



Susan G. Komen

Research Grants – Fiscal Year 2015

This research grant was approved for FY2015 Research Programs funding. This grant will be funded upon the execution of grant agreements between Komen and the grantee institutions.

Identifying resistance mechanisms in ER+ breast cancer by translational genomics

Investigator(s): Nikhil Wagle, M.D.

Lead Organization: Dana-Farber Cancer Institute

Grant Mechanism: CCR Basic and Translational

Grant ID: CCR15333343

Public Abstract:

In spite of tremendous advances in the treatment of estrogen receptor-positive (ER+) breast cancer using hormonal therapy, patients frequently develop resistance to these therapies. These resistant tumors remain the most common cause of breast cancer death, yet mechanisms by which this resistance develops are poorly understood. Much more work is required to fully understand all of the clinically relevant resistance mechanisms in breast cancer patients treated with hormonal therapy. Moreover, there is an urgent need to develop new therapies for patients who no longer respond to hormonal therapy. The goal of this project is to improve our understanding of resistant ER+ breast cancer by using cutting-edge genomic technology to directly characterize tumor samples from patients who have developed resistant breast cancer, as well as systematic pre-clinical approaches in breast cancer cell lines. First, we will use next-generation sequencing technology to comprehensively characterize the genomes from breast tumor samples obtained from 100 patients who have developed resistance to hormonal therapy. At the same time, we will conduct a systematic pre-clinical study in breast cancer cell lines to identify genes that might contribute to resistance to anti-estrogen therapy. Once completed, this work should help us understand how ER+ breast cancers develop resistance to hormonal therapies, as well as identify new targets and therapeutic strategies in resistant breast cancer.

