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A1

FLOW CYTOMETRIC ANALYSIS OF CIRCULATING HEMOCYTES IN THE APPLE SNAIL *Pomacea canaliculata*

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Morphological studies on gastropod hemocytes have revealed different cell types usually distinguished by their nuclear shape and location, nuclear/cytoplasmic ratio, emission of cytoplasmic extensions, and by the properties of cytoplasmic granules. Three different cell types can be distinguished in the freshwater snail *Pomacea canaliculata*: hyalinocytes, agranulocytes and granulocytes. Here we report flow cytometric analysis of circulating hemocytes in *P. canaliculata.* Cells from freshly withdrawn hemolymph were cytometrically sorted, Bouin-fixed and stained with hematoxylin and eosin to reveal the different cell types. The three different cell populations mentioned above could be separated and microscopically confirmed. Also, small and large acidic granules were shown in different cells using the acidotropic probe LysoTracker Red on freshly withdrawn hemolymph. These granules may correspond to L and R granules previously observed under electron microscopy in hyalinocytes and granulocytes, respectively. Fusion of R granules was promoted by surface contact activation and by bacterial exposure, perhaps preceding a kind of compound exocytosis.

A2

JASMONIC ACID IN MICORRHIZAL *Digitaria eriantha var. sudafricana* PLANTS UNDER ABIOTIC STRESS.

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Jasmonic acid (JA) regulates the responses of plants to abiotic stress, injury and water deficit. In this study the aims was quantify content of JA, OPDA (12-oxophytodienoico acid), 11-OH-JA and 12-OH-JA in mycorrhizal (AM) and non mycorrhizal (non AM) plants under a biotic stress. Seedling of *D. eriantha* cv. sudafricana inoculated whit *Glomus intrarradices* and non AM plants were subjected to different conditions: 1) 23°C and soil at field capacity (no stress), 2) 23ºC and 6 % water for one week (dry), 3) 4°C for 72h (cold) and, 4) irrigated with 200mM NaCl for two weeks (salinity). Identification and quantification of JA performed by gas chromatography-mass spectrometry- selected ion monitoring (GC-MS-SIM). No stress AM plants showed significantly higher values only for OPDA (2247 pmol/g) and JA (2631 pmol/g) compared to plants non AM. In the drought and salinity treatments, the values of OPDA, JA, 11 and 12-OH-JA increased significantly up to 35% in AM plants. Under cold stress OPDA and 12-OH-JA showed significantly higher values in AM plants while concentrations of JA and 11-OH-JA didn´t showed significant differences among AM and non AM plants. Arbuscular mycorrhizal by *G. intrarradices* promotes increased JA, OPDA and derivatives in *D. eriantha* under no stress, drought and salinity conditions. Cold affects differential ways JA components studied.

A3

MORPHOGENESIS AT TILLERS LEVEL IN POPULATIONS OF *Trichloris crinita*

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Trichloris crinita is a summer perennial species present in the natural grassland of arid and semi-arid regions of Argentina. The study was carried on a parcel located in the experimental field of Agronomy of UNSL (San Luis). In spring and summer were recorded and evaluated morphogenetic and structural variables in tillers at three populations: San Luis, Catamarca and Mendoza. In spring was made a clean cut (CL: 15/10/12) and identified 25 tillers. In summer, there were marked 14 tillers after a defoliation performed when most of these reached the first leaf senescence. In each tiller were measured every 7 days to determine the following morphogenetic variables: leaf appearance rate (TAH), mean leaf lifespan (VMF) and elongation rate (TEF); and structural variables: number of green leaves (NHV), first choice foliar leaf length (LF1H), distal length of tiller (LD) and number of tillers children. For each growing season, we applied a multivariate analysis (Ward), considering the variables of the 3 populations. In both seasons were discriminated two clusters, one corresponded to the population Catamarca, and another to San Luis and Mendoza. Catamarca showed an increased foliar refill and greater poise, while the remaining populations had a slower foliar refill. Mendoza had a smaller poise than San Luis. The Catamarca population could be adapted to grazing systems with less break time in the study area.

A4

EVALUATION OF MODERATELY ASTHMATIC PATIENTS WITH NO MICROBIAL EXACERBATION UNDER TWO THERAPEUTIC APPROACHES.

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It was evaluated the use of monotherapy with inhaled ciclesonide and a salbutamol PRN, compared with routine treatment consisting of a long beta-agonist (LABA) as salmeterol more fluticasone propionate. The aim of present work were measure the inflammatory process by spirometry, impulse oscillometry and sputum cellularity, discard bacterial colonization and oropharyngeal colonization with fungi, and evaluate quality of life using a standard questionnaire. We selected 66 subjects with moderate asthma and identified: Group I (32 subjects) salmeterol-fluticasone and Group II (34 subjects) and ciclesonide. The FEV1 showed significant improvement of patients after one year, corroborated this by decreasing of the total resistance of the airway R25 for both groups. The bacterial isolates were not associated with increased asthma exacerbations process. Colonization by fungi like *Candida* was 44.6% and 52.2%. The eosinophils in sputum were significantly decreased in all treated patients between the beginning and end of treatment. ACQ inquest showed satisfactory control of asthma and suggests the usefulness of indirect evaluation of the inflammatory process of the airways to compare two pharmacological treatments for asthmatic patients.

A5

EFFECT OF ANTAGONIST OF ANGIOTENSIN II TYPE 2 RECEPTORS ON APOPTOTIC PROCESS IN RAT KIDNEY DEVELOPMENT

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Angiotensin II (Ang II) plays an important role in the complex process of renal organogenesis. Previously, we demonstrated that AT_2receptor antagonist PD123319-treated animals exhibited renal alteration at early postnatal stage. A pro-apoptotic role has been attributed to AT_2 receptors during kidney morphogenesis. In addition, Bcl-2 (antiapoptotic) and Bax (apoptotic) proteins were involved in apoptosis regulation, as well as in cell adhesion and migration. In this study we examined the effect of antagonist of Ang II type 2 receptors on apoptotic process in kidney development. We studied two groups of pups at postnatal days 0, 8 and 15 (P0, P8, P15), from mothers untreated and treated with (PD123319, 1 mg/kg/day) during late pregnancy. Gene expressions of Bcl2 and Bax were determined by RT-PCR and apoptotic cells were identified by TUNEL assays. In PD123319-treated animals, a lower Bax and Bcl2 mRNA levels was observed at P8 and P15 compared with control rats. The apoptotic process showed a gradual expansion from the juxtamedullary cortex to medulla in both groups, but in treated animals, this event was spatially and temporally delayed. TUNEL-positive staining cells no were detected either glomeruli or developing structures. Our results suggest that Ang II AT_2 receptors could module the apoptosis required for the proper maturation of the kidney.

A6

MICROGRAPHIC PARAMETERS IN THE CHARACTERIZATION OF *Lippia integrifolia* (LAMIACEAE, "INCAYUYO")

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Lippia integrifolia (Griseb.) Hieron. is an aromatic shrub up to 1m high. Inhabits the northern and central Argentina, especially in the regions surrounding the Andean mountains of Catamarca, La Rioja, Salta, and northern San Juan, where it grows on stony ground, in dry lands, but it is uncommon in northern San Luis. It is known as "incayuyo", "Inca´s tea", "pulco" and "poleo". In traditional folk medicine its leaves are used as a digestive, against gastric pain, emmenagogue and stomachic (especially in cases of slow digestion) and for treatment of bronchopulmonary diseases. The aim of this study was to carry out the botanical characterization by means of qualitative and quantitative micrographic studies. The aerial parts were collected and preserved in FAA (formalin:acetic acid:alcohol), and then diaphanized for measuring the micrographics parameters. The species can be distinguished by exomorphological characters, as well as anatomical and quantitative micrographic features. The leaves are amphistomatic, with anomocytic stomata. Micrographic characters are as follows: stomata number (upper epidermis) 5±1; stomata number (lower epidermis) 9±1; stomatal index (upper epidermis) 6.7 (6.3) 5.9; stomatal index (lower epidermis) 8.7 (8.6) 8.5; palisade ratio 10.5±0,9; vein islets number 20±1.6; veinlet termination number 13.3±1.5. This study contributes to the quality control of the drug, mainly when it is finely crushed or powdered.

A7

FATTY ACID PROFILE AND DESATURASE ACTIVITY IN RESPONSE TO DIFFERENT PERIODS OF STRESS

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Changes in the plasma lipids profile and desaturase activity are associated with metabolic abnormalities that increase cardiovascular risk. We evaluate desaturase activity, plasma fatty acid and lipid profile in rats subjected to different periods of chronic stress. Two groups of male Wistar rats were used: controls (C) and stressed (S) for immobilization (IMO), 180 days, 2 h/day, three times a week. On days 1, 7 and 180 after IMO, blood was withdrawn and plasma fatty acids (FA), desaturase activity (DA), corticosterone (CORT), glycemia (GLY), total cholesterol (TC) triacylglycerols (TAG), HDL-cholesterol (C-HDL), LDL-cholesterol (C-LDL), ApoB and Lp(a) were determined. Acute stress did not modify the FA profile. On the 7th IMO day increases in myristic (83%), palmitoleic (PA; 77%) and arachidonic acids (47%) were observed. At 180 days increases in oleic (65%) and palmitoleic (294%) acids and decreases in arachidonic (AA,31%), linoleic (37%) and linolenic acids (31% were noted. IMO increased Δ9 DA on days 7 and 180 and decreased Δ6 DA on day 180. There was a gradual increase in TC (18 to 56%),C-HDL (11 to 39%), C-LDL (9 to 58%), TAG (64 to 91%), ApoB (27 to 62%) and Lp(a) (20 to 65%). Stress modifies desaturases activity. Increments in Δ9 activity are associated with high PA levels and hypertriglyceridemia. This enzyme could constitute a target in the prevention of metabolic disorders and cardiovascular disease.

A8

OLIVE OIL IMPACT ON CHOLESTEROL METABOLISM IN HYPERCHOLESTEROL-EMIC RABBITS

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Olive oil (OO), the principal fat of Mediterranean Diet, is known to benefit hypercholesterolemia (HC), a risk factor for cardiovascular disease. We have previously found that HC rabbits have poor semen/sperm quality, and OO supplementation improved semen parameters affected by high fat diet. Our interest resides in studying the intracellular pathway of cholesterol (chol) metabolism in rabbit testis under different experimental diets (control; 0.05% chol and protected by 7% OO). We found that saturated or unsaturated lipid intake affects differently the intracellular pathway of chol metabolism. Specifically, a transcription factor, SREBP, changed its expression (RNAm and protein) depending on the type of fat consumed, showing a putative molecular mechanism for OO protection. Our data demonstrate that OO improves semen quality in our rabbit model of HC, and suggests that the mechanisms accounting for this protective effect likely involves complex alterations in cellular metabolism beyond simply a reduction in chol.

A9

THE SUPERIOR OVARIAN NERVE IS INVOLVED IN THE REGULATION OF HORMONES FROM OVIDUCT OF RATS WITH POLYCYSTIC OVARY

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There are only a few studies related to the oviduct function through the superior ovarian nerve (SON) in the polycystic ovary (PCO) condition. In this work we studied whether the superior ovarian nerve section (SON-s) affects in the PCO rat oviduct: 1) the release of progesterone (P), estradiol (E2) and nitrites; and 2) the expression of androgen (AR) and estrogen (ER) receptors. The relationship with the nerve growth factor (NGF) and trkA receptor mRNA levels were also analyzed. The PCO condition was induced in adult virgin rats by an injection of estradiol valerate (2 mg/rat). Rats were sacrificed after 2 months. SON-s was performed 7 days prior to sacrifice. The SON and SON-s oviducts were incubated with Krebs-Ringer buffer in a metabolic bath, for 3 h, to measure the release of P and E2 (by RIA) and nitrites (by Griess reaction). The gene expressions were measured by RT-PCR. The SON-s induced an increase of E2 ($p<0.05$), and a decrease of P and nitrites release ($p<0.01$) from the oviducts. Also SON-s normalized the mRNA expressions of NGF/trkA and AR, which were increased and decreased, respectively, in the oviduct of PCO rat compared with non-PCO rat. Although the SON participates in the hyperinnervation of reproductive tissues of the PCO rats, our results suggest that SON would contribute to maintain the hormonal environment necessary for fertilization.

A10

ANATOMICAL ADAPTATIONS TO SUN-SHINE/SHADE IN VERBENACEAE OF SAN LUIS (ARGENTINA) EVIDENCED BY QUANTITATIVE MICROGRAPHIC ANALYSIS

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Plants exhibit a remarkable ability to adapt to the varying conditions from optimal environments to hostile or threatening. Thus, fail to maximize their reproductive performance and development capacity in often unfavorable environmental conditions. To cope with the stress imposed by both biotic and abiotic factors of the environment in which they live, plants show changes in form, function and development, resulting in a decrease in mortality and an increase in reproductive performance individually and population in these conditions. The aim of this study was to measure and compairing micrographs parameters belonging to representative samples of three species of Verbenaceae of San Luis: *Lantana megapotamica* (Spreng.) Tronc., *Aloysia gratissima* (Gillies & Hook. ex Hook.) Tronc. and *Lippia alba* (Mill.) N.E.Br ex Britton & P.Wilson from different biotopes in hilly areas, particularly shady and sunny slopes. This material was preserved in FAA, diaphanized and stained with safranin 1%. Were measured: stomata number (SN), number of epidermal cells (EC), stomatal index (SI), palisade ratio (PR); vein islets number (VI) and veinlets termination number (VTN). All species show hypostomatic leaves. Shade samples had higher SN and SI, PR, VI and VTN, while solana samples showed more EC. The results show changes that are directly related to levels of sunlight and/or moisture/dryness of the atmosphere and even soil.

A11

NOVEL NATURAL COMPOUNDS OBTAINED FROM NATIVE PLANTS INHIBIT THE *IN VITRO* GROWTH OF *Trypanosoma cruzi*

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Trypanosoma cruzi is a monoflagellate parasite that causes the Chagas disease. At present, Chagas disease is treated with nitroheterocyclic derivatives such as benznidazole (BZN) and nifurtimox although their use require long treatment courses, and they are not effective in the late-stage disease, and present many side effects. Then, it is important to test synthetic drugs and natural compounds presenting anti-trypanocidal activity, in connection with specific biological features of the parasite that could be used as specific targets for their pharmacological control. In this study, we tested several novel natural compounds, obtained from native plants, on the *in-vitro* growth of *T. cruzi* (strain Dm28c). Among the tested compounds six derivatives of grindelic acid strongly inhibit the growth of *T. cruzi* from concentrations of 5 μg/ml and seem to be more active than BZN.48 hours after incubation with our compounds the most low 50% inhibitory concentration against epimastigotes was 0.15 μg/ml. However, most of parasites remain viable (eosin exclusion test), indicating a cytostatic effect under these experimental conditions. It remains to determine whether these compounds are cytotoxic on mammalian cells, and to identify molecular targets on parasites. We conclude that screening of novel natural compounds remains valid for the search of molecules against Chagas disease.

A12

DIHYDROXYLATED AND DERIVATIZED CHALCONE ANTIBACTERIAL ACTION AND SYNERGISM AGAINST *Pseudomonas aeruginosa* ATCC 27853.

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P. aeruginosa is a Gram negative, non-fermenting bacterium, which behaves basically as an opportunistic nosocomial pathogen. The purpose of this study was to investigate the effects of dihydroxylated chalcones of known antibacterial action, chalcones derivatized and their binary and ternary combinations against *P. aeruginosa* ATCC 27853, in order to contribute to the guidance of an appropriate antibiotic therapy. Microorganism growth curves were obtained using a kinetic-turbidimetric method, in culture media added with varying amounts of chalcone alone or in the presence of its binary or ternary combinations. The minimum inhibitory concentrations (MIC) were evaluated, being the binary combination 2',4-disilylchalcone-gentamicin (MIC= 67.5 μg/mL) the most effective and its action improved 1.3 times when rutin (quercetin glycoside) was present (MIC= 52.3 μg/mL). Rutin facilitates the entry of the active compounds into the microorganism. By comparing the effect of 2',4-$(OH)_2$-chalcone in respect to 2',4-disilylchalcone, it follows that the derivatization of the dihydroxylated chalcone doubles its activity, probably due to the presence of bulkier nonpolar substituents facilitates entry through porins. These results suggest that chalcone derivatives have wide scope for the development of new antimicrobial agents. Further experiments and derivatization processes are necessary to obtain more effective compounds against this microorganism.

A13
VIABILITY AND GERMINATION IN ACCELERATED AGING CONDITIONS OF *Jatropha curcas* SEEDS

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J. curcas can be grown in marginal areas and their seeds contain oils for biodiesel production This study intends to explore the viability (V) and germination percentage (PG) of *J. curcas* seeds using the Accelerated Aging by Test Tetrazolium. In bottles with distilled water, seeds were placed in mesh bags without touching the water, in an oven at 40-45 ° C for 0, 24, 48, 72, 96 and 120 h. Seeds were removed and staining with tetrazolium salts;were evaluated V and PG in each time. At time T0 there was 86.6% viability and 86.6% PG, no significant differences were found respective to times T24, T48 and T72. At T96 there was a significant decrease of V (50%) and PG (16% a 40%). Seed viability was lost at T120 while PG becomes zero. *J. curcas* seeds are sensitive to accelerated aging after forced respiration resulting in reduced viability and germination. It is concluded that long term storage of *J. curcas* seeds is difficult.

A14
STEM ANATOMY OF *Jatropha curcas* AND *J. macrocarpa* (Euphorbiaceae).

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The objective was to analyze the anatomical structure of the stem of *J. curcas* and *J.macrocarpa,* species of importance in the production of oils for biodiesel yield. Samples were taken from the first two internodes and hypocotyl. Were fixed, dehydrated and included in Histowax. We used triple stain Hematoxylin, Safranin and Fast Green. The preparations were photographed on a Zeiss Axiophot microscope with scanning equipment and image capture. The first stem internode *of J. macrocarpa* has a cortex more thick with periderm cells of thickened walls than *J. curcas,* as in the second internode although the differences were less pronounced. In both species, the cortex has laticifers while the medulla has starch. In *J. macrocarpa* the peridermis of the hypocotyl has higher cell and thickened walls, while in *J. curcas* lenticels are more frequent. The observed differences in the stem anatomy could affect the tolerance to adverse environments and production of oils of both species.

A15
EFFECT OF S-METOLACHLOR AND ACETOCHLOR ON SURVIVAL AND DEVELOPMENT OF *Digitaria eriantha* IN FIELD CONDITIONS

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Digitaria eriantha is a Poaceae C4 species with excellent perennial forage value. It was introduced and domesticated from South African grasslands with excellent adaptation and production in Temperate Semiarid Central Region from Argentina. It is currently in full spreading but it has serious implantation problems in the presence of unfavorable weeds, like *Cenchrus pauciflorus* (Roseta) or *Digitaria sanguinalis* (Pata de gallina). Other related species like sorghum or maize, this problem is solved by applying a grass herbicide to the soil previous treatment of seeds with Fluxofenim® (Syngenta™), a safener antidote (S) to avoid phytotoxicity caused by the herbicides. The aim of this study was to evaluate the survival and development of *Digitaria eriantha* with and without safener in field conditions, and posible phytotoxicity of (S) on seeds of *Digitaria eriantha* in presence of the herbicides S-Metolachlor (S-M) and Acetochlor (A). The trial was conducted with a Split -Split experimental design plot with two planting dates (November and February), with and without irrigation, and a negative control with and without (S) and commercial doses of herbicides applied in pre-emergence . The results show that (S-M) survival with (S) was 20± 5%. We conclude that (S) produces a 50 ± 11% phytotoxicity and (S-M) produces a smaller effect ($p \leq 0.1$) than (A) compared with controls, on *Digitaria eriantha* growth and development.

A16
REDUCTION OF ETHANOL VOLUNTARY CONSUMPTION IN RATS BY EXTRACT OF *Jodina rhombifoli*: AN ORAL ACUTE TOXICITY STUDY

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Ethanol is the most common drug of abuse in Argentina as well as in other industrial countries. Drugs reducing voluntary ethanol consumption would be of prophylactic value. In the present work was investigated the effect of leaves extract from *Jodina rhombifolia* (Hook. & Arn.) Reissek, commonly known "peje" and "sombra de toro" (Santalaceae), on ethanol drinking behavior in male Wistar rats (200-250 g) and the acute toxicity in mice. The extract (0, 125, 250 and 500 mg/Kg; *p.o.*) was administrated twice daily. Ethanol intake occurred under the two bottle free-choice regimen between 20% (v/v) ethanol and water, 24 h/day. Rats were alcohol-naive before the start of the experience. Treatment was repeated for 10 consecutive days. Acute toxicity: the doses studied were 5-2000 mg/kg and animals were observed for 14 consecutive days to register mortality or other toxic symptoms. Mean daily alcohol intake in vehicle-treated rats rose to 6.32±0.14 g/kg per day. The repeated administration of extract resulted in a significant ($p<0.001$) reduction in the acquisition of ethanol drinking. In the rat groups treated with 125, 250 and 500 mg/Kg extract, the amount of ethanol consumed daily was 2.62±0.17, 2.38±0.15 and 2.33±0.15 g/Kg respectively. The results of the present study demonstrate that the repeated daily administration of the extract delayed the acquisition of ethanol drinking behavior. None of the animals treated with extract showed any visible symptoms of toxicity at dose as high as 2000 mg/kg.

A17
PRELIMINARY STUDIES ON THE PROPAGATION OF A MEDICINAL NATIVE SPECIES *Achyrocline satureioides* (LAM.) DC, "MARCELA", IN SAN LUIS PROVINCE

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Information to propagate native species whose use is promoted does not exist or not calibrated to intensive crops. *Achyrocline. satureioides* is a very important medicinal species as it is used in popular medicine to treat different illness. There is not information about physiological aspects regarding its biological cycle and sexual propagation, to make a rational management and / or to eventually reach its domestication. The objective of this work was study the dormancy and germination of this native medicinal plant. Seeds were collected in Cruz de Piedra locality (SL). The seeds were placed to germinate according to the standard method in Petri's dishes, in stove at 23±2°C for 21 days, under the following conditions: I) dark and light-dark conditions; II) washed and unwashed seeds. The germination percentage was 56% in light-dark and 1% in the dark, while in previously washed seeds we observed a germination of 87%. The results showed that *A. satureioides* (Lam) DC is a positive photoblastic species and it presents germination inhibiting substances.

A18
USE OF MEDICINAL PLANTS BY MOTHERS IN THE TREATMENT OF CHILDHOOD DISEASES (AGED 0-14) AT SAN LUIS, ARGENTINA

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The use of medicinal plants (MP) in children is at least risky, often causing serious digestive or neurological conditions, and complicating clinical pictures by interaction with some allopathic medicines. In order to determine the prevalence of treatments with PM by mothers of childrens from 0-14 years in the area of influence of two health centers near San Luis city ("El Volcán" y "El Chorrillo"), were developed structured field surveys. Participants were 142 mothers who came to the clinic for care or control of their children (except emergencies), and voluntarily agreed to answer a questionnaire. Most of the mothers (50%) were between 20-29 years old, were native of San Luis (68%) or from neighboring provinces (31%) and has incomplete secondary education (20%). 80% of them have used or use PM to treat conditions of their children, but only 30% was reported at the time of medical consultation. 92% indicated that at least once had consulted a traditional healer or herbalist. We identified 19 medicinal plants associated with the domestic treatment of the condition that caused medical consultation. Mothers in general ignored the risks of indiscriminate use of each species. These results determine the need to integrate MP in the medical interrogation of mothers of pediatric patients, and the importance of the diffusion of appropriate uses and risks of MP in the population at large.

A19
ESTRADIOL IN SUPERIOR MESENTERIC GANGLION MODULATES THE OVARIAN STEROIDOGENESIS THROUGH NITRIC OXIDE

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The superior mesenteric ganglion (SMG) is formed by principal neurons, which have estrogenic receptors. The objectives of this work were to study if estradiol (E_2) in SMG modifies in the ovary: 1) progesterone (P_4), androstenedione (A_2) and E_2 release; 2) 3β-HSD and 20α-HSD (P_4 synthesis and degradation enzymes, respectively) activities; and 3) nitric oxide (NO) release, on diestrous II. The SMG-Ovarian Nervous Plexus (ONP)-Ovary system was incubated with E_2, tamoxifeno (Txf) (non-selective estrogenic receptors antagonist) or Txf plus E_2, added in ganglion compartment. SMG and ovary, connected by the ONP, were placed in different cuvettes containing Krebs Ringer solution, pH 7.4, and incubated in a metabolic bath at 37 °C. P_4, E_2 and A_2 (by RIA), and nitrite (by Griess method), were determined at 15, 30, 60 and 120 min of incubation. ANOVA-1 and Tukey test were used. E_2 in SMG inhibited ovarian P_4 release ($p < 0.05$), in concordance with a decrease in the activity of 3β-HSD and an increase in that of 20 α-HSD, ($p<0.001$), in addition it inhibited the E_2 release and increased the A_2 and NO release ($p<0.001$) in ovary at all times. The effects observed were reversed by the addition of Txf plus E_2, but not by Txf alone, which did not induce changes, compared to control. In this work we demonstrated the importance of the activation of estrogenic receptors of SMG neurons in the steroidogenesis and NO release in ovary. Its possible relevance in ovarian pathologies must be considered.

