

It has been known that the oleanolic acid, triterpenoid saponins produced from some oriental herbs, have anti-inflammatory activity. IL-1 β , IL-6, and TNF- α are major proinflammatory cytokines inducing the synthesis and release of many inflammatory mediators. They are involved in immune regulation, autoimmune diseases, and inflammation. In this study, the effects of oleanolic acid on the expression of proinflammatory cytokines were investigated in mouse peritoneal macrophages. Oleanolic acid alone significantly increased IL-1 β , IL-6, and TNF- α production and the expression of their genes as determined by immunoassay and reverse transcription-polymerase chain reaction analysis, respectively. However, when murine macrophages stimulated with bacterial lipopolysaccharide were treated with oleanolic acid, the production of these proinflammatory cytokines and their gene expression were suppressed in a dose-dependent manner. Taken together, these data indicate that oleanolic acid has potent anti-inflammatory and immunomodulatory effects by regulating IL-1 β , IL-6, and TNF- α production. [Supported by KOSEF Grant 1999-2-214-001-5]

[PD3-12] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]

Regulation of inducible nitric oxide synthase gene expression by oleanolic acid in murine macrophage RAW 264.7 cells

Choi CY^o, Kim JY, Jeong HG

Department of Pharmacy, Chosun University, Kwangju, Korea

The effect of oleanolic acid on the inducible nitric oxide synthase (iNOS) gene expression was investigated in the mouse macrophage cell line RAW 264.7. Oleanolic acid significantly induces nitric oxide production and iNOS level in dose dependent manner. Quantitative reverse transcription-polymerase chain reaction analysis demonstrated that inducible nitric oxide synthase gene expression is increased by oleanolic acid treatment. Since iNOS transcription has recently been shown to be under the control of NF- κ B family of transcription factors, we assessed the effect of oleanolic acid on NF- κ B activation using a transient transfection assay and electrophoretic mobility shift assay (EMSA). Transient expression assays with NF- κ B binding sites linked to the luciferase gene suggest that the oleanolic acid-induced increase in transcription is mediated by the NF- κ B transcription factors. Using DNA fragments containing the NF- κ B binding sequence, oleanolic acid was found to activate protein/DNA binding of NF- κ B to its cognate site as measured by EMSA. Collectively, this series of experiments indicate that oleanolic acid up-regulates iNOS gene expression through activation of NF- κ B. [Supported by KOSEF Grant 1999-2-214-001-5]

[PD3-13] [10/19/2000 (Thr) 15:00 - 16:00 / [Hall B]]

Hepatoprotective Effects and Acute Toxicity Test of the Extract of Jejo, the powder of *Protactia brevitarsis*

Lee J^o, Yeon JD and Kim JY

R&D Center, Daewoong Pharm. Co.,Ltd.

"Jejo" is the powder of *Protactia brevitarsis* and known to be effective on hepatitis and hepatic disorder in folk remedy. We performed hepatoprotective and acute toxicity test. Hepatoprotective effects were tested in Sprague-Dawley rats with 70% ethanol extract of Jejo and