

봉독에서 분리된 melittin의 종양침투 억제효과 및 기전연구
대구가톨릭의과대학교 의용생체공학연구소: 조현지, 정윤정, 박관규, 장영채*
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**Melittin suppresses PMA-induced tumor cell invasion
through the inhibition of NF- κ B and AP-1-dependent MMP-9 expression**

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Objectives

Melittin, a major polypeptide in bee venom (BV), has been reported to suppress proliferation and induce apoptosis in cancer cells. However, the effects of melittin in preventing invasion by renal carcinoma cells are still undefined.

Materials and Methods

○ Material

Melittin and Apamin was obtained from Sigma Chemical (St. Louis, MO).

○ Methods

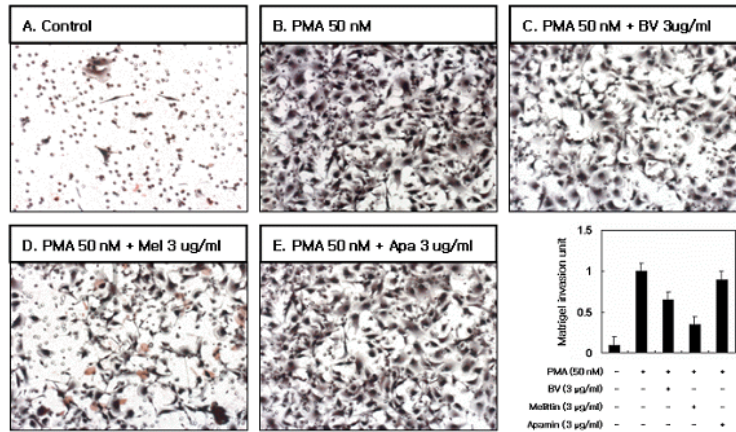
invasion assay, gelatin zymography, Western blot analysis and promoter assay.

Results

we examined the inhibitory effect of two major polypeptide in BV, melittin and apamin, on PMA-induced MMP-9 expression in Caki-1 cells. Melittin, but not apamin, suppressed MMP-9 expression. Moreover, reporter gene, electrophoretic mobility shift, and Western blotting assay showed that melittin inhibits MMP-9 gene transcriptional activity by blocking the activation of NF- κ B and AP-1 via ERK/p38 mitogen-activated protein kinase. These results suggest that melittin represents a potential anti-metastatic agent suppressing PMA-induced cancer cell invasion through the inhibition of MMP-9 expression.

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A. Invasion assay



B. Gelatin zymography assay

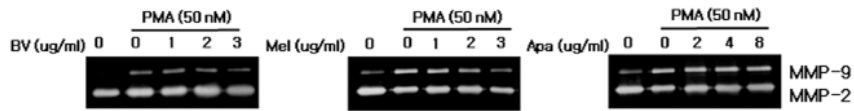
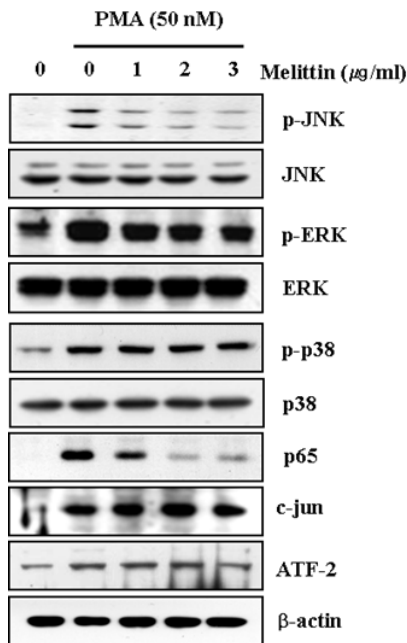
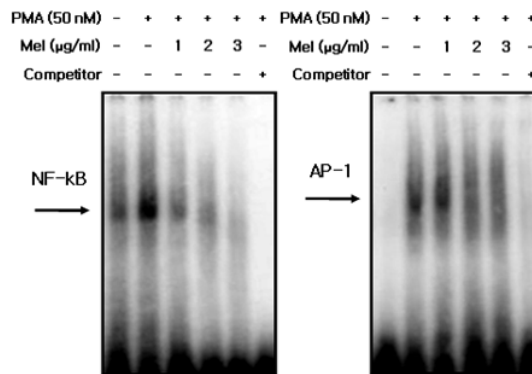


Fig 1. Effect of BV, melittin, and apamin on PMA-induced MMP-9 in Caki-1 cells.

A. Western Blotting assay



B. Electrophoretic mobility shift



C. Reporter gene assay

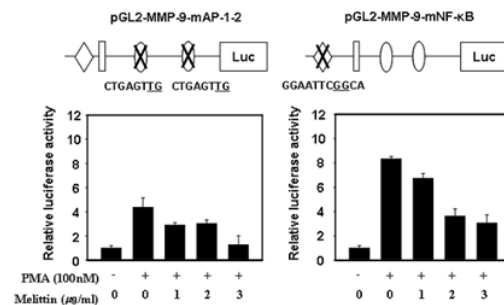


Fig 2. Effect of melittin on PMA-induced activation of MAP kinase pathway and transcription factor.