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丹参酮ⅡA诱导人鼻咽癌CNE细胞凋亡

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中文摘要：目的: 探讨丹参酮ⅡA(tanshinone ⅡA,Tan ⅡA)抗人鼻咽癌CNE作用及其可能作用机制。 方法 :通过细胞形态学观察、生长曲线绘制、MTT检测以及克隆实验观察Tan ⅡA对CNE细胞增殖的影响;应用Hoechest33258和PI双染法观察Tan ⅡA对CNE细胞凋亡的影响;采用荧光分光光度计检测Tan ⅡA对CNE细胞细胞内钙及线粒体膜电位的影响;RT-PCR检测Tan ⅡA对CNE细胞Bad, MT-1A mRNA表达的影响。 结果 :Tan ⅡA能抑制CNE细胞增殖,且随Tan ⅡA剂量的增加和作用时间的延长而增强,Tan ⅡA作用CNE细胞24,48,72 h的IC_{50}分别为45.7,24.8,3.3 mg·L^{-1}。Tan ⅡA作用CNE细胞24 h后,CNE细胞出现染色质聚集等典型的凋亡形态学改变,且随Tan ⅡA剂量的增加,CNE细胞凋亡百分率逐渐增大。Tan ⅡA作用后,CNE细胞的细胞内钙升高、线粒体膜电位降低、Bad mRNA表达增加、MT-1A mRNA表达上调。 结论 :Tan ⅡA具有抗CNE作用,其诱导细胞凋亡可能与钙依赖性通路和MT-1A表达上调有关。

中文关键词：丹参酮ⅡA 肿瘤 人鼻咽癌CNE细胞 凋亡 钙依赖性通路 MT-1A

Apoptosis inducing effect of tanshinone ⅡA on human nasopharyngeal carcinoma CNE cells

Abstract: Objective : To investigate anticancer effect and potential mechanism of tanshinone ⅡA (Tan ⅡA) on human nasopharyngeal carcinoma cell line CNE cells. Method : Antiproliferative effect of Tan ⅡA on CNE cells was evaluated by morphological examination,cell growth curves,colonial assay and MTT assay. Apoptosis detection was carried out using Hoechest33258 and PI double-dyeing method. Intracellular Ca^{2+} concentration and mitochondria membrane potential were detected by fluorospectrophotometer. Bad and MT-1A transcript analysis in CNE cells was analyzed by real-time reverse transcriptase-polymerase chain reaction (RT-PCR). Result : Tan ⅡA could inhibit CNE cells proliferation in dose- and time-dependent manner. 50% inhibiting concentration of Tan ⅡA on CNE cells in 24,48,72 h was 45.7,24.8,3.3 mg·L^{-1}, respectively. Typical apoptotic morphology such as chromatin aggregation was observed in CNE cells with Tan ⅡA treated for 24 h,and the apoptotic inducing effect was in a dose-dependent manner. After treated with Tan ⅡA,intracellular Ca^{2+} concentration of CNE cells was increased,mitochondria membrane potential of the cells was decreased,relative mRNA level of Bad and MT-1A was up-regulated. Conclusion : Tan ⅡA had anticancer effect on CNE cells through apoptosis via calcineurin-dependent pathway and MT-1A downregulation.

keywords: Tanshinone ⅡA carcinoma human nasopharyngeal carcinoma cell line CNE apoptosis calcineurin-dependent pathway MT-1A

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