

## Anti-inflammatory Effects of *Ponciri Fructus* Extracts on Raw 264.7 Cells

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*Poncirus Fructus* (PF) is obtained by drying the trifoliolate orange fruit belonging to the Rutaceae family. In our country of medicine, PF has been used as a treatment of indigestion, allergy and inflammation. But Mechanism and medical data for PF is insignificant. Recently, the effect of the study PF of biological activity was reported, such as anti- thrombosis, anti-bacteria, anti-virus, anti- allergic. We investigated that the effect of PF on anti-inflammatory in murine macrophage-like cell line Raw264.7 cells. Our results show that the expression level of Nitric Oxide (NO) and Matrix-metalloproteinase-9 (MMP-9) significantly decreased. Moreover, to determine the expression level of pro-inflammatory cytokines such as Tumor Necrosis Factor (TNF- $\alpha$ ) and Interleukin-6 (IL-6) and the phosphorylation pattern of signaling molecules of mitogen-activated protein kinase (MAPK) family, we performed ELISA and western blot in Raw264.7 cells. In addition, nuclear factor-kappa B (NF- $\kappa$ B) pathway was confirmed. PF extract inhibited the production of TNF- $\alpha$  and IL-6. The extract suppressed the phosphorylation of ERK1/2, JNK, and p38 MAPK, and the nuclear translocation of NF- $\kappa$ B p65 in activated cells. Our results suggest that PF can be used as a potential therapeutic agent or functional food to relieve inflammation.

**Key words:** *Poncirus Fructus*, Inflammation, LPS