

Study Title

Eye Irritation Test with H-21209 in Rabbits

Laboratory Project ID

Haskell Laboratory Report No. 602-95

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Study Completed On

August 28, 1995

Performing Laboratory

E. I. du Pont de Nemours and Company
Haskell Laboratory for Toxicology and Industrial Medicine
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[REDACTED]

GENERAL INFORMATION

Substance Tested:

[REDACTED]

Synonyms/Codes:

• H-21209

[REDACTED]

Physical Form:

Whitish liquid

Composition:

[REDACTED]

Contaminants:

[REDACTED]

Purity:

[REDACTED]

Submitter's Notebook No.:

[REDACTED]

CAS Registry No.:

[REDACTED]

Sponsor:

DuPont Specialty Chemicals
E. I. du Pont de Nemours and Company
Wilmington, Delaware

Study Initiated - Completed:

8/7/95 - 8/28/95

In Life Phase
Initiated - Completed:

8/8/95 - 8/11/95

Eye Irritation Test with H-21209 in RabbitsSUMMARY

H-21209 was evaluated for acute eye irritation potential in 2 rabbits. An aliquot of 0.01 mL of the test substance was instilled into the lower conjunctival sac of the right eye of each rabbit. Approximately 20 seconds after instillation, the treated and control eyes of 1 rabbit were washed. The treated and control eyes of the remaining rabbit were not washed. The eyes of the rabbits were examined on the day of treatment and on days 1, 2, and 3 following treatment.

H-21209 produced mild conjunctival redness in both treated rabbit eyes. In addition, slight chemosis was observed in the treated washed rabbit eye. The treated unwashed and washed rabbit eyes were normal by 1 and 3 days, respectively, following treatment. No clinical signs of toxicity were observed during the study.

Under the conditions of this study, H-21209 was a mild eye irritant.

Report by:

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Acknowledgement: Bryan W. Crossley and M. Scott Karr also participated in the conduct of this study.

TF/alw

INTRODUCTION

The purpose of this study was to evaluate the acute eye irritation potential of H-21209 in young adult rabbits.

MATERIALS AND METHODS

A. Animal Husbandry

Young adult female New Zealand White rabbits were received from Hare Marland, Hewitt, New Jersey. The rabbits were housed singly in suspended, stainless steel, wire-mesh cages. Each rabbit was assigned a unique identification number which was recorded on a card affixed to the cage. The last 3 digits of the identification number were written on the inside of each rabbit's ear with a water insoluble marker. The rabbits were offered approximately 125 grams of Purina Certified High Fiber Rabbit Chow® #5325 daily during the study. Water was available ad libitum.

Haskell Laboratory has an animal health monitoring program. This program is monitored and administered by the Laboratory Veterinarian. Water samples are periodically analyzed for total bacterial counts and for the presence of coliforms, lead, and other contaminants. Additionally, samples from freshly washed cages and cage racks are periodically analyzed to assure adequate sanitation by the cagewashers. Data from this program are maintained separately from study records. Animal feed is certified by the manufacturer to meet specified nutritional requirements and to be free of a list of specified contaminants. On the basis of these analyses, there is no evidence suggesting that contaminants were present in the feed or water in amounts which may have interfered with the results of this study.

Rabbits were quarantined, weighed, and observed for general health for approximately 2 weeks. Animal rooms were maintained on a timer-controlled, 12-hour light/12-hour dark cycle. Environmental conditions of the rooms were targeted for a temperature of $20^{\circ}\text{C} \pm 1^{\circ}\text{C}$ and relative humidity of $50\% \pm 10\%$. Excursions outside these ranges were judged to have been of insufficient magnitude and/or duration to have adversely affected the validity of the study.

B. Protocol

On the day of treatment, the eyes of 2 female New Zealand White rabbits were examined using illumination, magnification, and fluorescein dye. Animals used on this study were free of pre-existing corneal or

conjunctival injury or irritation and were judged to be in good health. These rabbits weighed 2360 and 2464 grams on the day of treatment.

An aliquot of 0.01 mL of H-21209 was introduced into the lower conjunctival sac of each right eye. The left eye of each rabbit was not treated with the test substance and served as a control. Approximately 20 seconds after the test substance was administered, both eyes of 1 rabbit were rinsed for approximately 1 minute with room temperature water. The treated and control eyes of the remaining rabbit were not washed. Each rabbit was observed for approximately 30 to 60 seconds before being returned to its cage, and any abnormal behavior was noted. In the absence of visible evidence to the contrary, the test substance was assumed to be stable under the conditions of administration.

