



CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP110070

Project Title:
Targeting HER2 for cancer therapy

Award Mechanism:
Individual Investigator

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

Lay Summary:

Aside from skin cancer, breast cancer is the most common form of malignancy in women. About 1 in 8 women are expected to develop breast cancer during their lifetime, and in the United States alone, about 40,000 are predicted to die from this disease in 2010. Despite intensive efforts, a need therefore persists for the development of new therapies. Our proposed study seeks to address this by investigating a new therapeutic approach for the treatment of breast cancer and multiple other cancer types. Our approach is based on the following: cancerous cells frequently produce large amounts of proteins called growth factor receptors that are displayed on the surface of the tumor cells. The receptors signal to the cell to continue to grow and divide in an uncontrolled way, resulting in tumors. Hence, by removing these receptors from the cell surface, the signals will be suppressed and tumor growth arrested. Our research plan is to generate proteins, more specifically engineered antibodies, that will clear receptors from the cell surface and degrade them inside the tumor cells. As such, these antibodies are expected to have potent anti-tumor effects. In addition, since antibodies are naturally occurring proteins in the normal immune system of a person, their clinical use is expected to result in minimal adverse side effects. These studies could not only lead to a new therapeutic modality for breast cancer, but will also improve the understanding of the behavior of cell surface receptors which is critical for the development of cancer therapeutics. In addition, this approach could have broad relevance to the targeting of multiple different growth factor receptors that are associated with other malignancies such as lung, colon, ovarian and pancreatic cancer.