Start New Document

Patch II

File Name/Info

TX 2348

Patch Code

[ ]

Environmental Health & Toxicology

2349 [ ]

THE ACUTE EYE IRRITATION POTENTIAL

OF

[ ]

SOCAL 2381

JULY 26, 1985

Submitted By: RADuncan 1-29-85

R. A. Duncan, B.S.
Toxicology Technician

Reviewed By: [ ]

Toxicologist/Study Director

Approved By: [ ]

Supervising Toxicologist

[ ]

SOCAL 2381

THE ACUTE EYE IRRITATION POTENTIAL OF
[ ]

To the best of my knowledge, this study was performed in compliance with the TSCA Good Laboratory Practice Standards (40 CFR Part 792, November 29, 1983).

[ ]

Study Director
[ ]

7-29-85
Date

RAD:v11-5.20
compliance
7/18/85

(415) 883-0493

Scholler Associates, Inc. / 2 COMMERCIAL BLVD • NOVATO, CA 94947

The following study at CEHC has been reviewed and approved for compliance with EPA FIFRA and TSCA Good Laboratory Practice (GLP) Standards and Quality Assurance (QA) regulations:

Study # SOCAL 2381

Type of Study EYE IRRITATION

Date Study Started MAY 14, 1985

Approved Jean Scholler

Jean Scholler, Ph.D.
Quality Assurance Officer

Date 7-29-85

Date(s) of previous reviews 5-16-85

I. THE ACUTE EYE IRRITATION POTENTIAL OF [ ]

II. ORIGIN AND PURPOSE

[ ] , [ ] [ ] [ ] , requested that the eye irritation potential of [ ] in rabbits be determined.

III. SUMMARY

One-tenth milliliter of the test material was placed in the conjunctival sac of one eye in each of nine rabbits. Three of the rabbits were further treated by rinsing the eye for one minute with distilled water at a rate of 250 milliliters per minute after a 30-second exposure.

The treatment caused slight to moderate conjunctival redness in unrinsed eyes within one hour. Corneal opacity and iritis were not observed, and all eyes were free of irritation at 72 hours. Moderate to severe conjunctival irritation was observed in treated-rinsed eyes at one hour. All eyes were free of irritation at 72 hours.

IV. MATERIALS AND METHODS

A. Materials

Test Material: The [ ] used in this study was a viscous, dark brown oil, coded APD 4723. It contained [ ] [ ] [ ]. It was received from the study sponsor on November 19, 1984 and stored at room temperature.

B. Animals and Husbandry

Young adult male New Zealand white rabbits, supplied by L.I.T. Rabbitry, Whitehall, Montana, were used in this study. They were received on April 2, 1985, allowed a conditioning period of six weeks, and examined for ocular defects prior to dosing in our laboratory. The animals were 14-16 weeks of age at the time of dosing.

The animals were housed individually in wire-bottom cages in an air-conditioned room. The temperature ranged from 22.6-23.0°C and the relative humidity from 41.0-58.2% during the study period. The photoperiod was a 12-hour light/dark cycle: lights on at 0630 and off at 1830. The animals were fed a daily ration of Purina Laboratory Rabbit Chow HF® #5326 and had free access to water.

Each animal was individually identified by a cage card that stated the animal number, sex, study number, test material code number, dosage, and date of treatment.

C. Methods

1. Preparation of Test Material

The test material was delivered neat.

2. Dosing and Observations

One-tenth milliliter of the test material was placed in the conjunctival sac of one eye in each of nine rabbits. The untreated eye of each animal served as the control. Three of the rabbits were further treated by rinsing the control and treated eye for one minute at a rate of 250 milliliters per minute with distilled water after a 30-second exposure. All the eyes were examined and graded for ocular reaction at 1 hour after treatment and at 1, 2 and 3 days, using the method of Draize et al. (1), which is given in Appendix A.

All animals on study were observed at least once each morning and late afternoon for any behavioral or physiological abnormalities, except on the day of sacrifice when observations were made once daily.

Animals were sacrificed at the end of the study with an intravenous overdose of barbiturate. Animals were not necropsied.

3. Study Schedule

The study was begun on May 14, 1985 and completed on May 18, 1985.

D. Retention of Raw Data, Biological Specimens, and Test Materials

All raw data will be retained indefinitely by Chevron Environmental Health Center, Inc. upon completion of the study. Chevron Environmental Health Center, Inc. will also retain a 20-gram sample of the test material for at least one year, or until the quality deteriorates due to age to the point that re-evaluation would be meaningless. Raw data and test material samples are stored in archives at Chevron Environmental Health Center, Inc.

