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**LXVIII REUNIÓN ANUAL DE LA
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(SAIC)**

**XXV JORNADAS ANUALES DE LA SOCIEDAD
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**LV REUNIÓN ANUAL DE LA ASOCIACIÓN
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**VIII REUNIÓN CIENTÍFICA REGIONAL DE LA
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TECNOLOGÍA DE ANIMALES DE LABORATORIO
(AACYTAL)**

15-17 de noviembre de 2023
Hotel 13 de Julio – Mar del Plata

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CONFERENCE SAIC IV.*Thursday 16th November 12:00 – 12:50***Chair: Verónica Marignac****LIQUID BIOPSY IN WOMEN'S HEALTH, ONCOLOGY AND ORGAN TRANSPLANTATION****Lili Li***Founder, Acrux Fleeting-code*

Liquid biopsy is a non-invasive diagnostic method of detecting and monitoring health status by analyzing bodily fluids, primarily blood. It offers a significant advantage over traditional tissue biopsy by reducing the risk, pain, and discomfort for patients. Non-invasive prenatal test (NIPT) has revolutionized prenatal care by offering screening for chromosomal abnormalities as early as the 10th week of pregnancy. It analyzes the cell-free fetal DNA circulating in the mother's bloodstream to assess the risk of Down syndrome (trisomy 21), Edwards syndrome (trisomy 18), Patau syndrome (trisomy 13). This offers parents-to-be timely and valuable information, aiding in informed decision-making regarding the pregnancy and preparation for potential outcomes. Technological advancements have improved the sensitivity and specificity, enabling the detection of subchromosomal copy number variants. 22q11.2 deletion syndrome (or DiGeorge syndrome) is the most common microdeletion and a leading

cause of congenital heart defects and neurodevelopmental delay. Classical deletion and nested deletions that are ≥ 500 kb in the 22q11.2 low-copy repeat A-D region can be detected by SNP-based NIPT. Real-world population data showed 0.2% cases as high risk. As an emerging and promising tool for monitoring graft health and early detection of rejection, cfDNA (cell free DNA) assay can improve post-transplant rejection assessments by more than 50% than traditional methods, leading to better patient outcomes. It is now available for kidney, lung and heart transplantation. The clinical utility of ctDNA in patients with solid tumors has increased, aiding in risk stratification, prognosis, and treatment planning. Postoperative ctDNA-positive status indicates a higher risk of recurrence. Implementation of ctDNA testing can inform prognosis and assist in determining the level of treatment that may be needed to clear residue disease, prevent relapse and improve chances of long-term survival.

CONFERENCE SAIC V - Dr. Alfredo Lanari.*Thursday 16th November 11:00 – 11:50***Chair: Ariana Bruzzone****PENTAMERIC LIGAND-GATED ION CHANNELS: FROM MOLECULE TO MEDICINE****Cecilia Bouzat***Instituto de Investigaciones Bioquímicas de Bahía Blanca- CONICET- Departamento de Biología, Bioquímica y Farmacia, Universidad Nacional del Sur.*

Pentameric ligand-gated ion channels (pLGICs) mediate ionotropic responses in vertebrates and invertebrates. These receptors are vital for converting neurotransmitter recognition into electrical impulses, contributing to essential physiological processes such as movement, memory, cognition, and plasticity. They are found in the central and peripheral nervous systems, as well as in various non-neuronal cells, and are associated with a wide range of disorders, making them significant pharmacological targets for clinically relevant drugs. In vertebrates, the pLGIC family includes the cation-selective channels, nicotinic acetylcholine receptors (nAChRs) and 5-hydroxytryptamine type 3 receptors, and the anion-selective channels, glycine and gamma-aminobutyric acid type A receptors. In invertebrates, the repertoire of pLGICs is even more diverse, encompassing anionic channels activated by glutamate, acetylcholine, and biogenic amines. Remarkably, the free-living nematode *Caenorhabditis elegans*, which serves as a model for human diseases and anthelmintic drug discovery, possesses one of the largest and most diverse receptor families. As a result,

C. elegans is an ideal organism for investigating the biology and pharmacology of pLGICs and exploring their potential as targets for novel therapeutic interventions. Through the use of heterologous expression systems and patch clamp recordings of wild-type and mutant pLGICs, particularly $\alpha 7$ nAChRs and 5-HT_{3A} receptors, we have elucidated the molecular mechanisms of their operation. Our studies have deciphered the kinetics and pharmacological peculiarities that enable these receptors to adapt to their physiological roles and have identified new compounds with therapeutic potential for neurological and neurodegenerative disorders. In *C. elegans*, our studies ranging from the molecular to the organism level have provided insights into novel aspects of pLGIC pharmacology and function as well as their physiological roles. Furthermore, these studies have identified novel receptor targets and attractive lead compounds for anthelmintic drug therapy. Overall, our studies lay the foundation for the design and development of therapies that can effectively target and modulate pLGICs for improved clinical outcomes.