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**61. PHYTOCHEMICAL PROFILE AND ANTI-LIPOXYGENASE ACTIVITY OF ALCOHOLIC EXTRACTS OF PLANT SPECIES FROM THE ASTERACEAE FAMILY**

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The use of medicinal plants for healing purposes is an ancient and common practice still in use nowadays. Lipoxigenase (LOX) plays an important role in the physiopathology of inflammatory and allergic diseases since it is the enzyme responsible for the biosynthesis of inflammatory mediators. We evaluated the anti-LOX capacity of alcoholic extracts of nine plant species (*B. boliviensis*, *B. incarum*, *Ch. keidelii*, *C. atacamensis*, *N. armatum*, *P. lepidophylla*, *P. lucida*, *P. phylliciformis*, *T. absinthioides*) belonging to the Asteraceae family and its relation to their phytochemical profile. Tinctures of plants collected in the Argentine Puna were analyzed. Total polyphenols content varied between 64-160 µg Gallic Acid Equivalents (GAE)/mg, non-flavonoid phenolic compounds varied between 53-153 µg GAE/mg, flavones/flavonols between 6-28 µg Quercetin Equivalents/mg and flavonones/dihydroflavonones between 24 and 51 µg Naringenin Equivalents/mg. Species from the genus *Parastrephia* presented the highest inhibitory activity on LOX with IC<sub>50</sub> values between 219 and 253 µg/mL, *P. lepidophylla* being the most active one. This could be related to the higher levels of total phenolic compounds and flavones/flavonols found in this species. The results indicate the potential use of *Parastrephia* extracts as a natural anti inflammatory.

**62. FORMULATION DESIGN, QUALITY CONTROL AND IN VITRO ASSAYS FOR A SEMISOLID PHARMACEUTICAL FORM CONTAINING L. PLANTARUM CULTURE SUPERNATANT AS ACTIVE PHARMACEUTICAL INGREDIENT**

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Bacterial resistance mechanisms are closely related to biofilm formation. Because of these mechanisms, 80% of bacterial infections become chronic. In previous works we reported anti-pathogen activity of supernatants from *L. plantarum* ATCC 10241 (SLp) against *P. aeruginosa*, safety compared with conventional treatments, total chemical composition, minimal inhibitory concentration and dosage. The aim of this work is the development of a topical dosage form (cream) of low-cost, efficient, stable and safe to convey SLp. Stability studies were conducted: pharmacotechnical and microbiological assays. The formulation designed complies with the requirements of all pharmacotechnical quality control tests and showed good microbiological stability, indicating that the formulation has the right proportions of excipients. The organoleptic characteristics were rated as very good by ten healthy volunteers. In antimicrobial activity tests, two strains of bacteria commonly found in chronic infections, *P. aeruginosa* and *S. aureus*, were used. The qualitative results found indicate that SLp conveyed as a cream maintains its antimicrobial activity.

**63. VOLATILE METABOLITES OF *Ipomoea cairica* ON *Staphylococcus aureus* BIOFILM**

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*Ipomoea* is the largest genus in the flowering plant family Convolvulaceae with 52 species in Argentina. The genus comprises climbing or creeping plants. Antimicrobial effects have been reported for many species of *Ipomoea*. Nevertheless, this is the first report on the activity of *Ipomoea cairica* on biofilm. The aim of this study was to investigate the chemical composition of extracts (E) from leaves (L) and flowers (F) of *I. cairica* and their activity on *Staphylococcus aureus* biofilm. E were prepared from L and F with ethyl ether and analyzed by GC-MS. E activity was determined on mature biofilm of *S. aureus* ATCC 6538 P. Considerable disrupting effects of EF were observed on the biofilm of *S. aureus* at 42 and 21 µg/mL (70-52%) while EL at the same concentrations showed 63 and 50% reduction, respectively. β-caryophyllene (24%), palmitic acid (14%), germacrene D (10%), β-elemene (7%), β-bisabolene (6%) and caryophyllene oxide (2%) were the major constituents of EL. EF contained β-caryophyllene (17%), caryophyllene oxide (9%), palmitic acid (7%), and β-bisabolene (3%). The greater activity of EF could be attributed to the higher concentration of caryophyllene oxide, which is known to have antimicrobial properties. *I. cairica* is a promising source of metabolites active against the main mechanism of bacterial resistance.

**64. BIOACTIVE VOLATILE CONSTITUENTS FROM *Senecio punae***

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Plants of the *Senecio* genus are a rich source of pyrrolizidine alkaloids and sesquiterpenes of furanoremonophilane and eremophilan-type. *S. punae* was collected at Susques (Jujuy province, Argentina) at 3600 m.a.s.l. The ether extract (E) prepared from the aerial parts was analyzed by chromatographic and spectroscopic techniques. Fractionation of E by column chromatography afforded a fraction (F) containing a 90% of eremophila-7(11), 9-dien-8-one (D) and other oxygenated sesquiterpenes as minor compounds. F was further processed to give compound D. This compound was previously isolated from *Petasites hybridus* and *Cacalia hastata* both belonging to the tribe Senecioneae. E, F and D were evaluated at 250 µg/mL, against *Oryzaephilus surinamensis*, a cosmopolitan pest capable of feeding on a variety of stored grains. E showed no toxic effects but acts as repellent and antifeedant; F resulted to be an attractant and D was no toxic for the insect. E would provide a potential adjuvant in bio-repellent formulations in order to reduce grain infestation. We also evaluated the antibacterial activity and antibiofilm ability of E, F, D, and mixtures with the antibiotic oxacillin (OXA) on *S. aureus* ATCC 6538 P and a methicillin resistant strain. D associated with OXA (6 and 3 µg/mL, respectively) resulted the most active against both strains, showing a growth inhibition of 71-77% and a biofilm inhibition of 94%.