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论著

硼替佐米上调fas、bcl2l12、caspase-9和caspase-3基因表达

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摘要 目的： 探讨硼替佐米诱导慢性粒细胞白血病细胞株K562细胞凋亡及新基因bcl2l12在其中的作用。方法: MTT比色法观察硼替佐米对K562细胞的生长抑制作用；Annexin-V标记和线粒体跨膜电位（Δψm）分析细胞凋亡；RT-PCR方法检测0、6、12和24 h fas、bcl2l12、bcl-2、 bim、bax、caspase-3和caspase-9基因表达变化。结果: 硼替佐米抑制K562细胞生长呈时间和剂量依赖性，24 h和48 h半数抑制浓度分别为161.41 nmol/L和96.33 nmol/L；硼替佐米诱导K562细胞凋亡，12 h Annexin-V阳性细胞就开始增高，并呈时间依赖性，Δψm减低；RT-PCR显示fas、bcl2l12、caspase-3和caspase-9表达增高，但bcl-2、bim和bax表达无明显改变。结论: 硼替佐米可以抑制K562生长并诱导凋亡，上调fas、bcl2l12，使线粒体膜电位下降,激活caspase-9和caspase-3基因，促使DNA发生断裂可能是其诱导凋亡的机制之一。

关键词 硼替佐米 K562细胞 基因,bcl2l12； 半胱氨酸天冬氨酸蛋白酶类

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Up-regulation of mRNA expressions of fas, bcl-2, bim, bax, caspase-3, caspase-9, and bcl2l12 in K562 treated with bortezomib

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Abstract

<FONT face=Verdana>AIM: To detect the treatment of K562 leukemia cells with bortezomib altering the expression of genes fas, bcl-2, bcl2l12, bim, bax, caspase-9 and caspase-3.METHODS: MTT assay was used to detect the inhibition of proliferation. Apoptosis was detected by Annexin-V staining and mitochondrial transmembrane potential (Δψm). RT-PCR was used to analyze the mRNA expressions of fas, bcl-2, bcl2l12, bim, bax, caspase-3 and caspase-9.RESULTS: Bortezomib caused a time- and dose-dependent inhibition of cell proliferation and IC50 of 24 h and 48 h were 161.41 nmol/L and 96.33 nmol/L, respectively. At the concentration of 104 nmol/L, bortezomib induced apoptosis in a time-dependent manner, including increasing annexin-V positivity and decreasing the Δψm. RT-PCR showed that bortezomib up-regulated the mRNA expression of fas, bcl2l12, caspase-9 and caspase-3, but mRNA expressions of bcl-2, bim and bax did not changed obviously.CONCLUSION: Bortezomib inhibits the proliferation of K562 and induces apoptosis, in which fas, bcl2l12, caspase-9 or caspase-3 gene is one of the main genes taking part in.</FONT>

Key words Bortezomib K562 cells Genes bcl2l12 Caspases

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