A20
SORGHUM MICROSILAGES UNDER THERMAL STRESS.

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Whole sorghum plants microsilages were developed. The plants were exposed to temperatures below the critical lethal to evaluate the silage quality by organoleptic characteristics, temperature, pH and dry matter (DM) and chop size. Plants were cut with a 36% of DM in hard doughy grain and submitted to three thermal treatments. Control: plants retained in a cool place until copping time. Cold: plants placed in a fridge during 9.5 hs (10.8º to 1.6º C). Frozen: fraction placed in a freezer to simulate an early frost, thus, submitting the plants to 4.5 h cold exposure (>0° C), 1.5º h to 0º C and 3.5º h below zero (0º to -5º C). Later, the material was chopped with a precise chopping static machine and was placed into PVC pipes (11*4.5 cm), achieving compaction of 500 kgm^{-3}. They were hermetically capped to ensure the fermentation process and opened after 138 days. The size of the particles was measured by Penn State system. The multivariate analysis allowed discriminating two clusters with similar characteristics. One cluster corresponding to Control material and the other conformed by the Cold and Frozen materials. In all treatments, the organoleptic characteristics, temperature, pH and DM coincided with a correct fermentative process. Nevertheless, the largest tenor of particles bigger than 19 mm recorded in the Cold and Frozen could affect compaction.

A21

ASSESMENT OF MINERAL CONTENTS IN AERIAL PARTS OF *Schizachyrium microstachyum* (Poaceae)

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This work describes the determination and evaluation of the mineral composition (Ca, Mg, Fe, Mn and Zn) of aerial parts of *Schizachyrium microstachyum* grown in two soil series within the Corrientes province, Argentina. This species is part of natural grassland used for extensively livestock production. The sampling process was performed during the summer and winter. Organic matter was eliminated by using dry-ashing digestion. Analyses were performed by inductively coupled plasma optical emission spectrometry (ICP-OES). Principal component analysis (PCA) and hierarchical cluster analysis (HCA) revealed different mineral compositions of the samples collected from the different kind of soils. Samples collected in the Chavarria's series showed higher concentrations of micronutrients (Fe, Mn and Zn) and macronutrients (Ca and Mg). The average contents of samples collected from Chavarria and Pampin series were: calcium 750 and 735 µg g^{-1}; magnesium 217 and 186 µg g^{-1}; iron 38.1 and 44.3 µg g^{-1}; zinc 13.3 and 12.9 µg g^{-1}; and manganese 110.8 and 84.0 µg g^{-1}, respectively. Mean forage mineral concentrations were compared with beef cattle requirements using a two-tailed t test. Forages from native pastures may meet most but not all mineral requirements of beef cattle, and supplementation of specific minerals, particularly Mg and Fe, may be necessary.

A22

CHOLESTEROL-LOWERING AND ANTI-OXIDANT EFFECTS OF *Plantago major* IN RABBITS

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The purpose of this study was to demonstrate the hypocholesterolemic and antioxidant effect of a 2% plantain infusion in rabbits treated with a lipid diet. White New Zealander male rabbits were used and randomized into 3 experimental groups. Lot 1 Control: balanced food (AB). Lot 2. Hypercholesterolemic (HC): AB supplemented with lipids. Lot 3. Experimental (HC + 2% plantain infusion in drinking water for 3 months). At the beginning and end of treatment, blood was extracted from the ear of the animal for biochemical determinations. Baseline values: Lot 1: Col (Total cholesterol, mg/dL): 78 ± 1.54, Trig .(Triacylglycerides, mg/dL) 55 ± 1.06, HDL(mg/dL) : 18 ± 1.45. Lot 2: Col. 136 ± 2.01, Trig: 73 ± 1.65, HDL. 10 ± 0.85. Lot 3: Col. 127 ± 1.94 ,Trig. 68 ± 0,58, HDL: 14 ± 1.73. Post treatment (90 days): Lot 1: Col: 74 ± 0,94, Trig: 57 ± 1.62, HDL: 19 ± 0.88. Lot 2: Col: 128 ± 1.33, Trig: 68 ± 0,95, ; HDL: 9 ± 0,19. Lot 3: Col: 54 ± 1,31, Trig: 61 ± 1,06, HDL: 16 ± 0.38. Malondialdehyde, total antioxidant activity and gutathione peroxidase were determined as oxidative stress parameters. In this study, rabbits fed with a lipid diet that drank the 2% plant infusion showed a significant decrease in cholesterol levels and a protective effect on lipid peroxidation.

A23

EVALUATION OF THE WATER HOLDING CAPACITY IN HYDROLYSATES OF GOAT CHEESE, FOR NEURAL NETWORKS

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The content and / or physical state of the water influences both the textural and organoleptic properties of food such as microbiological stability and physical chemistry. The hydration properties are related to the interaction of proteins with water and influence various aspects inherent in the formulation, processing and storage of foods. The large number of variables involved in hydrolysis processes requires measuring the functional parameters accurately and with trials economy. The objective of this study was to evaluate the effect of variables pH, temperature, hydrolysis time, amount of buffer added and enzyme: substrate ratio, applying a Statistical Design of Experiments (DOE) and Analysis of Results for of Neural Networks for predict behavior and increase their applications as a food additive.
Was determined water holding capacity (WHC) and the held water (HW) by the method of Piva et al (1981). The analysis of the results by using surface-response graphs we allow to fix the optimum conditions to obtain appropriate values for water holding capacity for different food systems.

A24

STUDY OF THE EMULSIFYING PROPERTIES OF A PROTEIN HYDROLYSATE USING NEURAL NETWORKS

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Proteins are good emulsifying agents, so it is interesting to investigate these properties in protein hydrolysates that can be used as food additives. These additives may contribute or not to prepare emulsions, and it is desirable to modify the conditions of hydrolysis to obtain the appropriate degree at this functional property for a given food system. The objective of this work was to determine the effect of different variables (pH, temperature, hydrolysis time, amount of added buffer, enzyme: substrate ratio) for emulsification properties using neural networks for data analysis. Previously we performed a Design of Experiments, which allows studying all variables at the same time and evaluate the interactions between them. Turbidimetric technique was used (Pearce and Kinsella, 1978 modified by Tang et al, 2005) for Emulsifier Activity Index (EAI) and the Index of Emulsion Stability (IEE). Analysis of the data shows that IAE is favored with the reduction of enzyme: substrate ratio at low pHs. On the other hand IEE is higher only with high values of enzyme: substrate ratio.

A25
EVALUATION OF THE PROTEIN QUALITY OF ADVANCED LINES OF AMARANTHS

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The amaranth grain protein is exceptional for its lysine content, being an optimum nutritional complement for conventional cereals that are deficient in this amino acid. The objective of the present work was to evaluate the nutritional quality of the amaranth protein, estimate based on the chemical score (CS) and the protein digestibility corrected amino acid score (PDCAAS). Whole meal flours of two advanced lines from the region were used: *Amaranthus hypochondriacus* x *Amaranthus cruentus* H17a (AH17a) and *Amaranthus cruentus* G6/17a (AcG6/17a).The amino acids profile was determined according to AOAC and the real digestibility (Dv) was determine *in vivo* in Wistar rats according to FAO. The calculation of the amino acids score (AAS) was performed to obtain the CS, whose value corrected according to Dv gives the protein PDCAAS value. The CS for AH17a was of 38, and for AcG6/17a of 33. The PDCAAS resulted to be 0.31 for AH17a and 0.26 for AcG6/17a. The amaranths are a good source of essential amino acids according to the values recommended by FAO/WHO (2007), except for valine, which appears in both cases as a limiting amino acid. The elevated content of lysine is highlighted: 69 and 65 mg/g of protein, respectively; reaffirming the amaranths complementary value for cereal-based foods.

A26
NUTRIENT AVAILABILITY AND BIOFILM FORMATION BY *Listeria monocytogenes*

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Listeria monocytogenes is a Gram-positive aerobic to facultative anaerobic bacterium that is an important foodborne pathogen which is capable of adhering and forming biofilm on different food-contact surfaces. Biofilm formation is dependent on various factors such as temperature, motility, cell surface hydrophobicity. The aim of this study was to evaluate the effect of nutrient availability on biofilm formation by *L. monocytogenes*. Strain: *L. monocytogenes* CLIP 74902. Culture medium: trypticase soy broth (TSB) supplemented with 10 g/l glucose and enriched medium (EM) (g/l): proteose peptone 30, yeast extract 5, trypticase 5, glucose 2, pH 7.6. The experiments were performed by sixfold, adding 150 µl of each medium in 96 well microplates. Aliquots of 10 µl of overnight culture were added into each well, incubated at 37ºC under aerobic conditions for 24, 48, 72 and 96 h. The negative control wells contained broth only. Biomass (OD_{600nm}) and biofilm formation were monitored in a plate reader. To estimate the biofilm formed, the content of the each plate was washed with sterile PBS. The remaining attached bacteria were fixed with methanol, stained with crystal violet and then, the dye was removed with PBS. The adhered cells were resuspended with 33 % (v/v) glacial acetic acid, and the OD_{550nm} was measured in a plate reader. At 96 h, sessile biomass obtained in TSB was higher compared to EM (OD_{550nm} 1.66 and 0.887), while planktonic biomass in TSB was lower in relation to EM (OD_{600nm} 0.357 and 0.631 respectivelly). These results demonstrate the important control exerted by glucose availability on biofilm formation by *L. monocytogenes*.

A27
POT SIZE MATTERS: EFFECT ON GROWTH OF TRANSGENIC (GMO) Hi II MAIZE (*Zea mays* L.)

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The production of high quality planting material of genetically modified crop plants (GMO) *in vitro* from vegetative parts, has created new opportunities in global trading. For this process to have place is necessary that transgenic plantlets maintained in greenhouses must have regular care and tending on a weekly or daily basis. Nevertheless, it is usual to find protocols in literature where maize plantlets were grown on 5L pots before *in vitro* plantlet regeneration and rustication. This study was conducted to assess the effect of pot size on growth of GMO maize Hi II hybrid, comparing two conditions: (A) protocols reported on literature and (B) protocol developed as the result of this investigation. Plantlets of transgenic Hi II hybrid were cultured on greenhouse conditions, in 5L (A) and 35L (B) pots. The composition of the soil mixture was (A) poor black soil or (B) a mixture (peat moss: vermiculite: humus; 4:4:2). Nitrogen source was applied to treatment (B) at key grow stages. Results show that the treatment (A) gave rise to poor, some unfertile, relatively small plants (150±15cm), compared to treatment (B) that gave rise to vigorous (220±25cm), mature and fertile plants. Soil volume in small pots can have limiting effects on overall plant growth and influence plant responses to experimental treatments.

A28
INFERTILITY IN A MODEL OF DIET-INDUCED OBESITY IN MALE B6 MICE

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Obesity and overweight are known causes of infertility in men, but the mechanism involved remains unknown. The aim of this study was to evaluate the redox profile/ inflammatory/metabolic systemic and testicular morphological abnormalities that could explain the sub-fertility. Mice model included 2 groups: LFD (low fat diet) and HFD (high-fat diet). At 18 weeks HFD group showed an increase in proinflammatory cytokines (TNF-a and IL-6) and oxidative stress markers (carbonyl and TBARS) levels. Basal fasting blood glucose and intraperitoneal glucose tolerance tests showed insulin resistance in HFD group. Epididymal fat weight was greater in HFD, and testicles showed foam cells in the interstitium. The spermato/spermiogenesis showed patchy epithelial disorganization, and abnormal spermatocytes with abnormal acrosome complex-acroplaxoma. These data suggest that the abnormalities found in spermatogenesis may be caused by changes in redox/inflammatory/metabolic status in testis, reflecting the systemic situation associated to inflammation of the adipose tissue.

A29

EFFECT OF CADMIUM EXPOSURE ON LIPIDIC ENZYMES ACTIVITY IN RAT CEREBELLUM: COMPARISON BETWEEN DIFFERENT DIETS

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Cadmium (Cd) is a toxic element and an important environmental contaminant. We studied its effect on the lipid profile and lipidic enzymes of rat cerebellum under different diets. Four lots of female Wistar rats were used: 2 lots received casein (Cas) and 2 lots soybean (Soy) as protein source. Within each group, 1 lot received regular water (control-Co) and the other, 15 ppm of Cd in the drinking water for 60 days. Lipids were extracted and separated by TLC. Total cholesterol (TC), triglycerides (TG) and phospholipids (PL) were determined. Total RNA was isolated with Trizol and cDNA was obtained. Hydroxymethylglutaryl CoA Reductase (HMGCoAR), Acetyl CoA Carboxilase (ACC), Fatty Acid Synthase (FAS), Glycerol 3 phosphate acyltransferase (GPAT) and Diacylglycerol Acyltransferase (DGAT) were determined by PCR. S28 was the control.TC showed an increase in the Cd groups ($p<0.05$) with no differences among the different diets, which was sustained by an increased expression of HMGCoAR in both Cd groups. TG and PL increased in Cas Cd and decreased in Soy Cd ($p<0.05$). ACC and DGAT did not show differences while GPAT and FAS decreased in the Cd groups. This shows that the lipidic enzymes are altered by Cd and that Soy does not confer protection against Cd.

A30

UNIVERSITY STUDENTS AND ADDICTIVE DRUGS

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This work is part of the project "Use of psychotropic drugs in Mendoza", granted by SeCTyP – UNCuyo. It shows comparative results on self-medication (SM) and addictive drug use by students of 7 UNCuyo Schools in 2010 (n = 1108) and in 1998 (n = 310). A questionnaire with 7 questions on addictive drugs and one question about medical drug consumption with 46 options was designed and validated. A Chi-square test was used for comparisons. It was found that SM in 2010 was 79.33% (1.4 times higher than in 1998). Only 13.45% of students had the same knowledge about medication. The prevalence of tobacco use (around 28%) and LSD, anabolic steroids, amphetamines, hashishand fungi (3%) was relatively similar in both years, but alcohol, marijuana, tranquilizers and cocaine use increased about 4 times in the period. Most students (82.8 %) reported alcohol consumption (always + sometimes); about 79%, 1-5 glasses weekly. Marijuana ranked next, with 10% prevalence, tranquilizers with about 6% and cocaine with just over 1%. Arts and Political Science showed the highest prevalence of consumption and Law and Engineering the lowest. Alcohol and tobacco were not considered addictive by most students. Most respondents (96.6 %) deemed necessary corrective and preventive education. The results point to the need to develop specific programs for each School.

A31

MOLECULAR DETECTION OF RESISTANCE TO FLUOROQUINOLONES AND CLARITHROMYCIN IN *Helicobacter pylori* STRAINS.

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The discovery of *Helicobacter pylori* infection and its role in different diseases from chronic gastritis to gastric cancer has radically changed the management of patients with this condition. However, antibiotic resistance is the main factor affecting the efficacy of the current eradicating therapies. The aim of this work is detect resistance to fluoroquinolones (FLQ) and/or clarithromycin (CLA) in *H. pylori* strains by a molecular genetic assay based on the DNA.STRIP technology. DNA from twelve *H. pylori* strains was extracted and a multiplex PCR with biotinylated primers and a reverse hybridization using Genotype Helico DR (Hain Lifescience) was performed. The results showed that 20% of *H. pylori* strains from Spanish patients and 33% of *H. pylori* strains from Argentina were CLA resistant. The reference strains NCTC 146128 were FLQ and CLA resistant. Only one Argentinian patient harbored a heterogeneous CLA susceptible and resistant strain. The banding pattern obtained with the gyrA probes (codons 87 and 91) confirms one FLQ resistant strain which was previously detected as resistant by sequencing. The prevalence of strains resistant to CLA in our region is high compared to other regions of world. The method allowed the molecular genetic identification of *H. pylori* and its resistance to FLQ and/or CLA simultaneously using a template that ensures the easy and fast interpretation of the banding pattern obtained.

A32

EFFECT OF THE NUMBER AND LOCATION OF WATERING POINT ON ANIMAL ACTIVITY ON *Digitaria eriantha* PASTURE.

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Daily distance traveled by grazing cattle is an indicator of animal activity according water and forage availability. 4187 geopositions from four cattle that alternately grazed 1, 2 or 3 watering point (WP) paddocks of *Digitaria eriantha* pastures were collected. All paddocks were similars, 400-450 ha and daily distance traveled of each animal was assessed from 15-09-2011 to 15-10-2011. After check the normality of data set and verify that there were not differences between animals, analysis of variance (ANOVA) and mean difference LSD-test were performed. Significant statistical differences ($p <0.05$) were found on daily distance traveled according number of WP, daily animal access to drinking and number of visited WP. On 1-WP paddocks the daily traveled distance is lower compared to 2-WP situations, since the animal the animal does not walk away from the WP. On 3-WP daily distance was not different from the others, probably by proximity and high number of WP in reduced area. No differences on daily distance traveled were found when 2 WP were located diagonally oposite or on the same fence. 24% of days animals did not drink water and walk a lower daily distance (4200 m vs. 6000 m, ± 230 m.) since not come from WP. We can infer that 2 WP on 450 has paddocks forced pasture exploration, while a third WP on this area has no effect on animal activity.

A33

EFFECT OF FEEDING ON THE SELECTED BODY TEMPERATURE IN *LIOLAEMUS DARWINII*

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The behavior of selecting elevated body temperatures after physiological functions like feeding is frequently observed in Squamata order. However, this pattern has yet no precedent for the genus *Liolaemus.* The aim of this study is to compare the selected body temperature (*Tsel)* in two different conditions: feeding/fasting in the lizard *L. darwinii,* using a terrarium with individual lanes and a linear thermal gradient (25-55°C). In March 2013, 20 specimens were captured and divided in two groups, to receive two simultaneous treatments (fasting/feeding) for 4 days. We recorded the *Tsel* every 30 minutes, for 12 hours (8:00-20:00). No significant changes were detected in *Tsel* during the activity for both groups (ANCOVAs: "fasting": F=0.75, *p*=0.8; "feeding": F=0.89, *p*=0.7, cov.: body weight). The *Tsel* of lizards varied significantly between treatments T-test (gl=498)=5.73; p<0.0001). The *Tsel* was significantly higher within the "feeding" group (32.5±0.2ºC) than in the "fasting" (30.5±0.2°C). The differential selection of body temperatures is related to the physiological mechanisms of digestion, since a higher body temperature increases enzymatic activity and thus promotes digestion. This mechanism enhances positive ecological consequences in the species fitness.

A34

CONSTRUCTION OF INTERNAL AND EXTERNAL AMPLIFICATION CONTROLS FOR HLA-B27 DIAGNOSIS BY PCR.

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Spondyloarthritis (SpAs) are a group of related inflammatory arthritis which share multiple clinical features and genetic predisposition factors. The major genetic risk factor is the presence of human leukocyte antigen B27 (HLA-B27). In our laboratory we determined HLA-B27 by real-time polymerase chain reaction (qPCR) from whole blood ~~as~~ samples. The amplification of HLA-B27 exon 3 ~~of~~ was carried out using specific primers, yielding a 135 base~~s~~ pair (bp) amplicon. In this work we constructed a 423 pb fragment to be used as Internal Amplification Control (IAC)in order to discard false negative results. For this purpose, an exogenous sequence of 288 pb was inserted into the 135 pbamplicon sequence, flanked by HindIII restriction sites.The construct was amplified by PCR and cloned into a conventional vector. The identity of clones was confirmed by restriction enzyme mapping and sequencing. This clon was digested with HindIII and religated, generating a fragment of 135 pb to be used as external control. Theses constructions can be amplified using the primers specific to the exon 3 of B27allele in a competitive qPCR and furthermore used as positive control both in conventional PCR and qPCR.

A35

NON ESSENTIAL TRACE ELEMENT UPTAKE IN SOYBEAN SEEDS

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Argentina has become the third largest soybean grower in the world. Currently, the increasing dependence of soybean meal for industrial production promotes the expansion of land for cultivation including polluted regions near human activities. Therefore, non-essential elements may be assimilated by plants through the foliage (as external deposits) or root system. In this context, metabolic and physiological processes play important roles in regulating the transfer and behavior of trace elements in the soil/plant/animal system. The aim of this work was to evaluate the transfer of metals and its relation to crop quality, of two non-essential trace elements (Ni and Pb), through soil and soybean sampling. Trace element concentrations were determined by inductively coupled plasma optical emission spectroscopy (ICP-OES) after dry digestion (550 °C). The average contents determined in ashes from vegetal samples were: Pb, 23.5 μg g^{-1} and Ni 6.6 μg g^{-1}. Our results show that soybean seeds have concentrations greater than the soils of origin (Pb, 15.0 μg g^{-1} and Ni, 4.6 μg g^{-1}) indicating the possible uptake of these two elements. Finally, the non-essential element bioaccumulation depending on the rhizosphere soil compartment showed significant and high regression coefficients.

A36

PRESENCE OF *Escherichia coli* 0157:H7 IN FECES AND WATER SAMPLES FROM FEED LOT OF CATTLE IN CORDOBA PROVINCE

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Escherichia coli is one of the major inhabitants of the intestinal tract of most mammalian species. A small proportion of *E. coli* are pathogenic and a major cause of disease worldwide. We determined the presence of *E. coli* O157: H7 in feces and water collected from feedlot cattle in the south of the province of Cordoba. We analyzed 200 fecal and 50 water samples from 50 stores. Colonies of *E. coli* O157: H7 were selected on agar CHROMagar O157 and sorbitol Mac Conkey agar. They were identified by biochemical tests and the method of *E. coli* O157 latex agglutination. The water samples were analyzed for viable plate count, total coliforms, *E. coli* and *P. aeruginosa*. In 10% of stool samples *E. coli* O157: H7 was isolated. All the water samples were not suitable since one or any more of the studied parameters were exceeding the normality. Viable mesophilic aerobic counts ranged $1x10^4$ to $2\ x10^5$ cfu/ml; total coliforms between 23 and $9.3\ x\ 10^5$ MPN/100 ml. We observed the presence of *E. coli* in 70% and *P. aeruginosa* in 50% of samples. The major pollution found in the water the presence of *E. coli* O157: H7 in feedlot is a signal alarm to establish preventive strategies to avoid contamination of meat products and the spread of the disease.

A37
ALTERATIONS IN THE PRE-NATAL DEVELOPMENT OF RATS TREATED WITH DIFFERENT PROTEIN COMPOSITION AND INTOXICATED WITH CADMIUM

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Prenatal stress affects the developing fetus with possible loss of neurons and cognitive function and alterations in several tissues. Intoxication with cadmium (Cd) causes an imbalance between anti- and pro-oxidant mechanisms. We evaluate the possible protective role of soy protein consumption against the mechanisms by which Cd exerts its toxicity. Four lots of female Wistar rats were used: 2 lots received casein (Cas) and 2 lots Soy as protein source. Within each group, 1 lot received regular water (control-Co) and the other, 15 ppm of Cd in the drinking water during pregnancy period. We determined nitrites and lipid peroxidation in fetal tissue and CAT (Catalase) and GPx (Glutathione peroxidase) activities. The body weights of pups and adult rats, was measured. In brain, CAT activity increased in the Cas-Cd group ($p<0.05$) and GPx in Soy-Cd group ($p<0.05$). In fetal liver, CAT activity decreased ($p<0.05$) while GPx increased ($p<0.05$), in Soy-Cd group. In brain the thiobarbituric acid reactive substances (TBARS) ($p<0.01$) and nitrites levels ($p<0.001$, $p<0.05$) were increased in groups treated with Cd, while in liver tissue was decreased in Cas-Cd group ($p<0.001$). Our results would demonstrate the presence of oxidative and nitrosative stress in fetal liver and brain tissues at 20 days of gestation. Furthermore different protein diets primarily soy protein, do not protect pups against the toxicity exerted by Cd.

A38
ANGIOTENSIN II AT2 RECEPTOR INDUCED NEURITE OUTGROWTH BY TRANSACTIVATION OF NERVE GROWTH FACTOR'S TRKA RECEPTOR.

