

## Korean Bee Venom Rextracts Downregulate TNF- $\alpha$ in Macrophage Cell Line

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Several investigators have evaluated the effects of honey bee venom (*Apis mellifera*) to biological activity such as anti-inflammatory and antinociceptive effects. But, the biological activity of the Korean bee venom extracts are not evaluated yet. Recently, tumor necrosis factor (TNF)- $\alpha$  is a pleiotropic cytokine found intracellular within most cells and thought to signify a nonspecific response to tissue stress. TNF- $\alpha$  exerts proinflammatory functions that may play to an important role in initiating the fibrosis. We are tried to extracts of *A. mellifera* and *A. cerana* in the Korea bees and LPS-induced to TNF- $\alpha$  expression are estimated, and tried to determine whether reduces lipopolysaccharide (LPS)-induced to TNF- $\alpha$  expression effect of murine macrophage-like cell line RAW 264.7 cells by the Korean bee venom. The results showed indicated that LPS increased to TNF- $\alpha$  production on RAW cells by 20-35 fold in a dose-dependent manner. The Korean bee venom of *A. mellifera* or *A. cerana* inhibited LPS-induced to TNF- $\alpha$  expression ratio are estimated by 63% and 43%, respectively. These effectively suppress LPS-induced to TNF- $\alpha$  expression mechanism are not completely understood in this study, but the Korean bee venom is recognized LPS-induced to TNF- $\alpha$  expression effect of murine macrophage-like cell line.