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Inhibitory effect of *Corydalis heterocarpa* on MMP-2, -9 activity in HT-1080 human fibrosarcoma cell

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The matrix metalloproteinases (MMPs) have been implicated in normal matrix remodelling events such as mammary gland involution and in pathological conditions such as metastasis of cancer progression. Among them, MMP-2 and MMP-9 belong to a group named gelatinase. MMP-2 is associated with tumour tissues, and the appearance of active MMP-2 is closely correlated with tumour metastasis. The halophyte, *Corydalis heterocarpa* has recently been reported to have important biological implications such as anti-oxidative, anti-inflammatory, and anti-bacterial activities. In this study, the MMP inhibitory effect of *C. heterocarpa* was evaluated in phorbol 12-myristate 13-acetate (PMA) stimulated HT-1080 cells using crude extracts and their solvent fractions. The organic layer was partitioned between 85% aq. MeOH and n-hexane, and then the aqueous layer was fractionated with n-BuOH and H₂O. Effects of ethanol extracts and their solvent fractions on MMP-2, -9 expression were evaluated using gelatin zymography and reverse transcription polymerase chain reaction (RT-PCR). The ethanol extracts and their solvent fractions downregulated PMA-induced MMP-2, -9 expression in a dose-dependent manner. Furthermore, the protein expression levels of MMP-2, -9 were analyzed by western blotting. Presence of crude extract and solvent fractions decreased PMA-induced the MMP-2, -9 activity. Based on current study results, *C. heterocarpa* was suggested to possess MMP inhibiting natural components indicating that *C. heterocarpa* may be used as a valuable source of anti-metastasis substances.

Biography

Jung Hwan Oh has completed her PhD from Tokyo University of Marine Science and Technology and Post-doctorate from North Carolina State University. She has published more than 100 papers in reputed journals.

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