

抗肿瘤药物三尖杉酯碱对HeLa细胞增殖的影响及其与CenpB基因的关系

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以人宫颈癌细胞株HeLa为对象, 采用免疫印迹(Western blot)、流式细胞光度术(FCM)和间接免疫荧光-流式细胞光度术(IIF FCM)等方法, 分析HT对细胞增殖周期、凋亡等的影响, 并检测着丝粒蛋白CenpB基因表达的水平, 进一步分析它与细胞增殖的关系及HT的作用效应。结果表明, ①总的来看, 0.2 μ g/mL HT作用时间的延长带来HeLa细胞G1期缩短、S期延长的时相变化趋势, 与之相关的是G2期向G1期过渡的缓慢延迟; ②凋亡率呈现增加的趋势; ③相对于未处理的对照细胞, 0.2 μ g/mL HT的作用使CenpB蛋白表达水平降低, 只是不呈简单的时间函数关系: 12h时间点或此之前的细胞增殖和基因表达行为有一个背离曲线走向的转折。这可能是细胞周期检验点对药物诱导作用的反馈调节的体现, 而重要着丝粒结构蛋白CenpB蛋白的基因表达调节与之可能有明显的相关性。

Effects of Anti-tumor Drug Harringtonine on the Proliferation of HeLa Cell and Its Relationship with CenpB gene

Human cervix cancer cell strain HeLa as the analytic object, immunoblot (Western blot), flow cytometry (FCM) and indirect immunofluorescence-flow cytometry (IIF FCM) techniques were used to analyze the effects of anti-tumor drug harringtonine (HT) on the proliferation and apoptosis of HeLa cell, and for further exploration of the relationship between CenpB gene and cell proliferation and the reaction effect brought about by HT, the expression level of CenpB was detected. The results are as follows: ① In general, the prolonging of 0.2 μ g/mL HT treatment on HeLa cell causes the change tendencies of G1 phase shortening, S phase extending, and related to these, the transmission from G2 phase to G1 phase is postponed slowly. ② Apoptosis rate shows an increasing trend. ③ Compared to the untreated control cells, the effect of 0.2 μ g/mL HT contributes to the decrease of the expression of CenpB protein, however not a simple function relationship is given by the data: At or before the 12h time point is a turn of the behaviors of cell proliferation and gene expression, which deviates from the total tendencies of the curves. This may be the performance of the feedback regulation to the drug inducing function to cell cycle checkpoints, and the gene expression regulation of CenpB, an important centromere constitutive protein, may be related to it distinctly.

关键词

三尖杉酯碱(harringtonine (HT)); HeLa细胞(HeLa cell); 细胞增殖(cell proliferation); 着丝粒蛋白B (centromere protein B (CenpB))