hydroperoxide as a potent antioxidant.
Thus, the flavonoid components of crude drugs could be applied to regulating the eicosanoid and antibody production, inhibiting the lipid peroxide.

[PB1-2] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

Silica-Induced Phospholipase A2 Activation in Raw 264.7 Cells

Lee SJ, Seo MH, Jang YU, Yoon JY, Cho JH, Kim CJ, Sim SS

College of Pharmacy, Chung-Ang University

Silica which is a typical fibrogenic particles in many occupations including coal mining, quarrying and sandblasting induced acute inflammatory response and fibrosis in lung. To investigate the mechanism of phospholipase A2 (PLA2) activation induced by silica, we observed the effects of protein kinase inhibitors on silica-induced PLA2 activity in Raw 264.7 cells. Silica caused PLA2 activation in a dose- and time-dependent manner in Raw 264.7 cells. Silica-induced PLA2 activation was significantly inhibited by a variety of phospholipase inhibitors, such as manoalide (1 μM), neomycin (100 μM), U73122 (1 μM) and propranolol (200 μM). Also it was dose-dependently inhibited by various protein kinase inhibitors, bisindolmaleimide (protein kinase C inhbitor), tyrosine kinase inhibitors (genistein and DHC), calmodulin antagonists (W-7 and trifluoperazine), calmodudlin-dependent protein kinase II inhibitor (KN62) and mitogen-activated protein kinase kinase (MAPKK) inhibitor (PD098059), whereas it was not affected by forskolin, sodium nitroprusside and nitric oxide synthase inhibitor (L-NAME and L-NNA). These results indicate that inflammatory response induced by silica may be mediated via various signal transduction pathway. Considering complex action of silica on inflammatory response, it is difficult to find therapeutics for silica-induced inflammation.

Poster Presentations - Field B2. Pathology

[PB2-1] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

Anti-inflammatory Activity of Phenylpropanoids on the Carrageenan-induced Paw Edema

Kim CJ, Lee SJ°, Seo MH, Yoon JY, Jang YW, Cho JH, Sim SS,

Department of Pathophysiology, College of pharmacy, Chungang University

Phenylpropanoids, C6-C3 compounds are widely distributed in vegetable kingdom. There are currently a great deal of interest in the health benefits of phenylpropanoids, through their potential anti-oxidant, anti-inflammatory and anti-aggregatory properties. The phenylpropanoids have scavenging activity of oxygen free radical which is shown in the flavonoids. In this study, the structure-activity relationship of phenylpropanoids in anti-inflammatory effect was evaluated in the carrageenan-induced paw edema of rats. The volume of the hind paw after intradermal injection of 0.1 ml of 1 % carrageenan in a subplantar of right hind paw was measured by plethysmometer for 4 hrs. It shows that all of phenylpropanoids have dose-dependently anti-inflammatory activity at a oral dose of 12.5mg/kg. Caffeic acid have the most activity, but their activity was less cative than indomethacin and ibuprofen. Their efficiency of anti-inflammatory action in the order: caffeic acid > chlorogenic acid > p-coumaric

acid > sinapinic acid > cinnamic acid. > ferulic acid > quinic acid. These differences of anti-inflammatory activity may be due to structural difference of phenylpropanoids. These data showed that phenylpropanoid has the anti-inflammatory activity in which the more has hydroxy group of benzene ring, the more has potent anti-inflammatory activity. From these results, phenypropanoids can be developed a led compound as a anti-inflammatory agents.

[PB2-2] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

Analgesic activity and Inhibitory Action of Capillary Permeability of phenylpropanoids in the HAc-induced Peritonitis

Lee SJ°, Seo MH, Yoon JY, Jang YW, Cho JH, Sim SS, Kim CJ.

Department of Pathophysiology, College of pharmacy, Chungang University

In this study, the structure-activity relationship of phenylpropanoids in analgesic activity and inhibitory activity of capillary permeability were evaluated in the HAc-induced peritonitis. The writhing syndrome 10 min after i.p. injection of 0.1 ml/20g of 0.7 % acetic acid was measured for 10 min. The capillary permeability into peritoneal cavity 10 min after i.p. injection of 0.1 ml/20g of 0.7 % acetic acid and simultaneously i.v. injection of 0.1ml/20g of 1 % Evan's blue solution was measured. The peritoneal exudate 30 min after intravenous injection of Evan's blue was taken and the contents of Evan's blue was spectrophotometrically measured by ELISA microplate reader at 615 nm. It shows that all of phenylpropanoids have dose-dependently analgesic activity and inhibitory action of capillary permeability at a oral dose of 25mg/kg. Caffeic acid have the most activity, but their activity was less cative than indomethacin and ibuprofen. Their efficiency of analgesic action and inhibitory action of capillary permeability in the order: caffeic acid > chlorogenic acid > p-coumaric acid > sinapinic acid > cinnamic acid. > ferulic acid > quinic acid. These differences of anti-inflammatory activity may be due to structural difference of phenylpropanoids. These data showed that phenylpropanoid has the anti-inflammatory activity in which the more has hydroxy group of benzene ring, the more has potent anti-inflammatory activity.

Poster Presentations - Field B3. Neuroscience

[PB3-1] [04/19/2001 (Thr) 15:30 - 16:30 / Hall 4]

Changes in behavior and the levels of neurotransmitters after bilateral entorhinal cortex lesions

Lim DK, Oh YH°

College of Pharmacy, Chonnam National University, 300 Yongbong-dong, Buk-gu, Kwangju

To determine the effects of entorhinal cortex lesions on hippocampus and other regions, rats were bilaterally treated with ibotenic acid (20 nmol) into entorhinal cortex. On one week after the treatment, water maze and avoidance tasks were performed in each rat. In addition, changes in the levels of dopamine, serotonin and glutamate were determined in various brain regions. Ibotenic acid-treated rats showed impaired retention and acquisition compared to controls. In Morris water maze and passive avoidance tasks, the treated rats were more impaired in retention of memory than in acquisition. However, more impairments of acquisition than retention were shown in active avoidance tasks. In the biochemical studies, the activities of caspase-3 were increased in entorhinal cortex