Asifa Ahmed, Nikhat Ahmed, Zulfiqar Ali Naqvi, Shamim Mushtaq.

Augmented Glycosylation during wound healing of Corneal Epithelium in Organ Cultures

Pak J Ophthalmol Apr 2002;18(2):48-52.

Department of Biochemistry, University of Karachi, Karachi

Corneal epithelial migration is a prerequisite for wound healing process. The underlying mechanisms that bring about migration remain unclear. In the present study, rabbit corneal epithelial nonmigrating and migrating samples were prepared in organ culture. The rate of healing was found to be maximum (61 ±0.004 um/hr; r2=0.892; p<0.001) during 18-48 hr of the migration. The amount of protein in each sample was determined by bicincominic acid assay whereas total glycosylation was determined by the incorporation of 14 C-glucosamine. A yield of 69.4±6.42 and 31.9 + 3.74 in u gs of protein/cornea was obtained in nonmigrating In=1261 and migrating (n=224) corneal epithelia, respectively. The total glycosylation was found to be 2.9 fold increased in the migrating as compared to the nonmigrating corneal epithelia. Glycoproteins were immobilized on nitrocellulose membrane following sodium-dodecylsulphate-polyacrylamide gel electrophoresis (SDS-PAGE). The glycosylation was seen to occur In the high molecular weight region and was confirmed to be greater in the migrating as compared to the nonmigrating corneal epithelia.