B181 Complement modulating activity of plants from Guatemala

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Fifty eight extracts from different parts of thirteen plants from Guatemala were investigated for their influence on complement-mediated hemolysis. Classical (CP) and alternative (AP) complement pathways activities were determined in human serum (1). The plants (*Acalypha guatemalensis*, *Byrsonima crassifolia*, *Gliricidia sepium*, *Guazuma ulmifolia*, *Lippia graveolens*, *Neurolaena lobata*, *Ocimum micranthum*, *Petiveria alliacea*, *Quassia amara*, *Simarouba glauca*, *Smilax lanceolata*, *Tridax procumbens* and *Wigandia urens*) were selected on the base of their ethnomedicinal use in Guatemala.

Eight plant extracts showed potent inhibitory activity on CP (IC_{50} < 5 µg/ml): *T. procumbens* (chloroform/methanol from aerial parts, IC_{50} = 0.77 µg/ml), *W. urens* (chloroform from flowers, IC_{50} = 1.62 µg/ml), *O. micranthum* (alcoholic from leaves, IC_{50} = 1.65 µg/ml), *S. lanceolata* (chloroform from rhizome, IC_{50} = 2.14 µg/ml), *P. alliacea* (alcoholic from leaves, IC_{50} = 2.40 µg/ml), *A. guatemalensis* (chloroform from leaves, IC_{50} = 2.84 µg/ml), *N. lobata* (alcoholic from leaves, IC_{50} = 3.89 µg/ml) and *G. sepium* (alcoholic from leaves, IC_{50} = 3.91 µg/ml). Quercetine was used as a positive control (IC_{50} = 33.7 µg/ml).

Only two extracts, the aqueous from bark and leaves of *G. sepium* exhibited interesting activity on AP (IC_{50} of 80.48 µg/ml and 38.64 µg/ml, respectively). An aqueous extract from leaves of *Azadirachta indica* was used as a positive control (IC_{50} = 226.4 µg/ml)

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References: 1. Klerx et al. (1983) J. Immunol. Methods 63: 215-220.

B182 Activity of "sangre de drago" and a fucoarabinogalactan from *Croton urucurana* Baill. on complement system and lymphocyte proliferation

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Croton urucurana Baill. (Euphorbiaceae), known as Urukurá and Uruchnum, is a common species in Paraguay, Northern Argentina, Southern Brazil, and Uruguay. Incision in the bark of the trunk and branches produces an immediate excision of a blood red latex, known as "sangre de drago". Once the "bleeding" has stopped, the gum then exudes over the same lesion and may be collected solidified a few days later. Both products are used in folk medicine. The gum is mainly constitued by a high molecular weight fucoarabinogalactan (CU-1) (1). The latex is mainly constitued by catechins and proanthocyanidins, such as the SP-303 (2). In order to investigate the possible immunomodulatory activity of the latex and the fucoarabinogalactan, activities on classical (CP) and alternative (AP) complement pathways in human serum (3), and on proliferation of murine lymphocytes by [^{3}H]thymidine uptake (4) were investigated.

The polysaccharide CU-1 exhibited a strong activity on AP of complement system (IC_{50} = 28.8 µg/ml) resulting in consumption of complement factors. CU-1 also stimulated the normal splenocytes proliferation (at 100 µg/ml) and lymphoid leukaemia cells growth (at 10 µg/ml to 100 µg/ml).

Latex exhibited a potent inhibitory activity on CP (IC_{50} = 6.2 µg/ml) and AP (IC_{50} = 119.7 µg/ml) of complement system and inhibited the proliferation of activated and non activated splenocytes and lymphoid leukaemia cells growth, at 100 µg/ml.

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References: 1. Milo et al. (2002) J. Nat. Prod. (in press). **2.** Ubillas et al. (1994) Phytomedicine 1: 77-106. **3.** Klerx et al. (1983) J. Immunol. Methods 63: 215-220. **4.** Fernández et al. (1998) J. Ethnopharmacol. 62: 25-34.