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MicroLat
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them to contract the cell in both parallel and transverse axes. That the particular organization of actin filaments in PMCs allow uted to the periphery of the cell. These results lead us to conclude of the contraction, the parallel layer of actin filaments redistrib- without changing the organization of the transverse layer. As result The other layer is localized above the nucleus and oriented parallel erous epithelium and is oriented transversally to the major ST axis. underneath the nucleus and close to the basal membrane of the seminif- contain two layers of actin filaments. One layer is localized under- na,K-ATPase molecules. We have been studying this hormonal regulation for many years and described many of the components of the signaling cascade induced by activation of the hormonal receptors. Dur- in our talk, we will discuss several aspects of the molecular mecha- nism by which dopamine and angiotensin regulate the activity of the proximal tubule Na,K-ATPase.

Testicular peritubular myoid cells (PMCs), the main cellular component of the seminiferous tubule (ST) wall, are contractile cells that express cytoskeletal markers of true smooth muscle, such as alpha-isoactin, F-actin, and myosin. The contractile activity of PMCs is responsible for the contraction of STs underlying the transport of spermatozoa and testiscular fluid and, at least in part, for sperm release during spermatogenesis. The actin cytoskeleton of PMCs from isolated segments VII-VIII of rat testis ST were analyzed by confocal and electron microscopy. PMCs of these segments contain two layers of actin filaments. One layer is localized underneath the nucleus and close to the basal membrane of the seminif- erous epithelium and is oriented transversally to the major ST axis. The other layer is localized above the nucleus and oriented parallel to ST axis. The contraction induced by endothelin-1 reduced the area of PMCs and reoriented the parallel layer of actin filaments without changing the organization of the transverse layer. As result of the contraction, the parallel layer of actin filaments redistribut- ed to the periphery of the cell. These results lead us to conclude that the particular organization of actin filaments in PMCs allow them to contract the cell in both parallel and transverse axes.
L-S 5. ECO-EPIDEMIOLOGY OF LEISHMANIASIS IN ARGENTINA

Cutaneous Leishmaniasis: studied in the nine endemic provinces since the year 1990 (7,000 human cases, 250,000 phlebotomine). The scenarios of transmission were characterized as: 1) Sylvicycle/transmission. 2) Sylvicycle/peridomestic transmission, metapopulation structure-interface effect - environment modification. 3) Peridomestic cycle/transmission. The risk in each scenario and region was associated with the abundance, diversity and micro-scale distribution of Lutzomyia neivai, Lu. whitmani, and Lu. migonei. Based on the above scenario characterization the recommendations were stratified according to: 1) hyper-endemic to epidemic transmission: high to moderate risk, 2) moderate transmission - common source outbreaks, 3) receptive area - vectors without cases, 4) area vulnerable-adjacently with traffic area 1. The proposed measures were: active search of cases, risk assessment, monitoring the trend of the eco-epidemiologic momenta (sentinel sites). Risk maps are developing.

Visceral Leishmaniasis (VL): The vector, Lu. longipalpus, was found in Corpus-Misiones 2000, Clorinda-Formosa 2004 and 2007 (‘hot spots’ and canine VL), Posadas-Misiones 5/2006 (canine VL and first VL human case). The evaluation of receptivity in Posadas (3/2007) showed the presence of the vector in 42% out of 314 sampled sites, 5.2% with > 31 vectors/trap. Santiago del Estero (10/2007-5/2008) reported 4 human cases and 6 canine cases associated with Lu. migonei. The expansion of vectors and canine VL to the province of Corrientes were observed in 12/2008. The following human VL cases were reported until June 2009: Misiones 44 (5 dead), Santiago del Estero 4 and Corrientes 1, with canine VL cases in almost all the country (> 7000 Posadas) due to the traffic of dogs from the endemic area. The risk scenarios were stratified, and so the recommendations for surveillance and control of vectors and reservoirs.

L-S 6. ECOLOGY AND CONTROL OF Triatoma infestans IN RURAL COMMUNITIES OF NORTHERN ARGENTINA
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Chagas disease remains a public health priority to 100 years of the discovery. Control of this disease is based on the elimination of its main vector, Triatoma infestans, through the application of pyrethroids, insecticides and horizontal actions involving the community. Identify the causes of incomplete elimination of T. infestans in isolated rural communities and preventing their restoration are key issues for the long-term control. In Argentina, the control of the disease has historically been more difficult in Moreno Department, Santiago del Estero. As part of a project on the eco-epidemiology of Chagas disease in rural communities in this province, we assessed the development of surveillance strategies against T. infestans with community participation (1993-2004), and identified the spatio-temporal patterns and sources of reinfestation after a massive spraying through the application of geospatial tools. Community-based surveillance strategies were based on the election of community leaders and the transfer of detection, notification and chemical control to the residents through workshops in schools, supervised by the research group and the Chagas disease control program. The spatial-temporal analysis of reinfestation was conducted by using geographic information systems, global positioning systems and statistical statistics. These tools helped to develop recommendations for scientifically based control and surveillance strategies. Sustained, supervised, community-based actions finally led to the interruption of local human T. cruzi transmission.

L-S 7. OIL PRODUCING FLOWERS. ADVANCES IN KNOWLEDGE ABOUT THEIR EVOLUTION
Cocucci A, Sérsic A, Cosacov A. Instituto Multidisciplinario de Biología Vegetal, Córdoba, Argentina. E-mail: aacocucci@gmail.com

Recent molecular phylogenies let us draw conclusions on the origin and diversification patterns of Nierembergia (Solanaceae) and Calceolaria (Calceolariaceae), which are among the most specious plant clades bearing oil-flowers in temperate South America. In both genera the acquisitions of elaiophores, which is traceable back to the earliest ancestors, represent key innovations associated with strong speciation relative to sister genera. Elaiophores have been presumably co-opted for pollination service from trichomes of vegetative organs or petal outside involved in other functions such as herbivore deterrent. Reports of extrafloral oil-collection further suggest a non-nuptial origin of the oil-based association. In Nierembergia, the transition to oil-flowers involved the loss of nectaries and the exaptation of the corolla tube from a nectar container to an exosporion organ. Primary association was probably with Centrindines in Calceolaria or with smaller Tapinotaspidines in Nierembergia. Shifts from large to small oil-collecting bees (Calceolaria) and vise versa (Nierembergia) have occurred. In both genera studies on multiple populations show that in a single species the locally predominant oil-bees changes between Centrindines and Tapinotaspidines, suggesting that these shifts may still be occurring. Elaiophore loss, which is marked in tropical zones, is linked to shifts to selfing, pollination by pollen-collecting bees or (in Calceolaria) non-nectarivorous birds.

L-S 8. COGNITION AND INTERINDIVIDUAL INTERACTIONS IN INSECT SOCIETIES
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Animal societies that have many individuals show a high number of interactions, a fact that facilitate the rapid spread of information. The cognitive skills of the agents involved on circulating information allow us to evaluate the scope of that spread to form a dynamic network. Interestingly, there are almost no experimental studies that combine multi-agent interactions occurring in animal societies with learning processes. We believe that a social insect like the honey bee Apis mellifera allow for this type of approach. The various mechanisms for communication in honeybees, and the division of labor based on the age polyethism facilitate the implementation of highly coordinated activities. In this context, the acquisition of information at early ages is important because the young worker bees, those subjects that only perform tasks within the hive, will begin to gather resources outside the nest at older ages. Through various experimental studies, we try to answer how information spreads in a large animal society and how that information remains on a collective level.
HEXARELIN AFFECTS MEMORY ACQUISITION IN MICE
Instituto de Fisiología, Facultad de Ciencias Médicas, Universidad Nacional de Córdoba.

In a previous work, we have demonstrated that ghrelin (Ghr) reverses the deleterious effects upon memory observed in chronic food restricted animals. The objectives of the present study were to evaluate the effects of a ghrelin analogue employed in human therapy, hexarelin (HEX), upon mice memory acquisition, employing the object recognition test, in two experimental designs: A) HEX administration (100 μg/kg/dia, sc) to adult mice for 28 days and B) HEX administration (200 μg/kg/dia, sc) to pregnant females during different periods, evaluating memory acquisition in their litter at adulthood. In A, HEX diminished memory vs control group (C) in females with both doses assayed (% of time exploring novel object: C 1h: 68.5±2.3, n=14; HEX100 24h: 36.2±6.9, n=7; HEX200 1h: 39.2±4.7, n=8; HEX200 24h: 37.6±3.2, n=8, p<0.05) while in males, only with the mayor one (C 24h: 62.4±2.2, n=11 y HEX200 24h: 48.8±4.5, n=7, p< 0.05). In B, memory was altered (especially in females) only when pregnant females were treated for the whole pregnancy or during the first third. In contrast, this last treatment accelerated the neurobehavorial development (negative geotaxis, surface righting reflex and cliff avoidance, at 8 to 10 postnatal days). These discrepancies could be attributed to differential effects of HEX upon different central nervous system structures.

EFFECT OF PRENATAL CHRONIC FLUORIDE ADMINISTRATION IN RATS
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Fluoride (F-) is used to prevent tooth decay. However, it was demonstrated that excess of this ion in the organism can cause damage in several organs and tissues. Besides, F- can cross the placenta reaching the developing fetus. The aim of the present study was to determine if administration of sodium fluoride (NaF) to rats during gestation affects body weight and mandible growth of their pups. Pregnant rats were divided into two groups (control and treated). Treated group was administered with 20mg/kg or 50mg/kg of NaF (i.p.) since day 10<sub>n</sub> to 20<sub>n</sub> of gestation. Their pups were weighed and sacrificed at postnatal day 3, 15 or 20. Their mandibles were weighed and fixed in formaldehide after sacrifice. The right hemimandible of each animal was radiographed and the left one was processed for histological analysis. Dose of 50mg/kg was lethal in 100% of the mothers. In the group treated with 20mg/kg, a significant decrease in food intake was observed. In addition, body weight and mandible growth of the pups were significantly lower compared with those of control (p<0.05). In conclusion, these results show that NaF administration to the mothers (20mg/kg) during gestation does not have a lethal effect, although it affects postnatal growth of their pups which may have a negative influence on normal development.

CHANGES IN SUBMANDIBULAR SALIVA OF RATS CHRONICALLY EXPOSED TO CONSTANT LIGHT OR REPEATED IMMOBILIZATION
Altermann A<sup>1,2</sup>, Mathison R<sup>1</sup>, Davison J<sup>1</sup>, Coronel C<sup>3</sup>, Bellavia SL<sup>1</sup>, Finkelberg A<sup>2</sup>, Gallará RV<sup>1,2</sup>.

Sympathetic and parasympathetic systems are involved in the stress response and regulate saliva secretion. This study evaluated the effects of stress on trophic and functional changes in submandibular gland (SG). Male adult rats were divided in three groups and daily food intake and body weight were monitored. Group-I (IMO) was immobilized 2h per day for 7 days. Group-II (LL) was exposed to constant light (20 days). Group-III (C) was unstressed controls (1h light-10h dark). Saliva samples collected under anaesthesia following ip administration of isoproterenol and pilocarpine (5mg/Kg), were assessed for total proteins (TP), amylase activity and subject to SDS-PAGE. After 20 min glands were dissected and wet and dry weights determined. In IMO (n=11) rats SG wet (174±18.1) and dry (39.8±1.7) weights (mg) were significantly lower (p<0.05) than in C (n=13) (209±8.1 and 46.8±2.0) and LL (n=7) (205.5±9.4 and 52.2±1.9). In IMO, food intake (p<0.01) and body weight (p<0.01) were lower than in C and LL. The volumes of saliva secreted (μg/mg dry-weight) in IMO (1470±198) and LL rats (1119±99) were significantly higher than in C (877±68) (p<0.05). No differences were observed in the amount of TP and amylase activity. The electrophoretic profile in LL rats lacked of a protein band of approximately 25KD. Peptide mass fingerprinting, using MALDI-TOF mass spectrometry, identified the two proteins absent in LL saliva as common salivary protein-1 and prolactin-induced protein. Stress modifies autonomic nervous control of saliva secretion. Immobilization stress induces trophic effects upon SG without changing saliva protein composition. Constant-light promotes changes in the protein composition of saliva without trophic effects upon SG. The function as well as their unexpression of common salivary protein-1 and prolactin-induced protein in animals exposed to constant light should be investigated.

PROTECTIVE EFFECT OF MELATONIN IN PREGNANT RATS
Ponce RH, Cisternaus CD, Vaqué AM, Compagnucci MV, Abramor NF, Vermouth NT.
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Melatonin (Mel) is known for its importance in circadian rhythms (CR) modulation and for its antioxidant, citoprotective and antia apoptotic properties. In mammals, the maternal melatonin circadian rhythm is considered the main synchronizing signal during gestation. It is known that prenatal chronic stress generates long term alterations over both hypothalamic-pituitary-adrenal axis regulation and neurophysiology development in pups. The aim of this study was to examine the possible protective role of melatonin administered to pregnant rats submitted to chronic varied stress (CVS). We analyzed the copulatory behaviour and the CR of drinking behaviour, α-amylase of salivary glands and malate and lactate dehydrogenase of testis in pups from mothers submitted to CVS from 10 to 20 day of pregnancy and treated with Mel (1 mg/Kg) or vehicle during the last 5 days of gestation. Melatonin administration to CVS mothers significantly prevented the CR disruption at 28 and 45 postnatal days and restored the normal patterns of latencies and number of mount, intromission and ejaculation at 120 postnatal days compared with pups from normal mothers. Results reinforce the Mel entainment role over maternal programming. It is possibly, that melatonin through its different mechanisms exerts a neuroprotective action, restoring the behaviours studied.
5. Akodon azarae XY FEMALES
Ortiz M1, Marchal F1, Romero-Fernandez F1, Sanchez A1, Pinna-Senn E1, Lisanti J1.

