

(ノート)

ユーカリ抽出物のコラゲナーゼ (MMP-1) 活性阻害作用

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Inhibitory Effect of *Eucalyptus globulus* on Collagenase Type I (MMP-1)

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Abstract

The long term UV irradiation leads to “photoaging” which is characterized by deep wrinkle and sagging of the skin. Many researchers propose that the formations of wrinkle and sagging by photoaging is due to the alternation of the structure in the dermal matrix. The dermis is maintained by the balance of synthesis and degradation of dermal matrix such as collagen, elastin, and glycosaminoglycans. In photoaging skin, it is reported that the degradation of matrix is stimulated and their synthesis is reduced. Therefore, to prevent or improve the photoaging skin, it will be required to modulate the balance. Then, we noticed the approach of collagenase inhibition for the modulation. We had investigated the plant extracts having the inhibitory effect for collagenase, and reported that a 50% ethanol extract of *Eucalyptus globulus* inhibits collagenase activity. In this study, we tried to fractionate the *Eucalyptus* extract to obtain the higher inhibitory effect and to study the active substance. As a result, we could fractionate an active substance with higher inhibitory effect. And, with the examination by TLC and UV-Vis spectra, it was found that the active substance was polyphenol compounds with chelating effect.

Key words: matrix metalloproteinase (MMP), collagenase, inhibition, *Eucalyptus globulus*, chelating effect.