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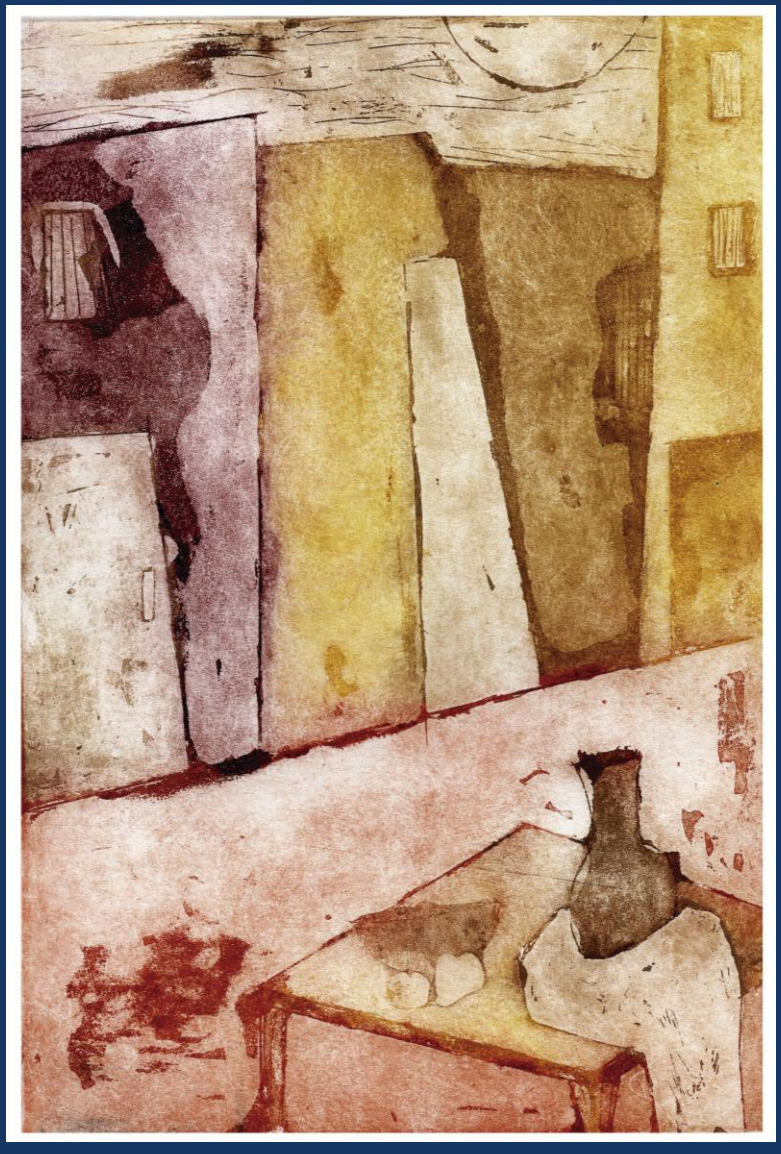

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La Tapa (*Ver* pág. 4)
***Atardecer en la tarde***
Antonella Ricagni

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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

## LXIV Annual Meeting of
## Sociedad Argentina de Investigación Clínica (SAIC)

## LI Annual Meeting of
## Asociación Argentina de Farmacología Experimental (SAFE)

## XXI Annual Meeting of
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## Sociedad Argentina de Protozoología (SAP)

## 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**

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**LA TAPA**

Antonella Ricagni. **Atardecer en la calle**

Técnica: Aguatinta /aguafuerte. Año 2011. Medidas: 21 x 29 cm. Gentileza del autor.

Antonella Ricagni es Licenciada en Artes Visuales, con orientación en Grabado. Ha ejercido la docencia en Artes Plásticas en el nivel primario. Trabajó en varios museos como orientadora de sala y tallerista. Es escenógrafa egresada de la Escuela Metropolitana de Arte Dramático (EMAD). Ha realizado una residencia artística en México especializada en Xilografía.

Actualmente es docente en la materia Ilustración, en la carrera de Diseño Gráfico en la Facultad de Arquitectura, Diseño y Urbanismo, Universidad de Buenos Aires, y en Plástica y Tecnología en varias instituciones educativas en la ciudad de Buenos Aires.

