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1.

THE FAMILY *AMARYLLIDACEAE* IN THE PROVINCE OF SANTA FE (ARGENTINA)

Aquilanti Y, Mogni V, Lusardi MB, Oakley L, Prado D.
Cátedra de Botánica, Facultad de Ciencias Agrarias (UNR), C.C.Nº14, S2125ZAA Zavalla.

The object of the present contribution is the taxonomical study of the Family ***Amaryllidaceae*** (*Liliopsida*, Order *Liliales*) for Santa Fe, which includes 90 genera and about 1000 species of tropical and subtropical regions of the world. The methodology consisted in observation in the field, analysis of plant collections (Herbaria SF, SI and UNR) and existing literature. Our preliminary results show that the family is represented in Santa Fe by three genera with nine taxons, plus an additional one of doubtful occurrence: ***Habranthus gracilifolius*** Herb., ***H. pedunculosus*** Herb., ***H. schulzianus*** Ravenna (one of the few endemic species in the province), ***H. tubispathus*** (L'Hér.) Traub, ***Rhodophiala bifida*** (Herb.) Traub, ***Zephyranthes candida*** (Herb. ex Lindl.) Herb., ***Z. filifolia*** Herb. ex Kraenzl., ***Z. minima*** Herb. subsp. ***minima*** and ***Z. seubertii*** E.P. Hume. The species ***Habranthus brachyandrus*** (Baker) Sealy has been mentioned for the province, but no herbarium specimens have been found so far. A distribution map, dichotomic keys for genera and species and some photographs are presented.

2.

INTRODUCTION TO THE STUDY OF THE FAMILY *LOGANIACEAE* IN THE SANTA FE PROVINCE

Tomassini G, Mariatti A, Romagnoli D, Maturo H, Oakley L, Prado D.
Botánica, Fac. Ciencias Agrarias-UNR, CC Nº 14, S2125ZAA Zavalla, Argentina. E-mail: hmaturo@unr.edu.ar

The object of the present contribution is to start the taxonomical study and of the geographical distribution of the Family *Loganiaceae* in the Santa Fe province. The Family *Loganiaceae* comprises 37 genera and 660 species of tropical and subtropical regions of the world. In Argentina is represented by two genera and eight species. They consist of shrubs, herbs and trees with simple opposite stipulate leaves; quadrangular shoots; flowers actinomorphic, perfect, in cimose inflorescence. The method consists of bibliographical review, consultation of national herbaria with important collections of the province (SF; SI; UNR). Our preliminary results show that the family is represented in Santa Fe by only one genus: *Spigelia* L. with a single species, *S. humboldtiana* Cham. & Schltdl. A distribution map and some photographs are presented.

3.

VASCULAR FLORA OF THE SANTA FE PROVINCE: *PHYTOLACCACEAE*

Bianciotto ME, Giani MS, Galetti L, Oakley L, Prado D.
Botánica, Fac. Ciencias Agrarias-UNR, CC Nº 14, S2125ZAA Zavalla, Argentina. E-mail: lucianogaletti@gmail.com

The Family *Phytolaccaceae*, Order *Cariofilales*, comprises 17 genera and some 80 species of tropical and subtropical regions of the world. They are perennial herbs, shrubs or trees, with simple alternate leaves, with or without stipules. Flowers small actinomorphic, hermaphrodite or diclinous-monoecious, displayed in simple or compound racemes. Ovary superior, 1-16-carpellate. Fruit berry, drupe, samaroid, achene or rarely a capsule. The present contribution provides keys for the identification of taxa based on morphological characters and a map of geographical distribution. 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. Three genera are found in Santa Fe, with only one taxon each: *Petiveria alliacea* L. var. *alliacea*, *Phytolacca dioica* L. and *Rivina humilis* L.

4.

VASCULAR FLORA OF THE SANTA FE PROVINCE: *MENYANTHACEAE*

Galetti L, Bianchi M, Oakley L, Prado D.
Botánica, Fac. Ciencias Agrarias-UNR, CC Nº 14, S2125ZAA Zavalla, Argentina. E-mail: lucianogaletti@gmail.com

The Family *Menyanthaceae*, classified in the Order *Oleales* until recently and now belonging into the Order *Asterales* (APG III), comprises five genera and some 33 species of tropical and subtropical regions of the world. They are perennial aquatic herbs, with simple alternate leaves. Flowers actinomorphic, hermaphrodite. Calyx pentalobulate, in tube; corolla rotate; 5 stamens. Ovary superior, 1-carpellate, with calyx and corolla adnate. Fruit capsule. The present contribution provides an updated nomenclatural position of the family, plus a map of geographical distribution. 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. Only one genus is found in Santa Fe, *Nymphoides* Hill & Séguier, with only one taxon: *Nymphoides indica* (L.) Kuntze.

5.

DIFFERENTIAL EXPRESSION OF THE GENETIC VARIANCE IN F_2 OF RECIPROCAL CROSSES

Crippa I[1], López Anido FS[1], Cravero VP[1,2], Martín EA[2], Bermejo C[2], Cointry EL[1].
[1]Genetics and Plant Breeding. Universidad Nacional de Rosario, CC 14 (S2125ZAA), Zavalla, Santa Fe, Argentina. [2]Conicet – CC 14 (S2125ZAA), Zavalla, Santa Fe, Argentina, E-mail: crippaignacio@hotmail.com

The objective of this paper was to determine the gene actions, heterosis, and genetic variance present in reciprocal F_2 populations obtained by combining divergent genomes. Days to first harvest, number of head per plant, weight of the main head, total yield and marketable yield per plant and the length-diameter ratio of main head were evaluated. For precocity and length-diameter ratio, the means value of F_1 generations were significantly different with intermediate values between parents indicating the presence of additive action, while for weight of the main head, total and marketable yield, dominance effects were present. For these traits the absolute mean parent heterosis is important but only for MY the best parent heterosis is expressed (13.1%). F_1 reciprocal crosses were not significant different in any case, however, for the reciprocals F_2 all the comparisons made indicate an unexpected differences between them. The greater genetic variance developed en reciprocal F_2 facilitates selection.

6.

CALCIUM MOBILIZATION DURING HEPARIN-INDUCED CAPACITATION IN CRYOPRESERVED BOVINE SPERMATOZOA

Rodriguez PC, Beconi MT.
Biological Chemistry, INITRA, School of Veterinary Science. University of Buenos Aires. E-mail: prodriguez@fvet.uba.ar

Spermatozoa require a preparatory process called capacitation to fertilize mature oocytes. Two of the events related to capacitation of mammalian spermatozoa are an increase in intracellular Ca^{++} and protein phosphorilation. The sites that regulate intracellular Ca^{++} concentration are plasma membrane and mitochondria, which accumulate 90% of the Ca^{++} uptaken by spermatozoa and have different mechanisms for Ca^{++} influx and efflux. Our aim was to determine the effects of the inhibition of the mitochondrial Ca^{++} cycle during heparin-induced capacitation in cryopreserved bovine spermatozoa. Samples were incubated 45 min, in TALP medium, at 38ºC, in the presence of: a) heparin (H), a well known capacitation inducer; b) H+CGP 37157, specific inhibitor of mitochondrial Ca^{++} efflux; c) H+RU 360, specific inhibitor of Ca^{++} influx to the mitochondria and d) H+CGP 37157+RU 360. In every treatment, capacitation (by CTC), progressive motility (PM, by optical microscopy) and viability (by the eosin/nigrosin technique) were evaluated. Addition of CGP 37157 decreased PM ($p<0.05$), indicating the role of mitochondrial Ca^{++} efflux in the activation of specific signals of sperm PM. RU 360 (5 µM) significantly reduced capacitation without affecting PM or sperm viability, indicating that an increase in cytosolic Ca^{++} concentration would negatively affect mechanisms involved in capacitation such as protein phosphorilation. The addition of both inhibitors showed the effect of RU 360. Extracellular Ca^{++} uptaken by spermatozoa during heparin-induced capacitation would be mobilized into the mitochondria and other specific intracellular compartments.

7.

EFFECT OF IMAZAPYR HERBICIDE ON DISH GERMINATION OF DIFFERENT SUNFLOWER GENOTYPES

Lescano MC, Breccia G, Vega T, Nestares G.
Cátedra de Genética, Facultad de Ciencias Agrarias, UNR, CC14. (S2125) Zavalla, Argentina.

Rapid and efficient diagnostic tests for early screening of herbicide resistance are convenient alternatives to field screening methods. The aim of this work was to evaluate a dish germination bioassay for detection of imidazolinone resistance (IMI-R) in sunflower. Three inbred lines differing for their IMI-R: susceptible (S), intermediate (I) and resistant (R) were evaluated. Seeds were germinated in Petri dishes with filter paper containing 50 ml imazapyr solution at: 0 (control), 1, 10, 100, 1000 and 10000 µM. For each treatment 3 replications of 25 achenes each were incubated under controlled conditions for 4 days. The variables radicle length (RL) and germination percent (%G) were analyzed through ANOVA. Dose–response curve model was fitted for RL. For the variable %G mean values did not differ significantly ($p>0,05$) among herbicide concentrations for each genotype. The imazapyr concentration that reduced RL by 50% was 10 µM for the S seedlings while for the R and I genotype was nearly 1000 µM. In the presence of imazapyr 10 µM the S seedlings showed a reduction in root hairs density. It was concluded that the germination rate was not affected by the presence of imazapyr and the S genotype could be discriminated through this method. This diagnostic test could be a useful tool when breeding for IMI-R in sunflower.

8.

CARACTERIZATION OF SOME SOIL PROPERTIES IN THREE MICROENVIRONMENTS FROM AN HALOMORFIC DEPRESSED AREA OF ZAVALLA

Zerpa G, Sosa O, Martín B, Maccagno A, Lombardo F.
Facultad de Ciencias Agrarias. Universidad Nacional de Rosario.

The objective was to evaluate some soil properties in three microenvironments (Me) of an halomorfic depressed sector (Zavalla, Santa Fe). The Me were three patchs: without vegetation (S1), with *Distichlis spicata* (S2) and with *Cynodon dactylon* (S3). Soils are Tipical Natracualfs. Basal coverage (BC) (with a rectangular squared frame of 0,1 m^2) and the next edaphic properties (0-7 and 7-15 cm): pH (in water; potenciometry, 1:2,5), electrical conductivity (EC) (conductimetry, 1:2,5), exchangeable sodium percentage (ESP) (previous determination of CEC and sodium) and structural stability (SS) (% of aggregate stability to water; Henin method) were evaluated. Three soil samples were taken in each Me (July, 2009). Data were analyzed by ANOVA and Duncan Test. Results are showed in table 1.

Table 1. Soil properties (0-7 cm) and BC in three Me

Me	BC (%)	pH	ESP (%)	EC (mmhos.cm^{-1})	SS (%)
S1	0c	10,05a	43,91a	1,831a	2,7b
S2	18b	10,06a	24,20b	0,721b	5,5a
S3	90a	10,05a	28,98b	0,87b	4,5a

Different letters in column mean significant differences ($p\leq0,05$)
EC was high in S1 and lightly high in S2 and S3. Possibly a higher evaporation in S1, with regard to S2 and S3, is responsible for a higher superficial concentration of salts and Na. SS was very low in the three studied sites, surely derived from high level of Na. At 7-15 cm depth only there were differences for SS (lower in S1). It concludes that microenvironments of depressed areas can differ in some soil properties.

9.

MULTILEVEL NONLINEAR MIXED MODEL FOR MODELING AND CHOOSING A LACTACTION CURVE

Garcia M del C[1], Rapelli C[1], Cuatrin A[2].
[1]IITAEE, FCFyE. UNR. [2]INTA. E-mail: mgarcia@fcecon.unr.edu.ar

The modeling of the milk production curve is an important tool in the dairy production system. The mean production is estimated using repeated measures over the time to units grouped hierarchically. In a multilevel nonlinear mixed model the random effects are associated to heterogeneity units that have a hierarchical structure with several levels. In this paper we describe the nonlinear mixed model selection process to explain the lactation evolution according to the number of lactation. The milk productions are recorded by calving year, season and number of that lactation. We fit a Wood curve assuming that the three parameters (production at baseline, ascent and descent rate of the peak) depend linearly on the season and the lactation and three random effects, year, season and cow. The model building strategy selects the parameters that include random effects, the structures of covariance matrices and the factors affecting the evolution of the response. Different models are evaluated using traditional methods: the likelihood ratio and criterion AIC or BIC and a new proposal (rc) In the final model the initial value and the descent rate depend on season and number of lactation, while the ascent rate is affected by the season. The initial value varies between cows, season and year, but the others according to the cows. The results of the goodness of fit with the traditional method and the rc are similar, they do not support the use of the latter (models with values close to 0.90).

10.

GEOGRAPHIC DISTRIBUTION OF BREAST CANCER STANDARDIZED MORTALITY RATIOS SMOOTHED BY STATISTICAL MODELS IN SANTA FE, ARGENTINA

Hachuel L, Arnesi N, Boggio G.
IITAE. Fac. de Ciencias Económicas y Estadística. U.N.R. E-mail: narnesi@fcecon.unr.edu.ar

This paper shows the geographical distribution of the age Standardized Mortality Ratios (SMR) attributed to breast cancer in women in Santa Fe province in 2000-2005. The SMR compare the observed number of cases in the study population with its expected value. The expected number is calculated accounting for the different age distributions in the departments using a Poisson regression marginal model. Then, to account for the variability in the SMR is used information from official records such as unsatisfied basic needs, health care, education level and population density. These are included as explanatory variables in a new Poisson model applied to the SMR obtained from the former marginal model. Out of all the indicators considered, the influence of population density ($p<0.0001$) is significant; the higher the density, the greater the risk of mortality. This fact is probably related to a higher level of stress and environmental pollution typical of larger urban conglomerates. Thus, the geographical distribution of the adjusted SMR enables the distinction of two areas. The northern area has the lowest population density and less environmental pollution. The central and south present the highest SMRs and are in correspondence with the most densely populated departments. The results demonstrate the importance of using appropriate statistical models for an appropriate explanation of regional variations in mortality.

11.

EFFECT OF DIFFERENT DOSES ON NITROGEN AND SULFUR ON THE YIELD AND QUALITY OF TWO CORN GENOTYPES (*Zea mays L.*)

González A[1], Papucci S[1], Cruciani M[1], Pedrol H[1,2].
[1]Department of Extensive Crop Systems, Faculty of Agronomy, National University of Rosario, Santa Fe province, Argentina. [2]Experimental Agricultural Station, National Institute of Agricultural Technology, Oliveros, Santa Fe province, Argentina.
E-mail: agonzale@unr.edu.ar

The objective of this experiment was to analyze the effect of different doses of nitrogen and sulfur on the yield and quality of two corn genotypes. The trial was conducted in Zavalla (60º 53' W, 33º 01' S.), Argentina The hybrids sown were: ACA 2000, which has a low yield potential and vitreous texture, and ACA 417 RR2, with a high yield potential and soft texture. The treatments consisted in three rates of nitrogen (N_0: control; N_{75}:75 kg ha^{-1} N, and N_{150}: 150 kg ha^{-1}N), and two rates of sulfur (S0: 0 kg ha^{-1} S y S40: 40 kg ha^{-1} S). Were evaluated the grain yield at 14% humidity (YLD) and grain weight by hectoliters (WH). The results were analyzed with ANOVA and the Duncan's test. Significant differences were found between both hybrids in grain yield (YLD) ($P\leq0,01$), while differences in WH were found only in ACA 2000 hybrid ($P\leq0,01$). The hybrid with high yield potential and soft texture increased yield with all rates of N; the doses of S improved WH to levels similar to the ACA 2000 hybrid. In contrast, the hybrid with low yield potential increased yield and WH significantly with N application as compared with the control. The strategies of use of the different nutrients vary according to the yield potential and grain texture of the genotype.

12.

EFFECT OF DEFOLIATION ON THE PHYSIOLOGICAL QUALITY OF SUNFLOWER (*Helianthus annuus* L.)

Giordano F[1], Planisich A[1], Benitez R[1], Cortina M[2], Tuttolomondo G[1], Rosbaco I[1], Bisaro V[3], Salinas A[2].*
[1]Extensive Crops; [2]Plant Physiology; [3]Statistics. Agricultural Sciences Faculty. [*]CIUNR-UNR. Rosario, Argentina. E-mail: gtuttolomondo@hotmail.com

Leaves of sunflower are very important in the yield of sunflower and in ambient stress conditions the carbohydrates move not only from leaves but also from different vegetative or reproductive parts of the plant, specially from the stem. Nevertheless, it is unknown the influence of the duration of photosynthesis on the germination and vigor of the achenes, important characteristics for its use for seeding. The objective of this work was to study the physiological quality of the sunflower achenes of two cultivars (cv), traditional (CF27) and high oleic (Olisum), submitted to two different levels of defoliation (D). D was produced in preflowering (R4), flowering (R5), and without defoliation. It was determined the Weight of 1000 achenes (W); Standard Germination (G); Relationship stem / root (S/R); and vigor (Electric Conductivity, EC). D of 90% produced a great number of empty seeds; CF27 and Olisum showed different behaviour in these stress conditions; CF27 did not show differences in the G and EC. Olisum showed differences in G in 90% D with the rest of the treatments. With the increasing defoliation, both cv showed the highest values of the relation (S/R). Normal achenes obtained from 90% D had the highest percentages of G and EC but the lowest W of the achenes. D in R4 and R5 of both cv did not affect the physiological quality of the achenes produced.

13.

EFFECT OF X-RAY ON THE PHYSIOLOGICAL QUALITY OF SOYBEAN SEEDS (*Glycine max* L. Merrill)

Salinas AR[1], Craviotto RM[2], Arango MR[2], Gallo CV[2], Bisaro V[1], Seguetti J[1].*
[1]Cátedra de Fisiologia Vegetal. Agricultural Sciences Faculty. [*]CIUNR- UNR. E-mail: arsalinas@gmail.com; [2]E.E.A. Oliveros INTA. Oliveros, Santa Fe. E-mail: rcraviotto@arnet.com.ar

The X-Ray technique is well known and used in medicine, biology and many industries. The International Rules of the International Seed Testing Association (ISTA) has a chapter about the use this technique in seed analysis. The aim of this work was to study the effect of X-Ray on the germination of soybean seeds and the alterations produced at the intracellular level. It was used the X-Ray Rutax Equipment and there were irradiated 200 seeds of the cultivar RA 518 during 3 seconds, 25 Kv. and 50 mA. There were used 200 seeds as a control. The seeds were submitted to the standard germination test. There were irradiated 200 seedlings of 48 hours of germination and were determined the number of divided cells and chromosomes. X-Ray irradiation did not affect Standard Germination of irradiated seedlings, showing irradiated seedlings 100% germination and 98% control seedlings but histological studies showed an increase of the number of radical apical cell divisions. The X-Ray promoved cell divisions in the radical tip of soybean seedlings, showing 82% of divided cells and 62% for not irradiated cells, but those modifications were not shown by the Standard Germination Test.

14.

