



CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP170691

Project Title:
Patient-Derived Xenograft and Advanced in Vivo Models (PDX-AIM) Core Facility

Award Mechanism:
Core Facility Support Awards

Principal Investigator:
Lewis, Michael

Entity:
Baylor College of Medicine

Lay Summary:

With a few exceptions, traditional cancer research using tumor-derived cell lines grown on plastic have failed to yield results that benefit cancer patients. There are many reasons for this failure. To circumvent these shortcomings, researchers have begun to use "patient-derived xenografts" (PDX), and other models in which human tumors are grown in living hosts, including the mouse and the fertilized chicken egg. Development of a Patient-Derived Xenograft and Advanced In Vivo Models (PDX-AIM) Core is a high priority for Baylor College of Medicine (BCM) and its affiliate, The Texas Children's Hospital (TCH). BCM established a new PDX-AIM Core in 2016 jointly backed by the BCM Advanced Technology Laboratories and the Dan L. Duncan Cancer Center. The Core currently provides PDX development, and limited experimental assistance to two of the five existing PDX Programs. Our goal is to unify existing PDX programs, to develop at least six new PDX programs, specifically rare pediatric and adult tumors, and to provide infrastructure to expand services greatly. Using two experimental platforms (mouse and egg), the overarching goal of the PDX-AIM Core is to provide computational and experimental infrastructure, as well as technical expertise to generate, characterize, manage, and experiment with, large collections of state-of-the-art in vivo cancer models for multiple organ sites that retain biological fidelity with the tumor of origin. By necessity, the core will be structured as a "decentralized" facility based on expertise for each cancer type. Core services will be provided on a subsidized chargeback basis, as per the capabilities of organ-specific PDX Programs. New PDX Program initiatives will be supported by a competitive pilot project program. This proposed Core directly addresses five CPRIT research program priorities. Thus, we anticipate this PDX-AIM Core to have a significant impact on cancer research at BCM/TCH, Texas, and indeed world-wide.