عنوان مقاله:

Adenosine A۱ Receptor Antagonist Up-regulates Casp۳ and Stimulates Apoptosis Rate in Breast Cancer Cell Line T۴۷D

محل انتشار:

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خلاصه مقاله:

Background: Adenosine receptor family, especially A۱ type is-overexpressed in breast-derived tumor cells and the P۵۳ gene is mutant in some of these cells while the casps gene is of wild type as well. The aim of this study was to evaluate the effect of the A۱ receptor function on cell programmed death or proliferation, as well as the relationship between this receptor stimulation/inhibition and caspase ۳ (casp۳) expression in T۴۷D cell line that has a mutant and non-functional P۵۳ gene. Materials and Methods: The expression of casps۳ was measured by real-time polymerase chain reaction and then flow cytometery and MTT assay were used to assess the apoptotic and proliferation cell rate after the treatment of T۴۷D cells with specific agonist N۶-cyclopentyladenosine (CPA) and antagonist ۱,۳-dipropyl-۸-cyclopentylxanthine (DPCPX) of this receptor ۲۴, ۴۸, and ۷۲ hours after treatment. Result: Our results indicated that DPCPX significantly induces apoptosis in T۴۷D cells and the rate of survival cell after the reduction of this treatment, especially ۷۲ hours after treatment. Finally, the expression of casp۳ was up-regulated by DPCPX treatment, especially in ۷۲ hours while CPA treatment had opposite results (P > ۰.۰۵). Conclusion: In general, DPCPX could up-regulate casp۳ gene expression and subsequently increase the apoptosis rate in T۴۷D cells with casp۳ expression without the

.P۵۳ gene interference. Therefore, adenosine A۱ receptor antagonists may be introduced as anti-cancer agents

کلمات کلیدی:
Receptor, Adenosine A۱, Apoptosis, Genes, Casp۳, T۴۷D Cells