



CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP110200

Project Title:
Rational combinatorial targeting of PDE4 and associated survival pathways
in B-cell malignancies

Award Mechanism:
Individual Investigator

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

Lay Summary:

This research project aims to test a new type of treatment for lymphomas. Lymphomas are malignant tumors derived from cells called lymphocytes, which reside in the bone marrow, blood and certain organs such as spleen and lymph nodes. It is important to discover new treatments to lymphomas because these cancers are common and often fatal. In the United States alone approximately 70,000 new cases of lymphomas are diagnosed every year. Unfortunately, treatment modalities have not changed significantly in the last decades, and cure rate for these cancers have remained flat. Indeed, approximately half of the patients diagnosed with the most common forms of lymphomas still die of their disease. It is now well accepted that to improve the cure rates in cancer, we need to better understand the genes and proteins that are associated with tumor development, and utilize this knowledge to improve the diagnosis and the treatment of these diseases. We discovered that high levels of a protein called phosphodiesterase 4B (PDE4B) is associated with poor outcome in lymphoma. In addition, using lymphoma cells grown in the laboratory we preliminary found that drugs that block this protein also inhibit the growth of lymphoma cells, and improve the efficiency of other anti-lymphoma agents. In this project, we will expand on these pilot studies and use will use mouse models of human lymphoma to test whether new anti-PDE4B drugs can cure lymphoma. In addition, we will develop and validate a broadly applicable technique to measure the amounts of PDE4B in samples of lymphomas, which will allow other investigators and oncologists to identify the patients more likely to benefit from these new treatments. In summary, the findings of this project should spearhead the testing in humans of this more effective and less toxic treatment modality, and eventually improve the clinical outcome of lymphoma patients.