ACUTE TOXICITY OF NITRITE ON *Pleoticus muelleri* (CRUSTACEA, PENAEOIDEA) POSTLARVAE FED DIETS SUPPLEMENTED WITH ASTAXANTHIN

Díaz AC, Cuartas EI, Velurtas SM, Fenucci JL.
Dpto. Cs. Marinas, FCEyN, UNMdP, CONICET, CIC. E-mail: acdiaz@mdp.edu.ar

Nitrite is the most common pollutant in culture systems and may be accumulated in aquatic systems as result of imbalances of nitrificant bacterial activity. Carotenoids act as biological antioxidants, protecting cells and tissues. Astaxanthin is the main storage carotenoid in crustacean; it must be included in diet to maintain normal tissue concentration. The objective of this study was determining the nitrite toxicity and histological alterations on *P. muelleri* postlarvae fed with three diets supplemented with 0, 100, and 300 mg astaxanthin/kg diet. The shrimp were obtained from hatchery-raised postlarvae. Diets were tested in three replicates groups of 90 individuals each, during 30 days. Subsequently, acute toxicity tests were carried out exposing animals at 0, 10, 20, 40, and 80 mg/l of nitrite. The 96-h LT_{50} values of nitrite were 46.9, 65.3 and 84.1 mg/l for shrimps fed to 0, 100 and 300 mg astaxanthin/kg diet. The histological results show that when increase the nitrite concentration it is observed in branchial lamellae hyperplasia and epithelial picnosis, and in midgut gland cariolysis, cellular desquamation and different types of cells cannot be distinguished. The astaxanthin supplementation in diets is partially efficient to reduce the effect of nitrite stress at lower concentrations.

15.

MONOSODIUM GLUTAMATE (MSG): NEONATAL HYPOTHALAMIC IN FEMALE RATS

Cardamone L, Mahieu S, Millen N, Contini M de C.
LIFE. FBCB. UNL. Santa Fe. Argentina. Ciudad Universitaria. Paraje El Pozo. CC 242. E-mail: mcontini@ fbcb.unl.edu.ar

The aim of this work was to evaluate the effects of MSG in neonatal hypothalamic model. Female Wistar rats were housed at a temperature of 23ºC ± 2ºC and a daily cycle of 12 h light and dark. They were given ad libitum water and standard diet. For hypothalamic lesion-induced obesity, newborn rats were subcutaneously injected with MSG (4 mg/g body weight) at 2, 4, 7 and 9 days after birth (**MSG**) and saline solution was also administered to control rats at similar days (**C**). Lee index (body weight $(g)^{1/3}$/nasal-anal length (cm) x 100) was calculated as a predictor of obesity in MSG-rodents. At the age of 7 month the following assessment were carried out: basal glycaemia, glucose tolerance (K glc.), insulin tolerance test (K ins.), retroperitoneal fatty weight (RFW), cholesterol, HDL, LDL and triglycerides. Data is express as mean ± SEM (standard error of the mean). [G]: C: 0.93 ± 0.03; MSG: 1.02 ± 0.056. K ins.: C: 0,23 ± 0,02; MSG: 0.162± 0.002*. Lee Index: C: 0.28 ± 0.001; MSG: 0.31 ± 0.003*. Tail length (mm) C: 189 ± 2.64; MSG: 146 ± 15.2*. RFW (g)/100g weight: C: 4.27± 0.30; MSG: 6.74 ± 0.51*. Lee's index in rats MSG exceeds cutoff defining obesity. The tail length in MSG rats is decreased therefore relates to slower growth, an effect that may be associated with endocrine disruption that causes MSG on the hypothalamus. The insulin tolerance test is altered thus suggesting insulin resistance in MSG rats. This could be associated with increased retroperitoneal fatty weight and also with the existence of obesity

16.

ALTERATIONS OF RENAL HISTOLOGY RELATED TO ALUMINIUM (Al), TESTOSTERONE (T) AND OXIDATIVE STRESS

Azogaray V, Contini M, Millen N, Mahieu S.
Lab. Investigaciones Fisiológicas Experimentales.FBCB. UNL.

Chronic exposure to Al causes alterations in renal function through the induction of oxidative stress and we found that males are more susceptible to the cation than females' rats. Our objective was to investigate the histological changes induced by Al in kidney and whether they could be related to oxidative stress and / or the presence of T. Wistar male rats were divided into 5 groups (n=6): control (C), C+Orq (orchiectomy), Al (treated for 3 months with Al lactate (0.57 mg Al/ 100 g, ip, 3 times per week), Orq+Al, Orch+T (implants) and treated with Al (Orch+T+Al). Capacity to concentrate urine was examined, and the creatinine clearance was determined. Then the animals were anesthetized and both kidneys were removed. One kidney were fixed in formaldehyde in PBS and subjected to histochemical techniques: hematoxiline-eosine and PAS. In kidney homogenates were assessed: lipid peroxidation (LPO), glutathione and catalase. In plasma membranes we determined gamma-glutamyl transferase (GGT) activity. All groups treated with Al (intact and Orch) decreased GGT activity and the ability to concentrate the urine. Al increased LPO with reduced GSH and CAT. Orq. improved these parameters. In the Al groups, the glomeruli and proximal tubuli were swollen. There was an increase in the mesangial matriz. Some of the glomeruli showed crescent formation, and dilatación in the Bowman space. In the cortical tubuli there were slight swelling, and considerable damage and degeneration. These findings suggest that both the histological changes induced by Al as the ability to concentrate urine would be independent of both oxidative stress and the presence of T.

17.

CARDIOVASCULAR RISK RELATED TO CHILDREN'S MALNUTRITION IN SLUMS

Millen N, Contini M, González M, Mahieu S.
Laboratorio de Investigaciones Fisiológicas Experimentales. FBCB. UNL. Santa Fe. E-mail: nmillen@fbcb.unl.edu.ar

The purpose of this research work was to monitor the nutritional state, obesity and possible dyslipemia in children who live in slums whose ages range from 5 to 14, to determine the malnutrition level and the presence of predictive factors related to the cardiovascular risk that may lead to the appearance of arterial hypertension in adulthood. 189 boys and girls, who were divided in two groups, according to their age: I: 5-9 years old (n=88), II: 9-14 years old (n=101) y according to sex: male (m) and female (f). Anthropometric studies were made. Some anthropometric indicators were obtained and the blood pressure (BP) was measured. Some haematology parameters and the lipid profile in our blood: cholesterol levels (Chol), HDL, LDL and triglyceride levels (TG). *Results*: Acute malnutrition: Im 13%, If 24,3%, IIm 26%, IIf 36%. Chronic malnutrition: Im 2,2%, If 16,2%, IIm 8,7%, IIf 10,9%. Overweight: Im 4,3%, If 2,7%, IIm 1%, IIf 3,6%. Obesity: Im 2,2%, If 8,1%, IIm 4,3%, IIf 5,4%. Increased PA: Im 12,5%, If 18,4%, IIm 24,5%, IIf 10,8%. From the whole sample, 20,1% had levels such as Chol $\geq$ 170mg/dl; 14,8% had TG levels $\geq$ 100 mg/dl; 12,2% had HDL levels $\leq$ 40 mg/dl. *Conclusions*: We observed that in the controlled group of people, 9% of the children have suffered a decrease in their height and some risk factors such as alterations in the lipid profile, hypertension in obese and overweight children as much as in children suffering malnutrition. From the total amount of hypertensive children (16, 3%), a great number corresponded to children with particularly acute malnutrition (35%). Therefore, the risk factor related to hypertension is connected not only to overweight or obesity, but also to acute or chronic malnutrition.

18.

EVALUATION OF THE ACTIVITY OF URINARY N-ACETYL-β-D-GLUCOSAMINIDASE AS AN EARLY INDICATOR OF TUBULAR DAMAGE IN TYPE 2 DIABETICS WITH MICROALBUMINURIA

Paparella C, Bouvet B, Arriaga S, Amarilla A, Almará A.
Departamento de Bioquímica Clínica. Facultad de Ciencias Bioquímicas y Farmacéuticas. UNR. Suipacha 531. Rosario.

Diabetic nephropathy (DN) is the most common cause of renal chronic failure in diabetes mellitus (DM). The first clinical evidence of DN is the appearance of microalbuminuria, which is considered an early marker of glomerular alteration. However tubular damage may also be involved in the initial stages of DN. The N-acetyl-β-D-glucosaminidase (NAG) is an urinary marker of tubular disfunction so its determination could be useful for the early diagnosis of DN, parallely to the assessment of urinary albumin excretion (UAE). The aim of this study was to compare the urinary activity of NAG between two groups of patients with type 2 DM over 5 years of evolution: microalbuminuric (MA; UAE= 30-300 mg/g creatinine; n=12) and normoalbuminuric (NA; UAE<30 mg/g creatinine; n=19). Urine samples of 30 healthy no diabetic individuals were included as control. On the first morning urine were determined the UAE (mg/g creatinine) through an immunoturbidimetric method (Wiener lab) and the NAG (U/g creatinine) by a colorimetric method (Roche). The results (mean ± SD) were compared by Student *t*-Test. The MA group showed higher values of UAE and NAG than the NA group: UAE= 91.7±72.1 and 13.8±5.5, respectively ($p<0.0001$) and NAG= 20.5±17.7 and 5.6±4.4 respectively ($p<0.001$). These results suggest that in type 2 DM the tubular damage occurs in conjunction with the glomerular alteration in incipient stage of DN and that the urinary NAG could be used for their detection.

19.

FORENSIC ORIENTATIVE TEST FOR THE DETECTION OF BLOOD

Pavesi A[1,2], Paparella C[1], Tur G[2], Almada L[2], Bouvet B[1].
[1]Area Química Analítica Clínica Facultad de Ciencias Bqcas y Farmaceuticas Suipacha 531 Rosario. [2]Laboratorio Biológico de la URII.División Criminalística 3 de febrero 4101 Rosario. E-mail: Apavesi2001@yahoo.com.ar

In forensic science the preliminary way to detect the blood presence, is the orientative test, a positive test must be followed of other studies. The 4 amjnophenazone and phenol react with HEMO group of the blood in the presence of H2O2. The test orientative is subject to frequent polluting agents wich as vegetables, coke, detergents, wine, fruit juices, cofee, milk, bleach and earth. These materials can interfere. Is necessary evaluate this test in the presence of the mentioned polluting agents. Our objetive was to evaluate the results of the reaction of 4AF/F and H202 in stain of blood and in the most frequent polluting agents.10 samples of the polluting substances mentioned (M C group) and 10 samples composed by blood with the polluting agents (MS group). The qualitative reaction was realised in plate of touch to environment temperature with 3 drops of the solution problem one drop of 4AF/F and one drop of H202 to 5%, the pink colour indicates a positive test . In the 10 samples of group MC, this test was negative, whereas in the samples of MS group, it was positive. The $\chi 2$ test showed association between the positive results of the test and the presence of blood ($p<0,0001$). These evidence shows that the proposed test is useful to find blood in forensic samples. The orientative test is simple, fast and economic an it can contribute to the investigation of forensic cases.

20.

PREVALENCE OF BETA-HEMOLYTIC STREPTOCOCCI ISOLATED FROM PHARYNGEAL SWABS

Ponessa A, All L, Gambandé T, Dlugovztky D, Luciano M, Cordoba L, Colmegna E, De la Torre N, Carletti R, López S, Althaus N, Notario R.
Fac. Ciencias Médicas. U.N.R. Rosario. Argentina. E-mail: aponessa@fmedic.unr.edu.ar

Beta-hemolytic streptococci are the most frecuently bacterial isolated from pharyngitis, asociating group A with major risk of post-streptococcal complications. However, recently group C and G were related with episodes of toxic shock syndrome and rheumatic fever. The aim of this study was to determine the prevalence of streptococcal pharyngitis in local population, and the frequence of appearence among the different streptococcus groups in pediatric and adult population.

Pharyngeal exudates were obtained from children and adults. Swabs were cultured on Columbia agar plates containing 5% sheep blood. Lancefield grouping was performed inmuno-agglutination test.

Between the months of January and August of 2009, 470 patients were studied, 340 children and 170 adults. Beta-hemolytic streptococci was detected in 87 (18.5%). 69 samples (79%) belonged to group A, 13 (15%) to group C and 5 (6%) to group G. Group C and G beta hemolytic streptococci was more prevalent in adult population (11 and 4 samples respectively). On the other hand, Group A was isolated significantly more frequently from pediatric population (55 out of 69 samples).

Because of viral prevalence, bacterilogic culture prior antibiotic theraphy administration remain higth priority

21.
PREVALENCE OF CARDIOVASCULAR RISK FACTORS IN ADOLESCENTS APPARENTLY HEALTHY

Corbera M, Lioi S, Ensinck A, Gerrard G, Zumoffen C, Turco M, D'Arrigo M.
Clinical Analytical Chemistry Area. Dept. of Clinical Biochemistry. FBIOyF-UNR.

In recent years, it had increased the interest for the identification of cardiovascular disease and its risk factors in children and adolescents, but most of the strategies are aimed at those with obesity and not those who have a normal weight. The aim of this study was to determine the prevalence of cardiovascular risk factors in adolescents with overweight / obesity and without it. The study included 66 adolescents with ages between 16 and 18 and they were randomly selected of secondary schools in the city of Rosario. The parents of the participants answered to questionnaire regarding family history of diabetes, hypertension and obesity, while anthropometric variables were obtained (weight and height), artery pressure. Blood samples were taken for the determination of glucose, cholesterol and triglycerides by enzymatic methods, HDL-cholesterol (cholesterol linked to high-density lipoproteins) and LDL-cholesterol (cholesterol linked to low density lipoproteins) by selective precipitation and insulin chemiluminescence. It was considered dyslipidemia: triglyceride levels > 150 mg / dl, cholesterol > 170 mg / dl, HDL-col < 45 mg / dl and LDL-col > 130 mg / dl. The obesity and hypertension were defined by major values the 95th percentile. Of all participants, 9% were considered overweight / obesity (SP + o), the rest were normal (N). The cardiovascular risk factors that were identified, hypertriglyceridemia (SP 16%, N 8%): hypercholesterolemia (SP 66% N 42%), low HDL cholesterol levels (SP 33%, N 13%): high levels of LDL cholesterol (SP 33%, N 5%). Only 2 adolescents (3%) presented criterias for dyslipidemia. The results of this study showed a. high prevalence of cardiovascular risk factors in apparently healthy adolescents, even those without obesity. This population can be identified at an early age

22.
SURVEY OF ANTIOXIDANT ENZYMES (SOD AND GPX) IN CHAGASIC PATIENTS WITH AND WITHOUT HEART DISEASE

Lioi S[1], Ensinck A[1], Gerrard G[1], Corbera M[1], Zumoffen C[1], Turco M[1], Beloscar JS[2], D´Arrigo M[1].
[1]Area Química Analítica Clínica. FBIOyF. [2]Carrera de Cardiología. Fac. de Ciencias Médicas. U.N.R. Argentina.

Clinical studies have demonstrated that Chagas disease has a progressive, localized and relentless evolution.It begins with an aggressive phase and continues with an immunopathogenic inflammatory-long term process that occurs primarily with electrocardiographic abnormalities.Little is known about the underlying mechanisms that make a patient with Chagas to evolve into a) an undetermined stable condition or b) a lifetime severe irreversible condition.The infected individual may remain asymptomatic until a critical mass of damaged heart tissue begins to show symptoms of irreversible myocardial injury. While all living organisms support numerous endogenous and exogenous oxidative stresses, many have antioxidant defense systems (enzymatic and non-enzymatic).There are enzymes that act specifically on certain reactive species.Thus, superoxide dismutase (SOD) prevents the reaction of NO with O^{2-}, increasing the life of NO and decreasing the generation of $ONOO^-$, one of the most powerful oxidants, glutathione peroxidase (GPX) catalyzes the reduction of peroxides (ROOH, including the H2O2) to alcohols (ROH), exploiting the potential reduction of glutathione (GSH).These enzymes would control the balance in the production of reactive oxygen species. The aim of this study was to conduct a descriptive study of the enzymatic activities of SOD and GPX in chagasic patients with heart disease (CC n = 9) and without heart disease (CsinC n = 8). For statistical analysis one way ANOVA was performed. Results were compared with healthy controls (Controls n: 93). The enzyme activity was determined by spectrophotometric methods (kits Randox Labs). The activities obtained were: SOD (U_{SOD} /g of Hb): Controls 895 ± 314; CsinC 2719 ± 304; CC 2468 ± 263, $p < 0.0001$ GPX (IU / g of Hb): Controls 61.51 ± 11.21; CsinC 87.65 ± 13.53, CC 74.41 ± 24.64, $p<0.001$. It is concluded that *Trypanosoma cruzi* infection could modify the oxidative stress contributing to myocardial dysfunction.

23.
YIELD RESPONSES OF SOYBEAN EARLY CULTIVARS IN LATE SOWING DATES

Romagnoli M, Rosbaco I, Tuttolomondo G, Martignone R.
Facultad Ciencias Agrarias, Univ. Nac. de Rosario, 2125 Zavalla.

Field trials were carried out in Zavalla, Argentina (33º 01' S) in 2006/07 and 07/08 cropping seasons (CS) on a Typic Argiudoll soil in order to evaluate differential yield responses between maturity group III and IV cultivars (CV) in late sowing dates (SD). Cultivars were DM3100 and DM3700 (III); and DM4200 and DM4870 (IV). Sowing dates 1 (SD1) were 11 Dec. 2006 and 5 Nov. 2007; SD2 were 28 Dec. 2006 and 6 Dec. 2007 and SD3 were 18 Jan. 2007 and 14 Jan. 2008. Phenology, daily mean temperature, rainfall, and incident solar radiation were recorded throughout the CS. Experimental design was a randomized complete block with 3 replications in each CS and SD. Seed yield was adjusted to 13.5% humidity. Data were analyzed by analysis of variance and LSD test was used to compare means. ANOVA indicated that SD; CS; CS X SD and SD X CV interaction explained 88.1; 4.8; 1.0 and 1.0%, respectively, of the total variability. In DM3100 yields were similar in SD1 and SD2 and were 86% lower in SD3. In the other 3 CV, the highest seed yields were observed in SD1. In SD2 yields were 21; 18 and 17% lower than SD1 in DM3700; DM4200 and DM4870, respectively. In SD3 yields were 88; 90 and 88% lower than SD1 in DM3700; DM4200 and DM4870, respectively. There were no differences in seed yield among the four CV in SD3. Yield reductions in SD3 were attributed to shorter VE-R1 and R1-R5 stages and less favorable conditions of radiation, humidity and temperature during the seed filling periods. In SD3, these CV completed their growth period near to the first frosts. Therefore, in very late sowing dates it is necessary to continue searching CV that complete seed growth with an appropriate vegetative biomass and plant distribution for maximum incident radiation interception.

24.
QUANTITATIVE EXPOSURE ASSESSMENT FOR VEROCYTOTOXIGENIC *E. coli* (VTEC) FROM PRIMARY PRODUCTION TO CARCASS: A SIMULATION MODEL

Olvera A, Signorini M, Tarabla H.
INTA-UNL, 2300 Rafaela, Santa Fe.

Hemolytic Uremic Syndrome (HUS) resulting from VTEC meat contamination is highly prevalent in Argentina. A quantitative exposure assessment was conducted to estimate the likelihood and magnitude of VTEC exposure in beef. Beef food chain was divided into two stages. The first included prevalence evaluation according to type of production (pastures/ feedlots) and HUS associated VTEC strains. The second included the evolution of VTEC prevalence and concentration throughout slaughtering taking into account hide contamination, cross-contamination during de-hiding, decontamination process effects and microbial growth during storage under refrigeration. The probability distributions that best reflected each stage were incorporated into the software @Risk® and iterations were performed using Monte Carlo simulation. The predicted VTEC prevalence in carcasses was 0.49 (0.39; 0.59) and the number of VTEC was -0.12 logCFU (-3.17; 3.09). The most correlated variables with the number of VTEC in beef carcass were hide VTEC concentration (r=0.702) and VTEC transfer from hide to carcass (r=-0.553). Proportion of VTEC associated with HUS (r=0.671) and cross-contamination (r=-0.391) were the most important factors associated with the prevalence of VTEC in carcasses. This information should be considered during risk management and communication of HUS.