In several rodent species, exceptional mechanisms of sex determination are seen, such as the XY fertile females of Myopus schisticolor and several species of Akodon. We have analyzed the transmission of the XY female condition in A. azarae taking advantage of the possibility of distinguishing, according to the C-banding pattern, male X chromosome (X1) from that of XY females (X2 o X3). The study of F1 and F2 of different crossings confirmed the correlation between X type and sexual phenotype, and that the different X types are transmitted to the descendants. It was also observed that the male offspring of XY females receives the X from the father and the Y from the mother, which demonstrates that the Y chromosome of the above mentioned females is functional in a suitable context. On the other hand, we analyzed the Sry gene in two males and in three XY females by means of PCR amplification of a 823 bp fragment that includes the complete ORF of this gene. The obtained clones and the deduced proteins did not show significant differences between males and XY females. These results indicate the causal role of an X linked mutation in sexual reversion, and rules out the mutation of the Sry as the only reason of this phenomenon. On this base, we studied 653 bp of exon 1 of Dax1 gene in 6 males. The resulting sequences did not show differences between males and XY females.

6. OBSERVATIONS ON AKODON BOLIVIENSIS XY FEMALES
Pinna-Senn E1, Marchal F1, Romero-Fernandez F1, Sanchez A1, Ortiz M1, Lisanti J1.

The mechanism of mammalian sex determination depends on the Y chromosome which, through the expression, at the correct time and level, of the Sry gene, leads to male development. However, in the populations of several rodents, including the South American genus Akodon, there are fertile XY females besides XX ones. With the objective of investigating the transmission of the XY female condition in Akodon boliviensis, the cytogenetics of the descendants of different laboratory crosses, including XX and XY females, was studied. The results confirmed the complete fertility of XY females. It was also observed that XY females appeared in the progeny of XX females, and not only in that of XY ones. Given the fundamental of the Sry gene, we amplified and sequenced a 832 nt fragment that includes the complete ORF (543 nt) and 5’ and 3’ segments. Sequencing of this gene in 5 A. boliviensis specimens did not reveal significant differences between these species males and XY females, which indicates that sex reversal would not be due to a mutation of this gene. Supposing that, analogously to our finding in A. azarae, sex reversal could be caused by the mutation of a sex-linked gene, we began to study this possibility by amplifying and sequencing a 654 nt fragment corresponding to great part of exon 1 (the largest) of Dax1 gene in 6 A. boliviensis specimens (2 males, 2 XX and 2 XY females). This fragment sequence was the same in males and in both types of females.

7. SRY COMPARISON IN THREE SPECIES OF AKODON (RODENTIA, SIGMODYONTINAE)
Marchal F1, Romero-Fernandez F1, Sanchez A1, Ortiz M1, Pinna-Senn E1, Lisanti J1.

Sry gene expression is necessary and sufficient to initiate male development, at least in the great majority of eutherian and metatheria mammals. The only Sry exon encodes a protein that binds DNA through an HMG domain. Comparative studies of the Sry gene in different mammalian species showed that only the HMG box region would be preserved. In order to determine the degree of conservation of the above mentioned gene in the genus Akodon, the Sry sequence of A. boliviensis, A. azarae and A. dolores was compared. Nucleotide alignments showed 96.8 % to 97.9 % identity between the species. A. azarae differs from A. boliviensis in 9 bp, an insertion of 2bp in the N-terminal region and a 11bp deletion in the C-terminal region. On the other hand, A. boliviensis differs in 13 pb and a 2bp deletion from A. dolores. The alignment of the deduced protein showed a range of identity between 97.7% - 98.3%.

8. ADSORPTION OF AFLATOXIN B1 (AFB1) BY KASACHSTANIA BOVINE SHOWING A COOPERATIVE EFFECT THAT INCREASE THEIR EFFICIENCY
Pizzolitto RP1, Armando R2, Combina M1, Cavaglieri L2, Dalcerio AM3, Salvano MA1.

Many microorganisms, mainly yeasts and lactic acid bacteria are able to eliminate mycotoxins from liquid medium. In our laboratory, we developed a model which quantifies the efficiency of the process (M x Keq) by determining the total number of sites for adsorption (M) and the equilibrium constant (Keq) involved. The purpose of this study was to evaluate the ability of yeast detoxifying Kasachstania bovine isolated from chicken feces. 107 cells ml-1 were incubated at 37ºC with increasing concentrations of AFB1 (0.3-20 ug ml-1) for 10 min. Centrifugation at 5000 g 15 min, allowed us to determine AFB1 concentration in supernatant by HPLC. Adsorption isotherms showed a biphasic curve whose inverse values correspond to M and Keq. When the concentration of AFB1 in the medium exceeded 2.5 ug ml-1, M increased 6-fold and the Keq declined only 40% so that the efficiency increased by almost 4 times. The results indicate that Kasachstania bovine is potentially a very effective bioeliminator AFB1, in liquid medium, as in the presence of high concentrations of the toxin, showed a cooperative effect at the level of its cell wall that increases the number of adsorption sites and hence their efficiency.
Decomposition is a fundamental ecosystem process in which nutrients contained in vegetable material are liberated to the soil. There are evidences that decomposition of species in litter mixtures can differ from that of individually incubated species due to diverse mechanisms of interaction among the different species within the mixtures (priming effects, mining effects, among others). We analyzed if some of this mechanisms underlying synergic and antagonistic effects are operating in litter mixtures of dominant species from Córdoba montane woodlands. We found that the synergic and antagonistic effects did not relate significantly to the initial chemical quality of the species in the mixture, neither to the initial decomposition of the species of the mixtures. In relation to the mechanisms underlying these effects, some evidences indicate an influence of chemical secondary compounds in particular species. Other evidences reject the influence of the initial concentration of nitrogen in these effects (priming effects). For the analyzed species, and in the first stages of decomposition, the effects in litter mixtures would be idiosyncratic and dependent to presence of particular species more than of the initial decomposition, or the initial nitrogen concentration.

Ecological of evolutionary niches, in their various guises, has become a central theme in organismal and evolutionary biology. One of the faunal zones in South America which has the biogeographic unity and the significance proposed for snakes is the relatively extensive faunal zones in South America which has the biogeographic unity. Valeria Dí Cola V, Chiaraviglio M. Cátedra de Biogeografía, Facultad de Ciencias Exactas, Físicas y Naturales. UNC. E-mail: anibal.cuchetti@gmail.com

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Evolution of ecological niches, in their various guises, has become a central theme in organismal and evolutionary biology. One of the faunal zones in South America which has the biogeographic unity and the significance proposed for snakes is the relatively extensive xeric belt of the East and South of the continent. It is interesting to note that xeric belts are of high diversity for the Bothrops genus. Three of its species, B. alternatus, B. diporus and B. ammodytoides occupy a large distribution range, being sympatric in some areas. We hypothesize that species will respond differently to environmental requirements according to the lack of resemblance of their distribution in the xeric band. We used ecological niche based models to examine the environmental factors correlated with species distribution and to identify potential areas for their occurrence and sympatry. From presence data and 23 environmental variables we perform Logistic Regression Analyses to obtain the models. The distribution of species is determined by different environmental variables. However, it is possible to identify common variables which explain the areas of sympatry found. In conclusion, several factors, acting as ecological barriers, limit the distribution of these species to spatially non-overlapping ranges, whereas other factors facilitate sympatry by allowing overlapping between their ecological niches.

DISTRIBUTIONAL MODELING AND ENVIRONMENTAL REQUIREMENTS OF LIZARD (Tupinambis rufescens) AND ITS RELATION WITH POPULATION PARAMETERS
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The analysis of species–environment relationship has always been a central issue in ecology. The quantification of such relationships represents the core of predictive geographical modeling in ecology. These models are generally based on various hypotheses as to how environmental factors control the distribution of species. Considering that species are sensitive to environmental heterogeneity, the study of distributional spatial patterns from an ecological perspective allows predicting their influence on population processes. The aim of this study is to determine the environmental variables that model the distribution of red tegu lizard (Tupinambis rufescens) in Córdoba and to analyze its relationship with population parameters. Using presence records of the species and considering biogeophysical variables, environmental requirements that determine the distribution were identified. From these results areas with different environmental conditions were identified to evaluate population parameters such as sex ratio and body size distributions. The variables that model and explain the distribution of T. rufescens are temperature and precipitation, linking the species to arid zones with high temperatures and seasonal climate. The populations exhibit sexual size dimorphism, with males attaining larger sizes than females. The differences between populations are reflected in sex ratio and body size distributions. The knowledge of the environmental requirements of species and the response of populations to changes in the landscape provide an opportunity to understand how environmental changes affect populations.

QUANTIFICATION OF ALGAL GROUPS BY MEANS OF FLUORESCENCE TECHNIQUES
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Microalgae are unicellular organisms that contain chlorophyll (Chl) and photosynthetic pigments. The Chl is a fluorescent pigment with maximum at 685 (PSII) and 700 nm (PSI). The excitation spectrum of fluorescence at 685 nm strongly depends on the algal group. Each group shows a norm characteristic excitation spectrum which can be used to determine the presence of this algal group in water samples and to quantify their relative population. Norm spectra for some algal groups have been already reported (Chlorophyta, Bacillariophyta, etc.). The aim of this study was to obtain the norm spectrum for the genera Anabaena sp. (ITEP-04) and Microcystis sp. (NPLS-04/MPCD-01) (Cyanophyceae). These strains were cultured in BG11 under controlled of light intensity and temperature conditions. The norm spectra were obtained from the in vivo excitation spectra of the samples containing different concentrations of the strains. Subsequently, the contents of Chl were quantified for each sample. We found an excellent correlation (R: 0.99) between fluorescence intensity and contents of Chl. The norm spectra thus obtained may be used now to determine the cyanobacteria populations by measure in the excitation spectrum fluorescence of surface water samples.
13. POUlTRY MANURE IN THE MICROBIOLOGICAL PRODUCTION AND QUALITY OF LETTUCE (Lactuca sativa L.)
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The fruit and vegetable area is responsible for taking safe and qualitative products to the Argentinian table every day. Lettuce is a vegetable whose production needs avian manure added to the soil to improve the structure and the contribution of nutrients. If wrongly handled, they may cause risk of pollution by *Salmonella* and *Escherichia coli*. The aim of the work is to analyze the effect of avian manure in the production of lettuce and in the microbial pollution in the soil and the product. The work was done in the UNRC with the Rapidmor cv of loose leaf, sown 3/26/08 and harvested 6/5/08. It was scattered leaving 20x25 cm per plant. Chicken and hen manure were used (5kg.m⁻²) applied 30 days before the seed. The design was in BCA with 4 repetitions. When harvested, the microbiological recounts were evaluated in soil samples with manure and lettuce and green and dry weight per plant. The information was compared with ANOVA (α=0.05). Results: the recounts of *E. coli* in soil and lettuce were below the maximum limit admitted for consuming (10⁵ ufc). *Salmonella* wasn’t detected. The green weight average was of 89, 145 and 160 and the dry weight of 8, 11 and 12 g.pl⁻¹ for the witness paddies, soil with hen and chicken manure respectively. There are meaningful differences in statistics between the witness and the manure, but not between them. Manure increases the production of lettuce and if they are correctly handled, they do not present risk of pollution.

14. GERMINATION OF Acacia atramentaria
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The establishment of *Acacia atramentaria* “Espinillo negro” usually can fail due to problems in germination process caused by seed tegument impermeability which limit seed water imbibitions. Seed treatments to pass the germination were evaluated. Fruits were harvested from plants located on hillside of Uritorco hill in “Capilla del Monte” (30°41’53”SL and 64°31’33”WL), ~ 900 m over see level (March/2006). Seeds obtained from those fruits were put in glass container and stored in freezer during 12 months and refrigerator during another 18 months. Water content was determinate as a percentage of wet weight. Treatments were seed scarification in humid conditions via seed immersion in water at 80°C which after get down to 20°C (24 hours) (EH); mechanical scarification with sandpaper N° 120 (EM); and control (T). Seed germination (G) was evaluated over paper at 25°C. After that seedlings were classified in normal (seedlings with all structures and 5 to 25 cm of length); weak (seedlings smaller than 10 cm); and abnormal (seedlings with fungal disease); other categories were hard seed (SD), fresh and dead seeds (SM). Counts were made at 5, 11 and 16 days. Germination is epigeal, cotyledons are green intensive and seedlings achieved 20 cm at 16 days. Differences among treatments were found; EM reached 98.3% of G and 5% of SM, meanwhile EH obtained 8.3% of G and the control 100% of SD.

15. LIMNOLOGICAL ASPECTS AND ICHTHYOFaUNA IN A PAMPEAN SHALLOW LAKE OF THE RIO QUINTO SYSTEM (CORDOBA, ARGENTINA)
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The southern region of Cordoba Province presents an important surface covered by shallow lakes connected to Rio Quinto through a series of canals. Many of these water resources are used as recreational fisheries of silverside *Odontesthes bonariensis*. Preliminary results on different limnological variables and ichthyofauna of the Onagoya lake (34°46’S, 63°38’W) are reported. In May 2009, in situ water measurements and laboratory analyses were performed. Fishes were captured with trawlnets and floating gillnets. The water had oligohaline characteristics (3.39 g/L) with a (Ca+Mg)/ (Na+K) relationship of 0.18 and hardness of 392 mg/L CaCO₃. The average temperature, pH and transparency (Secchi disk) were 15.5°C, 8.74 and 0.40 m respectively. Zooplankton abundance was 303,540 (± 96,160) org/m². Oxygen concentration showed oversaturation values. Related to ichthyofauna, 10 species were captured being *O. bonariensis* the dominant one in numerosity (53.4%). Shannon-Wiener diversity index was 2.03 bits and evenness index was 0.61. The presence of new species in the region was confirmed. According to previous year’s reports, hydrochory through canal systems man-made appears to be the main cause for increasing the number of species.

