

Culture of Rabbit Limbal Corneal Epithelial Cells on the Lyophilized Amniotic Membrane and Cryopreserved Amniotic Membrane

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The corneal tissue comprises five layers; epithelial layer, Bowman's layer, stromal layer, Descemet's membrane, and endothelial layer. The outermost stratified epithelium of cornea serves as a barrier to the outside environment. Central corneal epithelium is a highly differentiated tissue whereas the limbus contains the epithelial stem cell. The injury of the corneal epithelium may result in the loss of sight. Transplantation of cryopreserved amniotic membrane(CAM) to provide a substrate for regenerating epithelial cells and for cultivating limbal corneal cells for autologous transplantation have been found to be effective in reconstructing the corneal surface in rabbits and clinical trials. While, lyophilized amniotic membrane(LAM) have a longer shelf life, are easier to store and safer, due to irradiation. In this study, we cultured rabbit corneal epithelial cells on LAM supported by two teflon rings (AM insert). Corneal epithelial cells plated onto AM insert with a density 5×10^5 cells/cm². 1-2 days after inoculation, air-liquid interface culture was maintained 7-14 days. Corneal epithelium model in this experimental study will be good in vitro model not only for transplantation but also toxicological test kit.

References

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