

## SCIENTIFIC INFORMATION 02

**M U L T I V e N G e L**  
**ANTI INFLAMMATORY-BLOOD VESSEL TONIC- TOPIC**  
**ANTISEPTIC**  
*AESCULUS HIPPOCASTANUM, HAMMAMELIS AND CALENDULA OFFICINALIS*

### **Pharmaceutical Form**

250 Gram. Glass.

130 Gram. Collapsible tube.

***CALENDULA OFFICINALIS L* Stimulates the anti-inflammatory and cicatrizing activity (in inflammations induced by crragenine and prostaglandin E1), and an inhibiting action of the leucocitary infiltration.**

The tri terpenic alcohols off the calendula inhibit the topic inflammation induced by TPA or corton oil in mice, and have a cythostatic action in the Ehrlich carcinoma and sarcoma 180, in mice.

The calendula flowers have demonstrated an inmuno modulator activity. The calendula polysaccharides stimulate the mitogen-induced linfocitary proliferation, at concentrations between 1,1 and 10 mg / ml. The Hydro alcoholic extract shows an antibacterial activity (against *Staphiloccoccus aureus*, *Streptococcus fecalis*, antiparasitary against *Tricomones* and antiviral against *Herpes simplex*). The organic extract of the calendula flowers causes an inhibition, dosage and time dependent, of the inverse transcriptase of the HIV -1.

### **Bibliography**

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Phytochemistry 1996; 43 (6): 1255-1260

Amirghofran Z Azadbarkht M, Karimi MH. Evaluation of the immunomodulatory effects of five herbal plants. Journal of ethnopharmacology 2000; 72: 167-172

***AESCUSHIPPOCASTANUM L. (CASTAÑO DE INDIAS)*** Thanks to the presence of escines, the seeds have anti inflammatory and blood vessel toning properties, by diminishing the permeability of the vessels and exerting an important anti edematous action.

The seed extract reduces the lysosomic enzymatic activity (b-N acetylglucosaminidase, b glucuronidase and arylsulfatase) that is augmented in chronic vein pathologies, so that the hydrolysis of the proteoglicans that constitute part of the capillary walls is reduced. Furthermore, the filtration of the proteins with a low molecular weight, electrolytes and water toward the interstice is inhibited by a reduction in the vascular permeability. The escine shows these properties thanks

to an improving molecular mechanism at the entrance of the calcium ions that creates an increase in the tone of the vessel walls, *in vivo* as well as *in vitro*. Other mechanisms as the liberation of PGF<sub>2</sub> of the veins, antagonism to histamine and reduced catabolism of the tissue mucous polysaccharides contribute to these pharmacological actions.

### **Bibliography**

Bambardelli, E., Morazzoi P, Graffini A.A Review: Aesculus hippocastanum L, Phitotherapy 67: 483-511 1996.

Kreysel H., W.A. Possible role of lysosomal Enzymes in the pathogenesis of the varicosis and the reduction in their serum activities by venoststin, vasa 12: 377-382, 1983.

**HAMAMELIS Possesses blood vessel toning, anti inflammatory and anti oxidizing actions. The vessel toning has been demonstrated in rabbits, for several aqueous and hydro alcoholic extracts.**

As far as the anti inflammatory activity is concerned, it was demonstrated in lab rats for the chronical phase of the inflammation, but an activity in the acute phase has not been observed.

About the bark or skin (hamamalitanines) it has demonstrated anti oxidizing activity against super oxide radicals, by inhibiting the depolymerization of the hialuronic acid and furthermore, creating the contraction of the muscular tunic of the veins.

Other actions: a concentrated extract of the Hammamelis leave has demonstrated an antiviral activity *in vitro*, against the herpes virus HSV-1

### **Bibliography**

Djado Djipa et al., Antimicrobial activity of bark extracts of syzgium jambos (L.) Aiston (Myrtaceae). Journal of Ethnopharmacology 71(2000) 307-313

## SCIENTIFIC INFORMATION 02

MULTIVEN GEL  
ANTI INFLAMMATORY-BLOOD VESSEL TONIC- TOPIC  
ANTISEPTIC  
AESCULUS HIPPOCASTANUM, HAMMAMELIS AND CALENDULA OFFICINALIS

### AESCULUS HIPPOCASTANUM

In the course of an inflammatory process *in vivo*, the liberation of local TNF- $\alpha$  by activated macrophages, produces an augment of the expression of different adhesion molecules (CD54, CD62E), in the surface of the endothelial cells. Thus, numerous granulocytes coming from the blood stream get fixed to the endothelium, that migrate to the tissues to unchain a primary immunologic response.

This process produces a swelling and at the last stage, a tissue lesion (1). To stimulate an acute inflammation *in vitro*, an augment of the molecules of adhesion in the endothelial cells can be induced through TNF- $\alpha$  (2, 4). Through this model, induced by cytosines, it is possible to try the anti-inflammatory properties of some substances. Following this procedure, the influence of Aesculus hippocastanum over the expression CD54 and CD62E was studied.

The growing factor of the vascular endothelium (VEGF), an important growing factor that plays an important role in the angiogenesis and in the neo vascularization of the tissue is secreted by the smooth muscular cells (SMC) and has a mitogenic effect over the endothelial cells. This feature has an effect in the division rate of the endothelial cells, thus giving the required prerequisite to activate regeneration processes. In of producing a lesion or dysfunction of the endothelium, the regenerative process of the VEGF has great importance (5). In the *in vitro* regenerative model object of description, it is proposed as a positive reference an augment of the secretion of the VEGF by the SMCs induced by the TNF- $\alpha$ . It was studied by comparison with this control, the influence of the Aesculus hippocastanum in the form of an augment in the secretion of VEGF from the smooth muscle cells.

Aesculus hippocastanum is used in vein congestions and their sequels, as well as in case of hemorrhoids and lumbosacralgias.

The objective of the present investigation was to prove *in vitro* if under the influence of Aesculus hippocastanum it was possible to detect a reduction of the endothelial adhesion molecules ICAM-1 (CD54) and selectine E (CD62E) as a measure of a possible inhibitor of the swelling. With the trial system at test, Aesculus hippocastanum in the potency D4 did not cause a reduction of the influence over the expression of the adhesion molecules CD54 and CD62E, induced by the TNF- $\alpha$ . Which

is, the substance matter of investigation did not show any anti inflammatory properties. On the contrary, it was possible to prove the anti inflammatory effect of the acetylsalicylic acid (2).

It also was investigated, the possible influence of Aesculus hippocastanum over the secretion of VEGF in SMC cultures, as proof of possible regenerative effects of the substance subject of experimentation. It was proven that Aesculus hippocastanum was able to induce an *in vitro* augmentation of the secretion VEGF by the smooth muscle cells. Given that the VEGF, together with the FGF factor (*fibroblast grow factor*) and the PDGF (*platelet derived growth factor*) it was also considered an important growing factor, especially in the angiogenesis (5), the augment of the Aesculus hippocastanum induced VEGF secretion indicates a regenerative effect, and, therefore an organic strengthener of the substance object of experiments.

#### **BIBLIOGRAPHY**

Gerriset M, Carley WW, et al. Flavonoids inhibit Cytokine-induced endothelial cell adhesion protein gene expression. *Ajp* 1995; 147: 278-291.

Voisard R Oswald M et al. Expression of intercellular adhesion molecule-1 in human coronary endothelial and smooth muscle cells after simulation with tumor necrosis factor  $\alpha$ . *Coronary artery Disease* 1998; 9: 737-745.