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SHORT COMMUNICATIONS

VETERINARY

A1
FIRST RECORD OF THE PRESENCE OF "PUMA YAGUAROUNDI" IN CASILDA, A CITY IN THE SANTA FE PROVINCE, AND ITS RELATION WITH THE CANDELARIA STREAM AS A BIOLOGICAL CORRIDOR

Rimoldi P, Alesio C, Bela M, Biasatti N, Marc L, Spiaggi, E.
Cátedra de Biología y Ecología y Cátedra de Cirugía I y II, Facultad de Ciencias Veterinarias (UNR). Email: primoldi04@gmail.com

The Puma yagouaroundi, Lacèpede, 1809 (Carnivora: Felidae), is a Neotropical species which can be small or medium-sized and stands out for having distinctive features when compared to the rest of the cat family. It belongs to the lineage of the Nearctic pumas and this is shared with the P.concolor and Acinonyxjubatus. In spite of its wide Neotropical distribution and the fact that the International Union for the Conservation of Nature (IUCN) advises to revise regularly its stocks, very little is known of this mesocarnivorous. The aim of this work is to present the first record of this species in this urban area of Casilda, which can be done through a specimen which was hit by a car on the edge of the 33 National Road, km 748 (33º 02' 10.41''S 61º 07' 36.13''O). Although the animal had its fur a bit damaged by the drag along the road surface, it let us determined that it was a P. yagouaroundi since it kept its morphological features unaltered. It is important to highlight that the specimen was collected a few meters away from the Candelaria Stream, which has been part of the natural water reserve of the Saladillo Stream since 2015. This datum should not be underestimated because it lets us infer that this channel could be having the role of a binding corridor for wild species between patches and other corridors immersed in the matrix of the anthropic originthat governs the south of Santa Fe. Even if the phenomenon of urbanization, the lost of the surrounding habitats and the transport-related activities are highly threatening this and other species, the existence of biological corridors near large cities, lets us think of a viable tool to mitigate the effects of urbanization.

A2
EVALUATION OF CONSERVATION PARAMETERS IN PELVIAN RABBIT MEMBERS PRESERVED BY THE METHOD *CFP - Soft Fix* (WITHOUT FORMALDEHYDE)

[1]*Pereyra C F*, [1]*Perez Mogetta, L C*, [1]*Smacchia C A*, [1]*Cirimele M N*, [2]*Biancardi M E*, [2]*Madariaga M J*
[1]*Cátedra de Anatomía Descriptiva y Comparada 1 era parte, Fac. de Cs. Veterinarias;* [2]*Área Morfología, Fac. de Cs. Bioq. y Farm. – U.N.Rosario. e-mail: cfabiopereyra@gmail.com*

The knowledge of domestic animal anatomy is fundamental in the training of the future Veterinarians.This science requires that the conservation of the specimens retains the original characteristics. Formaldehyde has been used for biological specimen preservation; however, its toxicity and its carcinogenic effect led to investigate an alternative for its replacement. In a previous work, the adaptation and application of the Thiel technique for its use in domestic animals was analyzed, proving that it can be used in rabbits and that it conserves the volume, color and elasticity of the tissues. The objective of this work was the evaluation of conservation parameters of complete rabbit preserved by a CFP - Soft Fix applied to veterinary anatomy. Ten rabbits of the New Zealand breed were used, the carotid artery was catheterized and the conservative solution "I" was injected. All the corps were placed in the immersion solution "II" for 30 days for impregnation/fixation and then both pelvic limbs were dissected for the study. They were stored for 7 months in 2 different ways: the immersion rights in the preservative solution "II" and the left ones at room temperature, in a bag with an hermetic seal without solution. Every 15 days during the 7 months of the study, the flexibility of the coxal, femorotibial and tarsal joint angles (with goniometer) and muscle perimeters (with scrotometer) were measured on each piece. Based on these results we can conclude that the CFP - Soft Fix conservation method, in addition to preserving the volume, color and elasticity of rabbit pelvic limbs, does not alter the conservation parameters studied during the study time, maintaining its qualities with respect to the living animal.

A3

ANTIBIOTIC RESISTANCE OF *Staphylococcus* spp. STRAINS ISOLATED FROM PORCINE EXUDATIVE EPIDERMITIS CASES

[1]Pereyra N, [2]Cane J, [1]Francois S, [1]Cane V, [1]Freije J, [1]Barale N, [2]Portela E, [1]Comba E, [1]Tártara G.
[2]Microbiology, Facultad de Ciencias Veterinarias, Universidad Nacional de Rosario; [1]Becas Promoción Científica 2016.
E-mail: npereyra@medax.com.ar

Some mechanisms of resistance against antibiotics are known in the genus *Staphylococcus*. For example, the presence of betalactamase and *meca* gene determinate penicillin group resistance; *erm* gene, msrA genes, lnu gene and the mutation of ribosomal proteins confer macrolide resistance. The aim of this study was detect penicillin and macrolide resistances in *Staphylococcus* strains isolated from porcine exudative epidermitis cases. Thirty one strains of genus *Staphylococcus* were isolated and identified as *S. hyicus* (16 strains), *S. aureus* (8) and CoNS (7). Disk diffusion method was used to detect penicillin resistance (penicillin 10 IU, oxacillin 1µg and cefoxitin 30µg) and macrolide resistance (erythromycine 15µg and clindamicin 2µg); oxacillin and cefoxitin allow to detecting meticillin resistance. The results were the following. *S. hyicus*: 68% were resistance to penicillin, 87,5% to meticillin, 50% to erythromycine and 81% to clindamicin; *S. aureus*: 100% were resistance to penicillin and to meticillin, 50% to erythromycine and 75% to clindamicin; CoNS: 100% were resistance to penicillin, 85,7% to meticillin, 28% to erythromycine and 57% to clindamicin. The antibiotic resistance of staphylococci strains from pigs with epidermitis exudative is high. It is known that this resistance can be spread to other bacteria. It is necessary to reduce the generation of resistance bacterial strains and that depend on the responsible use of drugs in animals.

A4

DIAGNOSIS FOR INTRADERMOREACTION OF Trichinella sp. IN A SWINE FOCUS PRODUCER OF A TRICHINELLOSIS OUTBREAK IN CAÑADA DEL UCLE, ARGENTINA

González Beltrán, S[1,2]; Goizueta, J[3]; Masciangelo, W[3]; Gusparo, E[4]; Giudici, C[1,2].
[1]Enfermedades Parasitarias. Facultad de Ciencias Veterinarias. [2]Consejo de Investigaciones, Universidad Nacional de Rosario (UNR). [3]Supervisor Regional. SENASA. [4]SENASA E-mail: silmgb@gmail.com

An outbreak of human trichinellosis occurred in July 2016, in Firmat city, province of Santa Fe, Argentina. National Animal Health Service determined the focus was originated by parasitized pigs from a farm located in a small town called Cañada del Ucle. After satisfactory results in intradermal testing (IDR) in Mus musculus mice infected with Trichinella spiralis, the objective of this work was to validate the same technique in pigs. We went to the farm and we selected the 15 heaviest animals. The right ear was used for the inoculation of the T. spiralis antigen. The thickness of the skin was measured with a caliber and again after 48 hours. The animals were sent to slaughter where the diaphragmatic muscle and tail were recovered. Enzymatic artificial digestion (EAD) was performed on each one. The four animals that presented differences in skin fold size (not less than 3 mm), were diagnosed by EAD of both samples, presenting the highest load of larvae per gram (more than 325 l/gr.). In two animals, although the results by EAD were positive, the skin folds showed no differences, probably due to the low load of larvae found (0,058 and 0,1 l/gr.). In the tails, the presence in some cases of high loads would be indicating the probability of transmission by cannibalism.

A5

MACROSCOPIC CHARACTERIZATION AND LABORATORIAL DIAGNOSIS OF HYDATID CYSTS FROM CATTLE

[1]Negro, PS; [3]Pereyra, NB; [2]Anthony, LM; [1]Bonifacio, DR; [3]Cane, VI; [4]Camiletti, HEF; [2]Riganti,JG
[1]Parasitología, [2]Anatomía Patológica y [3]Microbiología, Facultad de Ciencias Veterinarias, Universidad Nacional de Rosario; [4]SENASA. E-mail: pnegro@fveter.unr.edu.ar

Echinococcus granulosus (*Eg*) causes Cystic Echinococcosis or Hydatidosis; *Eg* larval form is called Hydatid Cyst (HQ). HQ can be fertile or infertil according to presence of protoscolices (PE). In fertile HQ vitality was determined by ovoid morphology, intact rostellar hooks, account of limestone corpuscles in PE and results of methylene blue staining. In relation with the turbidity, hydatid fluid (HF) can be transparent or turbid. HF was collected: extended smears were stained with Gram and Ziehl-Neelsen looking for bacteria. HF was also cultivated in blood agar, Mac Conkey agar and thioglycolate broth. Approximately 1 cm HQ thick sections were fixed in formaldehyde 10% and processed by routine histological techniques; histological study allowed determinate different types of HQ evolutionary states. Thirty one HQ were collected (21 from lungs, 9 from livers and 1 from hearts) and 21caseified, 5 hyaline and 5 calcified HQ stages were found. Only one HQ was bacteriologically positive: *Peptostreptococcus* spp. was isolated (more tests are requiered for final identification). No statistically significant association was found between developmental state and turbidity, $\chi 2$: 1.74 ($p > 0.05$) but there was association between HQ developmental stage and fertility, $\chi 2$: 6.1 ($p < 0.05$). Absence of contamination in most of HQ would be related with transparent HF: QH would remain without discontinuity in its layers and so sterile. Association between QH evolution and

fertility could be linked to age of host (time is necessary for development of PE) and *Eg* strain. Correct identification of *Eg* larval form contributes to avoid erroneous diagnosis and enable to know epizootiology of Cystic Echinococcosis.

A6
RELATIONSHIP BETWEEN SINGLE PUPPY SYNDROME AND DISTOCIA.

Sorribas C, Pirles M, Schiaffino L, Borsarelli A
Cátedra de Clínica de Animales de Compañía. Facultad de Ciencias Veterinarias, UNR. monica_pirles@yahoo.com.ar

The single puppy syndrome originates when the litter consists of a single fetus, and occurs especially in large or giant breeds. During labor the fetus or fetuses induce a signal through the release of corticosteroids to the mother, which triggers the normal hormonal mechanisms of the process. When there is only one puppy the amount of corticosteroids it produces is not enough to trigger a reaction in the mother. In this case, the concentration of progesterone does not decrease and, therefore, delivery does not develop. Therefore, in bitches of large or giant breeds, when the litter includes a single fetus, it should be considered that delivery may not begin and, as a result, the death of the puppy occurs because of the lack of the necessary reduction of progesterone levels, or the triggering the hormonal mechanisms of labor. The aim of this study was to evaluate the correlation between the type of delivery and gestation of a single puppy. A total of 135 deliveries of bitches of different races and ages that conceived and gave birth to a single puppy were controlled, 57 of these deliveries were normal, while 78 were dystocic births. A Chi-square test was performed to compare the percentage of dystocic births (57.8%) with the percentage of normal births (42.2%) in the bitches that had a single puppy. From this test it was found that there is a significant difference between both groups ($p < 0.05$). From the above, it is concluded that the syndrome of the single puppy is an important cause of dystocia in the canine species, therefore when it is known with certainty that the bitch is breeding a single puppy, it is necessary to carry out a careful follow-up of the gestation, to intervene at the necessary moment, thus preserving the life of both the mother and the puppy.

