

extract was chromatographed on silica gel, to give six(I~VI) fractions. Each fraction was tested for its hypoglycemic activity and the fractions II and III showed the most antidiabetic activities. Antidiabetic activity was measured with alloxan-induced diabetic mice. We are in the process of determining the key substance(s) in the two fractions.

[PD3-6] [ 04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3] ]

### Antiinvasive, Antiangiogenic and Antitumor Activity of Ephedra sinica Extract

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*Ephedra sinica* Stapf, (Ephedraceae) is a shrub or small erect herb widely growing in northeastern Asia. The dry haulms of *Ephedra sinica*, together with that of *E. Intermedia* Schrenk et C. A. Mey. or *E. Equisetina* Bge. of the same family, commonly known as Mahuang, is one of the oldest and most widely used in the Orient as a diaphoretic, antiasthmatic, and diuretic. The dry root of these plants has also been used as an antisudorific.

Horikawa et al. have noted a moderate inhibition of mutagenicity and carcinogenicity of benzo[a]pyrene, 1,6-dinitropyrene and 3,9-dinitrofluoranthene by some medicinal herbs including *E. sinica*. However, no further report on the antitumor activity of this plant has been recorded to date. In the course of screening medicinal plants for antiangiogenic activity, we found that the methanol (MeOH) extract of *E. sinica* profoundly inhibited the tube-like formation of HUVEC in in vitro model at a non-cytotoxic concentration. Encouraged by this result we have thoroughly investigated the antiangiogenic and antitumor activity of this plant.

The MeOH was fractionated against ethyl acetate, butanol in sequence. A remained part (the water fraction), at 30 mg/kg/day, showed an inhibitory activity on the growth of tumor mass in BDF1 mice inoculated with B16F10 murine melanoma cells comparable to that of adriamycin administered at 2 mg/kg/day. Also, it was observed that the water fraction, at 30 ug/mL - a non-cytotoxic concentration, inhibited the tube-like formation induced by HUVEC and the invasion of B16 melanoma cells through a matrix membrane by more than 90 % in in vitro angiogenesis and invasion assays. From these results, it could be postulated that the antitumor activity of this water fraction might be attributed to its antiangiogenic and antiinvasive activities.

[PD3-7] [ 04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3] ]

### The Anti-inflammatory and Analgesic Activities of An-Tae-Eum

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An-Tae-Eum(ATE) has been used as a prescription for threatened abortion associated with pregnancy in traditional medicine. This study was aimed to determine that ATE might cure the arthritis during the pregnant period.

The anti-inflammatory activity of ATE was examined by using carrageenin induced edema, croton oil induced granuloma pouch, and adjuvant arthritis in rats. In addition, the analgesic and antipyretic effects of ATE were investigated by using general experimental methods in mice. The oral administration of ATE has been shown anti-inflammatory activity in 1 % carrageenin induced edema in rats, especially the anti-inflammatory activity of 600 mg/kg of ATE was more potent comparing with than that of 300mg/kg of ATE. Also, it significantly inhibited granuloma and exudation in mice. In the adjuvant arthritis experiment, the ATE decreased the hind paw edema after 5 days of oral administration. In addition, it inhibited the writhing syndrome induced by 0.7 % acetic acid in mice. The antipyretic activity of ATE was also observed through the typhoid vaccine experiment.