GRANT SNAPSHOT

2013 Pancreatic Cancer Action Network – AACR Career Development Award

Grantee:	Andrew Rhim, MD
Institution:	University of Pennsylvania
Research Project:	*Using human circulating pancreas cells as a biomarker for early PDAC*
Award Period:	July 1, 2013 – June 30, 2015
Amount:	$200,000

Biographical Highlights

Dr. Andrew Rhim is an Instructor of Medicine and Attending Gastroenterologist at the Perelman School of Medicine at the University of Pennsylvania. He completed his medical education and was the Sir William Osler Fellow in Medicine and Gastroenterology at Penn. Dr. Rhim trained in the laboratory of Ben Stanger, MD, PhD, previous Pancreatic Cancer Action Network Career Development Award recipient, and established lineage-labeled genetic mouse models of pancreatic cancer to study invasion, dissemination, and metastasis. He has established his own independent laboratory focused on the biology of pre-cancerous lesions of the pancreas and the molecular and cellular events that occur during the transition to pancreatic cancer (PDAC). The overarching goal of his studies is to learn more about how PDAC develops in order to devise new strategies for early diagnosis and treatment of patients. His work has been published in prestigious biomedical journals, including *Cell*, *Cancer Cell*, *Genes and Development*, and *Gastroenterology*.

Project Overview

Early detection is the single best predictor of long-term survival in patients with pancreatic cancer. Unfortunately, the vast majority of patients with PDAC are diagnosed at advanced stage, when surgery and chemotherapy are ineffective. Furthermore, many high-risk patients will develop advanced PDAC even if they are followed closely using MRI or ultrasound. Thus, it is imperative that new strategies to diagnose PDAC at its earliest stages are developed.

Dr. Rhim's recent studies may suggest one way to detect early PDAC. Working with Dr. Stanger, Dr. Rhim discovered that pancreas cells can enter into the bloodstream prior to the formation of large tumors in genetically engineered mouse models of PDAC. Not to be confused with metastasizing cancer cells, these circulating pancreas cells (CPCs) can be detected in a subset of patients with precancerous lesions of the pancreas and no current diagnosis of cancer, a portion of whom will develop PDAC. Normal control patients did not have significant numbers of CPCs.

Dr. Rhim's project will determine if CPC detection can identify patients who will develop pancreatic tumors before they can be found on current clinical tests. Dr. Rhim will perform CPC analysis in patients at elevated risk for PDAC (patients with precancerous lesions, significant family history, or chronic pancreatitis) and follow these patients over time to determine which will progress to cancer. Dr. Rhim will also analyze the genetic makeup of CPCs in patients who develop PDAC and compare to normal cells. Therefore, these studies may identify new strategies to identify patients with early pancreatic cancer and uncover novel drug targets to arrest metastatic disease.