16. SOYBEAN GERMPLASM DEVELOPMENT FOR HUMAN CONSUMPTION
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Soybean has an excellent nutritious value, but it present trypsin inhibitors that reduce its nutritional quality and lipoxygenase that produce a bitter flavor. With the objective of generating genetic variability in characters for grain quality, in INTA Marcos Juárez (2006) biparental crosses were carried out between the progenitors BRM92-6600 (conventional line without lipoxygenase) y PI 542.044 (conventional line without trypsin inhibitors). In 2007 the F₁ population was sowed in greenhouse and the F₂ population was obtained. In the Department of Agricultural Sciences of the UNSL the F₂ was sowed using bulk method and was conducted by the Single Seed Descent Method. 938 plants were harvested and the number of pods per plant (NP) number of seeds per plant (NS) and plant yield were determined The phenotypic, genotypic and environmental variances were estimated throughout an Analysis of Variance and the Coefficient of Heritability (h²) was estimated. The h²resulted more than 50%, showing the highest coefficients of heritability for NP and NS (78%). 81 plants were selected and in 2008 F₃ families were opened, selecting among and in families. The germplasm developed constitutes an important source of variability to select soybean genotypes with differential quality for human consumption.
17. PHOTODYNAMIC INACTIVATION OF Candida albicans BY A PORPHYRIN POLYMERIC FILM
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Photodynamic inactivation (PDI) of microorganisms is a new therapeutic modality that involves the treatment with a sensitizer, which it accumulates in cells. The exposure to visible light leads to the generation of reactive species of oxygen, which produces photodamage of cells. In these systems, the use of a sensitizing film favours the removal of the agent after treatment. In the work, we synthesized a porphyrin substituted for four groups derived of carbazole, which allow the electrochemical polymerization. The spectroscopic studies indicate that the film high absorbs in the visible region and produces efficiently singlet molecular oxygen. In vitro investigations of PDI were realized in Candida albicans. The film exhibits a photosensitizing activity causing a decrease of C. albicans cellular survival in ~2 and 3 log after 30 min and 60 min of irradiation with visible light, respectively. However, in anoxic condition the cellular viability is not affect indicating that an oxygen atmosphere is required for the mechanism of yeast photodynamic inactivation. Thus, the main advantage of use sensitizers chemically immobilized on a surface is producing the inactivation of microorganisms, without affecting the media with the agent.

18. EVALUATION OF TOXICITY OF NANOFIBERS POLYANILINE IN LARVAE OF Rhinella (Bufo) arenarum FOR ITS APPLICATION IN PHOTO-ASSISTED THERAPY
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The photothermal therapy (PTT) is based on the irradiation of certain nanomaterials with pulses of near infrared light, which absorb light and released as heat, causing the regression tumor. The objectives of this study were: Develop the polyaniline nanostructures and dispersed, by assessing the toxicity test in Rhinella (Bufo) arenarum larvae to determine median lethal concentration, internalization and excretion. The nanofibers were synthesized by interfacial polymerization. At physiological pH the nanofibers precipitate thus solubilized in the polyvinylpyrrolidone. The toxicity studies indicated that at concentrations between 0-400 mg / L did not cause lethal damage in larvae. Moreover, it was the internalization of the drug through UV-visible absorbance and IR. Also there were observed differences in excrement’s coloration between larvae incubated with nanofibers with respect to their controls, indicating its transit through the digestive system. The nanofibers are interesting because they are biocompatible nanomaterial, uptake and no signs of toxicity in larvae. It therefore might be suitable for application in the PTT.

19. ANTIFUNGAL ACTIVITY OF EXTRACTS FROM Ouratea hexasperma AND Ouratea parviflora ON Candida albicans
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The search for compounds with antimicrobial activity is important to the treatment for infection diseases. Because of the flavonoids have very important properties in medicine, they have been proposed like antimycotic drugs against yeasts (Candida albicans) and human pathogen filamentous fungi. These compounds may be useful for controlling fungal growth and mycotoxin production. In this study, we have evaluated the antifungal activity of different extracts from Ouratea hexasperma and Ouratea parviflora on C. albicans. The cultures were incubated with different concentrations of extracts (0.064-3.0 mg/ml), which were obtained by different solvents from leaves, roots and branches of O. hexasperma and O. parviflora. After 48 h of incubation at 37°C, the minimal inhibitory concentrations (MIC) were determined. Extracts obtained from O. hexasperma roots by solvents partition methanol:water ethyl acetate and O. hexasperma leaves by solvents partition methanol:water butanol showed a higher antifungal activity. Furthermore, the antifungal activity was compared by growth delay of C. albicans cultures. The studies indicate that these extracts have potential applications as therapeutic agents in the inactivation of yeasts.

20. REMEDIATION OF PHENOL: ANALYSIS OF REACTION PRODUCTS TOXICITY
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A great quantity of phenolic compounds are discharged from different industries, producing several environmental impacts. So, the treatment of these effluents is strictly neccessary. We have employed hairy root cultures (HR) from wild type tobacco (wt) and transgenic (DT) plants, to remove phenol with high efficiency. However, it is important not only to evaluate the decrease of a contaminant in the reaction medium but also to determine the potential toxicity of reaction products, which could be done using a bioassay. The aim of the present work was to evaluate the toxicological impact of post removal solutions, derived from treatments performed with tobacco HR (wt and DT), on Rhinella arenarum embryos. Acute test (96 hs) was carried out by exposing larvae to phenol solutions (25-250 mg/L) previously treated with HR. Phenol solutions with concentrations up to 150 mg/L, treated with wt and DT HR, produced 100 % mortality. Percentages of mortality for solutions initially containing 25, 50 and 100 mg/L were: 2.5, 15 and 37% for wt and 10, 57.5 and 65 for DT, respectively. CL50 were 84.5 and 54 for treatments with wt and DT HR, respectively. DT HR showed higher efficiency than wt HR, in removal assays. In conclusion, phytoremediation performed with tobacco HR was effective and reduced significatively the toxicity of post removal solutions, initially containing phenol in concentrations below 150 mg/L.
21. **PLANT REGENERATION THROUGH ANther CULTURE IN APOMictic CULTIVARS OF BUFFELL GRASS**

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Buffel grass is a grass used as forage in the Argentinian North West. It reproduces by apomixis thus generate variability by conventional breeding methods is difficult. Various biotechnology techniques to reduce or increase the level of ploidy such as anther culture can be combined to develop strategies for improvement. The aim of this study was to evaluate the response to androgenesis through anther culture in three cultivars of Buffel grass. To induce embryogenic calli, anthers containing microspores at the uninucleate stage of cvs. Biloela, Americana and Bella were cultured in darkness in Petri dishes, with basal medium Murashige and Skoog (MS), 3% (w/v) sucrose and 0.7% (w/v) of agar. The medium was supplemented with different combinations of 2,4-dichlorophenoxyacetic (2,4-D) 2, 4 and 6 mg / l +0.5 mg / l 2, 4-D +6 -benzylaminopurine (BAP), respectively, at 25°C, pH 5.8. Moreover, the inflorescences were subjected to different pretreatments: cold (5 and 7 days) and heat shock (40°C 30°C +10°C 30°C). Embryogenic calli were transferred to germination medium (MS +1 mg / l (BAP) +0.1 mg / l naftalenacetic acid (NAA), 0.7% (w / v) agar (pH 5.8). Green plant regeneration from anther-derived embryogenic calli was achieved in Biloela and Bella. The highest percentage of plants was obtained on cv. Bella in cold pretreatments with 5 days (1.7%) and heat shock (1.7%). Plant regeneration was linked closely to number of produced embryogenic calli and has allowed regenerating green plants in two of the three cultivars of grass Buffell used.

22. **CHRONic ADVERSE Stimuli During Pregnancy: POSTnatal CONsequences**

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In mammals, prenatal stress during pregnancy reprograms neuroendocrine and behavioural responses in offspring, inducing long-term consequences in the regulation of the hypothalamic-pituitary-adrenal and hypothalamic-pituitary-gonadal axis. The objective of the present study was to compare the influence of prenatal constant light (LL) or chronic variable stress (EE), applied to the mother during pregnancy, on the anxiety behaviour and fertilizing capacity in adult male rat offspring. Mothers were exposed to LL or EE from day 10 to day 20 of the pregnancy and their offspring studied. Offspring from undisturbed mothers were used as control. The elevated plus-maze test was used to investigate anxiety-related behaviour at 60 days old. The fertilizing capacity was tested at 90 days old and the testis histology studied. The offspring coming from LL or EE mothers were more anxious compared to control rats (p<0.05). In addition, 27.3 and 40% of males (LL and EE, respectively) were able to make pregnant a receptive female. No spermatogenesis changes were observed. In summary, these results indicate that prenatal exposure to LL or EE produce similar effects in the offspring. Those chronic adverse conditions would produce alterations on offspring behaviour on later life.

23. **EFFECT OF POST-WEANING DISTRESS ON IMMUNE PARAMETERS IN INTENSIVE SYSTEM RAISED SWINISH**

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The stress factor affects the homeostasis of hypothalamic-pituitary-adrenal axis (HPA) in intensive systems raised pigs, which could induce long-term changes in offspring immune function. The objective of this work was to investigate the effect of weaning stress on lymphocyte proliferation at 14 days of age of vaccinated and control mothers. Hybrids Landrace x Large White raised under conventional management practices coming from 10 mothers (5 for litter) were used. The experiment was carried out in spring and summer stations. Blood samples were taken before and after weaning. Mononuclear cells were collected for use in lymphocyte proliferation assay stimulated with Concanavalin A (Con A). The data of offspring groups of vaccinated post-weaning (V-POST) and not vaccinated post-weaning (NV-POST) mothers were evaluated by analysis of variance (ANOVA). The offspring NV-POST group shows a significant decrease in the lymphocytes proliferation if we compare it with the V-POST group, in spring as in summer. In conclusion, the post-weaning stress diminished the cellular immunity functional response in spring and summer stations.

24. **EFFECT OF POSTNATAL STRESS IN PRENATALLY STRESSED RATS ON HYPOTHALAMIC-PITUITARY-GONADAL AXIS AND LYMPHOCYTES IMMUNE FUNCTION**

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In conclusion, alterations induced by prenatal stress in hypothalamic-pituitary-adrenal axis (HPA) could change in long-term on hypothalamic-pituitary-gonadal axis (HPG) and in offspring immune function. The objective of this work was to investigate the effect of postnatal stress on luteinizing hormone (LH) and testosterone (TES) levels and cellular immune activity in adult rats prenatally stressed (EP). Males of three months of age were used, offspring of mothers stressed (EP) by immobilization (IMO) during pregnancy, and their control (CP). All groups were under acute postnatal IMO stress (20 minutes). Corticosterone (COR), LH and TES levels were determined before and after that stress were realized. Also the lymphocytes proliferation was studied. The TES and LH levels decreased in EP animals. This effect was negatively correlated with the COR levels. Postnatal stress diminished the lymphocytes proliferation in vitro in the animal EP. In conclusion, alterations induced by prenatal stress in HHA activity decreased HHG axis activity. Postnatal stress in EP animal diminished the cellular immunity functional response.
25. PARTIAL CHARACTERIZATION OF CATHEPSIN D-LIKE PROTEASES DURING OVARIAN REGRESSION IN Dipetalogaster maxima. A VECTOR OF CHAGAS' DISEASE Fratello L1, Carlini C2, Rubiolo E1, Canavoso L1


Ovarian regression is a gradual process whereby insects and other oviparous animals regulate vitellogenesis according to several environmental and physiological factors. In this context, cathepsins, acid hydrolases of lysosomal origin, seems to be relevant to degrade vitellin stores. The purpose of this work was to analyze the activities of different cathepsin-like enzymes (EC 3.4.22-23) in regression ovaries of Dipetalogaster maxima. The enzymatic assays were carried out using ovarian homogenates and specific fluorogenic substrates for cathepsin B, D and L. The characterization of the involved enzymes was made using specific inhibitors and analyzing the degradation fragments by tandem mass spectrometry (LC-ESI-QTOF). The activity of cathepsin D-like proteases was confirmed by inhibition tests with pepstatin A and cleavages analysis. The optimum pH for the activity was 3.5 and the estimated K_m was 24.56 μM. These results contribute to our knowledge about physiological and biochemical events that regulate the ovarian regression in triatomines.

