

R1  R2  R3  PG0  PG1  Estagiário  Tecnólogo   
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Service (sector) Cornea and External Disease - OCULAR  
PHARMACOLOGY N° CEP

### **Lyophilization of sclera and amniotic membrane – a pilot project**

Lima Filho AAS, Dias ABT, Conceição ACS, Barros JN, Souza Filho JP, Gomes JAP, Martins MC Purpose: The objective of this study was to investigate the lyophilization process, as a new method for the preservation of amniotic membrane and human sclera and to compare it with the traditional freezing process.

Methods: Two samples of amniotic membrane and six samples of human sclera were studied. The specimens were dehydrated by lyophilization in a Boc® equipment model Modulyotd. They were previously freeze-dried under a mixture of dry ice and isopropyl alcohol (in a temperature of  $-70^{\circ}\text{C}$ ). The time of the lyophilization cycle was 24 hours. The control-group underwent the conventional freezing method. The samples of amniotic membrane and human sclera obtained were submitted to hispathologic study. The specimens of amniotic membrane were also analyzed with the impression cytology technique.

Results: There were no histopathologic differences between the lyophilised samples and the control-group submitted to the conventional process.

Conclusion: The lyophilization process could be used to provide samples that do not need refrigeration, resulting in longer expiration dates and easier delivery. Lyophilised samples can be stored without refrigeration for two or three years, a great advantage over conventional freezing methods in which the sample can be kept for only six months.