2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl) benzene

SYNONYM: Oxyfluorfen; Goal®



* denotes the position of the ^{14}C label

SPONSOR: Rohm and Haas Company, Toxicology Department, Spring House, PA

PERFORMING LABORATORY: Rohm and Haas Company, Agricultural Products Development Department, Spring House, PA

AUTHOR: Qipan Zhang

REPORT: ^{14}C -Oxyfluorfen: Pharmacokinetic Study in Rats. Supplemental Report A: Metabolism of ^{14}C -Oxyfluorfen in Rats. Laboratory Report No. 34-92-97. Sponsor Project ID 90R-193 (Supplement A).

STUDY COMPLETION DATE: January 19, 1993

CONCLUSIONS: This report is supplemental to a pharmacokinetic study conducted on ^{14}C -oxyfluorfen in rats (Rohm and Haas Report No. 90R-193). The absorption, distribution, metabolism, and excretion of oxyfluorfen were

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studied in groups of rats administered a single oral gavage dose of 4 or 320 mg/kg [¹⁴C]oxyfluorfen, or 40 ppm (4 mg/kg/day) unlabeled oxyfluorfen in the diet for 14 days followed by a single oral gavage dose of 4 mg/kg [¹⁴C]oxyfluorfen on day 15.

The study demonstrates that ¹⁴C-oxyfluorfen is rapidly absorbed, distributed, metabolized, and excreted following oral administration in rats. Recovery of radioactivity was high for most groups (84.34-99.58% of administered dose). The feces was the major route of excretion. There appears to be a sex-related difference in oxyfluorfen excretion as evidenced by higher urinary elimination and slightly lower fecal elimination of radioactivity in females compared to males for all dose levels. The metabolism of oxyfluorfen appeared to be extensive with slightly dose- and sex-related differences in the metabolite pattern and amounts. The parent compound and about 19 metabolites were identified in the excreta. In the feces, the parent compound represented the highest amount of radioactivity. In the urine, most of the radioactive components were conjugates. A greater amount of the unmetabolized parent compound was detected in the feces of the high-dose group compared to the low-dose groups (single- and repeated-dosing). Three major pathways include O-deethylation, reduction of the nitro group, and diphenyl ether cleavage.

CLASSIFICATION: Considered by itself, this study is judged core-acceptable. However, this study alone does not satisfy the minimum requirements set forth under guideline series 85-1 for metabolism studies. The excretion and tissue distribution data need to be submitted, including the individual animal data. This information is reportedly in Rohm and Haas Report No. 90R-193.

When data from Study Report 90R-193 (MRID 423742-01) is coordinated with the results of the present study, the toxicology requirements for adequate metabolism data in the rat is satisfied.

A. MATERIALS

1. Test Substance

The nonradiolabeled test material (lot number RPO 8674FP) had a purity of 99.4%. Nonradiolabeled GOAL® technical herbicide (lot number 2-0956), used for the repeated-dosing study, had a purity of 71.4%.

Radiolabeled oxyfluorfen (lot number 602.0115) was labeled with ¹⁴C at the chlorophenyl ring. The radiopurity was 92.9%, and the specific activity was 9.12 mCi/g. The ¹³C-oxyfluorfen (lot number MWS-15-92-2) had a purity of 94.9%. The ¹³C-label was used to assist in metabolite identification.

2. Test Animals

Cr1:CD®BR rats (5/sex/group) were obtained from Charles River Laboratories, Kingston Facility, Stone Ridge, NY. Animals weighed 125-150 g. A single oral gavage dose of 4 mg/kg (low-dose group) or 320 mg/kg (high-dose group) labeled oxyfluorfen was administered to rats that were sacrificed at day 7 postdosing. Another group received 40 ppm unlabeled oxyfluorfen in the diet (equivalent to 4 mg/kg/day oxyfluorfen) for 14 days followed by a single oral gavage dose of 4 mg/kg radiolabeled oxyfluorfen (repeated-dose group).

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The rationale for choosing these doses was based on toxicity studies on GOAL®. The low dose was found to be a NOEL in a chronic/oncogenic study in rats and the high dose produced systemic toxicity in a subchronic study in rats. An intravenous dose of the compound was not administered because the water solubility of the compound was negligible.

