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基础研究

脱氧胞苷激酶对HeLa细胞放化疗敏感性的影响

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摘要：

目的：研究脱氧胞苷激酶（DCK）对人宫颈癌细胞HeLa药物敏感性与辐射敏感性的影响，为宫颈癌的基因治疗提供理论依据。方法：采用FuGENE 6转染HeLa细胞构建细胞模型，实验分为空白对照组、空载体阴性对照组及DCK基因沉默（siRNA）组，实时荧光定量PCR及Western blotting检测转染前后DCK mRNA及蛋白的表达变化，细胞计数法检测细胞的增殖情况，MTT法检测细胞对阿糖胞苷（AraC）的药物敏感性，克隆形成实验检测细胞的辐射敏感性。结果：与空白对照组及阴性对照组比较，siRNA转染HeLa细胞后DCK mRNA及蛋白表达水平明显降低（P<0.05）；3组细胞生长曲线无明显差异；siRNA组HeLa细胞对AraC药物的敏感性降低，辐射敏感性增高(P<0.05)。结论：抑制DCK基因表达可以降低宫颈癌细胞对药物的敏感性，增强辐射敏感性。

关键词： 脱氧胞苷激酶；HeLa细胞；药物敏感性；辐射敏感性

Effects of deoxycytidine kinase on sensitivity to radiotherapy and chemotherapy in HeLa cells

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Abstract:

To study the effects of deoxycytidine kinase (DCK) on drug sensitivity and radiosensitivity of human cervical carcinoma cell line HeLa and to provide theoretical basis for gene therapy of cervical carcinoma. Methods FuGENE 6 liposome was used to transfect HeLa and establish RNAi models,the cells were divided into control,empty-vector and DCK-siRNA group,the expressions of DCK mRNA and protein before and after transfection were detected by quantitative real-time PCR and Western blotting,the abilities of proliferation were measured by cell counting,the drug sensitivity to cytarabine （AraC） was determined by MTT assay,the clonogenic formation test was used to assess the radiosensitivity.Results Compared with control group and empty-vector group, the expressions of DCK mRNA and protein in siRNA group were significantly decreased (P<0.05).There was no significant difference of growth curve among three groups.The drug sensitivity to AraC in siRNA group was decreased,while the radiosensitivity was increased (P<0.05).Conclusion Inhibition of DCK could reduce the drug sensitivity and increase the radiosensitivity in human cervical carcinoma cells.

Keywords: deoxycytidine kinase;HeLa cells;drug sensitivity;radiosensitivity

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