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The sprouting of neurites are key morphological features characterizing neuronal differentiation. Angiotensin II (Ang II) elicits a variety of biological effects through specific receptors AT_1 and AT_2, present in well-identified nuclei in the brain. The potential effect of Ang II on neuronal differentiation was suggested by our group previously. Thus, we decided to examine the role of Ang II and CGP42112, an specific AT_2 receptor agonist, in neuronal differentiation by using SH-SY5Y human neuroblastoma cells. Here, we show that treatment for 3 days with either Ang II (100 nM) or CGP42112 (10 nM) induce neurite sprouting, as analyzed by optic microscopy (15–20 random fields were counted). Cells showing at least one neurite with a twofold length than the soma diameter were considered as differentiated. Neuronal differentiation was also assessed by the increase in the expression of Beta III tubulin, a neuritogenesis marker. Both Ang II and GCP4212 induced neurite outgrowth were abolished in cells pretreated with AG879, a specific TrkA nerve growth factor (NGF) receptor antagonist or PP2, a c-Src family protein inhibitor. These results suggest that activation of c-Src, and transactivation of TrkA receptor for Ang II or CGP42112 are important for neuronal differentiation.

A39
EFFECT OF DIFFERENT PROTEIN SOURCES ON THE ANTIOXIDANT DEFENSE SYSTEM LUNG RAT EXPOSED TO CADMIUM.

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Cadmium (Cd) is a toxic element and an important environmental contaminant. We studied its effect on the antioxidant defense system of rat lung under different diets. Four lots of female Wistar rats were used: 2 lots received casein (Cas) and 2 lots soybean (Soy) as protein source. Within each group, 1 lot received regular water (control-Co) and the other, 15 ppm of Cd in the drinking water for 60 days. Homogenates were made and TBAR'S and CAT activity were determined. Total RNA was isolated with Trizol and cDNA was obtained. Superoxide Dismutase (SOD), Nuclear factor-erythroid 2 related factor 2 (nrf-2), p47phox, Glutathion peroxidase (GPx) and NADPH Oxidase (NOX-2) were determined by PCR. S28 was the control. TBAR'S showed a significant increase in both Cd groups and CAT activity showed a not significant increase in the Soy groups (higher in the Cd group). Nrf-2 ($p<0.01$), p47phox ($p<0.05$), SOD ($p<0.05$) and GPx ($p<0.05$) showed significant increase in the Soy Cd groups, even though NOX showed a decrease in both Soy groups ($p<0.05$). We conclude that Cd induces several changes on the antioxidant defense system and that Soy would not protect the lung against Cd intoxication, at least at this level.

A40
ANTIBACTERIAL 4-FLUORCHALCONE AGAINST *Escherichia coli* ATCC 25 922 AND *Staphylococcus aureus* ATCC 25 923.

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In this study we investigated the antibacterial action of 4-F-chalcone against *E. coli* ATCC 25 922 and *S. aureus* ATCC 25 923 using a kinetic-turbidimetric methodology. The halogenated chalcone was synthesized by a green chemistry technique that does not require the use of large amounts of solvents harmful to health and the environment. Growth curves were obtained for both microorganisms in culture media added of flavonoid increasing amounts. According to a bacteriostatic inhibition mechanism proposed above, the specific growth rate (μ) varies linearly with the concentration of the antimicrobial in the form: $\mu = \mu_T - k_I \times C$ where μ: specific growth rate in bacteriostatic agent presence (min^{-1}); μ_T: specific growth rate (control), k_I: specific inhibition rate mL/(μg.min) and C: antibacterial compound concentration (μg/mL). The value of the minimum inhibitory concentration (MIC) for *S. aureus* was 24.3 μg/mL, much lower than in previous studies for specific basis unsubstituted chalcone, indicating that the halogen atom in para position of ring B generates a new site of action in the chalcone molecule, in which the main area of the region involved was the carbonyl group α,β-unsaturated. The MIC value to *E. coli* was greater than 300 μg/mL, due to structural differences between Gram (+) and Gram (-) microorganisms.

A41

MANNOSE-6-PHOSPHATE RECEPTORS MEDIATE THE INTERACTION OF LYSOSOMAL ENZYMES WITH BOVINE EPIDIDYMAL SPERMATOZOA

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Mammalian epididymis is crucial for the sperm maturation. The presence of acid hydrolases in the epididymal fluid is striking. In most cell types, lysosomal enzymes are transported to lysosomes via a cation dependent- and a cation independent mannose-6-phosphate receptors (MPRs) (CD-MPR and CI-MPR, respectively). We wanted to know whether whether these receptors are expressed in bovine spermatozoa (BS), and if they mediate interaction with epididymal enzymes. Spermatozoa and fluid were obtained from caput, corpus and cauda of epididymes of adult bulls (Aberdeen Angus) and were stored for MRP detection and to characterize the interaction enzyme-gamete. By immunoblot and IFI, using specific antibodies, we observed that both MPRs are detected in BS and the CD-MPR is redistributed along sperm surface during epididymal transit. Acid hydrolases such as β-galactosidase, β-N-acetyl-glucosaminidase, and β-glucosidase can be partially removed from the sperm surface with high ionic strength or mannose-6-phosphate, indicating that they interact with MPRs. This interaction was corroborated by binding assays, showing a preference of the enzymes for CI-MPR. Other enzymes (α-mannosidase and α-fucosidase) may be transported by alternative mechanisms. We conclude that MPRs are detected in bovine spermatozoa and they can be transported to the female tract and participate in events as capacitation, acrosomal reaction and/or oocyte penetration.

A42

NORADRENALINE IN COELIAC GANGLION FAVORS THE CORPUS LUTEUM SURVIVAL THROUGH AN INDIRECT EFFECT

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It is known that the ovary is innervated by superior ovarian nerve (SON) whose fibers originate in the Coeliac Ganglion (CG). The objective of this study was to evaluate if Noradrenaline (NA), added in the CG, modulates the release of GnRH, Progesterone (P_4) and Oestradiol (E_2), the enzyme expressions of P_4 synthesis (3β-HSD) and degradation (20α-HSD), and the apoptotic bax and anti-apoptotic bcl-2 factors, in the ovary of rat at Diestrous II stage. The CG-SON-ovary system was incubated in Krebs Ringer at 37ºC, keeping CG and ovary, connected by the SON, in separate compartments. CG was incubated with (control group) and without NA (10^{-6}M). Extractions of the ovarian incubation liquids were carried out at 60 and 120 min. P_4, E_2 and GnRH were measured by RIA and the expression of 3β-HSD, 20α-HSD, bax and bcl-2 by RT-PCR. ANOVA 1 followed by Bonferroni test with a statistical significance of ($p<0.05$) was used. NA in CG decreased ovarian P_4 ($p<0.001$) coinciding with a decrease of 3β-HSD expression ($p<0.01$) and a tendency to increases the 20α-HSD expression, compared to the control. Also, E_2 was increased and GnRH diminished ($p<0.05$). The expression of bax was decreased ($p<0.01$) and that of bcl-2 increased ($p<0.01$), leading to no modification of bax/bcl-2 ratio, respect to the control group. NA favors luteal survival through an indirect effect on the ovary, via SON. This effect will be independent of GnRH.

A43

NORADRENERGIC INFLUENCE ON THE OVARY: GnRH RELEASE AND ITS INVOLVEMENT IN OVARIAN APOPTOTIC MECHANISMS

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Gonadotropin Releasing Hormone (GnRH) seems to be an important intraovarian regulator. The aim of this study was to evaluate if noradrenaline (NA) modulates the GnRH, progesterone (P_4), and Oestradiol (E_2) release, the expression of synthesis and degradation enzymes of P_4 (3β-HSD and 20α-HSD, respectively), and the expression of apoptotic bax and antiapoptotic bcl-2 factors, in the ovary of rat at diestrus II. The ovary was incubated in Krebs Ringer buffer at 37ºC with and without the addition of NA (10^{-6}M). Extractions of the ovarian incubation liquid were carried out at 60 and 120 min. P_4, E_2 and GnRH were measured by RIA, and 3β-HSD, 20α-HSD, bax and bcl-2 mRNA expressions by RT-PCR. ANOVA 1 followed by Bonferroni test for statistical significance was used. NA in ovary increased the liberation of GnRH ($p<0.01$), E_2 ($p<0.001$) and P_4 ($p<0.001$), the last one was consistent with the increase of 3β-HSD ($p<0.01$) and the decrease of 20α-HSD ($p<0.01$). With regard to the apoptotic factors, an increase of bax ($p<0.01$), a decrease of bcl-2 ($p<0.01$) and an increase of the relationship between bax/bcl-2 ($p<0.05$) were observed compared to the control group. We conclude that NA, through a direct effect on the ovary, or indirectly through the action of GnRH, favors apoptotic mechanisms and the estral cycle continuity. The increased catecholaminergic tone may be responsible for reproductive disorders and hormonal dysfunctions.

A44

RELATION BETWEEN THE THIOL STATUS OF ODF1 AND THE SPERM MOTILITY. COMPARISON BETWEEN NORMO AND ASTHENOZOOSPERMIC SAMPLES.

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A correct assembling of the sperm tail in the testis and efficient maturation during epididymal transit is necessary for good motility. In the epididymal transit the thiols of flagellar proteins like ODF1 are oxidized and the sperm became motile. The aim of this work is to determine the importance of proteins thiol status in human sperm motility. Monobromobimane (mBBr) was used as specific thiol marker. Our previus results indicate that the interaction between mBBr and thiols interfere with rat sperm motility. Several proteins were labeled by mBBr including ODF1. Recordings of human sperms incubated with monobromobimane showed a decrease of the progressive motility. Other experiment was developing to compare normozoospermics (31) with asthenozoospermics (15) samples checking their thiol status. The mBBr fluorescent signal of the sperm tail in normal samples was lower, comparing with those from asthenozoospermics, suggesting an incomplete thiol oxidation. ODF1 was de most fluorescent protein detected by sds-page and western blot analysis. This work demonstrate that blocking thiol groups with mBBr change the progressive motility in human sperm to curvilinear movement and the role of these proteins, including ODF1, in the mechanisms that regulate progressive motility

A45

GENOTOXIC ANALYSIS OF WATER IN THE "LA REPRESITA" AREA INHABITED BY A HUARPE NATIVE COMMUNITY IN SAN LUIS

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"La Represita" area is located in central western San Luis Province, in the limit with San Juan province and is inhabited by a Huarpe native community. This area possesses two important contributions of water, an artificial pond and a tributary of Desaguadero River. The information available about the water quality in this area indicates that it is not optimal for human consumption due to high salinity and the presence of arsenic. The aim of the present study was to evaluate the characteristics of the water in the area of "La Represita". A genotoxic analysis was performed using the *Allium cepa* bioassay. Samples of water from the pond and Desaguadero River were collected in April and July 2013. Distilled water was used as control and the water from both contributions, artificial pond and Desaguadero River, as experimental, for quadrupled. *A. cepa* bioassay was perfomed following the standard procedure. Approximately 5000 cells were analyzed per treatment. Cytogenetic analysis in Desaguadero River samples indicated a cytotoxic and cytostatic effect caused by the high salinity of the water. Water pond samples showed several chromosome aberrations: C-mitotic, sticky chromosomes, loose chromosomes, anaphases multipolar, micronuclei, among others. These results indicate that the arsenic level in the pond samples could produce genotoxic, clastogenic and mutagenic effects in the analyzed cell population.

A46

CORTICAL REACTION: KINETIC DIFFERENCES BETWEEN OVULATED AND *IN VITRO*- MATURED MOUSE OOCYTES

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Oocyte cortical reaction is a fundamental process which prevents polyspermy ensuring embryo development. *In vitro*-matured oocytes are used in assisted reproduction, however it is unknown how *in vitro* maturation affects the oocyte physiology. In this study, we compared the kinetic of cortical reaction between ovulated and *in vitro*-matured mouse oocytes during cortical reaction. Immature oocytes were collected, after hormonal stimulation (PMSG) from ovaries and *in vitro*-matured in GIVF media during 15h. Ovulated oocytes were collected, after hormonal stimulation (PMSG-hCG) from ampulla. Cortical reaction was parthenogenetically stimulated in both cell types with $SrCl_2$ in presence of LCA-FITC, which labels cortical granule content. Images were taken every minute during 1h in a Nikon's ECLIPSE TE300 Inverted Microscope coupled to a LED illumination system. Preliminary findings show that the cortical reaction is gradual and simultaneous in ovulated oocytes but is abrupt and asynchronous in *in vitro*-matured oocytes. Our results show for the first time the dynamics of cortical reaction in real time and suggest that *in vitro* maturation affect the kinetics of cortical reaction.

A47

SEASONAL STUDY OF ANDROGEN RECEPTORS IN PROSTATE OF VISCACHA (*Lagostomus maximus maximus*)

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The prostate is an accessory gland of the reproductive masculine system which morphofunctionally depends of circulating testosterone levels. The viscacha is a wild South American rodent which exhibits a seasonal reproductive cycle with active (summer-autumn) and regression (winter) periods. In this rodent, the gland has 2 lobes that do not totally surround the urethra. Histologically, two zones are described: central (CZ) and peripheral (PZ). The objective of the present work was to study the distribution of androgen receptors (AR) during reproductive cycle in the gland. Prostates of adult male viscachas were processed by conventional technologies of optical microscopy and the AR was immunohistochemically identified using the antibody AR (N-20): SC-816. **PZ**: During the active period, this zone showed a greater percentage and intensity of the immunostaining in the epithelial cells (82.73 ± 0.95%) and fibromuscular stroma, while during gonadal regression, these parameters decreased. **CZ**: In the active period, the glandular mucosa showed a high percentage of immunostaining in epithelial cells (83.8 ± 1.4 %). However, in this period, the nuclei of stromal cells in the PZ showed a weak marking. In conclusion, the results show differences in the intensity and location of the RA, suggesting that prostate areas (CZ and PZ) have a variable androgen sensitivity. Other paracrine or hormonal factors might regulate the prostate gland function.

A48

EFFECTS OF DIFFERENT STRESSORS ON HEMATOLOGICAL PARAMETERS IN SPARROWS.

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In birds, blood levels of corticosterone (CORT) vary daily and may increase by different stress responses. Corticosterone levels are highest during the dark hours of the daily cycle and in response to stressor (e.g., food shortage, restrain, disturbance). The aim of this study was to evaluate how the endogenous level of CORT by different stressors, influences the profiles of biochemical parameters and heterophil to lymphocyte (H/L) ratio in *Passer domesticus*. To achieveour goal, we used as biological model the house sparrows and performed fasting and stress-induced experiments. Because repeated blood sampling and time of fasting affects hematological parameters we took samples with 72 hs of recovery between them. For stress-induced experiments, birds were held in cloth bags and disturbed by shaking or fasting. We used ANOVA with Tukey post-hoc to compare biochemical parameters and for H/L indexat different times of fasting and disturbing. We found a no effect of nocturnal peak of CORT on H/L index, while biochemical parameters show a classical pattern of fasting. In disturbing experiments H/L index increase one hour after disturbing and increase glucose whereas TG remains constant. H/L index increase after twelve hours of fasting, while biochemical parameters show a classical pattern. These results suggest that endogenous levels of CORT could be modulate by different stressors and generated different effects.

A49
METYLPHENIDATE PRESCRIPTION IN MENDOZA

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Methylphenidate is a central nervous system stimulant that has become the drug of choice for treating attention-deficit/hyperactivity disorder in children. This retrospective and observational study analyzed prescribing and dispensing methylphenidate in 9 drugstores of "Farmacias del Centro" in Mendoza, between 2007 and 2010. A total of 1515 prescription orders including methylphenidate was found throughout these years. Prescription of methylphenidate significantly increased from 2007 to 2009, but remained stable in 2010. Most methylphenidate prescriptions were done for children, 73.4% of them to boys and 20.8% to girls. In some childrens dosing was maintained over the four years included in this study, while in other cases, dosing was decreased. The prescriber physicians were child neurologists (52%), neurologists - surgeons (30.4%) and psychiatrists (10.7%), suggesting that patients had been adequately diagnosed and drug controlled. The increase in methylphenidate prescription between years 2007 and 2009 might be due to an increasing diagnosis of attention deficit disorder with or without hyperactivity disorder or to an increased incidence of these disorders in children. Continuing this study in Public Hospitals may help to solve the problem.

A50
IS ALAD ACTIVITY A GOOD BIOMARKER FOR CHRONIC LEAD EXPOSURE IN BIRDS?

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In recent times, atmospheric lead (Pb) emissions have been reduced significantly. However, Pb is still present in the environment, because it is a persistent metal. Inhibition of ALAD enzyme (δ-aminolevulinic acid dehydratase) is considered a sensitive and useful biomarker to detect Pb exposure in animals. It was extensively used as indicator of Pb contamination. However, there are no studies about the response of this biomarker to chronic Pb exposure in birds. Our objective was to characterize the ALAD biomarker response in *Passer domesticus* chronically exposed to Pb. To test our goal, birds were acclimated to laboratory conditions with water and food *ad libitum*.We established three independents groups of birds (n=6), 2 groups were exposed during 15 and 30 days to the same Pb concentration in drinking water, and 1 control group without exposition. At the end of the experiment animals were weighed and blood samples were drawn from brachial vein to determine ALAD activity, hematocrit and hemoglobin. We used an ANOVA with Tukey post-hoc to compare treatments. Our results showed a significant inhibition of ALAD in birds exposed to Pb during 15 days. Surprisingly, the animals exposed to Pb during 30 days exhibited a similar ALAD activity than control group.These findings question the utility of ALAD as a biomarker for lead contamination, since in that case birds are chronically exposed to lead.

A51
PREPARATION OF ANGIOTENSIN II AT2 RECEPTOR RIBOPROBES

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The classical effects of Angiotensin II (Ang II) are well known but new evidences involve this peptide in development and organogenesis. Ang II exerts its physiological effects through binding to membrane receptors AT1 and AT2. Ang II receptor expression is highly modulated during development. RNA probes generated by transcription *in vitro* are much more sensitive and stables than DNA probes. The aim of this work was the preparation of AT2 receptor riboprobes to study its expression pattern in rat brain. The PCR fragments of AT2 receptors were subcloned in the p-GEM T easy vector. The identity of the subcloned inserts was verified by RFLP. The restriction endonucleases Eco RI, Ssp I and Pvu II were used. The insert was extracted from the vector with restriction enzymes, and the band excised from the gel was purified. The riboprobes were obtained by transcription *in vitro* using SP6 or T7 RNA polymerases in both sense and antisense orientations to provide non-specific control and specific probes. The riboprobes were labeled with non radioactive digoxigenin. Total RNAs from rat brain at postnatal day 15 (P15) were purified by Trizol and analized by northern blot with AT2 riboprobes obtained previously. The expression pattern was compared with our previous data, autoradiography and RT-PCR. The highest expression of AT2 receptor was observed at P15. In conclusion, the riboprobes generated here allow sensitive and efficient detection of AT2 receptor gene expression.

A52
DEHYDROLEUCODINE DELAYS GROWTH OF MELANOMAS IN MICE OF STRAIN C57/BL6.

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Cancer is characterized by an abnormal proliferation of cells with ability to invade organs and tissues. Among antitumor drugs currently studied, the sesquiterpene lactones (SLs) are particular interest due to its antiproliferative activity. Dehydroleucodine (DhL) is a SL purified from *Artemisia douglasianaBesser*, a plant of Argentine west center. Previous results from our laboratory showed that DhL induces genotoxic damage and inhibits tumor cell proliferation, causing an arrest in the G1 and G2/M phases of the cell cycle. Furthermore, according to the used concentration; DhL induces senescence or apoptosis. Based on the above, in this work we proposed to determine the DhL action in melanoma growth in mice C57/BL6. Mice with implanted melanomas were subjected to three treatments with 23 mg/kg DhL: 1) the administration started 15 days before tumor implantation, 2) the administration began the same day of implantation and 3) the administration began when the tumor reached a volume of 200 mm^3. In all cases, the treatment was ended when the tumor volume reached 2500 mm^3. DhL produced a decrease in tumor volume of 64, 61.3 and 47.3% respectively in the three administration protocols evaluated. These results indicate that DhL delays melanoma growth in an animal model, showing a potent antitumor effect.

A53
AEROMYCOLOGICAL STUDY OF AN INTERNAL ENVIRONMENT OF UNSL: GRAVIMETRIC AND VOLUMETRIC SAMPLINGS

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Aeromycological analyses are important to provide information on the environmental air quality, which can be related to the frequency of human diseases in the sampling area, as well as to the biodeterioration that can suffer the heritage exposed. We wanted to study the presence of fungi in air of a UNSL ambit by Petri plates culture (gravimetric sampling) and by means of the Hirst spore trap (volumetric sampling). Different culture media were used in Petri plates and the grown fungi were microscopically observed. For comparison with the volumetric method, microscopic analysis of the spore trap Melinex® tape coincident with the gravimetric sampling date, was performed. The genera identified in plate culture were: *Monilia, Alternaria, Cladosporium, Aspergillus, Penicillium, Sporendonema, Dreschlera, Fusarium, Leptosphaeria,* and *Rhizopus.* The volumetric sampling allowed the observation of the same genera as well as other unidentified spores. Furthermore, the gravimetric method allowed for better identification of the fungus spores by linking with other fungal structures.

A54
PRESENCE OF *Cladosporium* AND *Alternaria* conidia IN AN INDOOR ENVIRONMENT AT SAN LUIS CITY (ARGENTINA)

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Cladosporium and *Alternaria* are two fungi genera that generate conidia as reproductive structures. These conidia remain a long time in the air and produce largest number of allergy cases in sensitive individuals. Between August 16th to November 14th of the same year it was performed a continuous aerobiological sampling at the indoor corridor of Faculties building (Universidad Nacional de San Luis), using a volumetric Lanzoni™ spore trap of Hirst type. For data analysis it was used the REA (Spanish Aerobiology network) proposed methodology. The maximum concentration of conidia was obtained from August 16th to 22th, and the minimum between September 27th to October 3rd. For *Alternaria*, the maximum values were obtained between November 1st – 7th, and the minimum between September 20th and 26th. Other papers reports that low temperatures tends to favor the presence of *Cladosporium*. About *Alternaria*, instead, it was observed a positive relationship related to this variable, but at lesser extent. It is important to continue studying the behavior of these microorganisms related to meteorological factors, looking for a behavior prediction and seasonality of allergies.

A55
PLANT COMMUNITIES AS INDICATORS OF NITRIFICATION IN TWO AREAS OF CHACO SERRANO IN SAN LUIS PROVINCE (ARGENTINA)

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The nitrophilous communities are those which develop in places where there is an enrichment of the soil with nitrogenous substances. In this work we investigated these communities in Potrero de los Funes and San Francisco del Monte de Oro, two locations in Chaco Serrano of the province of San Luis. Phytosociological surveys were conducted in areas of homogeneous vegetation, identified through satellite images, according to the methodology of the Zurich-Montpellier School. Inventories were collated and analyzed in phytosociological tables and was calculated an anthropization, adapted to the sampling sites. We identified four communities of suntrap, two of shadow and one of waterlogged soils, dominated by plants either nitrophilous, subnitrophilous or hipernitrophilous. Among these communities, the most important as bioindicators of nitrification, were the thistles. This community was well represented at Potrero de los Funes, whereas in San Francisco only isolated thistle individuals appeared, without forming a community itself. We conclude that these differences would be related to the major degree of anthropization in Potrero de los Funes.

A56
DETECTION OF RENAL FAILURE BY USING THE MODIFICATION OF DIET IN RENAL DISEASE (MDRD-4) EQUATION.

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The glomerular filtration rate (GFR) is the best indicator of renal function. A decrease in GFR precedes renal dysfunction and its persistent reduction therefore it is used as specific diagnostic criteria for chronic kidney disease (CKD). When GFR value is less than 60ml/min/1.73m^2, the prevalence of CKD complications and the risk of cardiovascular disease increase. The aim of this study was to evaluate the presence of CKD or occult renal disease (ORD) and to determine their stages by using biochemical parameters in patients (P) from San Luis. The study included 110 P (18-70 years old) from a private laboratory (November 2012- May 2013). Sera were used for creatinine determination (kinetic method) and GFR were estimated by the MDRD-4 equation. The MDRD-4 calculation showed that 63.6% of the P (85.7% female) had GFR values >60ml/min/1.73m^2. Additionally, in the group of P with GFR <60ml/min/1.73m^2 36.4% (97.4% female), the majority of them stage- 3 and only one P stage- 4. In addition, 60% (95.8% female) had GFR values consistent with ORD. In conclusion, more than 1/3 of the P this study had a decreased GFR and the majority had ORD. These results highlight the importance of GFR estimation for early CKD and ORD detection and prevention of future complications.

A57

Clostridium botulinum IN SOIL OF SANTA CRUZ, ARGENTINA, AND INFANT BOTULISM.