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26. RENIN-ANGIOTENSIN SYSTEM (RAS) AND IMMobilization (IMO)-INDUCED HYPERTENSION IN OLD RATS

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Aging has been associated with increase of free radicals. Moreover, IMO stimulate RAS and this was associated with oxidative stress increment, which could be induce hypertension. RAS participation in the hypertension induced by IMO in aging rats was investigated. Oral Losartan (10mg/Kg) (L) or the solvent of the drug (s/L) was administrated to 8 months age male Wistar rats. One group was subjected to IMO 1h/day/14 days and another no stressed remained as control (C). At 1 (AS) and 14 (CS) days of IMO, systolic (SBP), diastolic (DBP) and mean (MBP) blood pressure in response to stress and later of 6 h recuperation (R) were measured. In other group of rats plasma aldosterone (ALDO) and creatinine (CREAT) were measured in urine. Inadequate nourishing habits could be a risk factor of cardiovascular disease. The objective was to evaluate the soy bean oil supplement effect over lipidic profile, the osmotic fragility of erythrocytes and hemostasia in chronic stressed rats. Two groups of male Wistar rats were used, one with oil supplement for 4 weeks (OS) and the other without supplement (WS). Half of the animals of each group were subjected to immobilization (IMO) stress 2h/day/14 days and the other half remain as control rats (C). At the day 14, blood samples were obtained and activate partial thomboplastine time (APTT), coagulation time (CT), maximal (maxOF) and minimal (minOF) osmotic fragility of erythrocytes, fibrinogen (F) corticosterone (COR), glycemia (GL), total cholesterol (TC), triglycerides (TAG), HDL and LDL cholesterol levels were determined. COR and GL were higher in IMO rats. TC and LDL-cholesterol were higher only in WS stressed rats but TAG and HDL-cholesterol increased in both groups with IMO. Short CT and higher F levels were observed in all IMO rats, without changes in APTT levels. No changes in minOF with diminished maxOF were observed in oil IMO rats. The increase in HDL-cholesterol without changes in TC and LDL-cholesterol and the higher resistance of erythrocytes to a osmotic solutions show a protective effect of soy bean oil supplement in stressed animals. However, stress-induced hypercoagulability was not revert with soy bean oil supplement.
29. LIPOPROTEINS AND OXIDATIVE STRESS BIOMARKERS IN MALE AND FEMALE RATS EXPOSED TO CHRONIC IMMOBILIZATION

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Plasmatic lipoproteins (PL), free radicals, vascular endothelium and subendothelium are vascilitated to generate atherosclerosis patho-
y. In this work the plasmatic levels of PL and oxidative stress were evaluated in male (M) and female (F) rats stressed by chronic immobilization (IMO). Two groups of M and F Wistar rats were formed: controls (C) and stressed (S) by IMO 2 h/day (three times a week) during 180 days. Blood and aortic samples were obtained. Plasmatic lipoproteins were separated by ultracentrifugation and the fractions obtained, Lp (a), apo B y MDA were measured. Aort-
ic nitrotrirosin was determined. Triacylglicerides (TAG) and cho-
sterol (CHOL) were higher in SM than CM rats, in VLDL, LDL and HDL fractions. SF rats showed higher CHOL in VLDL and LDL and TAG in VLDL than S rats. Otherwise, CHOL and TAG increase in lipoprotein fractions was minor in SF than SM rats. Apo B, Lp (a) y MDA levels were higher and aortic nitrotrirosin positive in S rats of two sex respect to the no stressed controls. Chronic IMO induced change in the plasmatic atherogenic pattern, in the lipoproteins and oxidative stress markers in both sex. The attenuated effects on F rats indicated the protector effects of ovaric steroids.

30. ANTIOXIDANT EFFECTS OF VITAMIN E OVER THE ERYTHROCYTES AND COAGULATION IN CHRONIC STRESSED RATS
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The increase in the free radicals has been associated to health dis-
turb as atherosclerosis. The inhibition of oxidative damage with the antioxidant administration prevents the lipid peroxidation of cellular membranes. Hence, Vit E supplementation could be an important therapeutic strategy. The objective was to evaluate the antioxidiant effect of several doses of Vit E to stress-induced hemosta-
static and erythrocyte membrane stability changes. Male Wistar rats without supplement or with 6, 12, 50 or 100 UI of Vit E, via oral, for 4 weeks were used. Half animals of each grup (n=6) was subject to immobilization stress (IMO) 2 h/day/14 days and the remainder was the control rats. Blood and hepatic samples were obtained. IMO increase the hepatic malondialdehyde (MDA) and globular resistance. Moreover, the coagulation time (CT) was re-
duced. All Vit E doses reduced the MDA levels. A higher, doses dependent, coagulation time in rats with Vit E was observed. The dose of 100 UI increased the maximal globular resistance and de-
creased the minimal globular resistance. The lower lipid peroxidation and CT prolonged in rats with supplementation could be diminishing the thrombogenic risk, make evident the protective effect of Vit E. However, the effect of the higher dose over the erythrocyte fragility makes doubtful the application of this supple-
ment for prolonged time.

31. REDUCING CARBOHYDRATES AND ORGANIC ACIDS INDUCED BY NaCl AND Na2SO4 IN A NATIVE HALOPHYTE

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Carbohydrates accumulation in plants undergoing salinity or drought has been widely reported despite the significant decrease in the net rate of CO2 assimilation under these conditions (Murakosy et al., 2003). The aim of this study was to determine reducing sugars, sucrose and organic acids content in roots and leaves of Prosopis strombulifera seedlings hيدroponically grown in Hoagland solutions with addition of 50 mmol/l NaCl for NaCl treatment, 38 mmol/l Na2SO4 for Na2SO4 treatment and the iso-
smotic mixture of both salts (bisaline treatment) every 48 h until final Ψo = -1, -1.88, and -2.6 MPa were reached. Control plants were grown in Hoagland 25%. Glucose and fructose content in roots and leaves were not affected by any treatment; roots showed high-
est levels of reducing carbohydrates at moderate and high salinity, possibly because of polyols formation and lignin synthesis. Suc-
rose decreased in sulphate treated roots showing the deleterious effect of this salt affecting transport and synthesis. High concen-
trations of citric and succinic acid in salinized roots could be re-
lated to an increased respiratory rate in these organs due to the demand for ATP and ion incorporation from the surrounding me-
dium (osmoregulation). Highest content of malic acid in roots and leaves of treated seedlings, mainly under Na2SO4, treatment, is not related to the possible induction of crassulacean acid metabolism in this species.

32. FOLIAR AREA, STOMATAL CHARACTERISTICS AND WATER RELATIONS IN THE HALOPHYTE Prosopis strombulifera UNDER SALINITY

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Plant leaves respond to stress modifying their foliar area, stomatal density and water relations. In this study foliar area, stomatal density (SD), epidermal cell density (ECD), stomatal index (SI), stomatal area, and water relations (Ψw, Ψo, relative water content (RWC) and transpiration) were analyzed in seedlings growing hy-
droponically in Hoagland solutions with addition of 50 mmol/l NaCl for NaCl treatment, 38 mmol/l Na2SO4 for Na2SO4 treatment and the isooosmotic mixture of salts for bisaline treatment every 48 h until final Ψw = -1, -1.88, and -2.6 MPa were reached. Control plants were grown in Hoagland 25%. Leaves of NaCl-treated plants showed a RWC higher than controls, with a decrease in SD (lower number of larger stomata). These characteristics maybe a mecha-
nism of injury alleviation in response to excessive Na+ accumula-
tion in tissues, diminishing the transpiration rate and favoring higher water use efficiency. In the other hand, leaves of Na2SO4, treated plants showed low values of Ψw and Ψo and the higher transpiration rate, which cause hydric disturbances in correlation with the decrease in total and specific foliar area and the increase in SD (highest number of smaller stomata) in these plants. Therefore, all these settings in the epidermal morphology of P. strombulifera un-
der salinity are considered adaptive modifications specific to each salt and related to water use efficiency and photosynthesis control.
33. **SUNFLOWER NATIVE BACTERIA WITH HABILITIES TO PRODUCE PHYTOHORMONES IN VITRO**

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Numerous bacteria stimulate plant growth; they are named Plant Growth Promoting Rizobacteria (PGPR), and one of their mechanisms involved in plant growth stimulation is phytohormones production. In this study we evaluated the in vitro production of indol acetic acid (AIA) and salicylic acid (SA) by different bacterial strains isolated from the sunflower rizosphere. Strains Achromobacter sp. (SF2) and Bacillus pumilus (SF3 and SF4), were cultivated in GY medium for 48 h at 28°C under shaking. Hormones were extracted and purified following Durgbanshii et al. (2005) modified protocol, and identified and quantified by LC-ESI-MS/MS, equipped with double mass spectrometric and triple quadrupole. For quantification, deuterated internal standards (3H1-AIA and 3H1-SA) were used. The three bacterial strains produced AIA and SA. SF4 showed the highest AIA production. This fact could contribute, at least in part, to the growth promotion of sunflower seedlings.

34. **EFFECT OF THE OIL OF NANDU ON THE CICATRIZATION IN SKIN OF EQUINE**

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The aim of this work was to compare the healing effects of the oil of nandu (AN) and the oil with garlic (AA) on the skin of equine. The oil of nandu is obtained by warming and pressing of the fat and that oil with garlic by boiling 250 grs of garlic in 500 ml of sunflower oil. 3 horses of the FAV-UNRC were in use. They were realized 3 wounds to every side of the neck of 20 mm of diameter and 5 mm of depth, previous local anesthesia. There was placed in one of the wounds, once a day and up to the cicatrization, physiological solution, in another AN and in the third AA. Measurements of the wounds were realized and biopsies were obtained of the edges. The speed of centripetal contraction and the decrease of the volume was for the wounds treated with AN and AA of 2.05 mm / day and 2.33 mm / day and of 84.96 mm3/día and 98.62 mm3/día respectively. On the 3rd days the wounds treated with AN and AA they presented acute inflammation with ulceration and exuded purulent, from the 10th day they were showing signs of chronic inflammation and abundant presence of granulation tissue. To the moment of the cicatrization they demonstrated cicatral tissue in ripeness. It is possible to conclude that the oil of nandu and the oil with garlic behave of similar form in the cicatrization of the skin of the equine.

35. **TOOTH ENAMEL PATTERNS IN HUMAN PREMOLARS**


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Enamel type combinations called patterns have not yet been studied in human enamel. The aim of this work was to identify enamel patterns in premolars (Pm). Methodology: sections from 12 upper and 12 lower Pm crowns were obtained, embedded in epoxy resin, grinded, etched with acid, metallised and observed under a scanning electron microscope (SEM). Micrographs were identified in the free faces in the occlusal, medial and cervical thirds, as well as in the cusps in the inner and outer thirds. Results showed enamel with Hunter Schreger bands (inner) in the upper Pm free faces and radial enamel (outer) in the occlusal, medial and cervical thirds. In lower Pm, irregular enamel (inner) was found, whereas radial enamel (outer) was found in the occlusal, medial and cervical thirds. In Pm cusps, both upper and lower, the enamel pattern found was irregular enamel in the cusp inner third and radial enamel in the other two thirds. Differences were found between irregular enamel types present in the free faces and the cusps. In the free faces there are orientation changes of prisms that do no form bands and in the cusps there is a prism intercross compatible with the knot-like enamel shown by optical microscopy. We conclude that there exist several patterns in the same tooth group and that the combination of enamel types is a biomechanical adaptation.
During porcine gestation, the placenta carries out an essential role in implantation, materno-foetal recognition and maintenance of pregnancy. The collagen system, constituted by fibrillar proteins, is a component of the placental extracellular matrix. Our aim was to determine its localization in materno-embryonic tissue, since that will allow evaluating its contribution to the maintenance of placenta structural integrity. Placentas of 35, 60, 70, 80 and 114 days of gestation were processed. Picrosirius red and polarized light microscopy was used for localization of collagen fibers in the different gestational periods. The collagen fibers stained as green, yellow, orange and red, in sequence of increasing thickness, were expressed as semiquantitative, determining for each colour: (-): negative, (+): poor, (++): abundant and (+++): high expression. In porcine placental villi expression of collagen fibers was negative. As pregnancy progressed higher amount of heavy collagen fibers in connective tissue and myometrium was observed. In conclusion an increase of placental fibrosiness was detected as pregnancy advanced, agreeing with the structural remodelling and physiological maturation that the placenta must undergo during the gestation to successfully accompany the embryonic-foetal development.

The osteopontin is a glycoprotein present in the extracellular matrix of porcine placenta that binds integrins, as α_Vβ_3, promoting cell-cell binding and communication, and changes in cytoskeleton. The objective was to determine the expression of osteopontin and α_Vβ_3 integrin of porcine placental sections of early, intermediate and at term gestation. Detection was performed through immunohistochemistry. The results were expressed as semiquantitative, determining: (-): negative, (+): positive, (++): abundant and (+++): high marckation. Both proteins were detected in chorion and endometrium along pregnancy, making evident their role in cell adhesion. At Day ±30 both molecules were present in uterine and trophoblastic epithelial cells, implying their involvement in early pregnancy. As pregnancy progressed only α_Vβ_3 integrin was detected in both epithelia, suggesting the participation of other integrin receptors different from osteopontin involved in pregnancy maintenance. At Day ±30 osteopontin was expressed in glandular epithelium and lumen, indicating maternal contribution trough areolae in early periods of pregnancy to ensure materno-fetal contact. The present work would allow to improve our knowledge about certain mechanisms involved in the maintenance of gestation and placentation, indispensable for pregnancy to succeed.

