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ABSTRACTS BOOK

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A100
CELLS WITH PHAGOCYTIC ACTIVITY ON THE WALL OF SEMINIFEROUS TUBULES OF MOUSE TESTIS.

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In the wall of the seminiferous tubules (TS), of rodent's testis, the peritubular myoid cells (MP) form a monolayer providing peristaltic action and structural support. Recently macrophages located in the wall of mouse TS, known as peritubular macrophages (MacP) were described as cells capable of releasing colony stimulating factors and enzymes involved in the biosynthesis of retinoic acid for the differentiation of spermatogonia A. However, there are no studies detailing the interaction of MacP with MP cells and whether they have phagocytic activity. Due to this, we set out to locate, characterize and quantify MacPs in the wall of TS mouse testis and determine if they present phagocytic activity of the germinal epithelial cell. Microscopy images showed that MacPs have a cytoplasm with long projections that extend up to 100 μm long. They adhere to the outer face of the MP cells and they are observed introducing their extensions between the spaces of the adjacent MP cells. The cell count revealed that in stage VII-VIII of the TS, there are 6.1 ± 0.62 MacP per 40,000 μm² of the surface. Interestingly, consecutive confocal planes showed that 13.5 ± 2.74% of the MacPs contacted and enveloped undifferentiated spermatogonia A and 7.56 ± 3.58 % of MacP had cytoplasmic granules that were labeled with the antibody that identifies spermatogonia A (anti-E-cadherin). By labeling with an anti-Lamp-1 antibody, it was found that cytoplasmic granules corresponded to the phagocytic compartment pathway. These results indicate that in the TS wall MacP are activated and phagocyte spermatogonia A. Tests are being carried out to determine if other cells of the TS germinal epithelium are also phagocyted by MacP.

A101
ANTIPROLIFERATIVE EFFECT OF CHLOROFORMAL EXTRACTS (MEDIUM POLARITY) OF *Artemisia mendozana* DC *mendozana* ON TUMOR CELLS B16F0.

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The basic pathophysiology of cancer includes aberrations in the different points of the cell cycle. Due to the increasing incidence of cancer worldwide, there is an intense search for new therapeutic strategies to treat this disease. In this field, many investigations have focused on exploring the action of compounds of plant origin. The ajenjo, *Artemisia mendozana DC mendozana*, is a plant belonging to the Asteráceas family, typical of the Mendoza piedmont, used as a medicinal plant with antispasmodic, antifungal properties, among others. By means of column chromatography, 120 fractions (extracts of medium polarity) were collected and then grouped according to the similar chromatographic profile, finally obtaining 9 fractions (F 1-9). Their major compounds were identified, being: terpene compounds for F1-3, sesquiterpene lactones (LS) for F4-6, LS and flavonoids for F7 and phenolic compounds for F8-9. We analyzed the *in vitro* effect of F1-9 on the proliferation of B16F0 cells (obtained from a murine melanoma) for which the cells were cultured with DMSO (vehiclecontrol) or with 0.1 mg/mL of the fractions dissolved in DMSO.The growth index (CI) ± SE was calculated from 5 trials for 0 to 72 h and analyzed statistically. After 72 h of culture, the CI of the control was 9.6 ± 0.49 and those treated for F1 6.18 ± 0.63, F2 5.76 ± 1.53, F3 4.42 ± 1.32, F4 4.74 ± 1.15, F5 5.12 ± 1.65, F6 8 ± 1.57, F7 7.26 ± 0.69, F8 6.88 ± 0.74 and F9 5.32 ± 1 , 53 being significant with $p < 0.001$ for F2, F3, F4, F5 and F9. The results show that fractions obtained from the ajenjo plant significantly inhibit the proliferation of B16 F0 cells at low doses such as 0.1 mg/mL.

A102
TAMOXIFEN ALTERS LYSOSOMES OF BREAST CANCER CELLS BY A MECHANISM INDEPENDENT OF ITS ANTI-ESTROGENIC ACTIVITY

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Breast cancer is one of the most important causes of morbidity and mortality worldwide. It has been shown that the cells of some tumors have an increased lysosomal biogenesis in response to metabolic alterations, which also has an impact on the integrity and/or lysosomal functionality, showing increased levels of lysosomal proteases, such as cathepsin D (CatD). It has been demonstrated that this enzyme induces apoptosis when is released into the cytoplasm. Since the lysosomes could play a role either as initiators or executors of apoptotic processes when the membrane integrity is altered, this organelle could be taken as a potential therapeutic target against tumors. In breast cancer cell lines positive to estrogen receptor RE (REα), CatD is positively regulated by this hormone, while in cell lines negative for REα the enzyme is constitutively overexpressed. Tamoxifen (TAM) is one of the most common anti-estrogenic drugs used in breast cancer therapy. It interacts with RE and inhibits transcriptional

