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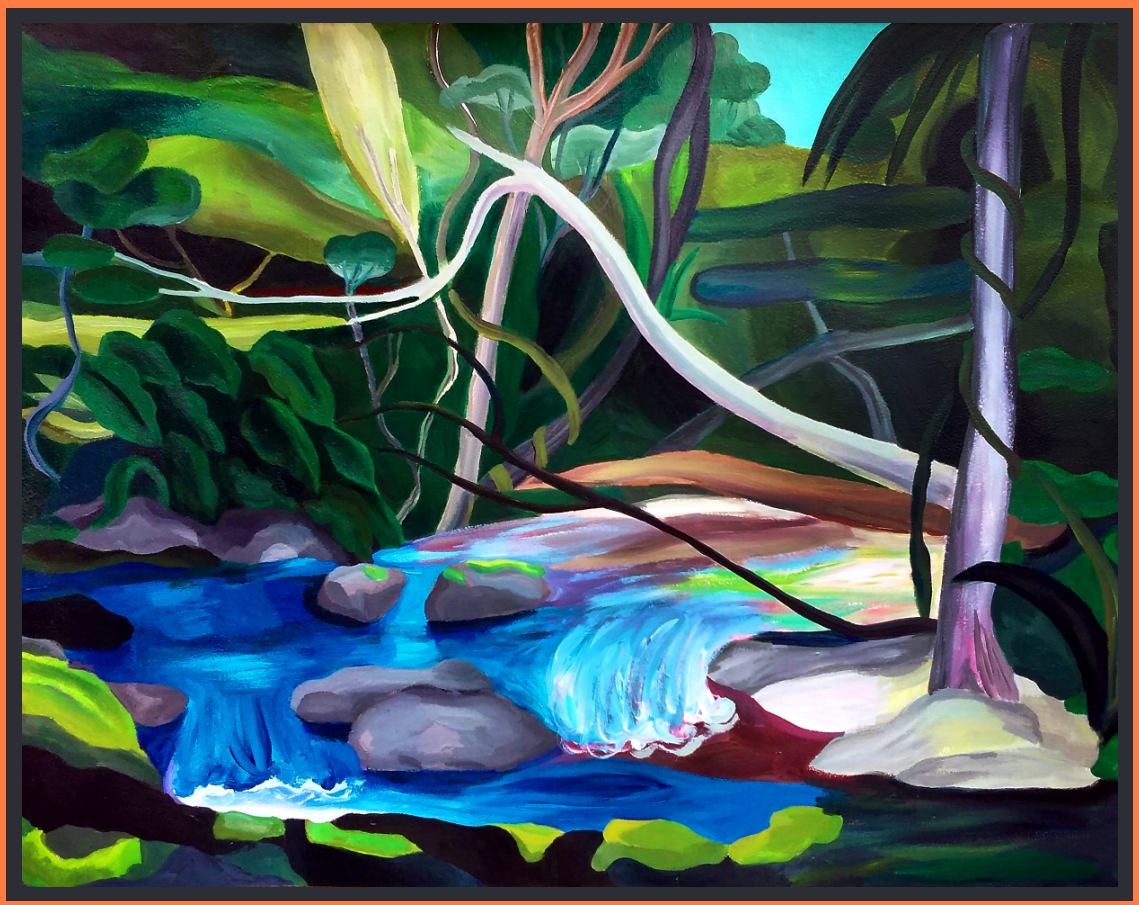

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REUNIÓN CONJUNTA SAIC SAB AAFE AACYTAL 2023

LXVIII REUNIÓN ANUAL DE LA SOCIEDAD ARGENTINA DE INVESTIGACIÓN CLÍNICA (SAIC)

XXV JORNADAS ANUALES DE LA SOCIEDAD ARGENTINA DE BIOLOGÍA (SAB)

LV REUNIÓN ANUAL DE LA ASOCIACIÓN ARGENTINA DE FARMACOLOGÍA EXPERIMENTAL (AAFE)

VIII REUNIÓN CIENTÍFICA REGIONAL DE LA ASOCIACIÓN ARGENTINA DE CIENCIA Y TECNOLOGÍA DE ANIMALES DE LABORATORIO (AACYTAL)

15-17 de noviembre de 2023
Hotel 13 de Julio – Mar del Plata

EDITORES RESPONSABLES
Dra. Isabel Luthy
Dra. Silvina Pérez Martínez
Dr. Ventura Simonovich
Dr. Gabriel Pinto