Peanut breeding had produced lines and cultivars with high proportion of large seed (sieve (S) > 7.5 mm) in response to market request keeping unknown if the seed distribution in different size categories is similar between them. Size distribution and 100-seed weight of each size category were evaluated in 14 genotypes growing in non-limited conditions at CAMDOCEX of FAV-UNRC. Crop season spread from 26/10/06 to 20-25/04/07 and 782 mm of rain were registered together with maximum and minimum temperature between those adequate to crop growth. At harvest maturity, size distribution of each genotypes (seed retained in S with elongated holes of 10, 9, 8, 7.5, 7, 6.5 and 6 mm) and 100-seed weight of each size category were measured. Utre UNRC and Uchaima UNRC cultivars had the greater proportion of seed in S with hole of 10 and 9 mm and WF42 line the lowest. The genotypes were different in 100-seed weight of each size categories, being Utre UNRC cultivar which achieved the bigger values in most of them. Highest differences in this characteristic were registered in S with holes of 8 and 9 mm. These results verify peanut genotypic variability in seed size distribution and 100-seed weight of each size categories.
Most rhizobacteria living in the rhizosphere and can be defined as any volume of soil specifically influenced by plant roots and/or in association with roots and hairs, and plant-produced material. Plant root-soil-microbe interactions are an important aspect of plant nutrient uptake strategies.

The present work was to contribute with the knowledge of physiological and biochemical response of rhizobacteria to peanuts under peanut rhizodeposition, in the presence and absence of saline stress (NaCl 50 mM). Rhizobacteria strains used were Azospirillum brasilense Cd and Bradyrhizobium SEMIA6144 and TAL1000. Viability, biomass, proteins, oligosaccharides profile and cellular trehalose were measured. Lipids were obtained and phospholipids were identified by TLC. Results indicated differences in rhizobacteria growth and profile proteins for the different experimental conditions. On the other hand, oligosaccharides periplasmic and trehalose were affected under saline peanut rhizodeposition and lipids pattern showed were similar. Results suggest that oligosaccharides and protein may be implicated in response to peanut rhizodeposition.

Many organisms alter the composition of their membrane lipids and fatty acids (AG) in response to environmental changes, to maintain the membrane fluidity at constant values, (Soltani and fatty acids (AG) in response to environmental changes, to Many organisms alter the composition of their membrane lipids and fatty acids (AG) in response to environmental changes, to maintain the membrane fluidity at constant values, (Soltani

The importance of weeping lovegrass (Eragrostis curvula) in Argentina relies on its value as forage, adaptability to semiarid conditions and contribution to soil conservation. The direction and magnitude of the associations between a dependent variable and a series of independent variables, as well as the relative importance of each of them on a particular trait determine the efficiency of an improvement program. The objectives of the study were: i) to estimate genotypic and phenotypic correlation coefficients among dry matter (MS) and crown diameter (DJ), panicle height (HPi), panicle height (HP) and panicle number (NP) and ii) to apply path coefficient analysis to determine how these variables affect MS production. Eighteen weeping lovegrass hybrids were evaluated during an agricultural cycle and conducted in a RBD with three replicates in Río Cuarto. The path coefficient analysis was applied to separate the total correlation into direct and indirect effects and to make a cause-effect model. Due to the fact that the environment does not influence at a genetic level, the genotypic correlations turned out to be higher than the phenotypic ones. The path coefficient analysis showed that DI had the highest direct positive effect on MS either in genotypic or phenotypic levels. In addition, the highest indirect effects were observed for most traits via NP at a genotypic level and HP at a phenotypic level. The trait DI is useful as indirect selection criterion to improve dry matter production in weeping lovegrass.
Productivity of maize is affected by several diseases. The “Mal de Río Cuarto” (MRC) is the most important viral disease in Argentina. The severity of MRC symptomatology depends on the plant phenological state when the virus is acquired, the genotype and the environmental conditions in which the culture develops. The objective of this study was to interpret genotypic and phenotypic correlation coefficients between disease severity degree and disease related traits. A recombinant inbred line population derived from a cross between a tolerant line and a susceptible line was evaluated in four environments in an endemic disease area. The path analysis was applied to separate the total correlation coefficient into direct and indirect effects. Generally, genotypic correlations were higher than phenotypic ones showing that the environment effect does not influence trait associations at genetic level. The path analysis showed that enations and internodes had the highest direct positive effects on MRC severity degree. The highest indirect effects were observed for most traits via enations and internodes. The relationship between disease severity degree and disease related traits were consistent across the environments.

Oregano plays a primary role among temperate culinary herbs in world trade. Of the species commercially known as oregano, most of the production comes from species of the genus Origanum. Origanum vulgare L. is the most variable species of the genus and the only one commonly known as ‘oregano’ in most countries. Six subspecies have been recognised within O. vulgare based on the basis of morphological and chemical characters. The commercial oregano of Argentina comes from O. vulgare ssp. vulgare, O. vulgare ssp. virens, O. x apillii and O. x majoricum. There is no report on the yield and composition of the essential oil (EO) and total phenol contents (TPC) of these cultivated populations in literature. Our objective was to analysis the EO, TPC and radical-scavenging properties from 3 populations of Origanum from Argentina. Results and discussion. The main components of EO were trans sabinene hydrate (>27.7%) and thymol (>17.7%). The main sesquiterpenes were demonstrated that the different Origanum cultivated in Argentina contained different levels of TPC and antioxidant properties by environmental conditions. The EOs of oregano species studied in this work showed variability in the relative percentage of the two main components, while no geographical pattern could be observed.

Functional foods are products that provide a health benefit beyond basic nutrition. Several essential oils (EO) have bioactivities on animal physiology and metabolism (antioxidants, anticholesterolics, are antimicrobials, insecticides, among others. The aim of this research was to evaluate if the modification of quail diet (supplementing it with EO thymol and isoeugenol) could have an effect on another sanitary and economic poultry related problem: the production of flies in poultry litter. Samples of manure deposited in the previous 0 to 48 hs by quail that were fed with a supplementation of 400 mg thymol, isoeugenol or butylated hydroxytoluene (control) per kg of feed were collected. Each 200g sample (6 replicates per treatment) was incubated in a glass container inside an emergence cage. Cages were inspected daily and adult flies that emerged were collected for 40 days. The effect of quail feed supplementation on the total number of emerging flies and on the number of specimens from the 3 most frequent species (Ophyra aenesens, Musca stabulans and Musca domestica) were assessed. Significantly less fly emerged from manure from the isoeugenol treatment, suggesting that the modification of the quail diet with this component may have a moderate insecticidal effect against these insects.

Azospirillum brasilense is a plant growth promoter bacteria (PGPB) that increase grain yield in cereals and plant growth in different species. It presence may also alleviate plant water stress. Among the mechanisms proposed to explain these beneficial effects includes the production of phytohormones by the bacteria, including indole-3-acetic acid (IAA), gibberellins (GAs) and abscisic acid (ABA). The aim of this work was to evaluate different mechanisms involved in A. thaliana plants inoculated or not with A. brasilense in both drought stress and well watered conditions. A. thaliana was cultivated in plastic pots with sand:vermiculite (1:1) at 24 °C with 16 h light and 8 h dark. The well watered plants inoculated with A. brasilense anticipated the phenological stages respect non inoculated plants, with a significant increase in rosette growth and rod length. Interestingly, A. brasilense inoculation enhanced percentage of survival in well watered plant as well as drought stress and ABA content in leaves measured by GC-MS. The results obtained suggested that A. brasilense promote growth and alleviate of water stress in A. thaliana plant by ABA production.
Humoral and cellular immunity against Bovine Respiratory Syncytial Virus (BRSV) has a major role in prevention and establishment of infection. The aim of this study was to characterize the humoral response induced by BRSV in naturally infected calves. The immune response was studied by serum neutralization (SNV) and immunowestern blot (IWB) using serum from 4 calves (8 sera). Nucleocapsid protein N of 43 kDa, P of 34 kDa and L of 200 kDa and matrix proteins M of 29 kDa were determined in the four sera (1/64, 1/64, 1/128 and 1/256). Major viral proteins 1) cellular viability by MTT test; 2) phagocytosis by NBT reductions and 3) apoptosis by: a) Giemsa staining and b) ethidium bromide/acidine orange staining. The results showed that a significant increased (p<0.05) of the cellular viability occur with F2 (15 mg/kg) compared with control. A no significant difference was observed with the other fractions. A significant increase (p<0.05) of the phagocytosis with F2 (15 mg/kg) and F3 (5 and 15 mg/kg) was observed. A significant increase of the apoptosis (p<0.05) was observed when Giemsa was used, with F1 (15mg/kg), F2 (0.5mg/kg) and F3 (15mg/kg). In conclusion, F2 at 15 mg/kg showed a cellular viability and phagocytosis increased, and an anti-apoptotic effect too, as well as F3 increase la NBT reduction at high concentrations, possibly for its NDGA content. No effects were observed with F1 in vivo on macrophages, only an anti-apoptotic activity.
53. EFFECTS OF ENERGY RESTRICTION ON METABOLIC PROFILE AND BODY MEASUREMENTS IN PREPUBERAL DOES
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Ruminants have the ability to cope with periods of food shortage. Of particular interest is to understand undernutrition physiology under long-term feed restriction, to determine the limits of metabolic adaptation. Twelve prepuberal does were randomly assigned to two groups: fed ad libitum (C) or restricted 50% (R) during 250 days. Feed was offered in individual cages. Diets were formulated to contain 2.3 Mcal/kg DM and 15% CP. Restriction decreased gain and body measurements in R does compared with C. Liveweight at the end of the experiment were 29 ± 1.7 y 15 ± 1.0 for C and R, respectively. Serum non-esterified fatty acids concentration markedly increased following intake reduction in restricted does, decreasing to basal levels after a period of 30 days, demonstrating the adaptation of does to under nutrition. Glucose concentration was always within the range of reference value, although it was higher in C. Restriction depressed serum alkaline phosphatase (ALP), concentration increased gradually and exhibited a 60 days delayed lower peak, compared to control does. At the end of the study IGFI concentration increased gradually and exhibited a 60 days delayed regression period. Its exploration will be useful to improve our understanding of biology of reproduction of Chagas’ disease vectors and to define strategies for their control.

54. HISTO-MORPHOLOGICAL AND ULTRA-STRUCTURAL CHANGES AND CELL DEATH DURING FOLLICULAR REGRESSION OF Dipetalogaster maxima
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In hematophagous insects, a poor nutritional status of female induces the decrease of vitellogenin (Vg) synthesis and uptake, and a cellular remodelling of ovaries. In this process, known as follicular regression, atrophy of follicles and resorption of oocytes also occurred. The aim of this work was to analyze the morphological and ultra-structural changes as well as cell death events occurring during early and late regression of ovarian tissue of the hematophagous D. maxima, a vector of Chagas’ disease. The approach included fluorescent and electron microscopy, immuno-histochemistry, TUNEL, in vivo and in vitro assays with vitelmin (Vt) and monodansylcadaverine (MDC). In vitellogenesis, ovaries exhibited a typical asynchronous development and showed a differential storage of Vt. During regression, Vg uptake decreased and follicles were of small size. In early regression, follicular cells showed nuclei with an apoptotic pattern. By contrast, late regression displayed cytoplasm vacuolization of nurse cells, phagocytic activity and cell death by apoptosis, necrosis and autophagy. We concluded that in D. maxima, follicular regression is physiological and gradual to promote oocyte resorption and distribution of energy resources to sustain the development of younger follicles.

55. PHYSIOLOGICAL AND BIOCHEMICAL ASPECTS OF VITELLOGENESIS AND FOLLICULAR REGRESSION IN VECTORS OF CHAGAS’ DISEASE
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In the hematophagous insects, reproduction is strongly associated with the nutritional status of females. To ensure an oviposition cycle, these species need a physiological compromise between the process of vitellogenesis and follicular regression. In Chagas’ disease vectors, these events have been scarcely explored. Therefore, we have analyzed the main biochemical changes occurring during the progress of vitellogenesis (post-blood feeding) and follicular regression (days 15 and 30 post-vitellogenesis) in Dipetalogaster maxima, a vector of Chagas’ disease. The study included: (a) measurement of vitellogenin (Vg) and vitellin (Vt) in hemolymph and ovary; (b) activity of acid phosphatase (PA), total cathepsins and cathepsin D in ovary; (c) lipids (LT) y carbohydrates (CH) in ovarian tissues. Results showed that transition to follicular regression was characterized by a significant decrease of circulating Vg and its storage in ovary. During early regression, there was a gradual activation of PA and cathepsin D, an aspartic protease involved in Vt degradation. In advanced regression, stores of LT and CH were very small. These findings evidenced that ovarian tissue adjusted its metabolic status along the regression period. Its exploration will be useful to improve our understanding of biology of reproduction of Chagas’ disease vectors and to define strategies for their control.

56. ALTERNATIVE METABOLIC PATHWAYS OF LIPOPHORIN INTERACTION AND UPTAKE IN DIFFERENT ORGANS OF Panstrongylus megistus
Fruttero L1, Stariolo R2, Rubiolo E1, Canavoso L1.

