TOXNEWS

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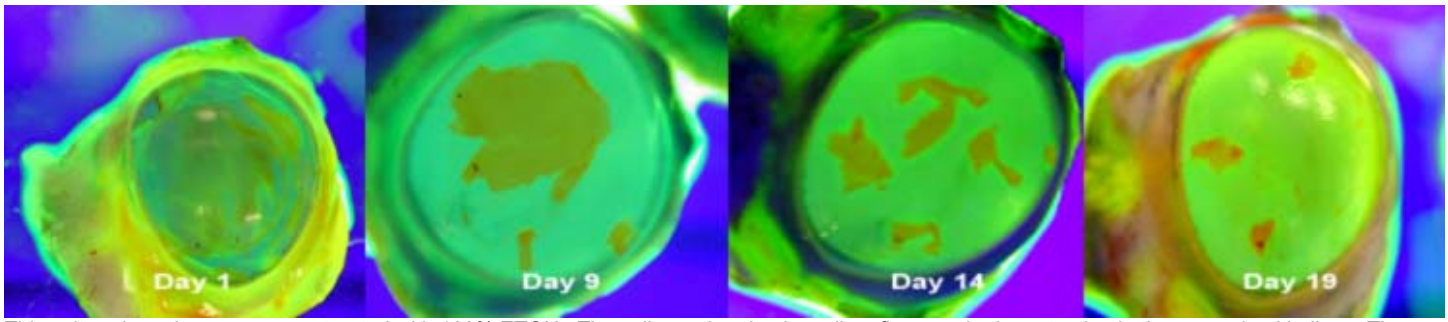
PORCINE CORNEA OPACITY/REVERSIBILITY ASSAY

A Draize Ocular Irritation Alternative Assay

PORCORA



This cultured porcine cornea was treated with 100% ETOH. The yellow coloration is sodium fluorescein dye retention in the corneal epithelium. The decrease in the area of stain retention is considered to be similar to the healing process found in *in-vivo* Draize evaluation.

Although a number of alternative assays exist for the determination of irritancy (e.g. BCOP, HET-CAM, CAMVA, Enucleated Rabbit or Chicken Eye, EpiOcular), none address the temporal question of reversibility.

Continuing its dedication to the 3Rs, MB Research Labs has, with the help of Hans Raabe of IIVS*, developed, an alternative to the Draize Ocular Irritancy Evaluation, which not only quantifies corneal damage, but also can address the need to determine reversibility, an important criteria for safety evaluation.

The above photos are from initial work and demonstrate that not only can the porcine cornea be kept viable for up to 19 days, the reversibility of the damage can be quantified using sodium fluorescein dye as an indicator.

MB Research Labs is pleased to announce the award of a Colgate-Palmolive Grant for Alternative Research to continue the development of the PORCORA.

This research grant will allow MB Research to:

- Optimize methods for dosing various materials in PORCORA
- Validate the acute damage to the cornea and quantify tissue recovery using sodium fluorescein retention
- Demonstrate the re-epithelialization of the corneal surface by histology
- Characterize PORCORA further through the use of confocal microscopy
- Develop a protocol for evaluating test substances
- Determine the accuracy, selectivity and sensitivity using various classes of test substances

If this assay is of interest or if you have any suggestions for the continued development, please contact Al Gilotti or Dan Cerven.

* Optimization of an In Vitro Long Term Corneal Culture Assay. Raabe, H.[2], Bruner, L.[1], Snyder, T.[1], Wilt, N.[1], and Harbell, J.[2] , [1] The Gilette Co., Boston, MA, USA, [2] Institute for the In Vitro Sciences, Gaithersburg, MD, USA, Presented at 44th Annual Meeting of the Society of Toxicology, New Orleans, LA, March 2005.