535~539.MAGE-A9对人乳腺癌MDA-MB-231细胞中P53转录活性及功能的影响[J].吕伟华,桑梅香,王彬,于凡,单保恩.中国肿瘤生物治疗杂志,2013,20(5)

MAGE-A9对人乳腺癌MDA-MB-231细胞中P53转录活性及功能的影响

点此下载全文

吕伟华 桑梅香 王彬 于凡 单保恩

河北医科大学 第四医院 科研中心，河北 石家庄 050011;河北医科大学 第四医院 肿瘤研究所，河北 石家庄 050011;河北医科大学 第四医院 肿瘤研究所，河北 石家庄 050011;河北医科大学 第四医院 科研中心，河北 石家庄 050011;河北医科大学 第四医院 科研中心，河北 石家庄 050011；河北省卫生厅科研基金资助项目(No. 20100120)
；河北省自然科学基金资助项目(No. H2012206077)
河北医科大学 第四医院 肿瘤研究所，河北 石家庄 050011

基金项目：河北省卫生厅科研基金资助项目（No. 20100120）；河北省自然科学基金资助项目（No. H2012206077）

DOI：10.3872/j.issn.1007-385X.2013.05.005

摘要：

目的：探讨黑素瘤相关抗原-A9（melanoma-associated antigen，MAGE-A9）对人乳腺癌细胞中P53转录活性及功能的影响。 方法：通过LipofectamineTM 2000体外转染质粒pcDNA3.0、pcDNA3.0-p53、pCMV6-MAGE-A9 和pcDNA3.0-p53/MAGE-A9至人乳腺癌MDA-MB-231细胞，RT-PCR和Western blotting检测细胞中 p21WAF1 mRNA和蛋白的表达，荧光素酶报告基因分析检测细胞中 p21WAF1 启动子介导的荧光素酶表达活性，MTT法检测转染不同质粒对MDA-MB-231细胞增殖的影响。 结果： 转染pcDNA3.0-p53/MAGE-A9组MDA-MB-231细胞中 p21WAF1 mRNA和蛋白表达水平均明显低于pcDNA3.0-p53组\[(0.15±0.01) vs (0.18±0.02)，(0.03±0.00) vs (0.06±0.01)；均P<0.05\]。转染pcDNA3.0-p53质粒可以增强MDA-MB-231细胞中 p21WAF1 启动子介导的荧光素酶的表达\[(58.56±3.47) vs (1.00±0.12)，P<0.01\]，转染pcDNA3.0-p53/MAGE-A9后，MDA-MB-231细胞中 p21WAF1 启动子介导的荧光素酶的表达较转染pcDNA3.0-p53组明显降低\[(22.02±4.91) vs (58.56±3.47)，P<0 05\]。与pcDNA3.0组相比，pcDNA3.0-p53组MDA-MB-231细胞增殖率明显明显降低\[(228.89±22 39)% vs (337.23± 23.67)%，P<0.05\]；而pcDNA3.0-p53/MAGE-A9组MDA-MB-231细胞增殖率明显高于pcDNA3.0-p53组\[(291.51±5 91)% vs (228.89±22.39)%，P<0.05\]。 结论： MAGE-A9可抑制MDA-MB-231细胞中P53的转录活性及细胞增殖。

关键词：黑素瘤相关抗原-A9 P53 乳腺癌 转录活性 MDA-MB-231细胞 荧光素酶报告基因分析

Effect of melanoma-associated antigen-A9 on transcriptional activity and function of P53 in human breast cancer MDA-MB-231 cells

Download Fulltext

Lv Weihua Sang Meixiang Wang Bin Yu Fan Shan Baoen

Research Center, Fourth Hospital of Hebei Medical University, Shijiazhuang 050011, Hebei, China;Institute of Tumor Research, Fourth Hospital of Hebei Medical University, Shijiazhuang 050011, Hebei, China;Institute of Tumor Research, Fourth Hospital of Hebei Medical University, Shijiazhuang 050011, Hebei, China;Research Center, Fourth Hospital of Hebei Medical University, Shijiazhuang 050011, Hebei, China;Research Center, Fourth Hospital of Hebei Medical University, Shijiazhuang 050011, Hebei, China;Institute of Tumor Research, Fourth Hospital of Hebei Medical University, Shijiazhuang 050011, Hebei, China

Fund Project:Project supported by the Scientific Research Foundation of Health Bureau of Hebei Province (No. 20100120), and the Natural Science Foundation of Hebei Province (No. H2012206077)

Abstract:

Objective : To explore the effect of melanoma-associated antigen (MAGE)-A9 on the transcriptional activity and the function of P53. Methods: Plasmids pcDNA3.0, pcDNA3.0-p53 and pCMV6-MAGE-A9 were transfeced in vitro into human breast cancer MDA-MB-231 cells using LipofectamineTM2000. The expressions of p21WAF1 mRNA and protein in MDA-MB-231 cells were analyzed by RT-PCR and Western blotting. Luciferase reporter assay was performed to determine the luciferase activity induced by p21WAF1 promoter in MDA-MB-231 cells. MTT assay were adopted to explore the effect of different plasmids on the cell proliferation. Results: The expression of p21WAF1 both in mRNA and protein levels was decreased in pcDNA3.0-p53/MAGE-A9 group, compared with pcDNA3.0-p53 group (\[0.15±0.01\] vs \[0.18±0 02\], \[0.03±0.00\] vs \[0.06±0.01\], P<0.05). The luciferase activity induced by p21WAF1 promoter was remarkably increased in MDA-MB-231 cells transfected with plasmid pcDNA3.0-p53 (\[58.56±3.47\] vs \[1.00±0 12\], P<0 01). After transfected with pcDNA3.0-p53/MAGE-A9, the luciferase activity induced by p21WAF1 promoter in MDA-MB-231 cells was significantly reduced compared with that in pcDNA3.0-p53 group (\[22.02±4.91\] vs \[58.56±3.47\], P<0 05). Compared with pcDNA3.0 group, the proliferation rate were significantly decreased in pcDNA3.0-p53 group (\[228.89±22.39\]% vs \[337.23±23.67\]%, P<0.05), while in pcDNA3.0-p53/MAGE-A9 group, it was significantly higher than that in pcDNA3.0-p53 group (\[291.51±5.91\]% vs \[228.89±22.39\]%, P<0.05). Conclusion: MAGE-A9 can inhibit the transcriptional activity of P53 and proliferation of MDA-MB-231 cells.

Keywords:melanoma-associated antigen-A9 (MAGE-A9) P53 breast cancer transcriptional activity MDA-MB-231 cell luciferase reporter gene assay

查看全文 查看/发表评论 下载PDF阅读器