In insects, lipid transport is mediated by lipophorin (Lp), the main hemolymphatic lipoprotein. Lp acts as a “reusable shuttle”, carrying several lipids between target tissues without being internalized and degraded. The aim of our work was to analyze the interaction between Lp-midgut and Lp-ovary in Panstrongylus megistus, an important vector of Chagas’ disease. The biochemical analysis included binding assays with 125L-Lp and ligand blotting experiments. In addition, cellular approaches were carried out by immunofluorescence and in vivo assays using fluorescent probes (Lp-Oregon Green). The results showed that Lp-midgut interaction was specific, displaying a high affinity constant (Kd=5,1x108 M). Ligand blotting revealed that two midgut membrane proteins (61 and 45 kDa) were involved in such interaction. In this tissue, Lp interacted reversibly with the sub-epithelial layer. In contrast, the studies in ovary using confocal laser microscopy evidenced internalization of Lp by endocytosis. This is the first report in triatomines that provides evidence of alternative lipid transport pathways for different tissues.
Previous in vivo and in vitro assays demonstrated the myotoxic activity from B. alternatus crude venom. The aim of this work was to evaluate the contribution of a phospholipase A2 (PLA2) and a metalloproteinase (baltergine) to the in vitro myotoxicity in murine myoblast cell culture. Both toxins were purified from B. alternatus venom. Then, the cytotoxic activity displayed by each enzyme and also of the whole venom pre-incubated with anti-baltergine (a-balt) in different dilutions was studied. Cells (into DMEM - 5% of SFB - 5% CO2, 37°C) were treated with different concentrations of the isolated enzymes (up to 200 µg/ml) and crude venom (200 µg/ml) pre-incubated with different amounts of a-balt. The cell viability was measured, after 3 h of exposure, by colorimetric method (crystal violet staining). Both the PLA2 and the venom pre-incubated with a-balt do not show myotoxic activity, whereas baltergine reduced the cell viability by about 30%. Due to the exposure of cells to the whole venom (100 µg/ml) produced 100% cytotoxicity and the a-balt antibodies neutralized completely the myotoxic activity showed by the venom, we can conclude that the metalloproteinase is capable, by itself, of damaging on muscular fibers. In spite of the lack of in vitro myotoxic activity by PLA2, a synergetic action of both enzymes could develop an acute muscle lesion characteristic for B. alternatus intoxications.

On the basis of 16s RNA, Pseudomonas genus belongs to group I, in the γ-branch. This group includes mammal’s pathogens (ie. P. aeruginosa), plant’s pathogens (ie. P. syringae) and non-pathogens (ie P. fluorescens, P. putida). When P. aeruginosa grows in choline- and taining media, sintethizes phospholipase C (PlcH) and phosphorylcholine phosphatase (PchP), two enzymes involved in the pathogenesis of this bacterium. The absence of PlcH in P. syringae, P. fluorescens and P. putida led us to focus in PchP properties. Motifs I and III of PchP are identical in the four species analyzed. But in motif II, PchP of P. aeruginosa and P. putida have a serine residue while P. fluorescens and P. syringae have a threonine residue in the same position. All these enzymes have a K_M value for p-NPP in the same range. Nevertheless, with Zn^{2+} or Mg^{2+} as cofactors, the affinity was similar but with Cu^{2+}, it was ~2.5 times lower for PchP of P. syringae and P. fluorescens, and ~4 times lower in P. aeruginosa and P. putida. All the enzymes showed preference for these ions in the order Zn^{2+} > Cu^{2+} > Mg^{2+}. On the other hand, in P. aeruginosa y P. putida, PchP showed a higher K_M for the three cations with respect to P. syringae y P. fluorescens enzymes. For this, the serine/threonine residue in motif II might be one of the factors involved in the affinity of PchP for Zn^{2+}, Cu^{2+} and Mg^{2+}. This change seems to be an indicator of PchP function in bacteria colonizing different ecological niches.

In bacteria, inorganic polyphosphates (PPs) are involved in various physiological functions and in virulence of pathogens organisms such as P. aeruginosa. In our laboratory we are studying the P. aeruginosa PA01 exopolyphosphatase (PPX) encoded by the gene PA5241. The aim of this study was to obtain a mutant strain unable to express the ppx gene to investigate the possible existence of more than one enzyme responsible for the hydrolysis of PPs. A deletional mutant strain was constructed according to Choi and Schweizer (Microbiol. 2005, 5: 1-11). Hydrolysis of PPs was measured by Pi release from substrates PP10, PP25 and PP65. The measurement of PPX activity in cytoplasmic extracts from stationary phase cells showed a specific activity decrease of only 30-35% for the mutant strain compared with that of the wild type (WT). Isoelectric focusing studies performed with extracts of WT and mutant strain showed three and two PPX activity areas respectively. The missing zone corresponded with PPX (pI 6.25). Enzymatic activities differing from PPX showed pl of approximately 7.1 and 5.2. Bioinformatics background suggests that the last protein could correspond to the survival protein SurE (PA3625).

Developing seedlings are subject to adverse environmental conditions. The salt stress is one of the most important abiotic factors that limit the normal development and activate a variety of signaling pathways in different organs of the plant. In response to salinity and drought stress, plants accumulate proline mainly. It was raised as to determine the biochemical and morphological changes at the level of lipid signals and proline accumulation in early germination of seeds under conditions of osmotic and salt stress. Morphological changes were observed in seeds germinated 4 days in sterile conditions and in darkness with different concentrations of NaCl and mannitol. We assessed lipid kinase activity in coleoptile and roots of barley (Hordeum vulgare) Usorach J, Meringer V, Machado E, Racagni G. Depto. de Biología Molecular. FCEFQyN. U.N.R.C. E-mail: javierusorach14051985@hotmail.com

59. HYDROLYSIS OF POLYPHOSPHATES IN Pseudomonas aeruginosa PA01: MORE THAN ONE ENZYME RESPONSIBLE

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61. ABSCISIC ACID SIGNAL IN BARLEY ALEURONE (Hordeum vulgare): ROLE OF PHOSPHATIDIC ACID AND DIACYLGLYCEROL PYROPHOSPHATE
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Aleurone tissue is a unique and versatile system to study the effect of antagonistic abscisic acid (ABA). During the ABA signal, phosphatidic acid (PA) generated by the phospholipase D (PLD) activity is the major phospholipid involved. Our objective was to determine the regulation of PA and DGPP levels in the ABA pathway. To analyze that, cells were incubated with $[^{32}P]Pi$ at different times. We determined the fatty acid composition and PAP and DGPP phosphatase activities in stimulated aleurone with GA and ABA. The kinetic of labeling of PA and DGPP was similar in both. Stimulation with ABA resulted in a rapid and transient increase in $[^{32}P]PA$ and $[^{32}P]DGPP$ levels at 5 min. The analysis of fatty acids of different phospholipids fractions revealed that the major fatty acid was 18:2. ABA decreased the ratio of unsaturated/saturated in PA and also increased the activity of PAP1. These results suggest that ABA modulates the turnover of PA and DGPP via PLD and PAP1 activities.

62. POTATO STOLONS: LIPID MOLECULAR SPECIES
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Phospholipids, galactolipids and fatty acids esterified are involved in signaling pathways triggered by biotic and abiotic stress. The participation of these compounds in the process of plant development, such as tuberization of potato stolons, controls and stimulated the hormonal treatment. Therefore we evaluated by ESI-MS/MS the lipid composition of potato stolons, controls and stimulated with jasmone (JA), abscisic and gibberellic acids. In control stolons, phosphatidic acid (PA) was the major compound, followed by digalactosyldiacylglycerol (DGDG) and phosphatidylinositol (PI). Monogalactosyldiacylglycerol (MGDG), phosphatidylcholine (PC), phosphatidylglycerol (PG) showed intermedia levels, and phosphatidylethanolamine (PE), phosphatidylserine (PS) and the lysophospholipids exhibited the lowest levels. No significant changes were found by the hormonal treatment. The presence of 34:2 in PE, PC, PI and PA supports the hydrolysis of PC and PE by phospholipase D and the hydrolysis of PI by phospholipase C, leading both to 34:2 PA production. In MGDG and DGDG 36:6 was abundant and their hydrolysis could release the substrate (18:3) for the JA biosynthesis. The identity of the molecular species suggest that lipid metabolism pathways are activated at the beginning of tuber formation, and shows the prevalence of PA and DGDD as constituents of photosynthetic membranes and nonphotosynthetic plastid.

63. CHARACTERIZATION OF PchP FROM Pseudomonas aeruginosa IN ORGANIZED MEDIA
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Pseudomonas aeruginosa is an opportunistic pathogen responsible for acute and chronic infections and it represents an important problem for patients with severe burns, cystic fibrosis, and immunocompromising diseases. We proposed a mechanism that would explain the pulmonary infection through the coordinated action of hemolytic phospholipase C and phospholylcholine phosphatase (PchP). Therefore PchP catalyzes the hydrolysis of phospholylcholine in choline and phosphate, and this reaction was previously studied by our group, in homogenous media. The aim of the present contribution was perform a comparative study of PchP behaviour in homogenous and organized media. The kinetic of the enzymatic reaction was monitored by $p$NP formation following the absorbance at 410 nm after $p$NP hydrolysis at pH 5.0 in presence of Mg$^{2+}$. Two different surfactants were used: BHDC for reverse micelles and Triton X-100 for direct micelles. In homogeneous media, PchP has a Michaelis-Menten behaviour and the parameters $K_m$, $k_{cat}$ and the catalytic efficiency ($k_{cat}/K_m$) were obtained. In BHDC we observed that this surfactant is a competitive inhibitor of the enzyme. On the other hand, we found that Triton seems to activate PchP in submicellar concentrations. We also studied the fluorescence lifetimes and anisotropy (r) of the intrinsic Trp of the PchP. The results indicate the different micropolarity and microviscosity of the media.

64. INTERACTION OF GABAERGIC PHENOLS WITH LANGMUIR FILMS
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The GABA$_A$ receptor, the main inhibitory receptor from central nervous system, has different recognition sites for specific ligands. Our group demonstrated that several phenolic compounds, from the family of propofol analogues, are active ligands of this receptor. In order to define the structure-activity relationship and to improve previous pharmacophoric models, in the present work we study the interaction of five phenolic compounds (propofol, thymol, carvacrol, eugenol and chlorothymol) with model membranes (dpPC Langmuir films). At low pressure, all compounds were able to expand the films. The more hydrophobic phenols produced a displacement of the phase transition toward smaller molecular areas, while eugenol showed an inverse effect. At higher pressures, all compounds induced the decrement of the minimum area and the collapse pressure, which indicates an interface destabilization. The compound interfacial concentration analysis indicated that they penetrate and keep in the interface as increasing the phospholipid molecular packing, being squeezed at high pressures (propofol, thymol, carvacrol) or after the LE-LC phase transition (eugenol, chlorothymol). The penetration studies suggest that, in spite of these compounds can be introduced in the membrane until high pressures, the penetration rate diminishes as the interface is more packed.
Previously we showed that the activity of the soluble wild-type E. coli β-galactosidase (β-Gal<sub>wt</sub>), against the soluble substrate ortho-nitrophenyl-galactopiranoside (ONPG), increased in the presence of multilamellar vesicles (MLVs) of a zwitterionic phospholipids. The purpose of this study was to compare the activity of a β-Gal<sub>wt</sub> (Sigma-Aldrich) with a recombinant β-Gal containing 6 histidine residues (His-tag) fused to the terminal carboxyl (β-Gal-His<sub>6</sub>), which was overexpressed in E.coli. This modification facilitates the protein purification by metal ion affinity chromatography (IMAC). The enzyme activity was measured by visible spectrophotometry, in the absence or presence of MLVs composed either pure egg phosphatidyl cholines (EPC, zwitterionic interface) or a binary mixture of EPC and dioleoyl phosphatidylglycerol at a 80:20 molar ratio (doPG, negative interface). The kinetic parameters were determined by fitting the michaelian model to the experimental data by a nonlinear regression. Our results showed that β-Gal-His<sub>6</sub> presented lower affinity for the substrate with respect to β-Gal<sub>wt</sub>. Although the interfacial overactivity was retained, it was smaller than that of β-Gal<sub>wt</sub>. Moreover, the catalytic efficiency (k<sub>catalytic</sub>/K<sub>M</sub>) increased in the presence of EPC: doPG MLVs, suggesting a higher sensitivity of β-Gal-His<sub>6</sub> for the negatively charged lipid-water interface than β-Gal<sub>wt</sub>.

Some aspects of the membrane dynamics may be encoded in the temporal fluctuation of ionic currents. From this perspective, in the present work we studied the conductance of K<sup>+</sup> and Cl<sup>-</sup> through black lipid membranes (BLMs) formed from poPC/POPE 3:7 dissolved in n-decane (~25 mg/ml) on a 150 μm of diameter hole, carved in a wall that separated two chambers filled with solutions of identical composition (HEPES 10 mM, 150 mM KCl, pH 7.4). Electrical transmembrane potential (∆V) within ±200mV was applied using Ag/AgCl electrodes connected through a saline 200 mM KCl bridge. The electrical current intensity (I) was recorded for 10 s at 10 kHz. Within the range 0 to ±100 mV, a single conductance state (G=6.4 ± 0.6 fs) was observed. The magnitude, dispersion and amount of conductance states (2-4) increased at [∆V]>100 mV. These results could be associated with the formation of transients pores induced by electrostriction of the membrane. A detrended fluctuation analysis (DFA) of the temporal pattern of electric current amplitude recorded between ±100 mV showed no autocorrelations (white noise). Beyond ±160 mV a transition to 1/f type noise was observed which is characteristic of critical states acquired by biological systems far from equilibrium. In our system this would correspond to the appearance of reversible pores that precede the electroproporation of the bilayer.

