

hsp27基因对鼻咽癌细胞增殖的作用及其机制

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Association of hsp27 Expression with Nasopharyngeal Carcinoma Cell Proliferation

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摘要 目的

探讨hsp27基因对鼻咽癌细胞增殖的影响及其机制。方法利用实时定量PCR检测NP460(正常鼻咽部上皮细胞株)、CNE2(低分化鼻咽癌细胞株)及S18(CNE2的高转移亚克隆)的hsp27转录水平,利用慢病毒转染技术在hsp27转录水平较低的CNE2中过表达hsp27,利用小干扰RNA技术抑制S18细胞内的hsp27,用MTT技术检测过表达或抑制hsp27后细胞增殖速率的变化,同时检测转录因子NF-κB的转录水平的变化,分析hsp27影响鼻咽癌细胞增殖速率的可能机制。结果(1)三种细胞株中的内源性hsp27水平为S18>CNE2>NP460,差异具有统计学意义。(2)在CNE2细胞中过表达hsp27基因后,细胞的增殖速率明显加快,NF-κB转录水平明显上调。(3)抑制S18细胞内的hsp27基因后,细胞的增殖速率明显减缓,NF-κB转录水平明显下调。结论hsp27基因可能通过调节NF-κB信号通路而对鼻咽癌细胞发挥明显的促增殖作用,可设计针对hsp27基因的抗鼻咽癌分子治疗策略。

关键词: hsp27; NF-κ B; 鼻咽癌; 增殖; 机制

Abstract: Objective

To study the role of hsp27 gene in the proliferation of nasopharyngeal carcinoma (NPC), and further explore the underlying mechanism. Methods The transcription levels of hsp27 in NP460(normal nasopharyngeal epithelial cell lines), CNE2 (low differentiated NPC cell line) and S18 (highly migratory subclone of CNE2) cell lines were determined by Real Time PCR. Over-expression of hsp27 in CNE2 cells (with low endogenous hsp27 level) was performed by lentivirus infection, and small interference RNA technique was employed to decrease hsp27 in S18 cells (with high endogenous hsp27 level). Then MTT experiment was used to evaluate the proliferation of the hsp27-overexpressed and -inhibited cells. The transcription level of nuclear factor kappa B (NF-κB) was measured as well. Results (1) the endogenous hsp27 level of three cell lines showed significant difference and the order was S18>CNE2>NP460. (2) The proliferation and NF-κB level of CNE2 cells was significantly upregulated with hsp27 over-expression. (3) The growth rate of S18 slowed significantly concurrent with down-regulation of NF-κB after inhibition of hsp27. Conclusion hsp27 plays an important role in the proliferation of NPC cells which may mediate by NF-κB signal pathway. The hsp27 gene would be a potential molecular target for anti-NPC therapy.

Key words: hsp27; NF-κ B; nasopharyngeal carcinoma; proliferation; mechanism

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