عنوان مقاله:

Synergistic anticancer mechanisms of curcumol and paclitaxel in triple-negative breast cancer treatment may involve down-regulating ZBTB۷A expression via the NF-B signaling pathway

محل انتشار:

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خلاصه مقاله:

Objective(s): This study aimed to verify whether curcumol combined with paclitaxel exerted synergistic antiproliferative and proapoptotic effects in MDA-MB-۲۳۱ mammary cancer cells.Materials and Methods: The effects of different concentrations of CC, PTX, and their combination on the proliferation of MDA-MB-۲۳۱ mammary cancer cells were determined by CCK-۸ laboratory tests. Combination index (CI) was calculated using CompuSyn software. Colony formation assays, Hoechst ۳۳۲۵۸ immunofluorescence staining, and flow cytometry were carried out to observe proliferation and apoptosis in each group. The protein expression of PCNA, Bcl-۲, Bax, ZBTB۷A, p-p۶۵, and NF-ƙB p۶۵ was detected by western blotting. The xenograft tumor volume and body mass of nude mice were measured. Immunohistochemistry was used to detect the expression of PCNA , NF-B p۶۵ and ZBTB۷A. TUNEL and DAPI staining were used to detect the apoptosis of tumor cells.Results: Curcumol combined with paclitaxel exerted a significant inhibitory effect on proliferation of MDA-MB-۲۳۱ cells in the CCK-۸ laboratory test. Hoechst ۳۳۲۵۸ immunofluorescence staining, flow cytometry, TUNEL, and DAPI apoptosis staining demonstrated that cell apoptosis was the highest in the CC+PTX group in vivo and in vitro. Expression of PCNA, Bcl-۲, ZBTB۷A, p-p۶۵, and NF-B p۶۵ was lowest in the CC+PTX group, while the expression of Bax was highest. The growth of xenograft tumors in the CC+PTX group was most notably suppressed. Immunohistochemistry showed that expression of PCNA, ZBTB۷A, and NF-ƙB p۶۵ was the lowest in the CC+PTX group.Conclusion: Curcumol combined with paclitaxel exerted a synergistic antiproliferative and proapoptotic effect on triple-negative breast cancer cells.

کلمات کلیدی:

Curcumol, NF-ƙB, Paclitaxel, TNBC, ZBTB۷A