AGRONOMY

A7
EXPANSIN LEVELS DURING DEVELOPING SOYBEAN SEEDS GERMINATION

[1]Montechiarini N,[2] Delgado L, [1]PalmieriR, [1]Rodríguez A, [1]Morandi E,[1]Gosparini C.
[1]Lab. Fisiología Vegetal. [2]Lab. Biología Molecular. Fac. Cs. Agrarias, UNR. Zavalla, Santa Fe. E-mail: nidia.montechiarini@unr.edu.ar

Sensu stricto seeds germination is an expansive process, without cellular division. It implies a volume increase preceded by plastic changes on the "elongation zone" (EZ) cell walls in embryonic axes. Expansin proteins are considered initiators of the release and enlargement cell processes, non enzimatically promoting the loosening of glycane-glycane bonds into the cell walls. During development of soybean seeds (*Glycine max* L. Merr) the enlargement to germinate is inhibited by the high Abscicic Acid levels on embryonic axis (ABAa). However, once finished histodifferentiation, approximately at 21 days after anthesis (DAA), the ABAa level decreases until reaches a non-inhibitory level at maturity. In consequence, the *"in vitro"* germination capacity of seeds increases. The aim of the present work was evaluate the expression of an Expansin, isolated on EZ of soybean embryonic axes, during development. Both immature soybean fruits of 25, 30, 35, 40 DAA and mature fruits (on physiological maturiry, 45 DAA or dry mature, 60 DAA) were harvested. The total RNA of EZ was retro-translated and the cDNA was used to quantitate Expansin by RT-qPCR. Whereas ABAa levels decrease, the Expansin expression for 30, 35, 40, 45 y 60 DAA respect to 25 DAA increased, 2.7, 3.7, 6.8, 156.8 and 126 times, respectively. It concludes that, both the ABAa decreases and Expansin expression increases would be directly related to the increase on germination rates for soybean seeds from development until maturity, by inducing the cell enlargement on the EZ.

A8
PRELIMINAR EVALUATION OF PEA (*Pisum sativum* L.) RESISTANCE TO ROOT ROT DISEASES IN SOUTH OF SANTA FE

[1,2]Espósito MA, [1]Lago ME, [4]Spitteler L, [2]Gatti I, [3]Scandiani M, [3]Luque A, [2]Cointry E. [1]EEA INTA Oliveros; [2]Cát. Mejor Veg y Prod de Semillas. FCA-UNR. [3]Centro de Referencia Micológica-FBIOyF-UNR.[4] Centro Universitario Gálvez. E mail: mesposi@unr.edu.ar

The south of Santa Fe and north of Buenos Aires occupy the largest area planted with peas in Argentina. The evaluation of different materials in naturally infested soils, allows knowing their behavior against soil pathogens causing root rot disease in a preliminary way. The objective of the present work was to explore the behavior and presence of potential sources of resistance to *Fusarium* sp. in materials

of the breeding program of FCA-UNR. Soil samples in patches that had previously exhibited affected plants were taken from a plot with root rot diseases history caused by *Fusarium* sp. in pea. Samples were homogenized to obtain a substrate with uniform natural infestation and then used to sow 9 materials in the greenhouse in two substrates (naturally infested and sterile), 2 repetitions of one pot each with 4 seeds / pot. The evaluated traits were emergence percentage (%E), total number of nodes per plant (NTP) and number of symptomatic nodes per plant (NSP). Proportion of symptomatic nodes per plant (PNAP) was determined for infested (i) and sterile (e) substrates, and the index PNAPe/PNAPi was calculated. An ANOVA was performed. Chinesse P. and VIR2524 materials had the lowest %E, with 56% each, but not significant differences among materials were found for NTP and PNAP. Nevertheless, descriptive analysis of results showed a differential behavior pattern for PNAP. The index allowed categorizing the materials according to their behavior. Ervilha showed a value close to one while Viper and Multifreezer were the most affected materials, in concordance with the passport data of the donor Germplasm Bank in respect to reaction to *Fusarium*. In conclusion, it stands up the importance of deepening the exploratory studies in order to select a set of promising materials on which to evaluate the resistance to *Fusarium* sp. and other specific pathogens.

A9
EVALUATION OF CULTIVARS OF *Medicago sativa* L. IN THE LOCALITY OF MARCOS JUAREZ, SANTA FE.

Martín, B[1]; Coronel, A[2], Galleano, A.[1], Karl, P.[1]-*
*[1]Cátedra de Forrajes, [2]Cátedra de Climatología Agrícola *(ex aequo). Facultad de Ciencias Agrarias, UNR, Campo Experimental Villarino, (S2125ZAA) Zavalla, Pcia. de Santa Fe, Argentina. Email. bmartin.unr@gmail.com*

The objective of this study was to know, in eight genotypes of alfalfa without winter rest, and during four cycles of growth, the annual production of dry matter (tn MS) and its relation with the effective precipitations (Pef), the potential evapotranspiration (ETo), the potential water deficiency (DHp) and the depth of the water table (NF), in the town of Marcos Juárez. We worked with the data obtained from the National Network of Evaluation of Cultivars of Alfalfa coordinated by INTA of Manfredi, from 2006 to 2016 (four growing cycles, in four cutting periods per cycle). The cultivars were: Bar Pal 10, Baralfa 85, Baralfa 9242, DK 192, Milonga II, Mireya, Monarca SP INTA and WL 903. The growth cycles were 2006/10; 2008/12; 2010/14 and 2012/16, in each one the accumulated productions of the 1st to 4th year of alfalfa duration were considered. The cultivars did not differ in their productions when comparing them in each cycle and in each year. The highest forage production was achieved in the first and second year, decreasing in the third and fourth years, possibly explained by the gradual decrease in the number of alfalfa plants with the advance of the years. The relationships between the productions of tn MS, ETo and DHp were low. There was evidence of an important influence of Pef and the depth of NF, on the productions of tn MS. A tendency was found in all the cultivars of a higher accumulated growth in the dry periods, but in parallel they were very sensitive with high rainfall and rise of the water table. It is concluded that there was no variation in the production of DM among the genotypes studied, a higher production was observed in the first and second year from sowing in each cycle analyzed. The variability of the production of alfalfa is explained in 71% by the changes in the variables effective precipitation and depth of the groundwater table.

A10
VASCULAR FLORA OF THE PROVINCE OF SANTA FE: THE ORDER *SANTALALES*

[1,2]Di Sapio O, [3]Galetti L, [3]Oakley L, [3,4]Prado D.
[1]Farmacobotánica, Fac. Cs. Bioquímicas y Farmacéuticas, U.N.R. [2]CIC-UNR. [3]Botánica Morfológica y Sistemática, Fac. Cs. Agrarias, U.N.R. [4]Instituto de Investigaciones en Ciencias Agrarias, IICAR-CONICET. E-mail: odisapio@fbioyf.unr.edu.ar

The Families *Cervantesiaceae*, *Loranthaceae*and *Olacaceae*belong to the class *Magnoliopsida* (=*Dycotiledoneae*) and are currently included in the Order *Santalales* according to most classification systems. It comprises species that inhabit regions of cold, temperate, tropical and subtropical zones of both hemispheres. They consist of trees or shrubs, autotrophic or hemi parasites with chlorophyll, as well as parasitic plants. The present work contributes to the knowledge of these families, providing keys to the identification of the different taxa based on morphological characters and a distribution map of the *Cervantesiaceae*, *Loranthaceae*&*Olacaceae* in Santa Fe. The methods consist of a bibliographical review, consultation of national herbaria with important collections of the province (SF: Esperanza; SI: San Isidro; UNR: Zavalla), field work experience of the authors and lab work to confirm their identity. The *Cervantesiaceae* family is represented in the province by the genus *Acanthosyris* (Eichler) Griseb. with two species: *A. falcata* Griseb. and*A. spinescens* (Mart. & Eichler) Griseb. and the genus *Jodina* Hook. & Arn. ex Meisn. with the species*J. rhombifolia* (Hook. & Arn.) Reissek. The *Loranthaceae*family is represented in Santa Fe by the genus *Ligaria* Tiegh. with only one species:*L. cuneifolia* (Ruiz & Pav.) Tiegh. The genus *Ximenia* Plumier ex L. of the *Olacaceae* family has one species in the province and two varieties: *X.americana* L. var. *americana* and *X. americana* var. *argentinensis* De Filipps. Taxonomic information, distribution map and illustrations are provided.

A11
INTRODUCTION TO THE STUDY OF THE *CUCURBITACEAE* FAMILY IN THE PROVINCE OF SANTA FE (ARGENTINA).

Cañete, B[1]; Chamorro D[1,2]; Palou D[1]; Maturo H[1]; Oakley L[1]; Prado D.[1,2]
[1]Botánica Morfológica y Sistemática Agronómica, Fac. Cs. Agrarias- U.N.R., CC Nº 14 (S2125ZAA) Zavalla, Argentina. E-mail: barbicanete23@gmail.com. [2]Instituto de Investigaciones en Ciencias Agrarias de Rosario, IICAR-CONICET. Zavalla, Argentina.

The Family *Cucurbitaceae* was historically classified in the order Cucurbitales according to its morphological features.It comprises herbaceous plants, rarely woody, usually vines with tendrils. They have alternate and simple leaves, without stipules. Unisexual flowers, pentamerous and actinomorphic, solitary or in cimose inflorescence. Fruit a berry -usually called pepo- or a capsule, rarely samaroid. The object of the present contribution is to set off the taxonomical study of the family for Santa Fe. The method consists of bibliographical review, consultation of national herbaria with important collections of the province (SF; SI; UNR), field work experience of the authors and lab work to confirm the specimens identity. The preliminary results show that the *Cucurbitaceae* family is represented in the province by six genera and 11 species. These are:*Abobra* Naudin, with *A. tenuifolia* (Gillies ex Hook. & Arn.) Cogn.;*Apodanthera* Arn., with *A. sagittifolia* (Griseb.) Mart. Crov. var. *villosa* (Cogn.) Mart. Crov.; *Cucurbitella* Walp., with *C. asperata* (Gilles ex Hook. & Arn.) Walp.;*Cayaponia* Silva Manso, with *C. bonariensis* (Mill.) Mart. Crov., *C. citrullifolia* (Griseb.) Cogn. ex Griseb. and*C. podantha* Cogn.; and *Melothria* L., with *M. candolleana* Cogn., *M. cucumis* Vell. and *M. schulziana* Mart. Crov. On the other hand, two species of the genus *Cucurbita* L**.** grow adventitious: *Cucurbita maxima* Duchesne subsp. *andreana* (Naudin) Filov and *C. pepo* L. It is also possible that *Cucumis anguria* L. can grow in the northwest of the province. A species distribution map, a brief description of each species, botanical ilustrations and a key for field recognition are provided.

A12
INTRODUCTION TO THE STUDY OF THE FAMILY PLUMBAGINACEAE IN THE PROVINCE OF SANTA FE (ARGENTINA)

Marcaccini M J[1], Robalio N[1], Anibalini V[1], Oakley L[1], Prado D[1,2]
[1]Botánica Morfológica y Sistemática Agronómica, Fac. Cs. Agrarias [2]Instituto de Investigaciones en Ciencias Agrarias de Rosario, IICAR-CONICET. Zavalla, Argentina. E-mail: robalionahuel@gmail.com

The Family *Plumbaginaceae* was historically classified in the order Plumbaginales, according to their morphological features. Currently, according to APG-IV, it is classified within the order Caryophyllales, based on molecular criteria. It consists of about 15 genera and 600 species throughout the world, most of thempresent in dry or saline areas. This family is represented in Argentina by three genera and five species: *Armeria* Willd., with **a** herbaceous species, *A. maritima* (Mill.) Willd., typical of Patagonia and high mountains; *Limonium* Mill. has a cosmopolitan distribution, with two perennial herbaceous species, typical of saline areas, and *Plumbago* L., with two shrub or sub-shrub species, from tropical and subtropical regions.The family includes woody or herbaceous plants, with simple, glandular leaves, arranged in a rosette at the base and alternate on the upper branches. Spiciform inflorescences or in dense flower heads. Indehiscent dry fruit or uniseminated pyxidium. The objective of this work is to begin the taxonomic study and the geographical and ecological distribution of the *Plumbaginaceae* Family for the Santa Fe province. The methods consist of a bibliographical review, consultation of national herbaria with important collections of the province (SF: Esperanza; SI: San Isidro; UNR: Zavalla), field work experience of the authors and lab work to confirm their identity. Our preliminary results show that the family is represented in Santa Fe by two species: *Limonium brasiliense* (Boiss.) Kuntze and *Plumbago scandens* L. Taxonomic information, illustrations and a distribution map are provided.

A13
NATURAL MORTALITY OF *Dichelops furcatus* (F) (HEMIPTERA: PENTATOMIDAE) EGGS IN EXTENSIVE CROPS AND SPONTANEOUS PLANTS OF THE SOUTH OF SANTA FE PROVINCE.

