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Growth Factors Dosage in Fresh and Preserved Amniotic Membrane in Different Medium and at Different Temperatures

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Purpose: To compare the concentration of different growth factors (EGF, NGF, FGF-b, TGF-B, HGF) in fresh and preserved in amniotic membranes during different periods of storage at different temperatures.

Methods: Eight amniotic membranes were obtained from eight placentas of cesarean deliveries at term. Each amniotic membrane was divided in seventeen pieces and preserved at saline solution 0,9% (1), DMSO 12%(8) and modified TC 199 preservation medium / glycerol (Ophthalmos) (8). One sample of each membrane in the saline solution was put in serum free and protein free hybridoma medium for 24 hours. The supernatant was retrieved and submitted to ELISA. After 24 hours preserved at -80° C and 0° C, one sample of each membrane was placed in serum free and protein free hybridoma medium for 24 hours. The supernatant was retrieved and submitted to ELISA.

Results: HGF concentration increased either in membranes preserved at -80° and at 0° at both media (DMSO and Ophthalmos') compared with fresh membrane. TGF-beta, IL-10, FGF and NGF concentrations couldn't be evaluated because of the low values, which means that they were probably too diluted in the supernatant.

Conclusion: These early results are not conclusive, but it looks like that both preservation media increase the concentration of growth factors, notably HGF, in the first 24hs. Another set of amniotic membranes will be obtained in order to repeat the experiment and confirm our initial findings.