B. METHODS

1. Acclimation

Rats were acclimated to the laboratory environment for approximately 1 week prior to use. Animals were individually housed in Nalgene® plastic metabolism cages (Nalge Company, Rochester, NY) for collection of urine and feces. During the dietary pretreatment phase, repeated-dose animals were individually housed in metal hanging cages then transferred to metabolism cages at time of radiolabeled dosing. All animals were acclimated to their respective cages for at least 3 days prior to beginning of treatment. Animals were provided Purina® Certified Rodent Lab Chow (#5002) and tap water ad libitum throughout the study. There was no indication that animals were fasted prior to and after dosing.

2. Dosing Solutions

The low-dose solution was prepared by dissolving ¹⁴C-oxyfluorfen and ¹³C-oxyfluorfen (1:1) into acetone. The solvent was evaporated, and the mixture was mixed with corn oil to obtain 0.8 mg/mL solution (specific activity (SA) of 10123 dpm/μg). The high-dose solution consisted of ¹⁴C-oxyfluorfen, ¹³C-oxyfluorfen, and nonradiolabeled oxyfluorfen (1:5:4) in acetone. A similar preparation procedure, as used for the low-dose solution, was followed to obtain a 64 mg/mL solution (SA of 2025 dpm/μg). In the repeated-dose group, the dose solution was ¹⁴C-oxyfluorfen and ¹³C-oxyfluorfen (1:1) in acetone. After evaporating acetone, the material was dissolved in corn oil to obtain 0.8 mg/mL solution (SA of 10123 dpm/μg). Oral gavage radiolabeled solutions were administered at 5 mL/kg. For the diet containing nonradiolabeled GOAL® for the repeated-dose group, test material was dissolved in acetone and mixed with feed, then acetone was evaporated. The diet was administered ad libitum for 2 weeks. The treated diet was assessed for stability.

3. Sample Collection

Urine, urine funnel washes, and feces were collected over dry ice at 0 hours, 1, 2, 3, 4, and 7 days postdosing for all dosed groups, as well as 6 hours postdosing for the single-dose groups. Whole blood and plasma were collected at 1, 3, 6, and 10 hours, and 1, 2, 3, 4, and 7 days postdosing in the single-dose groups only. After animals were sacrificed on day 7 postdosing, the following tissues were collected: liver, fat, kidneys, bone marrow, heart, lungs, brain, gonads, muscle spleen, adrenals, thyroids, and carcass. Cage rinse was collected at the end of the study.

Radioactivity in urine, urine funnel washes, cage washes, and plasma were analyzed by liquid scintillation counting (LSC) (in triplicate). Feces and carcass were homogenized and combusted prior to LSC. Whole blood and tissues were combusted prior to LSC. Methods for statistical analyses were limited to means and standard deviations.

Expired air was not collected since a previous study demonstrated that <0.3% of administered dose is eliminated as $^{14}\text{CO}_2$ following administration of 1000 ppm for 7 days (J.P. Wargo; Laboratory 23 Research Report NO. 23-57; July 6, 1973).

4. Metabolite Analysis

Urine and fecal samples were pooled for the metabolite analysis. The 1-2, 1-3, or 1-4-day pooled urine samples and 1-2- or 1-3-day pooled fecal samples from the dosed groups were analyzed for the presence of ^{14}C -labeled metabolites. Each pooled sample contained about 90% of excreted ^{14}C activity in urine or feces. Metabolite analysis was conducted by the Residue, Metabolism, and Environmental Fate Department of Rohm and Haas. Reference standards were used to identify metabolites. Four thin-layer chromatography (TLC) solvent systems were used: (A) toluene (normal phase), (B) ethyl ether (normal phase), (C) chloroform:methanol (normal phase), and (D) acetonitrile:methanol (reverse phase).

The pooled high-dose fecal samples were extracted with methanol. Three further acidified extractions were performed on the solid feces, while the methanol extracts were further partitioned with hexane, ethyl acetate (EtOAc), and butanol. Aliquots of extracted feces were combusted in a Packard Tri-Carb Oxidizer. LSC was performed using a Packard Tri-Carb Liquid Scintillation Spectrometer. Extractions of radioactivity in the feces from the pooled single and repeated low-dose groups were relatively similar to that of the single high-dose group, except methanol extracts were partitioned only with ethyl acetate.

