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17461

DP/ID/SER.A/1081
21 November 1988
ORIGINAL: ENGLISH

TOXICOLOGY RESEARCH LABORATORY

DP/ROK/82/028

REPUBLIC OF KOREA

Technical report: General Toxicology*

Prepared for the Government of the Republic of Korea
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

Based on the work of K.W. Takahashi
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United Nations Industrial Development Organization
Vienna

* This document has not been edited.

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1. Introduction

KRICT(the Korea Research Institute of Chemical Technology) Toxicology Research Center has been operating safety tests and laboratory animal production.

I traveled on an official trip to the KRICT with the purpose of conducting toxicological study.

The activities I performed were as follows:

- 1) Lecture on toxicological study
- 2) Counselling about toxicological GLP of KRICT
- 3) Lecture and toxicological examination concerning the optic sensory organs

2. Time schedule and persons met in Seoul and Taejon, Korea

24 February 1988

Japan (Narita) → Korea (Seoul) → Taejon

25 February 1988

)

3 March 1988

}

Taejon [1] *, [2] *, [3] *

4 March 1988

Seoul [4] → Japan (Narita)

- [1] Jung Koo Roh, Ph. D., Director of the Toxicology Research Center, KRICT
- [2] Sang seop Han, Ph. D., Senior Research Scientist of the Toxicology Research Center, KRICT
- [3] Hou Chol Shin, Research Scientist of the Toxicology Research Center, KRICT
- [4] Mr. Park, Pyong Chol, UNDP project programmer

* Persons I met while I worked at the KRICT.

3. Explanatory notes

Abbreviation:

GLP:Good Laboratory Practices

KRICT:Korea Research Institute of Chemical Technology

SOPs:Stndard operating procedures

4. Lecture on toxicological study

I compared the guidelines for various countries about toxicological study:

1) Acute toxicity study

- ① Introductory information
- ② Method
 - Introduction, Purpose, Scope, Relevance, Application and Limits of test
 - Description of the test procedure
- ③ Data and reporting

2) Subchronic toxicity study

- ① Introductory information
- ② Method
 - Introduction, Purpose, Scope, Relevance, Application and limits of test
 - Description of the test procedure
- ③ Data and reporting

3) Chronic toxicity study

- ① Introductory information
- ② Method
 - Introduction, Purpose, Scope, Relevance, Application and Limits of test
 - Description of the test procedure
- ③ Data and reporting

4) Carcinogenicity study

- ① Introductory information
- ② Method
 - introduction, Purpose, Scope, Relevance, Application and Limits of test
 - description of the test procedure
- ③ Data and reporting

5. Counselling about toxicological GLP of KRIGT

- 1) Dose levels in toxicological study
- 2) No-effect level in toxicological study
- 3) Selection of species in toxicological study
- 4) Sex of animals in toxicological study
- 5) Clinical observations in toxicological study

6. Lecture and toxicological examination concerning the sensory organs

1) Introduction of animal sensory organs.

- ① The optic sense
- ② The acoustic sense
- ③ The olfactory sense
- ④ The taste sense
- ⑤ The cutaneous sense
- ⑥ Other sensory organs

2) Lecture on the anatomy and physiology about optic sensory organs of laboratory animals.

- ① Orbita
- ② Eyelid
- ③ Conjunctiva
- ④ Lacrimal gland
- ⑤ Eye muscle
- ⑥ Cornea
- ⑦ Anterior chamber, Posterior chamber
- ⑧ Pupilla
- ⑨ Iris
- ⑩ Lens
- ⑪ Ciliary body
- ⑫ Vitreous
- ⑬ Retina
- ⑭ Chorioidea
- ⑮ Sclera
- ⑯ Optic nerve~Visual center

