Sequencing for all.

ion torrent
by life technologies™

PGM™ for genes. Proton™ for genomes.

Powered by fast, simple, scalable semiconductor chips, the Ion PGM™ Sequencer introduced an entirely new approach to sequencing, making it dramatically faster and more accessible.

The new Ion Proton™ Sequencer will go even further. With chip densities up to 1,000-fold greater than the Ion PGM™ Sequencer, the Ion Proton™ Sequencer will put whole-genome sequencing within the reach of any lab.

← THE CHIP IS THE MACHINE™

At the heart of every Ion Torrent™ sequencer is a powerful semiconductor chip. By increasing the density of wells in each generation of chips, Ion Torrent™ sequencers have realized a 100-fold increase in throughput in just their first year.

ION PROTON™ SEQUENCER

HUMAN GENOMES
HUMAN EXOMES
WHOLE TRANSCRIPTOMES

Human genome sequencing

The Ion Proton™ II Chip will enable fast, affordable, whole-genome sequencing on your benchtop.

Human exome sequencing

Using the next generation of semiconductor technology, the Ion Proton™ I Chip will deliver whole-exome sequencing in just a few hours.

2-hour run times

Rapid 100-base sequencing runs on the Ion Proton™ I Chip.

"Cost, speed, and accuracy are key elements in the use of DNA sequencing. The technological advances in the new Ion Proton™ instrument promise to be game-changing for both research and clinical applications."

DR. RICHARD LIFTON
YALE SCHOOL OF MEDICINE, USA

THE ONLY BENCHTOP GENOME CENTER

The Ion Proton™ Sequencer* is based on the next generation of semiconductor sequencing technology that made the Ion PGM™ Sequencer the fastest selling sequencer in the world. New high-throughput chips will enable the Ion Proton™ Sequencer to sequence a human genome with similar run times, and single-day workflow, as the Ion PGM™ Sequencer.

Data analysis, which has long been a bottleneck for whole-genome sequencing, can also be completed in the same day on a single stand-alone server. In the time it takes for other systems to batch sequence 6 genomes, the Ion Proton™ Sequencer can sequence and analyze 20 genomes for a small fraction of the cost.

Proton I*

The Ion Proton™ I Chip
165 million wells
2 human exomes

Proton II*

The Ion Proton™ II Chip
660 million wells
1 human genome

*The content provided herein may relate to products that have not been officially released and is subject to change without notice.

ION PGM™ SEQUENCER

SMALL GENOMES
SETS OF GENES
GENE EXPRESSION
ChIP-SEQ

10 Mb to 1 Gb

100-fold scaling means you can choose the amount of sequencing throughput required for your specific application.

"We are impressed by the performance of the Ion 318™ Chip. Producing 1 Gb of sequence data in a single run of just a few hours, these chips have opened up many new application areas for the Ion PGM™ Sequencer.

DR. NIALL LENNON
BROAD INSTITUE OF HARVARD & MIT, USA

90-minute run times

Rapid 100-base sequencing on the Ion 314™ Chip.

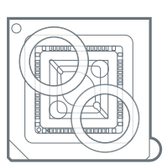
35–400* bp reads

If your application requires short-read or long-read sequencing, or single-end, paired-end, or mate-paired sequencing, the Ion PGM™ Sequencer delivers the greatest flexibility.

THE FASTEST BENCHTOP SEQUENCING SOLUTION

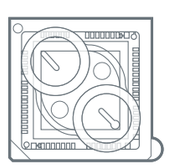
The Ion PGM™ Sequencer is ideal for sequencing small genomes, sets of genes, or performing gene expression profiling or ChIP-Seq. Using Ion AmpliSeq™ Custom Solutions, researchers can interrogate targeted genomic regions using up to 1,536 amplicons in a single tube, in a single day.

The Ion PGM™ Sequencer is faster than any other next-generation sequencer, requiring as little as 90 minutes to do an entire sequencing run. Its speed, simplicity, and scalability also make it an ideal platform to extend into diagnostics, and Life Technologies will seek FDA clearance for the Ion PGM™ platform in 2012.



