

Bankhead-Coley Cancer Research Program

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*2008 Program
New Investigator (3-year project)*

Project Title: SHP-2 and c-Src in Pancreatic Cancer Cell Biology, Tumorigenesis, and Metastasis

Project Summary: Pancreatic cancer is one of the deadliest human malignancies, with fewer than five percent of patients surviving five years after diagnosis. The reasons for the poor prognosis include a lack of obvious symptoms, rapid progression and metastasis, and resistance to conventional chemotherapeutic agents and radiation treatments. There is a great need for the development of improved pancreatic cancer therapies, and a comprehensive understanding of pancreatic cancer biology is crucial to this process. Therapeutic targets are necessary for the promotion of cellular events that are crucial for the development and progression of pancreatic tumors and/or metastases. Some of these events include cell division, cell migration, invasion into surrounding tissues, and acquisition of resistance to cell death. We have determined that the proteins c-Src and SHP-2 are ideal and complementary therapeutic candidates for pancreatic cancer, as they are both strongly expressed in pancreatic cancer and both have been demonstrated, in other systems, to promote many of the cellular events described above. We are examining the regulation and function of these proteins in human pancreatic cancer cells grown in culture, banked human pancreatic cancer samples, and a mouse model of the human disease. We are using multiple techniques to inhibit the function of these proteins, individually and in combination, in order to evaluate their therapeutic potential in a pre-clinical model of human pancreatic cancer.