



Hope Funds for Cancer Research

Press Release

Announces Newly Published Research in the journal *Cancer Research* from Postdoctoral Fellow

For Immediate Release
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Newport, RI - October 6, 2014 - A paper was published on September 29, 2014 in the journal *Cancer Research*, from one of the Hope Funds for Cancer Research postdoctoral fellows, Dr. Frances Byrne in Dr. Kyle Hoehn's laboratory at the University of Virginia and University of New South Wales. Her research explores that while the metabolism of endometrial tumors themselves has been largely understudied, women with metabolic disorders, including obesity and diabetes, have an increased risk of developing endometrial cancer.

"Dr. Byrne's work identifies that therapeutic targeting of the metabolic pathway may improve survival rates for subsets of patients with type I endometrial cancer," says Leah Rush Cann, a Hope Funds for Cancer Research Trustee.

The research published in the September 29, 2014 issue of the journal *Cancer Research*, identifies that the glycolytic inhibitor, 3-bromopyruvate, is a powerful antagonist of lipogenesis through pyruvylation of CoA, that 3-bromopyruvate promotes cell death via a necrotic mechanism that does not involve reactive oxygen species and that 3-bromopyruvate impaired the growth of endometrial cancer xenografts.

Cancer Research Article, [To View Click Here](#)

About Frances Byrne, Ph.D.

Dr. Byrne, is a postdoctoral fellow at University of Virginia & University of New South Wales, in the laboratory of Kyle Hoehn, Ph.D. Her work notes that while effective at killing cancer cells, most chemotherapy drugs also damage healthy cells. Therefore development of new drugs with better cancer cell-specific toxicity would dramatically improve the health and quality of life of cancer patients. A unique property of cancer cells is their ability to metabolize glucose differently to most normal cells. This type of metabolism, referred to as the 'Warburg effect', allows cancer cells to rapidly grow, survive, and spread throughout the body. This feature of cancer cells exposes a weakness that can be exploited for cancer therapy. The objective of this project was to identify a novel compound that could specifically kill cancer cells by targeting the 'Warburg effect'. The conceptual innovation of this project was the design of our drug screen. We developed cell-based assays to screen more than 5000 small compounds. The primary screen identified compounds that increased oxygen consumption in cells (which indicates change in cell metabolism). The secondary screen selected only those compounds that were toxic to cancer cells but not normal cells. The tertiary screen identified compounds that reversed the 'Warburg effect' by forcing cancer cells to convert glucose to carbon dioxide. Our lead compound from this screen has been named BAM10. The technical innovation in this project is that we have identified a novel compound (BAM10) that reverses the 'Warburg effect' and is selectively toxic to cancer

cells. We propose that BAM 10 may be an effective anti-cancer agent and have little or no toxicity to healthy tissues.

About Hope Funds for Cancer Research

The Hope Funds for Cancer Research was formed in 2006 by a group of concerned individuals who have experience in oncology, intellectual property law, investment banking, philanthropy, sociology, and the arts to establish a funding vehicle that would take a rational scientific, medical, and investment approach to granting money to the most interesting and promising research efforts to address the most difficult-to-treat cancers, including (but not limited to) pancreatic, lung, liver, sarcomas, esophageal, brain, gastric, and ovarian cancers and rare leukemias and lymphomas. These cancers are insidiously aggressive illnesses that kill most of their victims within months, even with aggressive chemotherapy. The Trustees of the Hope Funds for Cancer Research believe that funding research that could lead to breakthroughs in these areas and increase life expectancy in these types of cancers is at the core of our mission. The Hope Funds for Cancer Research is a 509 (a)(1) charity under 501(c)(3) of the Internal Revenue Service's code. For additional information about the organization, please visit <http://www.hope-funds.org> or call 401-847-3286.

Hope Funds for Cancer Research: Advancing Innovative Research in Understudied Cancers

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