GRANT SNAPSHOT

2011 Pancreatic Cancer Action Network – AACR Career Development Award

Grantee:	Jae-Il Park, PhD
Institution:	MD Anderson Cancer Center
Research Project:	*Telomerase in the Development of Pancreatic Cancer*
Award Period:	July 1, 2011 – June 30, 2013
Amount:	$200,000

Biographical Highlights

Dr. Park received his Bachelor's and Master's degrees from Korea University in Seoul, and then proceeded to the University of Texas Graduate School of Medical Science for his PhD in the field of Biochemistry and Molecular Biology. Dr. Park underwent his postdoctoral training at Stanford University, where he began his interest in telomere biology. Currently, Dr. Park is an Assistant Professor at the University of Texas MD Anderson Cancer Center, in the department of Experimental Radiation Oncology.

Based on his multifaceted interest in cancer cell signaling pathways, Dr. Park intends to extend his studies started at Stanford, and explore the role of telomeres in pancreatic cancer development and cancer stem cell biology.

Project Overview

Each time a normal cell grows, its genetic material (DNA) must split and divide. DNA is stored in chromosomes, and upon each chromosomal division, a piece of the end of the DNA gets lost. In order to protect DNA that codes for important genes, the edges of chromosomes are protected and capped by unnecessary sequences of DNA called telomeres. After all of the telomere gets removed from successive cellular divisions, the cell goes into a stated called senescence, and can no longer grow.

A protein called telomerase serves to append the telomeres to the ends of chromosomes. In cancer, telomerase gets aberrantly expressed and activated, allowing for uncontrolled cellular divisions without sacrificing DNA, and an avoidance of senescence. Dr. Park hypothesizes that part of the role of telomerase in pancreatic cancer is to activate a cellular signaling pathway involving proteins called Wnt and β-catenin. Dr. Park will experimentally explore the outcomes of telomerase expression on pancreatic cancer cells and in a mouse model of the disease. The rationale for the proposed research is that identifying the underlying molecular and genetic mechanisms of telomerase in tumor formation will provide valuable information for pancreatic cancer treatment.