



CANCER PREVENTION & RESEARCH
INSTITUTE OF TEXAS

Award ID:
RP180191

Project Title:
Understanding TFE3-mediated Tumorigenesis through Analysis of a Novel,
Clinically-Relevant Mouse Model of Translocation Renal Cell Carcinoma

Award Mechanism:
Individual Investigator Research Awards for Cancer in Children and
Adolescents

Principal Investigator:
Brugarolas, James

Entity:
The University of Texas Southwestern Medical Center

Lay Summary:

For reasons that are not well understood, kidney cancer is particularly prevalent in Texas. A most challenging type of kidney cancer is translocation renal cell carcinoma (TRCC). Unlike most kidney cancers, TRCC predominantly affects children and adolescents. Because of its relatively low frequency (compared to adult kidney cancer), TRCC remains understudied and lacks specific therapies. When metastatic, TRCC is uniformly lethal. Here, we propose to deploy the first mouse model of TRCC faithfully reproducing the human disease, which we have already generated, to provide insight into TRCC. This model is based on one of the most common genetic changes in human TRCC (i.e. a particular translocation), and the mice develop tumors that recapitulate human TRCC. We propose to use these mice to investigate how these translocations cause kidney cancer and to test potential treatments. If successful, our studies should not only deepen our understanding of how TRCC develops, but also lead to treatment advances.