Approximately 1 and 4 hours, and 1, 2, and 3 days after H-21209 was administered, the rabbits were examined for evidence of eye irritation and for clinical signs of toxicity. At each of these observation periods, eyes were examined using illumination and magnification and scored for ocular reactions according to the Draize scale (presented in Table 1). Eyes were also observed for any unusual responses to treatment such as pannus, blistering of the conjunctiva, ulceration, or other effects indicative of corrosive action. Control eyes were not scored. These untreated eyes were used for comparison and were considered "normal" relative to the treated eye.

C. Records Retention

All raw data and the final report will be stored in the archives of Haskell Laboratory for Toxicology and Industrial Medicine, E. I. du Pont de Nemours and Company, Newark, Delaware or in the DuPont Records Management Center, Wilmington, Delaware.

RESULTS

H-21209 produced mild conjunctival redness in both treated rabbit eyes. In addition, slight chemosis was observed in the treated washed rabbit eye. The treated unwashed and washed rabbit eyes were normal by 1 and 3 days, respectively, following treatment. No clinical signs of toxicity were observed during the study. Individual eye irritation scores are presented in Tables 2 and 3.

CONCLUSION

Under the conditions of this study, H-21209 was a mild eye irritant.

If these test scores are to be used for EEC/OECD classification, according to the guide to the labeling of dangerous substances published in the Official Journal of European Communities (EEC Directive 93/21, Annex VI), H-21209 probably could be classified as "NON-IRRITANT" until further data is available.

EYE IRRITATION TEST WITH H-21209

TABLE 1

DRAIZE¹ SCALE FOR SCORING OCULAR LESIONS

(1) Cornea		
(A) Opacity-degree of density (area most dense taken for reading)		
No opacity	0	
Scattered or diffuse area, details of iris clearly visible	1 (Slight)	
Easily discernible translucent areas, details of iris slightly obscured	2 (Mild)	
Opalescent areas, no details of iris visible, size of pupil barely discernible	3 (Moderate)	
Opaque, iris invisible	4 (Severe)	
(B) Area of cornea involved		
One quarter (or less) but not zero	1 (Localized)	
Greater than one quarter, but less than half	2 (Small)	
Greater than one half, but less than three quarters	3 (Moderate)	
Greater than three quarters, up to whole area	4 (Generalized)	
(2) Iris		
(A) Values		
Normal	0	
Folds above normal, congestion, swelling, circumcorneal injection (any or all of these or combination of any thereof) iris still reacting to light (sluggish reaction is positive)	1 (Moderate)	
No reaction to light, hemorrhage, gross destruction (any or all of these)	2 (Severe)	
(3) Conjunctiva		
(A) Redness (refers to palpebral and bulbar conjunctiva excluding cornea and iris)		
Vessels normal	0	
Vessels definitely injected above normal	1 (Mild)	
More diffuse, deeper crimson red, individual vessels not easily discernible	2 (Moderate)	
Diffuse beefy red	3 (Severe)	

EYE IRRITATION TEST WITH H-21209

TABLE 1 (Cont'd)

DRAIZE SCALE FOR SCORING OCULAR LESIONS

(B) Chemosis	
No swelling	0
Any swelling above normal (includes wictitating membrane)	1 (Slight)
Obvious swelling with partial eversion of lids	2 (Mild)
Swelling with lids about half closed	3 (Moderate)
Swelling with lids about half closed to completely closed	4 (Severe)
(C) Discharge	
No discharge	0
Any amount different from normal (does not include small amounts observed in inner canthus of normal animals)	1 (Minimal)
Discharge with moistening of the lids and hairs just adjacent to lids	2 (Moderate)
Discharge with moistening of the lids and hairs, and considerable area around the eye	3 (Copious)

¹ Draize, J. H., "Dermal Toxicity." Appraisal of the Safety of Chemicals in Foods, Drugs and Cosmetics. The Editorial Committee of the Association of Food and Drug Officials of the United States, Austin, Texas, 1959, pp. 46-59.

EYE IRRITATION TEST WITH H-21209

TABLE 2EYE IRRITATION REACTIONS OBSERVED IN THE
UNWASHED RABBIT EYE

Rabbit Number	1	4	1	2	3
30414	Hour	Hours	Day	Days	Days
Cornea					
Opacity	0	0	0	0	0
Area	0	0	0	0	0
Iris	0	0	0	0	0
Conjunctiva					
Redness	1	1	0	0	0
Chemosis	0	0	0	0	0
Discharge	0	0	0	0	0

EYE IRRITATION TEST WITH H-2109

TABLE 3EYE IRRITATION REACTIONS OBSERVED IN THE
WASHED RABBIT EYE

Rabbit Number 30415	1 Hour	4 Hours	1 Day	2 Days	3 Days
Cornea	0	0	0	0	0
Opacity	0	0	0	0	0
Area					
Iris	0	0	0	0	0
Conjunctiva					
Redness	1	1	1	1	0
Chemosis	1	1	0	0	0
Discharge	0	0	0	0	0