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幽门螺杆菌上调Bcl-xL基因的表达促进胃癌BGC-823细胞的增殖*

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Upregulation of Bcl-xLmRNACellular Expression by Helicobacter pylori Leads to the Proliferation of Gastric Cancer BGC-823 Cells

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摘要

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全文: PDF (674 KB) HTML (1 KB) 输出: BibTeX | EndNote (RIS) 背景资料

摘要 目的：探讨幽门螺杆菌（H. pylori）对胃癌细胞BGC-823 Bcl-xL基因表达的影响。方法：分别用东、西方型H.pylori裂解液处理胃癌细胞，MTT法检测细胞增殖情况，荧光定量PCR法检测细胞Bcl-xL基因mRNA表达水平的变化；Bcl-xL短发夹RNA（short hairpin，shRNA）质粒沉默Bcl-xL基因，MTT法检测胃癌细胞增殖能力。结果：H. pylori 裂解液处理胃癌细胞24 h后，与对照组相比，处理组均出现细胞的增殖（P 均<0.01），并且东亚型处理组的增殖作用比西方型处理组更明显（P<0.01）；Bcl-xL基因的mRNA表达水平也均出现上调（P 均<0.01），东亚型处理组的上调水平比西方型处理组更明显（P<0.01）；Bcl-xL shRNA质粒转染胃癌细胞BGC-823后，与对照组、Bcl-xL shRNA阴性对照组相比，细胞增殖受到抑制。结论：H.pylori的生物活性物质通过上调Bcl-xL基因的表达促进胃癌细胞BGC-823的增殖，东亚型H. pylori的生物活性作用比西方型强。Bcl-xL shRNA质粒在一定程度上可抑制胃癌细胞BGC-823的增殖。

关键词： 细胞增殖 Bcl-xL 幽门螺杆菌 Bcl-xL shRNA质粒 细胞增殖 CagA蛋白分型 Bcl-xL Bcl-xL shRNA质粒 CagA蛋白分型

Abstract: Abstract Objective: This study aims to investigate the effect of Helicobacter pylori on the expression of the Bcl-xL gene and its potential effect on human gastric cancer BGC-823 cell lines. Methods: Human gastric cancer BGC-823 cell lines were treated with extracts from East Asian-type andWestern-type H. pylori. Cell proliferation was evaluated by MTT assay. The mRNA level of Bcl-xL was detected by real-time quantitative PCR. The Bcl-xL-mediated RNA interference technique was employed to inhibit Bcl-xL gene expression and BGC-823 cell proliferation. The mRNA level, Bcl-xL protein expression, and inhibitory percentage of BGC-823 cells were detected by RT-PCR, western blot, and MTT assay, respectively. Results: The proliferation of BGC-823 cells treated with H. pylori extract was observed after 24 hours (P < 0.01) in relation to the control group. The enhanced cellular proliferation in the East Asian type was higher than that in the Western type (P < 0.01). The expression of Bcl-xL mRNA in the groups treated with H. pylori extract was significantly elevated (all P < 0.01) compared with the control group. Statistical difference in Bcl-xL mRNA expression was also found between the East Asian type group and theWestern type group (P < 0.01). Bcl-xL shRNA significantly reduced Bcl-xL mRNA and protein expressions as well as BGC-823 proliferation. Conclusion: The biologically active elements in H. pylori extract induced the proliferation of gastric epithelial cells by upregulating the expression of Bcl-xL mRNA in human gastric cancer cells. The East Asian-type H. pylori showed stronger influence on cell proliferation and Bcl-xL mRNA expression compared with the Western type. This result implies that the East Asian-type H. pylori had much more biological activity than the Western type. Moreover, Bcl-xL shRNA inhibited Bcl-xL expression and BGC-823 cell proliferation.

Key words: Helicobacter pylori Cell proliferation Bcl-xL Bcl-xL shRNA plasmid Helicobacter pylori Type of CagA Cell proliferation Bcl-xL Bcl-xL shRNA plasmid Type of CagA

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