CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP120190

Project Title:
Oncometabolites in Renal Cancer

Award Mechanism:
High Impact/High Risk

Principal Investigator:
Block, Karen

Entity:
The University of Texas Health Science Center at San Antonio

Lay Summary:

Renal Cancer is among the 10 most common malignancies in both men and women. Despite the recent approval of new therapies to target this malignancy, the reality is that most patients with advanced disease will not survive (median survival 13 months). Hence, the elucidation of novel molecular mechanisms is needed to develop more effective therapies for this deadly disease. Increasing evidence supports the paradigm that cancer development is tightly linked to alterations in metabolism. Metabolism refers to the complex set of chemical reactions that are required by an organism to conduct the basic processes required for survival. As a result, our laboratory has performed a comprehensive metabolic profile of renal cancer. This metabolic profile has enabled the identification small molecules (i.e. metabolites) with differential levels in renal cancer. Through this analysis, we have identified increased levels of a metabolite that may contribute to tumor development and/or progression. One of the goals of this project will be to determine the molecular basis for this metabolic alteration. In addition, we will determine the biological significance of our findings through the combined analysis of cancer genomes and cell models. Through this proposal, we aim to identify pathways that are involved in the development of renal cancer. If new pathways are identified, then it may lead to the development of novel therapeutic strategies. In addition, it may also help guide therapy. If we can identify the involved molecular pathways, then it may aid physicians in determining the best treatment options for an individual patient. The overall goal will be to develop new methods to enhance the outcomes of patients through an improved understanding of the metabolic basis of this disease.