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At present, infant botulism (IB) is the most frequent clinical form of the human botulism in the world, even Argentina. Between March 1982 and December 2012, 713 IB cases were reported, in all of the country, except Santa Cruz and Formosa provinces. *Clostridium botulinum* (Cb) spores are widely distributed in soil and environmental dust. This source has been proposed as the principal route of exposure; then frequency of positive soil samples for Cb should be considered an important parameter for botulism transmission. One hundred and forty-nine soil samples from Santa Cruz were processed for detection of Cb and typing of botulinum neurotoxin (BoNT). Positive results were obtained in only one sample (1/149=0.67%), BoNT type B. The minimum prevalence expected (MPE) of IB in a decade could be estimated as a function of the frequency of Cb spores in soil and the exposed population, taking as a reference another Patagonian province: Neuquén, which is characterized by 25.9% (21/81) of soils positive to Cb spores and 9.4% (67/713) of IB cases in Argentina. The MPE in Santa Cruz was 0.3 cases /10 years. Because of in Chubut province it has been determined that IB is underdiagnosed, a similar situation was suspected in Santa Cruz. However, these results suggest that the absence of IB records in Santa Cruz could be due to the limited presence of Cb spores in the environment with the consequent lower risk of exposure

A58

AKT1 KINASE PATHWAY IN THE SURVIVAL OF *Brucella abortus* IN MACROPHAGES.

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Brucella abortus survive phagocytosis within macrophages and even multiplied. The aim of this study was to determine the involvement of the kinase Akt1 in infected macrophages on intracellular survival and replication of different strains of *B. abortus*. Raw 264.7 macrophages were infected with virulent strain (2308) and virulence attenuated vaccine strains (S19 and RB51) of *B. abortus*. Intracellular multiplication and bacterial survival were studied in both control cells and cells treated with Akt1 kinase inhibitor (iAkt1). Survival and bacterial replication capacity was quantified by measuring the absorbance of bacterial cultures grown in suitable medium. We also carried out a count of live and dead bacteria intracellular using Hoechst and propidium iodide (PI) markers, through confocal microscopy. Absorbance of bacterial culture from infected macrophages treated with iAkt1 (0.290 ± 0.020) was significantly lower than cells without inhibitor (0.470 ± 0.010). Similar results were obtained with S19, while RB51 no differences in bacterial replication. In macrophages treated with iAKT and infected with S19 and 2308 decreased the number of intracellular bacteria and the amount of dead bacteria (PI stain) was significantly higher compared with non-treated macrophages. These results suggest that one of intracellular mechanisms used by the 2308 and S19 strains to survive phagocytosis, involves Akt1 kinase pathway.

A59

DIET-INDUCED OBESITY, INSULIN RESISTANCE AND PULMONARY INFLAMMATION

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Obesity is a chronic inflammatory disease associated to insulin resistance and oxidative stress in a number of tissues. Our hypothesis is that diet-induced obesity (OID) causes oxidative stress in the lung. To test this hypothesis we developed a model of OID in which C57 mice where fed for 6, 10 and 18 weeks, a control low-fat diet (LFD) and a high-fat diet (HFD). We measured adiposity, IR. In lung tissue we analyzed antioxidant enzyme activity (CAT, GPX and TBARS). Obese mice ate less food than control mice, but nevertheless the final body weight towards the 18^{th} weeks of diet was higher in the HFD compared to the LFD group(LFD 27±3 g vs HFD 31.75±7g). The glucose-tolerance test showed that the HFD group had more Insulino-resistant than the LFD group (18 weeks HFD 99.83±12.46 mg /dl vs LFD 122.5±19.23 mg /dl). The parameters of oxidative stress in lung were similar between the groups, however, these tended to be different towards the 18 weeks of diet (CAT: LFD 741.3± 125.8U/mg vs HFD 680± 85 U / mg; GPX: LFD 307.3± 38.59 U / mg vs. HFD 272.2 ± 36.77U/mg; TBARS: LFD 4.67 ± 2.19 microns / ml vs HFD 5.026 ± 2.52 mM /ml). The OID model used in this study caused changes in behavior (aggressiveness) of animals, which could have caused alterations in feeding pattern and results. We conclude that the diet used in this OID model should be reformulated to reduce its effect on animal behavior.

A60

COELIAC GANGLION MODULATES THE ANTISTEROIDOGENIC RESPONSE OF OVARIAN NITRIC OXIDE IN THE FIRST RAT PROESTRUS

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The *ex vivo* coeliac ganglion-superior ovarian nerve-ovary (CG-SON-O) system allows to study the relationship between the peripheral nervous system and the reproductive function. It has been shown that stimulating the CG with Acetylcholine (Ach), increases the ovarian levels of the neurotransmitter nitric oxide (NO). The aim of this work was to study if inhibitors of nitric oxide synthase (NOS) and an NO donor in ovarian compartment, with and without addition of Ach 10^{-6} M in CG, modify the release of NO and progesterone (P_4), in the first rat proestrus. The system was incubated in Krebs-Ringer buffer at 37°C. The addition of selective and non-selective inhibitors of inducible NOS, aminoguanidine 400 µM (AG) and L-nitroarginine methyl ester 100 µM (L-NAME), respectively; and NO donor, sodium nitroprusside 100 µM (SNP), were studied separately. NO (by the Griess technique) and P_4 (by RIA) were determined in the ovarian compartment at 30, 120 and 180 min of incubation. One-way ANOVA and Tukey test were used. In absence of Ach, AG inhibited NO at 30', 120' ($p<0.01$) and 180' ($p<0.05$), and increased P_4 at 30' ($p<0.05$) and 120' ($p<0.001$). L-NAME inhibited NO at 120' and 180' ($p<0.05$), inhibited P_4 at 30' ($p<0.001$) and increased P_4 at 120' and 180' ($p<0.05$; $p<0.01$). SNP increased NO ($p<0.001$) and inhibited P_4 ($p<0.001$; $p<0.01$; $p<0.001$), at all times. Ach magnified the inhibitors effects, mainly AG. In this way, during maturation of preovulatory follicles in the first proestrus, NO modifies P_4 levels and this effect is regulated by the peripheral nervous system.

A61

DETECTION HLA-DQ ALLELES IN PATIENTS WITH CELIAC DISEASE AND *Helicobacter pylori* INFECTION

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Celiac disease (CD) is an autoimmune disorder associated with a small bowel lesion induced by toxic gliadin components and is strongly associated with human leukocyte antigen (HLA)-DQ2 or DQ8. *Helicobacter pylori* is a bacteria inhabit gastric mucosa and it can lead chronic inflammation, peptic ulcers and gastric cancer. The aim of this study was to determinate the association between alleles DQA10501 and DQB10201 in the molecular diagnosis of CD and its association with *H. pylori* infection. A total of 27 patients were included in the study, which 11 have CD diagnosis based on histological study and endomysial or transglutaminase antibodies. For the extraction of genomic DNA standard proteinase K and phenol-chloroform method was used. PCR using specific primers for diagnosis of DQ2 alleles and culture, histology and urease test for the detection of *H. pylori* was performed. The HLA-DQ2 allele was identified both in 91% of patients with celiac disease diagnosis and six no CD (22%). The results showed 80% of prevalence of *H. pylori* infection in celiac patients with chronic antral gastritis and villous/cript VC ratio grade 3 and 4. In addition four patients without CD presented *H. pylori* infection. Molecular HLA-DQ detection is relevant because CD diagnosis based on histology and disease-specific antibodies is not always reliable. Patients that carry HLA-DQ2 could suffer CD at some stage in their lives. Moreover in patients colonized with *H. pylori* for which the infection could determine the evolution of CD.

A62

ANTIOXIDANT AND CYTOTOXIC ACTIVITY OF FLAVONOIDS ISOLATED FROM *B. scandens*

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We wanted to investigate the antioxidant and cytotoxic activity of flavonoids isolated from *Baccharis scandens*, a plant used in folk medicine as an antirrheumatic remedy. Preliminary phytochemical analysis was performed using "flash" cromatography. Polar fractions were purified by several column chromatographies on Silica gel and Sephadex LH-20 and the flavonoids Gardenine B (**1**) and Xanthomicrol (**2**) were isolated. Their structures were confirmed by spectral data (UV-visible, ^{1}H and ^{13}C RMN). The radical scavenging activity was evaluated using 2,2-diphenyl-1-picrylhydrazyl assay (DPPH). The method of Blois with a slight modifications was used. Absorbance was measured at 517 nm. As Positive control Ascorbic Acid, Caffeic Acid and Quercetin were used. Antioxidant activity was calculated by the equation: %DPPH radical scavenging=($A_{control}$-A_{sample}/$A_{control}$)x100. In addition, compounds **1** and **2** were tested *in vitro* for their capacity to inhibit growth of synovial fibroblast cell line, SW982. Cells were grown at 37 °C in a humidified atmosphere containing 5% CO_2 in Dulbecco's Modified Eagle's medium, supplemented with fetal bovine serum, l-glutamine, sodium pyruvate, penicillin and streptomycin. Cytotoxic activity was evaluated by 3-[4,5-dimethylthiazol-2-yl]-2,5 diphenyl tetrazolium bromide method. Study of cell death was performed by flow cytometry using annexine V and propidium iodide. Both flavonoids showed significant cytotoxic and antioxidant properties.

A63

CONGENITAL SYPHILIS: REALITY IN THE XXI CENTURY. DISCOVERY AND DESCRIPTION OF A CLINICAL CASE

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Syphilis is a disease caused by the bacterium *Treponema pallidum*, subspecies *pallidum*; it is transmitted through sexual intercourse and also from an infected mother to the fetus during pregnancy (congenital syphilis). The early detection of this disease by serology (VDRL), is important in pregnant woman. The aim of this work was to show how significant prenatal checkups, such as serology for syphilis, are for pregnant woman; plus proper treatment, which must be respected by the patient if she is positive to any of the determinations. In the present case, a pregnant patient with reactive VDRL was followed in the last trimester of pregnancy, who was prescribed with a penicillin drug treatment, which was discontinued before delivery. The newborn was subjected to the laboratory tests and the corresponding clinical examination, being VDRL reactive, but without any physical symptoms; the diagnosed was congenital syphilis. We conclude that it is important to carry out the controls established for pregnant women to rule out this pathology, since as prescribed to a pregnant mother with reactive VDRL, the appropriate treatment must be quickly established, and properly completed by the patient to avoid risk of congenital syphilis to the fetus. From the results, we suggest that the National Program to Fight against Human Retroviruses, AIDS and sexually transmitted diseases should be implemented with better control and monitoring of these high-risk patients.

A64

ARSENIC IN WATERS OF THE CENTRAL ZONE OF ARGENTINA

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The Regional Chronic Endemic Hydroarsenicism (HACRE) was produced for the study of arsenic (As) as contaminant of waters. The presence of arsenic in drinking water is commonly associated with cancer skin and several other diseases. Is a necessary warrant this contaminant detection in order to make the relevant health safety measures. In this study we evaluated the presence of As in 12 water samples from regions of central Argentine: Catamarca, La Rioja, Córdoba, San Luis and Buenos Aires, including some of this for first time. Spectrophotometric method was used to Vasak-Sedivek, the laboratory of Toxicology and Legal Chemistry successfully passed two quality controls CEPIS (Panamerican Center for Sanitary Engineering and Environmental Sciences)/ PAHO (Panamerican Health Organization)/ World Health Organization (WHO). Results were found in the range concentration: 0.0125 to 0.06 ppm. WHO and the Argentine Food Code advise a limit value 0.01 ppm for drinking water. The results indicated that all the samples overcome the suggested values, then we try to continue doing this monitoring and study on affected areas, this information bring the opportunity to As removal activities that could help to normal As levels permitting a compatible good quality of life. It is noted that in this work were harmonized research, teaching, community service and collaboration

A65
IS THE TIME VARIABLE IMPORTANT IN THE EFFECT OF ANDROGEN DEPRIVATION IN LUNG?

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Lungs are susceptible to injury due to free radicals. Also, androgens play a physiological role in pulmonary function. We tested the effect of castration on the prooxidant-antioxidant balance at two different times: 30 and 60 days after castration. Wistar male rats (200±20g) were separated in three groups: controls (Co), castrated (Ca), and castrated supplemented with testosterone (Ca+T) for five days. After 30 (30d) or 60 days (60d) rats were killed. TBAR'S and CAT activity were determined. Total RNA was isolated and Androgen Receptor (AR), Superoxide Dismutase (SOD), Nuclear factor-erythroid 2 related factor 2 (Nrf-2), Glutathion peroxidase (GPx) and NADPH Oxidase (NOX-2) were determined by PCR. S28 was the control. The expression of AR showed an increase in Ca and a significant decrease in Ca+T in both time ($p<0.05$). TBAR'S and CAT activity increased in Ca in both groups ($p<0.05$). GPx activity increased at 30d ($p<0.001$), did not change at 60d as well at its expression. Nrf-2 expression increased in Ca at 30d but only increased in Ca+T at 60d ($p<0.05$). SOD did not change at 30d but increased in Ca at 60d ($p<0.05$). NOX increased at 30d but decreased in Ca ($p<0.05$) at 60d. CT expression did not change. We conclude that androgen deprivation alters the prooxidant-antioxidant balance in lung in a time-dependent manner.

A66
GENDER DIFFERENCES IN THE OXIDATIVE STATUS IN RATS EXPOSED TO CHRONIC STRESS.

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Much evidence show a gender difference in the oxidative stress; but the mechanisms involved are not totally studied. It is also postulated an antioxidant effect of estrogens in females. In the kidney, these effects are still being studied. The objective was to investigate the gender differences in the oxidative status in rats exposed to chronic stress. Wistar female (F) and male (M) rats were used; both groups divided in controls (C) and stressed (IMO, 1 hour/day/14 days). In the 14 day after decapitation; blood was collected and the kidneys were removed. Corticosterone (CORT), total antioxidant capacity (FRAP), total nitrites (NOx) and malonildialdehyde (MDA) were determined in plasma, and MDA, superoxide dismutase (SOD) and catalase (CAT) activity were measured in the kidney. CORT increased in IMO F and M, being higher in M ($p=0.0001$). NOx decreased in all IMO rats ($p=0.0001$). MDA and FRAP were higher in F than M, without IMO effect ($p=0.001$, $p=0.003$). In the kidney MDA increased in IMO rats with higher values in M than F ($p=0.0003$), CAT was higher in F than M ($p=0.0003$) and SOD increased in IMO F ($p=0.0001$) without changes in M. Both sex groups responded to stress, being this response higher in M than F. Greatest increment in renal SOD and CAT activity and the minor increase in renal MDA level in F indicate a gender protective effect in the oxidative status in response to stress in the kidney.

A67
LEUKOCYTIC RESPONSES TO LEAD EXPOSURE IN *Passer domesticus*

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Lead contamination is still a severe public health concern worldwide. Although, the toxic lead effects were well documented in birds, there are no studies about the stress produced by this metal in passerine birds. The leukocyte profiles are considered a useful tool to assess stress in vertebrates. The objective was to determine the effect of chronic and acute lead exposure on leukocyte profiles of *Passer domesticus*, mainly the heterophil/lymphocyte ratio (H/L) as a measure of stress. For the acute lead exposure experiments, we set up 6 treatments groups, 1 control and 5 concentrations of lead, which were administered by gavages during 5 days. Besides, in chronic exposure experiments were carried out with 2 independent groups of animals (n=6) exposed during 15 and 30 days to the same lead concentration in drinking water, and 1 control group without exposition. We used an ANOVA with Tukey post-hoc to compare treatments. For acute experiment, the dose of lead administered during 5 days did not change the leukocyte profiles of birds. On the other hand, chronic lead exposure during 30 days produced an inversion of the H/L ratio. These findings give support that lead contamination can produce a stress state in birds, because they are exposed chronically to this metal.

A68
INFLUENCE OF TEMPERATURE ON THE BIOLOGICAL CONTROL OF *Botrytis cinerea* USING *Rhodotorula glutinis* AND *Rahnella aquatilis*

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Botrytis cinerea is a phytopathogenic fungus responsible for grey mould, causing important economic losses on fruits and vegetables. Microbial biocontrol agents have shown a great potential as an alternative to synthetic fungicides. The aim of the work was to evaluate the action antagonistic on the mycelial growth of *B. cinerea* using *Rhodotorula glutinis* and *Rahnella aquatilis* at different incubation temperatures. Inhibition of mycelial development of *B. cinerea* was assessed by measuring radial-growth in potato dextrose agar. Each plate was flooded with a suspension the *R. glutinis* and *R. aquatilis* at concentrations of (10^6 cel/mL). A cut 4-mm mycelial of disc from a 3-day-old culture was placed in the center of each plate. The diameter of mycelial growth was determined after 7 days at the temperatures of 4, 12 and 28°C. The fungicide Iprodione at a concentration of 0.5 mg/mL and sterile distilled water were used as controls. The effect on mycelial growth caused by treatment with *R. glutinis* and *R. aquatilis* at the different temperatures showed different behaviors. *R. glutinis and R. aquatilis* showed inhibitory effects upon mycelial growth at temperatures of 12 and 28°C, while that at 4°C showed no inhibitory effect. However, an opposite effect was observed with the fungicide iprodione.

A69

ANTIGENIC SIMILARITY BETWEEN *Larrea divaricata* Cav. PROTEIN FRACTIONS AND A *Pseudomonas aeruginosa* EXTRACELLULAR PROTEASE

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Larrea divaricata Cav. (jarilla) is a plant found in Argentina and used to treat different pathologies. Studies have demonstrated immunomodulatory effects and cross reactions between proteins of Gram negative bacteria and different protein fractions of jarilla. *Pseudomonas aeruginosa* is considered an opportunistic pathogen which can cause severe and lethal infections in vulnerable hosts. It produces several extracellular products such as elastase and alkaline protease, which play a major role in acute infections. The aim of our work was to study the cross-reactivity between *P. aeruginosa* exoproducts (EP) and the jarilla crude extract (JPCE). The strain of *P. aeruginosa* ATCC 27853 was used and their EPs were obtained. The JPCE was partially purified by using membrane concentrators with 10, 30, 50 y 100 kDa cutoffs. Mice were immunized with JPCE. Cross reactivity was assessed by neutralization tests using the zymogram technique. The samples were subjected to native conditions. Bands of 61 and 72 kDa were neutralized by sera obtained from mice immunized with JPCE 10-30, 30 and 50. Also, protease activity bands (34 and 92 kDa) were neutralized when anti-JPCE50 serum was employed. These results show the antigenic similarities between JPCE and proteins with protease activity from *P. aeruginosa*.

A70

ISOLATION OF *Microsporum gypseum* IN SOIL SAMPLES OF THE CITY OF SAN LUIS.

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Geophylic dermatophytes are on the ground in the form of spores, and they can be isolated using techniques which employ hair or nail keratin sources. *M. gypseum* species has a significant public health impact, by causing dermatophytoses or true tineas. In this study, we investigated the presence of *M. gypseum* in soil samples from 24 areas of the City of San Luis, using human hair keratin hook by the Vanbreuseghem's "hair-bait" technique, which were subsequently grown in Sabouraud agar with antibiotics and dermatophyte selective agar acc. to Taplin. For identification, colony morphology, observation of macro- and microconidia characteristics, presence of keratin hook, differential growth on special media, and specific tests were performed. After analysis of the data, a total of two positive *M. gypseum* samples (8.33%) was confirmed. While the number of isolations of this dermatophyte was low, it is important to determine the presence of this soil fungus, which is known to possess pathogenic impact and can develop significant inflammatory symptoms.

A71

MACROPHAGE CELLS REGULATE THE EXPRESSION OF STEROID RECEPTORS IN UTERUS OF RATS WITH POLYCYSTIC OVARY

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Polycystic ovary syndrome (PCOS) is associated with metabolic disorders, hyperandrogenemia, infertility and risk of endometrial hyperplasia. We have reported that macrophages secretions (MΦ-S) contain high TNFα levels and regulate the ovarian androgen production. In this study, we investigate whether MΦ-S from rat spleen affect the mRNA expression of the androgen (AR) and estrogen (ERα) receptors in the uterus of Control (C) and SOP rats. Its relationhip with nitric oxide (NO), as nitrites, was studied. PCO was induced in adult rats by i.m. injection of estradiol valerate, 2 mg/rat. After 2 months, rats were sacrificed. The PCO MΦ were isolated from spleen and cultured cells ($1x10^6$ cells) for 24 h in RPMI medium. Their secretions were used to stimulate C and PCO uterus, for 3 h in a metabolic bath. The mRNA expressions of AR and ERα were determined by RT-PCR, while nitrites by the Griess reaction. The effect of androstenedione 10^{-6}M on NO release was studied in PCO uterus incubations. A lower NO release from PCO compared to C uterus (300±6 *vs* 210±10 nM/mg uterus, $p<0.05$) was observed. The PCO MΦ-S decreased AR mRNA levels and increased NO release ($p<0.01$) in PCO uterus, without change in ERα mRNA expression. The TNFα contained in PCO MΦ-S could be responsible for the NO increase, which in turn could inhibit the AR expression, leading to a lower androgen sensitivity of the PCO uterus.

A72

EEVALUATION OF THE ANTIULCEROGENIC EFFECT OF *Ligaria cuneifolia* IN RATS: AN ACUTE TOXICITY STUDY

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Ligaria cuneifolia (Ruiz & Pau) Thieg. (Loranthaceae), is a widespread hemiparasitic plant in the Argentine Republic and it is employed in folk medicine. The aim of this study was to asses the anti-ulcerogenic effect in rats and acute toxicity effects in mice of the infusion 10% prepared according to Pharmacopea Argentina. We examined the effect on gastric damage induced by oral administration of absolute ethanol (EtOH). The scanned images of stomach were analized by using a program developed by National Institutes of Health. Acute toxicity: *Ligaria cuneifolia* was administered *p.o.* (5, 50, 300 and 2000mg/kg). The mice were observed two weeks to record toxic manifestations, and also to measure body mass (Guideline N°423, Organisation for Economic Co-operation and Development), EtOH produced gastric ulcers in all the animals treated. *Ligaria cuneifolia* (500 mg/kg) prevents the formation of gastric lesions induced by EtOH (damage: 7.55±3.46 mm^2, $p<0.001$ vs. EtOH: 134.11±9.13 mm^2). Several reports have shown that flavonoids protect against experimental ulcer. The anti-ulcerogenic effect of *Ligaria cuneifolia* could be due, in part, to the presence of flavonoid fraction in this plant. An oral single dose administration of the infusion did not produce mortality or any visible symptoms of toxicity. There were no signs or symptoms of restlessness, respiratory distress, diarrhea, convulsions, coma. These findings suggest a potential beneficial use of *Ligaria cuneifolia* on gastric cytoprotection.

A73

POD PRODUCTION IN A "CALDÉN" FOREST THAT SUFFERED ANTROPOGENIC DISTURBANCES.

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Caldén pods constitute a forage contribution to the diet of cattle beeding systems on natural grasslands. A stationary forest with 300 caldenes/ ha produces 600kg DM/ha. The aim was to evaluate the production of pods in a forest that suffered anthropogenic disturbances: selective logging about 50 years ago and recently fire. Pod production was done for 132 trees of different sizes according to trunk diameters. Four samples of 1 m^2 were collected from each tree, and average weight was determined. Based on canopy cover DMpods/tree was calculated. The aim was to estimate the number of trees per hectare the method of Cottan and Curtis (1956) was applied, based on the average distance between trees. The number of trees/ha and the relative density of trunk diameters was arranged in class intervals. The total production of pods/ha was calculated as a product between average annual production/tree and the number of trees/ha for each class interval. According to the relative tree density, the shape of the population pyramid resembles two pyramids, one upon the other, coinciding the union with the effect of logging. Total production was 195 kg of DM/ha, provided by the 47% of the trees (Total of 300), which corresponded to a diameter of more than 0.20 m. Weather conditions were favourable for flowering and fruiting, so the lower production is estimated to be the result of the forest structure resulting from the disturbances suffered over time

A74

VITAMIN D RECEPTOR-MODULATED HSP70/AT_1 EXPRESSION MAY PROTECT KIDNEYS OF SHRs AT STRUCTURAL AND FUNCTIONAL LEVELS

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Hypertension studies have shown that low levels of vitamin D are linked to renin-angiotensin system activation. In addition, the heat shock protein 70 regulates signaling pathways for cellular oxidative stress responses. Here, we wanted to evaluate whether the vitamin D receptors (VDR) associated with Hsp70/AT_1expression may be involved in the mechanism by which paricalcitol (Pari) provides renal protection in spontaneously hypertensive rats (SHRs). SHRs (N=10) were treated for 4 months with vehicle, Pari, enalapril (Ena), or a combination of both. The following variables were studied: blood pressure, biochemical parameters, fibrosis, apoptosis, mitochondrial morphology; and VDR/AT_1 receptor and Hsp70 expressions in the renal cortex. Blood pressure was markedly reduced by Ena or the combination but not by Pari alone. However, VDR activation, by Ena or combination, prevented fibrosis, the number of TUNEL-positive apoptotic cells, mitochondrial damage, and NADPH oxidase activity in SHRs. Additionally, high AT_1 receptor expression, like low Hsp70 expression(immunohistochemical/immunofluorescence studies), were reversed in the renal cortexes of Pari and/or Ena-treated animals, and these changes were most marked in the combined therapy group. Finally, all of the recovery parameters were consistent with an improvement in VDR expression. Data suggest that Hsp70/AT_1 modulated by VDR is involved in the mechanism by which Pari provides renal protection in SHRs.