25.

RECORD OF VITAL SIGNS ASSOCIATED TO ANIMAL WELFARE PARAMETERS IN DAIRY CATTLE

Costa A, Dasso L, Aramburu R.
Semiología y A. C. Facultad de Cs. Veterinarias UNR. E-mail: alcosta@fveter.unr.edu.ar

This work aims at determining indicators and obtaining values of parameters of animal welfare (AW) in milking cows from a dairy farm south of Santa Fe province. Milking cows from the Complejo Casilda dairy farm were studied. The parameters called freedoms by the Farm Animal Welfare Council from the UK were taken as initial matrix basis. One or more variables were selected from each of the parameters. The variables were studied with dimensions and indicators to reach a value. During 2009, three samples were taken with the aim of adjusting the methodology of field work and to register mean values associated to the variables under study in order to have the local values for the production situation and contrast them with those in the literature. The variables were: body temperature, hematocrit, proteinemia, cardiorespiratory frequency and test of the skin fold. Forty-two registers were obtained from 34 cows for each of the studied variables. Mean values were: Body temperature 38.8ºC TS: 0.4 (N.V.: 38.5-39ºC); Hematocrite 28.6% TS: 3.38 (N.V.: 24-46%); Proteinemia 7.12 gr% T.S.: 1.17 (N.V.: 7 a 8.5 gr%); Heart rate 58 beats/minute T.S.: 16.45 (N.V.: 40 a 80 beats/minute); Respiratory frequency 25 movements/minute T.S.: 5.51 (N.V.: 10 to 40 movements/minute) and test of the skin fold 2.61 seconds T.S.: 1.05 (N.V.: 2 to 4 seconds). Mean local values were within the range of the reference values in the literature.

26.

EFFECT OF VEGETABLE LYSATES ON ERYTHROCYTE IN EQUINES

Dottavio ME[1], Catalani G[2*], Rasia M[1].*
[1]Cátedra de Física Biológica. Facultad de Ciencias Médicas. UNR.
[2] Cátedra de Fisiología.[*]Facultad de Ciencias Veterinarias. UNR.
E-mail: galena @arnet.com.ar

In previous works we have already demonstrated that a vegetable lysate extract (VL) improved capillary circulation. Objective: To study the modifications on equine erythrocyte aggregation (EA) upon the hematimetric indexes, EDTA-anticoagulated whole blood samples were analyzed. Six healthy, non-pregnant adult mares with regular feeding were previously adapted to manipulation. Blood drawing was performed on day 0 and on day 7, after oral administration of 30% hydroalcoholic crude VL extract, prepared from *Portulaca sp, Agavia sp* and *Opuntia sp.* Assays: hematocrit, hemoglobin, erythrocytes, mean corpuscular volume (MCV) and mean corpuscular Hb concentration (MCHC), performed with the Hitachi 902 autoanalyser. EA was assessed by optical density time variation of a whole blood sample, estimating two parameters, namely, aggregate size (s_0/n_0) and aggregate formation velocity ($2k_2n_0$). The protocol was developed considering 40% hematocrit in autologous plasma. Statistics: Wilcoxon's test for independent samples. Results: expressed as median and range, yielded decreased post-treatment values (s_0/n_0) and ($2k_2n_0$), as follows: [1.78 (1.52 - 1.81)] and [1.15 (0.53 – 1.47)], ($p<0.05$). MCV and MCHC were also decreased ($p<0.05$). It can be concluded that decrease of EA and hematimetric indexes are due to the VL administration, therefore improving the blood microcirculation flow.

27.

LEVELS OF IgG_1 AND IgG_2 IMMUNOGLOBULINS SPECIFIC FOR *BRUCELLA SUIS* IN PORCINES FROM A HERD NATURALLY INFECTED

Torioni de Echaide S[1], Arestegui MB[2], Vanzini V[1], Aguirre N[1], Gualtieri CAS[2], Delgado G[3], Peralta L[2], Besso R[2], Scharovsky OG[4]
[1]Cátedra de Sueros y Vacunas, [3]Cátedra de Obstetricia, Fac. Cs. Veterinarias, Casilda; [2]INTA EEA Rafaela; [4]Inst. Genética Experimental, Fac. Cs. Médicas, CIC-U.N.R., Rosario, Argentina.

The complex epidemiology of porcine brucellosis, the lack of vaccines for its prevention and the scarce sensitivity of the conventional serologic tests make the control and eradication of the illness in infected herds, a hard task. With the aim of evaluating anti-*Brucella* immunoglobulins (Ig), 380 serum samples from a herd naturally infected with *Brucella suis* biotype 1 were analyzed. Pigs were classified as seropositive (+) or negative (-) according to the BPA (agglutination in plate with antigen) and C-ELISA (competition ELISA) tests. The results were related to the levels of anti-*Brucella* IgG_1 and IgG_2 evaluated by I-ELISA (indirect ELISA) with isotype specific monoclonal antibodies. Four groups (G) were identified: $BPA^-/C\text{-}ELISA^-$ (G1): 42% (n=158); $BPA^+/C\text{-}ELISA^+$ (G2): 41% (n=155); $BPA^+/C\text{-}ELISA^-$ (G3): 9,5% (n= 36); $BPA^-/C\text{-}ELISA^+$ (G4): 8% (n=31). The optical density (OD, mean ± SD) for IgG_1 and IgG_2 were: 0.086 ± 0.189 and 0.109 ± 0.127 (G1), 0.682 ± 0.300 and 0.299 ± 0.144 (G2); 0.219 ± 0.284 and 0.186 ± 0.186 (G3), 0.471 ± 0.387 and 0.265 ± 0.165 (G4). OD in G1 differed from G2, G3 and G4 ($p<0.0001$) and in G3 from G2 and G4 ($p<0.001$) for both IgG isotypes. Hence, pigs negative to C-ELISA (G3) or to BPA (G4) could be infected with *B. suis*. Therefore, evaluation of IgG_1 and IgG_2 through I-ELISA could complement the serologic tests presently available, in order to increase diagnostic efficiency.

28.

RELATIONSHIP BETWEEN GAS PRODUCTION AND DRY MATTER DEGRADATION OF FORAGES MEASURED IN RUMEN *IN VITRO*

Ronzano P, Figallo R, Faienza H, Peronja M, Smacchia A.
Laboratorio de Química Biológica. Facultad de Cs.Veterinarias. CIUNR. UNR. Bd. O.Lagos y ruta 33. 2170 Casilda. Argentina. E-mail: asmacchi@hotmail.com

This work aims at employing a methodology which would allow the recovery of DM after incubating forages in rumen *in vitro* and at determining if it is related with gas production *in vitro.* Forages (n:15) chosen for their variety were studied. Samples (0,3) g of forages were incubated (24 h, 39ºC) in closed systems, filled with ruminal filtrate from rumen cannulated sheep fed alfalfa hay. A control system was simultaneously incubated only with ruminal filtrate. The produced gas was controlled at regular intervals (every 2h) and the pH and redox potential at the end to test the correct operation of the systems. The contents of the *in vitro* systems were weighed and filtered through a synthetic mesh (0,1 mm). The filters with the recovered debris were processed at 60ºC for 48h and kept in the drier and weighed. The same procedure was carried out with the control system to observe the DM in the ruminal fluid (RF). The difference between initial and final DM of the incubated sample is expressed in percentage. Results are shown as DDM *in vitro* in % as example for the sample x*: DDMx in vitro % =* $(DMx_{24h} - DMx_{0h}) - DM\ RF_{24h} / DMx_{0h-1}$ Gas production was significantly correlated (r: 0.6318 $p< 0.0154$) with the degraded DM in rumen, measured from the recovered debris at the end of incubation. The regression equation that represents it is y: 5.5297 +0.799. x; where x=*Gas (ml/g)* and x=*DDMx in vitro%* The significant positive correlation between gas production and degraded DM in rumen *in vitro* were also described by other authors (Williams, et. al., 1991). These results encourage the use and improvement of these methodologies as useful tools for the study of the operation of rumen.

29.

PRELIMINARY ANALYSIS OF BURSA VENATION OF THREE STRAINS OF *HAEMONCHUS CONTORTUS*, NEMATODE PARASITE OF RUMINANTS

Angulo Lewylle M, Rocca E, Giudici C.
Cátedra de Parasitología Veterinaria - Enfermedades Parasitarias. Facultad de Ciencias Veterinarias. Universidad Nacional de Rosario. Casilda. E-mail: mangulolewylle@gmail.com

The cuticle of the lobes that form the bursa in *Haemonchus*, has arteries that look like a river delta, or veins of the wings of an insect. These patterns in the venation of these nematodes, may serve to identify sub-populations within a infra or metapopulation. Therefore, the aim of this study was to explore the distribution in the venation of *Haemonchus contortus*. This will be used twelve nematodes males (4 individuals per strain), obtained from autopsies of three sheep (strain), two from the town of Casilda (strains "Par" and "Tor") and one of Zavalla (strain "Zav "Faculty of Agricultural Sciences-UNR) in Argentina. From each of the parasites, were obtained from digital images of the left lobe venation between the third and fourth ribs, under light microscope at 100 x. Subsequently, for biometric analysis, using two computer programs, a graphic editing and other spectral analysis, taking a circular piece of 100 x 100 pixels, values were obtained in grayscale for each nematode. Preliminary results were obtained for each strain: Par strain: 103, 72, 159 and 126, on average, 58, 48, 94 and 72, standard deviation, 124, 76, 208 and 156, median; Tor strain: 103, 107, 97 and 123, on average, 59, 61, 53 and 70, standard deviation, 129, 132, 122 and 154, median; Zav strain: 101, 101, 126 and 114, on average, 60, 58, 70 and 67 of standard deviation, 125, 123, 162 and 138 median. While even the number of individuals and *H. contortus* strains analyzed was low, were observed in all individuals, differences in the distribution of the venation of males, indicated by the individual values of the medians. This preliminary data would infer that all individuals, regardless of strains, have particular characteristics in the pattern of this character.

30.

OCCUPATIONAL RISKS AMONG RURAL VETERINARIANS IN SANTA FE PROVINCE, ARGENTINA

Tarabla H, Hernández V A, Pérez L, Mezzadra H.
INTA Rafaela, Santa Fe/ FCV UNL Esperanza, Santa Fe.

Veterinary practice is associated to numerous occupational risks. Our objectives were to evaluate: a) frequency of veterinarians that suffered occupational accidents and zoonosis in Santa Fe province, b) work disability, c) risk perception, d) prevention measures and e) associations. On August 2008 a census was carried out in rural veterinarians (N= 741) attending compulsory continuing education meetings. Response rate to a structured questionnaire was 75.8% (n= 562). Data analysis included cumulative (CIR) and density incidence rate (DIR), χ^2, Student *t* test, Pearson and Spearman correlations, odds ratio and logistic regression. More than 86% had suffered occupational accidents, 59.6% had required medical attention and 81.4% suffered some work related illness. Fifty two percent had at least one day off work due to occupational accidents (37.9±51.7 days). CIR for zoonosis was 34.1% (brucellosis 29.1%, toxoplasmosis 2.1%, leptospirosis 0.6%, tuberculosis 0.6%, anthrax 0.6%, ringworm 0.4%, others 0.6%). DIR from 1964 to 2008 was 20.7% for all zoonosis, and 19.5% for brucellosis. The latter diminished gradually from 1964 up to date, and was higher during the first years in practice. Sixty nine interviewed had at least one day off work due to zoonosis (24.0 ± 27.8 days). CIR for brucellosis increased with years of exposure. Those working in the area of bovine brucellosis sanitation had 2.1 times more risk than those working in the control area. Risk perceptions tended to be significantly correlated, but with low coefficients. Usage of protective elements was independent from risk perceptions. In conclusion, frequency of occupational accidents and zoonosis was high. Coordinated institutional efforts seem to be needed to diminish current losses and prevent new ones, having as primary targets veterinary students and young veterinarians.

31.

ANATOMICAL VARIATIONS OF FETAL URINARY SYSTEM

Acosta D, Copioli D, Ibarzabal J, Ortega M, Pellicciotti M, Rossi M. Morphological Institute Science Museum. Chair of Normal Anatomy. Faculty of Medical Sciences. National University of Rosario. E-mail: manuelalejandroortega@hotmail.com

The urinary system is responsible for maintaining the homeostasis of acid-base system and balance the body hydrosaline. Many of these malformations have clinical and pathological consequences in the womb or after birth, some are incompatible with life, others are asymptomatic and are surgical findings or additional imaging studies. The aim is to scrutinize the human fetal urinary tract to determine the incidence of anatomical variability.Were used for the same 136 male and female fetuses, no known specific pathology, fixed and preserved in formalin solution 10%, which included gestational ages between 20 and 35 weeks assessed by morphometry and fetal weight of their adrenal glands. The anatomic changes were the most important finding of horseshoe kidneys in two fetuses, the presence of bilateral double ureters or bifid, accessory arteries entering the renal parenchyma outside the hilus, multiple venous drainage, among others. We conclude that the segments of the fetal urinary system where anatomical variability was found mostly were the kidneys (1.47%), the arterial system (3.67%), venous drainage system (1.47%) and ureters (1.47%). In total fetuses studied, the percentage of registered anatomical abnormalities was 8.08%. Therefore, we can say that no significant differences when comparing these percentages with those described in other works and classic literature. This allows us to assert that not only the study sample was representative to meet the target, but the human renal system, together with the cardiovascular system, one of the anatomical structures in which most often occurs developmental anomalies.

32.

EFFECT OF ADDITION OF *Salvia Hispánica L.* SEEDS IN THE DIET ON THE GLYCOLIPIDIC PROFILE OF ADULT eSS DIABETIC RATS

Aimaretti S, Felizia S, Martínez SM, Tarrés MC, Montenegro SM. Cátedra de Biología. Facultad de Cs Médicas. CIC-UNR.

We resolved to evaluate the effect of addition of *Salvia hispanica L.* (chía) seeds in the diet of adult rats of the eSS diabetic line, on glycemia, glucose tolerance, triglyceridemia and cholesterolemia. Male rats of 200 days of age received, during 60 days and ad libitum, usual food (H:n=9), or usual food plus chia grinded seeds (H+Ch:n=9). At the start of the experiment weight was measured in g (P) and basal glycemia (G_0) and 30 min (G_{30}), 60 min (G_{60}) and 120 minutes (G_{120}) after glucose overload (mg/dl) were measured. Mean daily intake in g (CMD) and its caloric contents (C_{MCal}) were calculated. At 60 days measures of glycemia (mg/dl) were repeated. Triglyceridemia (TG) and cholesterolemia (C) were dosed. Values previous to the addition of "chía" were similar in both groups: P:H+Ch:350±33 vs H:341±23, p=0.505; G_0: H+Ch: 133±19 vs H:131±19, p=0.815; G_{30}:H+Ch:296±42 vs H:280±49, p=0.486, G_{60}:H+Ch:332±65 vs H:34±44, p=0.594 y G_{120}: H+Ch: 177±33 vs H:198±35, p=0.213 At 60 days difference was found in the values of G_{60}: H+Ch:345±47 vs H:419±88, p=0.041 y G_{120}: H+Ch:170±50 vs H:240±42, p=0.006. The results of the other variables were:P:H+Ch:315±66 vs H:358±31, p=0.102; G_0:H+Ch: 134±23 vs H:151±45, p=0.331; G_{30}: H+Ch: 319±53 vs H:339±73, p=0.504, TG: H+Ch:285±141 vs H: 319±113, p=0.577 y C: H+Ch: 154±52 vs H:157±21, p=0.941. CMD of the usual food measured in g and in calories did not differ between groups H+Ch: 22±7 vs H: 23±2, p=0.934; C_{MCal}: H+Ch:69±20 vs H: 71±12, p=0.776. Although the group H+Ch added chía seeds to the usual diet, its total caloric intake did not show a significant difference (76±25 vs 71±12, p=0.625). We may conclude in eSS chía improved glucose tolerance without modifying lipidic profile.

33.

ERITHROCYTE SHAPE AND DEFORMABILITY IN PRESENCE OF CHROMIUM

Bazzoni G[2], Hernández G[2], Bollini A[2], Mengarelli G[2], Huarte M[1], Piehl L[1], Rubin de Celis E[1], Rasia M[2].
[1]Cát. Física. Fac. Farmacia y Bioquímica. UBA. [2]Cát. Física Biológica. Fac. Cs. Médicas. UNR.

Chromium (Cr) is capable to cause clinical toxicity and carcinogenesis. We studied the influence of Cr^{VI} on the cellular shape (CS) and deformability of erithrocytes (ED) *in vitro*. E from healthy donors (n=11)washed, incubated 30 min at 37ºC in PBS with Cr^{VI} (170 and 340 µM) and without it (0 µM). We determined: a) Suspension viscosity (SV) in saline at 40% hematocrit by viscometry (indirect estimation of ED); b) CS by optic microscope; c) Membrane fluidity (MF) by ESR, using 5 and 16-doxil stearic acids as probes, estimating S,order parameter, and correlation time (T); d) lipoperoxidation degree (LPO), expressed as µmol of malonil-aldehyde (MDA) /ml of E. Results presented as media ± SEM Stadistical Analysis: Student test. * p< 0.05; **p<0.01

n:11	S	T (nsec)	MDA (µmol/mlE)	VS (cp)	CS
0 µM CrVI	0.679 ± 0.001	1.90 ± 0.17	61.38 ± 1.27	2.90 ± 0.06	Biconcave disc
170µM CrVI	0.690 ± 0.002*	2.04 ± 0.26	74.00 ± 0.91*	3.07 ± 0.03**	Stomatocytes II
340µM CrVI	0.709 ± 0.005**	2.03 ± 0.08	79.50 ± 1.56**	3.22 ± 0.06**	Stomatocytes II

The interaction between CrVI and E membrane, in the concentrations studied, produces stomatocytes and diminishes ED (higher SV). These results agree with a diminution of MF affecting the external layer only

34.

SUSCEPTIBILITY TO MAMARY ADENOCARCINOMA M-406 IN RECIPROCAL HYBRIDS BETWEEN CBi^- AND CBi MICE

Cáceres JM[1], Zacarías Fluck MF[1,2], Rico MJ[1,2], Scharovsky, OG[1,3], Di Masso RJ[1,3], Rozados VR[1]
[1]Instituto de Genética Experimental, Facultad de Ciencias Médicas, Universidad Nacional de Rosario, [2]CONICET. [3]CIC-UNR. E-mail: jmcaceres2000@gmail.com

Mammary adenocarcinoma M-406 spontaneously appeared in a CBi mouse and it is maintained *in vivo* by periodic intraperitoneal inocula in CBi mice. CBi^- line was artificially selected for body conformation from the CBi population. When CBi^- mice are challenged with M-406 they show 100% of takes followed by 100% of regressions (resistance) while, in CBi mice, the tumors grow exponentially (susceptibility), with 0% of regressions. Tumor behavior was studied in CBi x CBi^- (n=24) and CBi^- x CBi (n=24] reciprocal hybrids. Mice were challenged s.c. with M-406. Tumor volume vs. time data were fit with the exponential model $Vt:S.e^{[k.t]}$. .M-406 grew exponentially in 45/48 mice. Non statistical differences were found in tumor growth rate (k) between sexes or genotypes [mean ± SE – Male: (CBi^- x CBi) 0,1970 ± 0,0103, (CBi x CBi^-) 0,2098 ± 0,0129; Female: (CBi^- x CBi) 0,1983 ± 0,0114, (CBi x CBi^-) 0,1970 ± 0,0103; F = 1,335; P = 0,2618]. It is concluded that: (1) susceptibility to M-406 behaves as a dominant trait; (2) tumor growth does not show maternal effects; (3) sexual dimorphism was not observed in reciprocal hybrids, probably due to the absence of hormonal receptors in the tumor; (4) genes involved in mice susceptibility to M-406 would be autosomic and their expression would not be influenced neither by sex nor by genomic imprinting.

