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## Life Technologies Begins Shipping Ion Proton System

### Ion Proton™ System brings genome-scale sequencing to every lab by removing high cost and complexity -- will enable \$1,000 genome in a few hours

CARLSBAD, Calif., Sept 13, 2012 /PRNewswire/ -- [Life Technologies Corporation](#) (NASDAQ: LIFE) today announced it is now shipping the Ion Proton™ System. The platform's speed, ease-of-use and affordability will democratize genome sequencing. For the first time, genome-scale sequencing is accessible to all scientists and medical researchers, enabling an unprecedented wave of innovation in life sciences and the advancement of clinical research.

"The Ion Proton System is an important milestone in our vision to drive innovation, economic growth and scientific progress by transforming the genome center into a simple desktop sequencer," said Gregory T. Lucier, Chairman and Chief Executive Officer of Life Technologies. "A key area where we will see these future advances is in clinical research, where physician-scientists dealing with previously intractable conditions like cancer will finally have the tools to confidently understand, identify and treat the disease. This is an inflection point in the history of research, and there is much more to come."

Previously, genome-scale sequencing has only been possible at large centers or core labs because it required specialized molecular biology skills, expensive sequencers, extensive IT infrastructure and large numbers of bioinformatics specialists. With the introduction of the Ion Proton™ System, Life Technologies now offers a solution to overcome all of these barriers, enabling scientists to sequence within budget, on schedule and on the bench top in their own labs.

#### Automated sample prep for all labs

Life Technologies is introducing two new automated template preparation instruments: the Ion OneTouch™ 2 System and Ion Chef™ System. The Ion OneTouch™ 2 System is ideal for labs with a Proton and medium throughput requirements. The Ion Chef™ System is ideal for labs with any level of molecular biology expertise, or for labs with high throughput requirements. It automates the upfront sequencing workflow, going from library to "loaded chips" with just minutes of hands-on time, and is scheduled to ship in the first half of next year.

#### Semiconductor technology enables sequencing for all budgets, in all labs

The Ion Proton™ System is one-third the cost of light-based genome-scale sequencing systems, saving researchers hundreds of thousands of dollars. Additionally, at just \$1,000 per run, scientists can afford to follow a one-off idea or invest in a major study. Using the Ion PI™ Chip, available today, the system can sequence exomes and transcriptomes in just two to four hours. Initially the system will deliver 60-80 million filtered reads and up to 10 Gb of output, with potential for higher performance. Read-lengths are 100 to 200 bp and the consensus accuracy is comparable to that of the Ion PGM™ sequencer.

Life Technologies plans to ship more than 100 Ion Proton™ Systems to customers in September and continues to take additional orders and experience strong customer demand for the platform.

The Ion PII™ Chip is designed to sequence the human genome in just a few hours for \$1,000, and is expected to ship approximately 6 months following today's Ion Proton System launch. The Ion Proton instrument, chemistry and chip architecture are designed to accommodate the higher well density of the Ion PII™. Historically, each time the well diameter of Ion chips is reduced by half, the signal has quadrupled.

The Ion Proton™ System's technology builds on the rapid advances in increasing throughput, accuracy and read length made by the Ion Personal Genome Machine® (PGM™) Sequencer. The Ion PGM™ became the fastest sequencing sequencer in the world in just six months, and by the end of the first half of 2012 more than 1,000 units were in research labs around the world.

"The Ion Proton™ System is the outcome of 40 years of accumulated Moore's law, starting with technologies that enabled the moon landing and that ultimately gave us modern electronics, computing and communications," said Ion Torrent CEO and Founder Jonathan M. Rothberg. "Now, for the first time, we are leveraging the trillion dollars that has gone into semiconductor development to 'see' chemistry and directly decode genomes."

Dr. Rothberg announced today at the Ion World 2012 customer conference that Life Technologies has developed Avalanche™, a revolutionary 30-minute emulsion-free template preparation chemistry that will work on all Ion platforms. Dr. Rothberg also announced that Avalanche™ will enable an Ion PIII™ Chip for the Proton, with more than 1.2 billion sensors t

will take researchers beyond the \$1,000 genome. Both innovations are possible because of the rapid pace of development afforded by Ion Torrent's invention of semiconductor sequencing technology.

