



CANCER PREVENTION & RESEARCH
INSTITUTE OF TEXAS

Award ID:
RP160704

Project Title:
High affinity therapeutic mimotope antibodies to the oncogenic Epidermal Growth Factor Receptor

Award Mechanism:
High Impact/High Risk

Principal Investigator:
Tucker, Haley O

Entity:
The University of Texas at Austin

Lay Summary:

Vaccines are medicines that belong to a class of substances that work by stimulating or restoring the immune system's ability to fight disease by producing antibodies. Treatment (or therapeutic) antibodies are intended to treat an existing cancer by strengthening the body's natural defenses against the cancer. It is difficult to produce effective vaccines against some important cancers. These include a variety of tumors that produce on their cell surfaces very high or mutated levels of a protein called Epidermal Growth Factor Receptor (EGFR). Binding to EGFR leads to abnormally rapid cell division and migration. Thus, EGFR dysregulation can significantly contribute to the survival of tumor cells. We propose a novel way to produce a therapeutic vaccine to EGFR by displaying many thousands of copies of EGFR fragments (called peptide epitopes) on the surface of a nonpathogenic organism (*C. taeniosporum*). This modified organism (or its spores) is then presented to the patient's immune system in a manner most likely to stimulate antibodies. This is a proof of concept grant, and thus, the recipients of our novel cancer vaccine will be mice genetically modified to produce a human immune response.