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Oral administration of Houttuynia Cordata Thnub (Uh-Sung-Cho) water extract enhanced cytokine production by activated macrophage

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Our previous studies have shown that in vitro treatment of macrophages with water extract of Houttuynia Cordata Thnub, one of the medicinal plant, was found to increase the production of cytokines(IL-1β, IL-6, and TNF-α). In order to elucidate its effect in vivo, in the present study, Houttuynia Cordata Thnub water extract was orally administrated to mice, and the harvested peritoneal macrophages were used as an experimental model.

Seven weeks old mice were fed ad libitum on chow diet and the different concentrations (0, 20, 100, 500, 1000 mg/kg b.w.) of Houttuynia Cordata Thnub water extract was orally administrated every other day for 2 weeks. The production of cytokines(IL-1β, IL-6, TNF-α) secreted by activated macrophages was used as an index for the immunocompetence and detected by ELISA using the cytokine kit.

The animals in Houttuynia Cordata Thnub extract supplementation group showd enhanced levels of cytokine production compared to those in control group. The IL-6 production was increased up to 7.77 pg/ml, 7.01 pg/ml, 416.77 pg/ml at 100 mg/kg, 500 mg/kg, 1000 mg/kg supplementation group (control ; 6.66 pg/ml). Higher concentration of TNF-α was detected at the 100 mg/kg supplementation group (57.86 pg/ml) and 1000 mg/kg supplementation group (128.18 pg/ml) compared with that of control (48.34 pg/ml). However, IL-β production was not enhanced at any supplementation group. Consequently, it could be suggested that Houttuynia Cordata Thnub water extract may regulate immune function by enhancing the cytokine production by activated peritoneal macrophage in vivo. Further investigations for the supplementation effect of Houttuynia Cordata Thnub to mouse tissues are going on at present.