The Language Between Tumor Cells and Fibroblasts in Esophageal Squamous Cell Carcinoma

Beilei Liu, Ph.D.

Abstract:

Esophageal squamous cell carcinoma (ESCC), ranked as the sixth leading cause of cancer death worldwide. In Hong Kong, there are about 400 new cases of ESCC every year. Lack of effective treatments for tumor metastasis, recurrence and chemoresistance is the main reason for poor clinical prognosis of ESCC. Therefore, advanced diagnostic approaches and effective treatment strategies are urgently needed to achieve better outcomes.

Cancer-associated fibroblasts (CAFs) play important roles in tumor metabolism, angiogenesis, immunity escape and metastasis. Growing evidence suggests that extrinsic signals provided by CAFs, particularly various secreted factors, exosomes, and metabolites, are involved in the conversation between CAFs and other cells to promote tumor growth and progression. Due to their cancer-promoting function, CAFs have been attracting attention as one of the most promising therapeutic targets.

Here, we interpret the language between CAFs and tumor cells in ESCC and introduce how tumor cells recruit FGFR2+CAFs to the tumor microenvironment and promote tumor proliferation, metastasis, angiogenesis, and immunosuppression by secreting Wnt2 and MFGE8 proteins. By blocking their conversation, tumor growth is suppressed. The deciphering of these conversations between tumors and fibroblasts is expected to provide new prospects for the treatment of patients with ESCC.