



CANCER PREVENTION & RESEARCH
INSTITUTE OF TEXAS

Award ID:
RP180220

Project Title:
Targeting the prion protein Doppel in brain tumor angiogenesis

Award Mechanism:
Individual Investigator

Principal Investigator:
McCarty, Joseph

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

Lay Summary:

Gliomas are devastating malignancies that afflict approximately 15,000 people within the United States each year. They are the most common types of primary brain tumors, and in their advanced stages represent one of the deadliest forms of cancer. Most high-grade gliomas, and particularly glioblastoma (GBM), are refractory to standard surgical, radiation, and chemotherapeutic interventions. Targeted therapies, and especially those directed at cutting off the supply of blood vessels in tumors, have also had limited efficacy in patients. Understanding the basic cellular and molecular events that contribute to GBM initiation, growth and progression may lead to new therapeutic strategies to treat or prevent the pathogenesis of this insidious disease. We have discovered that the protein Doppel, which is a member of the prion family, is essential for the formation of new blood vessels in the developing brain and in GBM. In this project we will analyze signaling pathways regulated by Doppel to control angiogenesis using primary endothelial cell culture systems and pre-clinical mouse models of brain cancer. These efforts may lead to new therapies to inhibit brain cancer in patients.