Dr. Hua Tang

LTRC Concept Sheet # 08-99-0006

Title: Roles of Protein Kinas D Family Kinases in Interstitial Lung Disease

ABSTRACT

The aim of this tissue application is to establish proof-of-concept for novel mechanisms in the pathogenesis of human interstitial fibrotic lung disease. This application is also responding to a NIH Request for Application (R03, RFA-HL-08-008), in which human lung biospecimens from LTRC will be utilized for the project. We found that protein kinase D (PKD) family members, a newly described serine/threonine family kinase, were predominantly expressed in mouse lung compared with other tissues and organs. Our preliminary data also suggest that PKD1 regulates cell cytokine production, and PKD2 plays a critical role in cell proliferation and migration. We hypothesize that PKD family kinases may be involved in the development of human interstitial fibrotic lung disease. Hence, we apply for human lung biospecimens including normal lung tissue and clinical data from patients to test the hypothesis. We will use the lung biospecimens to determine the expression levels (protein and mRNA) and kinase activities of PKD1 and PKD2 and to correlate their expression levels and activities with the presence or severity of diseases. We will also determine the specific cell types involved. This study will be conducted in UT Health Center at Tyler.