In the fecal samples, radioactive components in hexane and EtOAc extracts were separated and characterized by TLC, then confirmed by gas chromatography (GC)-mass spectrometry (MS), where possible. Aqueous extracts from low-dose feces were first hydrolyzed and then analyzed by TLC. Metabolites in the acidified extracts were not isolated, but directly compared with reference standards by TLC, due to the small amounts of radioactivity in these samples. The butanol extracts from high-dose feces and hexane extracts from low-dose feces could not be analyzed due to low radioactivity (1.2-1.7% of administered dose).

For the pooled urine samples from the low- and high-dose groups, EtOAc and butanol extractions were performed. Radioactivity in the EtOAc, butanol, and aqueous layers were determined. Radioactive components from EtOAc extracts were separated by TLC and analyzed by LSC. The very polar materials in the chromatograms of the EtOAc extracts were hydrolyzed, purified, and analyzed. The butanol extracts also contained polar materials and were hydrolyzed and analyzed by TLC. Aqueous extracts from the urine were not analyzed due to low amount of radioactivity. As with the feces, some of the metabolites from the

urine were analyzed using GC-MS. They were first purified by several sequential preparative chromatographies to ensure radiopure materials.

5. Protocol

Animal husbandry and excretion and tissue collection were described in the study protocol (Appendix 1), but was not discussed in the study methods section. No protocol was provided for the metabolite analyses.

6. Compliance

The quality assurance statement and the statement of compliance with Good Laboratory Practices for the study were signed on January 19, 1993.

C. REPORTED RESULTS

1. Elimination and Recovery

After 7 days postdosing, total mean recovery of radioactivity was 84.34-99.58% of the administered dose for all dosed groups. Most of the radioactivity was eliminated in the feces (63.31-87.00% of the administered dose), with slightly higher amounts in the males compared to females for each dose level. A sex-related difference in the elimination of radioactivity in the urine was evident; 5.11-10.27% of the administered dose in males versus 18.61-25.11% of the administered dose in females. Although the excreta collection data were not provided for earlier time points, it can be assumed that peak elimination in feces and urine occurred soon after dosing since the investigators reported that the <90% of the radioactivity recovered in the feces and urine were eliminated by 2-4 days postdosing.

Mean total recovery of radioactivity in tissues and cage washes were 1.74-3.38% of the administered dose for all dosed groups. Because tissue distribution data were not provided, the radioactivity in the individual tissues can not be determined.

2. Metabolism

The percentages of the recovered fecal radioactivities identified as parent compound and/or metabolites were 64.3-74.8, 71.6-78.4, and 62.9-63.6% for the low-, high-, and repeated-dose groups, respectively. In the urine, 69.6-79.5, 69.2-83.8, and 67.5-69.8% of the recovered radioactivity were identified for the low-, high-, and repeated-dose groups, respectively.

Overall, ~8-10 metabolites were found in the feces of each dosed group (Table 2). The parent compound represented 8.7-29.2% of the administered dose; the higher amounts occurred in the high-dose group (24.0-29.2% of administered dose). Major fecal metabolites included RH-45469 (6.3-21.8% of administered dose), RH-34670 (1.9-9.6% of administered dose), and RH-35451 (0.5-9.4% of administered dose). For RH-45469 and RH-35451, higher amounts were found in the single and repeated low-dose groups than the single high-dose group. The parent compound and these 3 metabolites (RH-34670, RH-45469, and RH-35451)

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accounted for >50% of the fecal radioactivity. RH-35450 was found only in the high-dose group (0.6-1.7% of administered dose) while RH-34860 was found only in the repeated-dose group (0.8-1.0% of administered dose). RH-35298 was detected only in the single low- and high-dose groups (0.7-4.2% of administered dose). RH-120162 and RH-120450 were detected in all dosed groups, but were higher in the single low-dose group (\approx 3.6-6.9% of administered dose for each metabolite) compared to the other two groups (\approx 0.3-1.5% of administered dose for each metabolite).

In the urine, 9 of 13 identified compounds were conjugates (Table 2). The conjugate, RH-34800-C, represented 1.5-8.6% of administered dose. RH-45298-C represented 0.1-15.8% of administered dose but was not detected in high- and repeated-dose males. There also appears to be slight dose- and sex-related differences in the amounts of some urinary metabolites. The parent compound was not detected in the urine.

