عنوان مقاله:

Arsenic Trioxide increases paclitaxel-induced apoptosis in resistant breast cancer cells

محل انتشار:

دهمین کنگره بین المللی سرطان پستان (سال: 1393)

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خلاصه مقاله:

A partial response or resistance to chemotherapeutic agents is considered as a main obstacle in treatment of patients with breast cancer. Refining taxan based treatment procedure using adjuvant or combination treatment is a novel strategy to increase the efficiency of chemotherapy. PPM1Dexpression was recently reported to modulate the recruitment of DNA repair molecules. In this study we examined the impact of arsenic trioxide on efficacy of paclitaxel-induced apoptosis in paclitaxelresistant MCF-7 cells. We investigated the expression of PPM1D and P53 in response to thiscombination treatment. Resistant cells were developed from the parent MCF-7 cell line by applying increasing concentration of paclitaxel. MTT assay applied to determine the rate of cell survival. DAPI staining using fluorescent microscopic technique was applied to study apoptotic bodies. Real-time RTPCR analysis was also applied to determine PPM1D and p53 mRNA levels. Our results revealed that combination of arsenic trioxide and paclitaxel has a synergetic effect on MCF-7/PAC resistant cells by decreasing the IC50 value from 500 to 250 ± 0.11nM. Applying arsenic trioxide also caused a significant decreases in PPM1D mRNA level ($p< 0.05$). Our findings suggest that arsenic trioxide Increases paclitaxel-induced apoptosis by down regulation of PPM1D expression. PPM1Ddependent signaling pathway can be considered as a novel target to improve the efficacy of chemotherapeutic agents in resistant breast cancer cells

کلمات کلیدی:

Combination therapy, arsenic trioxide, resistant breast cancer, taxan