( ) R1 ( ) R2 ( ) R3 (X) PG0 ( ) PG1 ( ) Estagiário ( ) Tecnólogo ( )
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VEGF is Involved in bFGF-Induced Corneal Neovascularization

Hailton B. Oliveira, MD, Joel A. D. Javier, MD, Elias Jarade, MD, Jae Bum Lee, MD, PhD, Jin-Hong Chang, PhD, Dimitri T. Azar, MD **PURPOSE.** To characterize bFGF induced VEGF production in corneal keratocytes in vivo and in vitro. **METHODS.** Uniformly sized hydron pellets containing 80ng of bFGF, and control pellets were surgically implanted into wild type (C57BL/6) mice corneas. The corneas were observed and photographed at 4 hours, 1, 4, 7, 10, 14 & 21 days post implantation, and the percentage of corneal surface occupied by new vessels was calculated using NIH image program. Wild-type mouse corneas implanted with control and bFGF containing pellets were harvested at 4 hours, 1, 4, 7, 10, 14, and 21 days after pellet implantation. The harvested wild type corneas were evaluated for the localization of CD-31 and VEGF using immuno-confocal microscopy. Immunolocalization of bFGF receptors on immortalized keratocytes cell line was visualized using immuno-confocal microscopy. **RESULTS.** Neovascularization of the corneal stroma began on day 4 and was sustained through day 21 following bFGF pellet implantation. In the corneal area adjacent to the limbus, the onset of VEGF stromal immunolocalization occurred 24 hours after bFGF pellet implantation and was maintained throughout the 21 day period. CD-31 localization lagged behind VEGF expression by approximately 4 day. In the more central zone (adjacent to the pellet), the onset of VEGF stromal immunolocalization occured at day 1 and peaked at days 4-7. The lag period of CD-31 expression in this zone was 2-5 days. bFGFreceptors expression were visualized in immortalized keratocytes cell line.

CONCLUSIONS. bFGF-induced corneal neovascularization mediated via a VEGF-dependent pathway. Keratocytes express VEGF via bFGF stimulation.