Metabolism of oxyfluorfen appeared to be more extensive in the low-dose group compared to the high-dose group as suggested by lower recoveries of the parent compound in the feces for the latter group. There were sex- and dose-related differences in the urinary and fecal metabolite patterns. A proposed metabolic pathway for oxyfluorfen in rats is shown in Figure 1. Three pathways were proposed. In the first pathway, oxyfluorfen undergoes *O*-deethylation to form RH-34670 which is reduced to RH-45298, and then acetylated to RH-45469 or formylated to RH-120450. A conjugate of RH-45298 was also formed in the high-dose female urine. The second pathway involves reduction of the nitro group resulting in RH-35451 and the corresponding acetylated, formylated, and cyclized metabolites, RH-34450, RH-120162, and RH-120832, respectively. The third pathway is the formation of the major metabolite found in rat urine, RH-34800-C, by diphenyl ether cleavage.

D. STUDY AUTHORS' CONCLUSIONS

Oxyfluorfen appears to be readily absorbed, excreted, and extensively metabolized in rats. Nine metabolites were found in the feces, of which the parent compound and three major metabolites (RH-34670, RH-45469, and RH-35451) accounted for >50% of the fecal radioactivity. In the urine, most of the metabolites were conjugates; major conjugates were RH-45298-C and RH-34800-C. A dose-dependent difference in metabolism of oxyfluorfen was observed. Metabolism is more extensive in the low-dose groups than the high-dose group as indicated by 30 and 10-13% recoveries of the parent compound in the high- and low-dose groups, respectively. There were some minor sex-related differences in the metabolite levels. No major unknowns were left unidentified or uncharacterized in the excreta.

E. CONCLUSIONS BASED ON REVIEWERS' DISCUSSION AND INTERPRETATION OF DATA

The study demonstrates that ^{14}C -oxyfluorfen is rapidly absorbed, distributed, metabolized, and excreted following oral administration in rats. In general, total recoveries of the radioactivity were high for

most groups, with slightly lower recoveries in the high-dose males and repeated-dose males and females ($\approx 84\%$ of dose recovered). Most of the radioactivity in all groups were recovered in the feces, however, the amounts represented by biliary excretion and unabsorbed test material are not known since intravenous dosing was not conducted. There appears to be a sex-related difference in oxyfluorfen excretion as evidenced by higher urinary elimination and slightly lower fecal elimination of radioactivity in females compared to males for all dosing levels. Bioaccumulation of oxyfluorfen appears to be low, however, tissue distribution pattern cannot be determined since data were not provided. The metabolism of oxyfluorfen appears to be extensive. The parent compound and ≈ 19 metabolites were identified in the excreta. In the urine, most of the radioactive components were conjugates. In the feces, the parent compound represented the highest amount of radioactivity. A greater amount of the unmetabolized parent compound was detected in the feces of the high-dose group compared to the low-dose groups which suggests that metabolism is more extensive in the low-dose groups or possibly, that oral absorption is lower in the high-dose group. Overall, there were dose- and sex-related differences in some of the metabolites. In some cases, the low amount of radioactivity may have produced some variations in the measurements.

In several dosing groups, $>20\%$ of the administered dose represented cumulative unknowns/origin materials from all extracts and TLC bands, non-extractable residues (0-3% of the dose), and polar materials (1.6-5% of the dose). However, no single band of unidentified activity represented $>5\%$ of the administered dose.

F. STUDY DEFICIENCY

The excretion and tissue distribution data, including individual animal data, were not provided.

TABLE 1. Excretion of Radioactivity 7 Days Following Oral Administration of [¹⁴C]-Oxyfluorfen in Rats^a

Dose Group	Sex ^b	Percent of Administered Dose			Total Recovery ^d
		Urine	Feces	Other ^c	
4 mg/kg (single)	M	10.27	87.00	2.31	99.58
	F	24.71	68.63	3.38	96.72
320 mg/kg (single)	M	5.11	77.49	1.74	84.34
	F	25.11	63.31	2.61	91.03
4 mg/kg (repeated)	M	9.94	71.37	3.03	84.34
	F	18.61	63.59	2.42	84.62

^aData were extracted from Report 90R-193; Table I-4, p. 49

^b5/Sex/group

^cIncludes cage wash, urine funnel wash, whole blood, tissues, and carcass.

