



Research

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GRANT SNAPSHOT

2014 Pancreatic Cancer Action Network – AACR Innovative Grant

Grantee:	Diane Simeone, MD
Institution:	University of Michigan
Research Project:	<i>Mesenchymal Stem Cells in Pancreatic Cancer Biology and Therapeutic Development</i>
Award Period:	July 1, 2014 – June 30, 2016
Amount:	\$200,000

Biographical Highlights



Dr. Simeone is Director of the Gastrointestinal Oncology Program and Pancreatic Cancer Center at the University of Michigan Comprehensive Cancer Center. She also serves as Director of the Translational Research Program. Dr. Diane Simeone is the Lazar J. Greenfield Endowed Professor of Surgery and Physiology and Division Chief of HPB and Advanced GI Surgery. She received a 2010 Innovative Grant from the Pancreatic Cancer Action Network, funded in honor of the Randy Pausch Family, and joined the organization's Scientific Advisory Board in 2011.

Dr. Simeone's basic science laboratory investigates mechanisms of pancreatic growth regulation and molecular events important in the development and progression of pancreatic adenocarcinoma. She has expertise in both basic and translational research and extension of basic science findings into clinical trial design.

Project Overview

Pancreatic tumors are known to be surrounded and infiltrated by a dense mixture of cell types in addition to the cancer cells themselves. The cellular components of this "stroma," or tumor microenvironment, can actually outnumber the cancer cells. Pancreatic cancer stroma is very heterogeneous and comprises multiple cell types, including myofibroblasts, pancreatic stellate cells, immune cells, blood vessels, extracellular matrix (a scar-like material), and factors that help the cancer cells grow and spread. While the use of therapeutics to target the stroma is an emerging concept in the treatment of pancreatic cancer, the precise role of stroma in pancreatic cancer formation and progression remains poorly understood.

There is strong evidence that mesenchymal stem cells (MSCs) are recruited to the stroma, however, the role of MSCs in pancreatic cancer is not known. MSCs have not been studied in pancreatic cancer and an opportunity exists to identify and study these cells in pancreatic cancer and understand their contribution to pancreatic cancer biology. Dr. Simeone and her colleagues hypothesize that understanding the role of stromal cells in pancreatic cancer tumor growth, invasion, and metastasis, in particular the role of MSCs in these processes, will provide useful information in better designing therapeutic approaches to tackle this disease. Completion of this study will provide a mechanistic characterization of target molecules within the tumor microenvironment involved in key tumor-stromal interactions and contribute directly to a base of knowledge that can be used to rapidly design and implement new clinical trials.