

PRODUCT

Novel rabbit corneal wound healing model

INDICATIONS

Ophthalmology, Wound Healing, Corneal Scarring

VALUE PROPOSITION

- First-in-class corneal wound healing animal model
- Parallels key biological processes in humans such as keratocyte apoptosis response, inflammatory response, and scarring response.

DEVELOPMENT STAGE

Available for Licensing

PUBLICATION

Mohan, Rahul R et al.
"Apoptosis, necrosis, proliferation, and myofibroblast generation in the stroma following LASIK and PRK." [Experimental eye research](#) vol. 76,1 (2003): 71-87.

CONTACT INFORMATION

Saqib Sachani, PhD, MBA
Associate Director, Business Development and Licensing
sachans@ccf.org
(216) 672-1913

IDF# 10104

Novel Corneal Wound Healing Animal Model

Inventor: Steven Wilson, M.D. – Cleveland Clinic Lerner Research Institute

OPPORTUNITY

Corneal damage or scarring can result from a multitude of different sources both pathologic and physiologic in nature. Acute trauma, chronic dryness, corneal surgery, and several disease states can lead to corneal scarring and permanent vision impairment. The mechanisms through which corneal scarring may be treated are currently being investigated by researchers with the goal of developing novel therapeutics in this domain. At present, there is an unmet need for a viable animal model that can demonstrate a corneal wound healing process that mimics the same response found in humans. The development of an effective corneal wound healing animal model would enable researchers to test newly developed drugs and other therapeutics that seek to limit corneal scarring and promote epithelium / endothelium regeneration. Corneal surgeons have long sought the capacity to pharmacologically regulate the wound healing response to clinical advantage, and early intervention in the wound healing process still seems to be the most promising strategy. Therefore, a corneal wound healing model would benefit the development of these early interventional strategies.

SOLUTION

Researchers at Cleveland Clinic have developed a novel corneal wound healing rabbit model that provides a valuable research platform to study therapeutics that limit or heal corneal scarring. This rabbit model demonstrates a corneal healing response that closely parallels that which is found in humans. Model rabbits were found to demonstrate a keratocyte apoptosis response, inflammatory response, and subsequent corneal scarring response. The generation of this model enables further research into therapeutics for corneal abrasions and other classes of more permanent damage including corneal scarring that may result in vision impairment. Moreover, the utilization of this novel corneal wound healing rabbit model would accelerate the development of novel therapeutics by providing a means of evaluation and validation in the form of an effective and closely paralleled experimental model.

Benefits:

- Validated model for corneal wound healing.
- Applications include therapeutic screening, testing and validation.
- Platform to test drugs that limit or heal corneal scarring and advance wound healing.
- Model exhibits similarities to human system.