Carrizo A P, Parachú I, Batista J, Caterina S, Punschke E, Fernández C. Cátedra de Zoología Agrícola. Facultad de Ciencias Agrarias, Universidad Nacional de Rosario. CC14 (S2125ZAA) Zavalla. E-mail: anacarrizo60@gmail.com

Natural mortality of the green-belly stink bug, *Dichelops furcatus*, eggs by parasitoids and predators is an important ecosystem service to be incorporated in an Integrated Pest Management Program. The knowledge about the performance of these biological controllers on cultivated and spontaneous plants would allow the improvement of management strategies for their conservation. The natural mortality of *D. furcatus* eggs were evaluated on spontaneous plants adjacent to soybean and consociated alfalfa pastures fields, through the sentinel eggs technique, during December/2016 and February-March/2017. Adult stink bugs were collected in the same fields and reared under optimal environmental conditions. The egg masses were collected and stuck on cards, which were placed on two kinds of spontaneous host species: 1) broad-leafed, *Conyza bonariensis*; 2) grasses, *Echinochloa colona* and *Bromus catharticus*. After 48 hours, the egg masses were removed and reared in a rearing chamber under optimal environmental conditions,until the emergence of nymphs or wasps.

The natural control rate (NCR) of the eggs was calculated as: No. parasitized and predated eggs/Total number of eggs. The NCR rate was compared among plant species types by ANOVA and Scott & Knott Test. The abundance of natural enemies in a consociated alfalfa pasture field adjacent to the site of the trial was registered with a sweep net during the eggs natural mortality evaluation period.
The NCRs´ were not significantly different between plant species kinds and dates of evaluation (December: F=1.90; p=0.198; March: F=0.61; p=0.457). The more abundant natural enemies registered in the consociated alfalfa field belonged to the predatory genera *Orius* (Hemiptera: Anthocoridae), *Chrysoperla* (Neuroptera: Chrysopidae) and parasitoids genera *Trissolcus* and *Telenomus* (Hymenoptera: Scelionidae). The obtained control rates (grasses: 0,255; broad-leafed: 0,325) might be considered satisfactory in order to contribute in decreasing *D. furcatus* population. Also, the natural enemies found in neighboring consociated alfalfa pasture have been widely cited in the literature as predators or parasitoids of Pentatomidae bugs. Spontaneous vegetation that grows adjacent to the crops, as well as consociated pastures, would contribute to the presence of different natural enemies.

A14

FIRST REPORT OF *Argyrotaenia tucumana* (LEPIDOPTERA: TORTRICIDAE) IN PEACH ORCHARDS *(Prunus persica*) IN THE SOUTH OF SANTA FE PROVINCE.

Gonsebatt, G[1], Chalup, A[2], Seta, S[1], Leone, A[1], Coniglio, R[1], Ruberti, D[3], Moyano, M I
[11]Facultad de Ciencias Agrarias. Universidad Nacional de Rosario. Campo Experimental J. Villarino (2125) Zavalla, Santa Fe. [2]Instituto de Entomología. Fundación Miguel Lillo. Facultad de Ciencias Naturales e IML. Miguel Lillo 251. (4000) San Miguel de Tucumán, Tucumán. [3]Laboratorio Agrícola Río Paraná.Ruiz Moreno 225. (2930) San Pedro, Buenos Aires. E mail: sil.seta@gmail.com

The south of Santa Fe province and Northeastern of Buenos Aires province are the second region of fruit production in Argentina, of peaches for fresh market which demands fruit quality. Pests is one of the principal factors that reduce production. One pest that affect peach production is *Cydia molesta* (Busk), (Lepidoptera: Tortricidae). Tortricidae is one of the major groups of economical importance, in order to the number of specia, and to the level of damage it causes. Since 2012-2013, during peach harvest in Zavalla (33º01´S; 60º 53´W) and Piñero (33ª06´S; 47´W) , in the south of Santa Fe province, fruits with visible damage in epidermis generally in the insercton of the peduncle, or in protected zones by leaves or other fruits were observed. Superficial wounds were covered with rubber and insect dejections, causing less commercial value or total looses. Injuries also provocate the entrance of different pathogens, as *Monilinia fructicola.* The purpose of this work is determinate the presence, characterize and sour out this new Tortricido in the region. In January 2017, after seeing fruits with damage in the experimental Field of the Facultad de Ciencias Agrarias, in Zavalla, 100 fruits of Dixiland cv were harvested and carried to laboratory to determinate larvae presence over fruits or little below of epidermis. Once pupas appears they were carried with a portion of fruit to other jars, in order to obtain adults. The Enthomology Institute Fundación Miguel Lillo, proved that the specie was *Argyrotaenia tucumana* by analysis of genitalia, and colour of female adults. SENASA (Servicio Nacional de Sanidad y Calidad Agroalimentaria) was also notified. Future researches are necessary to study the distribution in the región, population dynamic, possible hosts, and monitoring sources for the detection of this pest.

A15

Drosophila suzukii (Matsumura) (DIPTERA: DROSOPHILIDAE) IN PEACH TREES (*Prunus persica*) IN THE SOUTH OF THE PROVINCE OF SANTA FE: FIRST RECORD.

Gonsebatt G, San Pedro P, Fanara J, Seta S, Leone A, Díaz B.
Cátedra de Zoología Agrícola. Cátedra de Cultivos Intensivos, Área Fruticultura. Fac. Cs Agrarias. UNR. C.C N°14. S2125ZAA Zavalla, Santa Fe. E.E.A INTA Concordia. Estación Yuquerí, Ruta Prov. 22 y vías del ferrocarril. 3200 Concordia, Entre Ríos. Fac. Cs. Exactas y Naturales. *UBA. E-mail: ggonseba@unr.edu.ar*

Drosophila suzukii (Matsumura) or "spotted wing drosophila" is a pest species, endemic to Southeast Asia, first identified in Japan in 1916. Its current distribution also includes Europe, North and South America. In Argentina, it was found for the first time in 2014, in the province of Buenos Aires, on blueberry crops. Recently, specimens were detected in the provinces of Río Negro, Corrientes, Entre Ríos and in some localities of San Juan and Mendoza. *Drosophila suzukii* has a dentate and sclerosed ovipositor with which it tears the epicarp of the ripening fruits, where it deposits its eggs. The main cause of losses in production is due to direct damage by feeding the larvae inside the fruit causing its deterioration, decomposition and subsequent premature fall. Among the most susceptible host plants are: blackberries, blueberries and strawberries (berries); and cherries, peaches, apricots and plums (drupes). In the province of Santa Fe there are no prospecting studies on the presence of *D. suzukii*. Considering that the south of the province of Santa Fe and north of the province of Buenos Aires constitutes a zone of fruit production of great importance and taking into account, the threat represented by *D. suzukii*, it was necessary to begin its detection. That is why, in December 2016 and January 2017, apple vinegar traps were placed in commercial peach trees (*Prunus persica*) in the towns of Zavalla (33° 01' S, 60° 53' W) and Piñero (33° 06' S; 47' W). Individuals were collected weekly and preserved in alcohol 70% for later identification, resulting in the detection of males and females of *D. suzukii* in both locations. Likewise, it was detected the presence of morphological variant of *D. suzukii* known as “cold” which has large body size, melanization and also its adapted to low temperatures. More detailed studies will be carried out on their abundance; the damages caused and host species

A16
NUTRITIONAL PROPERTIES OF ARBUSTIVE SPECIES OF TUCUMAN SCRUBLAND IN THE DRY SEASON PERIOD.

Blanco, M., Rodríguez Brito A. y Marchetti,C.
Faculty of Agronomy and Animal Science. National University of Tucumán. E-mail: mjv_blanco@hotmail.com.

The use of the forest as food resource, is the vital importance for goat small producers, especially in the dry season(May to September).The shrub species synthesize, as a chemical defense, secondary metabolites, as the tannins.A high concentration of tannins can be a limitation in the use of the forage resource offered by the scrubland.Knowing the nutritional content of the species consumed by the animals and their content in tannins,is elemental for a rational use of shrub species. We worked with five species:Malva (*Sphaeralceabonariensis* Cav.Griseb),Jarilla (*Larrea divaricata* Cav),Black Yuyo (*Solanum argentinum* Bitter & Lillo) and Bolillo Palm (*Trithrinax campestris* (Burmeist) Dudre & Griseb).Samples were collected from the species under study, following sampling techniques. Dry matter (DM), humidity,Crude proteins(CP),ashes(Ash),ether extract(EE),free-nitrogen extract (FNE)were analyzed by the AOAC method(1994).Crude fiber(FC) was evaluated by the ANKOM technology and tannins analyzed by the modified quantitative method of AOAC(1984). The results are the follow in percentage. Malva*(Sphaeralcea bonariensis):* DM:33.69±0.34,H:63.31±0.24,CP:3.67±0.7,E
E:4.7±3.45,Ash:6.9±0.1,CF:25.64±0.39,FNE:59.09±0.54,Tanin:1.36±0.10Jarilla(*Lareadivaricata*):DM:58.82±0.09,H:41.18±0.08;CP:10.63±0.13,EE:2.4±0.3,Ash:9.8±0.60,CF:21.14±0.61;FNE56.03σ±0.48;Tanin1.1σ±0.46.Black(Yuyo(*Solanumargentinum*)DM27.03σ±0.04, H72.97σ±0.05CP12.38σ±0.13,EE3.35σ±2.77,Ash:8.65±0.002;CF:14.96±1.28,FNE:60.65±0.18;Tanin:0.90 ±0.10. Bolillo Palm*(Trithinax campestri)*:DM:36,56±0.21,H:66.44±1.72 ,CP:4.51±0.57,EE:1.85±0.72 ,Ash:2.5±0.15,CF13.41±0.06,FNE 7.63±0.56, Tanin1.23±0.10
According the protein content, carbohydrates (FNE) and tannins, the best behavior are Jarilla and Black Yuyo.In general the % of tannins, are not a limitation for the use as a forage of the species under study.

MEDICINE

A17
CELL MEMBRANE LIPID COMPOSITION INFLUENCES UPON ERYTHROCYTE AGGREGATION (EA) IN OVERWEIGHT AND OBESE ADOLESCENTS

González C, Carubini R, Ciminari N, Mengarelli G, Cinara L, Hernández G, Bollini A.
Cátedra de Física Biológica. Facultad de Ciencias Médicas. UNR. Rosario (Santa Fe). E-mail: anbollini@yahoo.com

We have been studying AE related with nutritional condition in adolescents. At previous works we didn't find differences between normal weight condition with overweight and obese. In this study we raise number of patients and we study the relationship between erythrocyte membrane function and lipid profile, including membrane content of cholesterol (Cholm). We studied males and females adolescents, with 11 to 19 ages, without known metabolic diseases. They were classified according to BMI in: normal weight (N) (n=30): ≥10≤85; overweight (OW) (n=17): ≥85≤95 and obese (OB) (n=27): ≥95. EA was determined by optical method in suspensions of red blood cells in plasma and in dextrán 500 2% in saline. We determined: T (estimating the size of the aggregates) and V (estimating the initial rate). Cholm was assayed by lipid extraction and colorimetry. Total Cholesterol (TChol), HDLChol and LDLChol were determined bay colorimetry. Results were analyzed with one way ANOVA test and expressed as media ± standard deviation. Significance: *p<0.05, ***p<0.001. Results: EA: PLASMA: T in N: 1.20±0.21ns; OW: 1.29±0.34ns; OB: 1.55±0.***; V in N: 0.18±0.08 ns; OW: 0.17±0.10ns; OB: 0.51±0.14 ***. DEXTRAN:. T in N: 1.78±0.32ns; OW: 1.79±0.38ns; OB: 1.83±0.40***; V in N: 0.70±0.17 ns; OW: 0.73±0.19ns; OB: 1.74±0.42 ***. Cholm (g/l): N: 0.64±03.34; OW: 0.66±0.24; O: 0.96±0.51*. HDLCho(mg/dl): N: 54±14; OW: 47±13; O: 45±10*. We didn't find differences between groups for TChol and LDLChol. According to our results, T and V were increased between O and the other groups, in plasma and dextran assays. This is according with HDLChol decreased for O. Our results suggest that changes in cell membrane lipid composition in O influence cellular function that affects erythrocyte aggregation process.

