



Research Grants – Fiscal Year 2014

This research grant was approved by Komen's national board of directors for FY2014 Research Programs funding. This grant will be funded upon the execution of grant agreements between Komen and the grantee institutions.

Development of biomarkers of response to prevention interventions with lignans

Investigator(s): Carol Fabian, M.D.

Lead Organization: University of Kansas Medical Center Research Institute

Grant Mechanism: KS

Grant ID: SAC110051

Public Abstract:

With the support of a Promise Grant from Komen, we will be conducting a multi-institutional trial of a plant lignan which is found in high concentration in flaxseed and has been associated with a reduction in breast cancer risk. Premenopausal women at moderate to high risk of breast cancer will be randomized to placebo vs the lignin Secoisolariciresinol diglycoside (SDG; 50 mg/day, Brevail[®]) for 12 months. Breast epithelial cells will be obtained pre- and post-study by random peri areolar fine needle aspiration (RPFNA). The primary endpoint is change in cell proliferation; but we will also assess change in other risk biomarkers such as atypical appearance of cells, breast density assessed by mammography, and serum levels of hormones, growth factors, insulin, and adiponectin. In parallel studies using mouse models of estrogen receptor positive and estrogen receptor negative mammary gland cancer, we will determine if SDG produces the same favorable modulation of proliferation and tissue appearance; and if this translates to a reduction in cancer incidence and multiplicity. The current grant will allow us to interrogate mechanism of action at the gene and protein expression level for both animal and human specimens. These markers are representative of signaling pathways that might be critical for development of breast cancer. This will strengthen the biological rationale for the use of SDG for breast cancer risk reduction.