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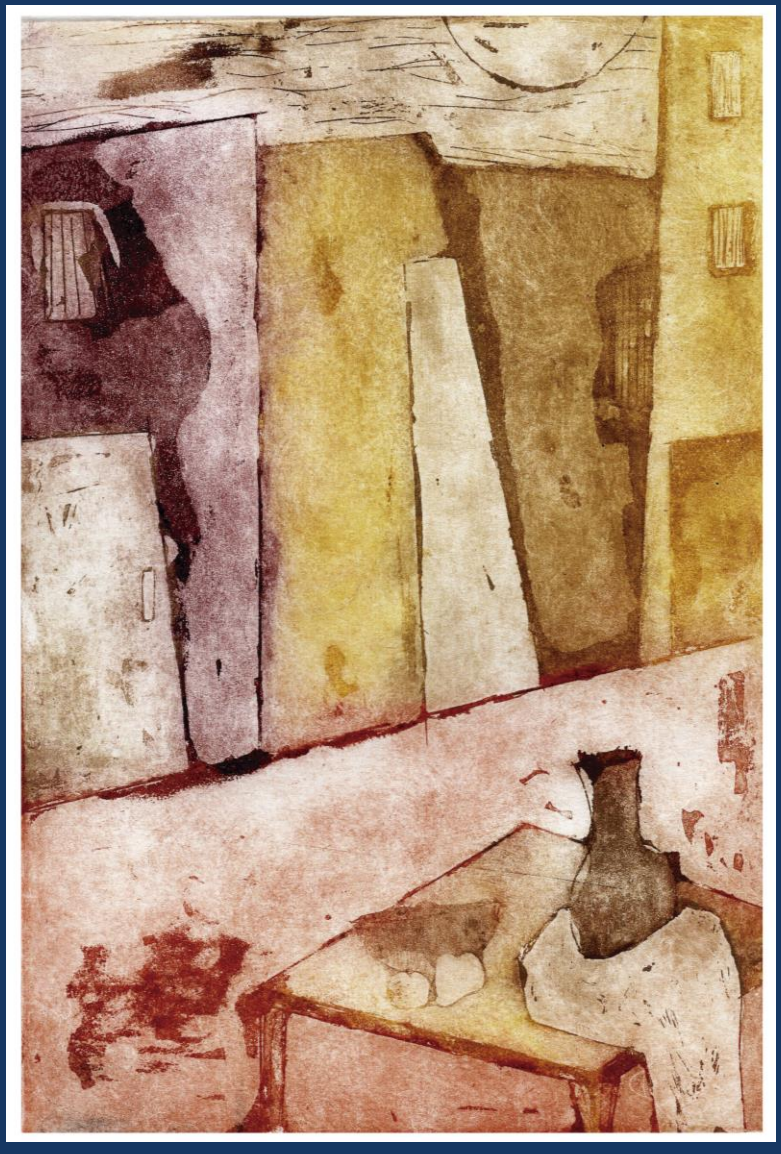

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Application nº 20190102232), control film (CF) or reference cream treatments (RC: silver sulfadiazine 1.0 %, lidocaine 0.67 % and vitamin A 248000 UI) were applied once daily for 21 days (n= 6). Control groups: untreated (UT) and not burned. Photographs and biopsies (H&E) were taken on days 0, 7, 14 and 21. Epidermal continuity and dermal organization were evaluated with scores according to Sanchez et al[1]. Biopsies analysis showed that epidermis closure was reached in the order AAF > CF > UT > RC. Besides, burns treated with AAF presented complete dermis organization at day 21 and histological characters similar to unburned control. These results could be related to the favorable moist environment provided by the components of AAF, that positively impacts on the tissue recovery. In contrast, burns treated with RC did not complete its regeneration at day 21 and even a regression was observed respect to day 14. Most of UT animals presented dense dermis and absence of skin annexes (day 21). These findings suggest that the use of the AAF allowed a more rapid and better quality skin regeneration process with respect to the available reference treatment.

Reference: 1- Sanchez MF et al. Drug Deliv Transl Res. 2018: 8 (5): 1000-13.

