reports, Joins a natural herbal product extracted from three herbs Clematis Radix, Trichosanthes Radix and Prunella Flos, was shown to have good analgesic and anti-inflammatory effects in several in vivo models, e.g., acetic acid-induced pain, carrageenan-induced paw edema and adjuvant-induced arthritis. And Joins has the cartilage protective effects on rabbit articular cartilage explants culture, in vitro OA model, and collagenase-induced experimental OA model. In this study, Joins and its components were further examined to investigate the mechanism. To study the mode of action of Joins effects on arachidonic acid metabolism pathway and inflammatory mediators (NO, TNF-a) were investigated. In arachidonic acid metabolism pathway, the effects on cyclooxygenases (COX) and lipoxygenase (LO) were examined. The generation of prostaglandin E2 (PGE2) and leukotriene B4 (LTB4) in cultured murine macrophage cell line RAW 264.7 medium were determined by their ELISA assay kit. COX-2 protein in cultured cell was determined by western blot analysis. Nitrite accumulation, an indicator of NO synthesis (NOS), in the culture medium and TNF-a in heparinized human whole blood, very powerful inflammatory mediators, were measured.
In arachidonic metabolism, Joins showed the inhibitory effects of lipopolysaccharide (LPS)-induced PGE2 production and COX-2 gene expression, but no effects on COX-1 and COX-2 activity. Joins also inhibited the A23187-induced LTB4 production concentration-dependently. In addition, Joins inhibited LPS and INF-g-induced NO production. Joins inhibited LPS-induced TNF-a expression.
Above results indicate that Joins interfere the arachidonic acid metabolism pathway by inhibiting both 5-LO activity and COX-2 expression. Two important inflammatory mediators, NO, TNF-a were also suppressed by Joins. The results represents that Joins can modulate arthritis by interfering important mediators related with arthritis such as arachidonic acid metabolites, NO and TNF-a.

**[PA1-40]** [ 04/17/2003 (Thr) 14:00 - 17:00 / Hall P ]

## Development of hangover settlemnet materials from natural products

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Hangover is associated with ethanol metabolism in body after the ingestion of an alcoholic beverage. Especially, The metabolism in liver is forcused by many researcher because, alcohol (approxiately 90%) is metabolized by the liver. Ethanol metabolism in liver involves both liver alcohol dehyderogenase(ADH) which actalyzes the oxidation of ethanol to acetaldehyde, and liver aldehyde dehydrogenase(ALDH) which metabolized rapidly acetaldehyde, product of ethanol oxidation, to acetate. It has been known that hangover is caused by increasing acetaldehyde concentration in blood after intaking alcoholic beverage. Thus, it is valuable that researchers will effort to study substrates which decrese rapidly this generation So, Fifteen samples( Inositol, RICEO, RI-AX Sweet chest nut rose, Kum Quat, oyster, Kohki,.Gurume-K, Gurume-J, Gurume-P,Carambora Lotus seed, lakanka F, Phytic acid and Chlorophyll) which had been determined in vitro by researcher in Yonsei University were tested in vivo. The samples were administrated through oral route thirty miniutes before alcohol administration. The sample and alcohol dose were 200mg/Kg and 3g/Kg , respectively.Then, blood collected at 1, 3 and 5 hour after alcohol administration, Ethanol and acetaldehyde concentration in blood were measured by using commercially available measurement kit(so called F-kit). Values of these two concentrations were compared with one of control and effect of hangover settlement is evaluated by degree of decreasing ethanol and acetaldehyde concentration in blood.
from the results, the samples could be categotized into three according to their biological effect on the enzymes. Samples in the first category make ethanol and acetaldehyde concentration in blood decreased, which is explained that both ADH and ALDH activity are enhanced. The samples are sweet chest nut rose, Kohki, Kum Quat, oyster, Gurume-K, Gurume-J, and Carambora.
And second part`s ones make only acetaldehyde concentration in blood deceased, which is

explained that ALDH activity is enhanced better than ADH activity. The samples are Inositol, RICEO, RI-AX, Gurume-P, Lotus seed and lakanka F.
Third part's ones make both ethanol and acetaldehyde concentration in blood ineffective which is explained ADH and ALDH activity are enhanced a little. The samples are Phytic acid and chlorophyll.

[PA1-41] [ 04/17/2003 (Thr) 14:00 - 17:00 / Hall P ]

## Neuroprotective effect of Hexane fraction of A0054 on Delayed Neuronal Death after Transient global Ischemia in Gerbil Hippocampus

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Several lines of recent evidences have shown that several pro-inflammatory genes or mediators, such as inducible nitric oxide synthase (iNOS), cyclooxygenase-2 and cytokines (e.g., tumor necrosis factor α and interleukin-1β), are strongly expressed in the ischemic brain. Inflammation is now recognized as a significant contributing mechanism in cerebral ischemia because anti-inflammatory compounds or inhibitors of iNOS and cyclooxygenase-2 have been proven to reduce ischemic brain damage.
In vitro assay, The Hexane fraction of A0054 inhibited NO (iNOS; IC50, 8.0 μg/ml) and PGE2 (COX-2; IC50, 20 μg/ml) respectively. In vivo study was carried out to evaluate neuroprotective effect of Hexane fraction of A0054 after transient global ischemia using Mongolian gerbil ischemia model. The hexane fraction of A0054 was administered for 15 days in oral, and then the gerbils were exposed to forebrain ischemia by clamping the bilateral common carotid arteries at 36℃ for 10 min. The morphological study was performed 7 days after ischemia or sham-operation. Histopatholoogical evaluation of delayed neuronal death (DND) was performed by microtuble associated protein 2 (MAP2) as a marker protein in dendrites.

[PA1-42] [ 04/17/2003 (Thr) 14:00 - 17:00 / Hall P ]

## An Anti-angiogenic Principle from Gardenia jasminoides.

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Gardenia jasminoides Ellis has been used in traditional medicine for the treatment of inflammation, jaundice, headache, fever and hypertension. The 70% ethanolic extract of gardenia fruit showed strong anti-angiogenic activity in the chick embryo chorioallantoic membrane (CAM) assay. Among hexane, ethyl acetate, n-butanol and aqueous fractions prepared successively from the 70% ethanolic extract, the n-butanol fraction was found to be most effective in the CAM assay. It also showed analgesic and anti-inflammatory activities in writhing test and croton oil-induced ear edema assay, respectively. An anti-angiogenic principle was purified from the n-butanol fraction using chromatographic techniques, and identified to be geniposide. Geniposide and genipin, the aglycone of geniposide, showed strong anti-angiogenic activity in the dose-dependent manner. Genipin significantly inhibited LPS-induced NO production in RAW264.7 macrophages, but geniposide did not. It was also convinced by western blotting.