A75

PHARMACOBOTANIC CHARACTERIZATION OF TWO PLANT SPECIES CALLED "YERBAS MEONAS" IN POPULAR MEDICINE OF CUYO REGION (ARGENTINA)

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Two plant species from west-central Argentina, *Amaranthus muricatus* (Moquin) Hieron. (Amaranthaceae) and *Euphorbia serpens* Kunth (Euphorbiaceae) are used in folk medicine. The first one (known as "yuyo colorado", "yerba meona" and "meonita") is used as antilytic, diuretic, laxative and emollient, while the second one (called "yerba meona", "meona", "yerba de la paloma" and "yerba de la golondrina") is used as a diuretic and emmenagogue. The aim of this study was to characterize both species botanically by qualitative and quantitative micrographic studies. Aerial parts were collected, conserved a portion in FAA (formalin-acetic acid-alcohol), and diaphanizing other one in order to determine its micrographic parameters. Species can be distinguished among them both by their exomorphological and anatomical characters, as well as their micrographic quantitative features. This study contributes to the quality control of these plant drugs, especially when the product is finely crushed or ground.

A76

ETHNOBOTANICAL DATA ON MEDICINAL PLANTS OBTAINED BY MEANS OF SCHOOLCHILDRENS FROM A SAN LUIS CITY SCHOOL (ARGENTINA)

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Traditionally it considered that medicinal plants (MP) and traditional medicine (TM) play an important role in the health system. However, it is unclear how many of the traditional uses of MP are preserved and transmitted by the community. Since 2012 a lot of information was obtained from EGB2 pupils of "Cristo Rey" Educational Institute through interviews and semi-structured polls, about the knowledge on MP of their family environment. Qualitative and quantitative data about the main used plants were collected and the age group, forms of uses in each case, and the therapeutic properties attributed to them These investigations show that 70% of the population uses MP, for several reasons: security (20%), illness (66%) and low cost (14%). 89 MP were reported, belonging to various plant families: Asteraceae (30%), Lamiaceae (16%), Verbenaceae (12%), Euphorbiaceae and Fabaceae (9% each), Moraceae (6%), Passifloraceae (5%), Rutaceae, Tiliaceae and Valerianaceae (3% each), and others (4%). Most of the uses are borne by parents and grandparents (40% each) and uncles and cousins (20%). Most of species were used to treat gastrointestinal, reproductive and respiratory disorders. Information on the proper use of the MP has been disseminated through brochures.

A77
ETHNOMEDICAL KNOWLEDGE ABOUT DIURETIC HERBS IN CENTRAL-WESTERN ARGENTINA

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Traditional medicines have used medicinal plants (MP) for the treatment of urinary system disorders from ancient times. Based on these uses it has been condensed and analyzed the information obtained through semi-structured polls to connoisseurs, healers and leaders of regional markets, as well as folk and bibliographic ethnopharmacological references. We found 185 species, belonging to 35 families, among which are Poaceae (29%), Fabaceae (11%), Asteraceae (8%), Amaranthaceae (4%), Apiaceae, Anacardiaceae, Lamiaceae, Lauraceae and Rutaceae (3% each) and Euphorbiaceae (2%). The remaining 25 families bring one species each (1.8%). Sixteen species (13%) are excluded from phytotherapics (Resol. ANMAT 1788/2000) and 10 are included in the positive list (Resol. ANMAT 1637/2001). 60% are official drugs in 8 Pharmacopoeias of developed countries, and 35% are registered in Argentinean vademecum, of which 9% are not officially recognized drugs by Argentinean Pharmacopoeia. In west-central Argentina, 55% of the diuretic species are purchased in health food stores and pharmacies, 15% in supermarkets and 30% in street sales, family farming or harvested from nature; only 2 species integrate the restrictive list of ANMAT and 28% (64 species) are native to the region.

A78
KNOWLEDGE AND USE OF MEDICINAL PLANTS BY HIGH SCHOOL STUDENTS FROM SAN LUIS (ARGENTINA)

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Medicinal plants (PM) and other natural resources have been used to cure and/or relieve diseases since ancient times. Local society still retains much of popular knowledge about PM. To quantify this empirical knowledge, semistructured interviews were conducted with students from two secondary-level schools. Of 168 respondents, 83.5% knew PM and 69% used them or used at least once. Access to the PM took place on the advice of family members (52%), neighbors (21%), health professionals (18%) and "healers" (9%). The consumption reasons were: 20% for its safety, 66% for a given condition and 14% for its low cost. The PM more consumed were "manzanilla" (*Matricaria chamomilla*), "boldo" (*Peumus boldus*), "basil" (*Ocimum basilicum*), "linden" (*Tilia* spp.), "Valerian" (*Valeriana officinalis*), "Poleo" (*Lippia turbinata*), "peperinas" (*Hedeoma multiflorum, Minthostachys mollis*), "té de burro" (*Aloysia polystachya*), "rude" (*Ruta chalepensis*) and "matico" (*Artemisia douglasiana*). 30% were purchased in supermarkets, 21% in pharmacies, 20% in health food stores, 15% by street vendors, 9% to healers and 5% by domestic cultivation. Students know and use some PM but unknown the adverse effects, therefore educational strategies should be adopted to change and optimize this practice. It is required advice regarding adverse reactions, allergic reactions, interactions, etc.

A79
GANGLIONIC EFFECT OF PROGESTERONE ON LUTEAL REGRESSION AT THE END OF PREGNANCY IN RAT

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Previously, we demonstrated that Progesterone (P_4) added to the coeliac ganglion (CG), and via the superior ovarian nerve (SON), stimulates the ovarian P_4 release, decreases the luteal expression of 20α-hydroxysteroid dehydrogenase (20α-HSD), P_4 degradation enzyme, and FasL, a regulator factor of the way extrinsic of apoptosis. The aim of this study was to analyze the ganglionic effect of P4, through SON, on the luteal expression of 3β- hydroxysteroid dehydrogenase (3β-HSD), P4 synthesis enzyme, and Bax and Bcl-2, regulator factors of the way intrinsic of apoptosis, in pregnant rats on 21 day, using the ex vivo CG-SON-ovary system. The system was incubated in Krebs Ringer at 37ºC, keeping CG and ovary connected by the SON, in separate compartments. P_4 (10^{-5}M) was added in the ganglion compartment [$(P_4)_g$]. At the end of incubation (180 min), the luteal expression of 3β-HSD was studied by Western Blot and the expression of Bax and Bcl-2 was analysed by RT-PCR. Student´s test with a statistical significance of $p<0.05$ was used. [$(P_4)_g$] did not modify significantly the expression of the studied parameters of luteal regression. In conclusion, the luteotrophic effect of P_4 through the peripheral neural pathway would be mediated by inhibition of 20α-HSD enzyme and by modulation of extrinsic pathway of apoptosis.

A80
Hsp70/CHIP/Nox4 NAD (P)H-OXIDASE INTERACTION IN THE OXIDATIVE EFFECT OF LOSARTAN ON PROXIMAL TUBULE CELLS (PTCs) FROM SPONTANEOUSLY HYPERTENSIVE RATS.

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The chaperone Hsp70 regulates a diverse set of signaling pathways. CHIP (Carboxyl terminus of the Hsc70-Interacting Protein) is a E3 ubiquitin ligase that targets proteins for poly-ubiquitination and degradation. We investigated Hsp70/CHIP contribution to Nox4 regulation after AT_1R receptor blockade in primary culture of PTCs. PTCs from 8-week SHR and WKY rats were stimulated with Angiotensin II (100 nmol/L, 15min) (AII), pretreated with Losartan (100 µmol/L, 90min) (L) and with Losartan 75min plus Angiotensin II 15min (L+AII). Losartan increased Caveolin-1 expression, increased Hsp70 and decreased Nox4 protein levels in SHR (L) membranes fraction. Decreased Hsp70 in SHR (L) vs SHR (AII) in cytosolic fraction confirm Hsp70 translocation to membranes. Increased levels ofHsp70/CHIP contrasts with the decreased immunoprecipitation of Nox4 in SHR (L) vs SHR (AII) membranes. Then, we silenced Hsp72 protein expression. Hsp72 depletion was associated with higher Nox4 expression and increased NAD(P)H oxidase activity in SHR (L+AII) vs SHR (L+AII) without transfection. After Hsp72 silencing of PTCs from SHR (AII), Losartan could not prevent AII-enhanced Nox 4 expression and NAD(P)H-oxidase activity. Membrane interaction of Hsp70/CHIP may induceNox4 protein degradation, involved in the cytoprotective effect of Losartan in PCTs from SHR.

A81
IDENTITY AND LOCATION OF THE CENTRAL NEURAL GANGLIA IN THE APPLE SNAIL *Pomacea canaliculata*

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Early authors reported that the central nervous system of this snail is formed by rings of interconnected ganglia around the gut. Six ganglion pairs can be distinguished: bucal, cerebral, pedal, pleural, intestinal and visceral, whose precise location was not clear in those early studies. Notwithstanding, recent authors have only mentioned a ring formed by two cerebral and two pedal ganglia. This apparent contradiction was explored by microdissections and 3D-rendering based on serial sections. The five first ganglion pairs were within the peripharyngeal sinus, while the sixth one was in the visceral hump. The bucal pair was on the surface of the pharyngeal bulb, while the cerebral one was at the tentacles' base. Both pedal ganglia were beneath the bulb, and joined the pleural ganglia in posterior direction on both sides. However, the intestinal pair was asymmetrical: it was continuous with the pleural ganglion on the right, while was separate on the left and communicated with the left pleural ganglion through a long connective. The right intestinal ganglion (subintestinal) also communicates with the left one (supraintestinal) through a commissure passing over the pharyngeal bulb, behind the salivary glands. The posterior connectives of the intestinal ganglia leave the peripharyngeal sinus to enter the visceral hump where they join the fused visceral pair, which lies on the posterior esophagus. These clarifications are significant for further studies of neuronal activation in response to environmental and immune challenges.

A82
DIOECY IN *Fraxinus pennsylvanica* (OLEACEAE) AND THEIR CONSEQUENCES IN FORESTRY.

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The purpose of this study was to analyze the growth of male and female specimens in *Fraxinus pennsylvanica* Marshall. Several authors argue that till the dioecious plants reach maturity, they don't exhibited differences between the sexes in terms of growth. Once achieved, it is evident that female specimens spend more energy, due to the formation and ripening of fruits. The study was conducted on 25 ash trees planted in July 1995. Of the 25 trees, 16 were female and 9 male specimens. When the transplant was done, we could not differentiate the sexes. In March 2013 we measured the diameter at breast height (DBH) and height in every tree. The average female specimen DBH was 16.5 cm and for males 21.5 cm there were no differences in height. The hypothesis test concludes that there are differences in DBH between female and male, being greater the male. There was also a high degree of positive relation between the male specimen and tree architecture, and leaf senescence. Studies on allergenics aspects of *Fraxinus* pollen compromises the use of male specimens. This contradiction could reach to recommend the male trees for commercial forestry and the female ones for the urban trees.

A83
HAPLOTYPES ANALYSIS OF THE GEN TCF7L2 AND ITS ASSOCIATION WITH TYPE 2 DIABETES MELLITUS.

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Common variants of the Transcription Factor 7-like 2 (*TCF7L2*) gene have been found to be associated with Type 2 Diabetes Mellitus (T2DM) in different ethnic groups. The San Luis population has one of the highest prevalence rates of diabetes in Argentina.We aimed to investigate the association of rs7903146 and rs12255372 polymorphisms in TCF7L2 with T2DM and to identify specific TCF7L2 haplotypes in the population of Juana Koslay, San Luis. 49 DNA samples were analyzed. The genotypes were analyzed by Tetra Primer ARMS-PCR. The minor allele of each SNP was significantly associated with T2DM. The strongest association was seen for the variant rs7903146, with an allelic OR of 2.58 (1.06-6.15, p=0.03). The two SNPs (rs7903146 and rs12255372) defined four haplotypes. The haplotype that consisted of two minor alleles (TT) or the haplotypes carrying at least one of the minor alleles at SNP rs7903146 or rs12255372 (i.e. CT or TG) were more frequent in the group of T2DM. This is the first study to examine the association of the two TCF7L2 variants with T2DM and to identify the more frequent TCF7L2 haplotypes in diabetic patients living in Juana Koslay, San Luis. In conclusion, our results add to the rapidly expanding body of evidence that implicates *TCF7L2* as an important risk factor for T2DM in multiple ethnic groups.

A84
DEGRADATION AND UTILIZATION OF HEMICELLULOSE FROM INTACT FORAGES BY *Pseudobutyrivibrio xylanivorans.*

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In NE of Mendoza, goats compose their diet with a predominance of native shrub species, such as *Prosopis flexuosa*, *Atriplex lampa*, *Tricomaria usillo*, *Geoffroea decorticans*, *Mimosa ephedroides* and *Capparis atamisquea*, which constitute an important source of vegetable fiber. From rumen of these goats, we isolated to *Pseudobutyrivibrio xylanivorans*, involved in ruminal digestion of fiber. This study was performed to determine the degradation and utilization of hemicellulose from intact forages by *P. xylanivorans*. Fermentations by pure culture were run to completion by using alfalfa hay and native forages selected by goats grazing. Hemicellulose concentration of the forages was estimated by hydrolysis in H_2S0_4 and measurement of total pentose present with the orcinol reaction. Degradation was defined as the solubilization of 80% ethanol-insoluble pentose, whereas utilization was defined as a loss in total pentose. The nutritional components measured from intact forages were crude protein, neutral detergent fiber, acid detergent fiber, acid detergent lignin (ADL), and starch. *A. lampa* showed the maximum degradation value (61.2 ± 1.0%) and utilization (52.5 ± 4.5%) of hemicellulose and *G. decorticans* showed the lower value of degradation (27.5 ± 2.4%), in comparison with alfalfa hay. The correlation coefficient (R^2=-0.79, p<0.05) between ADL and percentage of degradation and utilization of hemicellulose, suggests that lignin affects hemicellulolytic activity of *P. xylanivorans*.

A85

PREBIOTIC POTENTIAL OF HUMAN MILK: BIFIDOGENIC EFFECT *in vivo* AND *in vitro*

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Human milk is a source of numerous bioactive substances. However, in some cases, its mothers' offer is not possible for this cause the banks of maternal milk were created. The breast milk appears in milk banks, the pasterización process is slow to eliminate pathogenic microorganisms and the heat-sensitive substances can be damaged. Bifidobacteria is the main components of the healthy infant intestinal microbiota and its growth in the gut is stimulated by breast milk feeding. The aim of this study was to evaluate the *in vivo* effect of breast milk feeding with milk from the human milk banks and powder milk formulas in the dynamics of *Bifidobacterium* intestinal population of 68 neonates from 7 to 21 days of age. The counts of bifidobacteria in infants born vaginally and fed with breast milk were significantly higher than the others. The effect of the pasteurization process on the bifidogenic potential of human milk was tested *in vitro* using 25 *Bifidobacterium* strains from human origin. The growth of these *Bifidobacterium* strains in skimmed human milk, either raw (RSM) or pasteurized (PSM) and also re-added of pasteurized fat was evaluated. Growth stimulation of all bifidobacteria strains was observed in RSM, despite of been re-added of fat. *In vitro* correlated with *in vivo* findings, proving that a reduction in the bifidogenic factors occurred with bioactive components that are solubilized in the whey, not in the fat fraction.

A86

EFFECT OF KETAMINE SYSTEMIC SUBANAESTETHIC DOSES ON ANXIETY IN THE PLUS MAZE TEST IN RATS

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Psychotogenic effects of ketamine, due to antagonism of NMDA (N-methyl-D-aspartic acid) glutamate receptors, are widely known, and they are a subject of study in our laboratory. In previous studies we have verified the action of such antagonists injected into brain structures related to schizophrenic psychoses in behavioral tests in rats. In present study we searched for the effect of systemic administration of ketamine at low doses in the "plus maze" test. The plus maze test is a classical anxiety test. Time spent in the open arm, open and closed arm entries, time per entry and grooming are usually measured in our laboratory as anxiety parameters. Three systemically administrated doses were compared with vehicle: 1.25, 2.50 and 5 mg/kg. Statistically significant reduction was observed in the time spent in the open arm and time per entry ($p<0.001$, and $p<0.01$ for the first and second doses), time per entry and open arm entries ($p<0.01$, and $p<0.05$ for the first and second doses). Grooming was clearly enhanced by treatment ($p<0.01$, and $p<0.001$ for the first and second doses). We conclude that systemically administered ketamine in low doses produces anxiogenic effect clearly extrapolated to the effects observed in humans treated with ketamine and symptoms of schizophrenic patients.

A87

BIOLOGICAL WATER QUALITY ASSESSMENT OF URBANIZED RIVERS IN SAN LUIS, ARGENTINA

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Benthic macroinvertebrates are the most accurate bioindicator of water quality in aquatic ecosystems. They are permanent residents, respond to episodic and to cumulative effects, are directly affected by environmental conditions and possess a wide range of sensitivities. Rivers of the central zone of San Luis are widely used for tourist activities and have experienced an accelerated urban growth during the last 20 years. The goal of this study was to assess water quality of two urbanized rivers, Volcán and Trapiche, using benthic macroinvertebrates as bioindicators. Macroinvertebrates were sampled along the course of the rivers, during low and high flow periods between 2011 and 2013, using a 0.09 m^2 area and 300 µm meshed Surber net and preserved in 70% ethanol. Taxonomic richness was used to calculate the scores of the Biotic Index of San Luis Sierras (BISLS), whose values range between 4 (extremely contaminated environments) and 12 (no contaminated environments). In both rivers BISLS ranged from 8 to 10. A decrease in the index scores and as well in the number of macroinvertebrate taxa were observed from upstream to downstream sites for both rivers also. Aquatic environments along Volcán and Trapiche rivers are no contaminated or slightly contaminated. These measures combined with physical-chemical, and other biological indicators are important in order to assess the ecological state of impacted aquatic environments.

A88

PHYTOCHEMICAL ANALYSIS OF THE BARK FROM *Geoffroea decorticans* (GILL. EX HOOK. ET ARN.) BURKART

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Geoffroea decorticans is a middling-size tree (3–5m height). It belongs to the family Fabaceae, whose bark detaches itself in strips revealing lighter layers of the same hue. This species is widely distributed in the dry lands of the centre and north of Argentina. The aim of this work was to complete the phytochemical analysis of the *G. decorticans* bark. Samples were collected in San Francisco, San Luis, Argentina. The quality control of plant material was done by macro and microscopic studies, being observed characteristic elements of it. Different analytical marches were applied to recognize the presence of saponin glycosides and alkaloids from ethanolic extracts. Triterpene saponins were identified whose genin was lupeol and their glycosides were glucose and rhamnose. All these compounds were identified by comparison of chromatographic and spectroscopic data of genuine standards.

A89
ADAPTING THE BUCCAL MICRONUCLEUS CYTOME ASSAY FOR USE IN DOGS

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The Buccal Micronucleus Cytome (BMCyt) assay has been used to successfully quantify genetic damage in humans caused by a variety of genotoxic agents. The objective of this study was to adapt the BMCyt assay for use in dogs and to identify the type and frequencies of common nuclear abnormalities detected in dogs cells for comparison to those detected in human studies. Pet dogs may be particularly valuable sentinels to environmental health because they share the human places and respond to toxic insults in ways analogous to humans.
Buccal cells were collected from 12 purebred dogs, 20 days old, 5 males and 7 females, without sanitary treatments. After fixation and Giemsa stained, 850 cells per animal were analyzed (Thomas *et al.*, 2009). Surprisingly micronuclei (MN) were not detected in any sample. The frequency of binucleated cells were 4,6±3,0 and lobed nuclei were 5,8±3,1/ 850 analyzed cells. The absence of MN may be due to the genetically not damaged condition as newborn animals. MN will be searched in dogs intentionally exposed to genotoxic insult.Lobed nuclei seems common to dogs, it is a category not present in human cells, and its significance must be investigated. Examination of MN frequencies in the buccal cells of dogs has not previously been attempted.

A90
MICROORGANISMS, FEV and FEF 25/75 IN PATIENTS WITH CYSTIC FIBROSIS

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In cystic fibrosis, respiratory infections are common. The VEF_1 (forced expiratory volume in 1 s) and FEF_{25-75} (forced expiratory flow between 25 and el75% of forced vital capacity) are used to evaluate the resistance of the airways. This work aims to compare different infections a which patients may be subjected and which are most frequently found. It is essential to compare the FEF_{25-75} with VEF_1 as measures to determine the airflow limitation.
We studied 76 patients and were deter microorganisms, based on sputum culture and dynamic spirometry with a spirometer. In 2008 the *Staphylococcus aureus*, is 47%, 18% a methicillin-resistant *Staphylococcus aureus* (MRSA) and 29% to methicillin-sensitive *Staphylococcus aureus* (MSSA). In 2009 the *Staphylococcus aureus* it reached 45%, of which 20% corresponds to MRSA and 25% toMSSA. The *Pseudomonas aeruginosa* 41% in 2008 and 44% in 2009. The VEF_1 and FEF_{25-75} are used to evaluate the resistance of the airways. The most frequent infections are *Staphylococcus aureus* and *Pseudomonas aeruginosa*.
The VEF_1 to assess the degree of obstruction, bronchodilator response and treatment of exacerbations and evolution over time. Is noted that the first parameter is the FEF_{25-75}that reflects the commitment of the fine airways .The FEF_{25-75} being a better predictor than the VEF_1.

A91
CARRIERS OF *Candida* IN THE ORAL CAVITY FROM DIFFERENT POPULATIONS

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Candida is skin and mucous membranes anphibious fungus of animals and man. It is an opportunistic pathogen that can develop when there are predisposing causes pathology . Virulence attributes have to colonize and cause damage directly, to activate, resist or deflect the host immune response, constituting one of the infections agents such more frequent. We studied two populations, one rural NE Mendoza (N1 = 72) and other university students (N2 = 252). Samples were oral cavity swabs, which massively plated on Sabouraud agar and incubated for 48 h at 37 ° C. Isolated colonies were counted, studied morphologically and biochemically for typing. The results were: population 1 had positive cultures (20/72) 28% and in population 2 (54/252) 21%. With a count higher than 100 cfu 35% (7/20) and 0.4% (10/ 252) respectively. *Candida albicans* being the most commonly isolated in both cases , accounting for 80 % (16/ 20) in the first group and 93% (50 /54) in the second. From the data obtained show a greater degree of bearing on rural people with health conditions very suitable life and higher amount of non-*albicans Candida* species. We are studying the virulence factors of isolates.

A92
SEMINIFEROUS TUBULES WALL CONTRACTION WITH ENDOTHELIN-1

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Peritubular myoid (PM) cells form a monolayer which surrounds the seminiferous tubules (ST) in rodents. These cells are in turn covered by a monolayer of endothelial cells (EC) from lymphatic vessels. Both monolayers constitute the ST wall, joined by spaces with collagen fibers. PM are smooth muscle cells, with α-actin filaments arranged in two independent layers. PM cells contract with endothelin-1(ET1), a peptide synthetized by Sertoli cells. The aim of this work is to describe morphological changes of the ST wall during contraction, adding information from light, confocal, and electron microscopes (transmission and scanning SEM). To study PM cells surface by SEM, a previous digestion of the EC monolayer was needed. ET1 makes PM cells contract, folding their nuclei, changing their shape to a more rounded one, and reducing their area. Also, PM cytoskeleton changes: the two independent layers of α actin appeared denser, and the outer longitudinal layer tends to make ribbons that cover the nuclei. This correlates with the images of PM cells surface obtained by SEM when the EC monolayer has been digested. In contracted ST, big foldings appear in parallel to ST axis, in contrast with relaxed ST, where PM are polygonal flat cells with smooth surface. As a consequence of PM cell contraction, EC show numerous protrusions towards the interstitium, basement membranes get waved and the collagen fibers, that anchor PM cells with endothelium and epithelium, change their orientation.

A93
3,4-DIHYDROPYRIMIDIN-2(1*H*)-ONES AND 1,4-DIHYDRO-PYRIDINES AS BIOFILM FORMATION PROMOTERS

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Bacteria exist in nature under two forms or states. One of them is "biofilms". Biofilms grants to bacteria significant advantages because provides them protection from environmental fluctuations of humidity, temperature and pH, as well as nutrients concentration, facilitating the elimination of waste and providing bigger resistance to antimicrobial agents. In this work, a group of 12 compounds formed by 3,4-dihydropyrimidin-2(1*H*)-ones and 1,4-dihydropyridines was evaluated related with their capacity of increase the formation of biofilm by the bacteria *Yersinia enterocolitica* (the model selected in this occasion). The most active compound increased the observed formation of biofilm more than 5 times with regard to the control. By means of the obtained results of biological rehearsals and theoretical calculations, a mechanism was hypothesized involving the capacity of these compounds to establish covalent bonds by Michael's type reactions, trans-esterification and nucleofilic carbonyl attack in order to biofilm formation. The reactions between the evaluated compounds and the glucuronic and mannuronic acids residues would increase the construction of the mentioned structure.