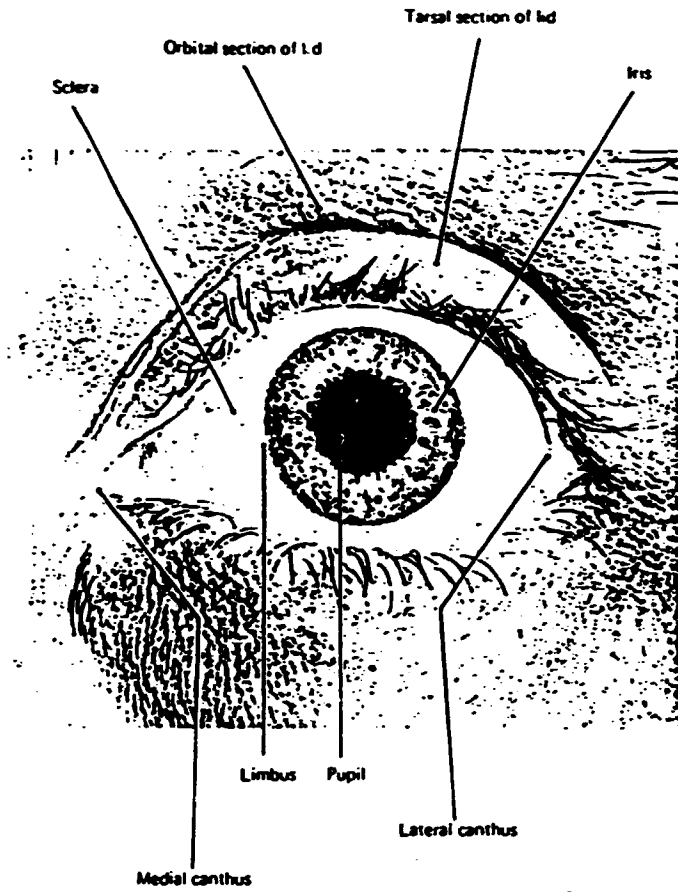


Figure External landmarks of the eye. The sclera is covered by transparent conjunctiva. (Photo by ML Gibson, from: *Medical Radiography and Photography*. Labeling modified slightly.)

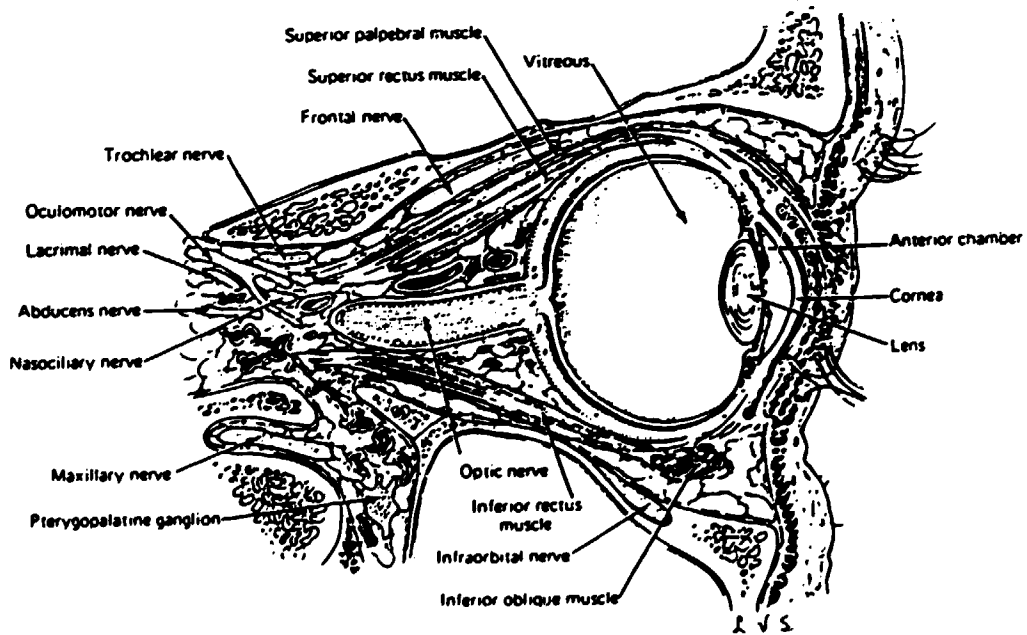


Figure Lateral view of eye and surrounding structures.

