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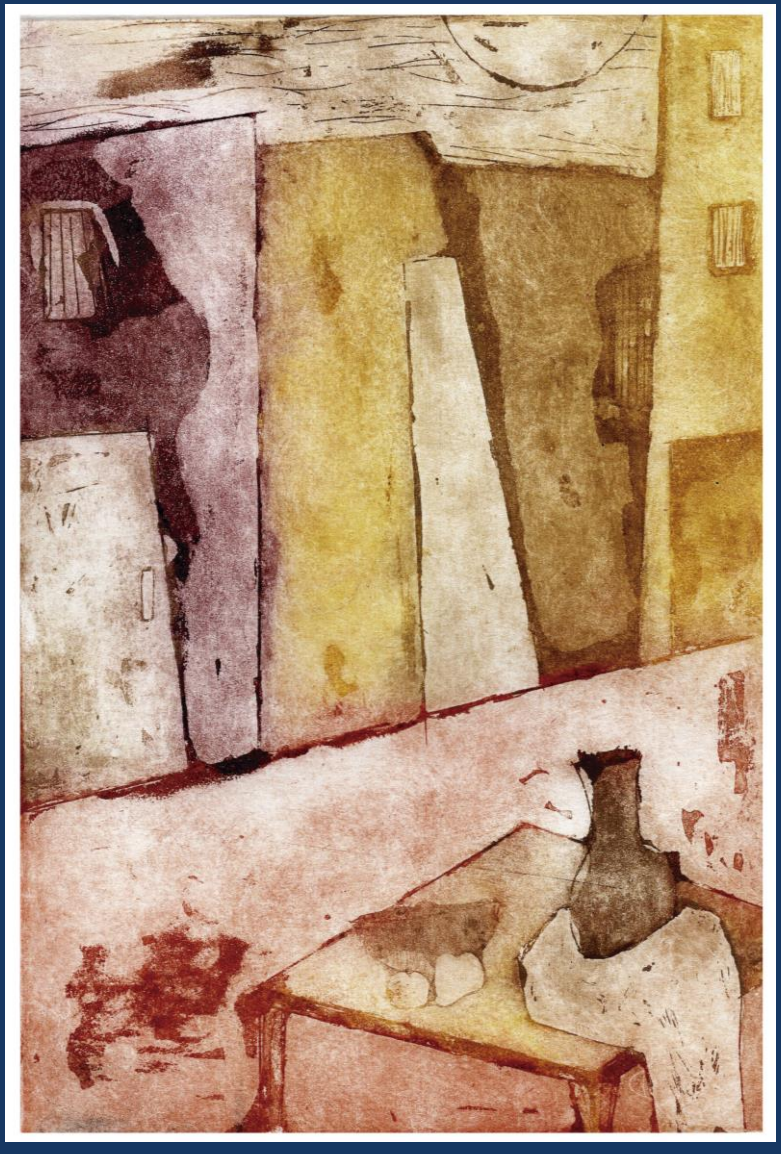

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La Tapa (Ver pág. 4)
Atardecer en la tarde
Antonella Ricagni

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REUNIÓN ANUAL DE SOCIEDADES DE BIOCIENCIA 2019

LXIV Reunión Anual de la
Sociedad Argentina de Investigación Clínica (SAIC)

LI Reunión Anual de la
Asociación Argentina de Farmacología Experimental (SAFE)

XXI Reunión Anual de la
Sociedad Argentina de Biología (SAB)

XXXI Reunión Anual de la
Sociedad Argentina de Protozoología (SAP)

IX Reunión Anual de la
Asociación Argentina de Nanomedicinas
(NANOMED-ar)

