

# The Measurement of Normal Precorneal Tear Film pH in Dogs Using a Microelectrode

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**Purpose:** To examine the feasibility of pH microelectrode for tear pH measurement in dogs and establish normal pH value of precorneal tear film of dogs.

**Materials and Methods:** A complete ocular examination using a slit lamp microscope and an indirect ophthalmoscope were performed in 17 beagle dogs (34 eyes, 13 females, 4 males). Mean body weight was 9.19 kg (ranged from 6.0 to 11.3). Nine eyes of which showed only mild to moderate conjunctivitis and remaining eyes were normal. To measure the pH values, the microelectrode probe was placed between 3<sup>rd</sup> eyelid and lower palpebral conjunctiva and the readings were taken when the values were stabilized.

**Results:** The mean pH value of the tears in normal eyes was  $6.64 \pm 0.15$  (mean  $\pm$  SD, n = 25). Conjunctivitis, sex and body weight were supposed not to have effects on the pH of precorneal tear film.

**Conclusion:** The mean value of precorneal tear film pH in dogs was  $6.64 \pm 0.15$ . The measurement of tear pH with a pH microelectrode was a rapid and useful technique that might be readily used in conscious dogs. The tear pH obtained in this study would be important information to design topical ophthalmic drugs in dogs.

**Key words:** tear, pH, microelectrode, dog

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