

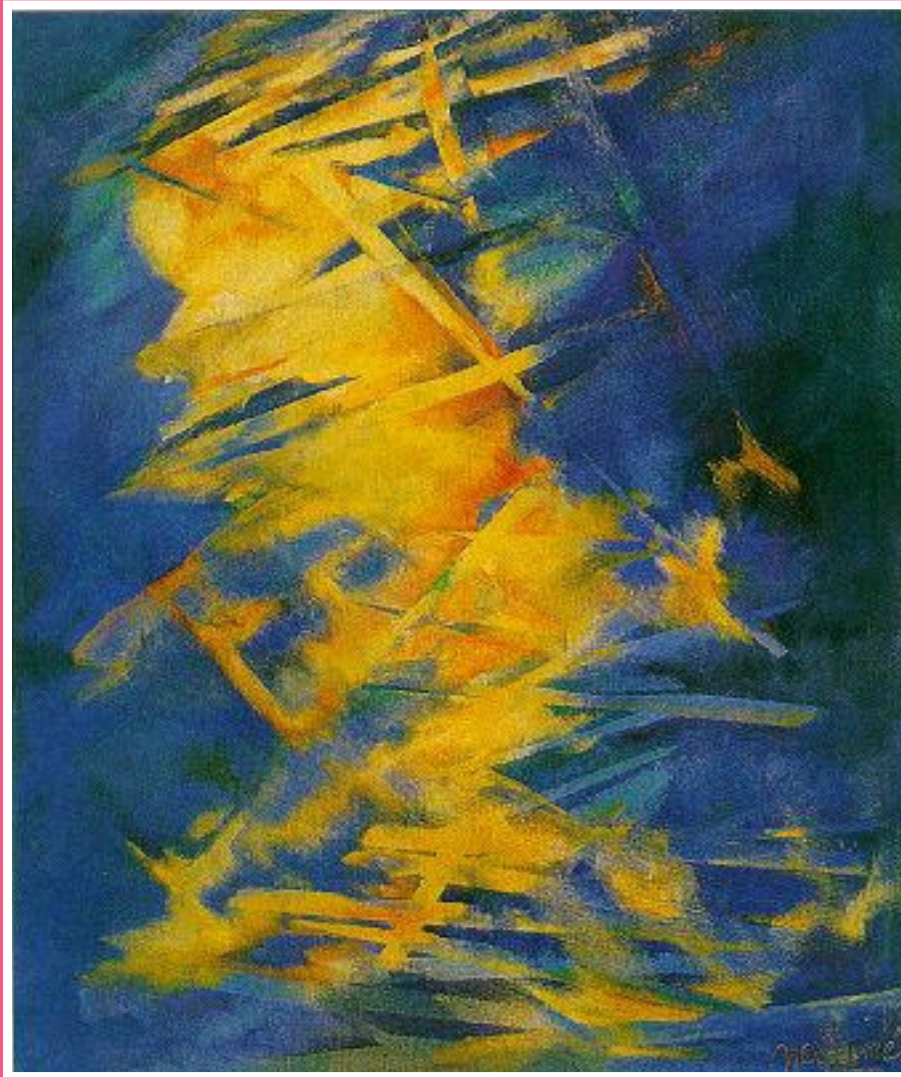
2017

# medicina

BUENOS AIRES VOL. 77 Supl. I - 2017

MEDICINA

Volumen 77, Supl. I, págs. 1-616



Keywords: overweight, obesity, adolescence, cholesterol membrane content, erythrocyte deformability.

## PHARMACOLOGY 5 (PHYTOPHARMACOLOGY)

### (1912) ACTION OF NATURAL PRODUCTS IN AN EXPERIMENTAL MODEL OF ALLERGIC INFLAMMATION OF UPPER AND LOWER AIRWAYS

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Introduction: Allergic inflammation is a pathophysiological feature of numerous medically important processes including allergic asthma. These types of conditions deteriorate the quality of life of those affected and so far there are no effective treatments. In previous work we have shown that dehydroleucodine (DhL), active ingredient of *Artemisia douglasiana* Besser (regional medicinal plant popularly known as "matico") exhibits antiulcerous, anti-inflammatory and antioxidant activity.

Objective: To determine the action of the lyophilized extract (LE) of matico in the prevention / treatment of allergic and inflammatory pathologies.

Materials and methods:

Adult male rats, Wistar strain. Group (G) ref: without any treatment. Control G (-): received intraperitoneal injection and nebulization with PBS. Control G (+): sensitized with an intraperitoneal injection of birch pollen and nebulized with the same substance. LEG (A): nebulization with a low concentration of LE. GLE(B): nebulization with a higher concentration of LE. BuG: nebulized with Budesonide (anti-inflammatory of the airways). Nebulizations were performed 25 days after sensitization. After the treatment, peripheral blood was removed and the leukocyte formula was analyzed. Statistics analysis: ANOVA-1 followed by Tukey-Kramer test.

