



季卫丹, 包龙, 严妍, 曹璐, 傅晓辉, 姜小清, 苏长青. hSul f-1基因腺病毒表达载体的构建及其对血管内皮细胞增殖、迁移能力的影响[J]. 第二军医大学学报, 2012, 33(3): 247-251

hSulf-1基因腺病毒表达载体的构建及其对血管内皮细胞增殖、迁移能力的影响

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季卫丹¹ 包龙¹ 严妍² 曹璐² 傅晓辉² 姜小清² 苏长青¹ ^{2*}

1. 苏州大学医学部遗传学系, 苏州 215123
2. 第二军医大学东方肝胆外科医院分子肿瘤研究室, 上海 200438
*通信作者

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摘要:

目的 构建携带人硫酸酯酶1基因(hSul f-1)的腺病毒载体, 研究其对于人脐静脉内皮细胞ECV-304增殖、迁移能力的影响。方法 通过基因操作技术将hSul f-1基因插入到腺病毒基因组中, 构建重组腺病毒Ad5-hSul f1; 应用蛋白质免疫印迹法检测hSul f-1蛋白在ECV-304细胞中的表达及细胞内磷酸化Akt、ERK的表达变化; MTT实验检测hSul f-1过表达对于ECV-304细胞增殖的影响; 采用划痕实验研究hSul f-1过表达对于ECV-304细胞迁移的影响。结果 成功构建携带目的基因hSul f-1的腺病毒载体; 免疫印迹结果表明hSul f1基因过表达会下调ECV-304细胞Akt和ERK信号分子的磷酸化水平; 细胞增殖实验结果表明hSul f1基因过表达抑制了ECV-304细胞增殖, 感染复数为50、100时细胞存活率下降至(68.49±0.05)%以及(67.78±0.06)% (P<0.05); 划痕实验结果表明hSul f1基因过表达能够抑制细胞的迁移, 相比于对照组细胞迁移能力减弱(P<0.01)。结论 重组腺病毒Ad5-hSul f1介导的hSul f-1基因在ECV-304细胞中的过表达明显抑制细胞增殖及迁移, 为hSul f-1用于肿瘤及血管生长相关疾病的基因治疗奠定了基础。

关键词: [腺病毒](#) [hSul f-1基因](#) [血管](#) [内皮细胞](#) [细胞增殖](#) [细胞运动](#)

Construction of adenovirus vector carrying hSulf-1 gene and its effects on proliferation and migration of human endothelial cells [Fulltext](#)

Ji Wei-dan¹ Bao Long-long¹ Yan Yan² Cao Lu² Fu Xiao-hui² Jiang Xiao-qing² Su Chang-qing¹ ^{2*}

1. Department of Medical Genetics, Medical College of Soochow University, Suzhou 215123, Jiangsu, China
2. Department of Molecular Oncology, Eastern Hepatobiliary Surgery Hospital, Second Military Medical University, Shanghai 200438, China
*Corresponding author.

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Abstract:

Objective To construct a recombinant adenovirus vector carrying hSulf-1 gene and to investigate its effect on the proliferation and migration of human umbilical vein endothelial cells. Methods The hSulf-1 protein was inserted into adenovirus genome to generate recombinant adenovirus Ad5-hSulf1, and then the virus was used to infect ECV-304 cell line. The expression of hSulf-1 protein was detected by Western blotting analysis, the cell viability was examined by MTT assay, and the cell migration ability was evaluated by wound-healing assay in ECV-304 cells. Results The recombinant adenovirus Ad5-hSulf1 was successfully constructed. Western blotting analysis showed that over-expression of hSulf1 down-regulated the phosphorylation levels of Akt and ERK in ECV-304 cells. MTT assay showed that over-expression of hSulf1 inhibited the proliferation of ECV-304 cells, with the cell survival rate decreased to (68.49±0.05)% at MOI of 50 pfu/ml and (67.78±0.06)% at MOI of 100 pfu/ml (P<0.05). Wound-healing assay showed that over-expression of hSulf1 significantly inhibited the migration of ECV-304 cells compared with the control group (P<0.01). Conclusion The recombinant adenovirus Ad5-hSulf1-mediated hSulf-1 over-expression can markedly inhibit the proliferation and migration of ECV-304 cells, laying a foundation for hSulf-1 related gene therapy of tumor and angiogenesis-associated diseases.

Keywords: [adenovirus](#) [hSulf-1 gene](#) [blood vessels](#) [endothelial cells](#) [cell proliferation](#) [cell movement](#)

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