A18

EFFECT OF INCREASING INFECTIVE DOSES OF *Trichinella spiralis* ON THE ACUTE PHASE OF INFECTION OF MICE WITH DIFFERENT SUSCEPTIBILITY TO THE PARASITE

Domenech B[1], Taborda D[2], Marizza V[1], Vasconi MD[1,2], Indelman P[2], Codina A[1,3], Hinrichsen L[1,3].
Instituto de Genética Experimental, Fac. de Cs. Médicas[1]; Área Parasitología, Fac. de Cs. Bioquímicas y Farmacéuticas[2], CIC-UNR[3]. E-mail: lhinrich@unr.edu.ar

Trichinellosis, an infection caused by *T. spiralis* (***Ts***), begins with an enteral phase and culminates with parasite larvae encysted in muscles. In previous experiences CBi+ and CBi/L mice (CBi-IGE colony) infected with 1, 2 or 4 L1 ***Ts*** larvae/g of body weight differed in parasite muscle load on day 30 post-infection (pi). This work aimed to study the effect of increasing infective doses on the number of adult intestinal parasites and ***Ts*** female fecundity, variables associated with resistance/susceptibility in the acute phase of infection, in two lines of mice with different susceptibility to the parasite. CBi+ (susceptible) and CBi/L (resistant) male adult animals (90±10 days old), infected with 1, 2 or 4 L1 ***Ts*** larvae/g of body weight were used. Mice were sacrificed at 3, 6 and 13 days pi (n=6 per line, dose and date of sacrifice), the small intestine was excised and the number of adult parasites (nPA) counted. ***Ts*** females were incubated at 37 ° C for 18 hours in RPMI medium to determine the number of newly hatched larvae (Fh, average number of larvae born per female parasite for each mouse). nPA showed no genotype effect at 3 and 6 days pi in the dose range analyzed. On day 13 pi intestinal parasites were found in CBi+ whereas no worms were recovered in CBi/L. Fh was measured at 6 and 13 days pi. The increase in the infective dose did not affect Fh in the susceptible line, but it decreased significantly in the resistant CBi/L mice ($P < 0.05$). The evolution of intestinal infections by nematodes depends on the infective dose and the host and parasite genotypes. The results suggest that, in the dose rangestudied, the host genotype plays a decisive role in this murine model: CBi/L would generate an effective early response, decreasing the number of larvae able to become encysted.

A19

EFFECT OF THE PRESENCE OF A MAMMARY TUMOR IN ANIMALS SUBMITTED TO A HIGH-FAT DIET

Chiaraluce FL[1],Barranco MM[1,2*], Zecchinati F[3], Cilenzo AA[1], Rozados RR[2,4], Rico MJ[2,4], Villanueva SSM[3], Scharovsky OG [2,4,5], Mainetti LE[2,4], García F[1,2]. [1]*
Cátedra de Fisiología Humana, Facultad de Ciencias Médicas (FCM), UNR; [2]CONICET; [3]Instituto de Fisiología Experimental (IFISE)-CONICET; [4]Instituto de Genética Experimental, FCM, UNR, [5]CIC-U.N.R. [*]Contributed equally

Epidemiologic studies indicate that consumption of a high-fat diet (HFD) may increase the risk of invasive breast cancer in posmenopausal women. P-glycoprotein (P-gp) is an efflux pump of the intestinal epithelium. We aimed to evaluate in mice submitted to a HFD the effect of the presence of a mammary tumor. Five weeks old BALB/c mice were fed with a 40% bovine fat diet (Group HFD; n=10) and with standard diet (Control Group C; n=10). Body weight (BW) was weekly assessed. A glucose tolerance curve was developed at week 12 and half of the mice in each group were challenged s.c. with triple negative M-234p mammary adenocarcinoma (HFD+T, n=5; C+T, n=5). Tumor size was evaluated 3 times/week and, at week 16, an insulin tolerance test (ITT) was done and samples of serum obtained; mice were euthanized and epididymal fat and jejunal mucosa samples were taken. Body weight gain, with higher values in HFD groups, showed a diet ($P<0,0001$) and tumor ($P=0.0076$) effect. Epididymal fat/BW % was higher in HFD groups ($P<0.0001$). Tumor growth was not affected by the diet. HFD groups showed higher glycemia in ITT test ($P=0.0012$), and higher P-gp expression (Western Blot) ($P<0.0001$). We conclude that HFD increased BW, % of epididymal fat, glycemia in ITT and P-gp expression. Tumor growth was not modified by HFD and did not affect the modifications induced by HFD. P-gp overexpression in animals fed with HFD diet could induce resistance to chemotherapeutic drugs. BALB/c mice fed with a HFD and M-234p tumor could constitute an appropriate model to study different therapeutic options to overcome resistance to chemotherapy.

A20

FOOD INTAKE, HEALTH PERCEPTION AND GYNECOLOGICAL SCREENING AMONG ADULT WOMEN IN CONCORDIA, ARGENTINA

Dagatti MS[1], Bertola Compagnucci A[1,2]; Isern G[2]; Iwanow P[1], Baroni MA[1], Nieto C[1], Pezzotto SM[1,2].
[1]Metodología de la Investigación Científica, Facultad de Ciencias Médicas, Universidad Nacional de Rosario. [2]IDICER, CONICET. Santa Fe 3100 (2000) Rosario. E-mail: spezzot@unr.edu.ar

To assess whether there is relationship between women's food intake, physical activity, gynecological screening and health perception, a cross-sectional survey was carried out among 90 mothers from three elementary schools corresponding to low (G1), middle (G2) and high socioeconomic level (G3). Data were analyzed applying mean±standard deviation, ANOVA, Chi-square tests, and multiple correspondence analyses (MCA). Mean age was 39.6±6.8 years old, and body mass index were 26.8±4.3, 26.5±5.4 and 24.6±4.1 kg/m^2 for G1, G2 y G3, respectively ($p=0.181$). High fruits and cereals intake and high educational level were associated with regular physical activity ($p<0.01$). Cereal intake and meat consumption were negatively associated with breast screening ($p=0.034$, $p=0.026$, respectively).

Furthermore, both gynecological examinations (breast screening and papanicolau) were positively associated with dairy consumption (p=0.053 and p=0.031, respectively). When performing the MCA, two directions of maximum variability could be defined; the first associated with the fruits and cereals consumption, and the second associated with pasta intake. Regarding the perception of health status, it was found that participants who perceive their health as excellent and very good are those with high consumption of the groups that made up the first dimension.

A21

GENE ACTIONS INVOLVED IN THE RESPONSE TO REINFECTION WITH *Trichinella spiralis* (*Ts*)

Spreafichi G[2], Molinas F[2], Vasconi MD[1,2], Indelman P[2], Codina A[1,3], Di Masso R[1,3],Hinrichsen L[1,3].
Instituto de Genética Experimental, Fac. de Cs. Médicas[1]; Área Parasitología, Fac. de Cs. Bioquímicas y Farmacéuticas[2], CIC-UNR[3]. E-mail: lhinrich@unr.edu.ar

Parasitic infections present, in most cases, a chronic course. In ***Ts*** infection, this fact, the diversity of parasitic stages and its different anatomical locations in the same host induce a specific dynamic in the host immune response that, in turn, determines a particular response in reinfection. Host genotype plays a significant role in this response. The lines from the CBi-IGE mouse colony differ in their susceptibility (R/S) to this parasitosis. Previously, an additive behavior of the genes involved in R/S during a primary infection was demonstrated when the degree of infection was measured in the CBi/L (resistant), CBi/C (susceptible) and F1 LxC genotypes. This research aimed to characterize the performance of the F1 (LxC) and compare it to its parental lines after re-infection with the parasite. Young adult animals (n=12 per genetic group and sex) infected with 2 L1 ***Ts*** larvae/g of body weight were re-infected with the same dose on day 33±3 after infection. Mice were sacrificed 30 days after reinfection. Muscle larval load (CPr, number of larvae/g of tissue) was determined, and the parasite reproductive capacity index (ICRr=CPr /infective dose) was calculated. The average values of CPr and ICRr in F1 (LxC) mice were compared with the mean value of the parental lines, using Student's "t" test for a single sample and an alternative bilateral hypothesis, to determine if there were significant deviations from the additive behavior. At variance with the type of gene action seen in the primary infection, both variables showed dominance of the resistant genotype CBi/L since the F1 population behaved similarly to these mice and differed from the susceptible CBi/C genotype. Under the conditions of this experiment, the evidentinfluence of the genotype on the degree of (R/S) during reinfection was corroborated in F1 mice, as well as the polygenic nature of the genetic determinants of the character.

A22

ANTITUMOR EFFECT OF THE REPOSITIONED DRUGS LOSARTAN (LOS) AND METFORMIN (MET) ON M-406 MURINE MAMMARY ADENOCARCINOMA

Grillo MC[1], Guercetti J[1], Rozados VR[1,3], Scharovsky OG[1,2,3], Rico MJ[1,3], Mainetti LE[1,3].
[1]Instituto de Genética Experimental, Facultad de Ciencias Médicas, [2]Consejo de Investigaciones, U.N.R., Rosario. [3]CONICET

Metronomic chemotherapy refers to the chronic, equally spaced, administration of low doses of chemotherapeutic drugs, without extended interruptions. Drug repositioning is an approach to use drugs formulated for other indications that showed antitumor activity. Losartan is an angiotensin II receptor inhibitor utilized to treat arterial hypertension. Metformin is used for the treatment and prevention of type 2 diabetes mellitus. Our objective was to study the antitumor effect and the toxicity of the combined metronomic administration of LOS + MET in the triple negative M-406 mammary adenocarcinoma model. Female inbred CBi mice were challenged, on day 0, with M-406 s.c. with trocar and, on day 7, animals were distributed in 4 experimental groups (n=6/group), GI: Control without further treatment; GII: treated with LOS 200mg/kg/day in the drinking water; GIII: treat with MET 600mg/kg/ day in the drinking water; GIV: treated as GII+GIII. Animals were weighted and tumor sizes measured 3 times/week. Each mice was euthanized when it reached the highest tumor volume ethically permitted. On day 25, the tumor volume of animals belonging to GIV (mean ± SEM: 3076.80 ± 849.75 mm^3) was significantly lower than that of GI (7721.47 ± 994.32 mm^3) ($P<0.05$). Survival of mice in the different groups (mean survival time in days: GI: 29; GII: 26.5; GIII: 25; GIV: 30) did not evince statistical differences. The body weight did not show decreases with respect to the initial value in the four experimental groups. We conclude that: 1) Metronomic chemotherapy with LOS+MET inhibited the growth of the mammary tumor, an effect that, nevertheless, did not modify mice survival; 2) The efficacy of the combined therapy is higher than that of the individual treatments; 3) The treatments are devoid of general toxic effects.

A23
CHARACTERIZATION OF TWO SPONTANEOUS MURINE MAMMARY ADENOCARCINOMAS

Bonet MN[1], Del Guidice A [1,3], Di Masso RJ[1,2], Scharovsky OG[1,2,3],Rico MJ[1,3], Rozados VR[1,3]
[1]Instituto de Genética Experimental (IGE), Facultad de Ciencias Médicas, Universidad Nacional de Rosario, [2]CIC-UNR,[3]CONICET.

Several factors have been investigated to stratify breast cancer patients by risk or treatment options. Among them, estrogen (ER) and progesterone (PR) and HER2/neu receptors, have demonstrated that are suitable to predict prognosis and response to treatment. Murine tumor models are useful for increasing the knowledge of cancer molecular biology. Mathematical models are practical tools for the description of biologic phenomena. Our objective was to characterize two spontaneous murine mammary tumors originated in IGE. Female BALB/c and CBi inbred mice were inoculated i.v., i.p. or s.c. with M-234p and M-406 mammary tumors, respectively. Animals were euthanized, and tumor samples were taken when: a) each tumor reached the highest tumor volume ethically permitted in the s.c. model, b) there were signs of pulmonary sickness in the i.v. model and, c) ascites was detected in the i.p. model. The expression of ER, PR and Her2/neu, evaluated by immunohistochemistry, was negative in samples of both tumors inoculated by the three vias. The growth of s.c. tumor was evaluated two times/week and the volume was calculated. Longitudinal data: Tumor volume-Time since tumor challenge, were adjusted with the exponential growth model. The mitotic index (n°/field in 20 fields 1000X) was evaluated in tumor sections stained with H-E. There was a positive correlation between k (exponential growth rate) and mitotic index in M-406 tumor ($P<0.05$) and a negative one in M-234p tumor ($P<0.01$). S.c., pulmonary or peritoneal microenvironments did not modify the expression of the receptors analyzed. The proliferative capacity of M-406 tumor would greatly explain its growth curve while, in M-234p tumor, other factors that regulate net growth, like apoptosis, would counter the negative correlation between k and the mitotic index and be responsible of exponential growth.