VI Reunión Científica Regional de la Asociación Argentina de Ciencia y Tecnología de Animales de Laboratorio (AACyTAL)

con la participación de
The Histochemical Society

13 - 16 de noviembre de 2019
Hotel 13 de Julio - Mar del Plata

EDITORES RESPONSABLES

Dra. Mónica Costas
Dra. Gabriela Marino
Dr. Pablo Azurmendi

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ANNUAL MEETING OF BIOSCIENCE SOCIETIES 2019

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with the participation of
The Histochemical Society

November 13th – 16th, 2019
Hotel 13 de Julio - Mar del Plata

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Dra. Mónica Costas
Dra. Gabriela Marino
Dr. Pablo Azurmendi

Gustavo WILDFEUER (1) | Cecilia GAMBA(1) | Valeria ROCA(2)

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Abstract/Resumen: Research on advanced therapies holds great therapeutic potential. Among them, cell therapy, based on transplantation of live cells, frequently relies on in vitro cultures with or without genetic modifications. Cross-contamination with unrelated cells and/or with microorganisms are among the most frequent risks related to cell culture. According to local and international standards, cellular therapy products characterization, even those intended for pre-clinical research, should include testing for identity, purity, potency, and viability. Short tandem repeats (STR) analysis is recommended for genetic cell line authentication for research but there is no clear consensus on the analysis for products intended for cell therapy. Our goal is to evaluate whether human leukocyte antigen (HLA) typing, by sequence-specific oligonucleotide (SSO) technology, could be use as a quality control to guarantee cell purity, particularly lack of cross-contamination with unrelated cells that will not be revealed by phenotypic characterization or morphological differences. We chose HLA typing because it is a highly polymorphic set of genes and this technology is commonly used in many typing laboratories including ours. Genomic DNA from 4 mesenquimal cell lines (MSC) was obtained and used to performed SSO-PCR for HLA-A; HLA-B and HLA-DRB1 and Luminex analysis according to standard protocols. To test the ability to detect cross-contamination, we performed gDNA mixes between samples (1:1 - 1:100). For the analysis, we compared the number of positive and negative beads in each sample and in the mixes. We set a minimum of 3 different beads as criteria to define contamination. All 4 cell lines showed a unique HLA profile for HLA-A; HLA-B and HLA-DRB1. Also, we were able to detect cross-contamination in all the mixes assayed up to 1:4 by means of at least 3 different beads for each gene. Cell contaminations lower than 20 % were not detected. HLA typing by SSO-PCR technology is effective to determine lack of cross-contamination with unrelated cells and may be a suitable assay for cellular therapy products.

0885 - COMPARISON OF DEPROTEINIZED BOVINE BONE, BIOGLASS AND, SYNTHETIC HYDROXYAPATITE IN THE BONE HEALING OF A CRITICAL SIZED BONE DEFECT. PRELIMINARY STUDY IN RATS.

Gretel Gisella PELLEGRINI(1) | Macarena Ms GONZALES CHAVES(2) | Ricardo ORZUZA(2) | **Susana Noemi ZENI** (1)

UNIVERSIDAD DE BUENOS AIRES – CONICET. INSTITUTO DE INMUNOLOGÍA, GENÉTICA Y METABOLISMO (INIGEM) (1); UNIVERSIDAD DE BUENOS AIRES. FACULTAD DE ODONTOLOGÍA. CÁTEDRA DE BIOQUÍMICA GENERAL Y BUCAL. (2)

