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### **Biological activities of Leaves of Viburnum sargentii for. sterile**

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Leaves and stems of Viburnum sargentii for. sterile called "Boo Doo Hwa or Baikdang Tree" has been used as one of many traditional folk medicines. This plant is widely distributed in gardens and around temples. It is reported that Viburnum spp. generally contains several iridoid glycosides as its main component.

For this study we has collected the stem and leaves of this plant in our campus and investigated the efficacy of hepatoprotective activity from liver cell damage induced by carbon tetrachloride and analgesic activity from the pain induced by acetic acid and hot plate on mice with methanol extracts, ethylacetate and butanol fractions of this plant.

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### **Inhibition of Nitric Oxide and TNF- $\gamma$ production in microglia cell by tanshinones**

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Tanshinones ,components of Salvia miltiorrhiza (SM), have been reported to have several pharmacological effect such as anti-cancer, inhibition of IL-12 and IFN- $\gamma$ . Recent evidences have showed that activation of microglia as macrophage-like cell in brain is involved in neurodegenerative disease such as Parkinson's disease, Alzheimer disease and ischemia. Especially, a large amount of nitric oxide (NO) released from microglia is very toxic to neuronal cell. Therefore, blocking of microglia activation is target for neuroprotective drug development. In the present study, we showed that dihydrotanshinone I and cryptotanshinone inhibited NO and TNF- $\gamma$  production from BV-2 cell activated by LPS. This effect was not due to inhibition of iNOS enzyme activity but suppression of iNOS mRNA expression, which is thought to be result of inhibitory effect of tanshinones on NF- $\kappa$ B and other upstream signal transduction molecules

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### **INFLUENCE OF ARECOLINE ON RELEASE OF CATECHOLAMINE FROM THE ISOLATED PERFUSED RAT ADRENAL MEDULA**

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Arecoline is one of the alkaloids isolated from Areca catechu. It has been shown that arecoline at low doses caused no modification of the ACh levels and of the motility while at higher doses it caused a reduction of the moude motlity and an increase of the ACh levels in the subcortical structures of the CNS of the mouse (Molinengo et al., 1988). In addition, increased plasma adrenaline levels following arecoline in normal subjects and patients with multiple system atrophy may result from nicotinic adrenal stimulation (Polinsky et al., 1991). Therefore, the present study was attempted to investigate the effect of arecoline

on secretion of catecholamines (CA) evoked by ACh, high K<sup>+</sup>, DMPP and McN-A-343 from the isolated perfused rat adrenal gland and to establish the mechanism of its action. Arecoline (0.1 ~ 1.0 mM) perfused into an adrenal vein for 60 min produced dose- and time-dependent inhibition in CA secretory responses evoked by ACh (5.32 x 10<sup>-3</sup> M), DMPP (10<sup>-4</sup> M for 2 min) and McN-A-343 (10<sup>-4</sup> M for 2 min). However, lower dose of arecoline did not affect CA secretion by high K<sup>+</sup> (5.6 x 10<sup>-2</sup> M), higher dose of it reduced greatly CA secretion of high K<sup>+</sup>. Arecoline itself did also fail to affect basal catecholamine output. Furthermore, in adrenal glands loaded with arecoline (300 μM), CA secretory response evoked by Bay-K-8644, an activator of L-type Ca<sup>2+</sup> channels was markedly inhibited while CA secretion by cyclopiazonic acid, an inhibitor of cytoplasmic Ca<sup>2+</sup>-ATPase was not affected. However, nicotine (30 μM), given into the adrenal gland for 60 min, initially rather enhanced CA secretory responses evoked by ACh (5.32 x 10<sup>-3</sup> M), high K<sup>+</sup> (5.6 x 10<sup>-2</sup> M) and McN-A-343 (10<sup>-4</sup> M for 2 min), not that by DMPP (10<sup>-4</sup> M for 2 min) followed by great inhibition later. Taken together, these results suggest that arecoline inhibits greatly CA secretion evoked by stimulation of cholinergic (both nicotinic and muscarinic) receptors, but at lower dose does not affect that by membrane depolarization and at larger dose inhibits that. It is thought that this inhibitory effect of arecoline may be mediated by blocking the calcium influx into the rat adrenal medullary chromaffin cells without the inhibition of Ca<sup>2+</sup> release from the cytoplasmic calcium store. It also seems that there is difference in the mode of action between nicotine and arecoline in rat adrenomedullary CA secretion.

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### Inhibitory effect of Poncirus Fructus on stem cell factor induced mast cell migration

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SCF can be considered a cardinal cytokine in mast cell biology as it affects mast cell differentiation, survival and migration. During inflammation, an increase in the number of mast cells can be seen. Such accumulation probably requires directed migration of mature mast cells or pre-cursors. We investigated whether Poncirus Fructus was able to inhibit directional migration of rat peritoneal mast cells (RPMCs) stimulated by SCF. In this study we report that Poncirus Fructus (1mg/ml) inhibits mast cell migration and F-actin distribution of rat peritoneal mast cell (RPMC) in SCF-induced mast cell migration. We also found that morphological alteration increased by SCF was completely abolished by pretreatment with Poncirus Fructus (1mg/ml). And Poncirus Fructus inhibited IL-6 and TNF-α secretion induced by SCF. Our findings provide evidence that the chemotactic response and inflammatory cytokines secretion to SCF was blocked by Poncirus Fructus.

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### Effect of Piperine, a Primary Component of Black pepper (*Piper nigrum*), on the Arachidonic acid Metabolism in Platelet Aggregation induced by Collagen

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An effect of piperine, a piperidine alkaloid of black pepper (*Piper nigrum*), on platelet aggregation and arachidonic acid metabolism has been investigated using rabbit washed platelets. Measurements of arachidonic acid liberation and generation of thromboxane B<sub>2</sub> (TxB<sub>2</sub>) and prostaglandin D<sub>2</sub> (PGD<sub>2</sub>), through cyclooxygenase pathway, or 12-hydroxyeicosatetraenoic acid (12-HETE), through lipoxygenase