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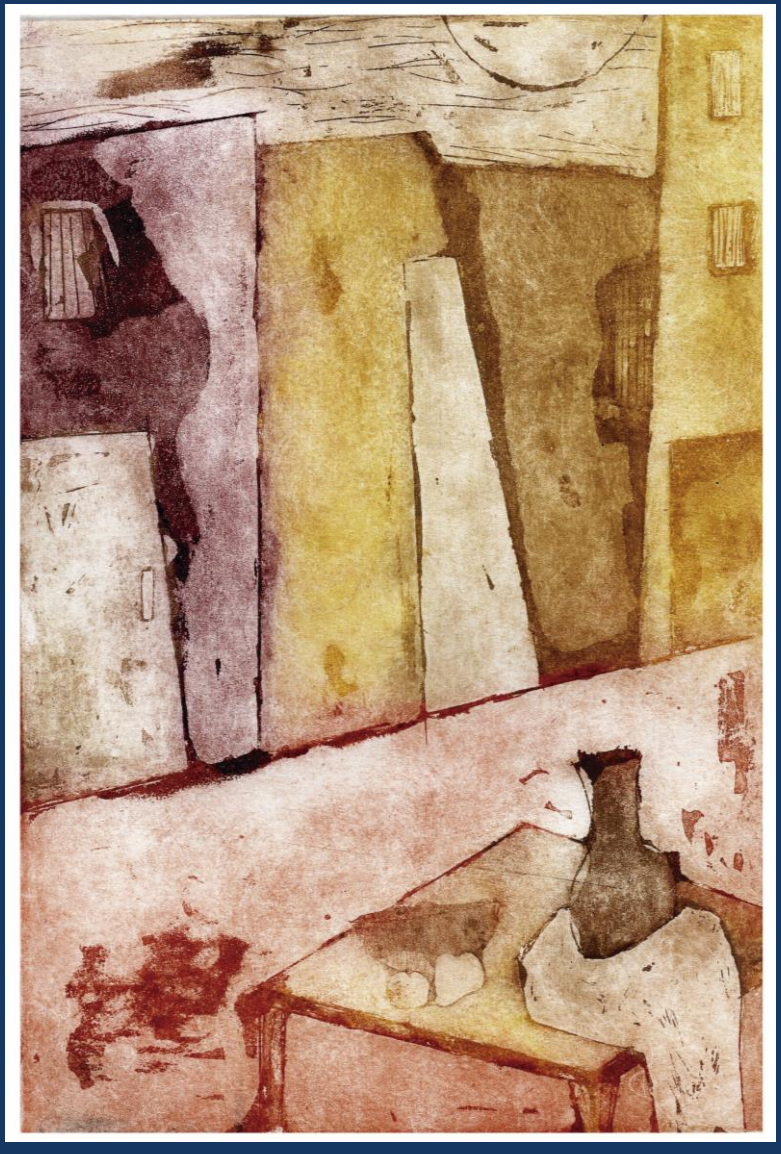

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La Tapa (Ver pág. 4)
Atardecer en la tarde
Antonella Ricagni

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Tel. 5287-3827 Int. 73919 y 4523-6619
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LXIV Reunión Anual de la
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LI Reunión Anual de la
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XXI Reunión Anual de la
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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

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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
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effects. Eu-VAN bactericidal activity was evaluated by killing curves. VAN and free-drug Eu were assayed for comparison purposes. Eu-VAN at 4xMIC of VAN caused 99.9 % killing within 360 min and bacterial erradication was observed within 24 h, whereas VAN needed 4-fold higher concentration for the same efficacy. Free-drug polymer (Eu) exhibited limited antimicrobial activity as population of bacteria was still viable after 24 h. Eu produces switch in sign of superficial net charge in S. aureus (Z potential measure) and a concentration-dependent membrane depolarization as determined by flow cytometry using DiBAC4, a potential sensitive probe. In addition, morphological changes were observed and these were confirmed by TEM. Fluorescence microscopy using a fluorescent conjugates of VAN (BODIPY-FL®) allowed to demonstrate increased binding of VAN to S. aureus when bacteria is treated with Eu-VAN as compared to free VAN. The difference was statically significant. The interaction of the cationic polymer with the bacterial cell led to improved antimicrobial efficacy of VAN. This result provides a feasible alternative to avoid or combat antimicrobial resistance. Therefore, more studies are needed to define its potential use.