V. RESULTS

A. Treated-Unrinsed Eyes (Tables 1 and 2):

Corneal opacity and iritis were not observed. Slight to moderate conjunctival redness was observed one hour after treatment; slight redness was observed at 24 and 48 hours. All eyes were free of irritation 72 hours after treatment.

B. Treated-Rinsed Eyes (Tables 1, 3, and 4):

Mean total eye irritation one hour after treatment was greater in rinsed eyes than unrinsed eyes; moderate to severe conjunctival irritation and slight chemosis were observed. Corneal opacity and iritis were not observed. All eyes were free of irritation 72 hours after treatment.

VI. REFERENCE

(1) Draize, J. H., Woodward, G., and Calvery, H. O. Methods for the study of irritation and toxicity of substances applied topically to skin and mucous membranes. J. Pharmacol. Exp. Ther. 82: 377-390, 1944.

TABLE 1: MEAN[a] EYE IRRITATION SCORES[b] OF RABBITS TREATED WITH [ ] (APD 4723)

Time After Treatment	Treated-Unrinsed				Treated-Rinsed			
	Cornea	Iris	Conjunctivae	Total	Cornea	Iris	Conjunctivae	Total
1 Hour	0.0 (-)	0.0 (-)	3.3 (2-4)	3.3 (2-4)	0.0 (-)	0.0 (-)	5.3 (4-8)	5.3 (4-8)
24 Hours	0.0 (-)	0.0 (-)	1.0 (0-2)	1.0 (0-2)	0.0 (-)	0.0 (-)	0.7 (0-2)	0.7 (0-2)
48 Hours	0.0 (-)	0.0 (-)	0.3 (0-2)	0.3 (0-2)	0.0 (-)	0.0 (-)	0.7 (0-2)	0.7 (0-2)
72 Hours	0.0 (-)	0.0 (-)	0.0 (-)	0.0 (-)	0.0 (-)	0.0 (-)	0.0 (-)	0.0 (-)

(a) Mean (range) of six treated-unrinsed eyes and three treated-rinsed eyes.
(b) Maximum irritation scores are: Cornea, 80; Iris, 10; Conjunctivae, 20; Total, 110.

TABLE 2: THE EFFECTS OF [ ] ON THE INDIVIDUAL EYES OF ALBINO RABBITS

Time After Treatment	Rabbit No.	Cornea		Iris	Conjunctivae			Total Score
		Opacity	Area		Redness	Chemosis	Discharge	
1 Hour	2157[a]	0	0	0	2	0	0	4
	2173[a]	0	0	0	2	0	0	4
	2183[a]	0	0	0	1	0	0	2
	2184[a]	0	0	0	2	0	0	4
	2191[a]	0	0	0	2	0	0	4
	2192[a]	0	0	0	1	0	0	2
24 Hours	2157	0	0	0	1	0	0	2
	2173	0	0	0	1	0	0	2
	2183	0	0	0	0	0	0	0
	2184	0	0	0	0	0	0	0
	2191	0	0	0	1	0	0	2
	2192	0	0	0	0	0	0	0
48 Hours	2157	0	0	0	0	0	0	0
	2173	0	0	0	1	0	0	2
	2183	0	0	0	0	0	0	0
	2184	0	0	0	0	0	0	0
	2191	0	0	0	0	0	0	0
	2192	0	0	0	0	0	0	0
72 Hours	2157	0	0	0	0	0	0	0
	2173	0	0	0	0	0	0	0
	2183	0	0	0	0	0	0	0
	2184	0	0	0	0	0	0	0
	2191	0	0	0	0	0	0	0
	2192	0	0	0	0	0	0	0

(a) No test material in eye. Hair around lids is stained brown.

TABLE 3: THE EFFECTS OF [ ] ON THE INDIVIDUAL EYES OF ALBINO RABBITS AFTER A 30-SECOND EXPOSURE AND A ONE-MINUTE WATER RINSE

Time After Treatment	Rabbit No.	Cornea		Iris	Conjunctivae			Total Score
		Opacity	Area		Redness	Chemosis	Discharge	
1 Hour	2193[a]	0	0	0	3	1	0	8
	2196[a]	0	0	0	2	0	0	4
	2197[a]	0	0	0	2	0	0	4
24 Hours	2193	0	0	0	0	0	0	0
	2196	0	0	0	0	0	0	0
	2197	0	0	0	1	0	0	2
48 Hours	2193	0	0	0	0	0	0	0
	2196	0	0	0	0	0	0	0
	2197	0	0	0	1	0	0	2
72 Hours	2193	0	0	0	0	0	0	0
	2196	0	0	0	0	0	0	0
	2197	0	0	0	0	0	0	0

(a) No test material in eye. Hair around lids is stained brown.

