

The Inhibitory Effects of *Houttuynia cordata* THUNB against Cadmium induced Cytotoxicity (II)

Lee JH1, You IS2, Kim JS2, Lee KN3, Chung WY4, Han DS4, Baek SH1#

1Dept. Natural Products and 3Dept. of Industrial Oriental Medicine, Professional Graduate School of Oriental Medicine, 4Dept. of Oral Anatomy, School of Dentistry, Wonkwang University, Iksan. 2Dept. of Industrial Chemistry Iksan College, Iksan, Korea

ABSTRACT—This study was conducted to investigate the antitoxic component in aqueous extract of *Houttuynia cordata* THUNB. The results were as follows: Generally, detoxification effects by *Houttuynia cordata* THUNB extract increased in proportion to the extract concentrations in rats. When 40 mg/kg dosage of *Houttuynia cordata* THUNB extract was administrated, *Houttuynia cordata* THUNB extract showed the highest antitoxic effects in metallothionein induction. After the extract treatment, body weights increased in proportion to the extract concentrations. However, after 3 weeks, the body weight decreased insignificantly. From the above results, *Houttuynia cordata* THUNB extract increased metallothionein concentration and decreased the toxicity of cadmium in rats. In vitro the antitoxic activity of aqueous extract of *Houttuynia cordata* THUNB on NIH 3T3 fibroblasts was evaluated by the MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-2H-tetrazolium bromide) and SRB (sulforhodamine B protein) assays. The light microscopic study was carried out to observe morphological changes of the treated cells. These results were obtained as follows: The concentration of 10–2 mg/ml of *Houttuynia cordata* THUNB extract was shown significant antitoxic activity. The number of NIH 3T3 fibroblasts were increased and tend to regenerate. These results suggest that *Houttuynia cordata* THUNB extract retains a potential antitoxic activity.

[PA4–8] [10/19/2000 (Thr) 10:00 – 11:00 / [Hall B]]

The Inhibitory Effects of *Trichosanthes kirilowii* against Cadmium induced cytotoxicity (III)

Lee JH, You IS1, Kim SK2, Lee KN3, Chung WY4, Han DS4, Baek SH#

Dept. of Natural Products & 3Dept. of Industrial Oriental Medicine, Professional Graduate School of Oriental Medicine, 4Dept. of Oral Anatomy, Wonkwang Univ. 1Dept. of Industrial Chemistry & 2Dept. of Environmental Horticulture, Iksan College. Korea

Abstract— This study was conducted to investigate the antitoxic agents in aqueous extract of *Trichosanthes kirilowii*. The results were as follows: Generally, detoxification effects by *Trichosanthes kirilowii* extract increased in proportion to the extract concentration in rats. When 40 mg/kg dosage of *Trichosanthes kirilowii* extract was administrated, *Trichosanthes kirilowii* extract showed the highest antitoxic effects in metallothionein induction. After the extract treatment, body weights increased in proportion to the extract concentrations. From the above results, *Trichosanthes kirilowii* extract increased metallothionein concentration and decreased the toxicity of cadmium in rats. In vitro the antitoxic activity of aqueous extract of *Trichosanthes kirilowii* on NIH 3T3 fibroblasts was evaluated by the MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-2H-tetrazolium bromide) and SRB (sulforhodamine B protein) assays. The light microscopic study was carried out to observe morphological changes of the treated cells. These results were obtained as follows: The concentration of 10–2 mg/ml of *Trichosanthes kirilowii* extract was shown significant antitoxic activity. The number of NIH 3T3 fibroblasts were increased and tend to regenerate. These results suggest that *Trichosanthes kirilowii* extract retains a potential antitoxic activity.

[PA4–9] [10/19/2000 (Thr) 10:00 – 11:00 / [Hall B]]

Protective Effects of Butanol Fraction of *Carthamus tinctorius* L. Semen on

Endotoxin- Induced Thrombosis in Rats

Seung Keum-Ran, Baik Sue-Jeong, Jung Joo-Hee, Joo Kyeong-Mi, Kang Hye-Kyung, Kim Young-Mi, Jeong Choon-Sik*, Jung Ki-Hwa

College of Pharmacy, Duksung Women's University

The concerns about diseases of a cardiovascular system have increased with the rise of living standard and the trend of advanced age. Among these, the thrombus causes the serious disease like apoplexia, cerebri and myocardial infarction. Thrombosis is caused by the injury of endothelium and the alteration in normal blood flow.

Endotoxin is the product from gram negative bacteria, and protein-lipo- polysaccharide is known as a main component of it. It is used in experiment for antithrombosis activity screening.

In our study, we injected endotoxin(4000EU/kg, i.v.) in rats at 1hr after administration of *Carthamus tinctorius* L. Semen butanol fraction(500mg/kg, p.o.). To investigate activities of *Carthamus tinctorius* L. Semen butanol fraction for blood coagulation system, we measured blood clotting time, prothrombin time, fibrinogen and fibrinogen degradation products *in vivo*, antiplatelet aggregation activity and the stabilizing effect on heat-induced hemolysis *in vitro*. And then we measured superoxide dismutase activity, glutathione content, glutathione S-transferase activity and malon dialdehyde content to figure out the mechanism of anticoagulation.

As a result, *Carthamus tinctorius* L. Semen butanol fraction has antiplatelet aggregation activity *in vitro*, delays blood clotting time and prothrombin time, and decreases fibrinogen and fibrinogen degradation products *in vivo*. Also, it increases superoxide dismutase activity, glutathione content and glutathione S-transferase activity, and decreases malon dialdehyde content.

On the basis of our study, we may propose that a blood coagulation system and cell injury is suppressed by the antithrombosis effect of *Carthamus tinctorius* L. Semen.

[PA4-10] [10/19/2000 (Thr) 10:00 - 11:00 / [Hall B]]

Analysis of Benzophenone and 4-Nitrotoluene in Water, Sediments and Soils by Gas Chromatography/Mass Spectrometry

Rhee HK^o, Kwon OS, Ryu JC

Toxicology Lab., Korea Institute of Science and Technology, P.O.Box 131, Cheongryang, Seoul 130-650, Korea

The benzophenone (BP) and 4-nitrotoluene (4-NT) classified as endocrine disrupting chemicals were determined in water, sediment and soil. The modified SPEED98 method for water samples and ultrasonic extraction of US EPA (method 3550B) method for sediment and soil samples were used for the analysis of BP and 4-NT. n-Hexane was used for the extraction of BP and 4-NT in the water, sediment and soil samples. 2 μ l of the concentrated solution (0.3 ml of final volume) was applied to GC/MSD. The method detection limits of BP were 10 ng/l for water samples, and 0.25 ng/g and 1 ng/g for sediment and soils. For 4-NT, method detection limits were 5 ng/l for water samples and 1 ng/g for sediment and soil samples. As a result, BP concentrations were ranged from 24.4 ng/l to 53.6 ng/l at 7 sites of water samples and from 10.3 ng/l to 13.9 ng/l at 2 sites of soil samples, which were higher than those of water and soil blanks. 4-NT was not detected in water, sediment and soil samples.

[PA4-11] [10/19/2000 (Thr) 10:00 - 11:00 / [Hall B]]

Effect of glycolic acid alone or combination with UVB on skin irritation and inflammation in guinea pigs

Hong JT, Park KS^o, Kim HJ, Kim EJ, Jung KM, Ahn KS, Lee JK, Man KT, Kim DJ, Kim YK and Lee