Ovarian cancer cells hijack surrounding tissues to enhance tumor growth

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Tumor growth is dependent on interactions between cancer cells and adjacent normal tissue, or stroma. Stromal cells can stimulate the growth of tumor cells; however it is unclear if tumor cells can influence the stroma.

In the September issue of the Journal of Clinical Investigation, researchers at MD Anderson Cancer Center report that ovarian cancer cells activate the HOXA9 gene to compel stromal cells to create an environment that supports tumor growth.

Honami Naora and colleagues found that expression of HOXA9 was correlated with poor outcomes in cancer patients and in mice with ovarian tumors. The expression of HOXA9 in ovarian cancer cells caused the cells to produce a protein called TGF-β. TGF-β then induced the surrounding non-cancerous cells to create an environment that supports the tumor. Blocking TGF-β expression in the ovarian cancer cells significantly reduced tumor growth. These findings raise the possibility that drugs targeting TGF-β could be used to treat ovarian cancer.

More information: HOXA9 promotes ovarian cancer growth by stimulating cancer-associated fibroblasts, *Journal of Clinical Investigation*, 2012.