

2007 Research Days Abstract Form – Department of Ophthalmology – UNIFESP/EPM

2. SCIENTIFIC SECTION PREFERENCE (REQUIRED): Review the Scientific section Descriptions. Select and enter the two -letter Code for the one (1) Section best suited to review your abstract
RS

3. PRESENTATION PREFERENCE (REQUIRED) Check one (1)
 (a) Paper
(b) Poster

4. The signature of the First (Presenting) Author, (REQUIRED) acting as the authorized agent for all authors, hereby certifies.
 That any research reported was conducted in compliance with the Declaration of Helsinki and the UNIFESP Ethical Committee"

Kátia Mantovani Bottós
 Signature of First

Scientific Section Descriptions
 (OR) ORBIT
 (PL) OCULAR PLASTIC SURGERY
 (RE) RETINA / VITREOUS
 (RX) REFRACTION-CONTACT LENSES
 (NO) NEURO-OPHTHALMOLOGY
 (TU) TUMORS AND PATHOLOGY
 (ST) STRABISMUS
 (UV) UVEITIS
 (LS) LACRIMAL SYSTEM
 (LV) LOW VISION
 (CO) CORNEA / EXTERNAL DISEASE
 (GL) GLAUCOMA
(RS) REFRACTIVE SURGERY
 (CA) CATARACT
 (US) OCULAR ULTRASOUND
 (TR) TRAUMA
 (LA) LABORATORY
 (BE) OCULAR BIODESIGNING
 (EP) EPIDEMIOLOGY
 (EF) ELECTROPHYSIOLOGY

Deadline: 29/10/2007

FORMAT:
 Abstract should contain:
Title, Name of Authors, Name of other authors (maximum 6), Purpose, Methods, Results, Conclusions.
 Example: ARVO (1.10 x 1.70)
 Abstract Book

1. FIRST (PRESENTING) AUTHOR (REQUIRED)
 Must be author listed first in body of abstract
 () R1 () R2 (**X**) R3
 () PG0 () PG1 () Estagiário () Tecnólogo () PIBIC
 Bottós Kátia Mantovani
 Last Name First Middle
 Refractive Surgery (RS) 01565/07
 Service (sector) N° CEP

5. ABSTRACT (REQUIRED)
Fluorescence Confocal Microscopy of Porcine Corneas Crosslinked with Riboflavin and UltravioletA
Kátia M Bottós, Paulo Schor, Caio Regatieri, Juliana Dreyfuss, Yara Michelacci, Wallace Chamon
Purpose: to assess ultrastructural stromal modifications in porcine corneas after riboflavin and ultravioletA (UVA) exposure using fluorescence confocal imaging.
Method: Fifteen freshly enucleated porcine eyes enrolled the study. Five eyes served as control (Group 1). Five eyes had its epithelial removed (group 2) and five eyes had its epithelial intact (Group 3). Groups 2 and 3 were crosslinked with riboflavin 0,1% solution (10 mg riboflavin -5-phosphate in 10 mL 20% dextran -T-500) and UVA (365nm, 3 mW/cm2) for 30 minutes. Ultrathin sections (10um) of the corneas were stained with anti -collagen-I (Seikagaku) and DAPI (4'-6-diamidino-2-fenilindole dihydrochloride) and its fluorescence was revealed under confocal microscopy (LSM 500 meta – Zeiss).
Results: The porcine treated corneas (group 2) showed an anterior pronounced fluorescence zone of 180 um, divided into a superficial zone of 130 um, with collagen fibers highly organized and a posterior zone of 50um partially organized. This fluorescence anterior zone was not founded in the control group, neither in the corneas that wasn't previously deepithelialized (group 3). In order to check if the number and location of keratocytes was affected, the groups were analyzed by fluorescence microscopy for nuclei (DAPI staining). A reduction in the number of cell nuclei seems to occur after crosslink (group 2).
Conclusion: it was possible, for the first time in the literature, to observe the riboflavin/UVA treatment effect using confocal fluorescence imaging, allowing a direct quantitative study to be performed in order to establish the safety of such procedure in new devices to come. Crosslinked corneas showed a pronounced and limited zone of organized collagen fibers, strongest in the anterior stroma. Treatment of the cornea with riboflavin and UVA without previous deepithelialization did not induce any crosslinking effect, thereby, to facilitate diffusion of riboflavin throughout the corneal stroma, the epithelium should be removed as an important and initial step of the treatment.