

Mangifera indica L. (Anacardiaceae) Stem Bark Extract Inhibits Mice Humoral Immune Response. Preliminary Results

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SUMMARY. The effect of the ethanolic extract of stem bark of *Mangifera indica* (MSE) on the primary immune response was studied in mice injected with sheep red blood cells (SRBC), a T-dependent antigen. This extract showed a suppressor effect on the production of IgM and IgG anti-SRBC. The extract at a dose of 20mg/kg ip caused a slight suppression effect reducing significantly the IgG levels by 29.5 and 22.8% on the seventh and tenth days, respectively. However, the dose of 80 mg/kg ip was more suppressive decreasing significantly the IgM (42.3%) and IgG levels (75.7%) on the fourth day. The suppression of the IgG level was maintained during primary immune response. It was more intense on the seventh (58.6%) and tenth days (45.0%) and decreased (37.4%) on the twenty-first day. In the spleen, the higher dose also caused a reduction (45.1%) of the number of IgM secreting cells on the fourth day, and of IgM (63.1%) and IgG (53.7%) secreting cells on the ninth day. The dose of 80 mg/kg of MSE injected ip 1 h before SRBC increased the percentage of phagocytic cells in the peritoneal cavity of mice. The results show that MSE reduces the IgM and IgG anti-SRBC levels, which may be associated with a reduction of Ig-forming cells and increased migration of phagocytes into the peritoneal cavity.

RESUMEN. "El extracto de corteza de tallo de *Mangifera indica* L. (Anacardiaceae) inhibe la respuesta inmune humoral en ratones. Resultados Preliminares". El efecto del extracto etanólico de corteza de tallo de *Mangifera indica* (MSE) sobre la respuesta inmune ha sido estudiado en ratones inyectados con glóbulos rojos de oveja (SRBC), un antígeno timo-dependiente. El extracto en una dosis de 80 mg/kg por vía intraperitoneal mostró un efecto supresor sobre la producción de IgM (42,3%) e IgG (75,7%) anti-SRBC en el cuarto día. La supresión del nivel de IgG ha sido mantenida durante la respuesta inmune. Esta dosis también causó una reducción del número de células secretoras de IgM (el 63,1%) y IgG (el 53,7%) en el bazo y aumentó el porcentaje de células fagocíticas en la cavidad peritoneal de los ratones. Los resultados muestran que MSE reduce los niveles de IgM y IgG que pueden ser asociados con una reducción de células formadoras de inmunoglobulinas en el bazo y migración aumentada de fagocitos en la cavidad peritoneal.

INTRODUCTION

The immunomodulating effects of substances extracted from plants have been demonstrated in animals ^{1,2} as well as in humans ^{3,4}. However, information on the effects of Brazilian plants on the humoral and cellular responses are scarce ^{5,6}.

Leaves, stem bark, seeds and fruits of *M. indica* L., popularly known as the mango tree, have been reported to have therapeutic proper-

ties. The stem bark is used for the treatment of fever, leucorrhoea, diarrhoea *inter alia*. The leaves are used in the treatment of asthma, cough, diarrhoea ⁷ and diabetes ⁸.

In vitro assays have demonstrated that the ethanolic stem bark extract of *M. indica* has antiamoebic activity ⁹ and that the leaf extract has inhibitory activity against *M. tuberculosis* ¹⁰ and

KEYWORDS: Antibody production; IgM and IgG anti-SRBC; *Mangifera indica* L. (Anacardiaceae); Phagocytosis; Plaque-forming cells; Stem bark extract.

PALABRAS CLAVE: Células formadoras de placas; Extracto etanólico de corteza de tallo; Fagocitosis; IgM y IgG Anti-SRBC; *Mangifera indica* L. (Anacardiaceae); Producción de anticuerpos.

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