35.

GLOBAL ASSESSMENT OF NEPHROPATHY IN SPONTANEOUSLY DIABETIC eSS AND eSMT RATS

Felizia S, Picena JC, Montenegro SM, Tarrés MC, Martínez SM
Facultad de Ciencias Médicas, CIUNR. UNR.
E-mail: drasilvina@yahoo.com.ar

A comprehensive assessment of diabetic nephropathy was made in eSMT (50 ♂ and 74 ♀) and eSS rats (68 ♂ and 68 ♀) by histopathological study, from 3 to 26 months. Direct and significant correlations between age and biomass, age and absolute and relative weights of both kidneys were demonstrated, with higher values in males. In 12 months old eSS rats, the glomerular diameter was higher in females (120 ± 6 vs 110 ± 8 µm; p<0.01) while in the eSMT did not differ by sex (106 ±11 vs 102 ± 9 µm; p>0.05). eSMT females showed similar values to those recorded in eSS males. In 60% of the eSMT rats and in 40% of the eSS over 21 months old, glomeruli "in candelabrum" were found due to thickening of the peripheral glomerular basement membrane and a segmental mesangial thickening. Sporadically, periglomerular fibrosis was detected in the eSMT and eSS females. In eSMT, an arteriolar wall thickening was detected in males from 9 months over and in females, from 12 months old; in the eSS males, during the first year of age over and in eSS females, from 21 months old. Protein was found in tubular lumen in 100% of males eSS and eSMT 9 months old and over. We conclude that in eSMT males, the glomerular and tubulo-interstitial lesions are more frequent and develop earlier than in other groups while the young eSS females showed the most moderate injuries. The finding in the eSS and the eSMT males of kidney weight gain, as well as of the observation of glomeruli decreased in size, suggests the existence of heterogeneity in the histological patterns of renal disease in both eSS and eSMT lines.

36.

CROSS-SECTIONAL ANALYSIS OF HEMATOCRIT IN EXPERIMENTAL POPULATIONS OF CAMPERO CHICKEN WITH THE SAME PROPORTION OF CORNISH GENES

Fernández R[1], Rozados VR[1], Dottavio AM[1,2], Di Masso RJ[1,2].
[1]Cátedra de Genética, Facultad de Ciencias Veterinarias. [2]CIC-UNR. E-mail: viviana.rozados@gmail.com

Packed cell volume or hematocrit (H) is a variable easy to measure and its modification represents one of the adaptative responses to the high requirement of oxygen imposed by the increased metabolic demand that the intensive selection for rapid growth has fixed in commercial broiler chickens. Campero INTA is a meat type chicken, with a lower growth rate than that of the commercial broiler strains. As White Cornish is the breed used as the paternal genotype in commercial broilers, the aim of this work was to evaluate the behaviour of H in males of two experimental population: Caseros I [CP males (White Cornish x Barred Plymouth Rock) x CR females (White Cornish x Rhode Island Red] and Caseros II [CR males x CP females] and in the reference population Campero INTA. H was determined at 1, 2, 4, 5, 8, 9, 10 y 11 weeks of life, in samples collected before euthanasia. The effects of age (F = 8.11; P<0.0001) and genotype (F = 4.51; P = 0.01) was difficult to assessed because of a significant genotype x age interaction (F = 2.92; P = 0.0008), possible ascribed to random oscillations of H values with age. It is concluded that the inclusion of 50% of Cornish genes in both experimental populations do not produce a significant metabolic stress as evaluated by H values.

37.

ANTITUMORAL EFFECT OF METRONOMIC CHEMOTHERAPY (MCT) WITH CYCLOPHOSPHAMIDE (CY) AND DOXORUBICIN (DOX) ON M-406 MURINE MAMMARY ADENOCARCINOMA

Fernández MV, Mainetti LE*, Rozados VR, Scharovsky OG[1].*
**Contributed equally. Instituto de Genética Experimental, Facultad de Ciencias Médicas. [1]Consejo de Investigaciones, U.N.R., Rosario. E-mail: viri.zenobi@hotmail.com*

MCT consists of a chronic, equally spaced, administration of low doses of different chemotherapeutic drugs without extended rest periods. DOX inhibits topoisomerase II enzyme, preventing DNA replication. CY, an alkylating drug, presents a toxic effect on proliferating cells. We have demonstrated the antitumoral effect of MCT with DOX or CY as an individual treatment. Our aim was to study the efficacy and toxicity of MCT with combined DOX + CY in the M-406 tumor model. CBi mice were s.c. challenged on day 0 with M-406 and distributed in four groups (G): GI) no treatment (controls); GII) Cy 20mg/kg/day in the drinking water from day 9; GIII) DOX 0.5 mg/kg i.p. 3 times/week from day 9; GIV) Treated as II + III. Tumors were measured and animals were weighted three times/week. Blood samples were taken on days 0, 20 and 40. On day 19, tumor volume in GII (Mean ± SEM: 131,44 ± 40,36mm^3) and GIV (101,28 ± 72,51) was lower than in GI (1157,76 ± 323,39) ($p<0,01$). On day 41, mice in GIV showed lower tumor volume than in GII ($p<0.05$). A complete regression was obtained in 1/5 mice in GIV. Survival was lower in GIV than in all the other groups ($p<0.001$). No decreases in body weight and white blood cells count were observed. In conclusion, the combined DOX + CY MCT in M-406 tumor-bearing mice: a) inhibited tumor growth, achieving one complete regression; b) was more efficient than treatment with either agent alone, c) increased the survival rate and d) was devoid of general toxicity.

38.

EVALUATION OF DIETARY LOW CALCIUM LEVEL AS AN OBESITY MODULATOR

González D, Leiva R, Gayol M del C, Olguin MC, Posadas M, Labourdette V.*
Cátedra de Biología. Fac. de Ciencias Médicas - Cátedra de Bromatología. Fac. Ciencias Bioquímicas y Farmacéuticas. UNR.*

Dietary components may alter genomic expression. Several studies have found a negative correlation beetween dietary calcium level and body mass index.

The aim of this study was to evaluate the effects of a low calcium diet on biomass, fat depots and metabolic efficiency in obese β line rats.

Adult pregnant β rats received AIN 93 diets with either low (hCa: 0.2g%) or normal (Nca: 0.6g%) calcium level. Males (n:10 and n: 9 respectively) were selected from the offspring and fed the same diets since weaning till fifty days of age.

Animals body weight and feed intake were measured every other day. Feed efficiency conversion was calculated as the ratio beetween total feed intake and body weight gain. At the end of the experiment, rats were sacrificed and retroperitoneal and perigonadal fat depots were dissected and weighed. Organs relative weights were calculated as the ratio between organ weight and total body weight. Comparisons between groups were done with unpaired Student's t test and differences were considered significant when $p<0.05$. Results: Weight gain (g): hCa: 181.50 ± 8.60 vs NCa: 154.00 ± 7.16 $p < 0.05$. Fat depots (g%): hCa: 4.98 ± 0.12 vs Nca: 4.46 ± 0.17, $p < 0.05$. Feed efficiency conversion: $p > 0.05$. Conclusion: an inverse relation between dietary calcium level and biomass and fat depots was found in these β rats. Hence, a calcium deficient diet during pregnancy may predict higher body and abdominal fat depots weight in the offspring.

39.

INFLUENCE OF POLISATURATED FAT ACIDS IN β RAT ADIPOSE TISSUE AND ENCEPHALON

Gutierrez S, Ogusuku M, Passerini F, Leiva R, Alet N, Gayol MdC. Cátedra de Biología. Facultad Ciencias Médicas. UNR. E-mail: gutierrezsantiago07@hotmail.com

Lipids are essentials in nervous system development, in cellular membranes and energetic supply material. The diet of male rat spontaneous obesity and diabetes animal model β inbred line, was supplemented with chia seeds(Ω3) and sunflower seeds(Ω6): habitual food(C), habitual food+sunflower seeds(G) and habitual food+chia seeds(CH) (n:5/group). This was observed from weaning up 300 days old. Daily food(g/d) and calorie(Kcal/d) intake, biomass(g), relative weight retroperitoneal and perigonadal adipose panicles and encephalon(gx100g biomass) were analysed with ANOVA-Bonferroni(media±SEM). At **300 days daily food intake** is less in G due to lower consumption of habitual food (C)22.19±1.48; (G)15.61±1.06; (CH)25.20±0.57($p<0,05$), though daily calorie intake is equaled due to sunflower high calorie (C)66.58±4.44, (G)76.13±5.62, (CH)76.81±1.70($p>0.05$). C **biomass** is the only that continued growing with age (C)456.8±12.47; (G)452.4±4.16; (CH)442.4±5.89($p>0.05$). With G, **adipose panicle relative weight** is the greatest (C)6.41±0.39; (G)8.56±0.18; (CH)5.79±0.25($p<0,05$). CH **encephalon relative weight** is greater: (G)0.40±0.13, (C)0.39±0.25, (CH)0.47±0.02 ($p<0,05$). Ω6 intake softens in β the hipertriglyceridemia but starts intense diabetes. Now it is proved that with less daily intake, some calorie and biomass, there is an increase of the panicle deposit that anticipates the installation of the metabolic syndrome. CH that had shown minor conversion efficiency, higher oxidation and higher clearing of free fat acids, now accumulates less panicle adipose tissue and an encephalon higher weight.

40.

ANATOMICAL STUDY OF THE IRRIGATION OF THE GLUTEUS MAXIMUS MUSCLE

Hernandez AD, Monaco NJ, Mortarino PAS, Ibarzabal JI, Calvo JE.
Institute Museum of Sciences Morphologic. Medical Science College. Rosario National University. E-mail: pupipaz@hotmail.com

The gluteal region receives two vascular-nervous pedicles, running respectively superficially and below the pear-shaped muscle. The superior one contains the superior gluteal artery and the inferior one the inferior gluteal artery. The study of both pedicles receives relevance in relation to the use of the gluteus maximus muscle like site donor of myocutaneous flaps. The objectives of the work are: a) to review the vascular anatomy of the gluteal, b) to deepen anatomical knowledge of the perforant gluteal arteries, c) to recognize the disposition of the main irrigation pedicles. We studied 20 masculine gluteal regions and 4 feminine ones in fetuses. It was counted the number of terminal branches of the gluteus maximus artery, analyzed the order of birth respect to the pear-shaped muscle, its territory of irrigation and the length of these branches was moderate. As result there were two pedicles in all the samples and a great variety in the disposition and emergency with respect to the pyramidal muscle, being the pattern most frequent the one that has the appearance of the superior pedicle over the pyramidal and the inferior one below this muscle (91.6%). There were not intersexual differences. We can conclude that the superior and medium thirds, by its abundant irrigation and his short vascular pedicle, would have one better application for flaps of neighboring receiving zones and the inferior third presents a longer pedicle, being better for flaps of receiving regions more moved away.

41.

CHARACTERIZATION OF L-DGE/L, A VARIANT OF L-DGE LYMPHOMA WITH LOWER GROWTH RATE, OBTAINED BY SELECTION

Hess LE, Zacarías Fluck MF, Scharovsky OG.
Instituto de Genética Experimental, Facultad de Ciencias Médicas, Universidad Nacional de Rosario, Rosario, Argentina.

L-DGE is a spontaneous immunoblastic type lymphoma with low metastatic capacity which appeared in a BALB/c mouse. L-DGE/M is an L-DGE variant that grows faster, has higher metastatic potential and over-expresses the immunomodulatory protein Galectin-1. Our aim was to obtain by selection an L-DGE variant with a lower growth rate. Twelve BALB/c mice were challenged s.c. with L-DGE (day 0). Tumors were measured 3 times/week and tumor volume was estimated. Mice were euthanized when they arrived to the maximum ethically permitted tumor volume and tumors and metastasis were excised. On day 21, the tumor with the lower growth rate was selected as donor of the next passage. The procedure was repeated for 16 consecutive passages. Tumor volume (V) vs Time data were adjusted with the exponential model $Vt=Start.e^{(k.t)}$, where Vt is V (mm^3) at time t, k is the exponential grow rate and t, the time (days). Tumor volume doubling time was then calculated as $T_D=0,69/k$ and tumor latency, the time that goes from challenge to the start of exponential growth, was estimated as $T_L=S^{-1}$. T_D for L-DGE/L was higher than that of L-DGE ($p=0,0068$), while T_L did not differ. The frequency of metastases and tumor regressions were similar for both tumors. We succeeded in obtaining an L-DGE variant with lower growth rate that will complement the studies on Galectin-1 expression and response to Cyclophosphamide previously developed in L-DGE and L-DGE/M.

42.

PANCREATIC DAMAGE IN RATS WITH PANCREATITIS TREATED WITH ALPHA-MACROGLOBULINS (AM)

Holotte D, Nipoti J, Pretini MJ, Roma S, Moreno H, Di Loreto V, Rigalli A.
Facultad de Ciencias Médica. UNR.

Acute pancreatitis is an inflammatory disease of pancreas that depend on the balance between proteinases and their inhibitors, such us AM. Monofluorophosphate (MFP), binds to AM and modifies AM homeostasis. Higher survival and lower pancreatic damage was observed in rats under MFP treatment. The aim of this work was to study the effect of AM administration to rats with pancreatitis. Esperiments were carried out in male adult Sprague Dawley rats with incomplete closed duodenal loop (ICDL) induced pancreatitis. Plasma with normal levels (nl) and high levels of AM (hl) and purified AM (pa) were obtained from rats of the same strain. After ICDL rats were divided in 5 groups of 8 rats each. They received the following treatments for 3 days. **C**: no treatment. **HL**: intravenous injection (iv) of 0.5 ml hl/day. **NL**: iv 0.5 ml nl/day. **FS**: iv 0.5 ml de fisiological solution/day. **PA**: iv 0.5 ml pa/day. Eight rats were subjected to simulated surgery (**Sham)**. Plasma levels of AM and activity of amylase were measured for 3 days after ICDL. After 14 days rats were euthanased and pancreatic damage was measured by a numeric score (0= no damage, 4 severe damage). In this system interstitial edema, fibrin, neutrophils granulocytic infiltration, fatty tissue and parenchymal necrosis, hemorrhage, vascular thrombosis and congestive blood vessels were assesed. Amylase increased in groups with pancreatitis after 24 hs of ICDL, without differences among groups. AM levels were higher in HL but without significant diferences. Score was lower in **HL** and **PA**. Conclusions: intravenous administration of AM induces lower histological damage. Although the differences were not significant the results are of clinical significance.

43.

***Trypanosoma cruzi* INFECTION IN MICE SWISS ATHYMIC. NO EFFECT OF HYPERPROLACTINEMIA**

Lacasi M, Lavaggi M, Roggero E.
Inst Immunology, Fac Cs. Medical UNR.
E-mail: marce-laky@hotmail.com

Introduction: athymic mice (nude) lack conventional T cells, however a significant number of T cells develops via a pathway Extrathymic. To determine whether PRL has some effect on the course of acute Chagas use nude mice grafted with pituitary as a model of hyperprolactinemia. Methods: Females control Swiss nude (nude-C) and grafted pituitary 2-4 (nude-H) were inoculated with 100 parasites Tulahuén strain of Trypanosoma cruzi (Tc). Results: Mortality was 100% in both groups of mice and found no major differences in survival time and body weight loss during infection. Parasitemias (Tc/50campos-D14pi) were lower in the Nude-H + Tc on the Nude-C + Tc (Nude–H+Tc:84± 15 vs Nude-C+Tc: 259 ± 66 *). At D18 P.I. PRL plasma levels were higher in Nude-H-Tc (Nude-H+Tc: 16226 ± 4287 vs Nude-C+Tc: 6399 ± 2085 *), the IFN-γ were lower (Nude-H + Tc: 15003 ± 915 vs Nude-C+Tc: 8846 ± 2016 *) while those of IL-6 and TNF-α were similar. The study of lymphocyte subsets Extrathymic (CD3int/CD122 +), NK (CD3-/CD122 +) and macrophages showed no major differences due to infection or pituitary graft except an increase in the percentage of B lymphocytes in the Nude-group H + Tc (Nude-H+Tc: 79 ± 0.9 vs Nude-H 58 ± 11 *).Conclusion: Tc is lethal infection in nude mice and T cells of origin are not relevant Extrathymic to control it. Pituitary grafting increased circulating levels of PRL and was associated with reduced parasitemia and the values of circulating IFN-γ, these differences were not reflected in mortality

44.

RADIOLOGICAL ASSESSMENT OF TRABECULAR BONE MINERAL DENSITY IN OVARIECTOMIZED RATS TREATED WITH MONOFLUOROPHOSPHATE (MFP) AND ZOLEDRONATE (Z)

Lombarte M, Moreno H, Rigalli A, Di Loreto V.
Laboratorio de Biología Ósea, Facultad Ciencias Médicas. UNR.

We have demostrated the decrease in bone mass and bone volume (BV/TV) histomorphometrically measured in ovariectomized (OVX) rats. These changes were only prevented by Z. Radiological fotodensitometry is a simple technique to estimate bone mineral. The aim of this work was to study if the trabecular bone mineral density (BMDt) measured by X-ray fotodensitometry is a suitable technique to assess bone changes in OVX rats treated with MFP and Z, and if the results correlated with the previously seen in BV/TV. Twenty-four 70-day-old Sprague Dawley rats were subjected to OVX: 1) Controls, 2) MFP: 40 umol/100 g bw/d per os, 3) Z: 1.5 ug/kg/w sc, 4) MZ: 40 umol/100 g bw/d per os+1.5 ug/kg/w sc. Six rats were Sham operated. After 30 days, rats were eutanized, left tibias were obtained, defleshed and radiographed together with an aluminium stepwedge reference. BMDt was measured at proximal metaphysis level over digitals images with an image analysis program. Results were reported as mg of Ca/cm^2. Data were compared with Kruskall-Wallis and Dunn's test (*$p<0.05$ vs sham and Z, mean±SE). Z prevent the decrease of BMDt induced by OVX (Sham: 22.7±1.3, OVX: 17.7±1.5*, MFP: 17.2±1.0*, Z: 22.8±1.1, MZ: 21.6±0.5). We found a significant correlation between BMDt and BV/TV (Spearman, $p<0.001$). We concluded that BMDt measured by X-ray is a suitable technique to estimate quantitative bone changes and can be advantageous used in a non invasive way.

45.

NORMAL SERUM LEVELS OF LDH (LACTATE DEHYDROGENASE) IN CBi/IGE MICE DIFFERING IN RESISTANCE TO CHALLENGE WITH *Trichinella spiralis*

Londra MF[1], Vasconi MD[2], Bertorini G[2], Di Masso R[1,3], Hinrichsen L[1,3].
[1]Instituto de Genética Experimental, Fac. Cs. Médicas; [2]Cát. de Parasitología, Fac. Cs. Bioquímicas y Farmacéuticas; [3]CIC-UNR, Universidad Nacional de Rosario.

