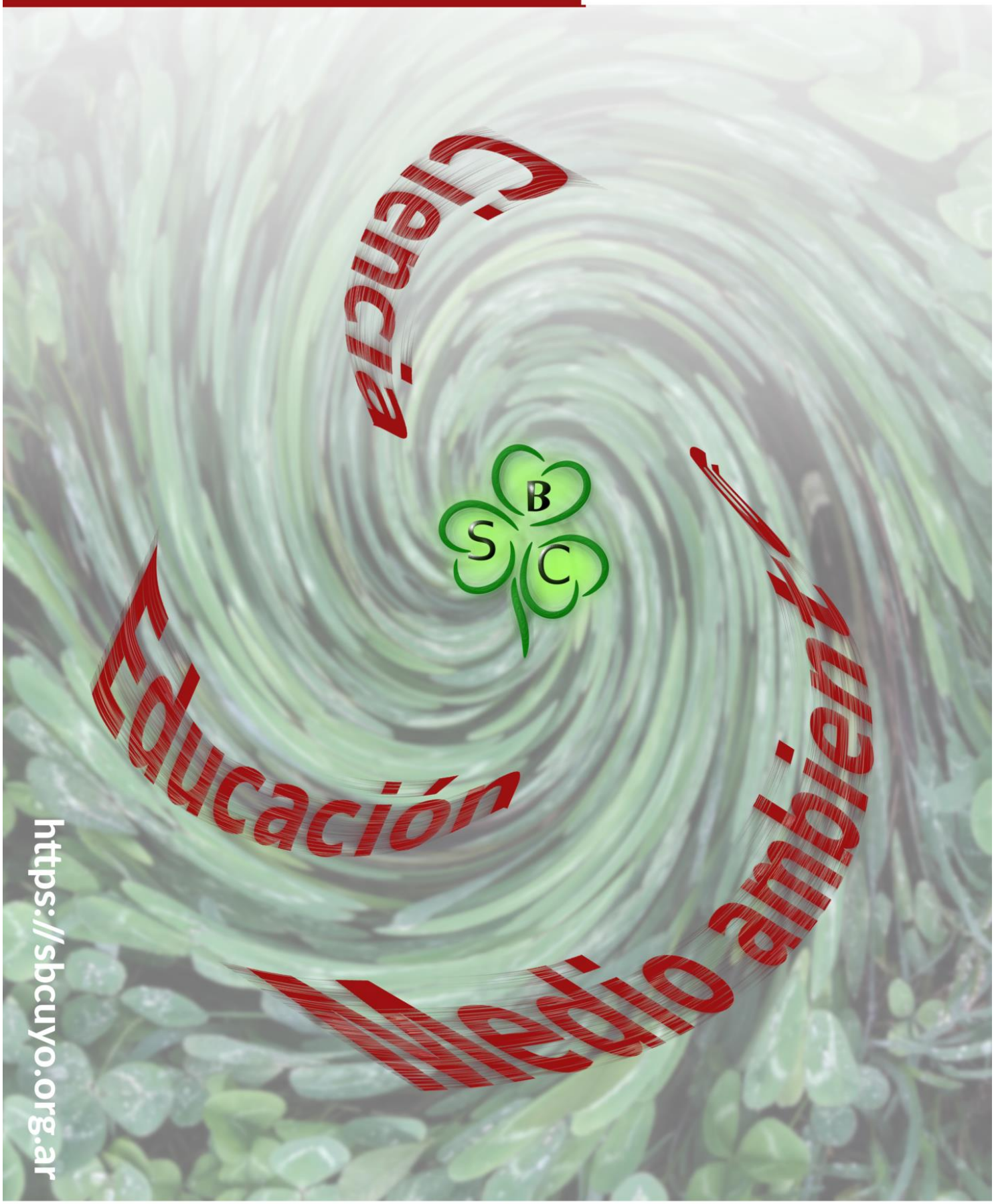
Sociedad de Biología de Cuyo

XXXVII Reunión Científica Anual

5 y 6 dic 2019 - San Luis



Libro de Resúmenes

XXXVII Reunión Científica Anual

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Centro Cultural José La Vía

Avenida Lafinur esquina Avenida Illia
San Luis
Argentina

85. A NOVEL METHOD FOR HEAVY METALS DETERMINATION IN AEROBIOLOGICAL SAMPLES

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Atmospheric air carries a big number of particles and environmental pollutants coming from anthropogenic activities, to which people are exposed. Metal pollution has been increasing rapidly over the past century in relation to the growth of human population contaminants production. Thus, aero particles such as pollen grains may contain various trace elements, and their amounts vary from one species to another. They can present traces of metals such as lead (Pb), barium (Ba) and manganese (Mn), which are among the most common air and soil contaminants, and they are considered toxic to living beings. In the present work, we propose a simple and fast method for the multielemental determination of traces in aerobiological samples. The sample of aeroparticles was obtained with a volumetric Lanzoni sensor, which is located on the terrace of the National University of San Luis. This device allows the capture of particles suspended in the air with a week periodicity, and with a suction flow of 10 L of air min^{-1}, similar to the volume of air inhaled by the human lung. The pollen content was analyzed during three months with continuous aerobiological sampling, in the atmosphere of the San Luis city, Argentina. Aerobiological samples were observed and readied with an optical microscope at 400 X and they were identified through palynological atlases and with the palynotheque belonging to Aerobiology´s laboratory. For multielement determination, a mass spectrometer with inductively coupled plasma (ICP-MS) was used. The aeroparticle samples were subjected to acid digestion at 90 °C for one hour. The conditions of analytical determination were optimized. The nebulizer gas flow used was 0.85 l min^{-1} and the RF power was 1200 W. The pollination period studied was from February to April of 2019. Comparatively with others pollen types, Chenopodiaceae and *Artemisia* were the most abundant in the atmosphere of San Luis during the analysis period. Linear regression models were used to analyze the metals vs. pollen content. Positive associations were found between Mn and Chenopodiaceae (r=0.86, P=0.0015). In the same sense it was observed positive associations between Pb and Chenopodiaceae (r=0.78, P=0.0026). The maximum concentration values for Chenopodiaceae (30 pollen grains/m^3 of air) were recorded in March, while the maximum values for *Artemisia* (11 pollen grains/m^3 of air) were recorded in February. In this study, during the pollination period an increase in the elemental content was observed. Therefore, the metals could be transported by aero particles such as pollen grains increasing respiratory disorders.

