



UNIVERSITY OF HAWAII
CANCER CENTER

FOR IMMEDIATE RELEASE

May 21, 2012

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University of Hawaii Cancer Center Researchers Create New Anti-Cancer Drug
Innovative Computer Modeling Techniques Utilized in Drug Development

HONOLULU- A team of University of Hawaii Cancer Center scientists led by James Turkson, Ph.D. have created a new type of anti-cancer drug named BP-1-102. The drug, which can be orally administered, targets a key protein that triggers the development of many types of cancer including lung, breast and skin cancers.

The development of BP-1-102 was guided by the research teams computer based molecular analysis of the cancer causing Stat 3 protein that causes cancer by promoting abnormal cell growth in otherwise healthy cells.

“The molecular structure of the hyperactive Stat3 protein basically resembles two cars that are joined together side-by-side,” said Professor Turkson. “We then utilized a computer program that creates molecular models of potential drugs engaging in binding to the Stat3 protein to craft the BP-1-102 drug which literally pulls apart the Stat3 protein rendering it ineffective in causing cancer.”

A unique feature of BP-1-102 is that it remains highly effective against cancer even when administered in oral form. Presently, most anti-cancer drugs require intravenous (IV) administration in a clinic or hospital setting which increases the financial, physical and emotional burdens on cancer patients. In its experimental form, BP-1-102 has shown promise in treating breast and lung cancers.

Currently, breast and lung cancers are two of the most commonly diagnosed cancers accounting for nearly half a million cases per year in the United States with over 200,000 deaths attributed to these diseases. In Hawaii, there is an average of 1500 cases diagnosed and over 600 deaths attributed to breast and lung cancers every year.

Professor Turkson is a recent and welcomed addition to the UH Cancer Center faculty. His innovative and ground breaking research focuses on developing novel anticancer drugs based on targeting signal transduction and apoptosis pathways. The research article is published in the May 22nd edition of the “Proceedings of the National Academy of Sciences” journal which can also be accessed on-line at: <http://www.pnas.org>

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The University of Hawai'i Cancer Center is one of 66 research institutions designated by the National Cancer Institute. Affiliated with the University of Hawai'i at Manoa, the center is dedicated to eliminating cancer through research, education, and improved patient care. Construction is under way on a new state-of-the-art research center, opening in 2013 to better serve the people of Hawai'i and the Pacific. Learn more about the Center's work at www.uhcancercenter.org.