

Heparanase-specific shRNA: A novel therapeutic strategy in human gastric cancer

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Previous studies have indicated that the heparanase (HPA) is correlated with histopathological parameters and poor prognosis of gastric cancers. Although their efficiencies in inhibiting the expression of HPA, the traditional HPA inhibitors may produce nonspecific and undesirable effects. In recent years, genetic approaches targeting HPA have been regarded as a promising alternative.

Antisense oligonucleotides, ribozyme, and small [RNA interference](#) (siRNA) have been developed to decrease the HPA expression. However, it remains unknown whether stable transfection of short hairpin RNA (shRNA) can knockdown the HPA expression and decrease the invasiveness and metastasis of [gastric cancer](#) cells.

A research team from China reported such research examining the effects of HPA-specific shRNA on the cultured gastric [cancer cells](#). Results showed that stable transfection of HPA-specific shRNA, but not of scrambled shRNA and mock vector, resulted in reduced mRNA and protein levels of HPA. The shRNA-mediated knockdown of HPA did not affect the [cellular proliferation](#) of SGC-7901 cells. However, the in vitro invasiveness and metastasis of cancer cells were decreased after knockdown of HPA. Moreover, transfection of HPA-specific shRNA decreased the in vitro angiogenesis capabilities of SGC-7901 cells. Their study was published on November 21, 2009 in the [World Journal of Gastroenterology](#).

Their research suggested that HPA-specific shRNA may be of potential

value as a novel therapeutic strategy in human gastric cancer and may be also applicable for the therapies of other cancers overexpressing HPA.

More information: Zheng LD, Jiang GS, Pu JR, Mei H, Dong JH, Hou XH, Tong QS. Stable knockdown of heparanase expression in gastric cancer cells in vitro. World J Gastroenterol 2009; 15(43): 5442-5448, www.wjgnet.com/1007-9327/15/5442.asp

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