86. EFFECT OF THE JOINT ADMINISTRATION OF KETAMINE AND FLUOXETINE IN POSITIVE CALBINDINE INTERNEURONS OF THE BASILATERAL NUCLEUS OF AMÍGDALA IN *Ratus novergicus*: PRELIMINARY RESULTS

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There are different pharmacological treatments for depression, limited in their effectiveness and many have very long latency periods. Current research points to NMDA antagonists as possible therapeutic targets of this disorder. The objective of this work was to assess at a behavioral level the synergistic interactions between the antidepressant of the SSRIs group fluoxetine, and ketamine, a non-competitive NMDA receptor antagonist and correlate the findings with structural changes in the basolateral nucleus of the tonsil with respect to positive calbindin Interneurons. Holtzman rats that were treated with fluoxetine were used. 10, 15 and 20 mg / kg and ketamine. 2.5, 5 and 10 mg / kg and subsequently were evaluated in the forced swim test each group consisted of n = 20. Fluoxetine in doses of 10 and 15 mg / kg and ketamine in doses of 2.5 and 5 mg / kg did not produce a significant decrease in immobility time, On the contrary, if significant decreases were observed with fluoxetine 20 mg / kg ($p < 0.01$) and ketamine 10 mg / kg ($p < 0.05$). Likewise, there was a significant decrease in immobility time when fluoxetine 10 mg / kg + ketamine 2.5 mg / kg ($p < 0.01$) and fluoxetine 15 mg / kg + ketamine 5 mg / kg ($p < 0,0001$). At 24 hours after the test, positive calbindin interneurons of the basolateral nucleus of the tonsil were analyzed by immunohistochemistry. Each group consisted of an n = 3. It was observed that the saline group presented significant differences with the group treated with 20 mg / kg of fluoxetine ($p = 0.001$), with the group treated with 5 mg / kg of fluoxetine ($p = 0.0001$) and with the group treated with 5 mg / kg of fluoxetine + 2.5 mg / kg of ketamine ($p = 0.0001$), the latter being the one with the least positive calbindin interneurons. Ketamine groups have not yet been analyzed. These results indicate that co-administration of fluoxetine and ketamine can induce a more potent antidepressant activity than when used alone. In addition, the decrease in the density of cositive calbindin interneurons in the basolateral nucleus of the amygdala could be directly related to the action of drugs on these neuronal populations, thereby increasing neuronal plasticity and being able to restore excitatory and inhibitory balance.

87. COX 1 AND COX 2 INHIBITIONS BY A DECOCTION OF ANDEAN SPECIES FROM SAN JUAN PROVINCE, ARGENTINE

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