



Pacific Biosciences Enhances Performance and Affordability of Key Applications on the Sequel System

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New Polymerase and Software Releases Improve Structural Variant Detection, Targeted Sequencing and RNA Sequencing Applications

MENLO PARK, Calif., March 07, 2018 (GLOBE NEWSWIRE) -- Pacific Biosciences of California, Inc. (Nasdaq:PACB), the leader in long-read, high-resolution sequencing, today announced a new version of Sequel[®] Software (V5.1) and a new polymerase. Combined, these enhancements increase throughput and the overall performance of Single Molecule, Real-Time (SMRT[®]) Sequencing for key applications such as *de novo* assembly, structural variant detection, targeted sequencing, and RNA sequencing (Iso-Seq[®] method), making genomic research more economical.

With this release the Sequel System can achieve up to 10 Gb per SMRT Cell for genomic libraries, effectively doubling the throughput when using ultra-long inserts (>40 kb) for *de novo* genome assembly. For targeted and RNA sequencing, customers can achieve up to 20 Gb per SMRT Cell. Since the SMRT Sequencing technology was first commercialized in 2011, Pacific Biosciences has increased the throughput per SMRT Cell 1000-fold. These ongoing throughput increases provide a significant cost savings for sequencing projects in the human, plant, and animal markets, which allows researchers the opportunity to increase the size and scope of their projects.

For human whole genome sequencing (WGS) studies, the new improvements support sensitive detection of structural variants with as little as 5- to 10-fold coverage per individual. As a result, customers can now complete low-cost WGS studies in thousands of individuals using fewer SMRT Cells. Sequel System users can obtain 10-fold coverage using as few as 4 SMRT Cells per sample and population genetics projects can be conducted with 5-fold coverage using as few as 2 SMRT Cells per sample. Pacific Biosciences also offers a [structural variation project calculator](#) to inform structural variant study designs.

This release improves the sensitivity of the Iso-Seq method to characterize an organism's transcriptome. For long amplicons (>3 kb), the new polymerase increases the number of high-quality sequences per SMRT Cell, reducing costs for HLA sequencing and other targeted applications. Further, software enhancements for multiplexed samples simplify the analytical workflow.

Dr. Nezhil Cereb, CEO and co-founder of HistoGenetics, was one of several early access users for this release. "By introducing SMRT Sequencing for routine HLA testing, HistoGenetics set the new gold standard. To date, we have run 475,000 samples on PacBio systems in our high-volume HLA typing lab. With these new Sequel System improvements, we are achieving increased throughput as well as saving time."

"Our market-leading, long-read sequencing technology continues to reveal new insights in genomics that cannot be reliably detected using other sequencing methods, as evidenced by the more than 3,200 scientific publications featuring SMRT Sequencing," said Kevin Corcoran, Senior Vice President of Market Development for Pacific Biosciences. "We remain focused on enhancing key applications and, with increased throughput, we are empowering users to perform large-scale studies at a price per sample that meets their research and commercial objectives."

More information about the Sequel System is available at: <http://www.pacb.com/sequel/>.

About Pacific Biosciences

Pacific Biosciences of California, Inc. (NASDAQ:PACB) offers sequencing systems to help scientists resolve genetically complex problems. Based on its novel Single Molecule, Real-Time (SMRT[®]) technology, Pacific Biosciences' products enable: *de novo* genome assembly to finish genomes in order to more fully identify, annotate and decipher genomic structures; full-length transcript analysis to improve annotations in reference genomes, characterize alternatively spliced isoforms in important gene families, and find novel genes; targeted sequencing to more comprehensively characterize genetic variations; and real-time kinetic information for epigenome characterization. Pacific Biosciences' technology provides high accuracy, ultra-long reads, uniform coverage, and the ability to simultaneously detect epigenetic changes. PacBio[®] sequencing systems, including consumables and software, provide a simple, fast, end-to-end workflow for SMRT Sequencing. More information is available at www.pacb.com.

Forward-Looking Statements

All statements in this press release that are not historical are forward-looking statements, including, among other things, statements relating to product enhancements, the suitability or cost-effectiveness of products for particular applications or projects, future availability, uses, quality or performance of, or benefits of using, products or technologies, and other future events. You should not place undue reliance on forward-looking statements because they involve known and unknown risks, uncertainties, changes in circumstances and other factors that are, in some cases, beyond Pacific Biosciences' control and could cause actual results to differ materially from the information expressed or implied by forward-looking statements made in this press release. Factors that could materially affect actual results can be found in Pacific Biosciences' most recent filings with the Securities and Exchange Commission, including Pacific Biosciences' most recent reports on Forms 8-K, 10-K and 10-Q, and include those listed under the caption "Risk Factors."

Pacific Biosciences undertakes no obligation to revise or update information in this press release to reflect events or circumstances in the future, even if new information becomes available.

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