[PC1-17] [10/17/2002 (Thr) 13:30 - 16:30 / Hall C]

23-hydroxyursolic acid Induces Apoptosis of human leukemia HL-60 cells

Won JongHeon°, Shin kyungmin, Seo BoRim, Park HeeJun, Choi JongWon, Lee KyungTae

College of pharmacy, Kyung-Hee University, Seoul,130-701

We found that 23-hydroxyursolic acid, triterpenoid was isolated from Cussonia bancoensis have a significant cytotoxic activity against HL-60 human promyelocytic leukemia cells. The IC of 23-hydroxyursolic acid was 32.83 μM. These anti-proliferative activity was due to induction of apoptosis. The effect of apoptosis was identified by DNA laddering, DAPI assay, PI staining, and Annerxin V-FITC binding assay. In order to explore the possible mechanism involved in 23-hydroxyursolic acid induced apoptosis, we examined apoptotic cellular molecules by western blotting. 23-hydroxyursolic acid activated pro-caspases 3. This compound also decreased anti-apoptotic Bcl-2 protein but increased pro-apoptic Bax and tBid.
These data suggest that 23-hydroxyursolic acid induced apoptosis of HL-60 cells through activation of caspase in conjunction with bcl-2 related proteins such as Bid, Bax, Bcl-2. Now we are further investigating the relationship with the mitochondrial potential.

[PC1-18] [10/17/2002 (Thr) 13:30 - 16:30 / Hall C]

Effects of cell viability and antioxidant enzyme activity of Phellinus linteus extract on Mouse melanoma cells(B16F10)

Cha EunJung, Kim AnKeun°

Colleage of Pharmacy, Sookmyung Women's University

The effects of oxidative stress on the alterations of different antioxidant enzyme activity on mouse melanoma cells(B16F10) was investigated. Oxidative stress was induced by the exposeure to hydrogen peroxide(H2O2). B16F10 cells were exposed Phellinus linteus Ex. in combination with H2O2 and measured the time course of changes in cell viability and antioxidant enzyme activity. CAT activity peaked at 12 hr. On the contrary, SOD and GPX activity was maximum at 6 hr. The cell viability of Phellinus linteus extracts in combination with hydrogen peroxide was higher than hydrogen peroxide alone.

[PC1-19] [10/17/2002 (Thr) 13:30 - 16:30 / Hall C]

Peroxynitrite Scavenging Mechanism of Alaternin and Nor-rubrofusarin glucose from Cassia tora

Park TaeHyun°1, Jung HyunAh2, Choi JaeSue2, Chung HaeYoung1

1College of Pharmacy, Pusan National University, Busan 609-735, Korea. 2Faculty of Food Science and Biotechnology, Pukyong National University,Busan 608-737, Korea

Peroxynitrite(ONOO-), formed from the reaction of superoxide(·O2-) and nitric oxide(·NO), is a potent oxidant that contributes to oxidation of various cellular constituents including lipids, amino acids, sulphydryls and nucleotides. It can cause cellular injury such as DNA fragmentation and apoptotic cell death. Also, the toxicity of ONOO- has been reported to be involved in inflammatory and nurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, and atherosclerosis. Moreover, a necessity of the strong scavenger of ONOO- has been increased due to the lack of endogenous enzyme against the damage by ONOO-. The aim of this study was to evaluate the ability of natural products to scavenge ONOO- and to protect cells against ONOO-. We tested various plant extracts for their ONOO- scavenging activities. Among them, extract from Cassia tora showed a potent activity in ONOO- scavenging. In futher analysis, the phenolic active components, alaternin and nor-rubrofusarin glucose were identified as potent ONOO- scavengers. The data from spectrophotometric analysis demonstrated that alaternin and nor-rubrofusarin glucose led to the decrease of ONOO--mediated nitration of tyrosine through electron donation. Alaternin, not nor-rubrofusarin glucose, also showed significant inhibition on