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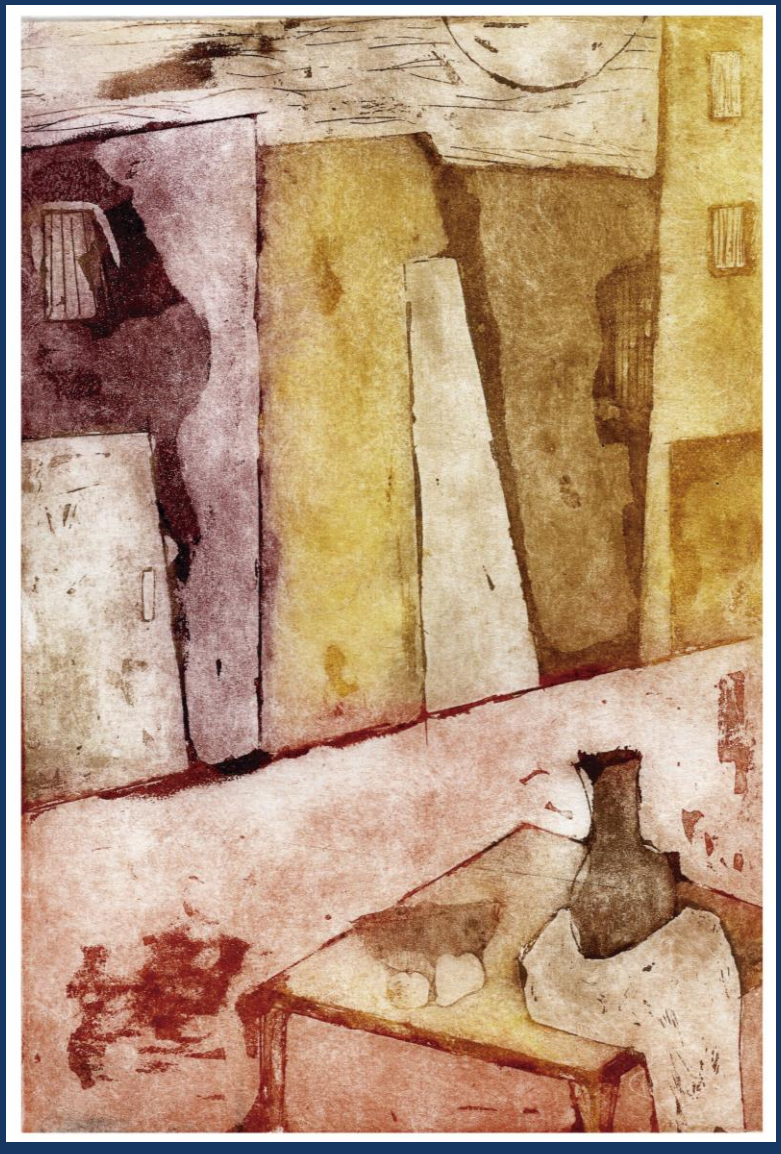

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REUNIÓN ANUAL DE SOCIEDADES DE BIOCIENCIA 2019

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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IX Annual Meeting of
Asociación Argentina de Nanomedicinas
(NANOMED-ar)

VI Regional Scientific Meeting of Asociación Argentina
de Ciencia y Tecnología de Animales de Laboratorio
(AACyTAL)

with the participation of
The Histochemical Society

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

CHIEF EDITORS

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

IFEG CONICET (1); INICSA CONICET (2); UNIVERSIDAD NACIONAL DE CÓRDOBA (3)

The Salvia hispanica L., whose common name is Chia, is an annual herbaceous plant belonging to the Lamiaceae family. Chia seeds have been investigated and recommended due to their high levels of essential fatty acids with the highest proportion of omega-3 fatty acid (ω3-FA) compared to other natural sources known to date. It is well known that the consumption of ω3-FA can slow or stop the growth of cancer cells. This work contains the preliminary results of our study about the effects of Chia oil (ChO) in a murine mammary gland adenocarcinoma by micro-X ray fluorescence (micro-XRF) analysis. The histological and multielemental analysis by micro-XRF has been combined to infer information about the mechanisms related with the anti-tumorigenic actions of ω3-FA. It is an experimental study in which 24 mice BALB/C were used, randomly distributed between two dietetic groups: 12 with normal diet (control) and 12 with diet rich in ChO. Three months after starting the diet, they were inoculated with mammary gland cells with moderate metastatic capacity (M3). The animals were slaughtered 45-50 days after inoculation. Two adjacent cuts were made to each sample, one of 6 micrometers for conventional histological analysis and another of 30 micrometers placed in a Kapton film for measurement with micro XRF. Micro XRF measurements were performed at the Brazilian Synchrotron Light Laboratory (LNLS) in Brazil. Variation of the values of certain chemical elements of the samples treated with ChO with respect to the control was observed. Calcium (Ca) and Zinc (Zn) showed significant decreases in samples with ChO. Phosphorus (P) was located in regions of tumor cells. The results were analyzed by t-test. The distribution and concentration of Ca, Zn and P in samples can help us explain the anti-tumorigenic role of ω3-FA as biomarkers of metabolic functions.

