Ningyan Zhang, J Cancer Sci Ther 2018, Volume 10
DOI: 10.4172/1948-5956-C7-141

Antibodies targeting *EGFL6* block breast cancer tumor growth and metastatsis

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EGFL6, a member of the EGF like superfamily, is significantly up-regulated in tumor versus wound or normal endothelial cells. Our recent study and reported by others showed that *EGFL6* plays important role in regulation of stem cell division and promoting angiogenesis. Using a series of in vitro and in vivo studies using orthotopic and genetically engineered mouse models, we demonstrated the mechanisms by which *EGFL6* stimulates tumor growth and angiogenesis in both ovarian and breast cancer types. Significantly, *EGFL6* blockage in vivo did not affect normal wound healing as shown by the existing anti-angiogenesis cancer therapy such as Avastin. We have identified a panel of *EGFL6* neutralizing monoclonal antibodies and investigated anti-*EGFL6* antibody function in tumor inhibition. Results showed that blocking *EGFL6* expression inhibited cell migration and invasion in cell culture studies. Targeting *EGFL6* using our anti-*EGFL6* antibodies also reduced the tumor growth in vivo. The results suggest that *EGFL6* is a potential therapeutic target for breast cancer treatment and the anti-*EGFL6* antibody presents a novel therapeutic strategy for blocking development of breast cancer metastasis.

Biography

Ningyan Zhang is a Protein Biochemist and started his career in the pharmaceutical and biotechnology industry working on antibody engineering and drug discovery. He has received his PhD degree and Postdoctoral training from the University of Kentucky and the University of Wisconsin, respectively. After a 15-year research career in the biotechnology industry, he was at Texas ETF (Emerging Technology Fund) Scholar to join the Faculty of the University of Texas Health Science Center at Houston in 2010. His current research programs focus on cancer biology and translational research to bridge novel target discovery to drug discovery.

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