### **A desktop server IT solution for genome-scale sequencing**

Life Technologies has replaced the IT server room with a simple desktop server by moving primary analysis to the sequencer and using the most advanced technology from Intel®, Nvidia® and Altera® to enable the highest direct link between the biological and digital worlds.

"We are pleased that when Ion Torrent wanted the most advanced components to support the highest sequencing data throughput in the world, they turned to Intel technology and our team of engineers to help make the Ion Proton™ a success," said David Brown, Marketing Director, Enterprise Platform and Services Division (EPSD) for Intel. "We have enjoyed our collaboration over the last year to create one of the most advanced sequencing systems in the world."

### **Automated bioinformatics solution for genome-scale sequencing**

Ion Reporter™ Software Life Technologies' cloud-based bioinformatics solution, performs alignments, identifies variants, and delivers automated annotation on data for paired tumor normal samples, and trio samples for inherited disease, from both the Ion Proton™ and Ion PGM™ platforms.

The system's pre-configured workflows make it easy to use, generate a report that classifies variants into simple categories, and make interpretation easier for researchers just getting started with sequencing. For example, the Ion Reporter™ Ingenuity Variant Analysis™ workflow streamlines exome-scale discovery by providing curated annotations to rapidly get to causal variants.

### **Driving innovation in clinical research**

The rapid performance advancement of the Ion PGM™ Sequencer, including read length, accuracy and throughput, positions Life Technologies to "lock down" robust kits and protocols to prepare for 510(k) clearance with the U.S. Food and Drug Administration (FDA) and other key regulatory agencies around the world. The Ion Proton™ System, which is built on the foundation underlying Ion PGM™ technology, gives researchers the rapid turnaround, ease-of-use, and affordability to go from multiplex sample sequencing to genome-scale sequencing on a single platform. After a period of deployment in the research market, Life Technologies also plans to develop the Ion Proton™ System for clearance with the FDA.

### **About Life Technologies**

Life Technologies Corporation (NASDAQ: LIFE) is a global biotechnology company with customers in more than 160 countries using its innovative solutions to solve some of today's most difficult scientific challenges. Quality and innovation are accessible to every lab with its reliable and easy-to-use solutions spanning the biological spectrum with more than 50,000 products for translational research, molecular medicine and diagnostics, stem cell-based therapies, forensics, food safety and animal health. Its systems, reagents and consumables represent some of the most cited brands in scientific research including: Ion Torrent™, Applied Biosystems®, Invitrogen™, GIBCO®, Ambion®, Molecular Probes®, Novex®, and TaqMan®. Life Technologies employs approximately 10,400 people and upholds its ongoing commitment to innovation with more than 4,000 patents and exclusive licenses. LIFE had sales of \$3.7 billion in 2011. Visit us at our website: <http://www.lifetechnologies.com>.

### **Life Technologies' Safe Harbor Statement**

This press release includes forward-looking statements about our anticipated results that involve risks and uncertainties. Some of the information contained in this press release, including, but not limited to, statements as to industry trends and Life Technologies' plans, objectives, expectations and strategy for its business, contains forward-looking statements that are subject to risks and uncertainties that could cause actual results or events to differ materially from those expressed or implied by such forward-looking statements. Any statements that are not statements of historical fact are forward-looking statements. When used, the words "believe," "plan," "intend," "anticipate," "target," "estimate," "expect" and the like, and/or future tense or conditional constructions ("will," "may," "could," "should," etc.), or similar expressions, identify certain of these forward-looking statements. Important factors which could cause actual results to differ materially from those in the forward-looking statements are detailed in filings made by Life Technologies with the Securities and Exchange Commission. Life Technologies undertakes no obligation to update or revise any such forward-looking statements to reflect subsequent events or circumstances.

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