



Research

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GRANT SNAPSHOT

2012 The Daniel and Janet Mordecai Foundation – Pancreatic Cancer Action Network – AACR Career Development Award

Grantee:	Darren Carpizo, MD, PhD
Institution:	University of Medicine & Dentistry of New Jersey – Robert Wood Johnson Medical School
Research Project:	<i>Pre-clinical Studies of an Allele-Specific p53 Mutant Reactivating Compound in Pancreatic Cancer</i>
Award Period:	July 1, 2012 – June 30, 2014
Amount:	\$200,000

Biographical Highlights



Dr. Carpizo is a surgical oncologist who specializes in treating pancreatic cancer patients. His research is in the field of Developmental Therapeutics in both basic and translational arenas. Surgery for pancreatic cancer is plagued by high recurrence rates that can only be lowered through the identification and application of new, effective anti-cancer drugs.

Dr. Carpizo did his undergraduate studies at Cornell University, and then completed his MD at the University of Illinois at Chicago. From there, he moved west where he completed a surgical internship and residency in Surgery at the UCLA Medical Center, Los Angeles, California. During his Surgical Residency he took time off to complete a PhD in Molecular, Cell and Developmental Biology through UCLA's STAR program (Specialized Training in Advanced Research) which is a program to provide formalized training in research to post-graduate medical trainees. Following completion of his Surgical Residency, he went on to complete a fellowship in Surgical Oncology at the Memorial Sloan-Kettering Cancer Center. There he obtained specialized training in the management of liver, pancreatic and bile duct cancers. Currently, he is an Assistant Professor of Surgery at the University of Medicine & Dentistry of New Jersey – Robert Wood Johnson Medical School in New Brunswick, NJ. He is also a member of the Cancer Institute of New Jersey, an NCI designated Comprehensive Cancer Center.

Project Overview

The next generation of anticancer drugs is defined by compounds that selectively kill cancer cells while leaving normal cells undisturbed. Dr. Carpizo and colleagues have identified a compound targeting one of the most commonly mutated genes in human cancer, TP53. TP53 is second only to K-Ras as the most commonly mutated gene in pancreatic cancer with point mutations occurring in 75 percent of patients. Considered a tumor suppressor, the protein p53's normal function is to tightly regulate cellular growth and division, making sure that cells only divide in the appropriate time and place. However, upon mutation, p53 loses its function and allows uncontrolled proliferation of cells, a hallmark of tumor formation. Dr. Carpizo's compound selectively kills cancer cells with one of the most commonly found p53 mis-sense mutants, p53-R175H, by restoring the normal structure and function to this mutant p53 protein.

In his proposed project, Dr. Carpizo plans to explore this compound's potential as an anti-cancer drug in pancreatic cancer by conducting pre-clinical experiments of the compound in a transgenic mouse model of pancreatic cancer that is driven by mutant K-Ras and the p53-R172H mutant (mouse equivalent of the human p53-R175H mis-sense mutant). Due to the compound's mutant p53 reactivating ability, he will also determine if the compound enhances the anti-tumor effects of external beam radiation and cytotoxic chemotherapy.