0715 - INTERACTIONS BETWEEN HYBRID NANOPARTICLES DESIGNED BY RADIO-SYNTHESIS AND THE HEMATOLOGY SYSTEM

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Nanoparticles (NPs) are extremely promising due to their physicochemical properties and their distinctive features for therapeutic applications. When NPs enter the bloodstream, they immediately interact with plasma and hematology cells (erythrocytes, monocytes and platelets). In the case of blood plasma, the surface of the NPs interacts with several different biomolecules, mostly proteins, forming irreversible layers called the `protein corona´. This adsorption of proteins onto NPs modify the diverse physicochemical properties of NPs such as size, surface charge, surface composition, and functionality, hence giving NPs a new biological identity and different biological responses. The aim of this work is to determine the effect of hybrid NPs on the formation of the protein corona in vitro and erythrocyte interaction and coagulation time. These hybrid NPs are AuNPs coated with human serum albumin (Alb) multilayers by a novel radiation-induced crosslinking process and are called Au/Alb core/shell nanoparticles (Au/Alb NPs). Albumins from human serum were added to the AuNPs suspension, 30% v/v ethanol was added and then these NPs were irradiated at 10 kGy with a gamma source to induce protein crosslinking. The protein corona effect was evaluated in terms of the hydrodynamic diameter (HD) of the NPs, isolation of the corona complex by size exclusion chromatography and polyacrylamide gel electrophoresis. In addition, not changes in the HD were found. In conclusion, our results suggest that Au/Alb NPs show a better hemocompatibility than albumin monolayer and pegilated Au.

0763 - GLUTAMIC ACID AS COATING FOR MAGNETIC NANOPARTICLES: A PLATFORM FOR DIVERSE BIOMEDICAL APPLICATIONS

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Coating of iron oxide magnetic nanoparticles (IOMNPs) with biocompatible molecules is mandatory for biomedical applications. The election of amino acids as coating agents is because their ability in surface stabilization of IOMNPs being also inexpensive and nontoxic. In the present work, glutamic acid (GA) was selected as coating agent aiming to obtain GA-modified IOMNPs with suitable physicochemical properties, including stability, for biomedical applications. The co-precipitation method was applied to obtain IOMNPs functionalized with GA. Two experimental procedures were evaluated varying the order of GA incorporation. In the first procedure (1), an aqueous solution of GA was added under magnetic stirring to a mixture of $FeCl_3.6H_2O$ and $FeSO_4$. In the second case (2), the mixture of iron salts was added to the aqueous solution of GA. Both reactions were conducted under N_2 atmosphere at 70 °C. A solution of NaOH was added dropwise. After 30 min, the supernatants were removed, and the resultant solids were washed and dried at 45 °C. The same procedure was applied to obtain bare IOMNPs. The resultant formulations were studied by FTIR, DLS to determine hydrodynamic diameter and isoelectric point, TEM, atomic absorption spectroscopy (for iron content determination) and DRX. Data analysis revealed that the method 2 allowed the efficient functionalization of IOMNPs with GA rendering a formulation with hydrodynamic diameter of 226.0 nm with spherical shape. The first method renders IOMNPs with similar properties than bare IOMNPs, revealing that functionalization with GA was not successful. The method applied to functionalize IOMNPs with GA was dependent on the order of reactants aggregation. It was possible to obtain IOMNPs coated with GA (IOMNPs@GA) with suitable properties for biomedical applications. The exposure of functional groups such as carboxylate moieties allows to the potential anchoring of diverse molecules (drugs or biomolecules) for the located treatment of multiple diseases.

0790 - F127 (OR P407) POLOXAMER AS A PROMISING GELLING AGENT IN SERTOLI CELL DELIVERY FOR CELL THERAPY OF THE TESTIS

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Sertoli cells (SCs) play an important role in creating an immune-privileged environment and supporting spermatogenesis. Their ability to survive transplantation long term without immunosuppression leads to the notion that SCs may be a tool for cell therapy of many chronic inflammatory diseases. Infertility has become a major health issue in the world, 40% due to male factor. There is no specific treatment to cure infertile patients; overall therapies try to bypass the cause using artificial reproductive technology. We hypothesize SC transplantation would be assessed as a practical approach for recovering spermatogenesis in azoospermic male with chronic inflammation. The trophic potential of SCs has been challenged by transplanting them in the testis of rats devoided of spermatogenesis by chemical treatment. However, experimental protocols employing a high number of SCs which disperse all around the testis had a very limited success. The aim of our work was to improve SC transfer protocols in order to increase cell density in specific areas of testis allowing diffusion of their secreted factors. We use biocompatible linear tri-block copolymer (Pluronic® F127) as cell delivery hydrogel and the SC line TM4. F127 was dispersed in saline to obtain 16-22 % (w/v) dispersions and placed at 34 °C. F127 preparation (22 %) turned into hydrogel in less than 1 min. TM4 cells dispersed in 22% F127 kept viable up to 24 h at 34°C (Trypan blue method). 2-4 x 10^6 TM4 cells labeled with carboxyfluorescein-succinimidyl ester (CFSE) dispersed in 22 % F127 or saline (100 µL) were injected ex-vivo in the testis from adult rats. After 7 min testes were frozen or fixed (PFA) for histology evaluation and fluorescence microscopy. Results showed that F127 increased cell density near injection sites limiting

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