Normal biochemical data are important to evaluate modifications or damage in organ function in experimental animals. There are, however, few publications providing reliable reference values in such variables as well as description of the analytical methods used. Our aim was to determine the mean value and normal variation of the serum activity of the muscular enzyme lactate dehydrogenase in adult mice of different genotypes of the CBi/IGE stock, in order to compare them with those of mice of the same genotypes infected with *Trichinella spiralis* (Ts), since a high serum level of this enzyme is an indication of muscular damage. Adult mice (90-110 days of age) of both sexes from lines CBi-, CBi/C and CBi+ of the CBi/IGE colony were used. Mice were pretreated with phenbendazol to eliminate the natural enteroparasites. Twenty five to 30 serum samples per genotype and sex were analyzed for lactate dehydrogenase activity using a commercial kit (LDH-P UV, Wiener lab, Rosario, Argentina). LDH serum activity (U/l) in mice was significantly higher than in humans (CBi-, 1100±72; CBi/C, 1300±85; CBi+, 1200±73). Variability was similar in all the groups; no significant differences attributed to genotype or sex were observed, neither were seen differences between these results and those of mice infected with the parasite. Since the latter were determined in the chronic phase of the infection, the lack of differences between normal and infected animals suggests that, irrespective of differences in the initial degree of cell destruction or the final parasitic load, all the genotypes were able to repair the damage inflicted by Ts. This study should be done between days 6 and 13 post-infection, when skeletal muscle cells damage occurs.

46.

FLUORINE CONTENT IN DRINKING WATER AND SOIL FROM SANTA FE PROVINCE

Lupo M, Pera L, Brun LR, Moreno H, Rigalli A.
Laboratorio de Biología Ósea. Facultad Medicina. UNR.

Fluoride (F) has applications in both human health and industries. Many industrial activities produce F which remais in water and soil. F has toxic effects that are dose dependent. The objective of this work was to meassure F in water and soil all over Santa Fe province. Water and soil F concentration was measured by potenciometry and isothermal distillation. Results are shown as median (range/number of data) and the comparisons were made according the number of samples, using Mann Whitney or Kruskal Wallis test with Dunns post test. Differnces were considered significant when $p<0.05$. Fluoride distribution in soil and water were not normal (Kolmogorov Smirnov test). F concentration [F] in water was 0.42(0.02-2.01/113) and in soil 0.76 (0.0-16.92/92). [F] in rural soil: 0.93(0.09-16.92/18) was significantly higher than [F] in urban soil: 0.76(0.01-15.37/64). On the other hand, [F] in water was signifincantly higher in well water: 0.58(0.06-2.01/44) than water supply: 0.30(0.03-1.87/37), water from dispensers: 0.10(0.08-0.88/5) and from reverse osmosis plants 0.12(0.1-0.13/2). Conclusions: F concentrations in water and soils from Santa Fe province are within the healthy range and no risk of fluorosis may exist. Water from water supply, from dispenser and from reverse osmosis plants have lower [F] than well water. Moreover, rural areas have a higher [F] in soil possibly because of the use of fertilizer.

47.

MEMORY TRAINER "TUBERCULOSIS: A SPREADING EVIL"

Milicic SA, Rodríguez León NS, Cesolari JAM.
Instituto Universitario Italiano de Rosario.
E-mail: soniamilicic@hotmail.com

The simulation is a really useful teaching-learning method in the clinical-epidemiological cycle of Medical Science courses.
The learning software "Tuberculosis: a spreading evil", created at the Italian University Institute of Rosario (IUNIR), works as a curriculum supporting tool in the teaching of a contagious disease - endemic in our country- such as Tuberculosis, integrating contents of Microbiology and Virology, Pathological Anatomy, Semiology, Cybernetics and Medical Bioinformatics. The aim was to contribute to the formation of medical doctors with a high scientific level and better skills in clinical decision making on this entity, promoting practical and autonomous learning. A theoretical framework and an exercise area were developed, using a web page editor-FrontPage 2003- which can be used in a Web platform.
The simulator was implemented on two cohorts of students (n= 86; 2008=48; 2009=38). Once the student completed the simulation, he received a score. This allowed a particular evaluation of each student. Besides, the program indicates the exercises in which mistakes were made by marking the correct answers and thus providing positive feedback to the learner.
Students defined this tool as a didactic way to incorporate new knowledge and self-evaluate and teachers, as a useful instrument for evaluating the acquired concepts on the disease.
The quality achieved in the educational software created, together with the inherently motivating nature of the simulation, contribute positively to the achievement of important objectives

48.

UPDATE IN THE STUDY OF THE TERMINAL NERVE (Nervus Terminalis)

Monaco NJ, Ansaldi SA, Graziosi DG, Hernández AD, Francisquello R.
Museum of Morphologic Sciences Institute. Chair of Normal Anatomy. Medical Sciences College. Rosario National University.
E-mail: nicolas.monaco@yahoo.com

The Terminal Nerve is little well-known by the classic authors and understood by some of them like the Cranial Pair 0 (Zero). This motivates the study and the update of concepts that describe its anatomy and function.
The objectives of this work are: a) to establish integrating concepts about the Terminal Nerve, b) to update concepts enunciated by the classics, and c) to determine its possible actual medical application. In order to this, classic anatomical literature, works of investigation and scientific publications were considered. As a result, we obtained that the Terminal Nerve is a very small nerve, thin, plexus-shaped and formed by amyelinic fibers, that extend from the mucous of nasal septum until the previous portion but of forebrain. Recent investigations relate it to the sensorial modality (but nonquimiosensorial), with the neuromodulation, the reproductive conduct and the vegetative function, central connections are attributed to it in addition to limbic system which would determine an influence on the emotion and the sexual conduct. We can conclude that the Terminal Nerve is a little well-known structure and recent investigations add important data to understand the role that this structure would have on the functions of the Limbic System.

49.

HISTOLOGY OF LEARNING THROUGT SIMULATIONS RESPIRATORY AUTOMATED DEVICE

Nasello A, Cesolari JAM, Rodríguez León NS, Cáceres J, Castro G, Calvi BJ, Lerro F.
Instituto Universitario Italiano de Rosario.
E-mail: antonasello@hotmail.com

This work, like others previous one, is an interactive method that allows playback oh histological differential diagnosis and aimed at the design of a software simulation of respiratory histology for first years students of the medical career and evaluates the results of its
implementation. The working methodology followed was the design of a simulation program in FrontPage 2003 version, which produced a problematic situation and assumed from the beginning involved in the mechanics of the creative process with two strands: a) the substrate to transmit knowledge and b) The software used for presentation. The program allows to show different histological preparations as fast as possible. The program was applied to three cohorts of freshmen in the medical career (2007 (n = 48), 2008 (n = 52), 2009 (n = 46)) of the Instituto Universitario Italiano de Rosario and found again that it can assess the performance of students with the presented problem and provide information on the practice of their self calculating percentage (%) pass rate and average learning time. In each case the inferences are constructed corresponding confidence intervals, with $\alpha = 0.05$. To determine the differences between the learning times of the three cohorts was implemented by way ANOVA $\alpha = 0.05$. Results: the time used for the development of the simulations was 35 minutes with a EE 3, to obtain the 80% that was required for approval and the final 45 minutes of chair time, all students successful (obtaining 100%) possible differential diagnoses and feedback to assess their action. There were no significant differences between the learning times of cohorts. It reiterates the conclusion from previous work because this simulation software cases problems, allows interaction, enables the evaluation of students performance against the problem and provides information on the practice of allowing self motivating feedback and training to assess action.

50.

METABOLIC CHANGES IN IL-6-DEFICIENT MICE DURING ACUTE INFECTION WITH *Trypanosoma cruzi*

Passerini M, Pasero J, Feldman P, Roldan L, Drogo C, Roggero E
CAECIS, Universidad Abierta Interamericana, Rosario.

Interleukin-6 (IL-6) is a multifunctional cytokine that not only modulates innate immunity, but has also metabolic actions, regulates body weight and food intake. Acute infection with *Trypanosoma cruzi* (Tc) in C57BL/6 mice (C57) causes weight loss, cachexia and death. C57 and IL-6 deficient mice on C57 background (KO6) were infected with 100 trypomastigotes (Tulahuén strain) injected s.c. Parasitaemia, body weight, food intake, mortality, glycemia (GOD/PAP enzymatic method), lipid profile (GPO/PAP enzymatic method) and IL-6, IFNγ and TNFα plasma levels (ELISA) were assessed. Results are expressed as means ± S.E.M. Body weight, IL plasma levels, glycemia and lipid profile were similar in both control groups, however daily food consumption was significantly higher in KO6 mice (C57-D0=4.96±0.26gr vs KO6-D0=6.27±0.54gr).Upon infection, body weight decreased in C57mice (C57-D12= 27.7±0.42g vs C57-D21=23.6±2.1g)**,** but it was significantly increased in KO6 mice (KO6-D12=27.9±0.32g vs KO6-D21=31.7±0.8g). Food intake decreased in both strains. Although KO6 mice had significantly higher parasitaemia and higher TNFα and INFγ levels than C57, mortality and survival rate were similar in both infected groups. IL-6 was only increased in C57. We conclude that IL-6 is involved in the control of body weight during infection, but it is not correlated with food intake or glucidic and lipidic metabolic changes**.** Paradoxically, during infection in the absence of IL-6, body weight increases while food intake decreases, suggesting a possible hydroelectrolitic imbalance in this model.

51.

GLUCIDE INTOLERANCE AND INFECTION RISK AT DIFFERENT AGES IN LINE IIMb RATS

Passerini F[1], Sgro MV[1], Gutierrez S[1], Casco C[1], Ruiz MF[1], Echenique C[2], Gayol MdC[1].
[1]Cátedra Biología. Facultad Cs. Médicas, [2]Área Parasitología. Facultad Cs. Bioq. y Farm. UNR.
E-mail: passerinifranco@hotmail.com

Insulin resistance and diabetes have negative effects on the immune system that generates an increase in the susceptibility to infections, some of them caused by fungi. The phagocytosis function in peritoneal macrophages in IIMb(b) male rats with glucide intolerance and diabetes was evaluated. Glycemia(g/l) ($Gli_{0\text{-}120}$), triglyceridemia(g/l) (TG), % phagocytosis(%P) and phagocytosis index(IP) were registered at 50, 100, 200, 300, 400 days of age (n: 8/age). The macrophage culture was measured in a revealing system of leavens *Candida albicans* and *Candida tropicalis*. At **50ds** before the inflammation acute phase, the immunity activity is low (%P: 13.56±1.79, IP: 1.49±0.10). At **100ds**: (%P: 27.14±6.35, IP: 1.62±0.19, Gli_0: 1.27±0.02, Gli_{120}: 1.65±0.05). At **200ds**: (%P: 36.50±6.23, IP: 2.33±0.09, Gli_0: 1.66±0.04, Gli_{120}: 2.04±0.04). At **300ds**: (%P: 10.70±2.53, IP: 1.93±0.11, Gli_0: 1.51±0.07, Gli_{120}: 1.98±0.08). At **400ds**: (%P: 4.00±0.89, IP: 1.50±0.29, Gli_0: 1.44±0.04, Gli_{120}: 2.59±0.10). %P showed between 100 vs 400ds($p<0.05$), 200 vs 300ds($p<0.01$) and 300 vs 400ds($p<0.001$). IP showed between 50 vs 100ds($p<0.01$) and vs 200, 300 and 400ds($p<0.001$); 100 vs 200ds($p<0.01$), vs 300ds($p<0.05$) and vs 400ds($p<0.001$); 200 vs 400ds($p<0.01$); 300 400ds($p<0.001$).As insulin resistance gets installed, followed by diabetes later appearance there is an %P and IP increase. Both indicators decrease in b as hyperglycemia increases, possibly due to age and pathologic symptom aggravation.

52.

ANALYSIS OF A MOUSE MODEL OF SPONTANEOUS MAMMARY CARCINOGENESIS. EFFECT OF PREGNANCY AND LACTATION ON TUMOR DEVELOPMENT IN LINE CBi-

Piñero G[1], Suárez C[1], Hinrichsen L[1,2].
[1]Instituto de Genética Experimental, Facultad de Ciencias Médicas, [2]CIC-UNR, U.N.R.

Lines CBi+ and CBi/C of the CBi/IGE stock, currently in their 110th generation of selective breeding, differ significantly in the proportion of female mice developing tumors (CBi+: 100%; CBi/C: 31.2%) as well as in tumor latency (median age at tumor detection, +: 240 days; **C**: 500 days); parous females showed similar values. CBi+ females possess an exogenous mouse mammary tumor virus (MMTV) variant while **C** females do not. To characterize susceptibility to spontaneous breast carcinogenesis in line CBi-, obtained in the same experiment of disruptive selection as CBi+, several characteristics of breast tumor development were studied and compared to those of + and **C**. The proportion of CBi**-** mice with tumors resembled that of + (66.7% mice) but tumor latency was similar to **C** (470 days); a complete reproductive cycle did not affect these variables (CBi**-**, 84.6% mice, 400 days). Overall, the results suggest that the differences observed between CBi- and the other genotypes may be associated with MMTV: CBi- could habor a less aggressive exogenous variant; the endogenous virus could be inserted in genomic sites different from those of CBi+, or the CBi- genotype may interact with the virus modifying its carcinogenic potency. The results pose new questions as to how the host germline genetic background, and its interaction with exogenous factors, affect susceptibility to carcinogenesis. These lines of the CBi/IGE stock, having fixed different gene combinations after so many generations of selective breeding, constitute an interesting model to study spontaneous carcinogenesis. Such models would provide the foundations to propose and develop new prevention and/or therapeutic strategies.

53.

EFFECT OF LOW DOSE CYCLOPHOSPHAMIDE (CY) ON NKT I CELLS IN A RAT EXPERIMENTAL LYMPHOMA MODEL

Rico MJ[1], Mainetti LE[1], Rozados VR, Scharovsky OG[2].
Instituto de Genética Experimental, Facultad de Ciencias Médicas, UNR. [1]CONICET. [1]CIC-UNR, Rosario. E-mail: majorico@gmail.com

NKT I cells are lymphocytes that participate in innate immune response. We have demonstrated that a single-low dose Cy has an antimetastatic effect on lymphoma L-TACB bearing rats and that metronomic chemotherapy (MCT) with Cy inhibited L-TACB growth. Low dose Cy (10mg/kg) induced a switch in cytokines profile from Th2 to Th1, lowering the % of circulating Tregs, without changes in NKT I cells. Our aim was to study if other antitumor therapeutic schedules with low-dose Cy, would be able to modulate NKT I cells. Inbred *e* rats were inoculated with L-TACB s.c. (day 0) and distributed in 3 groups: I) Control group, without treatment; II) Cy 20 mg/kg on day 14; III) MCT with Cy (10mg/kg, i.p.) 3 times/week, since day 10. Blood samples were obtained on days 0 and 21, and were processed for flow cytometry analysis with the markers: TCR/RPE and CD161/FITC. The % of circulating NKT I cells on day 0 (% Median [range]: 27,70 [12,10-32,30]) was higher than those, on day 21, of Group I (7,99 [2,80-31,60], p=0,033) and group III (8,56 [4,27-20,70], p=0,008) and did not differ from group II. On day 21, the % of NKT I cells in group II (12,80 [7,53-20,70]) was higher (p=0,0974) and in group III was lower (p=0,0571) than in group I. The decrease in the % of NKT I cells observed during tumor progression could not be reverted by the administrated treatments. Therefore, low doses of Cy that can modify the antitumor immune response by modulating Tregs cells, do not have an effect on NKT I cells.

54.

Trypanosoma cruzi INFECTION ATTENUATES IL-1β AND IL-6 CONCENTRATION IN THE CENTRAL NERVOUS SYSTEM

Roggero E[1], Roldan L[1], Feldman P[1], Passerini M[1], Besedovsky H[2], del Rey A[2]
[1]CAECIS, Fac. de Medicina, Universidad Abierta Interamericana. [2]Institute of Physiology and Physiopathology, Philipps University, Marburg, Germany.

Interleukins (ILs) play an important role in the control of the immune response and are involved in the regulation of the hypothalamus-pituitary-adrenal axis (HPA). Previous results showed that, although with different kinetics, corticosterone levels are increased in both the highly susceptible C57Bl/6 and the more resistant Balb/c strains during acute infection with the parasite *Trypanosoma cruzi*. Since ILs contribute to control the activity of the HPA axis, we evaluated IL-1β, IL-6 and tumor necrosis factor α (TNFα) in the hypothalamus (HT) and brain stem (BS) in this model. Infected mice and the corresponding controls were killed on day 17. First, we confirmed that corticosterone blood levels were increased in both strains following infection, although the levels were significantly higher in infected Balb/c mice. Serum levels of pro-inflammatory ILs were also increased in both strains during infection. However, we found a significant decrease in IL-6 and IL1β concentrations in the HT of C57 mice only (IL-6:C57-C:36411±3540 vs C57-Tc: 23531±3932, IL-1β:C57-C:189±24 vs C57-Tc:115±18 pg/mg). A similar trend was noted in TNFα concentration in the HT. No alterations in ILs concentration were detected in the BS. Decreased IL-1β and IL-6 concentrations in the HT of C57 infected mice may be associated with a delayed HPA axis activation and a deleterious effect on the control of the immune response during acute infection.

55.

OSMOTIC FRAGILITY OF RED BLOOD CELLS OF LINE IIMb

Ruiz MF[2], Casco C[2], Visconti M[1], Gayol M del C[2], Bollini A[1], Hernández G[1], Bazzoni G[1].
[1]Cát. Física Biológica. [2]Cát. Biología. Fac. Cs. Médicas.UNR. E-mail: m_ferchu@hotmail.com

The inbreeding line IIMb(b) of rats was considered normal control of the line beta (obesity and diabetes model). Recently, the line b started presenting variability on glucose tolerance; therefore it was necessary to characterize it in different aspects. One of them is rheology. The aim of this study is to investigate the osmotic behavior of red blood cells (RBC) suspensions of the lines b and beta and compare them. Males of 200 days from the lines b and beta of rats (n=4) were used. Osmotic fragility was studied with the Dacie method, which obtained curves that were rectified and analyzed with two parameters: x_{50} (NaCl concentration where 50% of hemolysis was obtained) and β (cell population response). Statistical analysis: Wilcoxon nonparametric test. The results were expressed as medians and ranges. Results: line b: x_{50} (mM): 72,07 (69,25-73,64); β: 0,085 (0,080-0,090); line beta: x_{50} (mM): 81,50 (78,00-86,00)***; β: 0,1225 (0,089-0,159)**. ***p<0,001; **p<0,01. Conclusion: This preliminary study shows that RBC from the line b are significantly more resistant to osmotic changes (lower x_{50}) but they have an heterogeneous response (lower β) unlike the line beta. We can infer that the erythrocyte membrane of the line b has a different behavior (it is less rigid) than the erythrocyte membrane of the line beta. These results will be compared with erythrocyte shape and deformability (studied by the investigation group).

56.

