

Immune-enhancing Activity of *Paeonia lactiflora* through TLR4-dependent Activation of p38, JNK, and ERK1/2 RAW264.7 Cells

Jeong Won Choi¹, Hyeok Jin Choi¹, Gwang Hyeon Ryu¹, Seung Woo Im¹,
Jae Won Lee² and Jin Boo Jeong^{3*}

¹Graduate Student, ²Post-doc and ³Professor, Department of Forest Science, Andong National University, Andong 36729, Korea

Paeonia lactiflora roots (PLR) are a medicinal plant widely used for treating inflammatory diseases. However, PLR has been recently reported to increase the production of proinflammatory mediators and activates phagocytosis in macrophages. Thus, in this study, we tried to verify the macrophage activation of PLR and elucidate its mechanism of action. PLR upregulated the production of proinflammatory mediators and activated phagocytosis in RAW264.7 cells. However, these effects were reversed by inhibition of TLR2/4. In addition, the inhibition of p38, JNK, and ERK1/2 reduced the PLR-mediated production of proinflammatory mediators, and the PLR-mediated activation of p38, JNK, and ERK1/2 was blocked by the TLR4 inhibition. These findings indicate that PLR may activate macrophages through TLR4-dependent activation of p38, JNK, and ERK1/2. These indicate that PLR has immunostimulatory activity. Thus, it is believed that PLR can be used as a functional food agent that enhances the immune system.

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*(Corresponding author) jjb0403@anu.ac.kr, Tel: +82-54-820-7757