

[*Phytochemistry*, **51**, 1005-1008 (1999)]

[Lab. of Pharmacognosy]

Abietane Diterpenoids from *Clerodendrum mandarinorum*.

T. FAN, Z. MIN, G. SONG, M. IINUMA,* T. TANAKA

From the stem of *Clerodendrum mandarinorum* (Verbenaceae), three new abietane derivatives, mandarones A, B and C, have been isolated. These structures were determined by means of spectral analysis including 2D methods. Among them, mandarones B and C possess a rearranged abietane skeleton which contains a 17(15-16)-abeo-abietane framework.

[*Natural Medicines*, **53**, 5-14 (1999)]

[Lab. of Pharmacognosy]

Effects of 70% Methanol Extract from *Evodiae Fructus* (Fruit of *Evodia rutaecarpa* var. *bodinieri*) and Its Alkaloidal Components on Blood Circulation

Hideaki MATSUDA, Masao YOSHIKAWA, Yasuko IDO, Toshiyuki TANAKA, Munekazu IINUMA*

The effects of 70% methanol extract (EBC-ext) from *Evodiae Fructus* consisting of dried fruits of *Evodia rutaecarpa* var. *bodinieri* (Rutaceae) on blood circulation of rat were investigated by using various experimental models. Oral administration of EBC-ext at 50, 200 or 500 mg/kg increased the dorsal skin blood flow and elevated the rectal temperature, the blood flow of abdominal aorta and cava in normal rats and recovered the decreased blood flow and temperature caused by water-immersion stress, but had no effect on the decreased erythrocyte deformability and on the blood coagulative and fibrinolytic system.

[*Macromolecules*, **32**, 2438-2448 (1999)]

[Lab. of Pharmacognosy]

Monomer-Isomerization Polymerization of 3-Methyl-3-(phthalimidomethyl)oxetane with Two Different Ring-Opening Courses.

Shigeyoshi KANO, Tomonari NISHIMURA, Hitoshi SENDA, Hiroshi OGAWA, Masatoshi MOTOI, Toshiyuki TANAKA,* Kenji KANO

The cationic polymerization of 3-methyl-3-(phthalimidomethyl) oxetane (1) afforded two kinds of polymers. One was polyacetal, which was produced at 50° and below, and the other was polyether, which was produced at 80° and above.

[*Biol. Pharm. Bull.*, **22**, 947-950 (1999)]

[Lab. of Pharmacognosy]

Molecular Cloning and Characterization of Two cDNAs for *Glycyrrhiza glabra* Squalene Synthase.

Hiroaki HAYASHI,* Akiko HIROTA, Noboru HIRAOKA, and Yasumasa IKESHIRO

Two cDNAs (GgSQS1 and GgSQS2) encoding squalene synthase have been isolated from licorice, *Glycyrrhiza glabra* L., and characterized. The deduced amino acid sequence of GgSQS1 was 88%, 81%, 78%, 45-44%, and 45-41% identical to those of GgSQS2, *Nicotiana*, *Arabidopsis*, mammal and yeast squalene synthases, respectively. Squalene synthase activity was found in the cell-free extracts of *Escherichia coli* transformed with the recombinant plasmids for GgSQS1 and GgSQS2, respectively. Genomic Southern blot hybridization indicated that there are three squalene synthase genes in the licorice genome. Northern blot analysis showed that GgSQS2 mRNA is mainly expressed during the exponential growth phase of the cultured licorice cells.