

Taiwanese Native Plants Inhibit Matrix Metalloproteinase-9 Activity after Ultraviolet B Irradiation

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摘要

Abstract

Medicinal plants have long been used as a source of therapeutic agents. They are thought to be important anti-aging ingredients in prophylactic medicines. The aim of this study was to screen extracts from Taiwanese plant materials for phenolic contents and measure the corresponding matrix metalloproteinase-9 (MMP-9) activity. We extracted biological ingredients from eight plants native to Taiwan (*Alnus formosana*, *Diospyros discolor*, *Eriobotrya deflex*, *Machilus japonica*, *Pyrrosia polydactylis*, *Pyrus taiwanensis*, *Vitis adstricta*, *Vitis thunbergii*). Total phenolic content was measured using the Folin-Ciocalteu method. MMP-9 activities were measured by gelatin zymography. The extracted yields of plants ranged from 3.7 % to 16.9 %. The total phenolic contents ranged from 25.4 to 36.8 mg GAE/g dry material. All of these extracts (except *Vitis adstricta* Hance) were shown to inhibit MMP-9 activity of WS-1 cell after ultraviolet B irradiation. These findings suggest that total phenolic content may influence MMP-9 activity and that some of the plants with higher phenolic content exhibited various biological activities that could serve as potent inhibitors of the ageing process in the skin. This property might be useful in the production of cosmetics.