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Neoplastic proliferation requires tumour cells to reprogram their metabolic pathways in order to support the higher proliferation rate (known as the "Warburg effect"). As a result, even under normal oxygen concentrations, transformed cells predominantly generate ATP through glycolysis followed by lactic acid fermentation, converting most incoming glucose to lactate rather than metabolizing it in the mitochondria through oxidative phosphorylation. We previously demonstrated that heme oxygenase 1 (HO-1), a cellular homeostatic regulator, has an antitumoral activity in prostate cancer (PCa) cells. In addition, after treatment with hemin, an inducer of HO-1 expression and activity, PC3 cells showed significantly lower glucose uptake, ATP production and oxygen consumption rate. In this context, we aimed to study whether HO-1 is involved in the regulation of aerobic glycolysis through modulation of lactate dehydrogenase (LDH) in PC3, C4-2B and MDA PCa 2b cell lines under HO-1 induction with hemin (80 μM, 24h). We found a significant reduction in LDHA expression by RTqPCR ($p<0.05$), total LDH enzymatic activity ($p<0.05$) and extracellular lactate levels ($p<0.05$). The analysis of the TCGA-PRAD public database revealed higher LDHA mRNA levels in tumor samples compared to non-tumoral prostate tissues ($FC=1.2$; $P=2.75x10^{-6}$), with increased expression as Gleason score is higher, and poorer overall survival for patients with high LDHA tumour levels ($p=0.03$). On the other hand, we observed decreased levels of LDHB (isoform with higher affinity for lactate, preferentially converting lactate to pyruvate) mRNA ($FC=0.5$; $P=3.33x10^{-15}$), with lower expression in patients with higher Gleason score. Altogether, our findings indicate that HO-1 induction alters both transcriptional and enzymatic activity of LDH and, in turn, lactate production, confirming its relevance as a key modulator of the energetic metabolism in PCa cells.

## 0276 - TARGETING ANDROGEN RECEPTOR AND WNT PATHWAY IN ENDOCRINE-RESISTANT BREAST CANCER.

**Virginia FIGUEROA** (1) | Gabriela PATACCINI(1) | Martín ABBA(2) | Ana SAHORES(1) | Claudia LANARI(1) | Caroline LAMB(1)

**IBYME-CONICET (1); UNIVERSIDAD NACIONAL DE LA PLATA (2)**

Endocrine therapy is the standard treatment for patients with luminal breast cancer. However, after treatment most patients develop hormone resistance, by mechanisms that may include deregulation of growth factor signaling pathways. Fibroblast growth factor 2 (FGF2) consists of a secreted low molecular weight form (LMW-FGF2) and several nuclear high molecular weight forms (HMW-FGF2). We previously demonstrated that FGF2-overexpression in endocrine responsive T47D cell lines, induced hormone resistance. The aim of this study was to explore the mechanisms underlying endocrine resistance. By RNAseq, we compared LMW- and HMW-FGF2-T47D cells, with T47D cells transfected with an empty vector (T47D-ctrl) and found that FGF2 overexpressing cells had a deregulated WNT signaling pathway with the upregulation of several WNT ligands. We also detected decreased estrogen receptor α and progesterone receptors (PR) along with an increase in androgen receptors (AR), both at the mRNA and protein levels. We found a more pronounced decrease of PR isoform A (PRA) than isoform B (PRB) resulting in a low PRA/PRB ratio, which is consistent with an endocrine resistant phenotype, according to previous results from our lab. To explore the role of AR and WNT signaling pathways in FGF-triggered endocrine resistance, we evaluated the effect of dihydrotestosterone (DHT, AR agonist), enzalutamide (E, AR antagonist) and LGK974 (WNT inhibitor) in LMW- and HMW-FGF2-T47D cells compared with T47D-ctrl cells. In endocrine resistant cells, DHT induced cell proliferation while blocking AR and WNT pathways inhibited cell proliferation and tumor growth. Conversely, DHT inhibited T47D-ctrl cell proliferation and blocking the AR had no significant effect on tumor growth. Our results suggest that targeting AR and/or WNT pathways may be an alternative therapy for endocrine-resistant breast carcinomas with low PR and high AR levels.

