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Anti-proliferative Effects of *Ixeris sonchifolia* H. Extracts on Human Hepatocellular Carcinoma Cells

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We investigated the anti-proliferative effects of *Ixeris sonchifolia* H. (godulbaegi) root extracts, luteolin (3', 4', 5, 7-Q-glucoside and 3', 4', 5, 7-tetrahydroxyflavone) and apigenin (3', 4', 5, 7-O-gluconic acid) on HepG2 (p53 wild type) cells, Hep3B (p53 null) cells, and Chang liver cells. In MTT assay 3', 4', 5, 7-tetrahydroxyflavone showed the most efficient anti-proliferative effects on these three cell lines. However, there was no significant anti-proliferative effect on Chang liver cell line in MTT results. We postulated that these effects might be a result from G₁ cell cycle arrest after propidium iodide staining, flow cytometry, analysis, and DNA fragmentation assay on HepG2 cells. We also examined the changes of protein expression levels related cell cycle arrest and apoptosis on HepG2 and Hep3B cells using Western blotting and RT PCR from 0 to 72 hours in time and 7, 12.5, and 25 µg / ml concentration of luteolin, one of the main active components. These data represented that the G₁ phase cell cycle arrest was gradually transferred from cytostatic state to apoptosis in time- and dose-dependent manner. They also suggested that time- and dose-dependent anti-proliferative effects are controlled by TGF-β1, Fas, and p53 signaling pathways.

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GREEN TEA EXTRACT INHIBITS CATECHOLAMINE RELEASE IN THE PERFUSED RAT ADRENAL GLAND

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The present study was designed to investigate the effects of green tea extract (GTE) and epigallocatechin gallate (EGCG) on secretion of catecholamines (CA) in the isolated perfused rat adrenal gland. In the presence of GTE (100 µg/ml) into an adrenal vein for 60 min, CA secretory responses evoked by ACh (5.32 mM), high K⁺ (56 mM) and Bay-K-8644 (10 µM for 4 min) from the isolated perfused rat adrenal glands were greatly inhibited in a time-dependent fashion. However, EGCG (8 µg/ml) did not affect CA release evoked by ACh and high K⁺. GTE itself did fail to affect basal catecholamine output.

Taken together, these results demonstrate that GTE inhibits greatly CA secretion evoked by stimulation of cholinergic nicotinic receptors as well as by the direct membrane depolarization from the isolated perfused rat adrenal gland. It is felt that this inhibitory effect of GTE may be due to blocking action of the L-type dihydropyridine calcium channels in the rat adrenal medullary chromaffin cells, which is relevant to the cholinergic nicotinic blockade. It seems that there is a big difference in mode of action between GTE and EGCG.

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The anti-inflammatory activity of *Kalopanax pictus* bark extract (V). Effects of saponins from KP on NF-κB and elastase activities

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In the previous studies, we confirmed the anti-inflammatory components of *Kalopanax pictus* bark using activity-guided fractionation in vivo. For the elucidation of anti-inflammatory mechanism, we evaluated the effects of these components on the inhibition of NF- κ B activity and human leukocyte elastase. A cell-based assay system developed in our laboratory⁽¹⁾ was used in transfectant RAW 264.7 cells. We found that kalopanaxaponin A and I showed potent inhibition of NF- κ B activity at doses of 1 ~ 2.5 μ g/mL and 2.5 ~ 5 μ g/mL, respectively. Of the compounds tested, kalopanaxaponin A showed the most potent inhibition of elastase activity.

(1) Moon KY, Hahn BS, Lee JS, Kim YS. (2001) Anal. Biochem. 292, 17-21.

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Ircinin-1 from the Sponge *Sarcotragus Species* Induces of Cell Proliferation and Apoptosis in the Human Skin Cancer Cells

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We investigated the anti-proliferative effects of a new compound, ircinin-1, from the sponge *Sarcotragus sp.* on SK-MEL-2 human skin cancer cells. From the data of MTT assay, cell viability was decreased by ircinin-1 in a dose-dependent manner. We observed that the anti-proliferative effect of ircinin-1 was due to the induction of apoptosis, which was confirmed by observing the morphological changes, the increased ratio of pro-apoptotic protein Bax to anti-apoptotic protein Bcl-2, and cleavage of poly(ADP-ribose) polymerase protein, via activation of caspase-3. The expressions of Fas and Fas-L also increased. Hence, these results suggest that the newly isolated ircinin-1 is capable of inhibiting cell proliferation and inducing apoptosis in human skin cancer cells.

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Inhibitory Effect of Luteolin on TNF- α -Stimulated IL-8 Secretion from Intestinal Epithelial Cells

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Intestinal epithelial cells can produce cytokines and chemokines that play an important role in the mucosal immune response. Regulation of this secretion is important to prevent inflammatory tissue damage. *Lonicera japonica* have been shown to inhibit inflammation. We tested the effect of luteolin, a major ingredient of *Lonicera japonica*, on TNF- α -stimulated IL-8 secretion from Intestinal epithelial