

عنوان مقاله:

Monomethyl auristatin E as a potent cytotoxic small molecule for development of antibody-drug conjugates against breast cancer

محل انتشار:

چهاردهمین کنگره بین المللی سرطان پستان (سال: 1397)

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خلاصه مقاله:

Introduction & Aim: Breast cancer is a heterogeneous disease characterized by differential responses to targeted and chemotherapeutic agents. Targeted therapy using monoclonal antibodies (mAbs) conjugated to chemotherapeutic agents or toxins has become one of the top priorities in cancer therapy. Antibody-drug conjugates (ADCs) represent a new class of targeted therapy for the treatment of cancer, in which mAbs specifically deliver a chemotherapeutic agent selectively to antigen-positive tumor cells. Monomethyl auristatin E (MMAE), a highly potent microtubule inhibitor, is a common payload used for development of antibody-drug conjugates. The purpose of this study was to investigate the cytotoxic effects of MMAE on breast cancer cell lines. **Methods:** In this study, MDA-MB-468 and MDA-MB-453 cells, grown in complete DMEM medium, were treated with MMAE at various concentrations (1, 10, 100, and 1000 ng/ml), and cytotoxicity was measured after 48 and 72 hours using an MTT assay. **Results:** Our results showed that MMAE possesses dose- and time-dependent cytotoxic activities against human breast cancer cells. The morphological features of the treated cells were supportive for the cytotoxic activity of MMAE. Findings from the MTT assay showed that MMAE has a significant cytotoxicity against MDA-MB-468 and, to lesser degree, MDA-MB-453 cells. **Conclusion:** MMAE can be used as a highly cytotoxic payload for development of antibody-drug conjugates against breast cancer.

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

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