A24
THE EXPRESION OF HIF1α AND VEGF IN TUMORS OF BREAST CANCER PATIENTS DOES NOT PREDICT THE CLINICAL RESPONSE TO ANTICANCER TREATMENT

[1,3]Del Giúdice A, [1]Perroud H, [1]Zachetti W, [1]Pizzo E, [2]Scalbi S, [3]Brunas O, [1,5]Rico M J, [1,4,5]Scharovsky OG, [1,5]Rozados V.
[1]Instituto de Genética Experimental, Facultad de Ciencias Médicas, [2]Instituto de Terapia Radiante y Oncología Médica, San Nicolás, [3]Laboratorio de Patología González-Brunás, Rosario, [4]Consejo de Investigaciones, U.N.R., Rosario. [5]CONICET

HIF1α (hypoxia inducible factor)and hypoxia are the main tumor angiogenesis inductors. VEGF (vascular endothelial growth factor) is a protein implicated in the induction of angiogenesis. We have previously identified cellular predictive factors of response to treatment in breast cancer patients. Here, we aim to identify serum factors predictive of clinical evolution through the analysis of HIF1αand VEGF, in primary tumors of breast cancer patients, and to relate them to their clinical evolution (disease free-DF or relapsed/progressed-R)at 5 years after the primary treatment. We have access to 12 archive tumor biopsies of stage I and II luminal A and B ductal breast carcinoma. The expression of HIF1α and VEGF, in 20 fields of high magnification, was determined by immunohistochemistry. The median value was used for patient tumors stratification in high and low expression. A non-significant higher expression of HIF1α in DF patients (n=4) (n° of positive cells, median [range]: 8 [0-15]) compared to R patients (n=8) (1 [0-15]), ($P=0.377$) was observed. VEGF expression was slightly higher in R: (4.5 [0-19]) compared to DF (3 [0-17]) ($P=0.745$). Patients stratification in high and low expression of each molecule did not show differences among groups. (HIF1α: $P=0.406$; VEGF: $P=0.575$). The expression of VEGF and HIF1α in the primary tumors is not a predictive marker of response to treatment, at least at 5 years after surgery. The study of higher number of samples will provide foundations for discarding or suggesting its use in the clinics.

A25
EVALUATION OF THE CONCENTRATION OF PLASMA CHOLESTEROL, BLOOD FLUIDITY, HEPATIC AND RENAL FUNCTIONS IN HYPERLIPEMIC WISTAR RATS TREATED WITH PROANTOCIANIDINES EXTRACTED FROM *Ligaria cuneifolia* (*Lc*).

Giacosa C[1], Gerschcovsky N[1], Galliano S[1], Fisch J[1], Dominighini A[1], Gonzálvez J¹, Crosetti D¹, Urli L¹, Ronco M.[2], Monti J[2], Wagner M[3], Carnovale C[2], Luquita A¹
¹Biofísica, FCM -CIURN- UNR. [2]Fisiología, FBIOyF - UNR; IFISE-CONICET. [3]Farmacobotánica -FyB - UBA.
E-mail: cotigiacosa@gmail.com

Proanthocyanidin enriched fraction from *Lc* was purified (*PLc*) to analyze the effect on Cholesterol (Cho) and Triglycerides (TG) levels, Blood Viscosity (BV), and both hepatic (HF) and renal functions (RF). Adult male Wistar rats (n=12), 70 days old, were fed for 28 days with "standard chow diet" added with 40% bovine meat juice (HFD). The rats were administered with either physiological solution (controls C, n=6) or *PLc* 3mg/100g body weight (treated T, n=6) i.p. each 24hr during 10 days. On day 11 they were anesthetized i.p. to obtain blood samples by cardiac puncture.Results: (mean±SD) Plasma Cho (mg%): C:168.00±6.63, T:100.11±4.91*; Plasma ChoHDL: C:32.20±1.46, T:28.00±2.39(n.s.); Plasma ChoLDL: C:24.00±0.63, T:17.78±0.62*; Plasma TG(mg%): C:191.80±21.45,

T:133.00±9.68*; Relative blood viscosity standardized to 45% of hematocrit (Blood Viscosity/Plasma Viscosity)$^{45/Hto}$: C:5,39±0,10, T:5,20±0,37(n.s.); Alkaline Phosphatase (IU/ml): C:623,20±11,62, T:553,78±20,63(n.s.); Aspartate aminotransferase (IU/ml): C:103,80±1,77, T:97,89±3,49(n.s.); Alanine aminotransferase (IU/ml): C:46,20±1,77, T:40,00±3,01(n.s.); Lactic Dehydrogenase(IU/ml): C:625,00±83,63, T:693,66±49,66; Uremia (mg/dl): C:11,60±0,51, T:10,44±0,34(n.s.); Creatininemia (mg/dl): C:0,14±0,02, T:0,13±0,02(n.s.) (*p<0.05 vs. C; n.s. not significant vs. C; Student's t Test for unpaired data).P*Lc* treatment for 10 days shows a lipid-lowering effect without alteration of blood viscosity nor HF nor RF, in rats fed with a HFD. The results allow us to consider P*Lc* as a potential and safe tool in the prevention of cardiovascular disease, by reducing plasma CoLDL, one of the main risk factors in the development of atherosclerosis.

A26
PREVALENCE OF NASAL COLONIZATION BY *Staphylococcus aureus*AND ANTIMICROBIAL RESISTANCE PROFILES IN MEDICAL STUDENTS.

Sáez B; Revelli L; Rodriguez Lanza M; Berron A; Faggi C; Ombrella A; Córdoba L; Luciano M Bulfoni M; Cerutti C; Ponessa A; Gambandé T.
Chair of Microbiology, Virology and Parasitology. Faculty of Medical Sciences. Universidad Nacional of Rosario.
E-mail: brendalud@hotmail.com

Staphylococcus aureus (SA) colonizes the skin and/or nasal passages of healthy people and produces a wide range of infections of varying severity. In the inpatient and coated with antimicrobial resistance (ATM) are selected strains of methicillin resistant (MRSA) Hospital (HO-MRSA) with resistance. On the other hand community acquired MRSA (CA-MRSA) show resistance to beta-lactams. The pathologies due to MRSA represent a therapeutic challenge. Currently there is no increase in cases of infections of skin and soft tissue with unusual gravity CA-MRSA but little is known about the rate of colonization of the healthy population in our environment. The purpose of this research was to determine the prevalence of nasal possession of SA in students of medicine and know the profile of resistance to antimicrobial agents in isolates. Prior informed consent and a survey targeted nasal swab samples from both nostrils for a population of 1572 students during the period 2014-2017. The same were sown in mannitol salt agar cultivation at 37°C for 24-48 hours. For bacterial identification were used conventional biochemical tests and the sensitivity to antimicrobial agents by diffusion technique according to the standards of the Clinical and Laboratory Standards Institute (CLSI). The antimicrobials tested were cefoxitin erythromycin clindamycin and cotrimoxazole. In the isolates resistant to cefoxitin was evaluated the sensitivity avancomicina teicoplanin gentamicin minocycline mupirocin fusidic acid chloramphenicol and rifampicin. Of the 397 1572 students (25.2%) were colonized with SA. 20 of these isolates (5%) exhibited resistance to methicillin (MRSA) without resistance (CA-MRSA). With regard to the resistance to erythromycin were resistant 153 isolates (38.5%). With regard to the resistance to clindamycin135 (34%) were resistant showing 115 of them (85%) inducible resistance and 20 (14%) constitutive resistance.All the isolates were susceptible acotrimoxazol. Through this study, we conclude that the rate of colonization with SA and MRSA in medical students differs from that reported in the general population. Cotrimoxazole would constitute the therapeutic alternative of choice for the empiric treatment of infections by SA and should be avoided the use of erythromycin and clindamycin. The detection of this microorganism in the nares of medical students is of great utility to avoid horizontal transmission and prevent possible propagation in the carrier causing infections with different levels of severity. The decolonization with mupirocin is a therapeutic possibility for carriers although there is always the possibility of a recolonization

A27
ASSESSMENT OF ADIPOSE MASS AND ADIPOCYTES SIZE IN RAT LINES WITH THE SAME FOUNDING NUCLEOS

Romero S, Chapo G, Gayol M del C, Tarrés MC, Gayol MC, Menoyo, I
Facultad de Ciencias Médicas. Universidad Nacional de Rosario. Email:inesmenoyo@hotmail.com

e(IIMe/Fm) and eSS (IIMe/Fm eSS) rats have the same founding nucleos (IIM strain), developed by Medical Research Institute of Rosario. A group of IIMe rats raised at School of Medicine at Rosario, between 1958 and 1960. In 1979,a group of IIMe/Fm showed hyperglycemia and was identified as IIMe/Fm eSS (e Stilmann Salgado).The aim of this work was to assess adipose mass with morphometric parameters and estimate the area of visceral adipose tissue adipocytes in different ages in e and *eSS* rats. At 70, 100 and 200 day-old respectively (36 rats, 6 male rats per group), e line: body weight W(g):350.8±37.5, 395.0±24.1, 526.0±96.1, (p<0.0001); body mass index BMI:(g/cm^2): 0.692±0.032, 0.771±0.066, 0.809±0.194, (p<0,01); thoracic circumference TC (cm): 14.2±0.7, 14.7±0.5, 17.5±1.3, (p<0.0001); abdominal circumference AC (cm): 18.2±1.3, 18.4±0.9, 22.1±1.1, (p<0.0001); adipocytes area (μm^2): 3800±1100, 6175±2320, 11387±4064, (p<0.0001); eSS line: W(g):279.2±7.4, 364.0±16.5, 422.8±11.8,(p<0.0001); BMI:(g/cm^2):0.618±0.035, 0.732±0.034, 0.749±0.139, (p<0,01); TC (cm):13.2±0.6, 14.7±0.4, 15.3±0.4, (p<0.0001); AC (cm): 17.3±0.8, 19.2±0.9, 20.9±1.1,(p<0.0001); adipocytes area(μm^2):3991±1399, 5881±1663, 7353±2891,(p<0.0001). At 200 day-old, significant differences between lines (Bonferroni´s test): W:p<0.01;BMI: p<0.05;TC: p<0.01;AC: p<0.01;adipocytes area: p<0.001. Adipose mass increased significantly with age in both e and eSS rats. It was accompanied by adipocyte hypertrophy. The increments in eSS line were lower than those in e line, from which eSS originated

A28
FOLLOW-UP OF ANTIMICROBIAL RESISTENCE IN *KLEBSIELLEAE*-TRIBE BACTERIA IN INPATIENTS AT THE INTENSIVE CARE UNIT IN A PRIVATE HOSPITAL OF ROSARIO

Maguire T, Biancofiore N, Revelli L, Freij J, Notario R.
Microbiology Department, Faculty of Medical Sciences, National University of Rosario. E-mail: tomasmag@hotmail.com

The appearance of multiresistent, extremely resistent and pan-resistent bacteria have resulted in a therapeutic challenge and increasing morbimortality.Among them, the enterobacteria, a wide spectrum beta-lactamase (ESBL) and carbapenemase (KPC) producers have appeared to be highly significant, especially in *Klebsiella pneumoniae* (Kpn).The purpose of this paper was to detect and monitor bacteria from the *Klebsielleae* tribe (*Klebsiella, Enterobacter, Serratia* - KES group) in inpatients at the Intensive Care Unit (ICU) in a private hospital of Rosario during the 2010-2016 period.Reports of 692 patients from the Microbiology Department, suffering from bacteremia, urinary, respiratory and surgical injury infections were included. Blood cultures were processed using the Bact/Alert automatized system.The rest of the samples were processed and identified using the conventional methodology. Difussion sensitivity tests were performed to meet the requirements of the Clinical and Laboratory Standards Institute (CLSI) and were corroborated by Vytek II. From the 127 isolated KES strains, 73 (57,5%) showed some kind of antimicrobial (ATM) resistence mechanism. These resistence mechanisms are transmissible and favored in hospitable environments by invasive procedures and the irrational use of ATM. The appearance of new multiresistent microorganisms has become a major drawback to world-wide public health, so its proper detection has become mandatory to restrain their propagation and to set up right therapeutic options which are fewer and fewer.

