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辐射诱导溶瘤腺病毒联合放疗对宫颈癌细胞HeLa S3的作用效果

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李笑梅 王海波 黄建

上海健康职业技术学院 生物化学教研室，上海 200237；上海交通大学医学院 生物化学与分子生物学教研室，上海 200025;上海交通大学医学院 生物化学与分子生物学教研室，上海 200025;上海交通大学医学院 生物化学与分子生物学教研室，上海 200025

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摘要：

目的：构建受辐射诱导的EGR-1启动子调控的携带人TRAIL基因的新型溶瘤腺病毒Ad-EGR-TRAIL，研究其联合放疗对宫颈癌细胞株HeLa S3的杀伤效果。 方法： 构建重组腺病毒Ad-EGR-TRAIL，用腺病毒Ad-GFP检测对HeLa S3细胞的感染效率。CCK-8法检测Ad-EGR-TRAIL组、单纯放疗组以及Ad-EGR-TRAIL联合放疗组对HeLa S3细胞的杀伤效应，同时观察它们对人正常宫颈细胞的作用。 结果： 成功构建腺病毒Ad-EGR-TRAIL，当MOI为100时，HeLa S3细胞的腺病毒感染效率最高。单纯Ad-EGR-TRAIL或放疗对HeLa S3细胞增殖的抑制率分别为（8.07±3.02）%和（23.02±4.03）%，Ad-EGR-TRAIL联合放疗对HeLa S3细胞增殖的抑制率达（79.77±9.15）%；同样的处理对正常宫颈细胞无明显抑制作用。 结论： Ad-EGR-TRAIL联合放疗对宫颈癌细胞HeLa S3有显著的杀伤作用。

关键词：TRAIL 腺病毒 基因疗法 放射治疗 凋亡

Effect of radiation-induced oncolytic adenovirus combined with chemotherapy on cervical cancer HeLa S3 cells

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LI Xiao-mei WANG Hai-bo HUANG Jian

Department of Biochemistry, Shanghai Health Vocational and Technical College, Shanghai 200237, China; Department of Biochemistry and Molecular Biology, Shanghai Jiaotong University School of Medicine, Shanghai 200025, China;Department of Biochemistry and Molecular Biology, Shanghai Jiaotong University School of Medicine, Shanghai 200025, China;Department of Biochemistry and Molecular Biology, Shanghai Jiaotong University School of Medicine, Shanghai 200025, China

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Abstract:

Objective : To construct a new radiation-induced, EGR-1 promotor-regulated, human TRAIL gene containing oncolytic adenovirus Ad-EGR-TRAIL, and to investigate the cytotoxicity effect of Ad-EGR-TRAIL combined with chemotherapy on cervical cancer HeLa S3 cells. Methods: Recombinant adenovirus Ad-EGR-TRAIL was constructed. HeLa S3 cells were infected with Ad-GFP, and infection efficiency was observed. The cytotoxicity effect of Ad-EGRTRAIL, radiotherapy (RAD), and Ad-EGR-TRAIL+RAD on HeLa S3 cells, as well as on normal human cervical cells, was examined by CCK-8 method. Results: Recombinant adenovirus Ad-EGR-TRAIL was successfully constructed. Ad-EGR-TRAIL showed the highest infection efficiency at MOI=100 in HeLa S3 cells. The inhibitory rates of HeLa S3 cells were (8.07±3.02)% and (23.02±4.03)% when Ad-EGR-TRAIL or RAD was used alone; however, the inhibitory rate reached (79.77±9.15)% when Ad-EGR-TRAIL and RAD were used in combination; and normal cervical cells did not significantly respond to the combination Ad-EGR-TRAIL and RAD therapy. Conclusion: Ad-EGR-TRAIL combined with chemotherapy can significantly kill cervical cancer HeLa S3 cells.

Keywords:TRAIL adenovirus gene therapy radiotherapy apoptosis

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