

The Effect of Chinese Herbal Medicines on TNF- α Induced Matrix Metalloproteinase -1;-9 Activities and Interleukin-8 Secretion

呂思潔

**Lee MH; Yang YY; Tsai YH; Lee YL; Huang PY; Huang
IJ; Cheng KT; Leu SJ**

摘要

Abstract

Matrix metalloproteinases (MMPs) play an important role in normal physiological functions and pathological processes. They are involved in normal skin functions as well as in the aging, healing, embryonic development, reproduction, and inflammatory responses of skin. Previous studies report that both high MMP-1 and MMP-2 activities were found in the skin of patients with dermatitis, and large amounts of MMP-9 have been reported to be accumulated in unhealed wounds. Interleukin-8 (IL-8), a C-X-C chemokine, may mediate neutrophil recruitment and activation and is involved in various inflammatory skin diseases. In this study, eleven Chinese herbal medicines were analyzed for their potential as anti-inflammatory agents using human fibroblast WS-1 cell lines. The results indicate MMP-1 and -9, but not MMP-2, were induced by TNF- α treatment in WS-1 cells. However, when WS-1 cells were pre-treated with eleven Chinese herbal medicines before TNF- α stimulation, all these herbal medicines suppressed TNF- α -stimulated MMP-1 activity in WS-1 cells as analyzed by casein zymography. In addition, the suppression of MMP-9 activity was also observed when WS-1 cells were treated with either *Paeonia suffruticosa*, *Scutellaria baicalensis*, *Saposhnikovia divaricata*, *Dioscorea opposita*, *Rubus chingii*, or *Salvia miltiorrhiza*. Of which, *R. chingii* significantly inhibited IL-8 secretion induced by TNF- α treatment as well. These results revealed that some novel components present in these Chinese herbal medicines may be used for the treatment of inflammatory responses in skin cells.