

**Sociedad de
Biología de Cuyo**

**XXXVII Reunión
Científica Anual**
5 y 6 dic 2019 - San Luis

Ciencia



Educación

**Investigación
y Ambiente**

Integración

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Libro de Resúmenes

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Centro Cultural José La Vía

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inhibition of lipoperoxidation in erythrocytes (86-88 % at 250 µgTLD/mL), while a less effect in the FRAP and ABTS antioxidant assays were found. Additionally, the decoctions showed a content of phenolics compounds of 94 mg GAE/g, 185 GAE/g and 64 GAE/g, for TLDSJ, TLDM TLDCH samples respectively. Regarding the flavonoid content, the Chilean sample was highlighted with 19 mg QE/g. In this work thirty phenolics compounds including sesquiterpenes, flavonoids, and phenolic acids were rapidly identified in TLDSJ, TLDM and TLDCH decoctions by means of ultrahigh resolution liquid chromatography orbitrap MS analysis (UHPLC-PDA-OT-MS) for the first time, which support that the medicinal decoction from both countries is a valuable natural product with antioxidant effects and with potential to improve human health. Additionally, this research opens a pathway for the development of important phytomedicine products. Authors are grateful to CICITCA-UNSJ, and U Austral de Chile

255. CHEMICAL CHARACTERIZATION FREE RADICAL SCAVENGING AND ANTIBACTERIAL ACTIVITY OF *Zuccagnia punctata* CAV (FABACEAE) EXUDATE

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The resins are nonvolatile products of plants, exude naturally (surface resins) or can be obtained by incision or infection (internal resins). Their chemical composition including flavonoids, terpenoids, and fatty substances is in some cases a protective barrier for the plant against the attack of some herbivores. A limited number of families including Fabaceae, Burseraceae, and Pinaceae stand out for their high resin production. Argentina's Andean region is the habitat of plant species belonging to the genera *Larrea*, *Zuccagnia*, and *Bulnesia* recognized for their high production of resins or exudates, of which there is a lack of knowledge about their potential as sources of compounds of agronomic and industrial interest. A dichloromethane exudate (DCME) obtained by dipping of fresh aerial parts from *Z. punctata* was evaluated regarding their antioxidant, antibacterial and UHPLC-MS metabolome fingerprinting. The antioxidant properties were assayed by DPPH, TEAC, FRAP and lipoperoxidation inhibition in erythrocytes methods and the antibacterial activity according to the Clinical and Laboratory Standards Institute (CLSI) guidelines. The DCME showed a stronger free radical scavenging activity on DPPH radical (IC₅₀ = 25 µg/mL) and inhibited the lipid peroxidation in erythrocytes in 70%, at 250 µg/mL. The DCME was active against Gram (+) and Gram (-) bacteria (MICs values between 125-250 µg/ml). Forty-seven compounds were detected and identified based on the UHPLC OT-MS including, chalcones, dihydrochalcones, flavones, flavanones, nine correspond to flavonoids, thirteen to caffeic acid ester derivatives. Several compounds are first reported for this species. The results support that *Z. punctata* exudate is a valuable natural product with the potential to improve human health and industrial interest. Authors are grateful to CICITCA-UNSJ, and U Austral de Chile

256. MORPHOLOGICAL CHARACTERIZATION OF RECENT POLLEN GRAINS FOR THE COMPARATIVE STUDY WITH FOSSILS AND ITS IMPLICATIONS IN *Ephedra* L. (GNETALES) DIVERSITY

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Many authors agreed that the study of recent pollen grains contribute to the taxonomy of some vegetal groups. By other side, the comparative studies with fossil pollen grains had allowed to reconstruct paleoflora and paleoclimates. The primary objective of this work was to analyze pollen grains of recent South American species of *Ephedra* and to compare them with fossil pollen grains recovered from La Cantera Formation in San Luis province (Early Cretaceous) that were assigned previously to this group. The pollen grains were removed of specimens deposited in a herbarium and stained with basic fuchsin. A minimum of 20 pollen grains were studied per sample, using a light binocular microscopy (1000 x) and were compared with the fossil palynomorphs. Fossil palynological samples used were located in the paleopalynological collection from IANIGLA CCT from Mendoza. The analysis showed that both morphological and morphometric characters of the grains were uniform in each of the recent species and did not correspond to individual differences. The main shared characters between species were: ellipsoidal to fusiform shape and polypllicate sculpture. These results support the previous idea that the great diversity in morphology and size of pollen grains assigned to *Ephedra* and recorded in La Cantera Formation indicating the presence of several species or even several genera in this association. This example shows a case where the study of recent species gives an important support to infer the diversity of species that lived in the past.