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siRNA CD31沉默 PECAM-1 对鼠源血管内皮瘤细胞VEGF表达的影响 点此下载全文

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摘要：

目的： 研究siRNA CD31靶向沉默血管内皮细胞中血小板内皮细胞黏附分子1（platelet endothelial cell adhesion molecule 1， PECAM-1 ）基因对鼠源性血管内皮瘤（murine hemangioendothelioma，EOMA）细胞增殖及其VEGF表达的影响。 方法: 实验分为裸siRNA CD31组、siRNA CD31-FAM组、稳定阴性对照 （SNC）组、空白对照（Opti-Med）组，以阳离子脂质体（RNAi-mate）为载体将化学合成的2′-O-甲基修饰的siRNA CD31转染体外培养的EOMA细胞，以激光共聚焦显微镜观察siRNA CD31的转染效果，以四甲基偶氮唑蓝（MTT）法检测siRNA CD31对EOMA细胞增殖的影响，以RT-PCR、Western blotting分别检测EOMA细胞中 PECAM-1 、 VEGF 的表达水平。 结果 ：与SNC组和空白对照组比较，裸siRNA CD31和siRNA CD31-FAM转染的EOMA细胞中的 PECAM-1 mRNA和蛋白、 VEGF mRNA和蛋白的表达量均显著降低（均 P < 0 01）。与SNC组比较，裸siRNA CD31组、siRNA CD31-FAM组的EOMA细胞增殖抑制率明显上升［（18 82±1 46）%、（18 91±2 21）% vs （0 61±1 06）%，均 P <0 01］。 结论: 采用siRNA CD31-脂质体复合物沉默EOMA细胞中的 PECAM-1 基因可抑制 VEGF mRNA和蛋白的表达，从而抑制EOMA细胞的增殖。

关键词：小分子干扰RNA 血小板内皮细胞黏附分子 血管内皮细胞生长因子 血管内皮瘤 细胞增殖

Effects of siRNA CD31-mediated PECAM-1 gene silencing on proliferation and VEGF expression in vascular endothelial cells Download Fulltext

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Abstract:

Objective：To investigate the effects of siRNA CD31-targeted silencing of the platelet endothelial cell adhesion molecule 1 (PECAM-1) or CD31 gene on VEGF expression and proliferation in endothelial cells. Methods: Murine hemangioendothelioma cells (EOMAs) were used as a model. They were transfected with naked siRNA CD31, siRNA CD31-FAM, a stable negative control (SNC) siRNA and Opti-Med as a blank control, respectively, using lipofectamin (RNAi-mate). After transfection, cell proliferation was assessed by MTT assays. PECAM-1 and VEGF mRNA and protein levels were determined by RT-PCR and Western blotting respectively. Results: PECAM-1 mRNA and protein levels and proliferative activity were all significantly lower in EOMAs transfected with naked siRNA CD31 and siRNA CD31-FAM than in EOMAs transfected with the SNC and Opti-MEM (P <0.01). As compared with the SNC, naked siRNA CD31 and siRNA CD31-FAM rested significantly higher rates of proliferation inhibition (P <0.01). Conclusion: The chemically synthesized 2’-O-methyl-siRNA CD31 may effectively silence the target gene PECAM-1 and inhibit proliferation in EOMAs, at least partially through a VEGF signaling-dependent mechanism.

Keywords:small interference RNA （siRNA） platelet endothelial cell adhesion molecule（PECAM） vascular endothelial cell growth factor （VEGF） hemangioendothelioma cell proliferation

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