A29
VALUATION OF THE OPINIONS OF 2nd YEAR STUDENTS OF MEDICINE ON THE ACTIVITIES OF UNIVERSITY EXTENSION

Palacios J, Lógica A, Arca A, Drogo C, Trapé M
Subject Biochemistry. Medical School. Inter-American Open University. (UAI) Rosario. E-mail: julieta.palacios94@gmail.com

Health education is considered one of the fundamental pillars in the field of Public Health. It is an instrument for comprehensive care defined by: care, prevention of illness, social adaptation to a chronic problem and finally health promotion. The 2nd year medical students carried out extension activities in the community with the purpose of establishing arelationship with what their work will beas future health professionals. A survey, previously validated, was applied and it addressed the different opinions from extensión activities that students participated in. The following proposals were analyzed if: 1-extension activities in the community facilitated the prevention of disease and health promotion, 2-these activities helped them to know the work they will assume as future doctors, 3-collaborated in improving the treatment with the patient. It can be inferred from the students' evaluations that the outreach activities in the community were effective for the prevention of illness and health promotion and helped to know whattheir future professional work is about and getting grelated with their doctor - patient relationship.

A30
INTERPRETATION OF A CLINICAL CASE AS TEACHING STRATEGY OF 2ND YEAR MEDICAL STUDENT

Cabrer M, Scarcella E, Arca A, Trapé M, Drogo C
Subject Biochemistry. Medical School. Inter-American Open University. (UAI) Rosario. E-mail: pachicabrer@hotmail.com

Biochemistry is an assigned annual subject in the 2nd year of Medical School for the students. The intervention was to applied an authentic clinical case studying a urine sample as a learning method as well as preparing the students for professional experience in the future.Objectives: Assess the students to determine if each one was able to construe the clinical case according to the learning strategies and substantial diagnostic. A class was developed in based of an authentic clinical case. The students were given a self-administered Customary I which was based in the before and after study of the clinical case. There were 4 benchmarks to be followed: *alteration of the urine analysis; *capture of the sample; *kidney failure and *possible outcomes/diagnostic. Once the case was done, the students were given a Survey II that averaged what kind of intervention and what was the learning results. In the first benchmark the difference of the outcome was statistically significant before and after the application. In the 2,3 and 4 bench markers there was no significant difference the results were fate. In the survey II: in all the questions responded (9-10): A lot. It has not been possible to infer that the use of a real clinical case as a teaching method is significaly productive for the students. But in the students' point of view, it can be said that they value the learning experience by using clinical cases, use of transversal competencies, the importance of the team-work as well as the written and oral communication skills developed through the assignment.

A31
ANALYSIS OF THE ASSESSMENTS OF THE COMMUNITY REGARDING EXTENSION ACTIVITIES IN THE PREVENTION OF DISEASE AND PROMOTION OF HEALTH CARRIED OUT BY STUDENTS OF MEDICINE- PHASE I

Feruglio, A, Drogo, C, Rodríguez León, N, Trapé, M.
Subject Biochemistry. Medical School, Universidad Abierta Interamericana. Instituto Universitario Italiano. Rosario.
E-mail: adrianferuglio@hotmail.com

University extension activities seek to generate positives changes in society. Work done shows that there is no full awareness of the role of extension as one of the central processes of university education. Objective: Analyze the community's assessments of extension activities. Material and Methods: 3 activities were carried out in the city of Rosario, *Descacharramiento; *Hand washing and *blood pressure control, in which participated voluntarily 11, 76 and 82 people completing surveys, respectively. The survey consisted of 8 propositions and a Likert scale. In each activity, the mean and the standard deviation were determined (æ = 0.05). Results: * Descacharramiento -useful ¥ 3.91 ± 1.04, -necessary ¥ 4.18 ± 1.25, -major frequency ¥ 4.18 ± 1.17, - medicine students ¥ 3.64 ± 0.92, -commitment ¥ 3.91 ± 1.04, -recognize health problems ¥ 3.91 ± 1.04, -working doctor ¥ 3.55 ± 1.13, -worked by students ¥ 4.00 ± 1.18; * Handwashing, -useful ¥ 4.21 ± 0.77, -necessary ¥ 4.26 ± 0.92, -major frequency ¥ 4.25 ± 0.84, -medicine students ¥ 4.12 ± 0.86, -commitment ¥ 4.22 ± 0.74, -recognize health problems ¥ 4.16 ± 0.69, - medical work ¥ 4.18 ± 0.78, - performed by students ¥ 4.42 ± 0.72; * Control of TA, -useful ¥ 4.20 ± 0.69, -necessary ¥ 4.17 ± 0.81, -major frequency ¥ 4.24 ± 0.75, - medicine students ¥ 4.23 ± 0.85, -commitment ¥ 4.26 ± 0.73, -recognize health problems ¥ 4.29 ± 0.71, - medical work ¥ 4.20 ± 0.71, - performed by students ¥ 4.35 ± 0.71. Conclusion: The analysis of the values of the participating community in the extension activities shows a high degree of satisfaction of them.

A32
ANALYZING THE OPINIONS OF THE STUDENTS OF THE 2nd YEAR OF MEDICINE REGARDING THE TEACHING FOR COMPETENCES IN THE BIOCHEMISTRY COURSE

Hesse, Lautaro; Gómez, Paulo; Lógica, Agustina; Drogo Claudia; Trapé Marcela
Subject Biochemistry. Medical School. Inter-American Open University. (UAI) Rosario. E-mail: lautarohesse@gmail.com

Biochemistry is an annual course for second year of medicine. A teaching proposal focused on competencies is an advance compared to traditional designs focused on content. Teachers work with different teaching methodologies to provide the necessary skills for the future medical professional.The application of clinical cases in the development of the theoretical classes of the Biochemistry course in Medicine, allows the student to understand the basic contents and apply them to medical practice in the near future. A survey, previously validated, was applied that addressed the competencies used in each class. The methodological approach through the application of clinical cases generated in the students more participation and motivation during the class. it can be inferred from the interpretation of the results that the modality of competency-based teaching was valued positively by the students.

A33
DETERMINATION OF THE DEGREE OF SATISFACTION OF MEDICINE STUDENTS RESPECTINGTHE EVALUATION MODALITIES IN BIOCHEMISTRY COURSE

Lógica A, Trapé M, Rodríguez León N, *Drogo C,*
Subject Biochemistry. Medical School. Inter-American Open University. (UAI) Rosario. E-mail. agustinalogica@hotmail.com

Evaluation is one of the most controversial topics incorporated in the curriculum since it involves issuing a judgment on the performance of students from information obtained, analyzed and compared with previously established opinion. The subject evaluation is as broad and complex as the educational system itself. In recent times, evaluation has been seen as the fundamental element from which the educational process revolves around. Two different evaluations were given, the first one was traditional and the second evaluation was based on student's competition. A survey, previously validated, was applied and it addressed the different methodologies used in each evaluation. In conclusion, we can infer from the results obtained that the degree of satisfaction of students was greater in the evaluation by competencies respecting the traditional evaluation.

ODONTOLOGY

A34
FISHERMEN AND FAMILY, COAST AND ISLANDS: AGE TO THE FIRST EXODONCE, LOST DENTAL GROUPS, SERVICE, EMERGENCY RESOLUTION AND FREQUENCY BETWEEN CONSULTATIONS

Esteve S, Merello J, Kohli A.
Instit. Univ. Italiano de Rosario. Santa Fe.E-mail: *aliciakohli2009@hotmail.com*

Our objective was to know at what age the tooth extraction begins and the behavior of this population to conserve their dental health. A standardized anamnesis directed to people 15-45 years, both sexes. they Answered about place of residence, age at the first extraction divided into group A: 15 to 29 years and group B: 30 to 45; extracted tooth classified into anterior (incisors-canines) and posterior (premolars-molars); service public or private used; dental group extracted at the first time and during interview; months elapsed of the last visit to the dentist in correct form (6 months). Fishers test. Total: 50 people, 40% on coast; Charigue 38%, Wintering 22%; males 60%; 63% y 55%. Age in the first extraction, grupo A: 85%; 84% and 95% (p=0.876). Posterior group, first exodonce: 75%; 100% and 82%. During the interview, this dental group were extracted 90% in the coast and 100% in islands. Resolutions (exodoncies or restorations) and service of Rosario: coast: were extracted in the public service the 100%; Charigue, in public they extracted 63% and the rest, in private, makes treatment; Invernada extract 45% and 55% makes restorations (p<0.001). Consultation correct modality: 55%; 26% and 45%. All begin their extractions at an early age. The first dental extraction and during the interview, in the public service, were of the posterior group. Some restore their teeth, by it would be convenient to more visit the dentist to preserve the posterior dental group.

A35
In vitro-STUDY OF RELATIONSHIP BETWEEN HARDNESS AND MAXIMAL FORCE INDENTED ON HUMAN DENTAL ENAMEL WITH AND WITHOUT FLUOROSIS

TamuchY, Ruiz G, Figallo G.
Facultad de Odontología. Instituto de Mecánica Aplicada y Estructuras de la Facultad de Ciencias Exactas y Agrimensura. Universidad Nacional de Rosario. E-mail: yamitamuch@hotmail.com

To compare hardness and maximal force indented on pieces of human dental enamel with and without fluorosis before the fracture is done. *In vitro* experimental study, n= 11 teeth with fluorosis and n=11 without fluorosis were included. From each tooth, 4 blocks were cut, each of one catted parallel to vestibular, mesial, palatine-lingual and distal tooth surfaces; those little pieces were included into acrylic resin and polished. A Vickers microhardness test was used, consisting in measuring increasing pushing over the sample until it is broken. From each one, a maximal value of force immediate before to fracture (MF) (measured in N) and its corresponding value of hardness (MD) were consigned. To compare differences of MF and MD, adjusting by group (with/without) and by dental surface, a Mann Whitney test was applied (beta=10%, alpha=5%). MF medians of group with and without fluorosis were similar: 0.1287 and 0.9807 N, respectively (P=0.337); adjusting by dental surface, again there were not differences (P=0.390). MD median of group with fluorosis was significantly lower than without fluorosis group: 0.2270 HV (range: 0.098 – 4.168) and 1.8386 HV (range 0.208 – 5.638), respectively (P=0.036); no differences between groups when adjusting by dental surface (P=0.653). Dental pieces with fluorosis fracture at levels of force significantly lower than those with no fluorosis.

BIOCHEMISTRY AND PHARMACY

A36
HEPCIDIN VALUES IN HEMATOLOGICAL AND NON-HAEMATOLOGICAL PATHOLOGIES

Raviola M, Detarsio G, Carbonell M, Williams M, Castro J C, Verón L, Prunello M, Bottai H, Pérez S. Facultad de Ciencias Bioquímicas y Farmacéuticas. Universidad Nacional de Rosario. E-mail: marianaravi@hotmail.com.

