New Data Published in Gastroenterology Demonstrate the Power of Fluidigm's Imaging Mass Cytometry on the Hyperion Imaging System to Identify Novel Targets for Pancreatic Cancer Therapy

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Study Highlighting IMC Application in Both Protein and RNA Detection Conducted by Researchers at Fluidigm Center of Excellence for Imaging Mass Cytometry at Georgetown Lombardi Comprehensive Cancer Center

SOUTH SAN FRANCISCO, Calif., Jan. 05, 2021 (GLOBE NEWSWIRE) -- Fluidigm Corporation (NASDAQ:FLDM), an innovative biotechnology tools provider with a vision to improve life through comprehensive health insight, today announced the publication of a new study led by Georgetown Lombardi Comprehensive Cancer Center that further validates the potential for Imaging Mass Cytometry™ (IMC™) on the Hyperion™ Imagin System to provide new insights into the interactions between pancreatic tumor cells and the immune system and to identify novel targets for therapeutic intervention.

The study also highlights the application of IMC in both protein and RNA detection, a capability that is extremely valuable for investigators studying the biological processes in single cells and precious tissue samples. The study data have been published in the journal *Gastroenterology*.

A Fluidigm® Center of Excellence for Imaging Mass Cytometry (CoE) was established at Georgetown Lombardi in early 2020. The Fluidigm CoE program accelerates adoption of mass cytometry through the development of new highly multiplexed panels for the study of cancer, immuno-oncology and immune-mediated diseases.

Pancreatic cancer is the third-leading cause of cancer-related death in the United States. The team led by Georgetown Lombardi partnered with Fluidigm Therapeutic Insights Services (TIS) to conduct the study, which combined IMC with RNAscope Technology.

Researchers at Georgetown Lombardi, Georgetown University, Lawrence Livermore National Laboratory, University of California, Merced, University of California, Davis, STCube Pharmaceuticals and Fluidigm used 12 distinct IMC probes to conduct RNAscope analysis on normal and diseased pancreatic cells and to evaluate interactions between these cells and cells of the immune system. RNAscope is a novel *in situ* hybridization assay for detection of target RNA within intact cells, and this publication is the first to report its use in a multiplexed fashion with 12 different probes, enabling simultaneous evaluation of multiple targets of interest and generating richer datasets.

"Pancreatic tumor cells have a fibrotic, immunosuppressive microenvironment, and this study was designed to evaluate if strategies that alter this microenvironment might help activate an antitumor immune response," said Stephen Byers, PhD, Associate Director and Professor of Oncology at Georgetown Lombardi and senior author of the publication. "Results demonstrate that CDH11, which is overexpressed on cancer-associated fibroblasts, allows cancer cells to escape detection by the immune system. Inhibiting CDH11 expression in mice significantly extended survival and restored sensitivity to gemcitabine, a chemotherapy agent used in the treatment of pancreatic cancer.

"These findings suggest that CDH11 could have significant potential as a novel target for pancreatic cancer therapy."

Key findings of the study include:

- Levels of CDH11 mRNA and protein were significantly higher in cancer-associated fibroblasts than in pancreatic cancer epithelial cells, human or mouse pancreatic cancer cell lines or immune cells.
- Mice in which one or both copies of the CDH11 gene had been knocked out survived significantly longer than mice with both copies of the gene.
- Compared with pancreatic tumors in mice with two copies of CDH11, tumors in mice with only one copy had increased markers of immune system activity, decreased extracellular matrix component and reductions in markers and cytokines associated with immunosuppression.
- Gemcitabine extended survival only in mice that lacked one or both copies of CDH11 or when administered in combination with an anti-CDH11 antibody.
- A small molecule inhibitor of CDH11 reduced the growth of pre-established pancreatic tumors only if T and B cells were present in mice.

Fluidigm Research and Development and the company's TIS program provided support in conducting the IMC analysis for the study. TIS, created to test and develop new solutions based on IMC, provided access to IMC technology, services and data analysis, while R&D scientists developed the method of conjugating metals to RNAscope reagents.

"Fluidigm is committed to harnessing the power of our technologies to inform new approaches to therapies, and this published study demonstrates our ability to generate insights that have the potential to advance cancer care and outcomes," said Andrew Quong, Chief Science Officer of Fluidigm and an author of the publication. "Significantly, the study also highlights the potential for IMC in both protein and RNA detection. This capability is extremely valuable for investigators studying the biological processes in single cells and with precious tissue samples.

“We established our Therapeutic Insights Services to expand access to our IMC and mass cytometry technologies. Going forward, we intend to leverage TIS to power additional groundbreaking research in our growing and evolving Center of Excellence program. The scientific and technological advances made in partnership with the CoE researchers will be made available to other scientists through TIS and the launch of new products. Access to these advances will accelerate the impact of mass cytometry in understanding critical biologic processes and the translation of those insights into novel therapies and clinical practice.”

About Imaging Mass Cytometry
Imaging Mass Cytometry is setting a new standard in tissue imaging, significantly simplifying high-multiplex panel design and eliminating the impact of tissue autofluorescence by using highly pure metal tags for which signals are separated by mass instead of by wavelength. Incorporating an easy-to-use immunohistochemistry workflow that simultaneously detects many proteins in a single scan, IMC is ideal for uncovering new insights in health and disease and empowering the development of better diagnostics and more effective therapies.

About Fluidigm
Fluidigm (Nasdaq:FLDM) focuses on the most pressing needs in translational and clinical research, including cancer, immunology, and immunotherapy. Using proprietary CyTOF® and microfluidics technologies, we develop, manufacture, and market multi-omic solutions to drive meaningful insights in health and disease, identify biomarkers to inform decisions, and accelerate the development of more effective therapies. Our customers are leading academic, government, pharmaceutical, biotechnology, plant and animal research, and clinical laboratories worldwide. Together with them, we strive to increase the quality of life for all. For more information, visit fluidigm.com.

Forward-Looking Statements for Fluidigm
This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including, among others, statements regarding potential applications for Fluidigm technology in disease research and development of therapies and expectations for Fluidigm’s Therapeutic Insights Services (TIS). Forward-looking statements are subject to numerous risks and uncertainties that could cause actual results to differ materially from currently anticipated results, including but not limited to risks relating to the possible loss of key employees, customers, or suppliers; uncertainties in contractual relationships; challenges inherent in developing, manufacturing, launching, marketing, and selling new products; risks relating to company research and development and distribution plans and capabilities; interruptions or delays in the supply of components or materials for, or manufacturing of, Fluidigm products; potential product performance and quality issues; intellectual property risks; competition; and reductions in research and development spending or changes in budget priorities by customers. Information on these and additional risks and uncertainties and other information affecting Fluidigm business and operating results is contained in Fluidigm’s Annual Report on Form 10-K for the year ended December 31, 2019, and in its other filings with the Securities and Exchange Commission. These forward-looking statements speak only as of the date hereof. Fluidigm disclaims any obligation to update these forward-looking statements except as may be required by law.

Available Information
We use our website (fluidigm.com), investor site (investors.fluidigm.com), corporate Twitter account (@fluidigm), Facebook page (facebook.com/Fluidigm), and LinkedIn page (linkedin.com/company/fluidigm-corporation) as channels of distribution of information about our products, our planned financial and other announcements, our attendance at upcoming investor and industry conferences, and other matters. Such information may be deemed material information, and we may use these channels to comply with our disclosure obligations under Regulation FD. Therefore, investors should monitor our website and our social media accounts in addition to following our press releases, SEC filings, public conference calls, and webcasts.

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