Lactoferrin suppresses loss of corneal epithelial integrity in a rabbit short-term dry eye model.

Fujihara T, Nagano T, Nakamura M, Shirasawa E.

Source

Santen Pharmaceutical Co., Ltd., Nara Research and Development Center, Japan.

Abstract

Human tear fluid contains lactoferrin at the highest concentration. In patients with dry eye such as Sjogren’s syndrome, the concentration of lactoferrin in the tears is approximately half the normal value. The present study utilizes a short-term rabbit dry eye model to evaluate if lactoferrin containing eye drops can reverse any of the damage produced by blockage of blinking with an ocular speculum. Damage was evaluated based on the extent of methylene blue staining in histological sections. After 3 h of desiccation, the amount of extractable dye recovered following sacrifice increased by more than 4-fold in the vehicle-treated eyes. However, in those rabbits treated with 1% lactoferrin, dye recovery was only 40% of the value in the vehicle-treated eyes. Between 1-3 h and over a concentration range from 0.01 to 1% lactoferrin, the decreases in staining were both time and concentration dependent. Alternatively, if 1% lactoferrin was applied during the desiccation period, there was partial restoration of corneal epithelial integrity.

Conclusion: These results suggest that lactoferrin may be of therapeutic value in decreasing the loss of corneal epithelial integrity in dry eye.

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