The discovery of hepcidin (Hep) as the key regulator of iron metabolism, has revolutionized the understanding of iron disorders. Hep is a 25-amino acid peptide hormone encoded in HAMP gene and synthesized predominantly in the liver. Its expression is under transcriptional control and is influenced by iron levels, erythropoiesis rate, inflammation and hypoxia. Hep negatively regulates iron absorption and release from storage cells by binding to ferroportin, a membrane iron transporter, and leading its degradation. The aim of this study was to

determine hepcidin plasma level in 84 patients with different hematological and non-hematological pathologies (26 chronic disease anemia (CDA), 25 thalassemia carriers (Th_c) (23 βTh and 2 βδTh), 20 iron deficiency anemia (IDA), 7 abnormal hemoglobins (AH), and 6 patients with lymphomas (L)), and to compare these values with a control group. All the patients studied had anemia (except the two HbS carriers), and no liver or renal disease. Twenty six volunteers with normal hematologic and iron profile constituted the control group. Plasmatic level of Hep-25 was quantified with the DRG®-Hepcidin-25 ELISA diagnostic kit.Th_c patients showed lower Hep values than the control group. They have an increased erythropoiesis rate with ineffective erythropoiesis, and Hep values do not correlate with iron storage. In IDA group, Hep decreases according to the decrease in iron deposits. In CDA patients, the Hep values were increased, in response to inflammatory cytokines and iron-filled deposits, despite having low iron level in plasma. AH did not affect the iron metabolism, so the Hep values were similar to the normal group. In patients with lymphoma we found higher hepcidin values than the normal group, but this difference has no statistical significance, probably due to the small number of patients studied.

A37
EFFECT OF THE USE OF GASTRIC PROBE TO INDUCE HEPATIC PRENEOPLASIA ON THE PULMONARY HISTOLOGY OF eSS AND WISTAR RATS AND ITS EVOLUTION THROUGH TIME

Rossi, A[1]; Valenti, J[2]; Pisani, G[1]; Bideqorry, M[1]; Palma, N[1]; Lugano, MC[1]; Quintana, A[1]
[1]Morfología, Facultad de Ciencias Bioquímicas y Farmacéuticas.UNR. [2]Patología. UAI. E-mail: arossi@fbioyf.unr.edu.ar

The administration of toxins by gavage in rats can cause respiratory problems and/or animal's death by aspiration. A model to induce hepatic preneoplasia (HP) to correlate it with diabetes, uses the promoter 2-acetylaminofluorene (2-AAF, by gavage). We analyzed the collateral effect of 2-AAF administration by gavage, on eSS (spontaneously diabetic) and Wistar (W, controls) rat lungs, after the induction of HP (125 d) and after 3 months after finishing the treatment (215 d), when the Diabetic Syndrome in eSS was declared (n=6 per line). Rats received 2-AAF (20 mg / kg body weight, vehicle: corn oil, volume: 0.5 mL) as a promoter by gavage, 4 days per week, for 3 weeks. At the end of the induction (EI), 3 rats were euthanized from each line and the livers and lungs were removed. They were fixed in 10% v/v formaldehyde and histologically processed. Lung sections were stained with hematoxylin-eosin. Livers were immunohistochemically labeled to detect PH. After 3 months (3M), the remaining animals were euthanized. All rats developed PH. GrupoWEI: mild bronchitis with active leukocytic infiltrate. GrupoeSSEI: interstitial leukocytic infiltrate near the bronchioles and in the interstitium, isolated nodular accumulations of macrophages and lymphocytes. At 3M, GroupW: bronchial obstruction due to necrotic material with polymorphonuclear infiltrate and lipophages, foci of bronchopneumonia due to aspiration and multifocal emphysema. After 3M, GrupoeSS: interstitial lymphocytic infiltrates and few lipophages around bronchi. Both rat lines suffered bronchoaspiration of 2-AAF promoter agent and the vehicle, being milder in Group eSS. We concluded that the administration of 2-AAF by gavage produces serious lesions on lungs that worsen with time even after stopping 2-AAF administration in both lines of rats.

A38
STEREOLOGICAL STUDY OF HEPATIC PRENEOPLASTIC FOCI AND INITIATED CELLS IN eSS RATS OF DIFFERENT AGES

Rossi, A[1]; Pisani, G[1]; Bottai, H[2]; Chapo, G[3], Quintana, A[1]; Lugano, MC[1]
[1]Morfología. [2]Estadística y Procesamiento de Datos. Facultad de Ciencias Bioquímicas y Farmacéuticas. [3] Bioterio Central. Facultad de Ciencias Médicas. UNR. E-mail: arossi@fbioyf.unr.edu.ar

Diabetes Mellitus and hepatocellular carcinoma share many risk factors. To study whether or not there is a greater predisposition to develop HC due to diabetes, a line of spontaneously diabetic rats (eSS) were used. Hepatic Preneoplasia (HP) was useful to study the PH-diabetes association. The objective was to analyze preneoplastic foci (PF) and initiated cells (IC) in livers of eSS rats with HP with a stereological study. 80-day- and 190-day- eSS and Wistar rats (W, controls) (n = 4 for each line and age) were used. HP was induced with an initiation-promotion model. At the end of the induction, rats were euthanized and the livers were removed, fixed in 10% v/v formaldehyde and histologically processed. PF were identified with rGSTP-i. With a 121-point grid, applying the Delesse principle, the volume density occupied by PF (Vvf), the volume density occupied by IC (Vvic), the number of PF per unit area (Nºf/a) and the number of IC per unit area (Nºic/a), were estimated in livers of eSS and W rats of 80 and 190d, analyzing 25 microscopic fields for each animal. The data were analyzed by mixed model ANOVA and the results expressed as the mean value ± standard deviation. It was considered significant when $p<0.05$.The Vvf and Nºf /a were significantly lower in 190-day-eSS rats than W of the same age. Nºic/a and Vvic did not showed differences between lines or ages. Since Diabetic Syndrome has been developed in eSS rats, hepatic metabolism alterations and production of metabolites that could exert antiproliferative and/or proapoptotic effect on PF could occur. The higher Vvf in 190-day-W rats respect to 80-day ones could be due to a greater susceptibility to HP induction due to age.

A39
STUDY OF THE BIOLOGICAL PROPERTIES OF A COMPLEX FORMED BY SULFAMETHOXAZOLE AND THE SILVER ION TROUGH THE *Allium cepa* L. TEST

Toplikar B, Mosconi N, Vega M, Giulidori C, Rizzotto M. Área Química General e Inorgánica, Facultad de Ciencias Bioquímicas y Farmacéuticas, UNR. CIUNR. IQUIR. E-mail: brendatoplikar@gmail.com*

There is an important requirement of new drugs in the field of pharmacology due to the continuous increase of the microbial resistance to antibiotics in clinical use. The formation of complexes between metal ions and sulphonamides constitutes a wide field of research, since both sulfas and their metal complexes have a broad spectrum of action in addition to the antibacterial one. Ag-SMX, a complex formed by Ag(I) and sulfamethoxazole (SMX), minimum formula: $AgC_{10}H_{10}N_3O_3S$, showed moderate antifungal activity against different species of *Candida* and *Aspergillus*, while SMX was inactive. Phyto, cyto and genotoxicity were tested exposing selected yellow onion bulbs to increasing doses of Ag-SMX and SMX (7 bulbs/dose). Mother solution (31.25 mg/L), dilutions (2:3, 1:2, 1:4, 1:10); negative control: commercial mineral water; positive control: $K_2Cr_2O_7$ 1 ppm were analyzed. Length and morphology of the roots have been evaluated as macroscopic parameters and mitotic index (MI) as a microscopic one. Statistics: One-way analysis of variance (ANOVA) was performed to compare the difference between control and treatment groups. Statistical significance was expressed as p-value < 0.05. Root length decreased for Ag-SMX but not for SMX. In both cases a significant increase of the MI was observed, but without chromosomal aberrations. Conclusion: the fact that SMX is being used clinically today, added to the results obtained, suggests an auspicious continuation of the study of Ag-SMX as a possible medical drug.

A40
SYNTHESIS OF SILVER (I) COMPLEXES WITH SULFAMERAZINE (SMZ). ANTIFUNGAL PROPERTIES OF THE COMPLEX [Ag(SMZ)]

Hure E[1], Mosconi N[1], Raimondi M[2], Rizzotto M[1]* *[1]Facultad de Ciencias Bioquímicas y Farmacéuticas, [2]Facultad de Ciencias Médicas, Universidad Nacional de Rosario, Maipú 1065, 2000 Rosario, CIUNR, IQUIR. E-mail: estelahure@yahoo.com.ar*

The requirement of new antimicrobials is a current topic due in part to the emergence of bacterial strains resistant to the antibiotics in use.The interest in metal derivatives of sulfonamides has been stimulated by the successful introduction of the silver-sulfadiazine complex for topical use in the treatment of skin lesions, which is still in use. By mixing silver nitrate solutions and the respective ligands (sulfamerazine -SMZ-, *o*-phenanthroline -phen- and potassium thiocyanate, KSCN) we obtained whitish solids which gave satisfactory results for: [Ag(SMZ)], % exp. (calc. for $AgC_{11}H_{11}N_4SO_2$): C: 35.7 (35.6); H: 3.2 (3.0); N: 14.9 (15.1); S: 8.5 (8.6). [Ag_2(SMZ)SCN]; % exp. (calc. for $Ag_2C_{12}H_{11}N_5O_2S_2$): C: 26.4 (26.8); H: 2.0 (2.1); N: 13.2 (13.0); S: 11.9 (11.9). [Ag(SMZ)fen]; % exp. (calc. for $AgC_{23}H_{21}N_6O_3S$): C: 48.4 (48.5); H: 3.4 (3.7); N: 14.9 (14.8); S: 5.0 (5.6). For [Ag(SMZ)], the minimum inhibitory and fungicidal concentrations (MIC and CFM respectively) were determined against the following human opportunistic pathogenic fungi from the American Type Culture Collection or the CEREMIC, FCByF, UNR: *Candida albicans*; *C. tropicalis*; *Cryptococcus neoformans*; *Aspergillus flavus*; *A. fumigatus*; *A. niger*; *Microsporum gypseum*; *Trichophyton rubrum*; *T. mentagrophytes*.The complex showed an interesting antifungal activity against all the fungi tested ((MICs: 31.25-62.5 μg/mL), while the free ligand, SMZ, was inactive in all cases (MIC> 250 μg/mL). The fact that the SMZ is currently employee for clinical use, added to the results obtained for [Ag(SMZ)], suggests an auspicious continuation of the study of these complexes in view of their possible application as medicines in the future.

A41
URINARY BIOMARKERS IN LUPUS NEPHROPATHY

Bona N[1], Ditaranto P[1], Pezzarini E[1], Balbi B[1], Basiglio C[1], Svetaz M[1], Bearzotti M[1], Alvarez M.[1], Bottai H[1], DanieleS[1], Rossi M.[1], Taurizano N[2], Rodenas M[2], Monje A[2], Aeschlimann C[3], Hartvig C[3], Sacnún M[3], Pelusa H[1], Arriaga S[1].
[1]Facultad de Ciencias Bioquímicas y Farmacéuticas. [2]Servicio Nefrología Hospital Provincial del Centenario. U.N.R. [3]Servicio de Reumatología Hospital Provincial de Rosario. E-mail: nazarenobona@gmail.com

Lupus nephropathy (LN) decreases survival and affects life quality of lupus patients. Biopsy is considered the gold standard for the evaluation of lupus renal activity. Beta 2 microglobulin (β2MG) freely filters through the glomerulus and it is reabsorbed by the renal tubules. Monocyte chemotatic protein 1 (MCP-1) is involved in the pathogenesis of tubulointerstitial damage, recruiting monocytes and producing interstitial fibrosis. Our aim was to analyze whether these urinary biomarkers are able to discriminate renal activity in patients with active LN (ALN) diagnosed through biopsy. We studied 80 lupus patients without active infections: 38 with ALN and 42 with inactive LN (ILN), derived from the Nephrology Service of the Hospital Provincial del Centenario and from the Rheumatology Service of the Hospital Provincial de Rosario. Biomarkers were assessed in random urine and expressed related to urinary creatinine: β2MG (μg/g Cr) and MCP-1 (pg/g Cr) by EIA methods, and P/Cr (g/g Cr) by colorimetric/kinetic method. The results obtained [median (range)] for β2MG, MCP-1 and P/Cr in NLA *vs* NLI were, respectively: 443 (0-9679) *vs* 141 (0-1091); 4.5 (0.1-29.2) *vs* 1.1 (0.0-9.7) and 0.74 (0.00-28.00) *vs* 0.11 (0.00-3.20). Significant differences were found between groups for all the parameters studied ($p<0.05$). Moreover, in ALN, we found a significant direct association between MCP-1 and P/Cr ($r=0.62$; $p<0.05$) and between MCP-1 and β2MG ($r=0.50$;

p<0.05). Determination of β2MG and MCP-1 would be useful to discriminate between patients with ALN and ILN together with P/Cr, a commonly used activity parameter. The associations found here suggest that the inflammatory process is involved in renal damage.