A94
EVALUATION OF THE CURRENT CONDITION OF "CALDENAL PUNTANO": TOWARDS THE CREATION AND MANAGEMENT OF A PROTECTED AREA

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For more than one decade they have promoted and executed projects of production and of conservation in the zone of Caldén's Forests in San Luis' Province. These forests agriculturalist - rancher are severely affected by the deforestation and the substitution of his natural vegetation due to an increasing activity. The general aim of this work was to realize an evaluation of the current condition of the caldenal in the south region of San Luis' province, to propitiate actions of conservation and managing of the autochthonous biodiversity and to promote the sustainable development of the area, across the creation and management of a protected area and of the production of educational offers. Interviews and photographic records were realized and there was checked bibliographical and cartographic material. The model selected as base for the planning was the Guide for the production of plans of protected area's Management (Administration of National Parks). The evaluation of the current state of "Caldenal puntano" showed a high degree of degradation of the native biota and there was a need to rethink the creation of a protected area as a conservation strategy.

A95
POSTCONDITIONING ANTIARRHYTHMIC EFFECTS INVOLVE ADENOSINE A_{2A} RECEPTORS

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Intermittent ischemia at the onset of reperfusion, termed ischemic postconditioning (IPC), reduce reperfusion arrhythmias. The role of adenosine A_{2A} receptors in this effect was tested in isolated rat hearts submmited to 10 min of regional ischemia, followed by 10 min of reperfusion and divided in 4 groups: 1) CONTROL, reperfusion with Krebs-Henseleit solution during 10 min; 2) SCH, the initial 3 min perfused with the addition of 50 µM SCH 58261, an adenosine A_{2A} receptor antagonist; 3) IPC, 3 cycles of 30 s reperfusion and 30 s ischemia, 4) IPC+SCH. We evaluated the incidence and severity of reperfusion arrhythmias. Almost all the hearts developed ventricular fibrillation during the first minute of reperfusion without difference between groups. After 3 min of reperfusion the fractions of hearts that still presented ventricular fibrillation were: 10/12 in CONTROL, 7/11 in SCH, 3/12 in IPC *, and 9/11 in SCH+IPC (* $p<0.05$ vs CONTROL, by Fisher's exact test). These data strongly suggest that activation of adenosine A_{2A} receptors is involved in the protective effect of IPC.

A96
WT-1 LINKED TO NITRIC OXIDE BIOAVAIBILITY CAN REVERSE THE VDR/AT_1 EXPRESSION AFTER UNILATERAL URETERAL OBSTRUCTION

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The evidences indicate that vitamin D deficiency and angiotensin II (Ang II) up-regulation play a pivotal role in the progression of renal disease associated with obstructive nephropathy. In addition, Wilms tumor 1 (WT-1) is downregulated during congenital obstructive nephropathy; and also, there is a functional interaction between WT-1 and vitamin D receptor (VDR)/AT_1 expression. Finally, nitric oxide (NO) associated with heat shock protein 70 (Hsp70) may modulate WT-1, preventing apoptosis during neonatal unilateral ureteral obstruction (UUO). Thus, present study proposes to determine if WT-1, linked to NO, can reverse the VDR/AT_1 expression after UUO. Rats with UUO were treated with either vehicle or NO modulators for 14 days. Decreased NO and Hsp70/VDR expression linked to WT-1 low expression was shown in UUO. Fibrosis and apoptosis was induced and it was associated with an increased AT_1 expression. Conversely, Hsp70/VDR upregulation and an increased WT-1 expression, with less fibrotic/apoptotic response, were observed in the NO modulators-treated rats. NO also regulated Hsp70 and WT-1 mRNA expression in MDCK cells. Finally, *in vivo* experiments with NO modulators support our hypothesis that WT-1 linked to NO bioavaibility can reverse the VDR/AT_1 expression after UUO.

A97
DETERMINATION OF EFFECTS OF DIFFERENT DRYING TREATMENTS IN PROTEIN CONTENT OF WHITE CABBAGE COMPLEMENTS

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White cabbage (*Brassica Oleracea var. Capitata*) is a vegetable rich in protein, crude fibre and antioxidant compounds therefore it is considered a natural functional food. In this work, the effects of different dehydration processes on protein content to obtain dietary complements of white cabbage were studied. We used dietary complements derived from white cabbage, subjected to dehydration at 50°C and 90°C in conventional stove, with pretreatments as blanching (B), freezing (F) or without pretreatment (WP). Protein content was determined by Kjeldahl method and the samples were assayed in duplicate. The results for complements dried at 50°C (expressed as g protein/100g dry matter) were: 9.38±0.03(WP); 9.21±0.30(B); 7.97±0.09(F), and the results for complements dried at 90°C were: 7.85±0.17 (WP); 10.42±0.26(B);12.50±0.26(F). Fresh sample contained 9.95±0.22 g/100g dry matter which indicates that samples dried at 50°C showed a slight decrease in the protein content while samples dried at 90°C showed an increase in samples with a pretreatment. This fact could be explaining because the blanching and the freezing would induce a protecting mechanism of these compounds during the drying. The dehydration at 90°C is more aggressive than process at 50°C,however this high temperature did not affect protein content as expected which is advantageous for obtaining high in protein complements in a less processing time.

A98
IMMUNOREACTIVITY OF DIFFERENT CELLULAR PROTEINS FROM *Pseudomonas aeruginosa* WITH SERA ANTI-*Larrea divaricata* PROTEINS.

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Larrea divaricata Cav. (jarilla) has been used in folk medicine for the treatment of different diseases. Its antigenic similarity with cellular and extracellular proteins from *Pseudomonas aeruginosa* has been demonstrated. This bacteria is considered as an opportunistic pathogen in vulnerable hosts due to numerous virulence factors and to its high intrinsic resistance to antibiotics. The aim of this work was to study the immunoreactivity of different cellular proteins of *P. aeruginosa* (PA) with sera anti-*L. divaricata* proteins (anti-JPCE). *P. aeruginosa* ATCC 27853 was the strain used and the cellular bacterial proteins (PPA) were obtained by sonication. The JPCE and PA proteins were partially purified by using membrane with 10, 30, 50 and 100 kDa cutoffs. Mice were immunized with JPCE fractions and IgG levels were obtained by using a ELISA test. IgG levels were significantly higher ($p<0.05$) than those corresponding to negative control when PPA were used as antigens on plate. PPA ≥ 100 kDa reacted with sera anti- R10, 10-30, 30 and 50 (titles to 1/800); PPA ≥ 50 kDa reacted with sera anti- R10 (to 1/3,200) and PPA ≥ 30 kDa reacted with sera anti- R50 and 100 (to 1/1,600). The results demonstrated a high antigenic similarity between jarilla`s proteins and native cellular *P. aeruginosa* proteins greater than 30 kDa.

A99
SEED MORPHOLOGY AND GERMINATION OF *Cereus aethiops* Haw. (CACTACEAE)

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The aim of the present study was to determine the basic morphological characteristics of seeds and seed germination process of *Cereus aethiops* Haw, columnar cactus native of the province of San Luis and widely distributed in Argentina. Seeds were collected in their natural habitat, to perform morpho-physiological studies in the laboratory. The fruit is an elliptical dehiscent berry that has many seeds. The seed is small, about 2.5 mm, dark brown seed coat and brittle. The endosperm is fleshy and white, with a small embryo located in an eccentric position. The germination process begins with the seed coat disruption in the curvature zone, in area near the junction funiculus- placenta. The germination percentages were very variable. The highest values were recorded in seeds scarified with sulfuric acid. The seed were a positive photoblastic behavior, and germination was epigeal. Data obtained on the regenerative capacity of this species is important in the knowledge and the preservation of native species.

A100
SPECIFIC EXPRESSION OF SERPIN 1F IN RAT EPIDIDYMIS

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Epididymal sperm association is a phenomenon observed in many mammals' species. When mature sperm reach the epididymal cauda, sperm aggregates by their heads conforming typical structures. After the ejaculation, the sperm detach by their own movement and the sperm associations finally disappear, producing a free a motile cells suspension. This process is intimately related to the maturation status of these cells. In previous works we isolated and identified SERPIN 1F in the caudal luminal fluid of mature rats. This protein is a member of the Serpin family (Serin proteases inhibitors). We demonstrated that SERPIN 1F was involved in sperm reassociation during in vitro assays. Trying to identify the site of expression of this protein, we isolated RNA from different epididymal regions and from other organs. By RT-PCR and PCR using primers specifically designed, we detected the presence of SERPIN 1F mRNA along the epididymal duct and vas deferens, but not in any other tissues.

A101
NITRIC OXIDE AND PROGESTERONE: RESPONSE FROM OVARY WITHOUT NEURAL INFLUENCE

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Using the coeliac ganglion-superior ovarian nerve-ovary system (Sys), we show that nitric oxide (NO) modifies the ovarian steroidogenesis. Since the NO/nitric oxide synthase (NOS) system is present in coeliac ganglion and ovary, the aims of this work in the first rat proestrus were: 1) to study the effects of NOS inhibitors and a NO donor on the release of NO and progesterone (P_4) in ovary alone (Ov) (without neural influence), 2) to compare NO and P_4 responses between Ov and previous results in the Sys. The Ov was incubated in Krebs-Ringer buffer (basal condition) at 37ºC. Inhibitors of NOS: aminoguanidine 400 µM (AG) and L-nitroarginine methyl ester 100 µM (L-NAME), selective and non-selective of inducible NOS, respectively; and NO donor: sodium nitroprusside 100 µM (SNP), were added in Ov. NO (by the Griess technique) and P_4 (by RIA) were determined at 30', 120' and 180'. ANOVA and Tukey test were used. In basal conditions, Ov showed higher levels of NO ($p<0.05$; $p<0.001$; $p<0.001$), and lower levels of P_4 ($p<0.001$) at all times, than Sys. AG in Ov inhibited NO production at 120' ($p<0.05$) and 180' ($p<0.001$), and increased P_4 at 180' ($p<0.01$); while L-NAME inhibited NO at 120' ($p<0.01$), compared with basal. Also, SNP increased NO ($p<0.001$) at all times and inhibited P_4 at 120' ($p<0.05$) and 180' ($p<0.001$). In the Sys, we previously observed an antisteroidogenic NO effect on P_4, using the same NOS inhibitors and NO donor; however, this effect was of less magnitude in the Ov, demonstrating the great importance of intact innervation to induce the P_4 levels, leading to cycle continuity.

A102
EVALUATION OF STAGE RENAL DISEASE BASED ON THE LEVEL OF KIDNEY FUNCTION

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Serum creatinine (SCr) is a deficiency index of renal function, patients can have significantly decreased glomerular filtration rates (GFR) with normal range SCr, making the recognition of renal dysfunction more difficult. The aim was to evaluate of stage chronic kidney disease based on the level renal function in adult women patients. We compared SCr and GRF estimated by 4 formulas: CrCl, CG (Cockcroft-Gault), MDRD and NKDEP. We included 242 patients, mean age 54,7 ±4,21 years, BMI 26,5±0,7, were grouped according to age (< 29, 30-39, 40-49, 50-59 and > 60 years). SCr increases with age (0,81±0,03 to 0,96±0,07 mg/dl, P<0,05), GFR (ml/min) decreases with age: CrCl 85,3±3,1 to 73,2±4.4 (P<0,01); CG 97,0±3,7 to 63,8±3,3 (P<0,001); MDRD 95,5±3,3 to 70,9±3,8 (P<0,001); NKDEP 89,8±3,1 to 66,7±3,5 (P<0,001) and BMI increases with age 21,2± 0,5 vs 27,79±0,7 (P<0,01).The percentage of patients with impaired renal function: 57,8% CrCL; 58,2% CG; 70,24% MDRD and 80,5% NKDEP were much higher than SCr alone 5,7% (p<0,001). The degree of chronic kidney disease classified by NFK-K/DOQI: 19,8% stage-1; 70,6% stage-2, 8,6% stage-3, 1,2% stage-4. The results suggest a prevalence of abnormal renal function in adult women over 40 years old. The main formula to detect hidden renal disease was using NKDEP. Estimation of GFR may help to facilitate the early identification of patients with renal impairment and classify at different stage, even when their SCr is normal.

A103
METABOLIC RISK FACTORS TO RENAL STONE FORMATION IN CHILDREN

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Physiological disturbances may create an environment conductive to renal stone formation. The aim was to evaluate metabolic risk factors to renal stones formation in children. In this retrospective study, we evaluated a total of 431 individuals using a standardized protocol and our pediatric patient was 11.60%. Urine (24h, 2h) and blood were recollected. Calcium, phosphorus, creatinine, magnesium, urea, uric, citric and oxalic acid, parathormone, sodium and potassium were determined. Mean age: 11.54±0.68 years old, male:female ratio 25:25, BMI: 18.89±0.81. Prevalence of obesity was 12%, overweight 8% and under-nutrition 20% (WHO, 2007). Biochemical abnormalities were found in 96% of individuals. Multiple risk factors were present in 92% (n=47) of the patients, and a single urine metabolic risk factor was present in the remaining 8% (n=3). Idiopathic hypercalciuria 54% (alone or in combination), hypocitraturia and hypomagnesuria 80% (alone or in combination), hyperoxaluria 64% and hyperuricosuria 44% were the most frequent risk factors identified. Marginal hypercalciuria 32% (most <12 years), absortive 14% and renal hypercalciuria 14% (most >12 years). The evaluation of metabolic risk factor in children to renal stone disease is the basis of medical treatment aimed at preventing recurrent stone events and the growth of preexisting calculi. We conclude that specific urine metabolic risk factors are found in most children with kidney stones and that hypocitraturia is as frequent as hypercalciuria.

A104
EFFECT OF COLD STRESS ON FREEZE-DRIED *Cryptococcus laurentii* USED AS MICROBIAL CONTROL AGENT

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The yeast *Cryptococcus laurentii* (BNM0525) isolated, identified and tested in our laboratory, is an effective biological control agent (BCA) against phytopathogenic molds. BCA marketing requires developing a formula that preserves viability and biocontrol ability. The objective of this study was to compare the population dynamics and biocontrol capacity of *C. laurentii* in two physiological conditions: -a) cold stressed (1°C) and -b) no-stressed (28°C).The yeasts were grown in Yeast Glucose Medium (YGM) at 1ºC and 28°C, and then lyophilized using a milk-based cryoprotective. The growth curve of both stressed and non-stressed formulae were tested after lyophilisation, as well as their effectiveness against *B. cinerea* (quantified as severity reduction - SR%) on apple wounds (Red Delicious cv). The apples were stored at 4°C during the bioassay. SR% by stressed yeasts was 79.3% versus 69.1% by non-stressed cells. The stressed cell population reached $5.01x10^7$ CFU/ml at 30 days. The growth curve of stressed yeasts exceeded that of non-stressed ones at all times studied. The significant difference in biocontrol effectiveness (SR%) could be due to the difference in population dynamics of stressed and non stressed cells throughout the bioassay period.

A105
ENDOGENOUS RHYTHM OF TrkB RECEPTOR EXPRESSION IN THE HIPPOCAMPUS IS MODIFIED BY A VITAMIN A-FREE DIET.

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Brain-derived neurotrophic factor (BDNF) bound to its receptor TrkB, is essential for the induction and maintenance of potentiation and long term memory. Retinoic acid, a vitamin A derivative, regulates phenomena related to cognitive function by activating nuclear receptors, RARs and RXRs. Our objectives were: to investigate whether TrkB and RXRα receptors display endogenous circadian expression in the rat hippocampus, to analyze the circadian variation of glutathione (GSH) levels and to evaluate the effect of a vitamin A-depleted diet on those temporal patterns. Holtzman rats received a diet containing 4000 IU of vitamin A/Kg diet (Control), or the same diet devoided of vitamin A (VitaminA-deficient, VAD, group), during 3 months. Rats were maintained under constant darkness conditions during 10 days before the experiment. Hippocampus samples were isolated every 4 h during a 24h period. Circadian rhythms of TrkB and RXRα mRNA were determined by RT-PCR and BMAL1 and PER1 proteins by *immunoblotting*, GSH levels by a kinetic assay. E-box, and E-box like sites were found on regulatory region of TrkB gene, which display an endogenously-controlled circadian expression in the rat hippocampus. Vitamin A deficiency (VAD) modified those temporal profiles, as well as, the rhythmic profile of GSH, probably, by altering the circadian patterns of key clock factors and/or retinoic acid receptors.

A106
PHYTOESTROGENIC ACTIVITY OF *Prosopis torquata*

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Many studies mention fruit consumption by wild canids. One of this vegetal species is *Prosopis torquata*. Prosopis' species have phytoestrogens, which are compounds with hormonal functions and may have different results both females and males. The question arises if the consumption of these fruits could be regulating the reproductive cycle in wild species, for example 8O
Lycalopex griseus. It was used as a model prepubertal female Wistar rats. The variables measured as indicators of estrogenic activity were: vaginal opening time (VO), macroscopic evaluation of the reproductive organs (edema and tissue turgor) and microscopic examination of the ovaries. The results of the VO time didn´t show differences between diets with fruits *P. torquata* and the control. The morphological variations in the ovary, oviduct and uterus between batches, were remarkable, showing a marked irrigation in the uterus of females who consumed fruits. With regard to the histological analyzes in the rats' ovaries that consumed fruits, phytoestrogens' action is seen due to the high number of follicles at different stages, corpus luteum's absence and the presence of cells with apoptotic features. According to what has been analyzed so far, the possibility cannot be excluded that the ingestion of vegetal material in wild mammals, is a reproduction's regulator.

A107
Digitaria eriantha var. ENHANCED INTA with - *Azospirillum brasilense* RESPONSE TO ABIOTIC STRESS.

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Digitaria eriantha var. enhanced INTA is an excellent forage resource in arid areas. The aim of this study was to evaluate the *Digitaria* symbiosis with two strains of bacteria *Azospirillum brasilense*, a commercial one (Az39) and AIA hipoproductor (ipdC-), in control and different abiotic stresses conditions. *Digitaria eriantha* seeds were inoculated and sown in soil: perlite (2:1, v / v) at 23:21°C with 16:8h photoperiod and were separate into four groups: 1) 23°C and field capacity (control), 2) drought (100ml PEG 6000) 1.5Mpa 3) cold (4°C for 72 hours) and 4) salinity (200mM NaCl). The effects were evaluated in different parameters: follage length (FL), root length (RL), fresh and dry weight in follage and root (FWf, FWr, DWf, DWr). In the control treatment were significant differences for (ipdC-) in all parameters evaluated except RL. Mitigation of both bacteria was positive against drought and cold stresses, for all measured parameters, with significant differences relative to control for both bacteria, being (ipdC-) always more effective than AZ 39. None bacteria caused mitigation on salt stress which indicates that they are not very effective in mitigating saline soils.

A108
ION DISTRIBUTION IN THREE PLANT SPECIES OF SALINE WETLANDS

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The objective of this work was to know and explain the behaviour of ions in saline wetlands plant communities. The study area is located between 33º 37´ south lat. and 65º 25´ west long. There were established three physiognomic types of vegetation: the high halophyte bushes (*Atriplex* sp.), the low halophyte bushes (*Sarcocornia neei*) and the open and dense halophyte prairie (*Distichlis spicata*). In each one were determined the ion content in soils and in the plants. The percentage of each ion with respect to the total shows that the values of Ca^{++}, Mg^{++}, and K^{+} are raised in the dense *Distichlis* prairie, while with the Na^{+} the opposite happens. The high rate values $K^{+}_{plant}/K^{+}_{soil}$ indicate that this ion has the highest concentration factor in all plant communities. In *Atriplex*, high content of K^{+} are used to compensate the high values of Na^{+}. *Sarcocornia* and *Atriplex* are able to assimilate more Na^{+} because they have internal strategies to prevent harm. The first species is fleshy and dilutes the Na^{+} by placing it in special cellular compartments, while in *Atriplex* it is concentrated in the leaves, which then they die and so the plant avoids the high concentrations. It is concluded that the ionic content of each of the plant communities is related to the way to tolerate the saline stress.

A109

RELATIONSHIP OF *Thr54* ALLELE OF FATTY-ACID BINDING PROTEIN 2 GENE WITH OBESITY IN TYPE 2 DIABETIC MELLITUS PATIENTS.

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The fatty acid-binding protein 2 (FABP2) has a high affinity for both saturated and unsaturated long chain fatty acids and is involved in the synthesis of TG. The A54T polymorphism of FABP2 gene has been associated with Type 2 Diabetes Mellitus (T2DM) and obesity in many but not all studies. Our aim was to investigate possible associations of FABP2 A54T polymorphism with T2DM and/or obesity in San Luis population. A total of 305 unrelated diabetic patients (115 males and 190 females) were studied. Genomic DNA was extracted from peripheral whole blood with Puregene DNA Purification System. Patients were genotyped by PCR-RFLP. In the whole population 36 % were
genotyped as AA, 49.2% as AT, and 14.7% as TT for the FABP2 A54T polymorphism. The frequency of T allele was 40 % . A significant difference was found in the frequency of FABP2 genotypes between obese and non obese subjects ($p < 0.0001$). The frequency of T allele was significantly higher in obese than nonobese subjects 47% vs 30%, [$p < 0.0001$, OR : 2.03 (CI 95% : 1.45-2.84)]. For these SNP the association with obesity was consistent with a recessive model [$p = 0.01$, OR:2.57 (CI 95%: 1.22-5.4)]. We conclude that diabetic patients with TT genotype present higher percentage of obesity according to the recessive genetic model.

A110

DRUG USE IN A MEDICAL EMERGENCY SERVICE

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An emergency exists when the lack of support leads to death in minutes. Drugs are very important within their possible treatments. Our aim was to analyze the diagnosis, drugs and administration routes (Ar) that were used on a private emergency medical service of San Luis. An observational, cross-sectional and retrospective study was performed. Age, sex, diagnosis, medications, and Ar of 767 patients, were recorded from May to July 2011. The diagnoses and drugs were classified by the Anatomical Therapeutic Chemical System and International Classifica-tion of Diseases, respectively. Results (%): Sex F 57, M 43. Age ≤15: 14, 16-40: 43, 41-70: 27 and ≥71: 14. Diagnostics: toothache 10.3, backache 7, gastroenteritis 6, bronchitis 6, gastritis 5, biliary colic 5, pharyngitis 5, nausea/vomiting 5, fever 3, laryngitis 3, abdominal pain 2.3, headache 2, other dental diseases 2, dyspepsia 1.6, influenza 1.4, pain 1.3, arthralgia 1.3, osteoarthritis 1.2. Medicines: dexamethasone/ diclofenac 12; dexamethasone 11; dexamethasone/dipyrone 6; metoclopramide/dipyrone 5; diclofenac 5, metoclopramide 5; mepred-nisone 4; meprednisone/ketoralac 4; metoclopramide/ranitidine 3; ibuprofen 3; meprednisone/ibuprofen 2; ketorolac/dexamethasone 2; ketorolac 2; ranitidine 2. AR: intramuscular 65, endovenous 16, oral 1, others 6. In many cases, would not justify the use of emergency services, but from other medical specialties, such as clinical medicine, pediatrics and dentistry. Drug misuse was detected, for example, an important prescription of drugs that have not a risk/benefit ratio favorably, such as diclofenac, dipyrone, ketorolac and metoclopramide; and an excessive use of parenteral administration presentations, which imply higher costs and risks for the patient. It is necessary to implement measures that contribute to improve the emergency service use and prescribing habits.

A111

FIXED-DOSE COMBINATIONS OF ANTIBIOTICS COMMERCIALIZED IN SAN LUIS FOR SYSTEMIC USE

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The antibiotics for systemic use (ASU) are essential tools for the therapy of the infectious illnesses. In many cases, ASU form part of fixed-dose combinations (FDC). Our objectives were to quantify the sale of ASU as FDC in the major drug-store of San Luis, determine its Therapeutic Potential Value (VTP), and its presence in the National Therapeutic Formulary (FTN) as indicators of its rationality. During June 2010, an observational, cross-sectional and retrospective study was performed. 316701 medicines were recorded. FDC of ASU were classified by Anatomical-Therapeutic-Chemical Classification (ATC), quantified, and analyzed by VTP (H: high, R: relative, D/N: doubtful / null, U: unacceptable), and by their presence in the FTN (Y: yes, N: no). ASU 78.5%; FDC 28.2%; ATC (%): J01C 81.9, J01E 10.9, J01G 4.3, J01A 1.1. FDC (n, VTP, FTN): amoxicillin(A)+clavulanic acid: 3201, H, Y; A+ambroxol: 1053, R, N; ampicillin (Am)+metamizo-le+guaifenesin: 487, U, N; Am+lysine+bromhexine+chlorphenirami-ne: 351, U, N; trimethoprim+sulfamethoxazole: 340, H, Y; trimetho-prim+sulfamethoxazole+glycerylguayacolic ether: 270, R, N A+di-clofenac: 193, U, N. Despite that the FDC more sold was of high VTP and is included in the FTN, many FDC are of VTP non-elevated and are not listed in the FTN, such as FDC of an antibiotic with a non-steroid analgesic- antipyretic-anti-inflammatory drug, FDC for cold or influenza that are unjustified and irrational. Is alarming the availability and demand in our country of medicines that do not contribute to rational use and therefore to the population health. It is necessary determine the sanitary impact of their consumption.

