

Nakrob Pattanapon 2015: Effects of Puppy Deciduous Teeth Stem Cells on Rabbit Corneal Regeneration. Master of Science (Veterinary Clinical Studies), Major Field: Veterinary Clinical Studies, Faculty of Veterinary Medicine. Thesis Advisor: Miss Soontaree Petchdee, Ph.D. 68 pages.

Corneal ulcers in dogs and cats can cause inflammation of the eye and may cause a vision loss. There are a number of treatments available to manage this condition. However, the effective treatment depends on many factors, including the severity of a wound. In this present study, we describe a method for the stem cells from puppy deciduous teeth (pDSCs) transplantation for treatment severe corneal ulcer in rabbits and dogs. Ulcerative keratitis was induced in 8 rabbits and 5×10^5 cells of pDSCs were transplanted through the sub-conjunctiva of the right eye and sterile saline was used as control in the left eye. The clarity of cornea recovered within 30 days after pDSCs transplantation in the transplanted group. Moreover, the number of layers of the lining epithelium of the cornea and the amount of connexin 43 (Cx43) were significantly higher in the transplanted group. In clinical trial, pDSCs were transplanted through sub-conjunctiva to treat severe corneal ulcers in 4 dogs. pDSCs transplantation created the shorter healing times and less corneal scars. The results suggested that, pDSCs transplantation is the effective therapy for corneal repair and can be effectively applied to treat the ulceration of the cornea in patients.

Student's signature

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