

Stromal fibroblasts in gastric carcinomas promote tumor metastasis through elevated TAGLN

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Objective: To observe the expression of TAGLN gene in gastric cancer and its effect on the tumor invasion and migration.

Methods: Real-time PCR, Western blotting and immunohistochemistry were applied to examine the expression of TAGLN in gastric cancer tissues and cancer-adjacent tissues (40 cases), gastric cancer cell lines (7 cell lines) and carcinoma-associated fibroblasts (CAFs), respectively. The relationship between the TAGLN expression and the pathological characteristics of gastric cancer was also analyzed. To further evaluate the effect of fibroblasts expressing high TAGLN (such as CAFs) on the tumor metastasis, cell invasion and migration kits were used.

Results: The mRNA and protein expression of TAGLN in gastric cancer cell lines were much lower than those in tissues, especially the cell line MKN45. However, no significant difference was detected among gastric cancer cell lines ($p > 0.05$). Compared with the cancer-adjacent tissues, the expression of TAGLN in gastric cancer tissues was higher ($p < 0.05$). Immunohistochemistry was also performed in our study and the TAGLN was found to be expressed mainly in stroma of gastric cancer, such as fibroblasts, endothelial cells of new vessels or myocyte in tumor-invaded muscularis mucosae. Furthermore, compared with that in lymph node free group (1.084 ± 0.328), the TAGLN expression increased obviously in lymph node metastasis group (3.751 ± 0.681). The cell invasion and migration examination in our study indicated that the CAFs expressing high TAGLN enhanced the invasion and migration ability of MKN45. Interestingly, when the TAGLN of CAFs was knocked down using siRNA, these cells may lost the ability to facilitate the invasion and migration of MKN45.

Conclusion: The TAGLN is overexpressed in the stroma of gastric cancer, and it may enhance the cell invasion and migration ability of gastric cancer.

Biography:

Li Wang is a Lecturer in the Dept. of Immunology and Microbiology, Shanghai Jiao Tong University School of Medicine, China. She did her PhD. In Immunology, Study on auto-irradiated T cells enhances anti-tumor immunity at Shanghai Jiao Tong University School of Medicine, China.