This study evaluated the effect of hydrostatic pressure (P = 1-171 MPa) on the conformation and aggregation of β-galactosidase enzyme (β-Gal), through analysis of the intrinsic fluorescence of the protein and light scattering. Pressure induced a bathochromic displacement on the center of spectral mass (CSM), whose magnitude increased with P and with the [urea] (ΔCSM<sub>max</sub> was -75 and -700 cm<sup>-1</sup> in the absence and presence of urea in 2.5 M, respectively). In the absence of urea, the pressurization to 171 MPa did not affect the kinetic parameters of the enzyme against an artificial substrate (V<sub>max</sub> = 0.022 ± 0.002 and 0.019 ± 0.002, K<sub>M</sub> = 0.2 ± 0.06 and 0.12 ± 0.05, P = 8 or 171 MPa, respectively). For all the [urea], the return to P = 5.5 MPa was accompanied by a partial recovery in the fluorescence signal while the activity is irreversibly lost and depending on the [urea] (V<sub>max</sub> decreased and K<sub>M</sub> remained constant) indicating that it was an “all or none” phenomenon. Light scattering showed an initial decline with P, reaching a minimum and then a recovery of the initial values with a slope that increased as a function of [urea], suggesting an early stage, at low P, dissociation monomer and a drop in the native structure in the second stage. While the half-inactivation of β-Gal in H<sub>2</sub>O occurs in P<sub>50</sub> = 300 MPa (BBA 129, 61-68,1996), in the presence of 0.4 M urea, P<sub>50</sub> was reduced to 171MPa, with it’s consequent technological advantage.

Lactobacilli constitute the indigenous or common flora in human vagina, where they exercise resistance to colonization by pathogenic microorganisms. The objectives of the present work were to in vitro evaluate Lactobacillus fermentum L23 and L. rhamnosus L60 susceptibility to antifungal and antibiotic compounds of clinical use, as well as to study the hemolytic activity of bacteriocins produced by these strains. Bauer and Kirby’s technique was performed (NCCLS, 2003). The inhibitory activity of the fractions obtained from purification was assayed by using the wells test, and a sensitive strain was used. The citotoxic effect of bacteriocins on red globules was studied by means of the test of tubes containing both human and ram eritrocites. L. rhamnosus showed resistance to eight antibiotics and L. fermentum was resistant to 6. None strain was antifungal resistant. No bacteriocin hemolytic activity was detected in the species of eritrocites tested. DISCUSSION. The importance of these results should be highlighted in reference to the resistance to antimicrobial compounds, which represents an advantage in these probiotic strains because they would not be eliminated from the vaginal environment.
69. DETECTION OF A BIOLOGICALLY ACTIVE SUBSTANCE PRODUCED BY Lactobacillus fermentum THAT INHIBITS Streptococcus agalactiae AND Neisseria gonorrhoeae
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S. agalactiae (GBS) is a human pathogen that colonizes the female genital tract and it acquires relevance because of perinatal infection. N. gonorrhoeae causes a sexually transmitted disease, and it has developed resistance to antibiotics. Lactobacilli are the main microorganisms of the healthy female vaginal environment, and produce antibiotic compounds such as bacteriocins. In the present work, sensibility of GBS and N. gonorrhoeae to the L. fermentum L23 bacteriocin was evaluated. The bacteriocin was obtained from a culture with 18 h of incubation at 37°C and centrifugation at 8000 rpm for 20 min at 4°C. 20 S. agalactiae strains and 12 N. gonorrhoeae strains were tested. The wells technique was performed in Thayer Martin and Mueller Hinton Plates. 60% of the GBS strains and 100% of the N. gonorrhoeae strains were inhibited by the L. fermentum bacteriocin. The obtained results did not coincide with those of Juarez Tomas (2003), since inhibition was due to acids and not to the action of a bacteriocin. In summary, the results are highly encouraging since the L23 bacteriocin was able to inhibit the tested strains. These promissory findings would allow the use of the L. fermentum L23 as a biocontrol agent or as a therapeutic alternative in the future for suppression or prevention of genital infections.

70. Giardia lamblia: PHOSPHOLIPID-BASED SIGNALLING AND ITS INVOLVEMENT IN THE ENCYSTMNT
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In order to adapt to their environment Giardia alternates between two different forms, trophozoite and cyst. The role of kinases and acidic phospholipids has been established in regulation of cell differentiation and adaptations of the lower eukaryotes under conditions of stress. However, the current understanding of intracellular signalling mechanisms that regulate Giardia differentiation is limited. The aim of this work was to determine the involvement of acidic phospholipids metabolism during the encystment process. We analyzed phospholipid pattern in [32P]Pi labelled trophozoites during different periods of time. Moreover, we assayed lipid kinase activities phosphatidylinositol kinase (PI-K), phosphatidylinositol phosphate kinase (PIP-K), dyacylglycerol kinase (DAG-K) and phosphatidate kinase (PA-K), by phosphorylation of endogenous substrates with [γ-32P] ATP. An increase of PI-K and PIP-K activity was observed when trophozoites were induced to encyst suggesting a role for these enzymes in encystation process. Our results demonstrate the existence of acidic phospholipids and lipid kinase activities belonging to phosphatidylinositol pathway in G. lamblia. Furthermore, we suggest the involvement of this pathway in encystment process.

71. Achyrocline satureioides: EVALUATION OF DIFFERENT EXTRACTS AGAINST Paenibacillus larvae, ETOLOGICAL AGENT OF AMERICAN FOULBROOD
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Achyrocline satureioides (Lam.) D.C. (Asteraceae), commonly known as “marcela”, is a medicinal herb widely used in Argentina for its digestive, anti-inflammatory, antioxidant, antitumoral, antibacterial and antiviral properties. American Foulbrood (AFB), a disease caused by P. larvae, affects the honey bee larval stage. Its control is made with antibiotics, but their irrational use may lead to antibiotic resistant microorganisms and to the presence of residues in honey. Aims: To evaluate the antibacterial activity of different extracts of A. satureioides against P. larvae. Methodology: P. larvae strains were isolated from hives with symptoms of AFB from Rio Cuarto and INTA Balcarce. A. satureioides was collected in Córdoba province. Hexane (EH), benzene (EB), ethyl ether (EE) and ethyl acetate (EAE) extracts were obtained sequentially by using a liquid-liquid extractor for less dense than the water solvents. Antibacterial activity was analyzed by the well diffusion technique. Results: The values of Minimal Inhibitory Concentrations were in a range from 0.016 to 0.125 mg/ml for EH; from 0.063 to 0.125 mg/ml for EB; from 0.5 to 1 mg/ml for EE, and from 4 to 8 mg/ml for EAE. Discussion: All the strains of P. larvae were inhibited by the different extracts of A. satureioides. EH showed the highest antibacterial activity. Resistant strains were generated by the use of antibiotics, and residues remained in honey. Vegetal extracts which are considered appropriate for the “in vivo” testing in the control of AFB disease.

72. ANTI-FUNGAL AND ANTI-ALLERGIC EFFECTS OF Achyrocline satureioides FLOWERS DECOCTION

Achyrocline satureioides has been used in popular medicine by its anti-inflammatory properties. Objectives were to evaluate the effects of Achyrocline satureioides flowers decoction (FD) on basophils from allergic patients to environmental fungi and to investigate mycelia growth in cultures of isolated fungi from house of each. Prick test and enzyme β-hexosaminidase release (β-H) test from basophils challenged with the allergen were assayed. The basophils were challenged with the allergen alone (100 PNU/ml); or added of FD or antihistamine drugs. Aeroallergens fungi were isolated and identified by optical microscopy and characterized by sort. The anti-fungal effect of FD was determined on the growth of mycelia. The inhibition of β-H was decreased by FD (optimal dose 4mcg/ml), p<0.01 and each one of the drugs: dexamethasone, theophyilline, disodium cromoglycate and ipratropium bromide p>0.01. The isolated fungi sorts were: Penicillium spp., Aspergillus spp. Section Nigri, Cladosporium spp. y Alternaria spp. The development of the colonies was partially inhibited and diameter, sporulation, coloration, exudates and pigments were modified by FD. In addition, form, number and aspect of conidia were altered. Anti-allergic properties in vitro of FD were corroborated. Doses of the order of mcg/ml demonstrated effects similar to ipratropium bromide, the drug of greater effect. The anti-fungal properties of FD were verified on the different isolate sorts.
73. **PCR STUDY OF PATHOGENIC *Escherichia coli* IN CALF FROM VILLA MARIA (CÓRDOBA) DAIRY BASIN**


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In Córdoba, the bovine herd is the first production. Diarrhea caused by *E. coli* generates economic loss around 20%. Some bovine bacterial strains could infect humans. There is no recent information about neonatal diarrhea in Córdoba. The aim of this study was to obtain current data about pathogenic *E. coli* strains causing diarrhea in neonatal calves from Villa Maria. Samples of rectal swabs of calf less than 45 days old (n=61), were transported in Stuart and cultured on McConkey agar. Lac+ colonies compatible with *E. coli* were biochemically characterized and DNA was extracted by heating. Virulence factors (LT, STa, F17, F5 and eae) were identified by PCR. Results and Discussion: There was a 36.1% pathogenic strain: 16.42% EHEC, 9.84% ETEC, 1.64% EPEC and only 0.16% were F17+. A 63.9% of non-pathogenic *E. coli* was found. The predominance of EHEC strains could impact on public health. Furthermore the currency of ETEC and EPEC could affect the productive capacity of artificial bringing up calves.

74. **Escherichia coli PATHOGENIC STRAINS IN A NEONATAL PIGLET FROM PIG INTENSIVE BREEDING PLACE OF CÓRDOBA**

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Neonatal porcine diarrhea is a major cause of economic losses in pig production. One of the main etiologic agents is *Escherichia coli*. Both enterotoxigenic (ETEC) and enteropathogenic (EPEC), associated with immunosuppression were the cause of stress management. The aim of this work was to characterize by PCR the strains of *E. coli* that produce diarrhea in neonatal piglets of pig intensive breeding in Córdoba. Samples of rectal swabs (n=58) transported in Stuart were analyzed, cultured on Mc Conkey agar. Lac+ colonies compatible with *E. coli* were biochemically characterized and DNA was extracted by heating. Virulence factors (LT, STb, STa, F18, eae) were identified by PCR. Results and Discussion: The findings showed a 1.72% of EPEC (eae+) and 24.14% of ETEC, which were 50% STb+, 21.4% LT+, 14.3% STa+; 7.15% F18+ and 7.15% STb+. A 74.14% of non-pathogenic *E. coli* was found. It shows a predominance of ETEC currency. These results show that, in this intensive breeding, with controlled environment and good prophylaxis (vaccination), the presence of pathogenic strains *E. coli* remains possibly by stress management.

75. **FUNCTIONAL DIVERSITY AMONG ORTHOLOGS GLYCOSYLTRANSFERASES FROM BACTERIAL SYMBIONTS AND PATHOGENS**

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LpcC of *Rhizobium leguminosarum* and LpsB of *Sinorhizobium meliloti* are orthologs proteins sharing 58% and 72% of identity and similarity, respectively. LpsB and LpcC are glucosyl/manosyl transferases involved in the biosynthesis of Inner Core of LPS. Previous studies have shown that the gene *lpcC* not complemented S. meliloti *lpsB* mutants, while *lpsB* complemented R. leguminosarum *lpcC* mutants. Orthologs of LpsB and LpcC are present in other α-proteobacteria including *B. japonicum*, *M. loti*, *A. tumefaciens* and the human pathogens *Brucella melitensis* and *Bartonella henselae*. To determine if this high conservation correlates with the functionality of these proteins, *lpsB* and *lpcC* mutants were complemented by their orthologs enzymes. The results showed that *lpcC* of *R. leguminosarum*, *A. tumefaciens*, *B. melitensis*, and *waaC* of *M. loti* complemented *B. japonicum* *lpcC* mutants, restoring the LPS profile to its wild-type phenotype. On the other hand, *lpsB* of *S. meliloti*, *lpcC* of *R. leguminosarum* and *B. japonicum* complemented *A. tumefaciens* *lpcC* mutants. In contrast, *S. meliloti* *lpsB* mutant was not complemented by any of its orthologs, suggesting that there is a functional diversity despite the high degree of conservation of these proteins.

76. **Achyrocline satureioides: VIRUCIDAL AND ANTVIRAL ACTION OF AQUEOUS EXTRACTS**

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Introduction: The *Western equine encephalitis* virus (WEEV) (Togaviridae) is a pathogen very important transmitted by mosquitoes. This virus causes epizootics in Argentina and major economic losses. Numerous investigations have reported that medicinal plants have antiviral properties, *Achyrocline satureioides* (Asteraceae) deserves to be studied in this property. Objective: To evaluate virucidal and antiviral activities of aqueous extracts obtained from *A. satureioides* against WEEV. Methodology: Aerial vegetal parts were submitted to extraction with cold (4°C) and hot water (70°C) sequentially for two days. These two solutions were identified as Cold Aqueous Extract (CAE) and Hot Aqueous Extract (HAE). Virucidal and antiviral activities of CAE and HAE, used at different non cytotoxic concentrations (200-800 and 150-400 μg/ml respectively) were evaluated by plaque reduction assay using Vero cells and WEEV Ag 80-646 enzootic strain. Results and Discussion: Both extracts inhibited viral replication in 100%. The virucidal effect was dose-dependent, reaching 82% (HAE) and 91% (CAE). The aqueous extracts of *A. satureioides* have exerted greater antiviral activity than virucidal. Subsequent studies were designed to determine the selectivity index, mode of action and chemical characterization of extracts.
The supply of water in Knutzen stream basin is sustained by the aquifer and subordinated by the stream. An agroecosystem is developed livestock rearing with use of antibiotics (medicinal and promoter of growth). The objective of this study was to examine the microbiological quality of water, its suitability of use and assess the antibiotics resistance of Escherichia coli strains isolated. Twenty six samples were extracted (4 of surface and 22 groundwater). Count of mesophilic aerobic bacteria (MA), total coliform (TC), fecal coliforms (FC), Escherichia coli and Pseudomonas aeruginosa and tests for antibiotics resistance were carried out. Surface water was more affected by contamination, all samples show high counts of CT in a range between 210-900 NMP/100 ml and presence of E. coli. The 54.5% of groundwater samples were unfit for human consumption to overcome some of the limits set in Argentine. The 92.9% (n=14) of the strains of E. coli was resistant to antibiotics ERY and PEN, the 35.7% to AM and the 28.6% to TET. All were sensitive to CIP, AMC and AMC and the 92.9% CEF. The results show that water is in bad microbiological quality, being the superficial most affected. The use of antibiotics in livestock, the use of antibiotics incorporated into the food from bovine animals as prophylaxis and growth promoters, is cause of selection resistant bacteria to antibiotics. The aim of this work is to elucidate in which way this regulators are involved in the metabolism of choline and in the induction of enzymes related to it. The second objective is to find the optimum conditions to obtain regulatory proteins in a soluble and active form. Firstly, the genes gbdR and ntrC amplified by PCR were cloned in the plasmids pET15b and pTOPO, respectively. The plasmid pET15b:gbdR was transformed in E. coli BL21 and the overexpressed protein appeared in inclusion bodies. This leads us to change the induction and overexpression conditions and to overexpress the protein in an homologous host, using another expression vector (pET1.6P). To obtain an active NtrC, it was necessary to make a sit-directed mutagenesis in the gene ntrC, to replace S161F. The modified gene (ntrCconstitutive) was subcloned in the plasmid pMPO321 and the protein was overexpressed in an heterologous host. Then, the soluble proteins were purified through an affinity column or by ammonium sulphate precipitation, showing a MW that corresponds to the size of the genes. In vitro and in vivo experiments will be performed, in order to study the interaction protein-DNA, and to elucidate the hierarchy between the regulatory proteins NtrC and GbdR in the metabolism of choline and enzymes induced by its presence in the culture medium of P. aeruginosa.