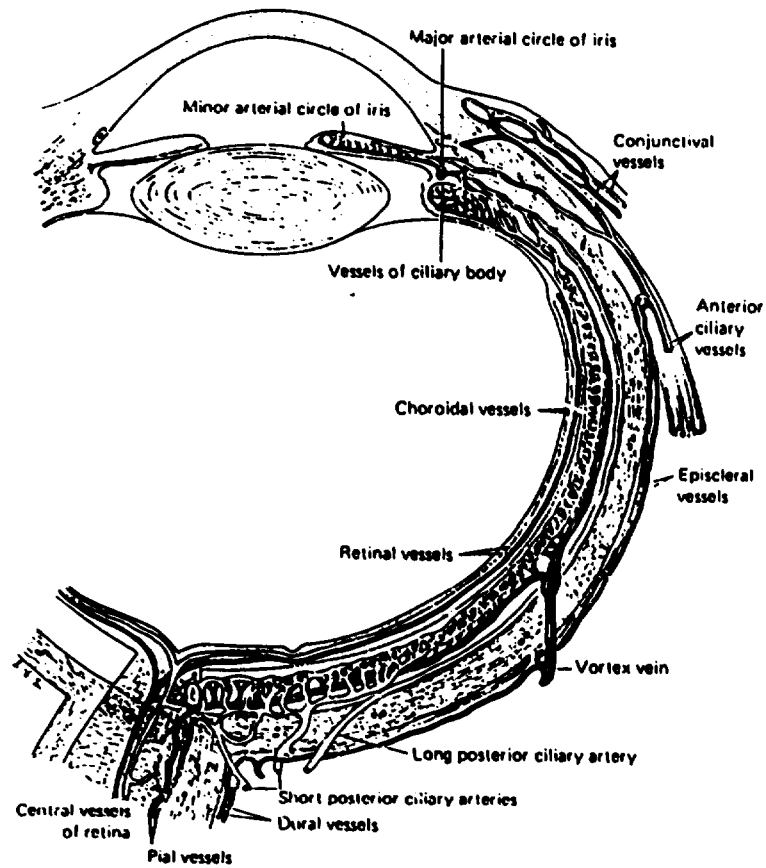


Figure Vascular supply to the eye. All arterial branches originate with the ophthalmic artery. Venous drainage is through the cavernous sinus and the pterygoid plexus.

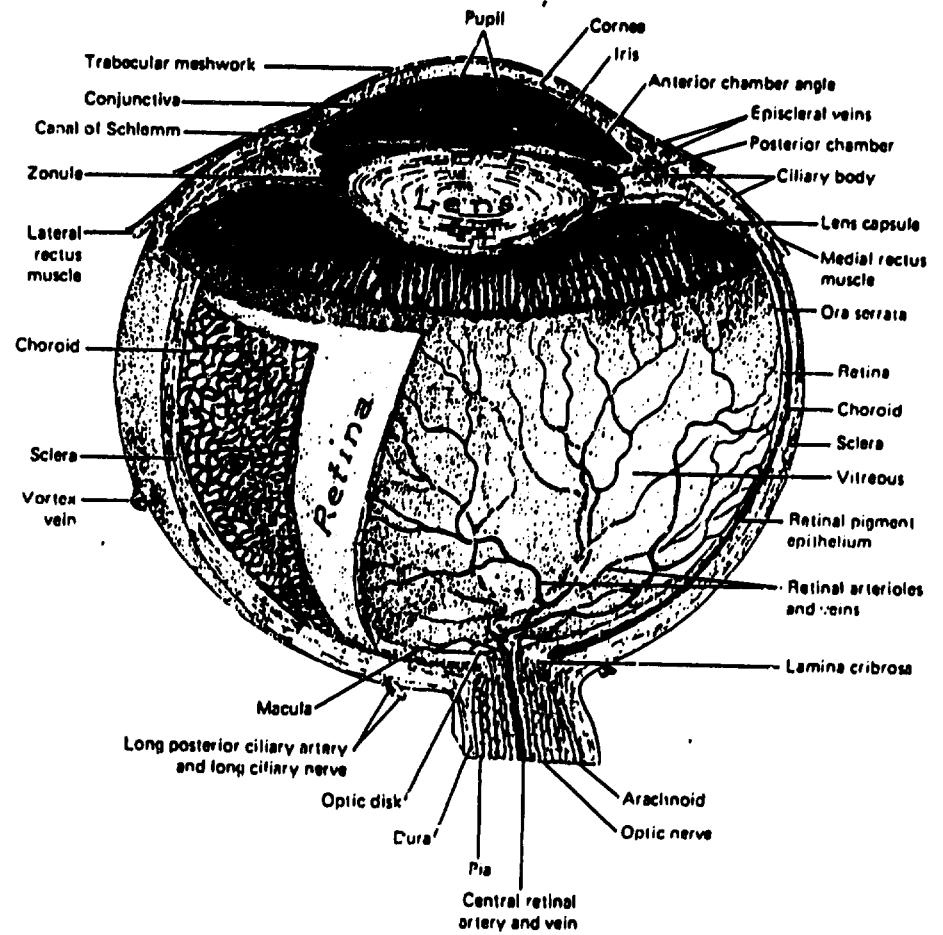


Figure Internal structures of the human eye. (Redrawn from an original drawing by Paul Peck and reproduced, with permission, from *The Anatomy of the Eye*. Courtesy of Lederle Laboratories.)

