Bankhead-Coley Cancer Research Program

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Women's Oncology
Moffitt Cancer Center & Research Institute

2011 Program
Technology Transfer Feasibility
(1-year project)

Project Title: From BAD to Good: Developing an Assay to Predict Ovarian-Cancer-Chemo-Resistance and Survival

Project Summary: The development of resistance to chemotherapy contributes enormously to cancer morbidity and mortality in Florida and globally. Patients with ovarian cancer, the most lethal gynecologic malignancy, succumb to their disease when chemo-resistance develops. We recently discovered a signaling pathway (BCL2 Antagonist of Cell Death, or "BAD") that causes ovarian cancer cells to become resistant to chemotherapy and shortens survival. Findings from over 1,200 patients/cancer samples (including ovarian, breast, colon, and brain) suggest that the BAD pathway can: i) be used as a clinical test to predict chemo-resistance and short-term survival for patients with ovarian cancer and ii) be inhibited by "smart drugs" that target and inhibit the pathway to reverse chemo-resistance and prolong survival. To strengthen the economic feasibility and commercial prospects of our discovery, we aim to translate our findings into a BAD pathway gene expression signature (BPGES) clinical assay, leveraging real-time polymerase chain reaction (RT-PCR)-based technology and expertise that is widely available in clinical laboratories worldwide. A BPGES assay has great clinical and commercial potential, helping doctors guide therapy via strategies tailored to the biology of each tumor for thousands of patients each year. This grant is enabling us to translate our findings to a clinical test that has potential to be commercially viable and reduce the burden of cancer mortality.