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The anti-inflammatory activity of Ginsenoside Rg3-enriched red Ginseng extracts in RAW264.7 cells and protects LPS-induced septic shock in mice

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Ginseng, the root of *Panax ginseng* Meyer, had been used in Easter Asia, including Korea, China and Japan for a thousand of years. The potential benefits of ginseng range from energizing the body to providing the longevity. Ginsenoside Rg3 (Rg3), one of the most effective ginseng saponin, has anti-inflammatory and anti-cancer effects. Numerous previous studies have unraveled the Rg3 Pharmacological effects. One recent study has also revealed its protective cardiovascular effects in hyper sensitive rats. Here we investigated the anti-inflammatory activity of Rg3-enriched red ginseng extract *in vitro* on murine macrophages RAW 264.7 cells. We found that Rg3-enriched red ginseng extract in dose dependent manner attenuate the expression of proinflammatory cytokines after LPS induction. The MTT assay for dose dependent concentrations of Rg3-enriched red ginseng extract show no cytotoxicity and nitric oxide concentration show a decreasing trend with increase in dose. The mRNA expression of proinflammatory cytokines like IL-1 β , IL-6, iNOS, COX-2 and TNF- α show the same trend like that of nitric oxide production. Furthermore, it was found that a remarkable attenuation of inflammation by oral treatment of Rg3-RGE extract in the mice survival study with LPS-induced septic shock. Rg3 enriched ginseng fraction can be hailed as a potent anti-inflammatory therapeutic agent in future.

Biography

Man Hee Rhee graduated in Veterinary Medicine in 1989 and completed his MS degree in 1991 and then PhD degree in 2000 in Neurobiology Department, Weizmann Institute of Science, Israel. He then spent 3 years in the Department of Cell Biology & Physiology, Washington University School of Medicine, USA as a Research Associate. He has joined in Kyungpook National University as Associate Professor. He has published more than 150 papers in reputed journals and has been serving as an Editorial Board Member of reputed.

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