Results:

Segmented neutrophils: increased in LEG (A) compared to CG (-)  $P < 0.05$ ; also increased in LEG (B) with respect to LEG (A)  $P < 0.001$ . Basophils: decrease in GLE (B) with respect to GC (+)  $P < 0.05$ . CG (+) shows a decrease of the same with respect to CG (-)  $P < 0.01$ . Monocytes: increase in ELG (B) compared to CG (-)  $P < 0.05$ .

Conclusions:

The usefulness of the model used has been demonstrated since there are obvious signs of inflammation in animals sensitized with pollen. The leukocyte formula is modified in the animals exposed to the lyophilized matico extract when compared to control groups.

Keywords: allergic inflammation, upper and lower airways, pollen, *Artemisia douglasiana* Besser

### (1708) ALOE VERA: IN VITRO IMMUNE-MODULATORY ACTIVITY OF DECOLORIZED LEAF JUICE AND INNER LEAF JUICE AND CHEMICAL CHARACTERIZATION

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*Aloe vera* leaf juice, when intended for human ingestion, is purified of its latex constituents via a process known as decolorization. Limited information is available regarding aloe's putative health effects after decolorization. Previous work showed higher antioxidant and immune-modulatory activity from *A. vera* decolorized leaf juice (DL) than inner leaf juice (InL). Our present aim was to assess the preparations' activity against a panel of human cytokines and to chemically characterize both DL and InL. **Methods:** Human peripheral blood mononuclear cells were treated with 2 g/l of DL or InL. The cultures were then treated with lipopolysaccharide (LPS) or polyinosinic:polycytidylic (poly I:C), to mimic bacterial or viral insult, and the culture supernatants were tested against a panel of human cytokines. Data was analyzed by ANOVA repeated measures. The major chemical

constituents in DL and InL were measured using a variety of analytical methods. **Results:** Cytokine analysis showed that DL alone significantly increased secretion of IL-1 $\beta$ , IL-6, IL-10, IFN- $\gamma$ , TNF- $\alpha$  and MCP-1/CCL2 while no significant effect was observed for InL. In the presence of LPS, DL significantly increased secretion of TNF- $\alpha$  while InL had no effect, both preparations decreased secretion of MCP-1, and InL increased secretion of RANTES while DL had no effect. In the presence of poly I:C, DL increased secretion of IL-6 and TNF- $\alpha$  and decreased secretion of RANTES, while InL had no effect. We found several chemical differences between DL and InL, notably major mineral (8.32% InL to 17.70% DL), organic acid (17.05% InL to 45.26% DL) and major oligosaccharide (9.20% InL to 21.00% DL) content. **Conclusions:** The decolorized aloe vera leaf preparation showed higher immune-modulatory activity than the inner-leaf preparation as measured by the cytokines tested, and differs chemically from the inner leaf preparation in potentially significant ways.

This work was funded by Herbalife International of America.

Keywords: Aloe vera; chemical characterization; immune modulation; inflammation

### (549) ANTIOXIDANT PROPERTIES OF *Vaccinium myrtillus* L. STEM AGAINST ETHANOL-INDUCED GASTRIC MUCOSAL INJURY IN RATS

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The role of oxygen derived free radicals in the development of acute experimental gastric lesions induced by ethanol is well-known. *Vaccinium myrtillus* L. (*Vm*) is an emerging crop in the province of Tucuman, its fruits being the main objective of the harvest. Until now, there is no data from the use of their stems for therapeutic purposes. In a preliminary study, we demonstrated an enhanced secretion of gastric mucus and effective gastroprotective effect in ethanol-induced gastric ulcers model in rats pretreated with aqueous extract of *Vm* stem (150 mg/Kg body-weight, orally).

The present study was designed to evaluate the antioxidant effect of the AE of *Vm* stems and to examine their participation in the gastroprotective activity. Phytochemical screening of the AE (infusion 5%) of *Vm* stems was carried out. The *in vivo* experimental groups were the following: 1- control group, 2- positive control group (sucralfate 100mg/kg) and 3- AE of *Vm* treated group (150mg/kg) (n= 6 adult Wistar rats/group). The levels of thiobarbituric acid (TBA, as index of lipid peroxidation) and the activities of reduced glutathione (GSH) and catalase (CAT) were measured in homogenates of gastric mucosa. The pretreatment of the animals with the AE of *Vm* increased activity of the CAT enzyme and decreased GSH and TBA levels in gastric mucosa homogenates. In addition, the morphological observations at macro and microscopic level also supported a protective effect of the AE. The present results indicate that the gastroprotective effects of AE of *Vm* stem may be related to their content of phenolic compounds, mediated by its antioxidant properties. We suggest that the AE of the stem of *Vm* may represent an attractive therapeutic option for protecting against the pathogenesis of gastric ulcers.

Keywords: *Vaccinium myrtillus* L, antioxidant, gastroprotective effects

### (245) ANTI-PHOSPHOLIPASE A2 ACTIVITY OF *Eclipta prostrata* EXTRACTS ON YARARÁ AND CASCABEL VENOM

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Phospholipase A2 enzyme (PLA2) present in ophidian venoms is able to hydrolyze membrane phospholipids and fatty acid esters,