



FOR IMMEDIATE RELEASE

PROTEA AND MBRCC ANNOUNCE CANCER RESEARCH COLLABORATION

New technology will probe Leukemia cancer cells.

Morgantown, West Virginia, 8:30am March 22, 2011 – Protea Biosciences, a leading developer of new bioanalytical technology, announced today that the company has begun a cancer research collaboration with the West Virginia University Mary Babb Randolph Cancer Center (MBRCC). The research will be conducted to help understand why some leukemia cancer cells become resistant to treatment and unresponsive to chemotherapy. The work will be performed at Protea's Morgantown laboratories and the laboratory of Laura Gibson, Ph.D., Professor of Microbiology, Immunology and Cell Biology and Deputy Director of the MBRCC.

The collaboration will be a first use of Protea's proprietary laser ablation electrospray ionization ("LAESI") technology, which allows a researcher to rapidly identify immense numbers of the different chemicals within cells. LAESI uses a special laser to burn a tiny hole in an individual cell, releasing a plume of cellular particles. The plume is intersected by a jet of ionizing gases and analyzed in a mass spectrometer – providing researchers with a wealth of data on the composition of the cells.

Human cells, including cancer cells, are surrounded in the body by fluid that contains many vital chemicals and other cells. This local environment, or "microenvironment" as it is often called, turns out to have great impact upon a cell's survival. LAESI technology will be used to clarify chemical changes and chemical signals in the microenvironments of cancer cells, providing new information to support development of new therapeutics.

"Cancer cells are influenced by the microenvironment they live in, and it may well be that this influences a cancer cell's sensitivity to chemotherapy," stated Dr. Gibson, Deputy Director of the MBRCC. "We still have much to learn about what affects the chemoresistance of tumor cells, but we know that part of their response to therapy is impacted by unique microenvironmental cues or changes. We believe there is something in the bone marrow cellular environment, where most of our white blood cells are made, that if identified, can help us to understand and better treat cancers like leukemias. LAESI technology has the potential to provide these answers."

"Because of LAESI's powerful capacity to identify biomolecules, this will be the first time where we can look at metabolic changes in leukemic cells simultaneously with changes in the fluids surrounding these cells," stated Steve Turner, Protea's CEO. "Ultimately we now have an ability to analyze all cancer cells, and understand the many biochemical changes that occur when a normal cell becomes a cancer cell. What's exciting is that this ground breaking research is being first conducted here in West Virginia."

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Protea develops new bioanalytical technology for the direct analysis of proteins and other biomolecules – the products of living cells and organisms. The firm applies their capabilities to develop new pharmaceuticals, products and services.

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For more Information:

Protea Biosciences, Inc.

Steve Turner, CEO
955 Hartman Run Rd.
Morgantown, WV 26507
Phone: 304.292.2226
stephen.turner@proteabio.com
www.proteabio.com

Mary Babb Randolph Cancer Center

Amy Johns, Director of Public Affairs
Planning, Marketing & Communications
WVU Healthcare & Health Sciences
Phone : 304.293.1412
johnsA@wvuhealthcare.com
www.hsc.wvu.edu/mbrcc