CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
DP150051

Project Title:
Targeting the DC-HIL Receptor for Anti-Cancer Immunotherapy

Award Mechanism:
Bridging the Gap: Early Translational Research Awards

Principal Investigator:
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Entity:
The University of Texas Southwestern Medical Center

Lay Summary:

Despite new advances in cancer treatments, survival of patients with advanced or widespread cancer remains poor because many cancers can weaken the immune system by activating a special type of white blood cells called myeloid-derived suppressor cells (MDSC) that prevents natural killing of cancer cells.

We discovered that mice and patients with melanoma (but not healthy mice or individuals) express a protein (termed DC-HIL) on the surface of MDSC that is responsible for their ability to prevent natural killing of cancer cells. Taking away the DC-HIL gene or blocking its function (through a specific antibody) stops the activation and expansion of MDSC, reactivates the cancer-killing ability of cancer patients, and slows down the growth and spread of the melanoma. Similar processes may apply for other cancers.

Our goal is to create a DC-HIL-blocking antibody that will be used to treat patients with advanced melanoma and other cancers in a more effective and safer manner than existing forms of treatment. Our studies have the added benefit of a blood marker (DC-HIL-expressing MDSC) that can identify patients who might best respond to this treatment.