TABLE 4: THE EFFECTS OF A ONE-MINUTE WATER RINSE ON THE CONTROL EYES OF ALBINO RABBITS TREATED WITH [ ]

Time After Treatment	Rabbit No.	Cornea		Iris	Conjunctivae			Total Score
		Opacity	Area		Redness	Chemosis	Discharge	
1 Hour	2193	0	0	0	2	0	0	4
	2196	0	0	0	1	0	0	2
	2197	0	0	0	2	0	0	4
24 Hours	2193	0	0	0	0	0	0	0
	2196	0	0	0	0	0	0	0
	2197	0	0	0	1	0	0	2
48 Hours	2193	0	0	0	0	0	0	0
	2196	0	0	0	0	0	0	0
	2197	0	0	0	1	0	0	2
72 Hours	2193	0	0	0	0	0	0	0
	2196	0	0	0	0	0	0	0
	2197	0	0	0	0	0	0	0

APPENDIX A

METHOD OF EYE SCORING

I. CORNEA

A. Opacity - Degree of Density (most dense area taken for reading)

0. No ulceration or opacity.
1. Slight: Scattered or diffuse area, details of iris clearly visible.
2. Moderate: Easily discernible translucent areas, details of iris slightly obscurred.
3. Dense: Opalescent areas, no details of iris visible, size of pupil barely discernible.
4. Complete: Opaque, iris invisible.

B. Area of Cornea Involved (area of cornea showing any degree of opacity)

0. Cornea not involved.
1. One-quarter (or less) but not zero.
2. Greater than one-quarter--less than one-half.
3. Greater than one-half--less than three-quarters.
4. Greater than three-quarters up to whole area.

Score equals AxBx5. (Maximum = 80)

II. IRIS

A. Values

0. Normal
1. Mild: Folds above normal, congestion, swelling, circumcorneal injection (any one or all of these or combination of any thereof), iris still reacting to light (sluggish reaction is positive).
2. Severe: No reaction to light, hemorrhage; gross destruction (any or all of these).

Score equals Ax5. (Maximum = 10)

III. CONJUNCTIVAE

A. Redness (Refers to palpebral conjunctivae only)

0. Normal
1. Slight: Vessels definitely injected above normal.
2. Moderate: More diffuse, deeper crimson red, individual vessels not easily discernible.
3. Severe: Diffuse beefy red.

B. Chemosis

0. No swelling.
1. Slight: Any swelling above normal (includes nictitating membrane).
2. Moderate: Obvious swelling with partial eversion of the lids.
3. Severe: Swelling with lids about half closed.
4. Extreme: Swelling with lids about half closed to completely closed.

C. Discharge

0. No discharge.
1. Slight: Any amount different from normal (does not include small amount observed in inner canthus of normal animals).
2. Moderate: Discharge with moistening of the lids and hairs just adjacent to the lids.
3. Severe: Discharge with moistening of the lids and considerable area around the eye.

Score equals (A+B+C) x 2. (Maximum = 20)

The total score is the sum of scores obtained for the cornea, iris, and conjunctivae. Maximum total score = 110.

JRC:mnb-6a(masproeye)
1/9/85

[ ] COPY

[ ]
November 20, 1985

FINAL TOXCOLOGY REPORTS FOR
[ ]
SOCAL 2381: ACUTE EYE IRRITATION
SOCAL 2382: FOUR-HOUR SKIN IRRITATION

B. W. TAYLOR
[ ]

Attention: J. J. Shook

Please find enclosed 10 copies each of the final toxicology reports SOCAL 2381: the Acute Eye Irritation Potential of [ ] and SOCAL 2382: the Four-Hour Skin Irritation Potential of [ ]. As requested, the original designation X245A was replaced with [ ]throughout the toxicology reports.

The data indicate that the test material caused transient minor eye irritation and was not a skin irritant. The primary skin irritation score was 0.04. The 24 through 72 hour mean scores (European labelling criteria) for both eye and skin irritation are listed below.

Eye Irritation	Score
Cornea	0.0
Iris	0.0
Conjunctivae	
Redness	0.22
Edema	0.0
Skin Irritation	
Edema	0.0
Erythema	0.0

These studies will be billed as indicated in the Toxicology Test request form to Charge Code 2286. Please contact M. L. Lakin of my staff if you have any questions or comments.

J. N. Ospenson

J. N. OSPENSON

JNO:dcc

Enclosures

cc: P. D. Accardo
R. B. Barber
G. H. Buteau - please originate an MSDS file for [ ]
R. D. Cavalli
C. M. Cisson
K. A. Frost
J. A. MacGregor
Z. A. Wong
N. C. Zeiser
G. H. Eisenlord) w/original reports
M. N. Barr)
Files) w/enclosure