0953 - MICROFLUIDIC-ASSISTED SYNTHESIZED OF OXALIPLATIN NANOVEHICLES COMBINED WITH CURCUMIN POLYMERIC MICELLES APPLIED TO CHEMORESISTANT COLORECTAL CANCER TREATMENT

Rodrigo LLOYD(1) | Elena María SANMARCO(2) | Dailenys ESPINOSA MARTINEZ(1) | Mario Alberto GADAN(3) | Julia GALLINO(2) | Florencia GIANNONI(2) | Marcela MORETON(4) | Diego CHIAPPETA(4) | Juan Martín CABALEIRO(2) | **Lucia POLICASTRO** (2)

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Resistance and metastatic recurrence are the main barriers for the effective treatment of cancer. Administration of antineoplastic drugs in 100 nm-size nanovehicles (NV) optimizes the localization of drugs in tumor tissue. This occurs manly due to the enhancement permeably retention effect that reduce peripheral toxicity and increase the tumor local therapeutic effectiveness. Oxaliplatin (Oxp), is a high efficiency chemotherapeutic drug but with severe adverse effects, thus this encapsulation in NV could significantly improve the effect. Moreover, the combination of this chemotherapeutic drug with sensitizing molecules, such as curcumin (Cur), could yet increase the possibilities of therapy success. This molecule is highly hydrophobic, so its encapsulation in NV also could improve its delivery. However, NV conventional synthesis technologies are inefficient with variations in the batch-to-batch procedures, which make it difficult for a rapid translation to patients. In recent years, microfluidic technology-assisted nanomedicines synthesis, where fluids are subtly controlled, significantly improve these processes and allow reproducibility between different batches. The aim of this work is to administrate Oxp in liposomes and Cur in polymeric micelles performed by microfluidic technology in order to improve chemoresistant colorectal cancer treatment. We developed a micromixer chip for the encapsulation of Oxp in liposomes, obtaining optimal conditions in size and % of encapsulation of Oxp. Both compounds encapsulated, alone or in combination, were tested in Oxp resistant subcutaneous tumor in nude mice developed by our group and administrated by intravenous injection. The administration of the combination of encapsulated drugs produced a high effect in tumor growth with only one dose application. These results could have a high impact on the synthesis and the encapsulation of oncologic drugs in liposomes in the national and regional pharmaceutical industry.

0970 - INHIBITION OF PORCUPINE HAS A DIFFERENTIAL IMPACT ON THE GENE EXPRESSION SIGNATURE OF BREAST CANCER CELL LINES OF DIFFERENT LEVEL OF AGGRESSIVENESS.

Sofia VALLA(1) | Gianina DEMARCHI(1) | Agustina CHIMENTO(1) | **Nadia BONADEO** (1) | María Lucía ROMANO(1) | Laura Daniela ALANIZ(1) | Martin GOTTE(2) | Carolina CRISTINA(1)

CENTRO DE INVESTIGACIONES BÁSICAS Y APLICADAS (CIBA) – CITNOBA (UNNOBA – CONICET) (1); KLINIK FÜR FRAUENHEILKUNDE UND GEBURTSHILFE, UNIVERSITÄTSKLINIKUM MÜNSTER (2)

Wnt pathway is involved in cellular processes which are dysregulated in cancer as cell renewal, proliferation and EMT. In particular, in breast cancer (BC) it has a role in both tumor initiation and progression. Porcupine's palmitoylation of Wnt ligands is required for their proper signaling and release and its inhibition showed anti-tumoral effects on different BC models. In order to study if the inhibition of Porcupine (PORCN) had different effects regarding to the aggressiveness of the BC cell lines, we analyzed the impact of IWP-2, a PORCN inhibitor, in the TNBC cell line MDA-MB-231 and in the less aggressive MCF-7 cell line. Cells were treated with 5 µM IWP-2 or DMSO as control. IWP-2 reduced the synthesis of Wnt ligands and target genes in MCF-7 but not in MDA-MB-231 cells (qPCR, 24 h, *p<0.05: WNT3A*, AXIN2*, CCND1*, C-MYC*, CCNB1*). We also found a decrement in CYCLIN B1 protein levels in MCF-7 cells. However, it reduced the expression of ß-CATENIN in both cell lines (WB, 48 h). Furthermore, cell number was also reduced in both cases (TB, 72 h). When analyzing stem cell markers, SOX2 mRNA was decreased and KLF-4 increased in MCF-7 and MDA-MB-231 suggesting that PORCN inhibition has a similar effect on the stem-cell phenotype in both cell lines. However, the number of colonies was reduced in MDA-MB-231 but not in MCF-7 cells (CFA, 8 d). In hanging drop assays (6 d), both cell lines formed bigger but less compact mammospheres than controls, with a stronger effect in MCF-7 cells, suggesting a loss of cell adhesion in this cell line. This was also consistent with reduced E-CADHERIN expression in MCF-7 cells. Regarding EMT, no differences were found in SNAIL-1, ZEB-1 and E-CADHERIN expression at the mRNA level with IWP-2 treatment although TGF-ß synthesis was decreased in MCF-7 cells. Our results suggest that the differences in the genetic background and phenotype of breast cancer cells can modulate the effect of PORCN inhibition over tumoral properties in vitro.

1017 - MUC4 IS THE PRINCIPAL MEDIATOR OF TNF-INDUCED TRASTUZUMAB RESISTANCE AND FOSTERS AN IMMUNOSUPPRESSIVE TUMOR MICROENVIRONMENT IN HER2+ BREAST CANCER

Sofia BRUNI (1) | Mara DE MARTINO(1) | Florencia MAURO(1) | María Florencia MERCOGLIANO(2) | Lucía SANTA MARÍA DE LA PARRA(1) | Patricia ELIZALDE(1) | Roxana SCHILLACI(1)

IBYME-CONICET (1); FACULTAD DE CIENCIAS EXACTAS Y NATURALES - UBA (2)