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# Anti-inflammatory Activity of *Cissampelos sympodialis* Eichl. (Menispermaceae) Leaf Extract

Karla V. BATISTA-LIMA [1], Ronaldo A. RIBEIRO [2], Filomena M.P. BALESTIERI [1], George THOMAS [1] and Marcia R. PIUVEZAM [1]*

[1] *Laboratório de Tecnologia Farmacêutica/Departamento de Fisiologia e Patologia, Universidade Federal da Paraíba, Caixa Postal 5009, CEP 58051-970, João Pessoa, PB, Brazil.*

[2] *Laboratório de Farmacologia da Inflamação e do Câncer, Universidade Federal do Ceará, CEP 60020-181, Ceará, CE, Brazil.*

**SUMMARY. The aqueous fraction of the ethanolic extract obtained from the leaves (AFL) of *Cissampelos sympodialis* Eichl. (Menispermaceae) was evaluated for anti-inflammatory activity, as it is used in folk medicine for this purpose. In mice the AFL (100 mg/kg, ip) inhibited both the 12-O-tetradecanoylphorbol 13-acetate and capsaicin- induced ear edema by 58% and 37%, respectively. The effective dose of AFL to inhibit the carrageenan-induced rat paw edema was 50 mg/kg (24%). Preliminary results of experiments on cell migration showed that the administration (subcutaneous route) of AFL at 100 and 200 mg/kg in rats inhibited the carrageenan-induced neutrophil migration measurement after the administration of the irritant by 53 and 50%, respectively. The results show that the AFL has anti-inflammatory activity.**

*RESUMEN.* "Actividad antiinflamatoria del extracto etanólico de las hojas de *Cissampelos sympodialis* Eichl. (Menispermaceae)". La fracción acuosa del extracto etanólico obtenido de las hojas (AFL) de *Cissampelos sympodialis* ha sido evaluada con respecto a la actividad antiinflamatoria, ya que en medicina popular es usada para esta finalidad. En ratones el AFL (100mg/kg ip) ha inhibido edema de la oreja por el 12-O-tetradecanoylphorbol 13-acetate y capsaicin en un 58% y 37%, respectivamente. La dosis eficaz de AFL para inhibir el edema de la pata de rata por carragenina fue 50 mg/kg (el 24%). Los resultados preliminares de experimentos sobre la migración celular mostraron que AFL en dosis 100 y 200 mg/kg sc en ratas después de la administración de la carragenina inhibió la migración de neutrófilos en un 53% y 50%, respectivamente. Los resultados muestran que el AFL posee actividad antiinflamatoria.

## INTRODUCTION

*Cissampelos sympodialis* Eichl. (Menispermaceae) is a plant popularly known in Brazil as "milona". The water infusion of its root is used in folk medicine for the treatment of asthma, arthritis, bronchitis and urinary infections [1], where inflammation is a common component of these diseases. For example, asthma is essentially a T helper type 2 (Th2) cell cytokine profile-driven chronic airway inflammation. Indeed, cytokines such as IL-4, IL-5 and/or IL-13 control various stages of the disease and interact to maintain and amplify the inflammatory response [2,3].

Recently, Piuvezam *et al.* [4] demonstrated that the aqueous fraction of the ethanolic extract obtained from the leaves of *C. sympodialis* (AFL) increases the production of the anti-inflammatory cytokine (IL-10) and inhibits the T cell proliferative response by concanavalin-A-treated BALB/c spleen cells.

Several other pharmacological studies have demonstrated that the AFL increases intracellular cyclic adenosine monophosphate (cAMP) levels in guinea pig alveolar leukocytes [5] and in human peripheral neutrophils [6]. cAMP is known to suppress inflammation by down-regulating neutrophil activity [7]. The AFL also inhibits both histamine-induced bronchospasm in normal guinea pigs and antigen-induced anaphylactic responses in ovalbumine-sensitized guinea pigs [8].

The above results indicate that the AFL may

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* Author to whom correspondence should be addressed. Fax: +55-021-83-2167511; e-mail: mrpiuvezam@ltf.ufpb.br