Experimental research of targeting VEGF-C gene inhibited in gastric carcinoma therapy by RNA interference

Chen Guoting, Niu Xianping, Li Qi, Ji Shengchao, Han Qinghui, Liu Yangzhou, Li Xia, Tan Jun and Cai Duan
Department of Surgery, Shanghai East Hospital Affiliated to Tongji University

Objective: To construct the plasmid expression vector pSIH1-H1-copGFPshRNA of RNA interference specific for vascular endothelial growth factor-C (VEGF-C).

Methods: Three shRNAs of genome sequences of VEGF-C gene were retrieved from Genebank, and then were designed and synthesized, and one negative chain as control. The four shRNAs were inserted respectively into plasmid pSIH1-H1-copGFP after anneal and connection and then transfect gastric cancer cells (SGC7901). The expression of mRNA of VEGF-C gene were analyzed by RT-PCR.

Results: The recombinant plasmid of pSIH1-H1-copGFP shRNA specific for VEGF-C were identified by gene sequence analysis, the aim sequence obtained completely coincided with the designs. The expression level of mRNA of VEGF-C gene of the transfect SGC7901 cells was significantly decreased.

Conclusion: The siRNA expression plasmid vector against mRNA of VEGF-C gene has been successfully constructed, and RNAi may be an efficient technique to inhibit lymphangiogenesis of gastric cancer.

Keywords: RNAi; VEGF-C; gastric cancer; shRNA; vector construction