^dRecalculated by the reviewer

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TABLE 2. Distribution of Metabolites in Pooled Urine and Feces After Oral Administration of Oxyfluorfen in Rats^a

Metabolites	4 mg/kg (single low-dose)				320 mg/kg (single high-dose)				4 mg/kg (repeated low-dose)			
	Males Urine	Males Feces	Females Urine	Females Feces	Males Urine	Males Feces	Females Urine	Females Feces	Males Urine	Males Feces	Females Urine	Females Feces
RH-32915 (parent)	13.9	-	14.3	-	24.0	-	29.2	-	8.7	-	12.2	-
RH-34670	0.7	1.9	4.3	2.5	0.1	9.6	0.4	6.6	0.1	4.6	2.0	3.6
RH-34670-C'	<0.1	-	0.3	-	-	0.2	-	-	-	-	-	-
RH-45469	-	21.8	-	8.9	0.2	6.8	-	6.3	-	21.8	-	14.1
RH-35451	-	9.4	-	7.5	-	2.3	-	1.9	-	5.9	-	0.5
RH-35450	-	-	-	-	1.7	-	0.6	-	-	-	-	-
RH-45298	-	2.4	-	2.3	-	4.2	0.7	-	-	-	-	-
RH-45298-C	0.1	-	1.5	-	-	15.8	-	-	-	-	1.3	-
RH-45298-C'	-	-	-	-	0.1	-	0.7	-	-	-	1.1	-
RH-120162	-	6.9	-	4.0	-	1.2	-	0.6	-	0.9	-	0.6
RH-120450	-	6.1	-	3.6	-	1.5	-	0.6	-	1.3	-	0.3
RH-120450-C'	0.3	-	0.7	-	-	-	1.4	-	-	-	-	-
RH-120450-C''	0.1	-	0.8	-	-	0.7	-	-	-	-	0.7	-
RH-34800	-	2.7	-	1.1	-	4.1	-	2.7	-	1.4	-	2.8
RH-34800-C	6.7	-	8.6	-	2.7	-	1.5	-	6.6	-	7.4	-
RH-34800-C''	0.1	-	0.5	-	-	-	0.4	-	-	-	0.5	-
RH-31689-C'	0.2	-	0.4	-	-	-	-	-	-	-	-	-
RH-45469-C'	-	-	-	-	0.4	-	-	-	-	-	-	-
RH-120832	-	-	-	-	-	-	-	0.4	-	-	-	4.8
RH-34860	-	-	-	-	-	-	-	-	-	0.8	-	1.0
Total	8.2	65.1	17.1	44.2	3.6	55.4	21.1	49.6	6.7	45.4	13.0	39.9
Other ^b	2.1	21.6	7.6	24.4	1.6	22.1	4.0	14.1	26.2	3.3	5.7	23.5

^aValues given as percentage of administered dose in the pooled urine and feces for each dosing group.^bRepresents the polar materials (not analyzed), non extractable residues, and unknowns/origin materials from extracts and TLC bands. No single band of unidentified activity represented >5% of the administered dose.

