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Service (sector) Pharmacology N° CEP

Staining of freeze-dried and fresh-frozen preserved human amniotic membrane

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Purpose: To evaluate the staining characteristics of commonly available dyes on preserved human amniotic membrane to aid in the handling of amniotic membrane during surgeries. **Methods:** Five dyes: Indocyanine Green (0,5 and 1%), Fluorescein (0,5 and 1%), Rose Bengal (0,5 and 1%), Lissamine Green (0,5 and 1%) and Trypan Blue (0,5 and 1%) were used to stain freeze-dried and fresh-frozen amniotic membrane. After staining, the samples were observed to evaluate the uptake of the stains in different times (from 1 to 6 hours every each hour and 24 hours later). **Results:** Indocyanine Green, Rose Bengal, Lissamine Green and Trypan Blue stain both freeze-dried and fresh-frozen amniotic membrane. Preserved amniotic membrane are not stained by fluorescein. Of these four dyes that stain the membrane, only the membrane stained with lissamine green was free of stain before 2 hours. Indocyanine Green, Rose Bengal, and Trypan Blue continued to strongly stain the membrane after 24 hours. **Conclusions:** Indocyanine Green, Rose Bengal, Lissamine Green and Trypan Blue have stained the preserved amniotic membrane. Lissamine Green appears to have advantages over the other dyes, because the time of dissipation was less than 2 hours. Intraoperative staining with Lissamine Green may be a simple and effective way to help surgeons in the transplantation for ocular surface reconstruction.