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

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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, em-bryonic 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 us-ing human fibroblast WS-1 cell lines. The results indicate MMP-1 and -9, but not MMP-2, were induced by TNF-αtreatment in WS-1 cells. However, when WS-1 cells were pre-treated with eleven Chinese herbal medicines before TNF-αstimulation, 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 activitywas also ob-served 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 inhib-ited IL-8 secretion induced by TNF-αtreatment 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.