

medicina

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REUNIÓN CONJUNTA SAIC SAB AAFE AACYTAL 2023

**LXVIII REUNIÓN ANUAL DE LA
SOCIEDAD ARGENTINA DE INVESTIGACIÓN CLÍNICA
(SAIC)**

**XXV JORNADAS ANUALES DE LA SOCIEDAD
ARGENTINA DE BIOLOGÍA
(SAB)**

**LV REUNIÓN ANUAL DE LA ASOCIACIÓN
ARGENTINA DE FARMACOLOGÍA EXPERIMENTAL
(AAFE)**

**VIII REUNIÓN CIENTÍFICA REGIONAL DE LA
ASOCIACIÓN ARGENTINA DE CIENCIA Y
TECNOLOGÍA DE ANIMALES DE LABORATORIO
(AACYTAL)**

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

EDITORES RESPONSABLES

Dra. Isabel Luthy
Dra. Silvina Pérez Martínez
Dr. Ventura Simonovich
Dr. Gabriel Pinto

AAFE AWARD - Annual award to the best work in pharmacology.

Thursday 16th November 11:00-12:40

Chair: **Guillermina Hernando**Juries: **Ventura Alejandro Simonovich, Susana Gorzalczany, Hugo Héctor Ortega****ADVANCING GASTROINTESTINAL NEMATODE TREATMENT THROUGH PHYTOCHEMICALS ADMINISTRATION TO LAMBS****María Victoria Miró¹, Mercedes Lloberas², Guillermo Virkel¹, Adrián Lifschitz¹**

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In the last 50 years, few antiparasitic drugs with new mechanisms of action have been introduced; leading to a global increase of drug resistance. Therefore, the search for alternative pharmacological tools is a priority in ruminant production systems. While numerous phytochemicals demonstrated efficacy against parasites *in vitro*, the transition to *in vivo* characterization poses a growing challenge. The drug concentration attained in the target parasites and, the resulting pharmacological effect are directly influenced by the administration route and pharmaceutical formulation. The aim of the current work was to analyze the pharmacokinetic-pharmacodynamic relationship of the combined administration of carvone (CNE) and ivermectin (IVM) to lambs. Three trials were conducted to evaluate the pharmacological interaction between CNE and IVM in lambs infected with nematodes. Drug concentrations were measured in plasma, target tissues and *H. contortus* by HPLC with fluorescent (IVM) and ultraviolet (CNE) detection. The decrease in

fecal egg count was used as an indicator for estimating the efficacy of both compounds. CNE significantly enhanced the plasma bioavailability of IVM. CNE showed a moderate anthelmintic effect, which was greater on the susceptible isolate of *H. contortus*. After the combination of CNE and IVM as an oral emulsion, both compounds were quantified in *H. contortus* recovered from infected lambs. Although the coadministration of CNE and IVM in lambs demonstrated a moderate *in vivo* anthelmintic effect and enhanced systemic availability of IVM, the concentrations achieved in both target tissues and parasites remained notably lower compared to those documented to induce anthelmintic effects in the *in vitro* assays. Consequently, these levels were insufficient to achieve the desired optimal efficacy. Innovative pharmaceutical formulations are required to establish phytochemicals as a useful pharmacological tool for controlling nematodes in ruminants.

ANTIHYPERGLYCAEMIC ACTIVITY OF TWO SPECIES OF *PHYLLANTHUS***Ana Melissa Gonzalez Miragliotta^{a,b}, Gonzalo Adrián Ojeda^{a,b}, Romina Belén Gonzalez^{a,b}, Ana Paula Escobar^a, Nelida María Peruchena^{b,c}, Ana María Torres^{a,b}**

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Phyllanthus niruri L. (*rompepiedra*) and *P. sellowianus* (*sarandí blanco*), are native species of Central and South America. In ethnopharmacology, *P. niruri* is used as a diuretic, while *P. sellowianus* is used as a hypoglycemic. The aim of the works was to evaluate the inhibitory potential of these extracts on α -glucosidase enzymes (APG) from different sources. Aerial Parts (APn) and Roots (Rn) of *P. niruri* collected in Corrientes-Capital, along with Leaves (Ls), Stem Bark (SBs), and Roots (Rs) of *P. sellowianus* from Corrientes-Monte Caseros, were

employed for this research. The extracts were prepared with methanol: ethyl acetate (7:3) and dried using a rotary evaporator. Antihyperglycemic efficacy was studied based on the ability of the extracts to inhibit APG activity. Results were quantified in terms of inhibition ratios (Ir), with acarbose as positive control. Additionally, phytochemistry and the HPLC-DAD profiles of the extracts were evaluated. In the *Saccharomyces cerevisiae* APG inhibition assay, extracts from both species outperformed the acarbose. The most active extracts were SBs: