山东大学学报(医学版) 2011, 49(1) 31- DOI: ISSN: 1671-7554 CN: 37-1390/R

论文

Bcl-2shRNA稳定转染联合γ射线对胃癌SGC-7901细胞凋亡的影响

王宁宁，沈方臻，林明刚，于丽，姚如永

青岛大学医学院附属医院肿瘤科，山东 青岛 266003

摘要：

目的 观察Bcl-2shRNA稳定转染联合γ线照射对胃癌细胞SGC-7901凋亡的影响。方法 构建针对Bcl-2基因的干扰质粒pGPH1/GFP/Neo，经脂质体介导转染SGC 7901细胞，G418筛选稳定表达的细胞株，γ线照射后形成4组细胞,分别命名为SGC-7901(A组)、照射/SGC-7901(B组)、Bcl-2shRNA/SGC-7901(C组)、照射/ Bcl-2shRNA/SGC-7901(D组)。CCK 8检测细胞增殖，AO/PE观察细胞凋亡，流式细胞仪检测细胞凋亡，Western blot测定Bcl 2蛋白表达量的改变。结果 Bcl-2shRNA、照射均可抑制Bcl-2蛋白表达，且二者有协同作用，差异有统计学意义（P＜0.05）；D组细胞生长慢于B组、C组细胞，B、C、D组细胞增殖抑制率分别为(27.00±5.27)%、(30.10±6.49)%、(98.40±11.35)%。A、B、C、D组细胞凋亡率分别为（3.80±0.22）%、（20.80±4.15)%、（23.20±4.34）%、（92.90±25.90）%，差异有统计学意义（P＜0.05）。结论 Bcl-2基因siRNA干扰联合γ线照射可协同抑制SGC-7901细胞中Bcl-2的表达，诱导细胞凋亡。

关键词： 胃癌细胞；B细胞淋巴瘤/白血病 2；RNA干扰；细胞凋亡；照射

Influence of stable transfection of bcl-2shRNA combined with γ irradiation on apoptosis of the gastric carcinoma cell line SGC-7901

WANG Ning-ning, SHEN Fang-zhen, LIN Ming-gang, YU Li, YAO Ru-yong

Department of Oncology, Affiliated Hospital of Medical College of Qingdao University, Qingdao 266003, Shandong, China

Abstract:

Objective To observe the effect of bcl-2 gene-specific RNA interference combined with γ irradiation on apoptosis and radiosensitivity of the gastric carcinoma cell line SGC7901. Methods The recombinant eukaryotic expression vector pGPH1/GFP/Neo designed to target the bcl-2 gene was transfected into SGC7901 cells by lipofectamin. Stable positive clones were selected with G418. After γ irradiation, the cells were divided into 4 groups: SGC-7901（group A）,irradiation/SGC-7901（group B）,Bcl-2shRNA/SGC-7901（group C） and irradiation/Bcl 2shRNA/SGC-7901（group D）.Cell proliferation was detected by CCK-8.Cell apoptosis was observed by AO/PE. The apoptosis rate was determined by flow cytometry. Expression of bcl-2 was determined by Western blot, and compared between transfection cells and non-transfection cells. Results Western blot analysis indicated that expression of bcl-2 was suppressed by shRNA and irradiation, and they had a synergetic effect. The growth of cells in group D was obviously slower than that in the other groups(P＜0.05). Cell inhibitory rates in groups B, C and D were (27.00±5.27)%, (30.10±6.49)% and (98.40±11.35)%, respectively. Apoptosis rates in groups A, B, C and D were（3.80±0.22)%,（20.80±4.15)%, （23.20±4.15）% and （92.90±25.90）%, respectively（P＜0.05）. Conclusions Bcl-2 gene suppression by RNAi and irradiation can induce cell apoptosis, co-inhibit expression of bcl-2, and obviously increase radiosensitivity in the human gastric cell line.

Keywords: Gastric carcinoma cells; B cell lymphoma/lewkmia 2; RNA interference; Apoptosis; Irradiation

收稿日期 2010-10-13 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者: 沈方臻（1962- ），女，副主任医师，主要从事肿瘤生物治疗及放化疗研究。 E-mail:shenfangzhen@163.com

作者简介: 王宁宁（1983- ），女，硕士研究生，主要从事肿瘤放化疗及生物治疗研究。

作者Email:

参考文献：

本刊中的类似文章