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In memoriam Dr. Julia Marina Oterino

October 8 – 10, 2008

Tafí del Valle, Tucumán, Argentina

The abstracts have been revised and evaluated by the Scientific Committee
of the Tucumán Biology Association

73.

DIRECT PCR USING *Spodoptera frugiperda* EGGS AS TEMPLATE

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Introduction: PCR is widely employed in a variety of experimental applications such as studies of *Spodoptera frugiperda (Sf),* an important pest in America. **Objective:** To optimize direct PCR technique using *Sf* samples. **Material and methods:** PCR reactions were performed in 25 µL containing: 21.4 µl sterile water, 0.1 µl of each oligonucleotide primers (JM76 and JM77), 5 µl 5X Taq buffer and 0.2 µl *Taq* DNA polymerase. One, two or three eggs were added to the reaction mixture. Negative and positive controls were performed with distilled water and purified DNA, respectively. Amplification was performed with the following program: An initial denaturation step at 97ºC for 5 min and then 35 cycles of the following: 1 min at 94ºC, 1 min at 58ºC, 2 min at 72ºC, and a final extension at 72ºC 2 min. **Results and Discussion:** Samples with 2 eggs were amplified with the same quality as samples amplified with purified DNA. Only one of three amplifications assays was positive in samples with one egg. Samples with 3 eggs were not amplified, probably due to excessive DNA or PCR inhibitors. The method is simple, fast and cost saving.

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74.

DEVELOPMENT OF SCAR MARKERS FOR THE ANALYSIS OF GENETIC DIVERSITY IN VICUÑA POPULATIONS

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The development of molecular markers is important for the study of genetic populations. Most molecular biology techniques involved in this area require a previous knowledge of DNA sequences in the species studied. Nevertheless, if the genetic information available is scarce, it is possible to apply the RAPD (random amplified polymorphic DNA) technique. The aim of this work was the development of new genetic markers to analyze the genetic variability among vicuña populations of the NOA. We previously analyzed different individuals with 31 RAPD primers. Two of them (V03 y A10) generated four polymorphic amplification products: V03-1 (990 bp), V03-2 (1,085 bp), A10-600 (563 bp) and A10-700 (711 bp), which were cloned and sequenced. In this work, specific primers for V03-1 were designed in order to obtain a SCAR (sequence characterized amplified region) marker. The comparison of the amplification patterns from 25 individual vicuña DNA samples using the V03 and the specific V03-1 primers confirmed that the specific primers reproduced the amplification pattern of V03-1 (presence or absence) and can be used as SCAR markers to study vicuña genetic diversity.

75.

COMPOSITION OF THE ESSENTIAL OIL FROM TWO DIFFERENT POPULATIONS OF *Senecio nutans* Sch. Bip.(ASTERACEAE)

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Senecio nutans Sch. Bip. is a perennial shrub, 20-60 cm high, that grows in South American Andean valleys at 3200-4800 m above sea level. This herb is known by the common name of "chachacoma". Leaves are used for the treatment of cough and chills, to relieve stomach pains and as a remedy for altitude sickness "apunamiento".

The essential oils from the aerial parts of *S. nutans* collected in Tafí del Valle, Tucumán province, Argentina, at two sites separated some 40 Km from each other, were obtained by hydrodistillation with 0.88% and 1.42% yield (based on fresh weight). The oils were analyzed by CG-MS. Both essential oil samples were rich in monoterpene hydrocarbons. The major constituents were alpha-terpinene, o-cymene, sabinene and alpha-phellandrene. These results are similar to the ones previously reported for collections from Jujuy Province (Argentina) and Peru.

76.

HEPATIC ALTERATIONS IN INDIVIDUALS CONSUMING HIGH LEVELS OF ARSENIC (As) IN DRINKING WATER IN TUCUMAN

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The aim of this work was to study hepatic alterations by means of clinical and biochemical parameters in a population of the east of Tucumán that consumes high As levels in the drinking water. The As was determined in water from the well. Two hundred individuals were studied, the following being carried out: clinical evaluation, dosage of serum enzymes aspartate aminotransferase (AST), alanine transaminase (ALT), and lactate dehydrogenase (LDH) as indicators of necrosis and Gamma Glutamyltransferase (GGT) and alkaline phosphatase (ALP) as indicators of cholestasis lesion. Subjects were divided into G1: 85 patients as control, G2: 83 patients, G3: 32 patients without and with evidence of hepatomegaly respectively. G2 and G3 consumed levels higher than 0.01 mg/L of As. x $\pm$ SD of ALP were 152.6 $\pm$ 55.5; 152.2 $\pm$ 47.5; 167.8 $\pm$ 41.5 IU/L; for GGT 12.8 $\pm$ 4.5; 20.2 $\pm$ 6.8; 17.4 $\pm$ 4.1 for LDH 207.4 $\pm$ 56.5; 242.1 $\pm$ 57.6 and 225.9 $\pm$ 51.7 U/L for G1, G2 and G3 respectively. No differences were found between AST and ALT with respect to G1. In conclusion, we demonstrated that, in individuals exposed to As consumption in the water, prevalence of hepatomegaly was not a significant clinical manifestation and that the biochemical changes found were compatible with the presence of a cholestasis pattern.