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(Asociación de Biología de Tucumán)**

9. VITELLOGENESIS AND FOLLICULAR REGRESSION IN *DIPETALOGASTER MAXIMA*, A VECTOR OF CHAGAS' DISEASE

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In insects, reproduction entails an accurate compromise between factors promoting vitellogenesis and those causing follicular regression. In Chagas' disease vectors, these aspects have been poorly investigated. In this work, we have analyzed the vitellogenic phase of *D. maxima* as well as morphological and cellular changes occurring in ovarian tissue during follicular regression. For the study, we have used western-blot, ELISA and immunohistochemical techniques. In addition, electron and fluorescence microscopy were employed to assess cellular changes. Results showed that: [a] vitellogenin protein expression in fat body and the levels in hemolymph were maximal between days 4-20 post-feeding; [b] during the vitellogenic phase, ovarian tissue showed a typical asynchronous development and some differential deposition of the protein according to the size of the follicles; [c] ovarioles entering in regression (from day 15 post-vitellogenesis) were poorly developed, and follicles presented nurse cells with different degree of vacuolization. In degenerating follicles, death of follicular cells occurred by apoptosis and necrosis. We conclude that in this vector, follicular atresia is complex. It can serve to promote resorption of some oocytes in order to sustain the development of younger follicles during the second vitellogenic cycle.

10. IN VITRO ANTIOXIDANT ACTIVITY IN METHANOL EXTRACT OF *Sechium edule* (Jacq) Sw

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INTRODUCTION: *Sechium edule* is a neotropical species that is a valuable although little explored alimentary resource. The vegetables produce great quantity of chemical fractions, that activity as antioxidants in order to control the oxidative stress. Therefore, it is necessary to investigate *in vitro*, these properties before considering it food with antioxidant functions.

OBJECTIVE: the main aim of the present work.

METHODS: Extraction of total phenols (Singleton VL *et al.*, 1965) DPPH assay (Brand – Williams *et al.*, 1995), Scavenging activity against nitric oxide (NO test), (Marcocci L *et al.*, 1994). Samples: flour of fruit (f), seeds(s) and pulpe(p).

RESULTS: methanol extract was found to be effective in scavenging DPPH to express how inhibition percentage (%): 88,87 (f); 89,13 (s) and 90,42 (p). Inhibition NO %: 47,51 (f); 55,62(s) and 50,01 (p)

DISCUSSION: Previous studies related with the nutritional composition by means of biological experiments claim of the good quality of this vegetable. The obtained findings encourage us to continue investigating the antioxidant properties of *Sechium edule* in order to recommend it as a food with functional characteristics.

11. MOLECULAR CHARACTERIZATION AND CRYSTAL MORPHOLOGY OF INDIGENOUS ENTOMOPHAGOUS *Bacillus* STRAINS AGAINST *Spodoptera frugiperda*

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Introduction: *Bacillus thuringiensis* (*Bt*) are the microorganisms most widely used in biological control of insect pest. These bacteria produce entomophagous crystals (Cry) during sporulation showing different morphologies according to *Bt* strains. **Objectives:** To determine the morphology of crystals produced by three native *Bt* strains active against larvae of *Spodoptera frugiperda* (*Sf*) and to characterize the microorganisms molecularly. **Materials and methods:** Crystals were studied by scanning electron microscopy. Sporulated cells were removed from the agarized medium, washed and placed on a micro slide. The 16S rDNA gene was amplified from genomic DNA by PCR. **Results and conclusions:** Morphological observations showed that the three strains contained bipyramidal crystals of two different sizes. This feature may resemble those against lepidopteran targets. The 16S rDNA analysis identifies the isolations as *B. thuringiensis* subspecies. The sequences were deposited in the Gene Bank, access N°: RT EF638795, LSM EF638796 and LQ EF638798. These results complement the knowledge on these native pathogenic strains with promissory characteristics for *Sf* biological control.

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12. CILIARY NEUROTROPHIC FACTOR (CNTF) STIMULATES CEPHALIC NEURAL CREST CELLS MIGRATION

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The molecular bases that regulate the oriented cell migration are little known, even if chemotactic signals have been proposed as a possible mechanism of modulation. Mesencephalic neural crest cells (NCC) of vertebrate embryos emigrate from the neural tube in a dorso-lateral way and change direction in cephalic sense towards the optic vesicle, where they differentiate in neurons and glia of the ciliary ganglion. Results of our laboratory showed that the chemokine Stromal Cell Derived Factor-1 (SDF-1) and the trophic factor Neurotrophin-3 (NT-3) induce NCC chemotaxis, whereas Ciliary Neurotrophic Factor (CNTF) may be another candidate involved in the above mentioned mechanism. In the present work, NCC exposed to *in vitro* concentration gradients of CNTF and registered by real-time video-microscopy for 6 hours, showed a significant increase of the curvilinear and linear distances travelled, as well as cellular speed, dependent on CNTF concentration. Nevertheless, chemotactic response was not observed, expressed neither as chemotactic index nor proportion of oriented cells. The parameters of cellular area and perimeter showed an increase dependent on CNTF concentration, indicating possible changes of the cell-substratum interaction during the migration, without affecting the shape factor. These results suggest that the chemokinetic effect of CNTF plays a role during NCC colonization of the optic vesicle, in a multifactorial system of orientation that involves, at least, SDF-1 and NT-3 signals.