

# A Word of Thanks

From the Dana-Farber Cancer Institute

Dana-Farber Cancer Institute is deeply grateful to Beta Sigma Phi for its ongoing support of our efforts to ensure a better future for all cancer patients. While it is highly unlikely that a “magic bullet” will bring an end to the many types of cancers, the research of Donald Kufe, MD, is particularly compelling because the oncoprotein that is the focus of his work is implicated in so many different malignancies. The efforts of Judy Garber, MD, MPH, director of the Friends of Dana-Farber Cancer Risk and Prevention Clinic, have similarly far-reaching implications as she and her colleagues assess factors that raise the risk of developing cancer and strive to find strategies to mitigate the risks.



(l-r) Donald Kufe, M.D., International's Laura Wingfield and Judy Garber, M.D.

## Overview of Dr. Kufe's Research

Basic research in Dr. Kufe's laboratory focuses on the MUC1 oncoprotein, which he identified in the early 1980s. Oncoproteins are involved in the regulation or synthesis of proteins linked to tumor growth, and this particular one had been found to be over-expressed by about 800,000 of the 1.4 million tumors diagnosed in the United States each year. MUC1 normally helps protect our cells from damage by adverse environmental conditions; Dr. Kufe and his colleagues have systematically investigated how tumor cells put MUC1 to their own use so that it begins to function as an oncoprotein instead. Several of their studies into the complex interactions between MUC1 and other elements in the cell were described in the last report. As each part of the intricate web becomes clear, researchers can identify vulnerable pathways, which, when shut down, will inhibit MUC1's tumor-promoting behavior without damaging its normal role in healthy cells.



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## Update

While continuing to study how MUC1 works on the molecular level, Dr. Kufe and his colleagues have developed vaccines and other agents for clinical trial in multiple cancers (breast, ovarian, renal, multiple myeloma, among them, all of which over-express MUC1). The vaccines, developed in Dr. Kufe's laboratory, involve fusing MUC1-positive cancer cells with dendritic cells to help stimulate the patient's own immune system.

*Excerpted from: Dana-Farber Cancer Institute Annual Report*