SAIC AWARD - Fundación Gador - Metabolic syndrome and related disorders.
Friday 17th November 16:00-18:00
Juries: Cristina Arranz; María del Rosario Ferreira Cordoneda; Ana Genaro

DAM'S FRUCTOSE INDUCED-METABOLIC SYNDROME PROMOTES LONG-TERM NEUROLOGICAL ALTERATIONS IN OFFSPRING

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Objective: The aim of this work was to determine if maternal metabolic syndrome (MetS), induced by a high fructose supplementation, induces long-term neurological and metabolic alterations in offspring. Material & Methods: 2 months old female Wistar rats were fed a standard diet and drunk either tap water alone or supplemented with 20% fructose, for 10 weeks, to induce MetS. Then they were mated with healthy males to generate litters (OC: offspring from control dams n=6; OF: offspring from fructose dams, n=6). So as to analyze only the prenatal effects of maternal MetS, all the pups were breastfed by control nurse dams, that had access to a standard diet and water *ad libitum* until weaning. Cognitive and social performance were evaluated between postnatal day (PN) 22 and 90. Animals were sacrificed on PN100 and metabolic parameters were analyzed. Normality of the data was analyzed by Shapiro-Wilk´s test, homoscedasticity by Bartlett´s test and then parametric (*t-test*) or non-parametric (Mann-Whitney) tests were performed on the data. Results: The elevated plus maze, the open field and the marble burying tests revealed an increased anxiety-like phenotype in females OF. On the contrary, the novel object recognition test showed that only the males from the OF group had long-term memory impairment. In the reciprocal social interaction test, both male and female OF presented lower number of social interactions, while only females showed significant increments in "socially inactive" behavior. Furthermore, in the Three Chamber Test, only females OF had lower social preference and social novelty indexes. In regards to metabolic parameters, females OF had increased levels of serum triglycerides and higher visceral fat percentage. Conclusions: maternal MetS has long-term adverse effects on the neurological and metabolic status of offspring rats with sexual dimorphism.

HEPATIC ALTERATIONS IN EXPERIMENTAL METABOLIC SYNDROME: METFORMIN AND NARINGIN REVERSION

María Agustina Rizzi[1], Tamara Mazo[2], Nori Tolosa de Talamoni[1] y Valeria Rodríguez[1]
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Fructose-rich diets (FRD) are responsible for an increase in obesity and metabolic syndrome (MS) cases, many of which may develop into non-alcoholic fatty liver disease (NAFLD). Metformin (Met) is used for the treatment of insulin resistance associated with MS but some clinical studies showed little effect of Met on the histological characteristics of the liver. Naringin (NAR) is a flavonoid with antioxidant, antiapoptotic, and anti-inflammatory properties. Our purpose was to evaluate the effect of co-administration of Met+NAR on systemic and metabolic alterations leading to NAFLD in animals with MS. Male Wistar rats were divided in 5 groups: 1) controls (C); 2) FRD 10% (w/v) in drinking water, 60 days; 3) FRD+Met (100 mg/kg b.w.); 4) FRD+NAR (40 mg/kg b.w.); 5) FRD+Met+NAR. Treatments started on day 21 of FRD administration. Biometric, serum biochemical and liver structure parameters were measured. Fatty acid (FA) profile and gene expression of acetyl COA carboxylase (ACAC) and stearoyl-CoA desaturase 1 (SCD1) were determined in the liver. ANOVA/Bonferroni ($p<0.05$) was used for statistical analysis. Body weight and waist circumference were significantly higher in FRD rats compared to C rats. All treatments decreased waist circumference. Adiposity, hepatosomatic index, and epididymal fat increased in FRD animals, effects that were reversed with Met+NAR. FRD animals had higher levels of TG/HDL ratio, AST, and LDH enzyme activities; NAR and combined treatment reduced these parameters. Also, liver fibrosis was attenuated by Met+NAR. Palmitic acid, monounsaturated FA and ω6/ω3 ratio were higher in FRD rats compared to C rats, while Met+NAR improved these parameters. ACAC and SCD1 gene expression increased in FRD rats compared to C group and decreased with the treatments. In conclusion, Met+NAR could be used as a new therapeutic alternative for the treatment of NAFLD, as it reverses biochemical and histological alterations and liver fibrosis, altered in this pathology.