PHAGOCYTIC CAPACITY IN OBESE AND DIABETIC LINE β RATS AT DIFFERENT AGES

Sgro MV[1], Passerini F[1], Gutierrez S[1], Casco C[1], Ruiz F[1], Echenique C[2], Gayol MdC[1].
[1]Cátedra Biología. Facultad Cs. Médicas, [2]Área Parasitología. Facultad Cs. Bioq. y Farm. UNR. E-mail: mvsgro@argentina.com

Obesity has been associated with low grade chronic inflammation in which macrophagic participate. It was evaluated the fagocitosis function in peritoneal macrophage in β male rats with spontaneous obesity and diabetes of puberal setting. Glycemia(g/l) ($Gli_{0\text{-}120}$), triglyceridemia(g/l)(TG), % phagocytosis(%P) and phagocytosis index(IP) were registered at 50, 100, 200, 300, 400 days of age (n: 8/age). The macrophage culture was measured in a revealing system of leavens *Candida albicans* and *C.tropicalis*. Anova–Bonferroni test was done (media±SEM). At **50ds** (%P: 6.90±0.99, IP: 1.25±0.11). At **100ds**: (%P: 15.17±1.09, IF: 2.76±0.13; Gli_0: 1.26±0.06, Gli_{120}: 1.52±0.08; TG: 1.90±0.10). At **200ds**: (%P: 12.30±3.60, IP: 1.82±0.12; Gli_0: 1.62±0.10, Gli_{120}: 1.86±0.16; TG: 2.51±0.36). At **300ds**: (%P: 7.90±1.91, IP: 1.45±0.14; Gli_0: 1.70±0.01, Gli_{120}: 1.96±0.08; TG: 2.58±0.32). At **400ds** (%P: 2.08±1.91, IP: 1.09±0.20; Gli_0: 1.45±0.05, Gli_{120}: 2.50±0.36; TG: 4.86±0.39). %P showed between 100ds and 400ds ($p<0.001$) and IP between 100 and 200, 300 and 400ds ($p<0.001$). At early ages %P and IP are lower, at puberty they raise up in coincidence with the dismetabolic symptoms (inflammation phase). At late ages, aggravated hyperglycemia and bactericidal function of neutrophil and macrophage decrease. So among other causes, a lower phagocytosis would explain the diabetic people infection risk.

57.

STUDY OF ERYTHROCYTE DEFORMABILITY FROM IIMb STRAIN OF RATS

Visconti M[1], Ruiz MF[2], Casco C[2], Gayol M del C[2], Bollini A[1], Bazzoni G[1], Hernández G[1].
[1]Cát. Física Biológica, [2]Cát. Biología. Fac. Cs. Médicas. UNR.

We reported hemorheological derangements in the IIMFm/β (β) line (rat model of hypertriglyceridemic obesity and diabetes) in relation to its eumetabolic control (IIMFm/α (α)), both imbred in Biología. In the last years, the extinction of the α line originated the incortporation from a new control line (IIMb line (b)). In this work we study erythrocyte deformability (ED), Hemoglobin concentration (Hb) and hematocrit (Hto) in males of 200 days from the b and β line (n=4). We determine: a) Hb spectrofotometricaly; b) Hto by microcentrifugation; and c) rigidity index: red blood cells suspended in saline-albumin solution (RI) (high RI low ED) were filtered through filters with pores of 5μm. Also we estimate the middle corpuscular hemoglobin concentration (MCHbC): Hb/Hto. Statistical analyses: Mann-Wihitney non parametric test. Results (middle and range): RI (%): β: 9.15 (6.13-12.92); b: 12.96 (9.42-17.84)**; Hto (%): β: 32 (28-34); b: 43.5 (42-44)*; Hb (gr/dl): β: 9.84 (8.76-12.35); b: 12.8 (12.1-14.2)**; MCHbC (gr/dl): β: 31 (26-34); b: 30 (28-32)^{ns}. n.s.: not significant; ** p< 0.01; * p< 0.05. Our results show a small ED in the b line but it didn't modify the MCHbC significantly, since Hb and Hto increased parallelly. The ED depends on the viscoelastyc properties of the membrane, in the MCHbC and the erythrocyte shape. Being that we don't find significant differences in the MCHbC, the diminution in deformability in the b line would be given by changes in the erythrocyte shape and/or in the viscoelastyc properties of the membrane, variables that will be studied in future experiments.

58.

A FOLLOW-UP STUDY OF PATIENTS WITH CUTANEOUS MELANOMA. PRELIMINARY RESULTS

Rodriguez Otero JC[1], Dagatti MS[2,3], Cesarios GMI[2], Fernandez Bussy R[2], Bergero A[2], Pezzotto SM[3].
[1]Cátedra de Clínica Quirúrgica, [2]Cátedra de Dermatología, [3]Instituto de Inmunología. Facultad de Ciencias Médicas. Universidad Nacional de Rosario.

Cutaneous melanoma (CM) incidence rate has been growing steadily for the last 30 years. CM mortality is associated with tumor thickness, which is the main prognostic factor in early stages. A follow up study of 53 clinically and histologically diagnosed CM patients (23 males, mean age = 60.0±13.6; 30 females, mean age =59.3±16.6) who attended the dermatology consultation in different health centers of the city, was carried out. Age at diagnosis, sex, primary melanoma site, Breslow thickness, Clark's level of invasion, recurrence and length of follow up were registered. 20 tumors were diagnosed in trunk (37.7%), 18 in lower extremities (34.0%), 9 in head and neck (17.0%) and 6 in upper extremities (11.3%). All lesions were pigmented. The Breslow thickness observed range was 0.2-7 mm, mean=1.7 mm. Thickness was greater than 2mm in 11 patients (20.8%). Clark levels: I (n=14, 26.4%), II (n=10, 18.9%), III (n=16, 30.2%), IV (n=13, 24.5%). Follow-up (years): <1 (22.6%), 1-3 (11.3%), 3-5 (35.8%), >5 (30.2%). Sixteen patients were followed for at least 5 years, 13 of them remain alive (81%), and only 4 have Breslow> 2mm and Clark IV. Eight of the 47 patients free of disease (17%) had Breslow>2mm and Clark IV, and were followed for an average of 3.9±5.1 years. Four patients died as a consequence of their CM (follow-up 4.8-10.2 years), 3 with Breslow thickness> 2mm and Clark IV. After an average follow-up of 4 years, 88.7% of the patients were clinically free of disease and without clinical evidence of metastasis. Conclusions: It is necessary to alert the population to periodic review for the early detection of this tumor since, diagnosed early, the prognosis is good.

59.

ASYMPTOMATIC WEDGING VERTEBRAL FRACTURE PREVALENCE RATE IN A SAMPLE OF MENOPAUSAL WOMEN IN ROSARIO, APPLYING TWO MORPHOMETRIC CRITERIA

Pezzotto SM[1], Morosano ME[2], Chapo G[2], Menoyo I[2], Tomat MF[2], Masoni AM[2].
[1]Instituto de Inmunología; [2]Cátedra de Química Biológica; Fac. Cs. Médicas, Univ. Nac. Rosario.

Wedging vertebral fractures (VF) is a major consequence of osteoporosis. In Rosario, the use of morphometric criteria to define VF is rarely used, so many VF are not detected. The objectives of this study were to compare two morphometric criteria to determine VF prevalence in dorsal spine radiographs of 164 asymptomatic not treated postmenopausal women, and to assess the reliability of two methods. Criterion 1 (C1): a vertebra is considered to be fractured if it has an anterior to posterior height reduction greater than 20%. Criterion 2 (C2): Comparison of posterior / anterior height ratio of each vertebra with a cutoff given by the mean minus 2 standard deviations of the ratios for the same vertebral body in the whole sample. Radiological morphometry was performed in 1476 vertebrae. heights anterior, posterior and superior measurements carried out in 5346 total (918 duplicated for intra and inter-operator reliability assess). The agreement between the two criteria was assessed calculating the Kappa coefficient (K). Intraclass correlation coefficients (ICC) were calculated to evaluate intra and inter-operator measurements reliability. 95% confidence intervals (CI) were also calculated. VF prevalence rates were 25.6% (C1) and 23.7% (C2), with statistically significant agreement (K=0.853, CI= 0.76-0.95, p<0.001). For intra-operator reliability, ICC was 0.996 (CI=0.994-0.998). For inter-operator reliability, ICC=0.994; CI=0.992-0.995. In both cases, agreement degree was almost perfect. Our findings indicate that C1, less complex, would be useful for the diagnosis of spinal deformities in our environment.

60.

USUAL NUTRIENT CONSUMPTION PATTERN IN SUBJECTS WITH GALLBLADDER DISEASE (GD)

Perroud H, Bertola Compagnucci A, Pezzotto SM.
Instituto de Inmunología. Facultad de Ciencias Médicas. Universidad Nacional de Rosario. E-mail: haperroud@gmail.com

The association between GD (gallstones or cholecystectomy) and diet has not yet been completely clarified. We had previously study a random sample of 1173 adult subjects in Rosario, Argentina. GD prevalence rate was 20.5%. After an average of 15 years, 44 subjects (18 males and 26 females, mean age 63.8±13.8 years) were located to determine their eating pattern and to compare it with the Rations Recommended Dietary Allowance (RRDA). Diet data were collected applying a semi-quantitative food frequency questionnaire and an atlas with previously standardized pictures portions, emphasizing on the usual diet before GD diagnosis. Mean ± standard deviation were computed for each nutrient, and for total energy intake (kilocalories). Macronutrients caloric contribution (%) to total energy intake (TEI) were calculated. Contributions were: Protein 18%, carbohydrates 41%, and fats 41%. Carbohydrates did not reach RRDA (50-55%), and fat exceeded RRDA (30%) in more than 10%. Sodium (2753±1540 mg/day), phosphorus (800±321 mg/day), and iron (16±4 mg/day) intakes did not differ from recommended values. Calcium consumption (719± 404 mg/day) was lower than the recommended values. Mean vitamin B1 (0.8±0.3 mg/day) and B2 (2±0.8 mg/day) intakes were adequate. Vitamin A and C intakes exceeded the recommendations (A: 10398±6043 IU, C: 161±113 mg). In contrast, niacin mean intake (6.9 mg/day) was 50% lower than the recommended value. Mean fiber consumption was 11.9 g/day (recommended values: 25-30g/day). In conclusion, GD subject's diet is rich in fat and cholesterol consumption, and poor in fiber consumption.

61.

CAUSATIVE AGENTS OF ACUTE BACTERIAL DIARRHEA IN A HOSPITAL DE ROSARIO (PERIOD 2006-2008)

Gambandé T, Ponessa A, Toledo V, Hails I, Cerutti G, Luciano MI, Córdoba L, Cerutti C, Notario R.
Chair of Microbiology, Virology and Parasitology. Medicine Faculty. U.N.R. E-mail: telmagambande@hotmail.com

In research conducted from 21/12/05 to 21/12/08 in the Hospital Español of Rosario, with a total of 587 stool cultures, we found 510 with negative results (86.88%) and in 77 (13.12%) positive results. In this stool cultures were isolated: 12 (15.58%) Enteropathogenic *Escherichia coli* (EPEC), 21 (27.27%), Enteric *Salmonella*; 1 (1.29%) *Shigella*; and 43 cases (55.84%) of thermophilic *Campylobacter*. Considering the positive stool cultures thermophilic *Campylobacter* was the most frequently isolated bacteria. Another important result was the rise in the incidence of *Campylobacter* throughout the studied period, found in 2008 a total of 20 cases (66.66%) against the 23 cases in the period 2006-2007 (48.94%) which shows a 17.72% increase in incidence in that year. Regarding the distribution of cases in the seasons of the year, both in 2006 and in 2008 *Campylobacter* isolates were markedly higher in winter and spring seasons, showing a characteristic double peak. In 2007 we did not get the typical results of the double peak seasonal incidence of this bacterium, attributing it to bad weather that winter, when it snowed in unusual snowfall regions. Undoubtedly there is an increased incidence of thermophilic *Campylobacter* as a cause of acute bacterial diarrhea in recent years in contrast to what happened with *Shigella* and other enteropathogens. This is data of utmost importance for the primary care physician, in terms of prognosis and treatment of acute diarrheal disease.

62.

GENOTYPE COMPARISON BETWEEN CAMPYLOBACTER JEJUNI ISOLATED FROM HUMANS AND POULTRY

Gambande T, Casadei E, Borda N, Puig C, Tomey ME, Luciano MI, Nieto N, Toledo V, Cerutti G, Hails I, Notario R.
Universidad Abierta Interamericana.
E-mail: telmagambande@hotmail.com

8 isolates from humans with acute diarrheal disease were compared with 23 isolates from hens and chickens cloaca, namely: 2 isolates from broiler of an industrial establishment (E1) and 7 isolated from other (E2), 7 isolates from laying hens (PON) and 7 isolates from poultry farm (FAM). Samples of human beings were planted as we previously described in selective agar in microaerophilic (Medicina (Buenos Aires) 45:654-658, 1985). The samples of chickens were inoculated in the same way and in Chan medium with subculture at 24 hours at the above selective medium. The clonality was determined by RAPD-PCR, using first 1254 (Stern NJ). Isolates was interpreted as different clones when they differed in a range of amplification. 5 different clones were obtained. Patterns I, II, V and were isolated in E2 and in humans (II also in E1 and in PON), in FAM, pattern I was found. Pattern III was only isolated in human beings. Pattern IV was found in all farms but not in humans. With these results we can determine that 93,54% of the strains were found in both animals and humans. The clone III was isolated only in human beings. Clone IV was only found in chickens. It is necessary to study more strains to confirm the existence of exclusively human strains. A molecular approach with greater discrimination should be used to confirm these results and – since previous studies have found a high and increasing resistance to fluoroquinolones and other antimicrobials, determine whether poultry in our country are responsible for human infection with resistant strains.

63.

BACTERIAL VAGINOSIS, CANDIDIASIS, AND TRICHOMONIASIS IN 60 WOMEN THAT ATTEND AMBULATORY CONSULT

Maero F, Luciano MI, Notario R, Gambande T, Borda N, Dimarco D.
Fac. Medicina y Ciencias de la Salud. UAI. Hospital Español de Rosario.

In the feminine genital tract, the vagina resents a dynamic ecosystem that remains in constant balance due to a delicate interaction among different factors. However, different microorganisms can be recognized which can alter the actual ecological balance originating vaginal infections. A descriptive study of transversal cuts was carried out with 60 women in fertile period aged between 19 and 50 years old to analyze flow vagina samples in order to identify the infectious agents prevalence, and their connection with predisposed associated factors. The vaginal content was analyzed through exams involving the use of cold, coloring and culture. The prevalence of bacterial vaginosis(VB) was of 28.3%, candidiasis 26.7% and trichomoniasis 1.7%. Most women were housewives who completed their primary studies. The connection between weekly sexual intercourses and VB was significant: more than 5 weekly sexual intercourses proved more probability of VB (p=0,001). It was also significant the consumption of oral contraceptives, the lack of prophylactic use and the use of vaginal showers. As regards candidiasis, connection with the use of oral contraceptives and bidet is observed. The only case of Trichomonas Vaginalis was associated with multiple sexual relationships. Conclusion. With the use of a simple methodology, it is possible to investigate the vaginal flow and to detect illnesses with an endogenousoriginand sexual transmition, affectation of the product of gestation such as preterm childbirth, and illnesses of sexual transmition as it is the one caused by trichomonas vaginalis.

64.

M.VACCAE INMUNOTHERAPY ADDED TO ANTIBIOTIC TREATMENT (DOTS) IN TUBERCULOSIS PATIENTS (TBP). COMPARATIVE ANALYSIS BETWEN ORAL _M. VACCAE_ (o_Mv_) AND INTRADERMAL (id _Mv_) ADMINISTRATION

Martinel-Lamas DJ, Fontela MS, Fiorenza GL, Farroni MA, Vogué CR, Stanford JL, Stanford C, Dlugovitzky DG.
Cát. Microbiología. Facultad Ciencias Médicas. Univ Nac Rosario. Hospl I. Carrasco. Windeyer Institute. Universidad de Londres.

We have previously reported some of the obtained data in studies of immunotherapy with id *Mv* (1 and 3 dose*s)* and o*Mv* (10 doses) which are able to induce changes in clinical and immunological parameters in TBP. It was comparatively analyzed the effect of id *Mv* and o*Mv* in 24 TBP both sexes, HIV- of each trial. In both studies 12 TBP received DOTS plus 3 doses of heat killed (hk) id *Mv* in one case and 10 doses of (hk) oMv, in other case. 12 TBP received Placebo (Pl: saline). For immunologic exams 4 blood samples were extracted and MN and PMN were separated (Fycoll-Triyosom) and stimulated or not with inactivated Mtb. IFNγ, TNFα e IL10 in culture supernatants (c.s.) and TNFα in plasma (ELISA; R&D Systems) were measured. Respiratory burst (RB) was determined in MN y PMN by Flow Citometry. R Index: IFM of stimulated MN and PMN / IFM of not stimulated CMN and PMN. Results. ($\bar{x}\pm$es). *Mv* added to DOTS increased MN and PMN RB from PTB. R was higher in TBP receptors of o*Mv* than TBP receptor*s* of id *Mv* and both compared with Pl. Increased IFN and IL10 levels in c.s. were detected in successive samples being higher in o*Mv* compared *with* id *Mv* and Pl. TNF values in PMN and MN c.s. and plasma of TBP treated with o*Mv* diminished more than in id *Mv* treated TBP and Pl. These data show the immunomodulatory effect of *Mv* in id and oral receptor.

65.

EFFECT OF AMIODARONE ON ERYTHROCYTE DEFORMABILITY

Spengler I[1], Popp L[1], Benedini L[2], Messina P[2], Schulz P[2], Manzo R[3], Allemandi D[3], Palma S[3].
[1]Cátedra Física Biológica, Facultad de Ciencias Médicas. UNR. Rosario. Santa Fe. [2]Departamento de Química.UNS, [3]Facultad de Ciencias Químicas. UNC. E-mail: isabelspengler@hotmail.com

Amiodarone (AMD) is a class III antiarrhythmic drug with amphipathic properties. The krafft point of AMD is 80ºC and therefore if a high concentration suspension (50 mg/mL or more) of amiodarone in water is heated above this temperature, transparent liquid preparations are obtained (colloidal dispersion). The aim of this study was to measure the erythrocyte deformability in the presence of commercial AMD (AMD-A), amiodarone dispersion (AMD-B) and phosphate buffer (PBS, pH = 7.4, as a control). Both samples were dissolved in PBS at 50mg/ml concentration (clinical use preparation). AMD - B was heated to 80ºC and then cooled. Red blood cells (RBC) suspensions from 25 healthy donors (10% hematocrit) in PBS (control) or PBS added of AMD-A and AMD-B, were incubated at 37ºC for 60 minutes. RBC deformability was estimated by its inverse, the index of rigidity (IR). The results obtained were: IR control = 7,00 ± 1,26, IR AMD- A = 8.10 ± 1.30, IR AMD-B = 15.96 ± 4.83. No differences ($p<0,0001$) were found between control and AMD-A. However, the results allow us to infer a significant difference in the erythrocyte deformability when AMD-B was used. A possible explanation for this phenomenon may be attributed to the formation of aggregates in AMD-B which can decreases the cell deformability.

66.