Abstract/Resumen: Bone grafts are important for alveolar bone height and volume preservation necessary for dental implant placement. The development of biomaterials for bone grafting with comparable characteristics and biological effects than those renowned internationally is necessary. Deproteinized bovine bone putty (BB), bioglass (BG) and, synthetic hydroxyapatite (SH) are frequently indicated as bone grafting materials due to their osteoconductive properties. We compared the bone healing response of BB, BG and SH (Odontit Implant Systems, Argentina) in a critical sized bone defect. We created a bone defect of 4 mm diameter in rat tibiae for implantation with each biomaterial (N=30 rats). Samples were collected at 2 and 4 weeks for histological and histomorphometrical analysis of new bone formation (NBF) and remaining particles of each device (RP). Radiographic analysis was done at T=0 and at 2 and 4 weeks. Results: % of NBF (mean ± SD): 2 weeks: Control group: 6.60 ± 3.71; BB group: 23.23 ± 3.89*; BG group: 18.35 ± 5.23*; SH group: 26.27 ± 9.30*; 4 weeks: Control group: 6.69 ± 2.38; BB group: 24.37 ± 3.66*; BG group: 17.45 ± 6.64*; SH group: 32.25 ± 3.80*. % of RP: 2 weeks: Control group: 0 ± 0; BB group: 5.04 ± 1.39*; BG group: 3.03 ± 2.31*; SH group: 4.46 ± 2.87*; 4 weeks: Control group: 0 ± 0; BB group: 4.45 ± 2.35*; BG group: 2.87 ± 1.14*; SH group: 3.78 ± 1.68* (*p<0.05 versus control group; p= NS between BB, BG and SH groups). Although SH exhibited a trend towards increased NBF we did not find statistical significance among the three biomaterials. Bone healing at the implanted sites, was accompanied by a progressive inflammatory response consistent with the expected histological stages of bone repairing. The 3 biomaterials exhibited an increased in radiopacity at 2 and at 4 weeks vs. control group indicating NBF. All biomaterials were associated with trabecular bone formation. Although further studies need to be done, our results indicate that BB, BG and SH exhibit similar osteoconductive properties.

0919 - LIPOSOME LOADED COLLAGEN BASED BIOMATERIALS WITH ANTIMICROBIAL ACTIVITY

Pablo Edmundo ANTEZANA (1) | Sofia MUNICOY(1) | Martin BELLINO(1) | Claudio PEREZ(2) | Martin DESIMONE(1)

FACULTAD DE FARMACIA Y BIOQUÍMICA UBA (1); FAC. DE CIENCIAS AGRARIAS, UNIVERSIDAD NACIONAL DE MAR DEL PLATA (UNMDP) (2)

Abstract/Resumen: Hydrogels are promising materials in the field of biomedicine due to its biocompatibility and biodegradability. Liposomes (L) have proved to be an effective vehicle as they are not toxic, biodegradable and can encapsulate and release different drugs in a controlled way. Silver nanoparticles (AgNPs) have proved antibacterial activity. In order to overcome the challenge of developing a long-term antimicrobial material, we report a non-conventional biomaterial with prolonged bactericidal effect based on the incorporation of liposomes encapsulating silver nanoparticles in collagen hydrogels. AgNPs were synthesized by a reduction method and then incorporated in liposomes (L-AgNPs) by the lipid film hydration and extrusion technique. Collagen hydrogels were prepared by exposing a collagen solution extracted from rat tails to a saturated atmosphere of ammonia to induce gelation. Antimicrobial collagen-based scaffolds were prepared by adding AgNPs-containing liposomes suspensions to the collagen gels (Col-L-AgNPs). The optical properties of AgNPs were monitored by UV–vis spectroscopy. The morphology of AgNPs and L-AgNPs was studied by TEM and the structure of collagen gels before and after incorporation of L-AgNPs was analyzed by SEM. The antibacterial efficiency of Col-L-AgNPs was then evaluated on Gram-positive (S. aureus) and Gram-negative (P. aeruginosa) bacteria and cytotoxicity towards mammalian cells was studied. As a result, AgNPs exhibited well dispersed spherical morphology with an effective diameter between 5 and 20 nm. The L-AgNPs showed an effective diameter of approximately 410 nm. Col-L-AgNP showed an important bactericidal activity against both bacteria and did not affect cell viability. Based on these results, Col-L-AgNPs is promising as a new material that conserves a strong bactericidal activity and biocompatible properties for 72 h which is especially attractive for wound dressing as it does not need to be replaced repetitively.