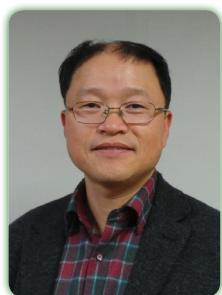


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Korean ginseng: Components as immunomodulators

Ginseng is ethno-pharmacologically valuable herbal plant in Korea, China and Japan as well as North America. It has been reported to display a lot of pharmacological activities including anti-oxidative, anti-stress, anti-cancer, anti-inflammatory, anti-diabetic and anti-obesity effects. Ginsenosides or ginseng saponins and acid polysaccharides are major principles showing ginseng's biological activities. By numerous studies immunoregulatory mechanism of ginseng and its active ingredients at the molecular levels has been elucidated. Thus, macrophages and NK cells are known as representative target cells in the regulation of immune responses by ginseng acid polysaccharides were components to activate macrophage and NK cell-mediated innate immune responses. Ginsenoside (G)-Rb1, G-Rc and G-Rd are found to suppress inflammatory responses by suppressing NF- κ B and AP-1 pathways. Furthermore compound K, a metabolite of ginseng saponins, stimulated functionality of macrophages by enhancement of transcriptional activation under normal conditions, whereas this compound displayed anti-inflammatory activity during LPS treatment. Target of compound K seems to be considered as AKT1. Therefore, these results strongly suggest that Korean ginseng is capable of normalizing suppressed or enhanced immune responses by modulation of specific target proteins such as AKT1 linked to the activation of NF- κ B and AP-1 pathway.

Biography

Jae Youl Cho is a Professor at Sungkyunkwan University, South Korea. His research areas are inflammatory and cancer signaling and development of anti-inflammatory and anti-cancer remedy from natural resources. His current research interests are to understand oncogene-related signaling cascade in cancer and inflammatory cells and figure out the molecular mechanism of anti-inflammatory and anti-cancer actions of naturally-occurring components. He is working as Editor-in-Chief of *Journal of Ginseng Research* (IF = 4.0) and a Director of Research Institute of Biomolecule Control sponsored by National Research Foundation Korea. He has received BSc in Genetic Engineering from Sungkyunkwan University and MSc (Genetic Engineering, Sungkyunkwan University) and PhD (Molecular Immunology) from University College London. After his PhD, he has worked as a Postdoctoral fellow in Washington University. He was an Assistant and Associate Professor of Kangwon National University for 8 years. He has published 400 peer-reviewed papers and 150 registered and applied patents.

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