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论著

siRNA抑制DNA-PKcs表达及对HeLa细胞增殖的影响

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摘要 背景与目的： 建立抑制DNA-PKcs表达的细胞模型，以此探讨DNA-PKcs的功能。材料与方法：构建DNA-PKcs的siRNA抑制表达载体，利用Lipofectamine介导，转染HeLa细胞，筛选稳定表达的转化克隆。Western blot检测DNA-PKcs表达。通过细胞生长速度检测细胞辐射敏感性变化。 结果： 设计了作用于DNA-PKcs不同位点的3条siRNA，并构建表达质粒，转染HeLa细胞，获得了3个稳定转化克隆，Western blot分析表明其DNA-PKcs表达受到明显抑制，细胞对γ射线和紫外线的敏感性增加，接种裸鼠后的肿瘤生长速度减慢。 结论： 成功建立了DNA-PKcs表达抑制细胞模型，并且发现DNA-PKcs表达抑制后除影响细胞的辐射敏感性外，还可能与肿瘤细胞增殖有关。

关键词 DNA-PKcs； RNA干扰技术； 辐射敏感性； 细胞增殖

Inhibition of DNA-PKcs by siRNA and Its Effect on the Growth of HeLa Cells

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Abstract BACKGROUND & AIM: The cell model of suppressed DNA-PKcs expression by siRNA was constructed and used to study the function of DNA-PKcs. MATERIAL AND METHODS: DNA-PKcs siRNA expression vectors were constructed and HeLa cells were transfected by lipofectamine. Western blot was used to measure the expression of DNA-PKcs and the rate of growth of cells was used to analyze the changes of radiosensitivity. RESULTS: Three stable transfectants were selected from the DNA-PKcs siRNA transfected HeLa cells. Western blot analysis indicated that the expression of DNA-PKcs was suppressed by the siRNA. The sensitivity of cells to UV radiation and ionizing radiation was markedly increased. The growth of tumor cells was inhibited. CONCLUSION: We successfully established the cell model of suppressed DNA-PKcs expression by siRNA. The inhibition of DNA-PKcs could influence the radiosensitivity and growth of tumor cells. DNA-PKcs; siRNA; radiosensitivity; cell proliferation

Keywords DNA-PKcs siRNA radiosensitivity cell proliferation

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