EFFECT OF RED CELL MEMBRANE FEATURES ON ERYTHROCYTE AGGREGATION IN PATIENS WITH SYSTEMIC LUPUS ERYTHEMATOSUS(SLE)

Spengler MI, Svetaz MJ, Leroux B, Petrelli D, Van Isseldyk F, Bosch P, Parente F, Bertoluzzo S, Carrara P.
Cát. de Física Biológica, Fac. Cs Médicas, Universidad Nacional de Rosario. E-mail: isabelspengler@hotmail.com

We studied the effect of cellular factors (erythrocyte deformability (ED), osmotic fragility (OF) and membrane lipid fluidity (MLF) in 39 women with systemic lupus erythematosus (SLE) and 27 healthy women. Erythrocyte aggregation was determined with the time variation of light transmitted across a total blood sample, determining two parameters: s_0/n_0 which estimated the aggregations' size and $2k_2n_0$ which represented the initial speed of the process. ED was estimated using its inverse: the rigidity index (RI) obtained from filtration. MLF was measured using fluorescent polarization. Anisotropy (r) is inversely related with fluidity. Results show that women with SLE had significally greater values from healthy women of: s_0/n_0 (1,89±0.05 vs 1.80±0.07, $p<0.002$), $2k_2n_0$ (1.04 ±0.71 vs 0.75±0.61, $p<0.05$), RI (9,84 ±4,78 vs 7,11±1,26, $p<0,05$), r (0,18±0,03 vs 0,15±0,01, $p<0,001$). OF's values did not show any difference among groups. Positive correlations were found between RI and r (r_S= 0,57; $p<0,005$); IR and $2k_2n_0$ (r_S=-0,37; $P<0,05$). Loss on MLF could explain the damaged on ED. Correlation between RI and $2k_2n_0$ showed that the increasing red cell's rigidity decreases speeds on rouleax are formed meaning that cellular factors are not responsible on the higher EA in these patients.

67.

USE OF THE EM ALGORITHM IN PCA MODELS FOR BIOLOGICAL DATA WITH MISSING INFORMATION

Quaglino M, Vitelleschi MS.
IITAE. Fac. Cs. Ec. y Estadística. UNR.

The EM algorithm is a general iterative method for maximum likelihood estimation in a wide range of problems including situations where data are missing. Each iteration of the EM consists of an E step (expectation) and an M step (maximization). These steps are often easy to construct conceptually and each step has a direct statistical interpretation. The EM algorithm takes a different form when it is applied to building PCA models from data sets with missing information. The steps to follow are: replace missing values by estimated values, standardize the data (optional), build the PCA model with a fixed number of principal components, re-estimate the missing value with the PCA model and so forth, iterating until convergence. In this paper, we applied the EM to building PCA models, to information from 102 diabetic patients treated at a private hospital, in Rosario city, with 18% of missing information. The application of the EM algorithm allowed us to obtain a PCA model using all the information available. We evaluated which factors established the greater differences among the studied patients, as well as, analyzed the possibility of grouping them according to similar characteristics. The PCA were calculated from the correlation matrix, shows two differentiating factors that account for 87% of the total variability among these patients. The first factor identifies the body frame. The second factor groups the studied patients according to the dose of insulin and blood sugar level. The configuration of points of the patients represented in the plane of the first two components showed clearly separate subgroups according to whether they are obese but not in relation to sex of the patients.

68.

PREVALENCE OF BETA-HEMOLYTIC STREPTOCOCCI ISOLATED FROM PHARYNGEAL SWABS

Ponessa A, All L, Gambandé T, Dlugovztky D, Luciano M, Cordoba L, Colmegna E, De la Torre N, Carletti R, López S, Althaus N, Notario R.
Fac. Ciencias Médicas. U.N.R. E-mail: aponessa@fmedic.unr.edu.ar

Beta-hemolytic streptococci is the most frecuent bacterial isolated from pharyngitis, asociating group A with major risk of post-streptococcal complications. However, recently group C and G were related with episodes of toxic shock syndrome and rheumatic fever.
The aim of this study was to determine the prevalence of streptococcal pharyngitis in local population, and the frequence of appearance among the different streptococcus groups in pediatric and adult population.
Pharyngeal exudates were obtained from children and adults. Swabs were cultured on Columbia agar plates containing 5% sheep blood. Lancefield grouping was performed using inmuno-agglutination test. Between January and August 2009, 470 patients were studied, 340 children and 170 adults. Beta-hemolytic streptococci was detected in 87 (18.5%). 69 samples (79%) belonged to group A, 13 (15%) to group C and 5 (6%) to group G. Group C and G beta hemolytic streptococci was more prevalent in adult population (11 and 4 samples respectively). On the other hand, Group A was isolated significantly more frequently from pediatric population (55 out of 69 samples).
Because of viral prevalence, bacterilogical culture prior antibiotic therapy administration remain high priority.

69.

DIAGNOSIS OF URBAN ZOONOSIS IN CASEROS DISTRICT, SANTA FE, ARGENTINA

Schiaffino LS[1], Marro AV[1], Pirles ME[1], Bin LE, Echenique CG[2].
[1]Cátedra de Clínica de Pequeños Animales, Facultad de Ciencias Veterinarias, Ovidio Lagos y Ruta 33, Casilda, [2]Área Parasitología. Facultad de Ciencias Bioquímicas y Farmacéuticas. Suipacha 531. Rosario. Universidad Nacional de Rosario, Argentina. E-mail: cgechenique@yahoo.com.ar

"Urban zoonosis" are diseases transmitted naturally from animals to man, and their cycle has been established in urban and suburban areas. The aim of this work was to establish the diagnosis in cases of zoonotic diseases in 125 stray dogs housed in shelters in Casilda and San José de la Esquina, Caseros District, Santa Fe, Argentina. Leptospirosis, brucellosis, dirofilariasis and enteroparasitosis diagnosis was carried out. Microsopic agglutination techniques revealed 46 positive animals for leptospirosis. Two of these showed clinical signs compatible with clinical disease. The presence of brucella sera was determined with tests of microagglutination on microscope slide; agglutination with buffered antigens and immune-enzymatic essay in 39 dogs, 4 of which had related clinical signs. The immune-enzymatic essay to determine filariae was negative for all animals, in which no clinical signs had been previously detected associated to dirofilariasis diganosis. Of the 125 fecal samples processed, 46% were positive (one parasite at least). The most frequent parasites were *Ancylostoma caninum* (26%) and *Toxocara canis* (15%). The results obtained in this work were forwarded to local veterinarians, who received medical and epidemiological advice. Achievements of this research acted as prevention and control of zoonotic diseases.

70.

HLA-DRB1 ALLELES IN PATIENTS WITH AUTOIMMUNE HEPATITIS OF ROSARIO POPULATION

García Borrás S, Pena M, Cotorruelo C[1], Biondi C, García Laplaca M[2], Tanno H[2], Racca L, Racca A[3].
Facultad de Ciencias Bioquímicas y Farmacéuticas. [1]CONICET. [3]CIUNR. [2]Facultad de Ciencias Médicas. UNR. 2000. Rosario. E-mail: sigarcia@unr.edu.ar

Autoimmune Hepatitis (AIH) is a progressive disease of the liver, with prevalence in women. Although the pathogenesis of the AIH is unknown, has been reported that susceptibility to this disease could be determined in part, by certain HLA class II genes. The aim of this study was to investigate the involvement of *HLA-DRB1* alleles in the development of this disease in our population. We studied 113 individuals attended at the Centenary Provincial Hospital of Rosario, 32 patients with a diagnosis of AIH and 81 individuals with no history or evidence of disease, used as control. The alleles were defined by the technique of PCR-SSP. We estimate the allele frequencies in the two analyzed groups and calculated the relative risk (RR) to determine the force of association. The most frequent alleles among patients were: *DRB1*0401*; *DRB1*0101*; *DRB1*0301*; *DRB1*1301* and *DRB1*0701*. The genetic markers most prevalent accounted Co: *DRB1*0701*; *DRB1*1103*; *DRB1*0808*; *DRB1*1303* and *DRB1*1101*. The comparison between the two groups showed that patients had significantly higher frequencies for these alleles (RR): *DRB1*0301*=27.84, *DRB1*0101*=6.07 and *DRB1*0401*=5.42. However, in these patients were statistically lower frequencies for the alleles (RR): *DRB1*0808*=0.062 and *DRB1*1103*=0.059. Taken together these findings indicate that *HLA-DRB1* polymorphism could contribute to the diverse spectrum of individual immune responses observed in patients with AIH.

71.

SECRETED PROTEINS BY HUMAN OVIDUCTAL TISSUE IN CULTURE INHIBIT INDUCED-ACROSOME REACTION IN SPERMATOZOA

Zumoffen C[1], Caille A[1], Munuce MJ[1], Cabada M[2], Ghersevich S[1]
[1]LER, FBIOyF. [2]Área de Biología, IBR. UNR. E-mail: zumoffen@ibr.gov.ar

In the presence of a suitable inducer capacitated sperm are able to undergo acrosome reaction (AR) *in vitro*. The aim of the study was to evaluate the influence of macromolecules present in the secretion of human oviductal tissue in culture (CM) on the induced-AR in sperm incubated under capacitating conditions. Tubal tissue were obtained from premenopausal women and were cultured for 48 h in DMEM / Ham 's F-12 medium. The CM were collected, dialyzed (10 kDa membrane). Motile sperm (swim up) were selected from normozoospermic donors (n = 4) and were incubated under capacitating conditions for 6 or 22 h in presence of CM ([proteins] 0, 0.2, 0.8 and 1.6 µg/µl). Human follicular fluid induced-AR was evaluated by Pisum sativum-FITC (inducible population (IP) = induced AR % - % basal AR) after each inbation time. ANOVA followed by Tukey-Kramer test were used for statistical analysis. The incubation in the presence of CM did not affect sperm viability and caused a dose-dependent decrease in IP (6h and 22h, $p < 0.001$). After 6h incubation in capacitation medium with CM (1.6 µg/µl), sperm were further incubated without CM for 4h. IP-10h was significantly higher than IP-6h ($p < 0.001$). When sperm were incubated 6 h in the presence of CM (1.6 µg/µl) that was previously inactivated by heat (100 °C, 10 min), there was no decreased in IP (similar to the control). The CM factors involved in the modulation of AR were removable, thermolabile and with a MW >10 kDa, suggesting that they were proteins.

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72.

RELATIVE ENERGY AND TOTAL SHANNON ENTROPY ON FOTOMETRICALLY SERIES OF SHEAR STRESSED ERYTHROCYTES

Korol A[1], Riquelme B[2], Perez S[3], D'Arrigo M[3], Rosso O[4], Valverde J[3].*
[1]Depto.Matemática, [2]Depto.de Física, [3]Depto.Bioquímica Clínica Facultad de Cs. Bioquímicas y Farmacéuticas- UNR. [4]Facultad de Ciencias Exactas, UBA.

The main idea for applying series analysis to photometrically recorded data of erythrocytes subjected to shear stress, is to obtain parameters that could reflect the dynamic properties of the cells. In this work the problem of characterise the cell behaviour was solved by using wavelet transform, with spline cubic function as mother wavelet.

We considered 7 levels of resolution: j= -1, -2, ...-7. We evaluated the energy in each level and wavelet relative energy, which could be thought as a probability distribution. Using this distribution we calculated the normalized Shannon entropy. Here we report studies on 19 donors: 14 β/ minor thalassemic patients, and 5 healthy donors without medication. The photometrically recorded series were obtained over several millions of cells subjected to a creep and relaxation process, using for this purpose a home made device called Erythrodeformeter. The results show that while the wavelet relative energy in the case of samples from β/ minor thalassemic patients grows with each level of resolution, on healthy donors decreases. The normalized Shannon entropy $\langle H_s \rangle$ results in two well defined sets of points, the mean values:

$\langle H_s^{(c)} \rangle = 0.9012$, and $\langle H^{(\beta)} \rangle = 0.78831$, showing a great difference on the order/disorder of the photometrically series of healthy donors, consistent with the expected on a healthy situation. This information, that could not be obtained with linear parameters, could be used on evaluation rheological properties of red blood cells and their relation with clinical.

73.

POTASSIUM CHANNELS ARE INVOLVED IN OSMOTIC EQUILIBRIUM OF HUMAN SPERMATOZOA

Caille A, Zumoffen C, Ghersevich S, Munuce MJ.
LER, FBIOyF, UNR. Argentina. E-mail: adricaille@yahoo.com

Hipoosmotic stress in spermatozoa (S) will be counteract with the influx or efflux of water and osmolites in the S. Our aim was to determine the participation of K^+ channels quinine sensitive during human sperm volume regulation. Semen samples with > $20x10^6$/ml and motility >50% (n=21) were used. Seminal Plasma (SP) osmolality was meassured with a freezing point osmometer. Motile S were selected by swim-up technique, in the absence (control: C) or in the presence of specific K^+ channels inhibitor (Q). Viability (eosine-Y), objetive movemment and kinetic (CASA), morphology and multiple abnormalities index (IAM) were evaluated. Adequated Q concentration (Q_1: 62,5 or Q_2: 125 µM) was stablished (no differences in viability nor motility vs C), using quinine sulfate (n=8). Q_1 was selected for further experiments. The reversibility was assesed by centrifugation. Data were analized with Tukey and Dunnett tests, p value <0,05 was considerated significant. The SP osmolality was 386±12 mOsm/kg. In the presence of Q_1 the average and rectilinear velocities and the lineality of pathway were lower respect to C (p 0,001). There were no effect in S viability. The effect was abolished when Q_1 was removed, returning to values similar to C. In the presence of Q_1 the % of flagellar abnormalities was higher than C (C: 12,3±1,3% vs Q_1: 17,6±1,4%; p<0,01), whithout association to diferences in IAM (C: 1,5±0,04% vs Q_1: 1,6±0,04%; NS). At least *in vitro*, S acts as an ideal osmometers, using K^+ to equilibrate their intracitoplasmic media and regulates their volume during migration from the SP. Considering that the inhibitión of K^+ channels diminished sperm progressive pathway in specific and reversible way, its use for contraceptive purposes should be studied.

74.

OXIDATION LEVEL OF MEMBRANE PROTEINS AND MODIFICATIONS BAND 3 IN SENESCENT ERYTHROCYTES

Mufarrege N, Rucci A, Ensinck MA, Cotorruelo C[1], García Borrás S, Racca L, Biondi C, Racca A[2].
Facultad de Ciencias Bioquímicas y Farmacéuticas. UNR. 2000 Rosario. Argentina. [1]CONICET. [2]CIUNR.
E-mail: nico_mufarrege@hotmail.com

The Red Blood Cells (RBC) have been used as an interesting and convenient model for studying cellular aging. The main changes in band 3 protein, leading to the exposure of senescence cell antigen (SCA) involved in the selective removal of the Senescent RBC (SeRBC). The aim of this work was to study the structural and oxidative modifications of membrane proteins in populations of different ages: SeRBC and Young RBC (YRBC). Blood was obtained from normal donors (n=15) and were centrifuged on preformed Percoll density gradients. Erythrocyte membranes were prepared by osmotic lysis and solubilized in SDS. The proteins were analyzed by SDS-PAGE. The band 3 was determined by immunoblotting. The estimate of protein oxidation was performed by measuring the carbonyl groups by ELISA. Densitometry of the gels showed no change in banding pattern between the two populations of RBC. The immunoblot showed differences in the band 3 protein: 90-100 kDa:(SeRBC**:** 88.3±15.4 vs YRBC:58.2±10.2; p<0.05) and its degradation products 55-60 kDa (SeRBC: 22.1±5.8 vs YRBC:17.0±5.2; p<0.05). Analysis of protein oxidation showed a statistically significant increase in SeRBC suspensions (SeRBC: 0.58 ± 0.09 nmol / mg prot vs YRBC: 019 ± 0.05, p <0.01). These findings show increased oxidation of membrane proteins and an increase in band 3 and its fragments during erythrocyte aging. These changes would be responsible for SCA generation involved in SeRBC recognition by splenic macrophages.

75.

TEXTURE STUDY OF SODIUM CASEINATE ACID GELS BY IMAGE DIGITAL ANALYSIS

Costa JP[1,2], Castellini H[3], Risso P[1], Riquelme B[1,2].
[1]Química-Física, FCBF, UNR. [2]Bio-Optica, IFIR, CONICET-UNR.
[3]Dpto. Física, FCEIA, UNR.
E-mail: riquelme@ifir-conicet.unr.edu.ar

Sodium caseinate (NaCAS) is a very useful ingredient in food industry because of its nutritional and functional properties. Acidification produces a gel structure as a result of the dissociation and aggregation of caseinic fractions. Formation of these protein gels can be made by the slow reduction of pH, by the addition of gluconodelta-lactone (GDL). Depending on its concentration and temperature, hydrolisis speed of GDL can affect the grade of hardness and elasticity of the formed gel. In this work, is assessed the formation and structure of NaCAS gels (3%) induced by different GDL/NaCAS ratio (0,35; 0,5; 0,7 y 1,0) at 35°C, by means of a digital processing of the images obtained in an inverted optical microscope with an adapted digital camera (Canon Powershot A640). Images were normalized to a grey scale before transformation and then turned to an entire numerical format of 8 bits. In its numerical representation, the Shannon entropy, softness, gray scale variance and uniformity were studied as an estimation of the texture of the images obtained. The entropy, softness and variance decrease with the added GDL quantity, but the uniformity increases. Results confirm that texture depends on gelification speed, which is directly related to the amount of added GDL. This image digital analysis technique using a conventional microscopy is, therefore, suitable and very useful for the texture analysis of NaCAS acid gels formed by different GDL ratios.

76.

STANDARDIZATION OF TECHNIQUES FOR THE STUDY OF ERYTHROCYTE AGGREGATION BY IMAGE ANALYSIS

Fontana A, Delannoy M, Lerda N, Alessi A, Riquelme B.
Dto. Química-Física, Fac. Cs. Bioquímicas y Farm, UNR. Optica Aplicada a la Biología, IFIR (CONICET-UNR).

Erythrocyte aggregate characterization is important to analyze the possible alterations observed in vascular pathologies such as hypertension and diabetes. Two techniques to study erythrocyte aggregation have been carried out in our laboratory: aggregate morphology characterization using the aggregate shape parameter (ASP) and distribution analyses of the aggregates. Both techniques are based on digital image analysis using an inverted microscope (Union Optical) and a digital Camera (Sony XC–75). Experiments were carried out to standardize such techniques for theses to be used by any operator having similar equipment. RBC suspensions in autologous plasma were prepared at 0.17, 0.33, 0.66, 1 and 1.33% concentrations from blood samples anticoagulated with EDTA Na_2. They were microscopically observed five minutes later with a 40x objective and 3 images of each sample were recorded. The cell count was performed using adequate software and both the area and perimeter of all the aggregates were measured in each aggregate. Results were statistically analyzed and it was observed that the 1% concentrations had a content of 97% of AMAS and 3% of isolated cells while the 1.33% concentrations showed a 100% of AMAS. In the 0.17% and 0.33% dilutions no AMAS were found but well-defined rouleaux and isolated cells were observed. 39% of isolated cells were found at the intermediate concentration as well as a 19% of rouleaux and a 42% of AMAS. According to these results, we conclude that the optimal dilution for this technique is 0.33%.

77.

MALE INFERTILITY: GENITAL INFECTIONS AND ITS CORRELATION WITH SPERM COUNT AND MOTILITY

Zilli MP, Záttara RP, Perona MN, Chaingam Ch, Colombo LG, Brufman AS.*
*Human Reproduction Laboratory, *Department of Microbiology. "Eva Perón" School Hospital. National University of Rosario.*

Infertility affects men and women around the world. Its association with genital infections is well documented but not confirmed as cause of reproductive failure. Semen analysis is the cornerstone in the study of infertile men. The aim of this study was to determine if there is an association between progressive motility impaired and / or sperm concentration with genital infections. We studied 147 patients with an age range between 20 to 48 years who consulted for infertility at Reproduction Laboratory of the Eva Perón (HEEP) School Hospital from May 2007 to May 2009. Semen analysis of all samples was performed according to WHO guidelines (1999) and bacterial cultures for common microorganisms and quantitative cultures for urogenital Mycoplasmas were developed. Chlamydia detection was studied by direct immunofluorescence. We considered altered those samples that showed count less than 20 x 10^6 sperm / ml and / or a progressive motility (a + b) less than 50% according to WHO standards. It was observed in the group with genital tract infections that is more frequent a decrease of progressive motility than in the uninfected group ($p < 0.05$). No association with any particular microorganism was observed. The difference was not statistically significant in sperm count. Although the alterations of seminal parameters are multifactorial, it is necessary to continue the study in order to confirm the results of this preliminary research and try to establish the cause of decrease in motility. This will allow us to contribute to a better understanding of the pathophysiology of human reproduction.