A112

RECEIVED REPORTS BY THE PHARMACO-VIGI-LANCE UNIT, UNSL

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The Pharmacovigilance Unit of San Luis National University (FVU-UNSL) was designated as Peripheral Effector of Pharmaco-vigilance National System in 2010. The voluntary reports were received (October 2010-October 2012). The reports of suspicions adverse events (AE), medication errors (ME) and inefficacies (IE) were loaded into a database. The severity, avoid-ability and imputability were determined. The Naranjo algorithm was used to determine the imputability. Drugs were classified by the Anatomi-cal Therapeutic Chemical classification, and diagnoses associated to EA, with WHO/ART terminology; also its distribution by age and sex were determined. Results (%): AE 90, IE 8.3, ME 1.7. Avoidable 86.7, unavoidable 13.3. Intensity: mild 66.8, moderate 29.7, and severe 3.5. imputability: possible 65, probable 35. Sex: M 20, F 80. Age: <20: 5, 20-39: 35, 40-59: 28.3, 60-79:30, ≥ 80: 1.7. Reports: general disorders of the organism 25, gastrointestinal 21.6, psychiatric 11.6, central nervous system, peripheral, and autonomic, respiretory and skin 6.7, others 15. Imputed drugs: N Group: 25, C: 18.3, J:15, R:11.7 and others:30. The notifications were mainly AE. The mostly were mild, avoidable, and possible; and the 50% of patients fully recovered. Women and young adults were the most affected. Despite it is a good start for the UFV-UNSL, it is necessary redouble efforts to further professional training and to inform to the community about the importance of the Pharmacovigilance, that allows to increase the quantity and quality of notifications for benefit of population health.

A113

Aristolochia argentina ROOT INFUSION INCREASES URINE OUTPUT AND ELECTROLYTES IN RATS

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Aristolochia argentina (family Aristolochiaceae) is popularly know as "charrúa". The roots of this plant are used in folk medicine. Their infusions and tinctures are reputed to have diuretic, antidiarrheic, astringent and antihemorroidal properties. The aim of this study was to asses the diuretic effects in rats. Infusions of the aerial parts and roots of the plant at 10% were prepared according to Pharmacopea Argentina and lyophilized. Wistar rats of either sex (200-250g) were employed. Lipschitz *et al.* method was used. Control (saline solution), furosemide and hydrochlorthiazide (reference drugs) groups were established. Urinary volume was measured at 15-min intervals for 3h to determine urinary volumetric excretion (UVE). Urine Na^+, K^+ and Cl^- contents were analized. Urinary density and pH were measured. Rats treated with root infusion showed a significative diuretic effect (UVE: 250 mg/kg: 78.33±3.12; 500 mg/kg: 80.98±2.12) respect the control (57.74±1.49), $p<0.0001$. Excretion followed a dose-dependent relation, with values from between 35-40% compared with the control group. Urinary excretion of sodium, potassium and chloride was significantly increased ($p<0.05$). Urinary density and pH were similar to controls. This diuretic activity could be due, in part, to the presence of flavonoids in this plant. Flavonoids are responsible for diuretic effect in other vegetable species. This phytodiuretic had important effects on the excretion of water and Na^+, providing scientific support to the traditional use of this plant.

A114

ANTIOXIDANT RESPONSE OF MYCORRHIZAL *Jatropha curcas* PLANTS UNDER COLD STRESS.

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Jatropha curcas is a perennial species adapted to marginal condition, suitable for making biodiesel. Previous studies showed that it is sensitive to cold stress; however the use of arbuscular mycorrhizal (AM) fungi could alleviate the negative effects of low temperatures. In this work we investigated the AM colonization and evaluated the effects of mycorrhization in plants of *Jatropha* subjected to cold stress.

Seedlings of *Jatropha curcas* L. were inoculated with *Glomus intraradices* (AM) and non inoculated plants were controls (NonAM). We measured the percentage of mycorrhizal root infection, stomatal conductance (SC), photosynthetic efficiency (PE), oxidative damage to lipids (L) and enzyme superoxide dismutase activity (SOD); catalase (CAT); ascorbate peroxidase (APX); and glutathione reductase (GR). AM plants showed about 60% of mycorrhizal root under both control and cold-stressed conditions. Under cold stress, nonAM plant decreased SC, PE and APX; in addition L and GR increased and no changes in CAT and SOD were found. In AM plants decreased GR and SC. The stability in several parameters suggesting that AM plants may be better protected against cold stress injury and could increase production in cold environments.

A115

CROSS REACTION BETWEEN PROTEINS FROM DIFFERENT *Pseudomonas aeruginosa* CELLULAR COMPARTMENTS AND *Larrea divaricata* PROTEINS.

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Larrea divaricata Cav. (Jarilla) is a bush widely used in folk therapy for the treatment of several pathologies. Partially purified proteins of crude extract (JPCE) cross-react with proteins of Gram-negative bacteria including *Pseudomonas aeruginosa*, which is an opportunistic pathogen that causes intrahospitalary infections. The aim of this work was to investigate if antibodies elicited with different *L. divaricata* proteins (JPCE) reacted with proteins from different *P. aeruginosa* cellular compartments. The strain used was *P. aeruginosa* ATCC 27853 and total cellular proteins (PS), membrane proteins (PM) and cytoplasm proteins (PC) were obtained. JPCE were partially purified by using membranes with 10, 30, 50 and 100 kDa cutoffs. Mice were immunized with fractions of JPCE and titles of IgG were obtained by using ELISA test. The sera obtained from animals immunized with the different proteins of JPCE reacted with PS ($p\leq0.052$), PM ($p\leq0.002$) and PC ($p\leq0.002$) in relation with the negative control. When PM and PC were employed as sensitizing antigens, high levels of IgG were observed with titles up to 1/1,600 and up to 1/800, respectively. The results demonstrate antigenic similarity between PM and proteins ≥ 30 kDa and ≥100 kDa of jarilla. However, PC reacted with anti-JPCE50, showing cross reactivity.

A116

CADMIUM ALTERS THE FATTY ACID CONTENT IN AORTA. EFFECT OF SOYBEANS AS DIETARY PROTEIN

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Cd toxicity has been associated to cardiovascular alterations. We have shown that Cd produces oxidative stress and lipid alteration in aorta. To study the effects of Cd on the fatty acid content in thoracic aorta, and the possible protective role of soybeans in the diet, 6 lots of adult male Wistar rats were conformed: 3 lots received casein and 3 lots soybeans as protein source in the diet. Within each protein group, 3 lots were formed: one received water without Cd (control) and the other two received 15 and 100 ppm of Cd (as Cl_2Cd) in the drinking water, respectively, for 60 days. Quantification of fatty acids by Gas Liquid Chromatography was performed in aorta of control and 100 ppm Cd-treated rats. Cd-treatment induced an increase of saturated fatty acid (FA) levels, in particular with 100 ppm of Cd ($p< 0.01$) in both casein and soybean groups. When the FA levels between both diets were compared, we found that in soybean group the levels of polyunsaturated fatty acid (PUFA) (linoleic acid, arachidonic acid and docosahexaenoic acid) were lower than casein group. Since PUFA are the major substrates for the synthesis of lipid peroxides and paracrine mediators of inflammation, the obtained results agree with previous studies, where we observed an increase of the thiobarbituric acid reactive substances levels and inflammation factors in the casein groups. Soybeans in the diet seem to protect the thoracic aorta against Cd effects.

A117
CADMIUM ON LIPID PROFILE IN RATS BRAIN. EFFECT OF SOYBEANS AS DIETARY PROTEIN

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Cadmium (Cd) is an environmental contaminant, toxic to the brain. We studied the Cd effect on the lipid profile of rat pre-frontal cortex (PFC) and parietal cortex (PC) under different protein diets. For that, 4 lots of adult female Wistar rats were conformed: 2 lots received casein, and 2 soybeans, as protein source in the diet. Within each group: one lot received water without Cd (control) and the other 15 ppm of Cd (as Cl_2Cd) in the drinking water, for 60 days. Lipids were extracted with isopropanol:hexane (3:2). Total cholesterol (TC), phospholipids (PL) and protein contents were measured. Fatty acid (FA) composition was determined by gas-liquid chromatography. In the PFC, Cd decreased serum TC in the casein group ($p<0.05$) without change in the soybean group. PL decreased with casein but increased with soybean diet. In the PC, Cd decreased the TC levels with both diets. PL levels did not change with the different diets. Soybeans reduced PL in the control group. In PFC, Cd increased 16:0, 18:0, 20:4 (n-6) and 22:5 (n-3) and decreased 22:6 (n-3), with both diets. In PC, 16:0 increased in soybean and 18:0 FA increased with both diets. Cd increased 20:4 (n-6) in casein. In PC, Cd reduced 22:6 (n-3) with both diets. Results indicate that 15ppm Cd for 60 days alters differentially the TC and PL profiles in cortical brain areas, and that a soybean diet modulates some of these effects. Alterations of FA can interfere with the normal PC and PFC functions.

A118
EFFECT OF PREPUBERTAL STRESS ON LIPID PROFILE AND GLUCOSE TOLERANCE IN RESPONSE TO STRESS IN ADULT RATS

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Stress during puberty may modify the stress response in adulthood. We study the prepubertal stress (PPS) effects on lipid profile and glucose tolerance in response to chronic stress in adulthood. Prepubertal male Wistar rats were used: controls (C) and stressed (S) for immobilization (IMO), 1h/day/7 days. Later, they were left undisturbed until 60 days old. At this age, each group was divided in control or chronic IMO and the CC (Controls), CS (control plus IMO), SC (with PPS without IMO) and SS (with PPS plus IMO) groups were performed. On the 6th day, glycemia, plasma colesterol (C), LDL-cholesterol (LDL-C), HDL-cholesterol (HDL-C) and triglycerides (TG) were determined. On the 7th day, oral glucose tolerance test (OGTT) was performed. Food intake (FI) and body weight (BW) were measured. Increased levels of C, TG, LDL-C and glucose and lower HDL-C levels were observed in IMO rats, being these changes higher in SS rats than CS ($p=0.02$, $p=0.001$, $p=0.03$, $p=0.001$ and $p=0.0001$ respectively). Glucose was higher in SC than CC rats ($p=0.03$). In the OGGT, glucose in SS, CS and SC were higher than CC rats. SS rats show lower BW gain and FI that CS ($p=0.001$, $p=0.0001$). PPS appears to sensitize the response to stress in adult rats leading to a negative energy balance, changes in lipid profile and impair glucose tolerance.

A119
QUALITATIVE AND QUANTITATIVE MICROGRAPHIC STUDIES IN FOUR SPECIES COMMONLY CALLED "TORONJIL"

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Four medicinal plant species are known in central-western Argentina under the common name "toronjil": *Melissa officinalis* L., *Nepeta cataria* L., *Marrubium vulgare* L. (Lamiaceae) and *Lippia alba* N.E. Br. ex Britton & P.Wilson (Verbenaceae). These are used in folk medicine as sedatives, carminatives and/or digestives. The present study aims to comparing the foliar micromorphology and determine the micrographic parameters of the four entities to enhance their quality control and detect eventual adulterants. It worked with both fresh and preserved materials (FAA, formalin: acetic acid: alcohol); the leaves were cut freehand and stained with iodine green: carmine alum, then mounted in glycerin-jelly. To determine the micrographic parameters, the material was diaphanized (Dizeo technique). Both stomata number (SN), stomatal index (SI), palisade ratio (PR), vein islet number (VIN) and veinlets termination number (VTN) were measured. The four species have significant anatomical differences and the quantitative micrographic parameters characterize the diverse drugs, and can help in pharmacobotanic quality control of herbal drugs or phytotherapic products that containing them, even those which are finely ground or powdered.

A120
EFFECT OF HYPERCHOLESTEROLEMIA ON VIA *RAS/MAPK* DURING SPERM CAPACITATION AND ACROSOME REACTION IN NEW ZEALAND RABBITS

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Cholesterol is a component of cell membranes and caveolin 1 is a protein involved in its metabolism. Caveolins are proteins associated to several cell functions, and its role is dependent on its association with membrane microdomains rich in this sterol. Cellular levels of cholesterol are essential for the expression of caveolin-1. We proposed that caveolin 1 possesses regulatory effect on signaling via the Ras /MAPK due to hypercholesterolemic. The objective of this project was to study the expression of caveolin 1 and pErk/Erk1,2 in sperm seminal from New Zealand adult rabbits (*control* and *hypercholesterolemic* groups), during sperm capacitation and acrosome reaction by IFI techniques and western blot. We observed an increment of caveolin1 and decrease of pErk1,2 in *hypercholesterolemic* group. This phenomenon inhibited sperm capacitation and acrosome reaction. This could indicate that overexpression of caveolin-1 by hypercholesterolemia affects the signaling pathway of Ras / MAPK, which regulate sperm capacitation and acrosome reaction.

A121

LACK OF TNFRp55 MODIFIES CIRCADIAN RHYTHMS OF LOCOMOTOR ACTIVITY AND CLOCK GENES EXPRESSION IN THE LIVER.

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Circadian rhythms in peripheral clocks, such as the liver, are controlled by neuroimmunendocrine signals proceeding from the master clock in the suprachiasmatic nucleus and locally regulated by the cellular clock transcription factors. TNFα is a pleiotropic cytokine which binds to cognate membrane receptors TNFRp55 and TNFRp75. Our objective was to evaluate the consequences of TNFRp55 deficiency on the 24h locomotor activity pattern, a function controlled by the master clock in the SCN, as well as on the circadian profiles of three key clock factors, Clock, Per1 and Cry1, in the liver of female mice in diestrous. Locomotor activity was recorded using a computational adquisition data system equipped with infrared detectors. Circadian clock genes expression was determined by RT-PCR from liver samples obtained every 6 hours from female mice maintained under constant darkness during 7 days before the experiment.As expected, Clock, Per1 and Cry1 expression is circadian and endogenously driven in the mouse liver. Lack of TNFRp55 decreases locomotor activity of female mice and modifies clock genes circadian rhythms in the liver. Particularly, it abolished Cry1 rhythmicity and advanced Clock and Per1 rhythms' phases. Thus, we suggest TNFα, through its p55 receptor signaling pathway, could play a role in the temporal organization of the circadian clock in the liver, a peripheral clock with relevant function in metabolism.

A122

ESCHERICHIA COLI O157:H7: RELATIONSHIP BETWEEN BIOFILM FORMATION, PH AND TEMPERATURE OF GROWTH IN VEGETABLE BROTH.

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Escherichia coli O157:H7 is widely known as an agent of diarrhea and hemorrhagic colitis. Furthermore, it produces hemolytic uremic syndrome (HUS) and thrombotic thrombocytopenic purpura in children and is associated with the consumption of undercooked ground beef and other foods. Cross contamination may occur in food processing plants and during subsequent handling and preparation, resulting in a wide variety of foods implicated in outbreaks caused by these strains. *E. coli* O157:H7 was cultured, using their ability to form biofilms. Strains were plated on Congo red agar plates and after incubation, were used a reference scale four colors to differentiate producing and non-producing slime *E. coli* O157:H7. We included positive and negative controls. There was high concordance between the methods tested for the production of slime. We studied the formation of biofilm in four culture media. Three cultures were performed on vegetable broth (lettuce, spinach and soy) and one culture on nutritive broth. The four broth presented different pH. Microbial growth was evidenced by O.D. (540 nm) in a spectrophotometer. The results suggest that the increased production biofilm was achieved at a pH range 4 to 7. We obtained higher OD values on vegetable broths than in nutrient broths. We will continue to assess the production of biofilm and curli in environmental strains as important vehicles of transmission of pathogens from various food products.

A123

ZINC EFFECTS ON LATERALIZED EXPLORATORY BEHAVIORS ARE MEDIATED BY ACTIVATION OF BASOLATERAL AMYGDALA NEURONS IN THE RAT

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Previously, we have shown that pregnant rats exposed to chronic administration of non-toxic concentrations of ZnTe during pregnancy, lactation and pre-puberal period of young animals modified some parameters of spontaneous lateralized exploration. Since exploration of novel environments depends on amygdala neurons activity, the objective of the present work was to find out if the basolateral amygdala (ABL) is a possible target site in rat brain where trace elements could be exerting its biological actions. All rats were stereotaxically implanted with microinjection cannulae into the left, right or both ABLs. Four groups were formed: (1) Control rats (n=19), (2) Left ABL ZnTe-treated rats (n=17), (3) Right ZnTe-treated rats ABL (n=31), and (4) Right/left ZnTe-treated rats (n=10). During 3 days at noon, all groups received into the ABL 1µl of saline, or saline containing 0.03µg/L of ZnTe. At Day 4, rats were tested in the Lateral Double Holeboard Labyrinth during 5 min to test lateralized behaviors. Results show that left lateralized exploration in control group was 77 Counts/5 min, and right exploration was 50 Count/5min ($p<0.01$). ZnTe treatment in left, right and right/left groups abolished the left bias exploration. Percentage of left bias exploration, which in Control group was 84.2%, also was affected by the ZnTe treatment (54.8 -70.6% range, n.s.). Results support the idea that the ABL might be one target site of Zn biological action.

A124

GROWTH OF AND PARTITIONING BETWEEN SHOOT AND STORAGE ROOT IN ANNUAL CARROTS (*Daucus carota* L.).

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In Argentina, only annual carrot cultivars (cv) can be sowed in the summer season because they have vigorous seeds, nevertheless the offer of commercial cv is limited. Short cycle cv could be useful for this season. The aim of this work was to investigate the patterns of shoot and root growth of 6 local carrot cv. The cultivars were: Precoz, Mediaguina, Larga Cordobesa Criolla INTA and the lines B10 y M1 (obtained from Criolla INTA). The variables analysed were: shoot and root weigth, length and diameter of roots. The cv were arranged in a randomized complete block design with four replicates. Roots were harvested to 45, 60 and 75 days after sowing. The results were statistically evaluated by ANOVA and Mean Comparison (LSD). The shoot growth rate was similar up to 75 days, where Larga Cordobesa showed the maximum value. Difference was observed in the growth of the root being B10 the one who showed the major rate and Larga Cordobesa the minor rate. Three groups could be formed according to the partitioning: Larga Cordobesa (to the shoot), Precoz y Mediaguina (intermediate) and Criolla INTA, B 10 y M1 (to the root). The last above mentioned reached the balance 15 days before the rest. These results coincide with Suojala (2000) who indicates that long cycle cv invest more carbohydrates to shoot in the early stages of growth.

A125
EFFECT OF LINEAR INFRASTRUCTURE ON DIVERSITY OF ANTS IN HYPER-ARID MONTE DESERT, SAN JUAN PROVINCE

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The maintenance of species diversity in natural ecosystems is a central focus of conservation biology. Linear infrastructures cause changes in the environment producing changes at several levels. Ants are often used as bioindicators because they are easily collected and respond quickly to environmental changes. The abundance of ant colonies on the roads or near them is determined by the responses of each species to a number of characteristics of these environments. The aim was to evaluate the effect of Central Corridor on ant diversity in Ischigualasto Provincial Park (IPP). In January 2013, we set up a total of 30 transects (15 transects disturbed and 15 undisturbed areas). In each transects was set up 6 pitfall traps during 24 hs. Twenty-two species of ants were collected, 6 species were restricted only to disturbed and 3 to undisturbed areas. Ants diversity were higher, although no significantly, in disturbed than in undisturbed areas (Simpson´s index, 0.16 and 0.14, respectively). Species with abundance significantly higher in undisturbed than disturbed areas were *Dorymyrmex* sp.; *D. ensifer; D. planidens; Forelius albiventris; Camponotus punctulatus; Acromyrmex striatus* and *Pogonomyrmex cunicularius*, and reverse were found for *Camponotus* sp.; *Pheidole* sp.; *Forelius* sp.; *A. lobicornis* and *P. brevibarbis* (GLM; $p<0.0001$). Linear infrastructures lead changes in the abundance of terrestrial ants assembly in the IPP.

A126
SEASONAL VARIATION OF FIELD BODY TEMPERATURE OF *Liolaemus darwini* AND *L. acostai*: A BIOLOGICAL PARAMETER WITH ASTRONOMICAL O CLIMATE CRITERIA?

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The weather seasons can be defined according to numerous criteria such as mean daily temperature, mean minimum and maximum temperatures, cloudiness, frost frequency; these variables take into account the criteria of weather seasons. The aim of this study was to perform a comparative analysis of body temperature of*Liolaemusacostai* and *L. darwini* with astronomical and climate seasonscriteria to determine whether the change of these points of view generates significant changes in the results. Data from body temperature (Bt) of *L. acostai* and *L. darwini* were used, both populations from the province of San Juan, Argentina. The data were taken over an entire annual cycle and grouped according to established both astronomical (winter, spring, summer and fall with three months per season) and climate criteria. Statistical test that was used wasone-way ANOVA and alpha was set at 5%.*L. acostai* and *L. darwini*Bt showed variations in climate criteria only. It is suggested that the climate criteria best represents climate variations that affect certain biological parameters such as body temperature.

A127
BIOLOGICAL INTERACTIONS IN WOOD-LANDS OF THE MONTE DESERT

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In arid and semi-arid ecosystems, woody plants produce changes in microclimate and soil properties. *Ramorinoa girolae* is a woody species, endemic of western Argentina and its morphology characteristics make it able to maintain different biological interactions. In this work we evaluate the diversity of plants under canopy of *R. girolae* and inter-canopy microhabitats, and fitted models to assess if the species richness under canopy was explained by different morphology characteristics of *R. girolae*. We recorded presence-absence data for plant species under canopy and inter-canopy in 29 individuals of *R. girolae* in the Ischigualasto Provincial Park, San Juan province, Argentina. For each individual we measured: area of canopy, density of branches, maximum high, cover percentage of shrubs and herbs under its canopy. The diversity index was higher under canopy (D=14.43) than inter-canopy (D=13.58), but there was not a significant difference (W=10.00; p=0.99). The best model to explain species richness included area of canopy (weight=0.14), density of branches (w=0.11) and both variables (w=0.08). The parameter likelihood was higher for area of canopy (0.51) than for density of branches (0.39). The microenvironments created by large and dense canopy facilitate the establishment and growth of different plant species.

A128
HEMATOLOGICAL REFERENCE VALUES FOR GUANACO (*Lama guanicoe*)

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Knowing the health status of wild animals is important. Due to this it is essential to have hematologic data of captive wild animals. There is a paucity of hematological reference values for the genus *Lama* (Artiodactyla); for guanacos there are only for juveniles (<3 years) and a few for adult animals. We analyzed blood samples of healthy captive adult guanacos (1 male and 6 females), whose data can be used as a basis for further research. Samples were obtained via jugular vein. These samples were placed on EDTA and processed with an Abacus Junior Vet Hematology analyzer. For differential leukocyte count, blood smears were taken, fixed with methanol and stained with Giemsa. Mean and SEM obtained for females: RBC (10^{12}/L): 12.87 ± 0.72; PCV (L/L): 0.27 ±0.02; Hb (g/L): 140.3 ± 5.43; MCV (fL): 41.45 ± 7.07; WBC (10^9/L): 7.87 ± 0.93; band cells (10^9/L): 0.16 ± 0.1, neutrophils (10^9/L): 5.83 ± 1.54; lymphocytes (10^9/L): 1.6 ± 0.6; monocytes (10^9/L): 0.17 ± 0.11; eosinophils (10^9/L): 0.1 ± 0.04; basophils (10^9/L): 0. The male had the following values: RBC (10^{12}/L): 11.3; PCV (L/L): 0.39, Hb (g/L): 154; MCV (fL): 39; WBC (10^9/L): 4.5; band cell (10^9/L): 0; neutrophils (10^9/L): 2.25; lymphocytes (10^9/L): 2.16; monocytes (10^9/L): 0.09; eosinophils (10^9/L): 0; basophils (10^9/L): 0. The values obtained were similar to those of others camelids like *L. glama*, *L. pacos* and *Vicugna vicugna*.

