

[P3-27]**Regulation of Inducible Nitric Oxide Synthase Expression by
Paeonia japonica (Paek-Jak-Yak) in Mice**Jin Kim¹, Chang-Shin Park¹, and Hyun-Sook Kim²¹Dept of Pharmacology, MTRC, CDIR, College of Medicine, Inha University Incheon, Korea;²Dept of Food and Nutrition, Sookmyung Women's University, Seoul, Korea

Nitric oxide (NO) is a small ubiquitous molecule influencing a great variety of biological process in the organism. Within the immune system, increased levels of NO were observed in various immunopathological situations such as inflammatory reactions. Our previous studies have shown that oral administration of *Paeonia japonica* (*PJ*) water extract may modulate immune function by regulating the cytokine production of mouse peritoneal macrophage stimulated with lipopolysaccharides(LPS). In the present study, we investigated the effects of *PJ* water extract on the production of nitric oxide (NO) and on the level of inducible nitric oxide synthase (iNOS) gene expression in mouse peritoneal macrophages. The *PJ* water extract was administered every other day for two or four weeks. Peritoneal macrophages of *PJ*-treated mice were incubated for 4 to 24 hrs with/without LPS to induce iNOS expression. The accumulation of nitrite was measured by Griess assay. The level of mRNA and protein of iNOS were determined by RT-PCR and western blot analysis, respectively. Nitrite production was increased in *PJ* treatment group when incubated with LPS. The intensity of the iNOS mRNA and protein expression was increased after 4hrs of incubation and a strong band was observed at 8hrs incubation in LPS-treated groups. However, iNOS was not expressed at all without LPS treatment. The results suggest that *PJ* may regulate the immune function by enhancing the response to endotoxin stimulation.