

FOR IMMEDIATE RELEASE**PROTEA BIOSCIENCES CONCLUDES NEW TECHNOLOGY LICENSE AGREEMENT****LAESI technology identifies viral-infected cells in minutes**

Morgantown, West Virginia, Sept. 8, 2010 – Protea Biosciences, a leading developer of new bioanalytical technology, announced today that the company has concluded an exclusive, worldwide license agreement with George Washington University for commercial rights to a new technology that provides rapid identification of a broad range of chemicals and biomolecules. In an article published yesterday in the prominent journal PLoS ONE (<http://dx.plos.org/10.1371/journal.pone.0012590>), a team of researchers at George Washington University led by Akos Vertes, PhD., used the newly-developed LAESI technology to rapidly identify virally-infected human cells.

Known as Laser Ablation Electrospray Ionization or “LAESI” mass spectrometry, the technology is capable of directly identifying proteins, peptides, lipids, and metabolites found in biological samples, including tissue, blood, urine and even single cells. Extremely rapid (each analysis takes less than 2 seconds), sensitive and quantitative, LAESI also provides 3 dimensional mapping of biomolecules through depth profiling and lateral imaging. Proteins and metabolites can be identified and localized in cell structures, tissues and fluids. Little or no sample preparation is required.

“We believe LAESI technology holds the promise to meet the great need of biologists and medical professionals to directly identify biomolecules in biomedical samples, without the currently-required destructive and time-consuming sample preparation methods,” stated Steve Turner, Protea CEO. He added, “We foresee a broad range of commercial applications in chemical and biological research, surgical pathology, clinical diagnostics, chemical and biological defense, forensics, agriculture, and many other fields. LAESI is a breakthrough technology of the first order”.

LAESI technology was invented and developed in the laboratory of Dr. Akos Vertes Ph.D., Professor of Chemistry, Professor of Biochemistry & Molecular Biology, and Founder and Co-Director of the W.M. Keck Institute for Proteomics Technology, at the Department of Chemistry, George Washington University. LAESI has already been demonstrated to be a powerful research tool and many of its applications have been published in peer-reviewed journals.

Professor Vertes commented, “LAESI represents a minimally invasive and minimally destructive approach to chemical analysis, which means that dynamic, even living cells or tissues can be probed for their molecular composition not only in three dimensions, but also with time. Small sample consumption of the LAESI analysis means that much of the sample remains available for additional investigation.”

In collaboration with the Vertes laboratory, Protea scientists are developing instrumentation and software that will bring the capabilities of the LAESI technology to research laboratories worldwide, with the availability of the first instruments in 2011.

In their article in PLoS ONE (<http://dx.plos.org/10.1371/journal.pone.0012590>) published yesterday, Prof. Vertes and coworkers demonstrate high throughput, *in situ* metabolite profiling of virally transformed and oncogene expressing cells. Their findings facilitate the identification of virus-induced changes in the biochemical processes of the host cells. These new insights on the affected metabolic pathways can be used to better understand the molecular mechanisms of virally induced cell changes, which in turn can result in new treatment strategies.

Protea Biosciences, Inc. (www.proteabio.com) develops new bioanalytical technologies that enable the direct analysis of proteins, metabolites, and other biomolecules, and applies their technology to the development of new pharmaceuticals, products and services.

For more Information:

Protea Biosciences, Inc., 955 Hartman Run Road, Morgantown, WV 26507

Phone: 304.292.2226

Fax: 304.292.7101

stephen.turner@proteabio.com

www.proteabio.com

The George Washington University, Washington D.C.

Emily Cain, Associate Director of Media Relations

202-994-3087

eecain@gwu.edu

Link to PLoS ONE article: <http://dx.plos.org/10.1371/journal.pone.0012590>

Video article in JoVE on LAESI imaging: <http://www.jove.com/index/details.stp?id=2097>

Video article in JoVE on single cell analysis: <http://www.jove.com/index/details.stp?id=2144>