

论著

不同辐射抗拒鼻咽癌细胞微小RNA差异表达的研究

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摘要 目的: 在验证鼻咽癌 (nasopharyngocarcinoma, NPC) 细胞CNE-1和CNE-2不同辐射抗拒性的基础上, 探索微小RNA(miRNA)在CNE-1和CNE-2中的表达差异。方法: 通过观察X线照射对CNE-1和 CNE-2 细胞克隆形成数目的影响, 利用SigmaPlot 软件进行分析及线性二次模型拟合存活曲线, 比较CNE-1和CNE-2 细胞剂量存活曲线及其生物学参数; 采用Paraflo microfluidic microRNA芯片检测, 用激光扫描器收集杂交的图像, 经LOWESS 滤波器规范信号后分析数据差异, 根据Targetscan3.1数据库资料

(<http://www.targetscan.org>), 预测CNE-1和CNE-2细胞microRNA差异表达与NPC放射敏感性差异的关系。结果: 发现在CNE-1和CNE-2细胞中miRNA的差异表达, 即与CNE-2细胞比, 在检测的326个microRNA中, CNE-1细胞中有20个miRNA上调, 13个miRNA下调, 其中检测量的绝对值在2 000以上且两者相差在3倍以上的miRNA有hsa-miR-152、hsa-miR-7、hsa-miR-205和hsa-miR-572; 分析结果提示明显差异表达的miRNA与放疗敏感性密切相关。结论: 不同辐射抗拒NPC细胞株CNE-1和CNE-2细胞的microRNA的表达有差异; 差异表达的miRNA与放疗敏感有关。

关键词 [鼻咽肿瘤](#); [CNE-1细胞](#); [CNE-2细胞](#); [microRNA](#); [辐射](#)

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Abstract

AIM: To discuss the discrepancy of microRNA (miRNA) in nasopharyngeal carcinoma (NPC) cells CNE-1 and CNE-2 on the basis of validating their different radioresistance. METHODS: Following the effect of X ray on the clones of CNE-1 and CNE-2 cells, the dose-survival curve and biological characteristics of CNE-1 and CNE-2 cells were determined by SigmaPlot software and the linear quadratic model of survival curves analysis. MicroRNAs were detected by Paraflo microfluidic microRNA chip, hybridization images collected using a laser scanner and normalizing the signals using a LOWESS filter. The relationship between the discrepancy of NPC radiosensitivity and the expression of microRNA was predicted according to Targetscan3.1 database (<http://www.targetscan.org>) after analyzing the data. RESULTS: Compared to CNE-2 cells, 20 microRNAs were gain-of-function and 13 microRNAs loss-of-function in CNE-1 cells among 326 detected microRNAs. 4 miRNAs that one detective value was more than 2000 and 3 folds than the other were hsa-miR-152, hsa-miR-7, hsa-miR-205 and hsa-miR-572. Data showed that radio-sensitivity was relative to the distinct discrepancy of miRNAs. CONCLUSION: The discrepancy of miRNAs is presents in different radioresistant NPC cell lines and related to radiosensitivity.

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