**Immuno-modulatory Effects of Polysaccharides Isolated from Korean Red Ginseng**

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In this work, we examined *in vitro*, *ex vivo* and *in vivo* immuno-stimulating activities of polysaccharides from Korean red ginseng. The crude polysaccharide (RGW-0) was isolated from red ginseng by hot water extraction, ethanol precipitation and ultrafiltration. The major constituents in RGW-0 were neutral sugar (59.8%), and the uronic acid (21.9%). The result of *in vitro* assay, RGW-0 showed an anti-complementary activity (ITCH₅₀ at 1,000 µg/ml: 23.9%). The immuno-stimulating effects of RGW-0 were also analysed *ex vivo* by means of nitric oxide (NO) and cytokines in supernatants of mouse peritoneal macrophage. The mouse peritoneal macrophage stimulated with RGW-0 produced NO and various cytokines such as IL-6 and IL-12 in a dose-dependent manner. We also investigated the immuno-stimulating actions of RGW-0 in 30 male Chinese Kun Ming (KM) mice. The mice were divided into three groups, and treated by oral administration with RGW-0 into two dosages (100 mg/kg and 200 mg/kg body weight) for 4 weeks. The results showed that there were no significant differences in body weight, spleen index, and thymus index. In the splenocytes proliferation test, the T and B lymphocyte proliferation abilities of RGW-0 were significantly increased than that of control group. Overall, Korean red ginseng crude polysaccharide may have immuno-stimulating activities beneficial to human health.

Neutral sugar - and uronic acid-rich crude polysaccharides were isolated from the Korean red ginseng. The polysaccharides retain anti-complementary activity (*in vitro*), and up-regulate NO and cytokine production (*ex vivo*). It also increase the T and B lymphocyte proliferation (*in vivo*). In conclusion, crude polysaccharides from Korean red ginseng may enhance the immune system as a functional food or nutraceutical.