



CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP160471

Project Title:
Identifying new epigenetic vulnerabilities in pancreatic cancer

Award Mechanism:
Individual Investigator

Principal Investigator:
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Entity:
The University of Texas M.D. Anderson Cancer Center

Lay Summary:

Pancreatic ductal adenocarcinoma (PDAC) is the fourth leading cause of cancer death, and only 7% of patients survive 5 years after diagnosis. Several mutations have been identified that drive PDAC development, with a critical mutation in the KRAS gene involved in >90% of all tumors. This mutation, along with other genes that are commonly mutated in PDAC, have made these tumors especially recalcitrant to so-called targeted therapies, which are drugs that target a specific protein, and no significant improvement in clinical outcomes has been gained in recent years. To approach the problem of designing new targeted therapies for patients with PDAC differently, we validated and optimized a novel screening system where we can test the effects of targeting any one of hundreds of genes in cells derived from human tumors. By doing so, we can screen many different tumors relatively quickly to learn important information about the genetic context that makes one tumor respond to a particular perturbation, while another tumor may not. We screened several genes that modify DNA and proteins within the cell to determine which of these may be relevant targets for new cancer drugs. In this proposal, we describe several of the most promising targets, and we propose additional experiments to learn more about the biology of these genes, how they might be targeted, and which patients might benefit the most from any future drugs that may be developed.