



NEWS

Science Publication Describes Novel Biology Discovered through the Use of the CyTOF® Mass Cytometer and Massively Multi-parametric Single Cell Analysis.

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Toronto, ON ‐ May 6, 2011 (BUSINESS WIRE) – DVS Sciences announced today the publication in Science of a milestone study describing the use of the **CyTOF®** Mass Cytometer to reveal unique, system wide insights into the complex hematopoietic cell populations and their drug-induced intracellular signaling.

The paper entitled Single-cell Mass Cytometry of Differential Immune and Drug Responses Across a Human Hematopoietic Continuum describes how, using simultaneous analysis of 31 intracellular and membrane bound proteins, nearly 290 distinct cell types were identified in healthy human bone marrow in a single experiment. Within these cell populations it was possible to analyze the response of 18 intracellular phosphoproteins involved in cell signaling to 24 potential drugs and combinations.

The study was carried out in the Baxter Laboratory in Stem Cell Biology, Department of Microbiology and Immunology, Stanford University. Professor Garry Nolan, the lead investigator commented "The ability to use highly multiplexed single cell analysis has given us a much higher resolution view of complex cellular processes that will be critical to understanding the underlying mechanism of diseases like cancer and autoimmune conditions. Detailed information on cell subtypes coupled with the ability to simultaneously analyze the impact of therapeutic agents on numerous cell signaling pathways may provide the opportunity to design drugs that may more effectively and precisely modulate these important diseases".

The **CyTOF®** instrument was developed by DVS Sciences in collaboration with the University of Toronto. The innovative approach extends the applications of multi-parameter flow cytometry by taking advantage of the analytical power of atomic mass spectrometry to measure up to 100 biomarkers simultaneously in single cells at a rate of 1,000 cells per second. Biomarkers are detected using metal labeled antibodies whose mass spectrometric output signals are essentially devoid of spectral overlap. Dr. Scott Tanner, CEO and President of DVS Sciences stated "We are very excited to be working with such leading research institutes on a study that demonstrates the power of highly multiplexed cytometry to better understand the structure and function of complex cell systems. We look forward to enabling many more breakthrough biological studies through the adoption of the robust and easy-to-use **CyTOF®** technology".

The **CyTOF®** Mass Cytometer is now available commercially.

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About Stanford's Baxter Laboratory in Stem Cell Biology

Information about Stanford's Baxter Laboratory in Stem Cell Biology and the departments of Microbiology and Immunology and of Radiology, which also supported the research, is available at <http://baxterlab.stanford.edu/>, <http://microimmuno.stanford.edu/> and <http://radiology.stanford.edu/>, respectively.

About Stanford University School of Medicine

The Stanford University School of Medicine consistently ranks among the nation's top medical schools, integrating research, medical education, patient care and community service. For more news about the school, please visit <http://mednews.stanford.edu>. The medical school is part of Stanford Medicine, which includes Stanford Hospital & Clinics and Lucile Packard Children's Hospital. For information about all three, please visit <http://stanfordmedicine.org/about/news.html>.