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Anti-Inflammatory Effects of Paeoniflorin Derivatives

Su-Ah Kim, Eun-Seo Jang, A-Yeon Lee, Su-Jeong Lee,
Marie-Carmel Balcos, June-Hyun Kim

Department of Biotechnology, The University of Suwon, Gyeonggi-do 18323, Korea

We previously showed that the root extract of Paeonia lactiflora might have anti-inflammatory effects. Paeoniflorin (PF) has been identified as one of the main bioactive components of Paeonia lactiflora, however its role has been well characterized. In this study, we tested whether PF and its derivatives, which is removed the hydroxy group from PF, might have anti-inflammatory effects. In the Nitric Oxide assay, PF and Paeoniflorin's derivative (PFD) showed 55% and 56% more anti-inflammatory effect, compared to LPS control, respectively at 250ug/ml.

To further confirm, we examined the effect of PF on tyrosine phosphorylation of Erk MAP Kinase. It is well established that tyrosine phosphorylation of Erk MAP Kinase is related to NF-kB mediated inflammation pathway. We therefore examined whther PF and PFD might regulate Erk activity. PF and PFD showed 35% and 22% less tyrosine phosphorylation compared to Paeonia lactiflora Red Charm extract control, respectively at 500ug/ml.

Taken together, these results suggest that PF and PFD may play a role in anti-inflammatory effects in the root extract of Paeonia lactiflora. This study will provide the basis to develop a platform for the inflammation-mediated diseases therapeutics in the near future.

Key words : Paeonia lactiflora Pall, anti-inflammatory effects,