· Pharmacology Laboratory, College of Pharmacy, Chonnam National University

DMSO, a non-polar solvent, is frequently used to dissolve the chemical compounds or natural products which are insoluble in water. However, DMSO provokes various unwanted activites such as the stimulation of cell proliferation. In studying the anti-allergic activities of natural compounds we isolated, the DMSO used to dissolve the natural compounds was found to possess some unwanted effects, it dose-dependently inhibited the antigen-stimulated degranulation of rat mast cells, RBL-2H3 cells. In accordance with this, we examined the effect of DMSO on the tyrosine phosphorylation of syk, PLCγ2, MAPK, and pyruvate kinase, the signal components of FcεRI (high affinity IgE receptor). At the concentration of 0.1 to 0.5%, DMSO did not have any effect on the tyrosine phosphorylation of Syk or PLCY2. Pyruvate kinase was tyrosine phosphorylated by DMSO at or above 0.1% and MAPK was also tyrosine phosphorylated at 0.5%.

[PA1-11] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

The Effects of Magnetic Fields on Circadian Rhythm of Pain Threshold in Mice

Choi YM°, Jeong JH, Choi SU, Min YS, Choi KB, La HO, Kim JH, Huh IH and Sohn UD

Department of Pharmacology, College of Pharmacy, Chung Ang University

The aim of this study was to determine whether magnetic fields (MFs) participate in the circadian rhythm of pain threshold. Pain thresholds were evaluated with the hot plate test using mice. We found that circadian rhythm of pain threshold exists with the significant increase of pain threshold during nighttime. This circadian rhythm was masked not only under continuous lightness for 5 days but also under continuous darkness for 5 days. Circadian rhythm was exhibited under darkness with the MFs cycle (exposure to 15G for 12 hours, from 08:00h to 20:00h) for 5 days, as was observed in normal mice. However, the circadian rhythm was not exhibited under darkness with the reversed MF cycle (exposure to 15G for 12 hours, from 20:00h to 08:00h) for 5 days though pain threshold in the MF-exposed period of nighttime was slightly decreased. This study suggests that MFs participate in the circadian rhythm of pain threshold without environmental light.

[PA1-12] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Effect of Daidzein and Genistein on Immune Function in Mice

Cho SK°, Yum JY, Suh ES, Kim DK, Kwon J, Eun JS

College of Pharmacy, Woosuk University

High soy consumption leading to high exposures of soy isoflavones has been associated with a reduced risk of cancers at many sites. As part of a study focusing on the chemopreventive mechanisms, we have investigated the modulating effects of daidzein and genistein, a prominent and more bioavailable isoflavone in soy foods, on murine immune function. Daidzein (50mg/kg) or genistein administered p.o. once a ady for 7 days in BALB/c mice. Daidzein decreased the mitogen-stimulated proliferation of murine splenocytes, but genistein increased. Daidzein stimulated the secretion of interleukin-4, but inhibited the secretion of gamma-interferon and interleukin-2. Genistein stimulated the secretion of gamma-interferon, interleukin-2 and tumor necrosis factor-alpha, but inhibited the secretion of interleukin-4. Daidzein and genistein inhibited the production of nitric oxide and enhanced the phagocytic activity in peritoneal macrophages. These results suggest that cancer preventive effects of daidzein is partly concerned with the secretion of TH2 cells cytokine and the activation of phagocytosis, and genistein is partly concerned with the secretion of TH1 cells cytokine and tumor necrosis factor-alpha and the activation of phagocytosis.

[PA1-13] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

The Reversible Mode of Action of YH1885

Lee SJ°, Song KS, Hwang MS, Keum SH, Lee BY, Lee JW

Yuhan Research Center, Yuhan Corporation, #27-3, Tangjeong-Dong, Kunpo, Kyunggi-Do 435-715, Korea

YH1885 is a potent acid pump antagonist as an antiulcer agent being developed by Yuhan Research Center. We compared the mode of action of YH1885 and omeprazole on gastric vesicles isolated from pig by washout method. To examine the mode of action of YH1885 in animals, we measured the effect of 7 days repeat-dosed YH1885 on plasma gastrin level in rats and dogs. The H^+/K^+-ATPase activity of gastric vesicle treated by YH1885 was completely recovered after washout, while that treated by omeprazole was strongly suppressed even after washout as reported. Plasma gastrin levels in rats and dogs were reached peak levels at 4 hr after the drug treatment, then began to decrease to normal level until 24 hr after the treatment. Increasing extent of plasma gastrin level showed a tendency of dose-dependent manner. Furthermore plasma gastrin levels had never reached to steady state during the whole treatment period. These results indicated that YH1885 is a reversible acid pump antagonist.
This study was supported by a grant of the Strategic National R & D project, Ministry of Science & Technology, Republic of Korea. (98-J13-04-01-A-03).

[PA1-14] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

Rhenium-188 tin colloid as a new radiation synovectomy agent

Ko JI°, Lee JJ, Doh H, Son M, Chang MS, Kim WB, Jeong JM(1) and Song YW(2)

Research Laboratories, Dong-A Pharm. Co. Ltd., (1)Department of Nuclear Medicine, Seoul National University College of Medicine, (2)Department of Internal Medicine, Seoul National University College of Medcine

Radiation synovectomy has been shown to be an effective treatment for the rheumatoid arthritic knee. In this study, we performed toxicity, stability and biodistribution study to evaluate the suitability of rhenium-188 tin colloid as a synovectomy agent. Intravenous (i.v.) injection in ICR mice and intra articular injection in SD rats were conducted to evaluate the acute toxicity of rhenium-188 tin colloid. LD(50) value of rhenium-188 tin colloid in i.v. toxicity test was 60.9 mCi/kg. In rats, mild toxicity including skin and synovium inflammation was observed in the radioactivity of 15 mCi/kg at intra-articular injection site, but systemic toxicity was not observed. Also In vitro stability tests showed that rhenium-188 tin colloid remained in colloid form without critical size variation over a 2-day period. Intra-articular injection of rhenium-188 tin colloid into normal rat joints was followed by gamma counting to quantify the leakage. The mean retention percentage of rhenium-188 tin colloid in normal rat joint was 98.7% at 1 day. In addition, the biodistribution study in rats showed that the highest radioactivity outside the injected knees was in the liver. Our preliminary results indicate that rhenium-188 tin colloid may be an effective radiopharmaceutical for synovectomy.

[PA1-15] [04/21/2000 (Fri) 10:30 - 11:30 / [1st Fl, Bldg 3]]

The chronic administration of green tea extract affects the levels of brain neurotransmitters in senescence accelerated mouse

Choi SJ°1, Lee HY1, Han SS2, Song CW2, Yang SD2, Lee HS1

1College of Pharmacy, Wonkwang University, 2Experimental Animal Laboratory, Toxicology Research Center, Korea Research Institute of Chemical Technology