78.

INTERACTION OF THE COMPLEX [Ag(SULFADIMETOXINATE)] WITH BOVINE SERUM ALBUMIN (BSA)

Monti L[1], Hure E[1], Mosconi N[1], Pontoriero A[1], Nerli B[2], Picó G[2], Atria AM[3], Campagnoli D[4], Rizzotto M[1].
Áreas [1]Inorgánica y [2]Fisicoquímica, FCByF, UNR, Rosario, Argentina; [3]Facultad de Ciencias Químicas y Farmacéuticas, Universidad de Chile, Santiago, Chile; [4]Facultad de Ingeniería Química, UNL, Santa Fe, Argentina.
E-mail: rizzotto@iquir-conicet.gov.ar

Binding of drugs to plasma proteins is one of the factors that affect their availability in the human body. Formation of complexes between sulfa drugs and metallic ions is an extended field of research because it improves the action of the sulfa drug. In the present work we studied the interaction of BSA with the complex Ag-sulfadimetoxine (Ag-SDM). When aqueous solutions of silver nitrate and sodium sulfadimetoxine (NaSDM) were mix a white solid was obtained, which was separated and washed, in different experiences, with water or water and methanol. In both cases the compound was solved in DMSO and later purified through crystallization in a methanol camera. Elemental analysis (N, C, H, S and Ag) let us suggest that all the solids were the same compound, with the following formula: $[Ag(C_{12}H_{13}N_4O_4S]$. In order to study the interaction of Ag-SDM with BSA, aqueous solutions of BSA with and without ligand (Ag-SDM and initial drugs) were analyzed by UV-Vis spectroscopy. An increment in absorbance and shifts to shorter wavelengths were found with NaSDM and AgSDM. It was found a saturation effect with NaSDM and a possible cooperative interaction with AgSDM. In conclusion, the formation of the complex AgSDM could be produce changes in the mechanism of binding of NaSDM to BSA.

79.

ANTIMUTAGENIC STUDIES WITH L-ASCORBIC ACID AND GREEN TEA EXTRACT BY MEANS OF THE AMES TEST

Pontoriero A, Hure E, Monti L, Mosconi N, Rizzotto M.
Área Inorgánica, Facultad de Ciencias Bioquímicas y Farmacéuticas, Suipacha 531, 2000 Rosario. E-mail: rizzotto@iquir-conicet.gov.ar

N-nitroso compounds are a class of widely distribute mutagens. They can be formed *in vivo* due to the reaction between amides and amines and nitrite. L-ascorbic acid (Asc.) and green tea polyphenols can react with nitrite diminishing or removing the nitrosation risk. According to the Ames test a compound would be a mutagen if the reversion coefficient, R.C. (R.C.: revertant number per tested plate/revertant number per control plate) is ≥ 2. In the present work we proved the chemopreventive action of L-ascorbic acid and green tea aqueous extracts as antimutagens (AM) on the mutagenicity of a constant dose of a reaction mixture (RM) formed by sodium sulfathiazole and nitrite. Variable doses of L-ascorbic acid were tested (580-5800 nmol/plate and 5.8-58 nmol/plate). The % of inhibition was calculated with the following equation: % inh. = $[(CR_{\text{without AM}} - CR_{\text{with AM}})/ (CR_{\text{without AM}} - 1)] \cdot 100$. Working with TA98 strain it was obtained a 34% of inhibition in the minor range and 100% of inhibition in the major range of Asc. Also, five doses of green tea were tested (between 10 and 100 µL/plate) and it was found 100% of inhibition in all of them. Previous experiences of antimutagenic effect of L-ascorbic acid against 4-Nitro-*o*-phenylenediamine (4-NOPD) was deepen, founding that it would be a 100% of inhibition if $[\text{L-ascorbic acid}]_0 / [\text{4-NOPD}]_0 = 8$. The excess of Asc. required for RC = 1 probably would be due to an incomplete displacement of reaction.

80.

PRELIMINARY STUDIES OF BIOSORPTION OF CHROMIUM BY RED SEAWEED (*Polysiphonia nigrescen*)

Tripaldi R, Sala L, Bellú S, Blanes P, González J, García S, Frascaroli M, Mangiameli M, Andreu V, Amherd S, Atria A, Ferrón J, Salas Peregrin J, Rubin de Celis E, Piehl L, Matulewicz C, Prado H.
Área Química Inorgánica. IQUIR-CONICET. Fac. Cs. Bioquímicas y Farmacéuticas. UNR.

Chromium pollution has increased with the growth of industrial activities. Their presence in aquatic ecosystem causes a harmful effect to living organisms. Cr^{VI} is known to be carcinogenic and during its reduction to Cr^{III} harmful species are generated for the DNA. The application of traditional treatment techniques implies a high cost and a continuous input of chemicals which cause further environmental damage. The high level of sulfation of the polysaccharides from *Polysiphonia nigrescens* suggests that this red seaweed could be used to remove heavy metals by biosorption. Native *P. nigrescens* was collected in Cabo Corrientes (Mar del Plata, Buenos Aires, Argentina). This study focuses on chromium biosorption by red algae biomass from aqueous solution, determining the influence of experimental parameters as: pH, contact time and amount of biomass. The biosorption capacity (mg Cr/g biomass) of *P. nigrescens* for Cr^{III} was 50.0 mg/g at pH 4.0 and 11.6 g/L biomass dosage, 19 h equilibrium time and 20.0 ºC. EPR and XPS spectroscopy from mixtures Cr^{VI}/biomass, pH=1, shows the presence of Cr^{V} + Cr^{III} bound to the surface of the red algae at short contact times and Cr^{III} at long contact times. This results indicate that, at pH=1, *P. nigrescens* can reduce Cr^{VI} from aqueous solution through an adsorption-coupled reduction mechanism to yield adsorbed Cr^{III}. Then the aqueous Cr^{III} remnant can be removed at pH 4.0.

81.

REMOVAL CHROMIUM BY LIGNOCELULLOSIC AND PECTIC- RICH BIOMATERIALS

Beyrne F, Leñini C, Sala L, Bellú S, Blanes P, González J, García S, Frascaroli M, Mangiameli M, Mogetta M, Ferela A, Atria A, Ferrón J, Salas Peregrin J, Olguín M, Rubin de Celis E, Piehl L.
Área Química Inorgánica. IQUIR-CONICET. Fac. Cs. Bioquímicas y Farmacéuticas. UNR.

Chromium is a toxic contaminant; Cr^{VI} interferes with the development of plants. The reduction of [Cr] from effluents to a permissible limit before discharging them into streams and rivers is important for human health and environment. The objective of this work was optimization of biomaterials capacity to adsorb chromium. Sorption is an effective method, solving the sludge disposal problem; is economically viable, especially if low-cost adsorbents are used. Pectic-rich (orange, grapefruit and lemon peel) and lignocelullosic biomaterials (rice husk, soya husk) are low-cost adsorbents for Cr^{III} removal. To achieve better conditions of batch adsorption procedure were experimental statistical designs for sorbents. A full 2^3 factorial design was performed to optimize the following factors: mass of adsorbent (m), pH, and contact time (t). To optimize the process a composite central design was used to analyze the surface response with two factors (m, pH). Kinetic and isotherms for Cr^{III} uptake using different materials were done. Abiotic Cr^{VI} reduction by the biomass was performed with various contact times. A surface characteristic of the Cr-laden biomass was investigated using X-ray photoelectron spectroscopy (XPS), electron paramagnetic resonance (EPR) and infrared spectroscopy. The XPS and EPR spectra indicated Cr^{VI} bound to the biomass was reduced to Cr^{V} and Cr^{III} showing the removal process is adsorption-reduction coupled.

82.

FEED EFFICIENCY DURING THE BREEDING-REBREEDING INTERFACE OF MEAT TYPE CHICKENS WITH DIFFERENT GROWTH RATE

Romera BM[1], Fain Binda V[3], Canet ZE[1,3], Dottavio AM[1,2], Di Masso RJ[1,2]
[1]Cátedra de Genética, Facultad de Ciencias Veterinarias. [2]CIC-UNR. [3]INTA Pergamino. E-mail: rjdimasso@ciudad.com.ar

Campero chickens are slow growing birds, bred in semicaptivity whithin an untraditional poultry farming that tends to satisfy the demand for natural products. The aim of this work was to characterize feed efficiency in two Campero chicken populations (Casilda CP and Campero INTA) in their last house breeding week prior to their allocation in an open field, in comparison with a fast growth commercial broiler (Cobb 500) with the same management system.Daily body weight gain ((DBGr) and daily mean feed consumption (DMFCr) relative to mean body weight were measured in 20 birds (10 males and 10 females) of each group. Feed efficiency was calculated as (DBGr/DMFCr). Due to growth rate differences (C.CP = C.INTA < Cobb 500), Casilda CP and Campero INTA were moved from the house to the open and food was changed from starter to breeding on day 35 while these changes were done on day 28 in Cobb 500. Statistical differences between groups were not significant neither in body weight nor in feed efficency (*Mean ± SEM* – males – C.CP: 0.5414 ± 0.0217; Campero INTA: 0.4906 ± 0.0204; Cobb: 0.4856 ± 0.0355; females - CP: 0.5392 ± 0.0253; Campero INTA: 0.4869 ± 0.0453; Cobb: 0.5885 ± 0.0746) despite their age differences. Associated variables (relative growth rate and feed consumption) which determine feed efficiency values did not show significant statistical differences either (DBGr (*Mean ± SEM*, machos – C.CP: 0.0681 ± 0.0034; Campero INTA: 0.0614 ± 0.0032; Cobb: 0.0587 ± 0.0066; females - CP: 0.0662 ± 0.0034; Campero INTA: 0.0657 ± 0.0046; Cobb: 0.0657 ± 0.0046), and DMFCr (*Mean ± SEM*, males – C.CP: 0.1253 ± 0.0027; Campero INTA: 0.1257 ± 0.0065; Cobb: 0.1228 ± 0.0134; females – C.CP: 0.1228 ± 0.0032; Campero INTA: 0.1395 ± 0.0113; Cobb: 0.1395 ± 0.0113). It is concluded that the lower growth rate of Campero chickens does not affect their biological efficiency of feed conversion although these birds required three weeks more to attain the fixed objective slaughter body weight.

83.

PRELIMINARY STUDY OF THE ASSOCIATION BETWEEN ANTI-CARDIOLIPIN AND ANTI-ANNEXIN V ANTIBODIES WITH RECURRENT ABORTION IN AUTOIMMUNE DISEASES

Coccoz D, Arriaga S, Valdés M, Bearzotti M, Svetaz M, Daniele S, Sjoberg I, Fornasiero L, Almará A[1], Paparella C, Bouvet B, Sacnún M[2], Musuruana J[3], Ghersevich S, Pelusa H.
Fac. de Cs. Bioqcas. y Farm. UNR. [1]CIUNR. [2]Hospital Provincial de Rosario. [3]Hospital Iturraspe Santa Fe.

The displacement of annexin V by specific antibodies (Ab) leads to a procoagulant state that could be involved in recurrent fetal losses. The objectives of this study were: a) to determine the presence of anti-cardiolipin (ACA) and anti-annexin V Ab in a population of women with systemic lupus erythematosus and/or antiphospholipid syndrome, non aborted (NA) and with recurrent miscarriages (RM) with a number of fetal losses ≥ 2 and b) to determine the association of both Ab with abortion. We worked with a NA group, n = 14, age (average ± SD): 30 ± 8 years and with another of RM, n = 10, age (average ± SD): 34 ± 6 years. The ACA (IgG and IgM) were determined by a commercial EIA (cutoff value ≤ 5 UPL / ml) and anti-annexin V Ab by an EIA developed by our group (cutoff value ≤= 6 U / ml). The ACA were positive in 80% of the RM and in 50% of the NA. None RM was positive for anti-annexin V Ab and only 7% of the NA exceeded the cutoff value. We calculated the corresponding positive and negative predictive values and we obtained 53% and 78% for ACA and 0% and 56% for anti-annexin V Ab respectively. These preliminary results indicate that in the sample analyzed, neither of the biochemical parameters studied have a statistically significant association (p> 0.05) with recurrent abortion.

84.

FUT 2 GENE AND SECRETOR STATUS IN PATIENTS WITH ORAL LESIONS

Moreno A, Racca A[2], Valdez V, Racca L, García Borrás S, Cotorruelo C[1], Biondi C.
Fac. Cs. Bioquímicas y Farmacéuticas. UNR. [1]CONICET. [2]CIUNR.
E-mail: cbiondi@fbioyf.unr.edu.ar

The mechanisms of aberrant expression of blood-group antigens are not clear in all cases. The *FUT2* gene has a significant polymorphism with typical ethnic specificity The aim of this work was to investigate the polymorphsm of *FUT2* gene and secretor status using biochemical and molecular biological methods in patients with oral lesions. We study of 64 subjects, half of whom suffered from oral lesions (benign, pre-cancerous and cancerous ones), while the other half were the healthy control group. We determinated the secretor status in saliva with the hemagglutination inhibition technique using monoclonal antibodies anti-A, anti-B and lectin *ulex europeaus.* We also investigated the Lewis phenotypes of fresh blood samples by a hemagglutination method. We analyzed the *FUT 2* polymorphism by ASO-PCR (allele specific oligonucleotid – polymerase chain reaction) with specific primers for G428 allele and the wild type allele of *FUT2* gene. We found a higher intensity of oral disease in the non-secretor group (OR = 3.44). The 51% of the patients with oral pre-cancerous and cancerous lesions was non secretors (Le a+ b-), in contrast with the healthy population. We observed a marginal association between secretor status and these lesions.

The studies of patients with pre malignant and malignant oral lesions, in which non-secretor status predominates, appear to be an associated risk marker for the development for oral cancer.

85.

REAL TIME PCR STRATEGY FOR NON-INVASIVE PRENATAL DETECTION OF FETAL *RHD* GENOTYPE

Cotorruelo C[2], DiMónaco R[1], García Borrás S, Biondi C, Racca A[3]. Área Inmunología. Fac. de Cs. Bioq. y Farm. [1]1º Cátedra de Obstetricia. Fac. de Cs. Médicas. UNR. [2]CONICET. [3]CIUNR.

Anti-D immunoprophylaxis should be administered to RhD negative pregnant women to avoid alloimmunisation to the D antigen regardless fetal RhD type. Fetal DNA has been recently found in maternal plasma providing new possibilities for prenatal *RHD* determination by non-invasive PCR based procedures. The aim of this work was to develop a real time PCR strategy for non invasive prenatal detection of fetal *RHD* genotype using DNA obtained from maternal plasma. We analyzed plasmas from 15 RhD negative pregnant women. DNA was extracted from 800 µl of maternal plasma through absorption and elution in silica gel membranes. *RHD* genotype was determined by a real time PCR strategy that analyses exon 7 and the 3' unstranslated region of the *RHD* gene using VIC and FAM probes respectively. The fetal origin of the DNA was assessed by detection of the *SRY* gene with a VIC probe. Eleven fetuses were *RHD* positive and 4 were *RHD* negative. The *SRY* gene was detected in 7 *RHD* positive and in 2 *RHD* negative samples. For all cases, 100% correlation was observed with RhD phenotype and sex evaluated at birth. These results suggest that fetal *RHD* status may be accurately determined by PCR in DNA extracted from maternal plasma of pregnant women. This non-invasive prenatal determination of fetal *RHD* genotype would contribute to rationalize the use of prophylactic anti-D immunoglobulin allowing its administration only to pregnant women with RhD negative fetuses.

86.

FLORA OF THE PROVINCE OF SANTA FE (ARGENTINA): THE FAMILY *COMMELINACEAE*

Di Sapio O[1], Galetti L[2], Oakley L[2], Prado D[2]. [1]Farmacobotánica, Fac. Cs Bioquímicas y Farmacéuticas, UNR, Suipacha 531, S2002LRK Rosario. [2]Botánica, Fac. Cs. Agrarias, UNR, CC nº 14, S2125ZAA Zavalla.

The Family *Commelinaceae* belongs into the Order *Bromeliales* (*Liliopsida*), comprising species of tropical and subtropical regions of both hemispheres. They are herbaceous, annual or perennial, erect or creeping plants, with mucilages. They are cultivated as ornamental plants and some possess medicinal properties. The present work contributes to the knowledge of this family providing keys to the identification of different taxa based on morphological characters and a distribution map of the *Commelinaceae* 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 genus *Commelina* L. is represented by two native species, three varieties and two forms: *C. diffusa* Burm. f. var. *gigas* (Small) Faden; *C. erecta* L. var. *erecta* f. *erecta* y *C. erecta* L. var. *angustifolia* (Michx.) Fernald f. *angustifolia*. They are ornamental and known as 'Santa Lucia's flowers', common in the center-north provincial departments. The genus *Tradescantia* L. has two native species: *T. anagallidea* Seub., *T. fluminensis* Vell. and an adventitious one: *T. pallida* (Rose) D.R. Hunt. The genus *Tripogandra* Raf. comprises *T. glandulosa* (Seub.) Rohweder concentrated on the province center-north, and *T. diuretica* (Mart.) Handlos mentioned for the province but whose presence is not supported by herbarium material. Taxonomic information, distribution map and illustrations are provided.

87.

REDUCTION DE VANADIUM(V) WITH BIOLOGICAL SUBSTRATES. KINETIC AND SPECTROSCOPIC CHARACTERIZATION

Disetti ME, Ceruti MJ, Oviedo N, Santoro M. División Inorgánica, IQUIR-Conicet, FCByF, UNR, Suipacha 531 2000 Rosario. E-mail: santoro@iquir-conicet.gov.ar

V^V is active in the oxidation of organic substrates, such as carbohydrates and derivatives. Due to the effectiveness of vanadium complexes with different ligands and multiple oxidation states for use as drug in problems of insulin resistance, a more detailed understanding of the fundamental reactions of reduction of V^V with carbohydrate is necessary. Studies of reaction kinetics of V^V with D-glucose, D-glucitol and D-fructose were realized in conditions of pseudo-first order (S>>V), at $[H^+]$=0,1-1,0M, T=37.0ºC and *I*=1,5M. The rate constants of disappearance of V^V at 350 nm and formation of V^{IV} at 765 nm have been obtained. In conditions under study, VO_2^+ is the predominant species of oxidizing agent. A brown coloration was observed, that can be described as the formation of complexes VO_2^+-S, which is then rapidly reduced, to give the products. The rates of formation and disappearance of these complexes are very fast, therefore we worked at T=20ºC by measuring changes in absorbance at 390-400nm. The acrylamide polymerization indicated that the reactions take place through a mechanism of free radicals, where V^V undergoes reduction by an electron. The kinetic profiles were fit on the base of the formation of the intermediary complex, followed by a step of slow electronic transference, to produce VO^{2+} and free radicals. The experimental rate laws obey a dependency of fractional order respect to S. The dependency respect to H^+ is complex. HPLC was used to detect reaction products. These studies will allow to extend the knowledge on the bioinorganic chemistry of the V.