

봉독에 의한 암 전이 인자인 matrix metalloproteinase-9

활성 억제 효과 및 기전 연구

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Bee venom suppresses PMA-mediated matrix metalloproteinase-9 gene activation via P38/JNK and NF- κ B - dependent mechanisms

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Objectives

Bee venom (BV), well known as a traditional oriental medicine, has been known to inhibit proliferation and induce apoptosis in cancer cells. However, no information is available about its inhibitory effects on invasion of cancer cells and related molecular mechanisms.

Materials and Methods

○ Material

Bee venom was obtained from the national institute of Agricultural Science and Technology (NIAST) of Korea.

○ Methods

Gelatin substrate gel zymography, Western blot analysis and promoter assay.

Results

BV inhibited the secretion and transcription of MMP-9 induced by PMA in MCF-7 human breast cancer. BV inhibited MMP-9 gene expression by blocking PMA-stimulated activation of NF- κ B. furthermore, BV suppressed PMA-induced phosphorylation of p38 and JNK mitogen-activated protein kinase, upstream factors involved in NF- κ B. The findings of the present study may provide a potential mechanism that explains the anti-metastatic activity of BV

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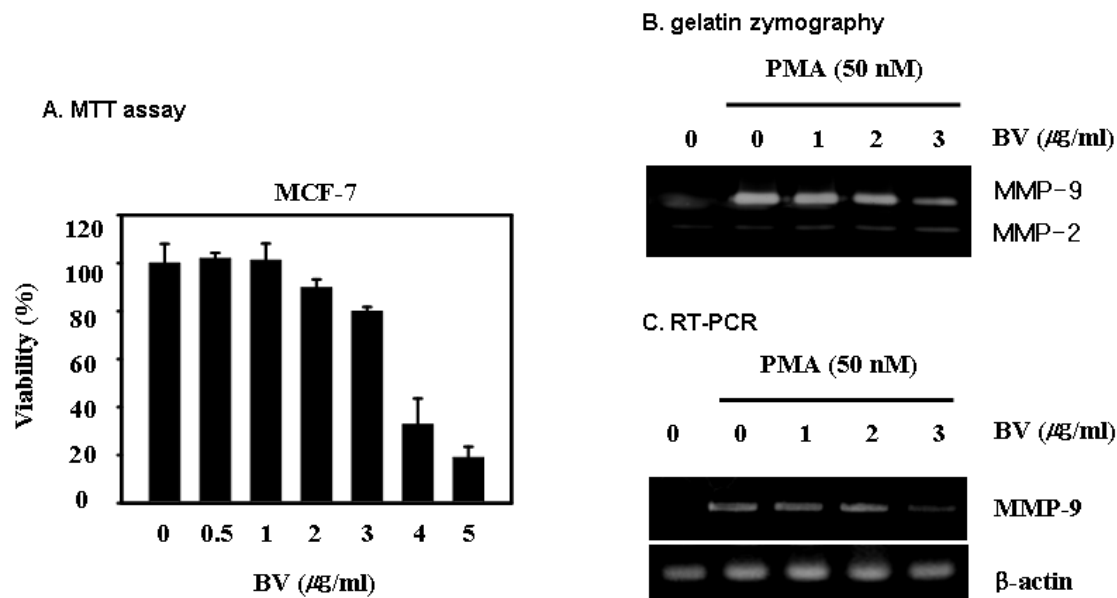


Fig 1. Effect of bee venom on PMA-induced MMP-9 activity in MCF-7 human breast cancer cells.

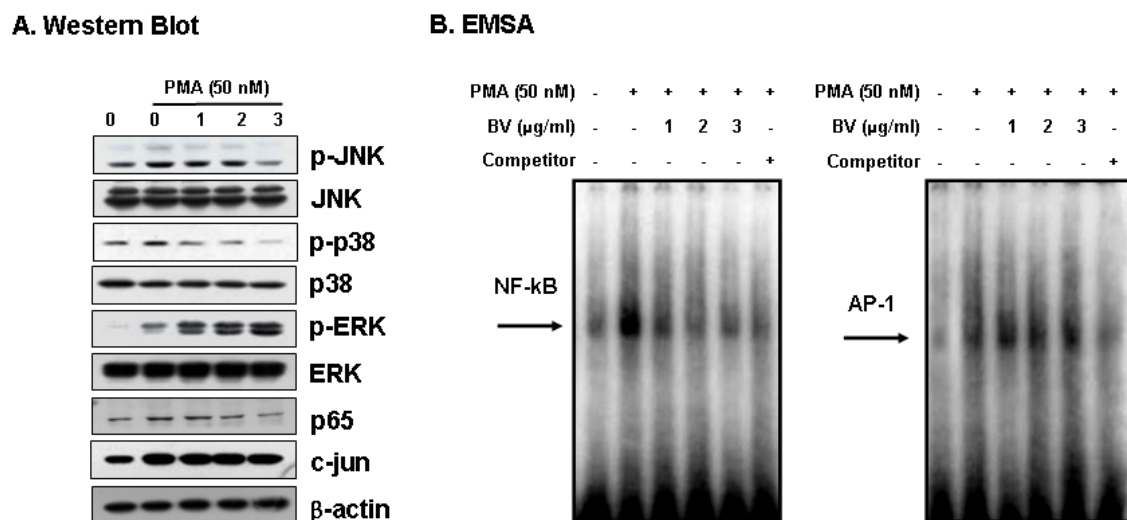


Fig 2. Effect of bee venom on PMA-induced activation of MAP kinase pathway and AP-1, NF- κ B in MCF-7