

ARGENTINE BIOLOGY SOCIETY

(Sociedad Argentina de Biología)

Abstracts from the

Eighth Multidisciplinary Workshop

(Octava Jornada Multidisciplinaria)

December, 2006

Buenos Aires, Argentina

The abstracts were evaluated prior to publication.

93. ANTIOXIDANT AND SCAVENGER PROPERTIES OF 6PP, A PRENYLATED FLAVONOID ISOLATED FROM *Dalea elegans*

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The polyphenolic components of higher plants may act as free radical scavengers or through other mechanisms contributing to anticarcinogenic or cardioprotective action. The prenylated flavanone 2'-4'-dihydroxy-5'-(1''-dimethylallyl)-6-prenylpinocembrin (6PP) was isolated from the roots of the Argentinian plant *Dalea elegans*. Previous results showed activity against oxacillin-sensitive and resistant *Staphylococcus aureus*. The aim of our work was to evaluate 6PP antioxidant properties. Enzymatic lipid peroxidation in rat liver microsomes was determined by measuring the *in vitro* formation of thiobarbituric acid-reactive substances (TBARS). 6PP significantly inhibited malondialdehyde production in a concentration dependent-manner between 6.25 and 100 μ M, (88.5 \pm 4.3%-100 μ M, $p < 0.01$). Microsomal oxygen uptake was determined by the polarographic method, employing an oxygraph with a Clark electrode. 6PP addition inhibited uptake oxygen between 25 and 100 μ M, $p < 0.01$. The ability of scavenging free radicals was measured by DPPH reduction spectrophotometric assay, at 517 nm. 6PP exhibited significant scavenging activity in a concentration-dependent manner between 10 and 100 μ M, (63 \pm 9%-100 μ M, $p < 0.001$). The antioxidant capacity of 6PP was quantitated spectrophotometrically through the formation of a phosphomolibdenum complex at 695 nm. 6PP was able to significantly reduce Mo (VI) to Mo (V) at 50 and 100 μ M, $p < 0.05$. Our preliminary results demonstrate that 6PP exerts both antioxidant and antiradical activities. Further studies are needed to evaluate possible therapeutic applications.

94. HYPOGLYCEMIC ACTIVITY OF *Opuntia salagria* CLADODES IN RATS

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An important increase in the medicinal use of plant natural products has been observed in the last few years. Cactus *Opuntia* has been traditionally used as a valuable health supporting nutrient and its different parts are currently used in folkloric medicine. The number of people with *Diabetes mellitus* and its associated complications rise on a daily basis. The purpose of this study was to analyze the oral hypoglycemic activity of cladodes of *Opuntia salagria*, an Argentine autochthonous species, in transiently hyperglycemic and streptozotocin (STZ)-induced diabetic rats. To this end, *O. salagria* cladodes were collected from the area surrounding Bahía Blanca city, Province of Buenos Aires. After removing the spines, cladodes were sliced and dried at 40°C in a forced air circulation oven and milled. The flour thus obtained was stored at 4°C until required. A slimy suspension of *O. salagria* powder cladode was prepared (2g/100ml of water). The animals used were male Wistar rats (250-300g), which were made diabetic by intraperitoneal injection of STZ (35mg/kg body weight). The animals exhibiting blood glucose levels >350mg/dl were considered diabetic. The main effects of the oral administration of the suspension in doses of 100 or 200 mg/kg body weight are summarized as follows: in transiently hyperglycemic rats (Glucose Tolerance Test) cladode suspension decreased blood glucose levels at both doses, and in STZ-induced diabetic rats, the administration of the suspension for 30 days, produced a significant hypoglycemic effect. These results are indicative of the potential use of *O. salagria* cladodes to regulate the plasma glucose levels.

95. IMT504, THE PROTOTYPE OF THE IMMUNOSTIMULATORY OLIGONUCLEOTIDES OF PyNTTTTGT CLASS AUGMENTS THE NUMBER OF BONE MARROW DERIVED ADHERENT CELLS WITH MULTIPOTENT DIFFERENTIATION CAPACITY IN VITRO AND IN VIVO

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Bone marrow (BM)-derived adult Mesenchymal Stem Cells (MSCs) have the capacity to differentiate *in-vitro* into different cell lines. This capacity makes them a likely cellular source for clinical application in tissue repair therapies. Here we report evidence indicating that IMT504, the prototype of the PyNTTTTGT class of immunostimulatory oligonucleotides, significantly augment the # of adherent fibroblast colony forming cells (CFU-F) with multipotent differentiation capacity, which are the most commonly properties to define MSCs. When rat BM cells were cultured in the presence of IMT504, the X \pm SE # of CFU-Fs increased as compared with untreated controls (2.1 \pm 0.7 vs. 0.9 \pm 0.3 x10²/femur, $p=0.04$). Furthermore, rats inoculated with IMT504 had a significantly higher # of CFU-F both in BM cells (CFU-F: 1.2 \pm 0.3 vs. 0.4 \pm 0.2 x10²/femur, $p=0.04$) and peripheral blood cell cultures as compared with untreated animals (0.37 \pm 0.14 vs. 0.05 \pm 0.04 /ml, $p=0.03$). On the other hand, CFU-Fs augmented either *in-vitro* or *in-vivo* by IMT504 stimulation possess capacity to differentiate to the osteogenic and adipogenic cell lineages as regular MSCs. Finally, we found that repair of an experimental bone defect was accelerated in rats subcutaneously injected with IMT504 as compared with untreated control animals two weeks after (area with consolidated bone: 92.6 \pm 10.3 vs. 70.3 \pm 6.8 %, $p=0.003$). Importantly, when human BM cells were cultured in the presence of IMT504, the mean # of CFU-Fs also significantly increased as compared with untreated controls (CFU-Fs: 2.6 \pm 1.2 vs. 1.0 \pm 0.6 x10¹/10⁴ plated). These results suggest the possibility of clinical use of IMT504 in bone and presumably other tissue repair therapies. Regarding this, it should be pointed out that in preclinical trials IMT504 has demonstrated to be a very safe drug.

96. STUDY OF THE RHEOLOGICAL PROFILE OF HONEY FROM VARIOUS SITES IN RELATION TO PHYSICO-CHEMICAL AND SENSATION PARAMETERS

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The physico-chemical, sensory and rheologic properties of honey depend on production factors, such as geographic localization, weather or vegetation available to hives. They are also influenced by the extraction techniques employed. The correlation between rheologic and physico-chemical and sensation parameters was studied so as to classify samples according to their quality as accepted by consumers. The systems employed were Argentine honey from different beekeeping sites and production year. System 1: Santa Fé (Casilda) year 2004, System 2: Santa Fé (Casilda) year 2006, System 3: Santa Fé (Cañada de Gomez) year 2006, System 4: Entre Ríos (Victoria) year 2006 and System 5: Mendoza (Santa Rosa) year 2006. Rheologic determinations were performed with a Brookfield DVII programmable viscometer, Searle type (small sample adapter). Sensation testing was carried out according to those descriptors suggested by IHC (International Honey Commission of Apimondia). The pH was measured with a HANNA pH meter, model HI9017. In these systems, pH varied between 3.45 \pm 0.01 and 3.95 \pm 0.01. They showed markedly different rheological profiles. Relative viscosity at rpm varied from 3400 \pm 10% cp to 183000 \pm 10% cp, 4 of the systems being plastic non-dependant on time, and one, plastic with thixotropy. Sensation characteristics were within acceptability parameters. Despite the great difference in rheologic profiles, all 5 systems correspond to products physico-chemically and sensorially accepted. Demand, however, varies depending on consumers.