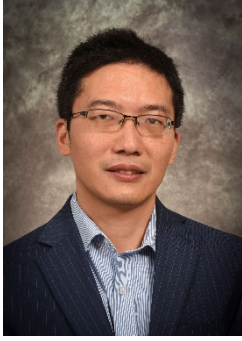


Zhang Awarded CPRIT Grant



Zhang was awarded with CPRIT individual investigator award titled “JMJD6-DGAT1 Signaling Axis Regulates Lipid Droplets and Tumorigenesis in ccRCC”. ([Simmons Cancer Center awarded nearly \\$19 million in CPRIT funding: Newsroom - UT Southwestern, Dallas, Texas](#)).

Clear cell renal cell carcinoma (ccRCC), which accounts for approximately 85% of all renal cancers, is resistant to a variety of cancer therapies and is highly lethal. The histological appearance of ccRCC is derived from the cellular accumulations of lipid droplets (LD). However, there is still a lack of mechanistic understanding on how LD accumulate in ccRCC and more importantly, whether this unique feature of ccRCC can be therapeutically targeted. Zhang lab identified a new JMJD6-DGAT1 signaling pathway that controls LD formation and ccRCC tumorigenesis. More importantly, DGAT1 inhibitor is shown to inhibit ccRCC cell proliferation while not affecting normal renal epithelial cell proliferation.

This funded proposal hypothesizes that JMJD6-DGAT1 signaling axis regulates lipid droplet formation and tumorigenesis in ccRCC. This is the first study elucidating the important role of JMJD6-DGAT1 signaling axis in ccRCC and provide new mechanistic insights on lipid droplet formation that may promote ccRCC tumorigenesis. Specific Aim 1 will explore the oncogenic role of JMJD6 in ccRCC tumorigenesis. Specific Aim 2 will elucidate the molecular mechanism by which JMJD6-DGAT1 signaling axis contributes to LD formation and ccRCC tumorigenesis. Specific Aim 3 will determine the therapeutic potential of targeting JMJD6-DGAT1 signaling axis in ccRCC by testing the specific DGAT1 inhibitor in cell line xenograft models and patient derived xenograft (PDX) models available through UT Southwestern Kidney Cancer Specialized Program of Research Excellence (SPORE).

Successful completion of this proposal would provide significant new molecular insight into oncogenic mechanisms associated with the great majority of ccRCC as well as the potential for new therapies for this typically lethal disease.

Dr. Zhang, an Associate Professor of Pathology, is also a member of the Simmons Cancer Center. To know about the Zhang lab, [Zhang \(Qing\) Lab | UT Southwestern, Dallas, Texas](#).