## 0284 - INITIAL CHARACTERIZATION OF FOXP3 BLOCKADE IN BRAIN TUMOR MODEL USING GENE THERAPY VECTORS

**Alejandro J. NICOLA CANDIA** (1) | Antonela S ASAD(1) | Sofia SAGRIPANTI(1) | Araceli ABT(1) | Matias GARCIA FALLIT(1) | Mercedes IMSEN(1) | Camila Florencia ZUCCATO(1) | Adriana SEILICOVICH(1) | Flavia ZANETTI(2) | Marianela CANDOLFI(1)

**INBIOMED-UBA-CONICET (1); INSTITUTO MILSTEIN (2)**

Our previous results indicate that systemic administration of a cell-penetrating peptide (P60) that inhibits Foxp3, a transcription factor required for Treg function, improves the efficacy of antitumor vaccines in experimental breast cancer models. In order to develop a gene therapeutic strategy to deliver P60 in vivo, we have generated an adenovector that encodes the P60 sequence as well as a fluorescent reporter gene dTomato (Ad.P60.dTomato), which successfully transduced breast tumor cells in vitro and in vivo. Here we aimed to perform an initial characterization of Ad.P60.dTomato in experimental glioblastoma. This vector successfully transduced glioblastoma cells in vitro and in vivo in mice bearing intracranial GL26 syngeneic tumors that received intratumor injections of Ad.P60.dTomato or its control vector (6x10^7 pfus) 21 d post-tumor inoculation. Expression of d-Tomato was also detected in the normal mouse brain 3 and 5 days post-injection of Ad.P60.dTomato. We next injected Ad.P60.dTomato in intracranial GL26 tumors growing in transgenic C57BL/6 mice that express Foxp3 fused to fluorescent GFP protein, in order to easily detect Tregs by flow cytometry. Seven days after adenovector injection we observed a significant decrease in the number of tumor-infiltrating Tregs in mice treated with Ad.P60.dTomato ($p<0.05$), an effect that was not detected in the spleen. Our findings suggest that local administration of Ad.P60.dTomato may improve the response to immunotherapeutic strategies that are inhibited by Treg function, such as antitumor vaccines.

## 0291 - DEVELOPMENT AND IN VITRO EVALUATION OF MAGNETIC/HYBRID NANOSTRUCTURED LIPID CARRIERS AS A TOOL FOR TARGETED DELIVERY OF ANTICANCER DRUGS

**Boris Emilio RODENAK KLADNIEW** (1) | Nehuén NOACCO(2) | Ignacio PEREZ DE BERTI(3) | Rosana CRESPO(1) | Guillermo CASTRO(2) | Germán ISLAN(2) | Ignacio LEÓN(4)

**INIBIOLP (1); CINDEFI (2); CINDECA (3); CEQUINOR (4)**

Cancer is the second cause of death in the world and many of the current therapies are still ineffective or present highly toxic side effects. Nanostructured lipid carriers (NLC) are nanosized colloidal drug-delivery systems composed of a binary solid/liquid lipids core and functionalizable surface. NLC were developed to improve the encapsulation, stability, bioavailability, controlled release and selective targeting of lipophilic therapeutic drugs. Here, we designed biocompatible hybrid chitosan (Chi) coated NLC containing 1,8-cineole (CN), acting as both bioactive monoterpene and nanostructuring liquid lipid, and magnetic nanoparticles (MNP), as a smart system for drug delivery to cancer cells. NLC, NLC/Chi and NLC/Chi/MNP nanoparticles (NPs) were prepared by ultrasonication. NPs were characterized by determining particle size, surface charge (SC), magnetic behavior, encapsulation efficiency (EE) and kinetic release of CN. Cell viability and cellular uptake of NPs were evaluated in human liver (HepG2) and human lung (A549) cancer cells, and non-tumoral lung (WI-38) cells. NPs presented spherical shape, sizes in the range of 190-270 nm with narrow distribution, and SC of -2.0 mV (NLC), +7.0 mV (NLC/Chi) y +10.0 mV (NLC/Chi/MNP). MNP and NLC/Chi/MNP showed