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Inhibitory Effect of 13-Butoxyberberine Bromide on Metastasis of Skin Cancer A431 Cells

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Abstract : Cancer metastasis is the major cause of cancer-related death. Therefore searching for a compound that could inhibit cancer metastasis is necessary. 13-Butoxyberberine bromide is a berberine derivative that has not been reported an anti-metastatic effect on skin cancer cells. This study aimed to investigate the anti-metastatic effect of 13-butoxyberberine bromide on skin cancer A431 cells. The effect of 13-butoxyberberine bromide on A431 cell viability was examined by MTT assay. Suppression of cell migration and invasion in A431 cells were determined by wound healing assay, transwell migration assay, and transwell invasion assay. Metastasis proteins were determined by western blotting. The results demonstrated that 13-butoxyberberine bromide decreased A431 cell viability in a dose-dependent manner. In addition, sub-toxic concentrations of 13-butoxyberberine bromide suppressed cell migration and invasion in A431 cells. In addition, 13-butoxyberberine bromide showed anti-metastatic effects by down-regulated MMP-2 and MMP-9 expression. These findings may be useful in the development of 13-butoxyberberine bromide as an anti-metastatic drug in the future.

Keywords : 13-butoxyberberine bromide, metastasis, skin cancer, MMP
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