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ZIP4 is a novel molecular target in pancreatic cancer

Pancreatic cancer is one of the most difficult human cancers to treat due to the inability to detect disease at an early stage and the lack of effective therapies. Although there has been some progress in the use of improved diagnostic methods and development of novel targeted therapies, the overall survival rate is not improved over the last decade. Pancreatic cancer remains the fourth leading cause of cancer death in the United States, with an annual mortality nearly equivalent to the annual incidence. Therefore, it is important to identify novel molecular markers and therapeutic targets in pancreatic cancer that could lead to more effective treatment for this malignant disease. Our study indicates that a dietary zinc transporter, ZIP4, regulates pancreatic cancer cell growth, tumor progression, and survival, which assigns a new and important role for ZIP4. We have shown that ZIP4 is specifically overexpressed in a majority of pancreatic cancer patients and contributes to pancreatic cancer pathogenesis and progression. Silencing of ZIP4 significantly decreased the growth of pancreatic cancer, and increased the survival rate of nude mice with orthotopic xeno grafts. Those results suggest that ZIP4 is a novel therapeutic target for pancreatic cancer. However, the detailed mechanisms of how ZIP4 regulates pancreatic cancer growth are not clear. Our studies suggest that ZIP4 overexpression causes increased IL-6 transcription and STAT3 activation, and also leads to increased cyclin D1 expression, indicating that ZIP4 might regulate pancreatic cell proliferation and tumor progression through the IL-6/STAT3 pathway.

Biography

Dr. Min Li got his PhD from Emory University in 2002. He then moved on to Baylor College of Medicine and started his career in cancer research as an Assistant Professor in 2004. Dr. Li joined the University of Texas Health Science Center at Houston, Medical School in 2010 as the Director of Cancer Research Program. His research interests include pancreatic cancer and brain tumor. Dr. Li's group is the first one to identify ZIP4 as a novel molecular target in pancreatic cancer. He has published more than 90 papers and serves as an editorial board member of many journals.