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Berberine 經由 RAS/RAF/MEK/ERK 訊息途徑對黑色素瘤 B16F10 細胞株之影響

Berberine effect on melanoma B16F10 cells via RAS/RAF/MEK/ERK singaling pathway migration

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Berberine is a primary component of the most functional extracts of Coptidis rhizome used in traditional Chinese medicine for centuries. In many papers, we know that Berberine inhibits metastasis and proliferation in breast cancer, stomach cancer, and cervical cancer. Melanoma is the most lethal and malignant in skin cancer. In the United States, although melanoma account for only 4% of skin cancer, cause about 80% of deaths. The overall 5-year survival rate for patients who melanoma is detected early before the tumor has spread to regional lymph nodes or other organs is better. The survival rate falls to 62 percent when the disease reaches the lymph nodes and 15 percent when the disease metastasizes to distant organs. We used B16F10 the melanoma cell line because it have high migration activity. Cell viability was tested by using MTT assay, B16F10 melanoma cells were treated with 15, 30 and 60μM Berberine. After 48 hours, the proliferation of B16F10 melanoma cells were suppressed, the IC_{50} was 30μM. The migration activity of melanoma can be inhibited by Berberine via RAS/RAF/MEK/ERK metastasis pathway, and also confirmed that non-small-cell lung cancer (NSCLC) cells treated with Berberine. Nobody investigate B16F10 melanoma cells inhibits migration via RAS/RAF/MEK/ERK signal pathway. So, we investigate whether Berberine inhibits migration of B16F10 via RAS/RAF/MEK/ERK signal pathway or not. We hope that our research can make people know more about melanoma, and contribute to the treatment of melanoma skin tumors.

Keyword: B16-F10 melanoma cell, berberine, migration, RAS/RAF/MEK/ERK