0954 - ALLOPREGNANOLONE DUAL MODULATES THE SEROTONERGIC AND GABAERGIC SYSTEM IN A RAT AGGRESSION MODEL

Maria Belen MULLE BERNEDO | Sebastina GARCIA | Victor ASTORGA | Ricardo Jorge CABRERA

IMBECU

Abstract/Resumen: The serotonergic system is involved in a wide variety of physiological and behavioral functions. Serotonergic axons have been shown to target GABAergic inhibitory neurons and vice-versa. Also, the serotonergic system is influenced by changes in plasma and brain levels of neuroactive steroids. Progesterone derivative, allopregnanolone (Allo) enhances GABAA receptors sensibility, acting as an allosteric modulator on the function of GABA. This receptor acts as heteroreceptor in serotoninergic neurons. Allo, also modulates negatively 5-HT3 receptors. This neurosteroid influences a wide range of behaviors, among others, like aggressive behavior in rodents. This work aimed to evaluate modulatory Allo effects in an aggressive behavior rat model. Male Sprague-Dawley rats 60 days old were used. On a postnatal day 60 (PND), the rats were cannulated in the 3rd ventricle (icv). On PND 66, the rats received once pCPA (300 mg/kg, i.p) injection in order to generate aggressive behavior. On PND 72, the rats were divided randomly into groups, 1) Allo; 2) Bicuculine (Bic)+Allo; 3) Bic 4) 5-HT 5) Allo+ 5-HT. Moreover, 30` before resident intruder test (RVI) receive the drug icv. The behavioral activity of all groups was video recorded and was analyzed by the researchers. Aggressive behavior was evaluated as the presence of tromping, bites, attempted mounts, and lateral threats (AB). We also measured non-social interaction (lying and sitting), social interaction (sniffing and grooming) and locomotor activity. All data were expressed as a mean+ SEM and analyzed by ANOVA I and Tukey post hoc test. Allo positively modulates the GABAergic system by decreasing aggressive behavior ($p< 0.01$). This decrease was reversed by the blockage of this system with Bicuculin ($p < 0.01$). The administration of 5HT icv did not modify the aggressive behavior induced by pCPA depletion. Moreover, the previous administration of Allo to 5HT icv significantly increased this behavior ($p< 0.05$). We conclude that Allo is a neurosteroid modulator of aggressive behavior in rats. This modulatory effect would be mediated by GABAergic and serotonergic mechanisms oppositely, thus proposing a duality in its modulatory capacity not described above, for this type of aggressive behavior in rats.

SAFE AWARD II

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1036 - DIISOPROPYLPHENYL-IMIDAZOLE (DII): A NEW COMPOUND THAT EXERTS ANTHELMINTIC ACTIVITY THROUGH NOVEL MOLECULAR MECHANISMS.

María Gabriela BLANCO (1) | María Soledad VELA GUROVIC(2) | Gustavo Fabián SILBESTRI(3) | Andrés GARELLI(1) | Sebastián GIUNTI(1) | Diego RAYES(1) | María José DE ROSA (1)

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Abstract/Resumen: Nematode parasites cause infections that affect approximately one-third of the world´s population and considerable losses in livestock and food crops. Paradoxically, the repertoire of effective anthelmintics for treating these parasitoses is very limited, as drug development has been delayed for decades. Moreover, resistance to currently available drugs is a global concern in livestock parasites and is an emerging issue for human helminthiasis. Therefore, anthelmintics with novel mechanisms of action are urgently needed. Taking advantage of Caenorhabditis elegans as an established model system for developing agents, in this project we synthesized and screened the anthelmintic potential of novel imidazolium and imidazole derivatives. We found that one of these derivatives, diisopropylphenyl-imidazole (DII), is lethal to C. elegans at both mature and immature stages. Toxicity appears to be specific because DII concentrations which are lethal to C. elegans do not induce significant lethality on bacteria, Drosophila melanogaster, and HEK-293 cells. Our analysis of DII action on C. elegans mutant strains determined that, in the adult stage, null mutants of unc-29 are resistant to the drug. Muscle expression of this gene completely restores DII sensitivity. UNC-29 was reported as an essential constituent of the levamisole-sensitive muscle nicotinic receptor (L-AChR). Nevertheless, null mutants in unc-63 and lev-8 (essential and non-essential subunits of L-AChRs, respectively) are as sensitive to DII as the wild-type strain. Therefore, our results suggest that DII effects on adult nematodes rely on a previously undescribed AChR. This novel AChR is composed by UNC-29 (a non-alfa subunit incapable of forming homomeric receptors) and other unidentified subunits. To completely elucidate its stoichiometry, we are analyzing DII resistance in different strains containing null mutations in AChR subunits. Since DII mechanism is different from those of currently used anthelmintics, it could constitute a therapeutic option when traditional anthelmintic agents fail. Interestingly, DII targets appear to be different between larvae and adults, as unc-29 null mutant larvae are sensitive to the drug. The existence of more than one target could delay resistance development. The specificity and novel mode of action of DII, which includes differential targeting in larvae and adult nematodes, support its potential as a promising drug candidate to treat helminthiasis.

1037 - ISCHEMIC CARDIOMYOPATHY AND THYROID ALTERATIONS: FROM THE ENERGETICS OF CALCIUM HOMEOSTASIS TO CARDIOPROTECTION IN RAT CARDIAC MODELS.

Matías BAYLEY(1) | Sofía LÓPEZ(1) | **María Inés RAGONE** (1) | COLABORADORES: Alicia CONSOLINI(1) | Patricia BONAZZOLA(2)