A129
THERMAL DATA IN THE FIELD AND SPACE TEMPORARY ACTIVITY OF TWO CORDILLERAN LIZARDS, SAN JUAN, ARGENTINA

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Body temperature is a key variable that affects all aspects of animal function. We studied aspects of the body temperature of field and activity patterns of *Liolaemus vallecurensis* and *L. ruibali*. Data were collected in January of 2007, recorded the cloacal (Tc), substrate (Ts) and air (Ta) temperature, the records of activity was carried out between 8 and 20 h. *L. vallecurensis* body temperature field was not related to the temperature of the air and substrate (r_{tc-ta}=0.03; p=0.858; N=28; r_{tc-ts}=0.1446; p=0.463). In *L. ruibali* body temperature field was related to the air temperature (r_{tc-ta}=0.3762; p= 0.0582; N=26) and no association was found with the substrate temperature (r_{tc-ts}=0.2728; p=0.1776; N=26). Both showed a unimodal pattern of activity, with difference in the time of maximum activity. The pattern of activity in *L. vallecurensis* does not differ between sexes in contrast to that observed in *L. ruibali* where females were more active. Data suggest that both species can maintain high body temperatures thanks to the behavior of sunstrokes that lies ahead.

A130
CONTENT OF PHENOLIC COMPOUNDS AND ANTIOXIDANT ACTIVITY IN SEEDS OF *Cucurbita spp.*

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Oxidative stressand the presence offree radicals arean important cause of various pathological therefore; the objective of this study was to evaluate the phenolic content and antioxidant activity in four varieties of *Cucurbita spp* seeds: Tetsukabuto (hybrid between *C. moschata* (Duchesne ex Lam.) (Duchesne ex Poir. And *C. maxima* Duchesne), *C .mixta* Pangalo (calabaza rayada), *C. moschata* (Duchesne ex Lam.) Duchesne ex Poir. (coreanito) and *C. maxima* Duchesne (calabaza plomo).Total phenols were determined according to the Folin-Ciocalteu method and their content was: Tetsukabuto 212,87±7,51, Calabaza rayada 275,10±6,86; Coreanito118,79±3,72, Plomo 212,87±7,51 (mol GAE/g sample). The antioxidant activity was calculated on the stable radical 2,2-diphenyl-1-picrylhydrazyl (DPPH) and is expressed as median inhibitory concentration (IC50) showing the following values; Tetsukabuto117,69±5,81; Calabaza rayada 77,75±3,64, Coreanito110,67±1,70**,** Plomo 87,39±8,64 (mg/ml). Fisher test (LSD) revealed that there are two homogeneous groups, formed by *C.mixta* Pangalo and *C. maxima* Duchesne which are those with higher phenolic content and antioxidant activity. The results obtained show that these seeds can be considered a source of natural antioxidants.

A131
EVALUATION OF THE GERMINATION OF *Pithecoctenium cynanchoides DC.* FOR ITS USE AS AN ORNAMENTAL

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P. cynanchoides (Bignoniaceae) has white flowers whith yellow center, lasting from the beginning of the spring until the end of the summer. As a contribution to the knowledge of the seeds for ornamental production we evaluated the germination in 3 different treatments: soak in water for 24 hours; absence of seminal wing and control. Six months after the collection of seeds, carried out in June 2011 in Valle Fértil, San Juan; 25 seeds were placed in paper tray by germination moistened with distilled water at 21 °C (± 1 ºC) with photoperiod of 12/12h light/dark, with 4 replications per treatment. The results were analyzed with ANOVA and Tukey's test (α=0.05) using the InfoStat (vers1.1). Under the three treatments we obtained germination percentages greater than 95 %, no significant differences were found between treatments. We obtained 100% germination when membranous wings were removed from the seeds. Variables studied had no influence on the germination of the species. The data suggest the feasibility of the species to its production as ornamental.

A132
MINERAL CONTENTS IN THE INFUSIONS OF TWO SPECIES OF SOUTH AMERICAN MISTLETOES

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Ligaria cuneifolia (Ruiz & Pav.) Tiegh. (liga roja) and *Tripodanthus flagelaris* (Cham. & Schlecht.) Tiegh. (liga blanca) –Loranthaceae– are hemiparasitic plants. The herbal infusions (teas) of these species are widely used in Argentinean folk medicine because of its cardiovascular effects (antihypertensive). For this reason, accessibility studies seem to be interesting as the total elemental concentration in herbs and infusions would be helpful for obtaining a realistic picture of the human intake of these elements. The concentrations of As and heavy metal elements such as Cr, Cd and Pb, as well as essential elements in fifteen samples of medicinal herb, prepared as infusion, were determined by using inductively coupled plasma optical emission spectrometry (ICP-OES). The samples were digested with concentrated nitric acid and hydrogen peroxide in a microwave system. This study showed the total content of arsenic and heavy metals in herbs was 14.02 and 11.15 mg Kg^{-1}, respectively and very low percentage of arsenic and heavy metals released into hot water indicating low contamination. The hazard index (HI) of daily tea drinking of *Ligaria cuneifolia* and *Tripodanthus flagelaris* was low and within the bounds of safety (<1) from the US EPA`s IRIS database.

A133
ANTIOXIDANT ACTIVITIES OF POLAR EXTRACTS FROM GRAPE MARCS

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The aim of this work is to study the antioxidant activity of polar extracts of grape marc used for the obtaining of fine wines. The most important secondary metabolites present in both wine and its byproducts are tannins and other phenolic compounds. There are multiple studies that show that they are the responsible for bio-activities such as anticancer and antiradical. The ability to capture the stable radical 2,2-diphenyl-1-picrylhydrazyl (DPPH) of aqueous decoctions and infusions and methanolic extracts from Malbec, Syrah, Chardonnay and Tannat marcs were evaluated at concentrations of 1000 to 5 µg/ml. Interesting results were obtained mainly for Syrah methanolic extracts and Malbec aqueous decoction (90% and 73% of inhibition at a concentration of 100 ?g/ml respectively). These results confirm the potential of using the pomace from these red grapes as feedstocks for the production of antioxidants.

A134
CHANGES IN THE CUTICULAR PROFILES FROM MALES OF *Ceratitis capitata* BY EXPOSITION TO ESSENTIAL OILS

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Cuticular hydrocarbons are compounds present on the epicuticle of all insects. They have an important role for sex recognition and mate choice as a contact pheromone. Previous experiments showed that exposure of sterile males of *Ceratitis capitata* (medfly) to the essential oils of *Baccharis spartioides* and *Schinus polygama* improved their mating success. Components of essential oils at the vapor phase might be ad/absorpted at the cuticle during the exposition treatment. We analyzed the chemical profiles of medfly males treated with the essential oils of *B. spartioides* and *S. polygama*. Twenty five-treated (exposed to oil) and 25 untreated males (unexposed) were placed in small amber glass vials and immobilized at -18 ° C. Cuticular hydrocarbons were extracted with 2 ml of hexane for 5 minutes. Each extract was concentrated by a constant flow of nitrogen before analysis by GC-MS Cuticular profile from treated males was different from untreated. Males treated showed a decreased content of hydrocarbons of low molecular weight compared to unexposed males. Interestingly, some monoterpenes hydrocarbons from the essential oils appear in the treated males. The changes observed might be implicated in females' choice.
Acknowledgements: ProCEM-San Juan provided *C. capitata* individuals. ANPCyT (PICT´07-01468) and CONICET (PIP´08-0407) funded the study.

A135
EFFECTS OF MIXTURES OF 'DEET' AND ESSENTIAL OILS AS REPELLENTS OF *Triatoma infestans*

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DEET (N, N-diethyl-m-methylbenzamide) is an effective synthetic repellent against a wide range of insects. However, it may exert toxic reactions under some circumstances and age groups, and may damage plastic synthetic fabric and painted surfaces. It would be interesting to explore alternative products. The essential oils (EO) are being developed as repellents against insects. In previous works, we have reported good repellent activity of essential oils from native species collected in San Juan, Argentina, against *T. infestans*, the vector of Chagas disease. We propose the use of mixtures of EO and synthetic products as a way to reduce the load of the active ingredient thus achieving equivalent levels of efficacy. Our objective was to test mixtures of DEET and EOs against *T. infestans*. The repellency on *T. infestans* nymphs was determined according to a standard method. Based on the percentage of repellency (RP) in a 72-h treatment, the best results were obtained for *Azorella cryptantha* EO (AcEO) using a mixture of 75% of AcEO and 25 % of DEET. This mixture was more effective than treatments with 75% and 100% of DEET ($P<0.05$).

A136
EX SITU CONSERVATION OF NATIVE SAN JUAN PLANT GENETIC RESOURCES

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Those native plant species that possess actual or potential value for feeding and agriculture, constitute the native phytogenetic resources. To contribute to the conservation of the genetic resources of local native plant, in 2010 began the campaigns of seed collection and herbarium specimens in San Juan. The seed collections are maintained in germplasm bank according to FAO **(**Food And Agriculture Organization**)** standards. Herbarium specimens are preserved under standard conditions, both collections in the Seedbed Institute (INSEMI). The collection sites were characterized and georeferenced. The information was systematized along with morphological descriptors of each species. As a result of the collection, there are 100 entries of native plant genetic resources (seeds), arranged in 18 collections: *Mimosaceae, Papilionoideacea, Ceasalpineacea, Asteraceae, Poaceae, Zygophyllaceae, Verbenaceae, Celastraceae, Caparidaceae, Anacardiaceae, Chenopodiacea, Ramnaceae, Apocinaceae, Bignoniaceae, Portulacaceae, Solanaceae, Malphghiaceae and Cactaceae*. This is the first action of *ex situ* conservation of native plant genetic resources that have been deployed in the province of San Juan.

A137

SPATIAL AND TEMPORAL TRENDS IN WATER QUALITY OF TWO PRINCIPAL RIVERS FROM IBERA SYSTEM

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The Iberá wetlands are a vast network of creeks, lagoons and swamps with a total area of approximately 17,000 km², located in the central portion of the province of Corrientes. The wetlands are of pluvial origin with a depth varying between 1 and 3 meters. Today, the Ibera system represents a strategic freshwater reservoir. In general, the physico-chemical properties of water tend to show a combination of geomorphological attributes modified by a wide range of direct and indirect climatic and human influences. Information on water quality parameters and their relationship is of critical importance to the implementation of sustainable water management strategies. This study presents the application of selected chemometric techniques to the physico-chemical dataset, namely, Principal component and Correlation analyses. Data of five indicators, suspended solids, ammonium-N, phosphate-P, biochemical oxygen demand (BOD) and dissolved oxygen, in samples collected between 2012 and 2013, were analyzed. Principal component analysis identified two components, which are responsible for the data structure explaining 78.4% of the total variance from the data. Significant data reduction was achieved. This enables better evaluation on the water quality on the monitored area.

A138

THYROID DISORDERS INFLUENCE RECEPTC COMODULATORS GENE EXPRESSION IN RA HYPOTHALAMUS DURING THE TRANSITION FROM LATE PREGNANCY TO LACTATION

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Thyroid disorders impair fertility and lactation. We have shown that these disorders affect hypothalamic thyroid hormone receptor (TR) expression. TR transcriptional activity is regulated by modulators such as repressors (NCoR) and activators (CoA) and of iodothyronine deiodinase II (DIO2). We studied the effects of hyper- and hypothyroidism on the TR pathways by determining the expression of TR modulators in medial basal hypothalamus (MBH). Wistar control (Co) hypothyroid (HypoT: 0.1 g/L PTU in drinking water), hyperthyroid (HyperT: T4, 250 µg/kg/day, *sc*) rats were sacrificed at days 19 (G19), 20 (G20), 21 (G21) of pregnancy and 2 of lactation (L2). Modulators expression was measured by real time RT-PCR. Two way ANOVA analyses were performed. In Co and HyperT CoA 1 and 2 and DIO2 expression was high in G19 while in HypoT rats levels were low at G19 and increased at G21 ($p<0.05$ vs G19 and L2). NCoR2 expression remained constant in Co and HyperT while HypoT rats decreased its expression on G19 and increased it on G20 ($p<0.05$ vs HypoT G19, G21 and L2). These results indicate that HypoT affected differentially the TR modulators at late pregnancy. In HypoT rats the increased CoA and DIO2 at G21 probably contribute to the brain homeostasis of thyroid status.

A139

INDUCTION OF HYPOTHALAMIC THYROID RECEPTOR EXPRESSION BY THE SUCKLING STIMULUS

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During lactation there are adaptations that enhance the metabolic efficiency with the aim to ensure the adequate fulfillment of the nutrient needs of the newborn. Suckling is an important stimulant of prolactin (PRL) secretion and food intake, and thyroid status is involved in the metabolic adaptations to lactation. Our objective was to determine whether circulating thyroid hormones and the hypothalamic response capacity to thyroid hormones are modulated by the suckling stimulus. For this, we determined serum PRL, T3 and T4 by RIA and the expression of thyroid hormone receptors isoforms (TRα1, TRα2, TRβ1, TRβ2) and of two members of the family of nuclear receptor co-regulators (NCOR1 y NCOR2) in medial basal hypothalamus (MBH) by real time quantitative RT-PCR in mid-lactating Sprague Dawley rats separated from their pups for 12 h and subsequently suckled for 0 (S), 2 (S/s2h) or 4 h (S/s4h). Two or 4 h suckling increased significantly PRL, T3 and T4 release ($p<0.05$ vs S) and induced significantly the expression of TRα1, TRα2, TR β1 and TR β2 ($p<0.01$ vs S) without changes in the expression of NCOR1 and NCOR2. These results indicate that hypothalamic TRs expression is induced by suckling in lactating rats in correlation with an increase in T3, T4 and PRL levels. Suckling stimuli may mediate metabolic changes in MBH that involve the participation of TRs.

A140

RAPID DETECTION OF SHIGA TOXIN-PRODUCING *Escherichia coli* O157:H7 FROM GROUND BEEF AND SAUSAGES IN SAN LUIS.

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Shiga toxin-producing *Escherichia coli* (STEC), a foodborne pathogen with a high prevalence in Argentina, is associated with human diseases such as bloody diarrhea and hemolytic uremic syndrome, being the serotype O157:H7 the most prevalent. The pathogenic potential of STEC is related to the production of Shiga toxins 1 and 2. A procedure for the fast detection of this pathogen in products sold in butcher shops in San Luis city is presented. Eighty samples of ground beef and sausages collected from April to August 2013 were analysed as follows: 20 g samples were enriched in 80 ml of tryticase soy broth (TSB) for 24 h at 37°C. Then, 18 µl of immunomagnetic particles coated with *E. coli* O157:H7 antibodies (IMP) were added to 1 ml enriched TSB and immunoseparated. DNA was extracted and a duplex PCR targeting genes *stx1/stx2* was performed. Sequences of 130 (*stx1*) and 346 (*stx2*) bp were amplified. The *stx2* gene was detected in 12 samples (15%). Four out of these samples were also $stx2^+$ by PCR after culture on Sorbitol Mac Conkey agar. Although DNA of nonculturable bacteria might be detected by using IMP followed by PCR, positive results obtained by this specific and rapid procedure are indicative for the presence of STEC in meat samples in our region.

A141

PREDATION OF *RAMORINOA GIROLAE*'S SEEDS DURING THE PRE-DISPERSAL STAGE.

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Ramorinoagirolae is a legume endemic to the humid hills of San Juan, San Luis and La Rioja. Its fruit, woody and hardy, contains seeds that are attacked by arthropods during the pre-dispersal stage. Our objective was to analyze variability in the number of healthy (He), aborted (Ab) and attacked (At) seeds by comparing 3 sites along a humidity gradient in Ischigualasto Provincial Park: Mina de cuarzo (more), Morado (intermediate) and Tramo (less humid site). At each site, 6 trees were taken at random, separated by at least 100 m. Ten mature fruits were collected per tree during the pre-dispersal period (January 2013). In the laboratory, the number of He, At and Ab seeds were quantified. Of the total seeds for Mina de cuarzo, 51% were He, 37% At and 12% Ab. For Morado, 19% were He, 78% At and 3% Ab. For Tramo, 39% were He, 58% At and 3% Ab. Generalized linear mixed models show that differences between sites explain the proportions found. Mina de cuarzo is significantly different from the other two sites. Probably it has the most favorable conditions, and their plants produced a greater number of He seeds and adopted the abortion strategy as a way to reduce attack by arthropods.

A142

IDENTIFICATION OF SHIGA TOXIN-PRODUCING *Escherichia coli* (STEC) FROM PRECOOKED BLOOD SAUSAGES (MORCILLAS) IN SAN LUIS, ARGENTINA.

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Infection by Shiga toxin-producing *Escherichia coli* (STEC), a foodborne enteropathogen, may result in watery or bloody diarrhea, and hemolytic uremic syndrome. In our country, the search of STEC O157:H7 in meat sold at retail markets is mandatory. It is only known one previous study in Argentina which reported 3% of STEC prevalence in "morcillas". Twenty seven samples of this food collected from butcher shops of San Luis city during 2013, were analysed. They were enriched in tryticase soy broth (TSB) and concentrated by using immunomagnetic particles coated with *E. coli* O157:H7 antibodies (IMP). Then, 50 µl TSB/IMP were plated onto Sorbitol Mac Conkey agar (SMAC) and other 50 µl TSB/IMP was directly used for DNA extraction. The extracted DNA after TSB/IMP, TSB/IMP/SMAC and TSB/SMAC, was screened for genes of Shiga toxins 1 and 2 by duplex PCR. Six samples (22.2%) were $stx1^+$ or $stx2^+$: five of them (18.51%) were positive from TSB/IMP, three (11.1%) from TSC/IMP/SMAC and two (7.40%) from TSB/SMAC. The *stx2* sequence was 2.3 times more frequently detected than *stx1*. These results indicate the high risk of STEC transmission by "morcillas" in San Luis. These sausages should be considered unsafe for consumers when they are inadequately cooked.

A143

Helicobacter pylori AND *Escherichia coli* IN BIOFILM COCULTURES.

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In the environment, multiple microorganims coexist as communities, competing for resources and, often, physically associated within biofilms. The aim of study was develop dual-species biofilm cocultures using two gastrointestinal pathogens such as *Helicobacter pylori* and *Escherichia coli*. The clinical strain of *H. pylori*, HP796, was tested for biofilm coculture with an *E. coli* ATCC 35218. The inoculum was prepared by combining the diluted pure cultures of *H. pylori* and *E. coli* in a 1:1 ratio. To allow the formation of biofilm, both strains were grown in Petri dish with Mueller-Hinton Broth supplemented with 5% fetal calf serum and 0.5% glucose, and glass surface was added for adherence. The cultures were incubated for biofilm formation under microaerophylic conditions at 37ºC. The evolution of the biofilm co-cultures until 120 h was performed by Gram staining, viable count and electron microscopy. *H. pylori* showed morphological changes characterized by small bacilli and coccoid forms around 72h of culture. The viable count was 80 ufc/ml and $5{,}8x10^5$ ufc/ml at 96 h for *H. pylori* and *E. coli* respectively. The biofilm at 12 h showed viable non culturable coccoid forms in *H. pylori* and 4.8 $x10^5$ ufc/ml for *E. coli.* Our results indicate the ability to form biofilms in vitro associated with *E. coli*, which supports the idea of the survival of *H. pylori* in the aquatics habitat. Therefore, studies on the ecology of *H. pylori* are necessary to define the transmission dynamics and control of the bacterium as a pathogen.

A144

AMENDING *Olea europea* L. SOILS WITH "ALPERUJO": EFFECTS ON THE STRUCTURE OF SOIL BACTERIAL COMMUNITIES.

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Land spreading "alperujo" (two-phase olive mill waste) as olive groves soil amendment has been proposed as a useful reutilization procedure. It is known that "alperujo"contains significant amounts of bioactive phenolic compounds; however the information about its effects on soil bacterial communities is limited. The objective of this study was to evaluate changes on bacterial communities on soils amended with "alperujo". This waste was applied on soils under two treatments: superficially or incorporated to the first 10 cm. In parallel, non-amended soils were used as controls. Soil samples were taken six months after application at 0-7, 7-14 y 14-21 cm depth. Profiles of microbial communities were determined using denaturing gradient gel electrophoresis (DGGE). Additionally, soil phenolic compounds were also measured. Analysis of DGGE profiles indicated that the structure of bacterial communities was different depending on both "alperujo" treatment and soil depth. At 0-7 cm depth, "alperujo"incorporated soils were different to the other treatments, with 75% of similarity. At 7-14 cm depth, both "alperujo"treatments differed from control soils, with 82% of similarity. No differences were observed between treatments in deeper samples. Interestingly, phenolic content was significantly higher in soils with "alperujo", suggesting that this increase may be altering microbial diversity

A145
EFFECT OF DIFFERENT AGRONOMIC MANAGEMENT ON ABUNDANCE AND TOTAL MICROBIAL BIOMASS FROM VINEYARDS SOILS OF SAN JUAN, ARGENTINA

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Soil properties such as microorganism abundance and total microbial biomass have been used as soil quality indicators. They are very sensitive to changes by agronomic management (tillage system, use of agrochemicals, addition of organic materials). The aim of this work was to assess impact of different agronomic management (zero, conventional and organic) on abundance and microbial biomass associated to vineyards soils. Samples were taken at random in April, according to the physiological state of the vine (0-5 cm depth) in rows and in soils between rows of the three systems. Microorganism abundance was determined by plating count method (CFU/g soil-1). Microbial biomass was determined indirectly, measuring CMB by fumigation-extraction method. Results showed that in all sites studied, bacteria abundance was significantly greater in soils of rows associated to tillage zero ($p=0.02$). Whereas filamentous fungi abundance was significantly greater in soils of rows associated to organic management ($p=0.02$). Values of microbial biomass were significantly greater in soils of inter-rows corresponding to organic system ($p=0.0005$). The lower parameters values corresponded to soils of the conventional system. These results suggest that conventional agronomic management, that means soil remotion twice a year, and agrochemicals application could affect soil microbial communities. This could impact on the studied microbial parameters

A146
AGE AND SEMEN QUALITY IN PATIENTS WITH FERTILITY PROBLEMS FROM SAN LUIS CITY.

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According to standardized protocols by the World Health Organization in its last edition in 2010, the objective of this study was evaluated the seminal quality and its relationship with age, in men with fertility problems who attending a laboratory in San Luis city. During the years 2011-2013 were analyzed semen samples from 97 patients whose ages were: 20-29 years old (G1, n = 11), 30-39 years old (G2, n = 61), 40-49 years old (G3, n = 22). We didn´t do a statistical analysis in the group of men older than 50 years old (n = 3). The following parameters were evaluated: volume (V), progressive motility (Mp), concentration (C) and morphology (Mf) according to Kruger strict criteria. We obtained the following means for each group (G):

G1: V=4.7 ml; Mp=46.4%; C= 88.9 mill/ml; Mf=10.2%;
G2: V=3.7 ml; Mp=47.7%; C=168.3 mill/ml; Mf=15.4%;
G3: V=3.2 ml, Mp=41.3%, C=232.1 mill/ml; Mf=11.9%.

Differences of $p < 0.05$ were considered significant. As a result of the Kruskal Wallis test the following variables showed significant differences between the groups analyzed: Mp ($p = 0.0397$) and Mf ($p = 0.0179$). These results demonstrate that the most of men of 30 to 40 years old performed seminal tests to evaluate their fertility, in this groups, we observed a good semen quality. While younger men attending the lab only for pathologies of unknown origin, this group showed a decrease in sperm concentration and morphology.

A147
BACTERIAL COMMUNITIES IN RHIZOSPHERE OF *Vitis vinifera* L. UNDER DIFFERENT AGRONOMIC MANAGEMENT USING CULTURE-INDEPENDENT TECHNIQUES

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In vineyards, different management practices influence soil characteristics, modulating the grapevine root system and further impacting the interactions of microbial communities in this niche. The aim of this work was to determine the abundance of bacterial communities and particularly nitrogen fixers in the rhizosphere of vines cultivated in San Juan, comparing the role of differential management systems by using culture-independent techniques. The rhizosphere samples were collected under six distinct plants in two different vineyards: Las Moras (organic) and Las Trojas (conventional) at 50 cm depth. The number of copies of the genes that encodes the 16S rRNA (bacteria) and *nif*H (nitrogen fixer bacteria) per gram of soil were determined by Real-Time PCR. The genes 16S rRNA and *nif*H were detected and quantified in all rhizosphere samples collected from both vineyards. Statistically, similar 16S rRNA gene copies were observed in conventional and organic vineyards ($P \leq 0.05$). Log values in conventional management were 9.74±0.35 and 9.67±0.44 in organic vineyards. The *nif*H gene copies also did not differ significantly between conventional and organic samples (4.89±0.61 and 4.79±0.22 log *nif*H copies per g of rizosphere, respectively). This study showed no significant abundance differences of bacteria and nitrogen fixing bacteria in rhizosphere vines of conventional and organic managements.