Evaluation of Animal Models for Retinal Degenerative Treatments

Lichun Zhong and Laxman S. Desai
Ocular Science Department, Toxikon Corporation
15 Wiggins Avenue, Bedford, Massachusetts, 01730 U.S.A.

Abstract

PURPOSE: To develop and compare different animal models for neovascularization in order to evaluate potential anti-neovascular drugs for treatment of age-related macular degeneration and diabetic retinopathy.

METHODS AND RESULTS: Several models were evaluated to study neovascularization. They include pig eyes, rabbits, streptozotocin (STZ) rat models, and lipid hydroperoxide (LHP) rabbit models. The pig eyes were used for open-eye angiogenesis, rodents were used for intraocular models, and rodent models were used for intravitreal injections. All models proved effective and fast and long-term studies for evaluation of anti-neovascular drugs are recommended.

CONCLUSIONS: The accomplishment of the neovascularization and corneal neovascularization rodent models are effective, fast and efficient methods for studying the age-related macular degeneration (AMD) and diabetic retinopathy (DR) related macular degeneration.

Introduction

Toxikon Corporation specializes in ocular-neuro research (TOX-ION) laboratory focused on evaluating the safety and toxicity of biologics, pharmaceuticals & medical devices. A multidisciplinary contract research organization (CRO) laboratory focused on evaluating the potential anti-angiogenic drugs for treatment of age-related macular degeneration and diabetic retinopathy. The purpose of this study is to evaluate several animal models and develop a new model to study the angiogenic potential of biologics, pharmaceuticals & medical devices.

Ocular Angiogenesis Models

- By separating different species into different categories, it is possible to study the differences in the response to different treatments.
- Using different species can help to understand the differences in the effects of different treatments.
- The use of different species can help to understand the differences in the effects of different treatments.
- The use of different species can help to understand the differences in the effects of different treatments.
- The use of different species can help to understand the differences in the effects of different treatments.
- The use of different species can help to understand the differences in the effects of different treatments.

Epidemiology of Blindness

- By separating different species into different categories, it is possible to study the differences in the response to different treatments.
- Using different species can help to understand the differences in the effects of different treatments.
- The use of different species can help to understand the differences in the effects of different treatments.
- The use of different species can help to understand the differences in the effects of different treatments.
- The use of different species can help to understand the differences in the effects of different treatments.
- The use of different species can help to understand the differences in the effects of different treatments.

Neovascularization (NV) Rodent Animal Models

- By separating different species into different categories, it is possible to study the differences in the response to different treatments.
- Using different species can help to understand the differences in the effects of different treatments.
- The use of different species can help to understand the differences in the effects of different treatments.
- The use of different species can help to understand the differences in the effects of different treatments.
- The use of different species can help to understand the differences in the effects of different treatments.
- The use of different species can help to understand the differences in the effects of different treatments.

References