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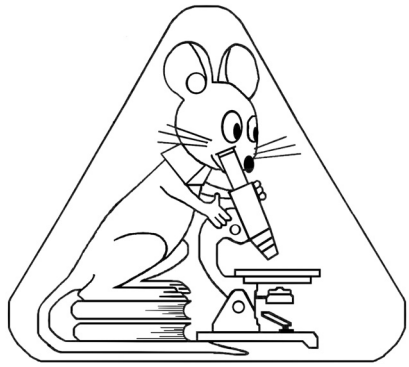

TUCUMAN BIOLOGY ASSOCIATION

(Asociación de Biología de Tucumán)

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Co5.

EFFECTS OF MEDICINAL HERBS ON THE SERUM COMPLEMENT ACTIVITY OF TURTLE (*Chelonis chilensis*)

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Herbal medicines (HM) contain many active principles, some of which have been isolated and are used in the pharmaceutical industry. Others were never isolated but are used empirically. On the other hand, the serum of vertebrates has a defense mechanism (complement system) against pathogens able to kill bacteria through three pathways: the classical, the alternative and the lectin pathway. In a previous work we reported the spontaneous activation of the alternative pathway by the serum of amphibians and reptiles against mammalian erythrocytes. The aim of this work was to test the effects of infusions of HM on the serum complement activity of chelonians. The materials used were 28 HM with verified authenticity and turtle (*Chelonis chilensis*) serum. The methods consisted of hemolytic tests with blood serum collected from turtles and human erythrocytes as a target. Hemolysis was read in a spectrophotometer. The results showed that out of 28 herbs tested, 2 had no effect on lysis, 3 inhibited more than 75% complement activity, 3 inhibited between 75% and 50%, 5 inhibited between 50 and 25% and in five of them inhibition was <25%. Ten samples seemed to increase activity. We conclude that the alternative pathway of the turtle complement system can be differently affected by the active substances of the infusions tested, which opens an interesting field of research on how each of them carry out their effects on this experimental model.

Co6.

PREPARATION AND VALIDATION OF PHARMACEUTICAL FORMS FOR TOPICAL USES WITH ACTIVE PRINCIPLES PURIFIED FROM *Tripodanthus acutifolius*

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Soaps and oil in water (O/W) emulsions are widely employed as preparations for topical uses. The active compounds incorporated should enable the obtainment of products with proved stability and biological activity. Two pharmaceutical forms (soap and O/W cream) with antibacterial activity and an O/W facial cream with free radical scavenging activity were prepared. Tripodantoside [purified from *T.acutifolius (*Ruiz & Pavón) Van Tieghem leaves infusion] was the active substance incorporated. Organoleptic parameters (colour, odour, brightness), stability (in accelerated and non accelerated conditions), pH, extensibility and contamination tolerance were evaluated. Antibacterial activity was assayed on *Staph. aureus* (ATCC 25923) strains, while DPPH assay was employed for free radical scavenging activity assessment. Pharmacotechnical, organoleptic, pH and stability parameters were acceptable. No microbial contamination was observed over 6 months after preparation. *In vitro* assays showed antibacterial and free radical scavenging activities present in the products. The results showed that natural bioactive compounds could be incorporated into stable and bioactive pharmaceutical forms.

Co7.

EFFECT OF POLYPHENOLS ISOLATED FROM *Baccharis incarum* AGAINST HYALURONIDASE ACTIVITY

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Baccharis incarum, widely distributed in the American continent, is popularly used as an anti-inflammatory agent, as a protective agent against liver, prostate and stomach diseases, in burns, skin wounds and ulcers, and to alleviate gout and arthritic pain. The aim of the present work was to evaluate the inhibiting capacity of the alcoholic extract of aerial parts of *B. incarum* and seven compounds isolated from it on the activity of hyaluronidase, an enzyme involved in chronic inflammatory processes such as rheumatoid arthritis.

Hyaluronidase activity was assayed by estimating the amount of N-acetylglucosamine released from the potassium hyaluronate substrate. The results expressed as percentage of residual activity were compared with those obtained with commercial anti-inflammatory drugs and antioxidant phenolic compounds.

The extract of *B. incarum* showed a dose-dependent inhibitory effect on the enzyme, with a percentage of residual activity of 43% with 300 µg of phenolic compounds. Among the seven pure compounds investigated, chlorogenic acid showed an inhibitory effect on the enzyme activity (8% of residual activity with 300 µg). The effect was higher than the one observed for the crude extract and the positive controls (indomethacin and quercetin). The results obtained would validate the popular use of *B. incarum* as an anti-inflammatory agent.

Co8.

ABILITY OF THE DOMESTIC BEE (*Apis mellifera*) TO FACILITATE PLANT BREEDING PROCEDURES IN *Lotus tenuis*

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Lotus tenuis is a component of the natural grasslands of the Depressed Plateau (Pampa Deprimida, Buenos Aires Province). It is an allogamous forage legume with entomophilic pollination. Its small flowers make hand hybridization difficult. Besides, it is interesting to explore the role of bees to facilitate genetic investigation and plant breeding procedure in *L. tenuis.* The aim of this work was to test bees manipulation in confinement to achieve descendents among selected genotypes. The experience was carried out in the open air. We evaluated seed/plant yield, umbels/plant, pods/umbel and weight of 200 seeds, in 2 groups of 6 genotypes each of *L. tenuis* under 2 situations during the reproductive period: (A) inside a cage with a baby beehive (bbh) and (B) exposed to outside space pollinators. The cage was 1.5 x 1.5 x 1m with an iron frame and covered with a plastic mosquito net. The bbh was 17 x 27 x 15 cm with 3 empty manufactured squares, each with 10 x 19 cm of wax surface, without honey, nectar or pollen and with an empty feeder. The bbh population was 100 gr of bees and a fertilized queen. At the end of the experiment the bee population was 110 gr. Two squares showed eggs, larvae in different stadiums, brood, nectar and pollen. The seed/plant yield in B was higher than A ($p \leq 0.05$) as well as the number of pods/umbel ($p \leq 0.05$). The seed obtained in A involved obtaining a numerous progeny from each participant genotype. The results show the ability of the domestic bee to facilitate genetic studies and plant breeding procedures in *L. tenuis*.