3) Lecture on the examination of eye diseases

- ① Senile eye disease
- ② Epiphora and its examination method
- ③ Disturbance of the eye lid function and its examination method
- ④ Disturbance of the anteroposterior position of the eye ball and its examination method
- ⑤ Disturbance of the direction of the eye ball and examination method
- ⑥ Disturbance of the ocular movement and its examination method
- ⑦ Desturction of the corea and its examination method
- ⑧ Disturbances of the aqueous humor dynamics and its examination
- ⑨ Disturbances of the pupil and its examination method
- ⑩ Lens disease and its examination method
- ⑪ Eye fundus disease and its examination method
- ⑫ Disturbance or defect of vision and its examination
- ⑬ Histopathological method of the eye ball

4) Lecture on the SOPs in the optic sensory organ examination

① Preparation

② Attention point

③ Practice of the examination

- Examination of pupilla size
- Examination of orbita
- Examination of eyelid
- Examination of conjunctiva
- Examination of lacrimal gland
- Examination of eye muscle
- Examination of cornea
- Examination of eye chamber
- Examination of pupilla
- Examination of iris
- Examination of lens
- Examination of vitreous
- Examination of eye fundus

5) Practice on the optic sensory organ examination in rabbits

- ① Examination of pupilla size
- ② Examination of orbita
- ③ Examination of eyelid
- ④ Examination of conjunctiva
- ⑤ Examination of lacrimal gland
- ⑥ Examination of eye muscle
- ⑦ Examination of cornea
- ⑧ Examination of eye chamber
- ⑨ Examination of pupilla
- ⑩ Examination of iris
- ⑪ Examination of lens
- ⑫ Examination of vitreous
- ⑬ Examination of eye fundus
- ⑭ Eye fundus photography

6) Practice on the optic sensory organ in rats

- ① Examination of pupilla size
- ② Examination of orbita
- ③ Examination of eyelid
- ④ Examination of conjunctiva
- ⑤ Examination of lacrimal gland
- ⑥ Examination of eye muscle
- ⑦ Examination of cornea
- ⑧ Examination of eye chamber
- ⑨ Examination of pupilla
- ⑩ Examination of iris
- ⑪ Examination of lens
- ⑫ Examination of vitreous
- ⑬ Examination of eye fundus
- ⑭ Eye fundus photography

7) Practice on the optic sensory organ in mice

- ① Examination of pupilla size
- ② Examination of orbita
- ③ Examination of eyelid
- ④ Examination of conjunctiva
- ⑤ Examination of lacrimal gland
- ⑥ Examination of eye muscle
- ⑦ Examination of cornea
- ⑧ Examination of eye chamber
- ⑨ Examination of pupilla
- ⑩ Examination of iris
- ⑪ Examination of lens
- ⑫ Examination of vitreous
- ⑬ Examination of eye fundus
- ⑭ Eye fundus photography

8) Making out the SOPs on the optic sensory organ in rats.

1) Preparation

2) Attention point

3) Practice of examination

- ① Examination of pupilla size
- ② Examination of orbita
- ③ Examination of eyelid
- ④ Examination of conjunctiva
- ⑤ Examination of lacrimal gland
- ⑥ Examination of eye muscle
- ⑦ Examination of cornea
- ⑧ Examination of eye chamber
- ⑨ Examination of pupilla
- ⑩ Examination of iris
- ⑪ Examination of lens
- ⑫ Examination of vitreous
- ⑬ Examination of eye fundus

9) Making out the SOPs on the optic sensory organ in mice

1) Preparation

2) Attention point

3) Practice of examination

- ① Examination of pupilla size
- ② Examination of orbita
- ③ Examination of eyelid
- ④ Examination of conjunctiva
- ⑤ Examination of lacrimal gland
- ⑥ Examination of eye muscle
- ⑦ Examination of cornea
- ⑧ Examination of eye chamber
- ⑨ Examination of pupilla
- ⑩ Examination of iris
- ⑪ Examination of lens
- ⑫ Examination of vitreous
- ⑬ Examination of eye fundus