



10x Genomics Announces Publication of Study in Nature Communications Demonstrating Single Cell Profiling in Leukemia Patients by the Fred Hutchinson Cancer Research Center

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– Study of data from patients with acute myeloid leukemia uses Company's single-cell RNA-sequencing technology to yield the most comprehensive single cell data sets to date –

PLEASANTON, Calif., January 16, 2017 – [10x Genomics, Inc.](#), a company focused on enabling the mastery of biology by accelerating genomic discovery, today announced the publication of a study enabled by the company's Chromium Single Cell 3' Solution. This powerful new technology provides robust single-cell expression measurements, allowing the discovery of gene expression dynamics and molecular profiling of individual cell types at scale. The study, titled "Massively parallel digital transcriptional profiling of single cells," was published in *Nature Communications* and was co-authored with researchers from the Fred Hutchinson Cancer Research Center.

"Earlier methods for single-cell RNA-sequencing posed practical challenges for many labs, including our own. Therefore, we welcomed the opportunity to collaborate with 10x Genomics to help validate and tailor its single-cell RNA-sequencing platform to unlock the potential of single-cell transcriptomics in both biological and clinical research," said Jason Bielas, Ph.D., co-author and principal investigator at the Fred Hutchinson Cancer Research Center. "The speed, reproducibility and high cell capture efficiency of 10x's single cell analysis allowed us to accurately profile fragile bone marrow samples isolated from patients with acute myeloid leukemia who underwent multiple rounds of chemotherapy, transplant conditioning and immunosuppression."

To demonstrate the technical performance and applications of the Chromium Single Cell 3' Solution, the researchers collected transcriptome data from approximately 250,000 single cells across 29 samples. Results showed superior scalability and robustness of this system for single cell RNA-sequencing, with comparable sensitivity to existing methods. The system's rapid cell encapsulation and high cell capture efficiency enabled analysis of precious clinical samples from patients with acute myeloid leukemia. Using the Chromium Single Cell 3' Solution, researchers determined host and donor chimerism at single cell resolution and compared immune cell subpopulation changes in patients before and after transplant.

Existing methods for single-cell RNA-sequencing face practical challenges when scaling to tens of thousands or more cells in throughput. The commercially available Chromium Single Cell 3' Solution enables single cell RNA-sequencing at scale, with high cell capture efficiency and flexible throughput.

Current plate-based approaches require time-consuming fluorescence-activated cell sorting (FACS) into many plates that must be processed separately. Microfluidics-based platforms utilize mechanical trapping of cells and are limited in their throughput and cell capture efficiency. Academic droplet-based techniques enable processing of tens of thousands of cells in a single experiment but are not efficient to implement, or robustly scale. The published data demonstrates the Chromium Single Cell 3' Solution can address both of these shortcomings in a single assay, resulting in a more scalable and robust platform for single cell RNA-sequencing.

"We were thrilled when we learned of the success Dr. Bielas and his team had when using the 10x platform," said Serge Saxonov, Ph.D., co-founder and chief executive officer of 10x Genomics. "This published study validates our system and highlights the novel insights that can be gained from rapid and scalable single cell analysis. We look forward to more of these studies and the potential impact on a wide variety of research and clinical applications."

The study published in *Nature Communications* is available online at <http://www.nature.com/ncomms>.

Single cell RNA-sequencing data is available at <http://support.10xgenomics.com/single-cell/datasets>.

About 10x Genomics

10x Genomics is changing the definition of sequencing by providing an innovative genomics platform that dramatically upgrades the capabilities of existing sequencing technologies. This is achieved through a combination of new microfluidic science, chemistry and bioinformatics. By implementing GemCode Technology within the Chromium System, researchers can now, for the first time, find new structural variants, haplotypes and other valuable genomic information with comprehensive workflows for Single Cell, Genome, Exome and *de novo* Assembly applications that incorporate their pre-existing sequencing technologies.

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