Antibiotics resistance of E. coli isolated from water samples associated to farm animal activity, and the pattern of antimicrobial resistance, let us to think that fecal contamination could be from cattle, in this basin.

The bacteriological quality of water in the dairy herds can influence the hygienic quality of milk. Use of antibiotics incorporated into the food from bovine animals as prophylaxis and growth promoters, is cause of selection resistant bacteria to antibiotics. The objective of this study was to examine the microbiological quality of water according to the criteria established by the CAA, in 50 establishments dairy and assess antibiotics resistance of E. coli strains isolated. Two water samples are collected; one from source (SW) and another from wash (WW). Count of mesophilic aerobic bacteria (MA), total coliform (TC), E. coli and P. aeruginosa detection and testing to antibiotics resistance were carried out. The 46% WW and the 24%of SW presented MA exceeding 300 CFU/ml. TC of counting exceeded the value admitted in the 70% SW and in the 80% WW. E. coli was isolated in the 20% both origins of water samples P. aeruginosa was detected in the 36% SW and in the 42% WW. All of E. coli strains were resistant to the antimicrobials PEN and ERY, 46.7% and 26.7% to AM and TET respectively, the 20% a AMC and the 6.7% CEF. The 100% the isolated was sensitive to CIP and CMP. The results show that a high percentage of dairy herds have water of poor bacteriological quality. The high percentages of resistance were observed in antibiotics used for applications not therapeutic, administered in cattle diet.

Phosphorylcholine phosphatase (PchP) of P. aeruginosa is induced when choline is used as a source of carbon and/or nitrogen and it is codified by the gene pchP. Its promoter has been localized, and the +1 transcriptional start site and the -12/-24 elements of σ-54 dependent promoters have been identified. The transcriptional regulators, NtrC and GbdR are involved in the utilization of choline as a source of energy and in the regulation of pchP gene. The aim of this work is to elucidate in which way this regulators are involved in the metabolism of choline and in the induction of enzymes related to it. The second objective is to find the optimum conditions to obtain regulatory proteins in a soluble and active form. Firstly, the genes gbdR and ntrC amplified by PCR were cloned in the plasmids pET15b and pTOPO, respectively. The plasmid pET15b:gbdR was transformed in E. coli BL21 and the overexpressed protein appeared in inclusion bodies. This leads us to change the induction and overexpression conditions and to overexpress the protein in an homologous host, using another expression vector (pET1.6P). To obtain an active NtrC, it was necessary to make a site-directed mutagenesis in the gene ntrC, to replace S161F. The modified gene (ntrCconstitutive) was subcloned in the plasmid pMPO321 and the protein was overexpressed in an heterologous host. Then, the soluble proteins were purified through an affinity column or by ammonium sulphate precipitation, showing a MW that corresponds to the size of the genes. In vitro and in vivo experiments will be performed, in order to study the interaction protein-DNA, and to elucidate the hierarchy between the regulatory proteins NtrC and GbdR in the metabolism of choline and enzymes induced by its presence in the culture medium of P. aeruginosa.

Anthraquinones (AQS) rubiadin (1), 1-rubiadin methyl ether (2), noranajdidol (3), 1-soranajdidol methyl ether (4) and 5-5'-bisoranajdidol (5) isolated from Heterophyllacea pustulata are type I and/or II photosensitizers. Previously, we have demonstrated that (1), (2), (3) have photodynamic activity (PA) on human cancer cells. In this work, we evaluated the uptake of AQS into cancerous cells and its subcellular localization. Indeed, the PA of (4) and (5) was assessed. To determine the incorporation and localization of (1), (2) and (3) the cells were incubated with each AQS. For uptake, the analysis of AQS in each fraction (extracellular/ intracellular) was realized by HPLC whereas the intracellular pattern was observed by fluorescence microscopy. To evaluate the PA, cells were loaded with the AQS (4) and (5) and immediately exposed to 1 J/cm². The cellular viability was analyzed by MTT. Controls without AQS were processed under same conditions. The results showed that AQS (1), (2), and (3) were incorporated in the cancer cells and localized mainly in the cytoplasm. The AQS (4)-(5) caused outstanding PA. According to the obtained, these AQS tested might be possible candidates for future studies in photodynamic therapy.
Integrins are membrane glycoproteins composed of α and β subunits necessary for adhesion between trophoectoderm and maternal uterine epithelium. The aim of the present study was to determine the presence of α3, β3, β1 and αvβ3 in placental tissue in sows at different early gestational periods and understand the success implantation and adhesion have in this species. Porcine placentae of 5, 15, 17 and 37 days of gestation and empty uteri are used. The presence of α3, β3 and β1 subunits and αvβ3 are determined by indirect and direct immunohistochemistry respectively. At day 5 the uterine epithelium showed the presence of all integrins with different grades of positivity. Integrins are not detected in maternal villi and uterine glands until 37 days of pregnancy. The maternal connective tissue exhibited high expression during the study. In conclusion, integrins would be involved in the molecular structure of implantation since they appear both in maternal and fetal villi at 37 days of pregnancy.

Introduction: dietary unsaturated fatty acids (UFA) may modulate cancer development and ECS. Aim: to analyze the effects of UFAs 20:5n3 (EPA), 20:4n6 (AA), 18:1 (OA) and saturated 16:0 (PA) on MCF7, T24 and T98G cancer lines proliferation and ECS receptors. Methodology: the cells lines MCF7 (breast cancer), T24 (urinary bladder carcinoma) and T98G (neuroblastoma) were cultured and supplemented with each FA essayed. Cell proliferation was evaluated by MTT method, CB receptors by ELISA and FA cell profiles in membranes by GLC. Data obtained were statistically analyzed. Results: MTT: AA and EPA suppress cell proliferation in T98G and MCF7 respectively; whereas PA and OA stimulate cell growth. ELISA: slight increases on the immunodetection of CB1 receptors in MCF7 and T98 were observed. GLC: we observed a fair reasonable correspondence between exogenous UFAs and the enrichment of FA in membranes composition. Discussion: this results show a differential modulation by FA supplementation on cell proliferation, CB receptors expression and membrane FA profiles in different cell cancer lines. The effects of FA have been associated with ERK kinase activation (Soto-Guzman et al., 2008) and eicosanoids and endocannabinoids metabolism, metabolites FA derived, capable of modify growth in cancer cells (Repossi et al., 2009; Pasqualini et al., 2008).

The present study examines the effect of maternal exposure to Triclosan on thyroid homeostasis and the development of the reproductive tract in female Wistar rat offspring. Female rats were exposed daily to Triclosan (0, 1, 10, or 50 mg/kg/day) from 8 days before mating to day 21 of lactation. Some offspring also were exposed directly after weaning. Maternal and reproductive outcome data were assessed. An uterotrophic assay was performed to screen in vivo estrogenic activity of Triclosan. Vaginal opening (VO), first estrus, and uterus and ovary weight were analyzed in female offspring. Blood samples were collected from the tail vein every 5 days during pregnancy and lactation of treated or control rats to determine the effect of Triclosan on the pattern of thyroid hormone secretion. Triclosan caused no external clinical signs of toxicity in mothers. Mean number of corpora lutea and implantation sites did not differ in treated groups compared to their respective controls. Female pup body weight significantly decreased in all treated groups on PND20. Fetal viability significantly decreased at doses of 100 mg/kg/day and sex ratio decreased at all doses. Exposure to Triclosan caused VO delay and uterotropic assay indicated the absence of estrogenic activity. Triclosan significantly decreased total serum T3 in a dose-dependent manner. The results show that Triclosan promotes hypothyroidism and reproductive toxicity in adult rats and produces fetal toxicity in offspring exposed in uterus, lactation, and after weaning. The NOEL for reproductive and teratogenic effects was less than 1 mg/kg/day.
85. DEVELOPMENT OF A IMMUNOLOGIC PARANEOPLASTIC SYNDROME IN A LUNG ADENOCARCINOMA MODULATED BY DIETARY LIPIDS
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Tumour and immune parameters were analyzed by linear regression in mice with lung cancer under diets with corn, fish or olein oils. Although diet affected the T lympho-proliferation (TLP) and survival, the found paraneoplastic syndrome (anaemia, neutrophilia, splenomegaly, thymus atrophy and cachexia) behave independent of the diet. The tumour diameter (TD) was indirect to spleen weight (SW), and to basal and ConA-stimulated TLP, whereas tumour weight (TW) was direct. TLP was positively associated with the SW/body weight (BW) ratio and negatively with the thymus/body weight ratio. Spleen and thymus weights were indirectly associated. BW decreased with disease progression, being splenomegaly a negative factor and thymus weight a positive one. Thus, TD was a better prognostic marker than the TW (may relate to histological differences), being linked to reduced survival and T response. The thymus associated with decreasing TD was a marker of the general status. Summing up, the lung cancer had a strong immunomodulating activity, of which parameters mutually interacted, giving identity to a paraneoplastic syndrome, where the thymus-dependent immunity may play a critical role.

86. "EL MORRO" HILL FLORULA: THE ASTERACEAE FAMILY SPECIES (SAN LUIS, ARGENTINA)
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El Morro Hill, as well as Los Morrillos and Yulto hills are situated at the NE of the province of San Luis. The climate is moderate, continental; rainfall varies from 500 to 600 mm annually. The soils are erodible litosols with low fertility and water retention. The physiognomic types of vegetation are: Forests, Forestry and Range foothills, mountain forests, grassland and shrublands called "romerillales", growing over non developed, drained soils, exposed to winds between 1100 - 1250 m. above sea level. Where dominant species are Heterothalamus alienus "romerillo" and Eupatorium buntifolium "romerito". The introduced invasive weed, Heterotheca latifolia, occurs in cultivated areas. In order to contribute to the development of the Sierra del Morro Florula, the species of the family Asteraceae in different physiognomic types were surveyed. They were identified and incorporated to the Ciencias Agropecuarias, UNSL, (VMA) Herbarium. At present, 43 entities were reported, grouped in 29 Genera: Baccharis, Thelesperma, Porophyllum, Vernonnia, Senecto, Heterothalamus, Eupatorium, Stevia, Chaptalia, Hysteroniconia, Bidens, Tagetes, Flaveria, Gaillardia, Viguiera, Trichocline, Zinnia, Schkuhria, Heterotece, Noticastrum, Ophryosporus, Charquiraga, Conyza, Gamochaeta, Taraxacum, Picris, Perezia, Hyalis, Gnaphalium. The most common is the Baccharis genus with 10 species.

87. ANTIGENIC CHARACTERIZATION OF STRAIN RC-98 OF BOVINE RESPIRATORY SYNCYTIAL VIRUS BY DOT BLOT
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Bovine respiratory syncytial virus is a pneumovirus involved in bovine respiratory disease complex. Antigenic studies done by means of monoclonal antibodies (Mabs) based on viral glycoprotein G (Gp G) have determined existence of four antigenic subgroups. Two major A and B, one intermediate AB and the group of strains not classifiable. The aim of this study was antigenic characterization of the strain RC 98 with Mabs by dot blot technique. The viral antigens were obtained from strain RC-98 and applied by drops on polivilidenefluoride membranes. Once dry, the membrane was blocked and incubated with each of the Mabs 48, 52, 54, 56, 59, 60, 67 and 70 (diluted 1:500) overnight at 4 °C in constant shake. The antigen-antibody complexes were detected by indirect immunoperoxidase technique using commercial kits (Vectastain ABC and DAB Kit), according to the manufacturer's instructions. Seven Mabs (numbers 48 to 67) reacted to strain RC-98 Gp G antigens in dot blot, although Mab 70 did not. These results permit to characterize the strain RC98 within antigenic subgroup A. This will allow the design of future prevention and more effective control schemes, because neutralizing antibodies produced against the G glycoprotein of subgroup A are not effective in fighting the infection of subgroup B.
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