

## Immunostimulatory Activity of *Paeonia lactiflora* in Mouse Macrophages, RAW264.7 Cells

Ju-Hyeong Yu<sup>1</sup>, So Jeong Park<sup>1</sup>, Jin Hee Woo<sup>2</sup>, Na Rae Shin<sup>2</sup> and Jin Boo Jeong<sup>3\*</sup>

<sup>1</sup>Graduate Student, <sup>2</sup>Undergraduate Student, and <sup>3</sup>Professor, Department of Medicinal Plant Resources, Andong National University, Andong 36729, Korea

*Paeonia lactiflora* (*P. lactiflora*) is a medicinal plant widely used for treating inflammatory diseases. However, *P. lactiflora* 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 *Paeoniae Radix Alba* (PRR, also known as red peony root) and elucidate its mechanism of action. PRR 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 PRR-mediated production of proinflammatory mediators, and the SPL-mediated activation of p38, JNK, and ERK1/2 was blocked by the TLR4 inhibition. These findings indicate that PRR may activate macrophages through TLR4-dependent activation of p38, JNK, and ERK1/2. These indicate that PRR has immunostimulatory activity. Thus, it is believed that PRR 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