A131 Diterpenoids with inhibitory activity against NFAT transcription from *Acanthopanax koreanum*

Xing Fu Cai [a], *Im Seon Lee* [a], *Young Ger Suh* [b], *Jung Woo Kim* [c] *and* Young Ho Kim [a]

[a] College of Pharmacy, Chungnam National University, Daejeon 305-764, Korea. [b] College of Pharmacy, Seoul National University, Seoul, 151-742, Korea. [c] Bio-Med RRC, Division of Life Sciences, Pai Chai University, Daejeon, 302-735, Korea.

The root and stem barks of *Acanthopanax* species (Araliaceae) have been used as a tonic and sedative as well as in the treatment of rheumatism and diabetes. From the phytochemical studies on the MeOH extract of *Acantho - panax koreanum* roots, two new diterpene compounds, (-)-pimara-7-one-9-ol-15-en-19-oic acid and 16α-hydroxy-17-methoxy-*ent*-kauran–19-oic acid, together with six known compounds, acanthoic acid, sumogaside, (-)-pimara-9 (11),15-dien-19-ol, kaur-16-en-19-oic acid, 16a-hydroxy-ent-kauran-19-oic acid, and 16α-hydroxy-17-isovaleroyl–*ent*-kauran-19-oic acid were isolated from the CH_2Cl_2 fraction by repeated column chromatography and reversed phase preparative HPLC. Among them, acanthoic acid was isolated as high yield amount and showed potent inhibitory activity on nuclear factor of activated T cells (NFAT) transcription. In conjunction with development of new immunosuppressive drug from natural product origin, sixty derivatives of acanthoic acid were synthesized by chemical method and investigated on the inhibitory activity against NFAT transcription. (-)-Pimara-9(11),15-dien 4-imidazolylcarboethyl compound showed most strong inhibitory activity against NFAT transcription (IC_{50} = 2 μM) among sixty compounds.

A132 Anxiolytic effect of *Echium amoenum* in mice

Bijan Shafaghi, Leila Tahmaseb and Nima Naderi

Department of Pharmacology and Toxicology, School of Pharmacy, Shaheed Beheshti University of Medical Sciences and Health Services, P.O.Box: 14155-6153, Tehran, Iran.

Putative activity of hydroalcoholic and aqueous infusion extracts of *Echium amoenum* L. was investigated in mice using the rotarod model of motor coordination and the elevated plus maze model of anxiety. The extracts were administered intraperitonealy (i.p.) once, one hour before performing the tests. Preliminary phytochemical study of the plant, with standard procedures, showed that it contains saponins, flavonoids, unsaturated terpenoids and sterols. There was no evidence of tannins, alkaloids and cyanogenic glycosides. The hydroalcoholic extract of *E. amoenum* in the dose range employed (125, 250 and 500 mg/kg) had no significant effect on motor coordination while the aqueous extract (62.5, 125, 250 and 500 mg/kg) disrupted motor coordination significantly. Intraperitoneal injection of aqueous extract (5, 10, 20, 30, 62.5, 80 and 125 mg/kg) showed a significant dose-dependent increase in time spent in open arm (OAT) with no significant change in open arm entries (OAE), close arm entries (CAE) and total arm entries (TAE). The anxiolytic effect was most evident in the 125 mg/kg group. It is almost evident that the extract produces its anxiolytic effect in doses in which no change in motor activity is observable. Comparison of the dose-response curve with the anxiolytic dose-response of diazepam (0.25, 0.5, 1 and 2 mg/kg) in the same setting showed that the maximal efficacy of the extract is significantly lower than diazepam. Because of different maximal efficacies we were not able to calculate extract/diazepam potency ratio but it does not seem to be more than 1/100. It is concluded that single administration of aqueous extract of *E. amoenum* produces a significant but mild to moderate anxiolytic effect.