



CANCER PREVENTION & RESEARCH
INSTITUTE OF TEXAS

Award ID:
RP160487

Project Title:
Cytokine signaling in Ewing sarcoma

Award Mechanism:
Individual Investigator Research Awards for Cancer in Children and Adolescents

Principal Investigator:
Shio, Yuzuru

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

Lay Summary:

Cells in our body are communicating with each other using a group of proteins called cytokines. Likewise, cancer cells communicate among themselves and with normal cells in patient's body using cytokines. Although important roles played by cytokines are well established in a variety of adult cancers, little is known about the roles of cytokines in children's cancers. We discovered a new and unconventional type of cytokine signaling in Ewing sarcoma, a cancer of bone and soft tissue in children and young adults. Our data show that Ewing sarcoma is uniquely dependent on this cytokine signaling: Blocking this cytokine signaling profoundly inhibited proliferation and tumorigenicity of Ewing sarcoma, but not other types of cancers. The goal of the proposed work is to understand the molecular mechanism of this novel cytokine signaling in Ewing sarcoma and evaluate the feasibility of targeting this cytokine signaling using antibodies. When the project will be completed, we will understand how the cytokine signaling contributes to progression of Ewing sarcoma and generate new insights to inform the therapeutic targeting of cytokine signaling in this cancer. Furthermore, the proposed research will provide a model of dissecting and targeting cytokine signaling in children's cancers, an important yet underexplored area of cancer research.