

论文

Peroxynitrite诱导下咽癌细胞凋亡与PDCD4基因活性相关

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摘要:

目的 探讨peroxynitrite (ONOO-)作用于下咽癌细胞过程中PDCD4基因表达的变化。**方法** 以体外培养的下咽癌FaDu细胞系为实验材料,不同浓度的ONOO-作用于FaDu细胞,噻唑蓝(MTT)比色法测定细胞生存率,采用Ho.33342/PI荧光双染进行形态学观察,RT-PCR及Western-blot检测PDCD4 mRNA水平及蛋白表达的变化,评价PDCD4基因在ONOO-诱导FaDu细胞凋亡过程中的作用。结果 ONOO-(50、100、200 μmol/L)作用FaDu细胞24h,能够显著抑制细胞增值,并诱导细胞程序性死亡,同时引起PDCD4 mRNA水平显著上调,PDCD4蛋白表达显著增加。**结论** PDCD4基因可能在ONOO-诱导下咽癌细胞生长的信号转导调节通路中起到关键作用。

关键词: Peroxynitrite; PDCD4; FaDu细胞; 细胞程序性死亡

Peroxynitrite-induced apoptosis in FaDu attributed to PDCD4 activity

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Abstract:

Objective To investigate the change of PDCD4 gene expression in hypopharyngeal squamous carcinoma cell line, i.e. FaDu cells, in response to peroxynitrite (ONOO-). **Methods** FaDu Cells were cultured in vitro and subjected to different concentrations of ONOO-. The viability of FaDu cells in response to ONOO- was measured by MTT assay. The morphological changes were monitored by Ho.33342/PI double staining to detect whether or not the cells yielded programmed cell death to such toxigen. Meanwhile, the changes in the expression of PDCD4 gene at both mRNA and protein levels were measured by RT-PCR and Western-blot simultaneously. **Results** Direct exposure of FaDu cells to ONOO- was able to block the cell proliferation, which was further confirmed via the apoptotic pathway. Under such an oxidative stress, the expression of PDCD4 gene was apparently increased at both mRNA and protein levels. **Conclusions** The present study demonstrates that PDCD4 gene may play an important role in ONOO- induced programmed cell death in FaDu cells, which may offer a new target for the treatment of hypopharyngeal squamous carcinoma.

Keywords: Peroxynitrite; PDCD4 gene; FaDu cells; Programmed cell death

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