Source: Tables S-1-F, S-1-M, S-2-F, S-2-M, S-3-F, and S-3-M; pp. 76-81

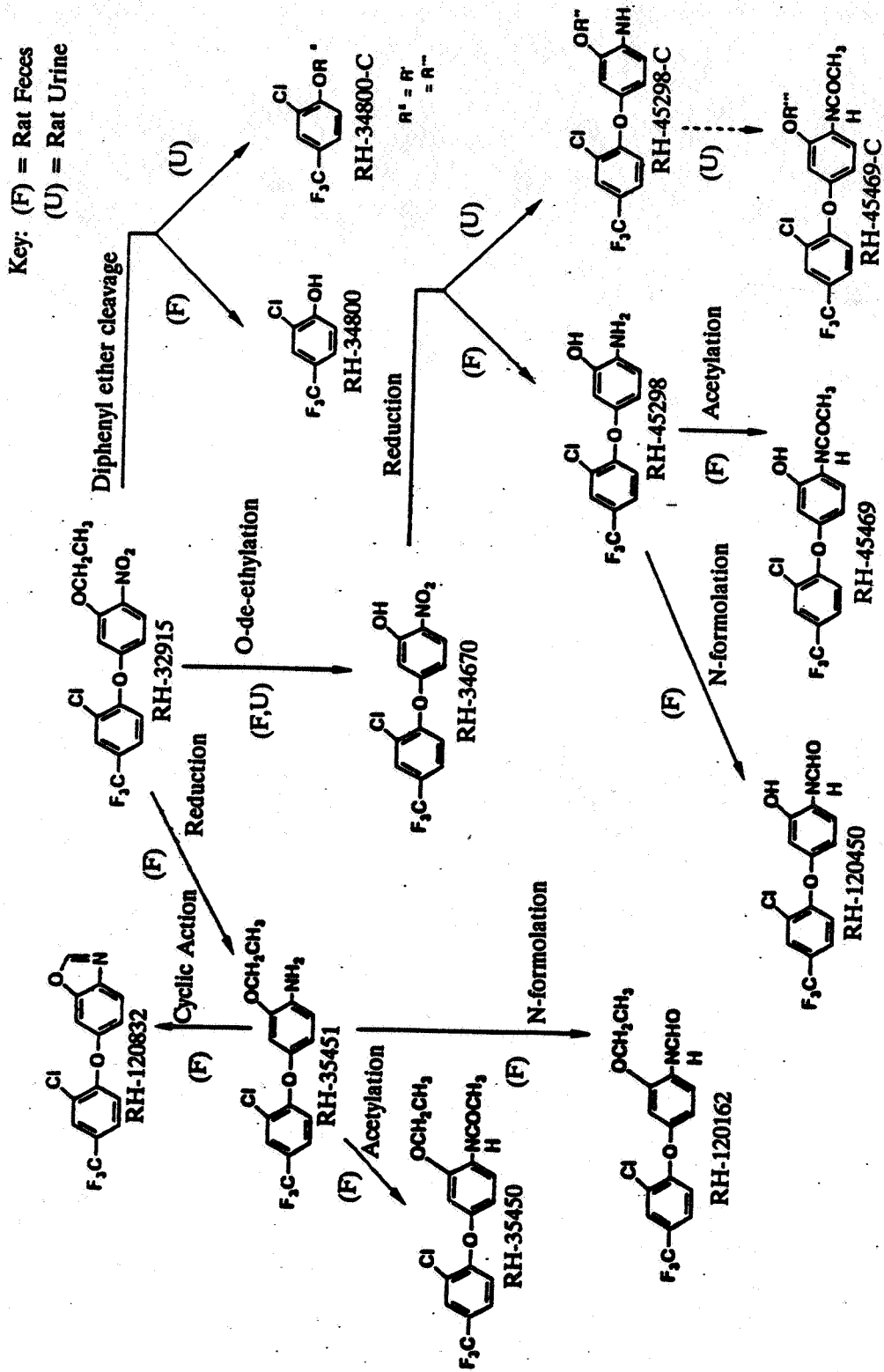


Figure 1. Proposed Metabolic Pathway of Oxyfluorfen in Rats

Source: Figure 7, p. 107

DP BARCODE: D180875

Dykstra 188AAA

REREG CASE # 2490

CASE: 816380
SUBMISSION: S422271

DATA PACKAGE RECORD
BEAN SHEET

DATE: 07/23/92
Page 1 of 1

*** CASE/SUBMISSION INFORMATION ***

CASE TYPE: REREGISTRATION ACTION: 606 DATA PACKAGE REVIEW 100.00 %
CHEMICALS: 111601 Oxyfluorfen (ANSI)

ID#: 111601-000707

COMPANY: 000707 ROHM & HAAS COMPANY

PRODUCT MANAGER: 53 BRUCE SIDWELL

PM TEAM REVIEWER: MARK WILHITE

RECEIVED DATE: 06/24/92

703-308-8078 ROOM: CS1 3E3
703-308-8586 ROOM: CS1 3RD FI

DUE OUT DATE: 09/22/92

*** DATA PACKAGE INFORMATION ***

DP BARCODE: 180875 EXPEDITE: N DATE SENT: 07/23/92 DATE RET.: / /

CHEMICAL: 111601 Oxyfluorfen (ANSI)

DP TYPE: 101 Phase IV Review

ADMIN DUE DATE: 10/01/92

CSF: N

LABEL: N

ASSIGNED TO	DATE IN	DATE OUT
DIV : HED	/ /	/ /
BRAN: TB- <u>1</u>	7/29/92	/ /
SECT:	/ /	/ /
REVR :	/ /	/ /
CONTR:	/ /	/ /

M/Metabolism
24

*** DATA REVIEW INSTRUCTIONS ***

Submission to partially fulfil the 85-1 General metabolism requirement. Please review. MRID 42374201

*** ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION ***

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL
180876	EEB	07/23/92	10/01/92	Y	N	N