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COX-2选择性抑制剂诱导人喉癌Hep-2细胞凋亡及自噬的体外研究

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COX-2 specific inhibitor induced apoptosis and autophagy in Hep-2 cells *in vitro*

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摘要/Abstract

摘要： **目的** 初步探讨环氧化酶-2（COX-2）选择性抑制剂塞来昔布对人喉癌Hep-2细胞诱导凋亡的作用及可能的机制并观察其引起的自噬现象。**方法** 用四甲基偶氮唑盐（MTT）法，检测塞来昔布以不同浓度（0～100μmol/L）及作用时间（0～72h）处理Hep-2细胞后细胞增殖活力的

变化；流式细胞仪检测不同浓度及时间塞来昔布处理后Hep-2细胞的凋亡率；透射电镜观察塞来昔布处理后的细胞超微结构改变；Western blotting检测凋亡诱导因子（AIF）移位改变。**结果** 塞来昔布呈时间和浓度依赖性地抑制Hep-2细胞的增殖；诱导喉癌细胞凋亡并呈浓度依赖性；药物处理72h与48h相比凋亡率的改变无统计学意义（$P>0.05$），药物处理72 h后在电镜下观察到自噬现象；AIF蛋白逐渐从线粒体释放、移位到细胞核。**结论** 塞来昔布可诱导喉癌细胞凋亡，其机制涉及非caspase依赖的AIF机制，Hep-2细胞产生的自噬可能会对抗塞来昔布诱导的凋亡。

关键词: Hep-2细胞, 自噬, 塞来昔布, 环氧化酶-2, 凋亡

Abstract: Objective To investigate the ability of celecoxib inducing apoptosis in Hep-2 cells and its possible mechanisms, as well as to observe the autophagy of the cells. **Methods** MTT was used to observe the proliferation of Hep-2 cells treated with celecoxib at different doses (0-100 μmol/L) and for different hours(0-72 hours). Cell ultrastructure was observed by electron microscope. Hep-2 cells were treated with celecoxib at different doses and for different hours and then the cell apoptosis rate was measured by flow cytometry. AIF expression was examined by Western blotting. **Results** Celecoxib induced a time- and dose-dependent growth inhibition in Hep-2 cells. It also induced the apoptosis of Hep-2 cells in a dose-dependent manner. No significant difference existed in the apoptosis rate of the cells treated by celecoxib for 72 and 48 hours($P>0.05$). Autophagy was observed in Hep-2 cells treated by celscoxib for 72 hours. Celecoxib showed the ability of transporting AIF from mitochondria to cell nucleus. **Conclusion** Celecoxib can induce cell apoptosis, in which AIF mechanism may be involved. Autophagy induced by celecoxib may protect Hep-2 cells against apoptosis.

Key words: Hep-2 cells, Apoptosis, Celecoxib, Autophagy, Cyclooxygenase-2

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