activity in the mammary gland. The aim of this study was to evaluate the effect of estrogens and tamoxifen on lysosomal acidification and CatD processing in breast cancer cells. Mammary cell lines MCF-7 (tumorigenic expressing REα), MDA-MB231 (tumorigenic non-expressing REα) and MCF-10A (non-tumorigenic) were treated in the presence or absence of 17-β-estradiol and/or TAM. For quantification of acidic lysosomes, cells were treated with Lysotracker. Cultures were subjected to immunoblot analysis and fluorescence microscopy. As expected, TAM blocked the effect of estrogen on CatD processing in MCF-7 cells. However, TAM used alone, also altered CatD processing and decreased the number of acidic lysosomes in both cell lines. Neither effect of TAM was observed on MCF-10A cell line. In addition, a decreased level of another lysosomal protein, GM2AP (related to the development of tumors), was observed in the cells due to TAM. All these results suggest that TAM has additional effects independent of its anti-estrogenic activity, possibly due to lysosomotropic action.

A103
AGING MODIFIES TEMPORAL PATTERNS OF OXIDATIVE STRESS AND PROINFLAMMATORY MARKERS IN THE RAT PREFRONTAL CORTEX

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Aging is often accompanied by a decline in cognitive function in conjunction with a variety of neurobiological changes, such as neuroinflammation and oxidative damage. The brain is vulnerable to oxidative damage because of its large amount of polyunsaturated fatty acids and relative deficiency in antioxidative defense mechanisms. Recent research has shown that the expression of proinflammatorycytokines increases with aging in brain. Besides cognitive deficit, older personsshow alterations in their circadian rhythms.The objective of this work was to investigate the consequences of aging on 24h patterns of oxidative stress parameters (TBARS and protein carbonyls)as well as TNFα, BMAL1 and RORα protein levels, in the rat prefrontal cortex (PFC). Holtzman rats from young (3-month-old) and aged (22-month-old) groups were maintained under constant darkness conditions, during 10 days before the experiment. Tissues samples were isolated every 6 h during a 24h period. TBAR‘s levels were measured by a colorimetric assay and protein carbonyls by ELISA. Protein levels of TNFα, BMAL1 and RORα were determined by immunoblotting. As expected, we observed an increase in the protein carbonyls levels in the PFC ofaged rats. We also found that lipoperoxidation as well as protein levels of TNFα, BMAL1 and RORα follow a robust circadian rhythm in this tissue.Interestingly,aging abolishes the oscillation of endogenous circadian patterns oflipoperoxidation, TNFα, BMAL1 and RORα protein levels.These findings may constitute, at least in part, the molecular basis of the relationship between TNF-mediated neuroinflammation and altered circadian rhythms of protein clock in aged individuals.

A104
BENEFICIAL EFFECTS OF AQUEOUS EXTRACT OF *Tessaria absinthioides* AND *Prosopis strombulifera* ON HUMAN ENDOTHELIAL VASCULAR CELLS

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The use of herbals in the treatment of disease is a well-established practice in traditional medicine. *Tessaria absinthioides* (*Ta*) and *Prosopis strombulifera* (*Ps*) are native plants from South-America with reported ethnopharmacological uses. Despite recent scientific reports about plant-derived compounds effects, there is not a well-conducted research about its effects on cardiovascular disease (CAD). The aim of this work was to analyze the potential antioxidant effects of aqueous extracts from leaves of *Ta* and *Ps* on human endothelial cells (HUVEC) isolated from the human umbilical cord. After cell exposure to different concentrations of *Ta* and *Ps*, intracellular reactive oxygen species (ROS) generation was measured by lucigenin-enhanced chemiluminescence and dihydroethidium assays. Total antioxidant status (TAS) of treated cells was measured by colorimetric assay. qRT-PCR was utilized to examine NADPH oxidases (NOX) subunits mRNA expression. Angiotensin II-induced HUVEC intracellular ROS generation was significantly diminished by the addition of 1 and 4 μg/ml of *Ta* or *Ps* extracts. *Ta* and *Ps* extracts (1 and 4 μg/ml) significantly increased TAS in HUVEC (*Ta* in a dose-dependent manner). Ps (4 μg/ml) was able to downregulate NOX2 ($p< 0.05$) and NOX5 ($p<0.001$) expression. Ta (4 μg/ml) could diminish NOX2 ($p<0.01$) and upregulate NOX5 ($p<0.0001$) expression. On the other hand, Ps ($p<0.01$) and Ta ($p< 0.001$) increased NOX4 mRNA expression. In conclusion, these herbal extracts may reduce antioxidant status on HUVEC which are one of the main therapeutic targets in the treatment of CAD.