CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP101042

Project Title:
Validation of a MCL1 Promoter Deletion as a Molecular Marker for Sensitivity to Bcl-2 Inhibitors in Pediatric Acute Lymphoblastic Leukemia

Award Mechanism:
Individual Investigator

Principal Investigator:
Kang, Min H

Entity:
Texas Tech University Health Sciences Center

Lay Summary:

Lymphoid malignancies are the most common cancer in children and adolescents in the United States, and the most prevalent of these is acute lymphoblastic leukemia (ALL) with the incidence being gradually increasing over the last 25 years. Significant improvements in primary therapy for childhood ALL have led to an overall cure rate of approximately 80 %. However, of the 20% of patients who relapse, the majority die. The ultimate goal of our proposal is to improve the treatment outcome of relapse ALL in children. New treatment modalities are being evaluated to improve the outcome for relapse ALL and for patients with high-risk factors at diagnosis. ABT-263 is a new drug that suppresses the gene that is highly expressed in leukemia patients, called Bcl-2. The drug is being tested in clinical trials for adult leukemia patients. We showed that ABT-737 (a laboratory version of ABT-263) can enhance the cell kill effect of the current ALL regimen and extend the survival of the mice bearing human leukemia cells. Based on our data, Children's Oncology Group is will initiate a clinical trial for ABT-263 in future. We recently identified a biomarker that could potentially distinguish patients who may respond better to the drug. Our current study proposes to confirm the novel observation in a large panel of laboratory models of ALL and to investigate the frequency of the biomarker in childhood cancer patients. The result of our study has the potential to change the clinical trial with ABT-263 in near future.