



Award ID:
RP101251-P07

Project Title:
Project 7

Award Mechanism:
Multi-Investigator

Principal Investigator:
Suzanne A Fuqua

Entity:
Baylor College of Medicine

Lay Summary:

Breast and lung cancers are the biggest cancer killers of men and women in Texas and the USA and new ways are needed to treat these cancers that are specific for individual patients. We want to “personalize” therapy by identifying molecular characteristics of tumors (“biomarkers”) that tell us what the best therapy is for each patient. Our team focuses on a specific group of tumor biomarkers called “nuclear hormone receptors” (of which there are 48) and their “co-regulators” (of which there are over 100) because their mechanisms of action are known, and many already have FDA-approved drugs. An example is tamoxifen, a drug that inhibits the estrogen receptor and is in routine clinical use for breast cancer treatment. At present, there is no similar treatment for lung cancer. We want to use information on the expression of each tumor’s nuclear receptor and coregulator profile to prevent and treat lung and breast cancers with hormonal therapy, in a manner tailored to the needs of each patient. Potential advantages are that such hormonal therapy will be much less toxic than currently available chemotherapy, and that this new hormonal therapy would greatly increase the efficacy of available chemotherapy. To do this we have assembled a world-class team of investigators in nuclear receptors, co-regulators, breast and lung cancer who all work in Texas (at UT Southwestern Medical Center, Baylor College of Medicine, and the MD Anderson Cancer Center). We will study the expression of nuclear receptors and co-regulators in a large number of breast and lung cancers and using this information perform all of the preclinical studies to make this approach available for clinical trial testing in patients. If our approach works, it has the potential to revolutionize the prevention and treatment of breast and lung cancer in Texas and the USA.