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 sullied to review your abstract
(RE)

3. PRESENTATION PREFERENCE (REQUIRED) Check one (1)
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 Heisinki and the 'UNIFESP Ethical Committee"

Signature of First

Scientific Section Descriptions

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

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Embryonic Stem Cells and Retina: Neurosphere Method

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PURPOSE
The purpose of this study is to evaluate the potential for survival, migration, differentiation and neural protection of muri ne neural progenitor cells (mNPC) in a pharmacological degeneration of the retinal pigmented epithelium and photoreceptor model in rats.
MATERIALS AND METHODS
Harvesting and culturing GFP -mouse NPC were obtained from E14 (embryonic day 14) C57BL/6 -GFP mous e embryos. The fetuses were placed in a Petri dish containing PBS/2% glucose, and the dissection was made under magnifying lens. The brains were sectioned and the tissue was incubated with Trypsin -EDTA solution (Gibco, 15400 -054) for 15min at 37ºC. Trypsin was inactivated with fetal bovine serum, and, after cell sedimentation, the supernatant was removed and the cells were dissociated in 70% DMEM (Gibco 11965 -118), 30% F12 (Gibco 11765 -062), 1% PSA (Gibco 15240 -062), 2% B27 (Gibco 17504 -044), 20ng/mL EGF (S igma E9644), 20ng/mL FGF -2 (R& D 233 -FB), and 5 µg/mL heparin (Sigma H3149 100KU). The cell suspension was counted in a hemocytometer and the cells were seeded in a T25 flask at a density equivalent to 100,000 cells/mL. The spheres were transferred to con ical tubes and washed carefully 3 times with 8 mL pre warmed DMEM. The spheres were put in growth factors free medium (DMEM/F12/B27) and kept in those conditions in suspension for 10 days. Eight transgenic C57BL/6 -GFP mouse (green fluorescent protein) wit h 8 weeks y -o was submitted to a pharmacological degeneration of the retinal pigmented epithelium and photoreceptor with systemic application of $NaIO_3$, after 72 hours was applied intra vitreus mNPC (100.000 células/µL). In 7 days, their eyes were dissecte d and cryoprotected in 30% sucrose in PB for at least 24 hours at 4°C. After they were embedded in OCT compound, retinas were sectioned perpendicularly to the vitreal surface on a cryostat (12-µm sections). The material was analyzed with immunohistochemistry primary antibodies anti-GFP, anti β – tubulina III and anti-GFAP
RESULTS
Survival and migration of the murine neural progenitor cells (mNPC) was observed after 7 days following a single application with neurosphere method.
CONCLUSION
Current results point to a possible role for mNPC in the treatment of some forms of human retinal degenerative diseases and highlight the versatility and efficacy of these cells as therapeutic tools in a broad range of neurodegenerative disorders.