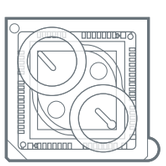
314

The Ion 314™ Chip
1 million wells
10 Mb output



316

The Ion 316™ Chip
6 million wells
100 Mb output



318

The Ion 318™ Chip
11 million wells
1 Gb output

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SEQUENCING APPLICATIONS →

SMALL GENOMES

SETS OF GENES

GENE EXPRESSION ChIP-SEQ

WHOLE TRANSCRIPTOMES

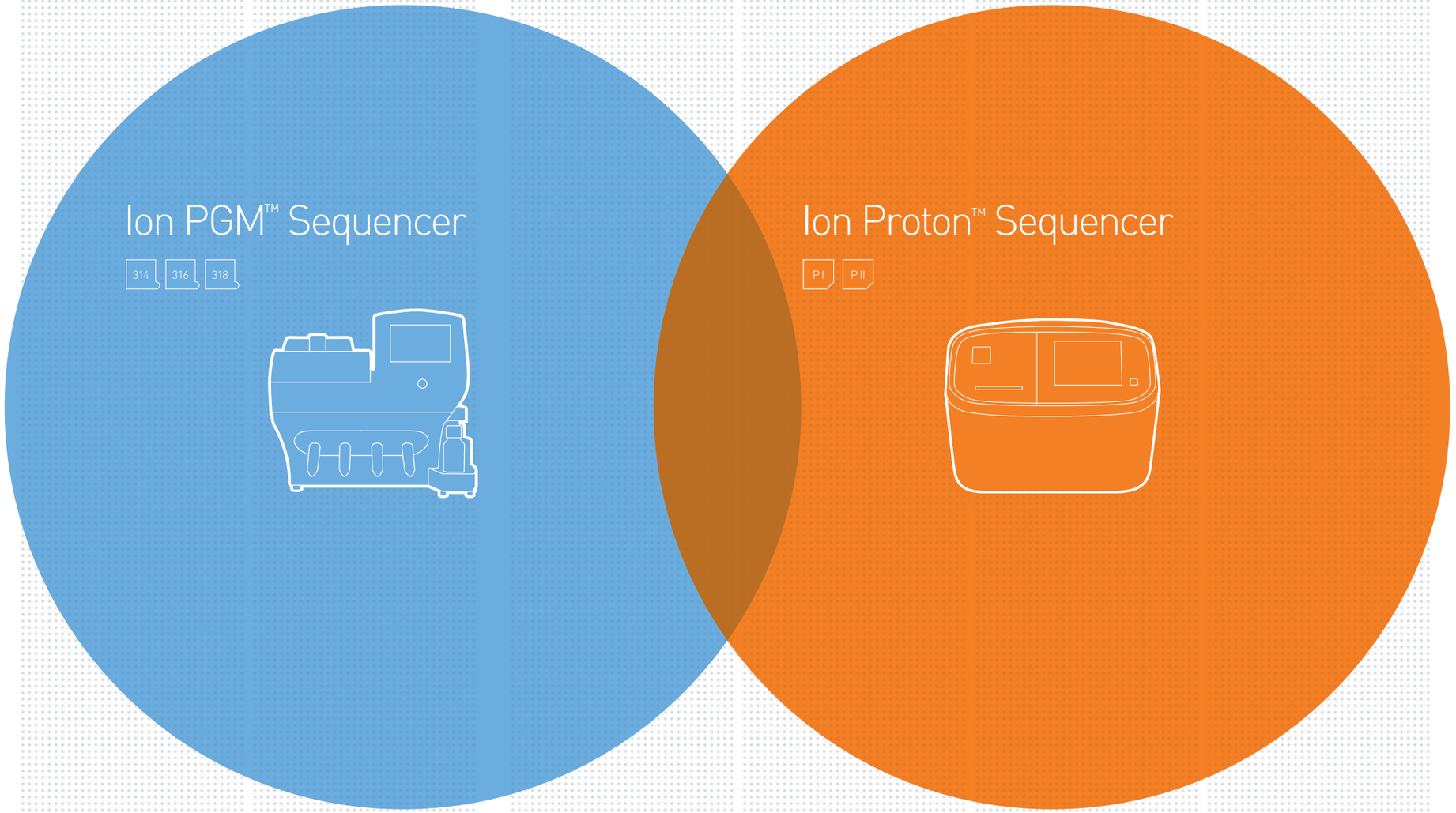
HUMAN EXOMES

HUMAN GENOMES

SEQUENCING FOR EVERY LAB, EVERY BUDGET, EVERY APPLICATION.

Ion PGM™ Sequencer users can choose from 3 chip densities for optimal performance for small-genome sequencing, sequencing sets of genes, ChIP-Seq, and gene expression.

Ion Proton™ Sequencer users can sequence exomes and whole transcriptomes on the Ion Proton™ I Chip, and human genomes on the higher density Ion Proton™ II Chip, with similar run times to the Ion PGM™ Sequencer.



SEQUENCING CHIPS →

314 316 318 | 314 316 318 | 318 P I | 318 P I | P I P II | P II

The most accessible sequencing technology, supported by a worldwide development community.

Democratizing sequencing is not just about making it simple and affordable. It's about openly sharing your methods and data so people can not only evaluate the technology, but build on it. Ion Torrent has opened its protocols, datasets, and source code to the world to enable the community to drive application development and help make sequencing accessible to every lab.

In just our first year, more than 6,000 scientists and developers have joined the Ion Community online, and over 150 more join each week. The Ion Community not only provides open access to information, but also rewards members for contributions such as posts and record runs.

Connect with scientists and developers, and access protocols, datasets, and source codes, by joining the Ion Community at iontorrent.com/community

Discover how-to guides, application notes, white papers, and protocols for your application on the Ion Community applications page at lifetechnologies.com/ionapps

Experience the speed, scalability, and simplicity of Ion semiconductor sequencing at lifetechnologies.com/ionsequencing

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Sequencing for all.

life technologies™