A42
CORRELATION BETWEEN TESTICULAR TRANSFERRIN, HYPOOSMOTIC TEST AND ACRIDINE ORANGE TEST

[1]Brunori M, [1]Marelli A, [1]Bucci MuñozM, [2] Vallejos E, [1] Moreno J, [1]Abraham N ,[1] Brufman A.
[1]Facultad de Ciencias Bioquímicas y Farmacéuticas. Dto. Bioquímica Clínica. Área Inmunología. UNR.[2] Universidad de Morón.
E-mail: abrufman@fbioyf.unr.edu.ar

The aim of this work was to determine if Testicular Transferrin (TTf) levels exert any influence on the integrity of the sperm membrane (SM) and sperm DNA. 34 semen samples were studied: 10 fertile controls (according to WHO 2010) and 24 from patients with different andrological pathologies. It was compared Concentration of TTf versus% of spermatozoa with altered membrane and Concentration of TTf versus DNA integrity, among which the Pearson Correlation Coefficient was applied. The integrity of SM was assessed by the HypoosmoticTest. DNA integrity was assessed by the Acridine Orange Test. Determination of TTf levels was performed using the Radial Immunodifussion method adapted for low concentration. The relationships were as follows: 1) a high degree of negative association (r = -0.91) was observed between TTf Concentration (mg / dL) and SM Integrity alterations (p <0.05). 2) no significant association was observed (r = 0.03) between TTf concentration (mg / dL) and DNA integrity (p = 0.48). We conclude from these results that the low levels of TTf are associated with the loss of integrity of the SMwhile it is not with DNA integrity. The possible role of TfT as an antioxidant protein and its stabilizing function of the SM is postulated.

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OCCUPATIONAL ACCIDENTS IN NURSING OF A PUBLIC HOSPITAL OF ROSARIO CITY DURING 2011-2015. GENDER PERSPECTIVE.

Hill E[1], Quaglia N [2].
[1]-Hospital de Emergencias "Dr Clemente Álvarez". Rosario. [2]- Área Tecnología en Salud Pública. Fac Cs Bioq y Farm- UNR. Centro Binacional de Criobiología Clínica y Aplicada- UNR.E-mail: *nquaglia@fbioyf.unr.edu.ar*

Women define a particularly vulnerable sector in the workplace; besides. The Emergency Hospital "Dr Clemente Álvarez" (HECA) is a public care center of Rosario, Santa Fe province. The aim of this study was to estimate the risk of occupational accidents (OA) among nursing professionals in connection to gender in the HECA during 2011-2015. Methodology: Observational, retrospective study. OA were classified according to biological risk (OA-BR), correspond to ergonomic or traumatic lesions (OA-ET) or others (OA-O). The incidence rates for OA were obtained for female (F) and male (M) workers in the time studied based on the total number of person-hours worked and the incidence rates ratio at the same time ($IRR_{2011-2015}$) in order to estimate the risks according to the objectives. Results: They were registered 107 OA among nursing staff of HECA in a total of 2440800 person-hours of work during 2011-2015 period. Of those, the 45.8% were OA-BR, 46.7% were OA-ET and the remaining 7.5% were OA-O. Women had a significantly higher risk than men of OA, with $IRR_{(2011-2015\ (F\ /\ M)}$: 1.73 (1.06-2.81). Differentiated analysis for OA-BR and OA-ET showed that the observed differences were at the expense of OA-BR, for these $IRR_{2011-2015\ (F\ /\ M)}$: 2.38 (1.07- 5.32). No significant differences were found for $IRR_{2011-2015\ (F\ /\ M)}$ in OA-ET: 1.41 (0.72-2.75). It should be noted that ages and seniority working of the injured workers at the time of the accident were assessed for those who suffered from the prevalent injury groups, OA-BR and OA-ET; no statistically significant differences between genders were found in any case. Conclusion: This significantly greater vulnerability of women than men in nursing, regardless of age and length of employment in each group of accidents, deserves to deepen these studies to address prevention women labor.

A44
IMPORTANCE OF THE IDENTIFICATION OF ROUND CELLS FOUND IN THE SEMEN OF MEN WITH IDIOPATHIC INFERTILITY

Paparella C, Bertalot S, Rodriguez A, Bouvet B
Facultad de Ciencias Bioquímicas y Farmacéuticas.-UNR. E-mail: ceciliapaparella@yahoo.com.ar

Certain environmental factors are considered reproductive toxins that affect the hypothalamic-pituitary-gonadal axis and the spermatogenesis. The hormonal deficiency produces immaturity in the ejaculate with increased concentration of germinal cells (GC) and deterioration in sperm parameters essential for male reproduction. In the direct microscopic examination of the semen non sperm cells called round cells (RC) are observed. The RC reflect different processes: GC (alterations in spermatogenesis); polymorphonuclear

leukocytes (PMN) (inflammatory process and/or infections of accessory glands or excretory ducts) and the presence of macrophages (M) suggests an immunological cause. Our objective was to evaluate in semen samples if the RC present are predominantly PMN, M or GC. 225 semen samples of infertile men between 25 and 42 years old were analyzed. Seminal analysis was performed by subjective method (WHO 2010) and in 209 samples (96.5 %) more than 6 RC was observed per 40X field. The concentration of GC was determined with Papanicolaou stain. The presence of M was quantified with 0.01 % neutral red. The Nahoum and Cardozo technique was used to determine the concentration of PMN. Within the 209 samples containing RC, 170 (81.3 %) had increased GC concentration, 65 samples (31.1 %) had M concentration higher than reference value and in 45 (21.5 %) high concentration of PMN was observed. The Chi square test was applied to evaluate the results and a statistically significant association was obtained between the presence of RC and GC in the semen ($p<0.01$). The results indicate that when RC is observed in the semen, there is a marked predominance of GC. It is important to identify and quantify the presence of RC in semen using specific techniques to establish adequate treatment for male infertility problems.

A45
PSYCHOACTIVE DRUGS USE AMONG HIGH-SCHOOL STUDENTS IN ROSARIO (ARGENTINA)

Biolatto S[1], Drogo C[1], Labadie N[1], Ferreyra J[1], Pardal MA[1], Reinoso A[1], Bottai H[1] and Pacchioni AM[1,2].[1] Facultad de Ciencias Bioquímicas y Farmacéuticas-UNR; [2]CONICET. Email: sbiolatto@gmail.com

The abuse of psychoactive drugs is a global health problem, that has its onset during adolescence. Between 2013 and 2016, we carried out a series of high-school's visits around Rosario; where the biological substrates as well as the social aspects of drug addiction were discussed with the students. Towards the end of the activity they completed a validated, self-administered, anonymous and voluntary questionnaire; which main goal was to survey their use of psychoactive drugs such as alcohol, nicotine, cocaine and marijuana. The work presented here is a descriptive analysis of the questionnaire´s results. A total of 1080 student were surveyed during 17 visits to public and private high-schools in Rosario. Their average ages differed over the years; in 2013 they were higher than in 2014 and 2016. While the percentage of students who claimed to have used any psychoactive drug at least once in their lifetime showed a significant increase over time, with 2016 being significantly higher than 2013 and 2014. Moreover, the average age of psychoactive drugs use onset was significantly lower in 2016 compared to 2013 and 2014. However, when considering the use of illegal drugs (i.e. excluding tobacco and alcohol) the percentages of use at least once do not differ over the years. Another interesting fact is the distribution of the type of drugs used. The most frequently drug used was alcohol which also showed a significant increase in 2016; followed by tobacco (significantly lower in 2014) and marijuana (significantly decreased in 2016). In summary, it was found that alcohol is the psychoactive drug more frequently used in the years tested among adolescents, while those mentioned in second and third place (tobacco or marijuana) changed according to the evaluated period. Changes were observed in the age of onset, as well as in the use percentages and patterns. However, in the analysis of the results it must be considered the differences in the samples composition over the years (age and school year).

A46
STUDY OF FLAGELLUM GLYCOSYLATION IN *Ralstonia solanacearum* AND ITS ROLE IN VIRULENCE

Tondo ML[1], Vandecaveye AI[1], Landoni M[2], Couto AS[2] and Orellano EG[1].
[1]Instituto de Biología Molecular y Celular de Rosario (IBR-CONICET-UNR). [2]Departamento de Química Orgánica (FCEyN-UBA) – CIHIDECAR (CONICET). E-mail: tondo@ibr-conicet.gov.ar

Protein glycosylation, the covalent attachment of carbohydrates to specific amino acid residues, is a common posttranslational modification in bacteria. Glycosylation of flagellin, the structural subunit of the flagellar filament, has been reported in many Gram-negative bacteria, playing roles in filament assembly, stability and function, adhesion, host recognition, immune evasion and virulence. *Ralstonia solanacearum* is a soil-borne β-proteobacterium that causes the bacterial wilt disease on more than 200 plant species, including economically important crops. Genomic analysis aimed at identifying genes involved in glycosylation systems of *R. solanacearum* revealed the presence of two open reading frames (*RSp0387* and *RSp0388*) encoding for putative glycosyltransferases, in close proximity to the flagellar genes. In the present work, monomeric flagellin was purified from the wild-type *R. solanacearum* GMI1000 strain and subjected to HLPC-ESI to confirm its identity. Glycosylation of the protein was corroborated by PAS stain and then the glycosyl moiety was characterized by mass spectrometry and HPAEC-PAD, revealing the presence of N- and O-glycans of 3 to 14 hexose units. To initiate the functional study of the *RSp0387* and *RSp0388* genes, two deficient mutant strains were generated and physiologically characterized. The mutant strains exhibited similar growth kinetics than the wild-type strain in liquid BG medium and normal colony morphology on triphenyltetrazolium-supplemented agar plates. The presence of flagellar filaments in both strains was evidenced by transmission electron microscopy; however, the swimming ability in liquid medium was impaired in both mutants, suggesting that the flagellar function is affected by the deletion of the *RSp0387* and *RSp0388* genes.

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STUDY OF THE RNA BINDING PROTEIN, HFQ, FROM *Xanthomonas citri* subsp. *citri* AND ITS ROLE IN CITRUS CANKER

Petrocelli S, Moyano L[2], Tano J[2], Perez Falcón AD[1], Orellano EG[2].
[1]Facultad de Cs. Bioquímicas y Farmacéuticas, Universidad Nacional de Rosario. [2]Instituto de Biología Molecular y Celular de Rosario (IBR-CONICET-UNR). Email: spetroce@fbioyf.unr.edu.ar

Small RNAs (sRNAs) have been recognized for being important gene regulators in bacteria. sRNAs play several essential roles in multiple cellular processes, including abiotic and biotic stress response. The majority of sRNAs regulate their target genes by base pairing, affecting mRNA stability and/or translation and the activity of proteins.The Sm-*like* Hfq protein is a key factor in the processes regulated by RNAs that promotes the sRNAs and mRNA interaction. The Hfq deficiency has a great impact in the physiology of several bacteria and was reported it is involved in the virulence processes in many animal pathogens. However, little is known about sRNAs and Hfq protein in bacterial plant pathogens. *Xanthomonas citri* subsp. *citri* (Xcc) is the bacterium responsible of citrus canker A, a severe disease that affects most commercial citrus cultivars worldwide. The aim of this work was the study of the role of Hfq protein in the bacterial physiology and in the pathogenesis process during citrus canker. For that purpose we have constructed the knockout *hfq*(XccΔhfq) and the complementant strains. Swimming and swarming assays, performed in XVM2-0.3 or 0.7% agar plates, adhesion to biotic and abiotic surfaces and biofilm formation, evaluated by confocal microscopy of GFP expressing strains, indicated that the Hfq protein from Xcc could be implicated in the control of these features. Lower survival rate for the mutant strain was observed after hydrogen peroxide treatment. In addition, XccΔhfq showed lower levels of catalase activity in non-denaturing polyacrylamide gels. Finally, a reduction in the disease symptoms was observed in orange leaves inoculated with XccΔhfq. These results suggest a role of Hfq protein in the regulation of sRNAs involved in bacterial virulence during citrus canker disease.

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