

ion torrent



## Ion GeneStudio S5 Series Systems

Focused, scalable next-generation sequencing has never been faster






**ThermoFisher**  
SCIENTIFIC

# Choose faster, more scalable next-generation sequencing

## Multi-instrument portfolio in one comprehensive NGS system

Since its inception, next-generation sequencing (NGS) has revolutionized genomic research, enabling accelerated biological discoveries and clinical advancements. Its power and application potential as a research tool continues to evolve, driving demand for faster, more accurate sequencers.

Built on Ion Torrent™ technology, the Ion GeneStudio™ S5 Systems provide the simplest sample-to-data workflow for targeted sequencing with industry-leading speed and scalability, allowing you to spend more time answering critical questions in your research.

-  • **Ion 550™ Chip**  
100–130M reads
-  • **Ion 540™ Chip**  
60–80M reads
-  • **Ion 530™ Chip**  
15–20M reads
-  • **Ion 520™ Chip**  
4–6M reads
-  • **Ion 510™ Chip**  
2–3M reads

Five Ion S5™ chip options enable a sequencing throughput range of 2M to 130M reads

Sequencing and analysis in as little as 3 hours with the Ion GeneStudio S5 Prime System



# Answer your research questions with less total workflow time and less hands-on time



**Sequence fast**  
**Ion GeneStudio**  
**S5 System**

Turnaround time: 19 hr\*



***and faster***  
**Ion GeneStudio**  
**S5 Plus System**

Turnaround time: 10 hr\*



***and faster***  
**Ion GeneStudio**  
**S5 Prime System**

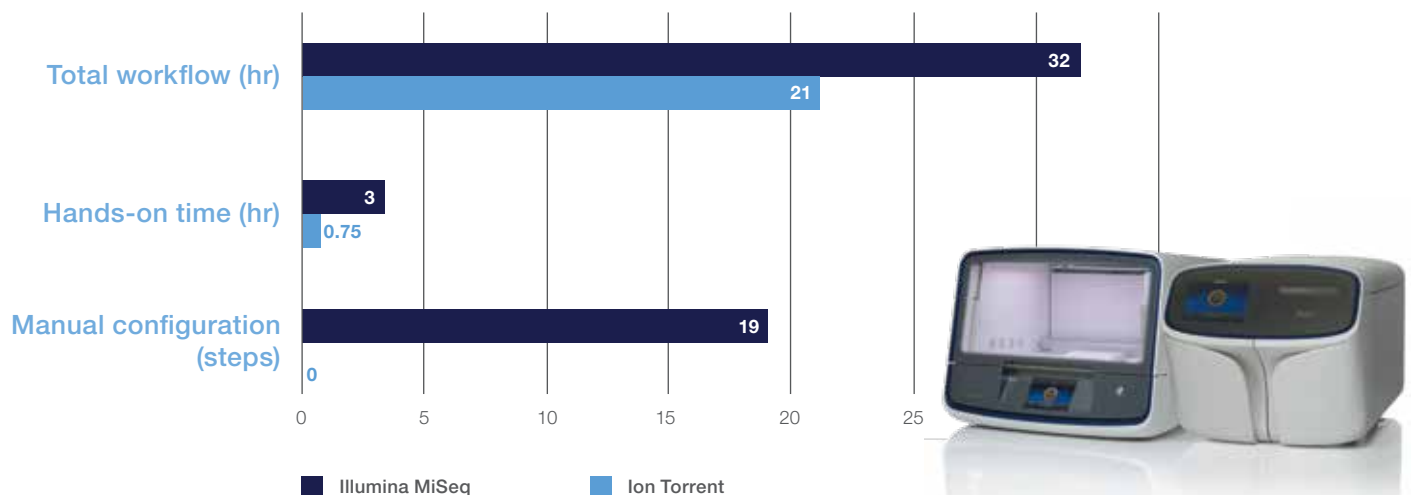
Turnaround time: 6.5 hr\*

Throughput scalability and application flexibility—all on the same platform. Choose the system configuration that best fits your budget and turnaround time needs.

\*Sequencing and analysis times based on Ion 540 Chip.

By combining the Ion Chef™ System with the Ion GeneStudio S5 System, collect data up to 30% faster, with 75% less hands-on time than with the Illumina™ MiSeq System.

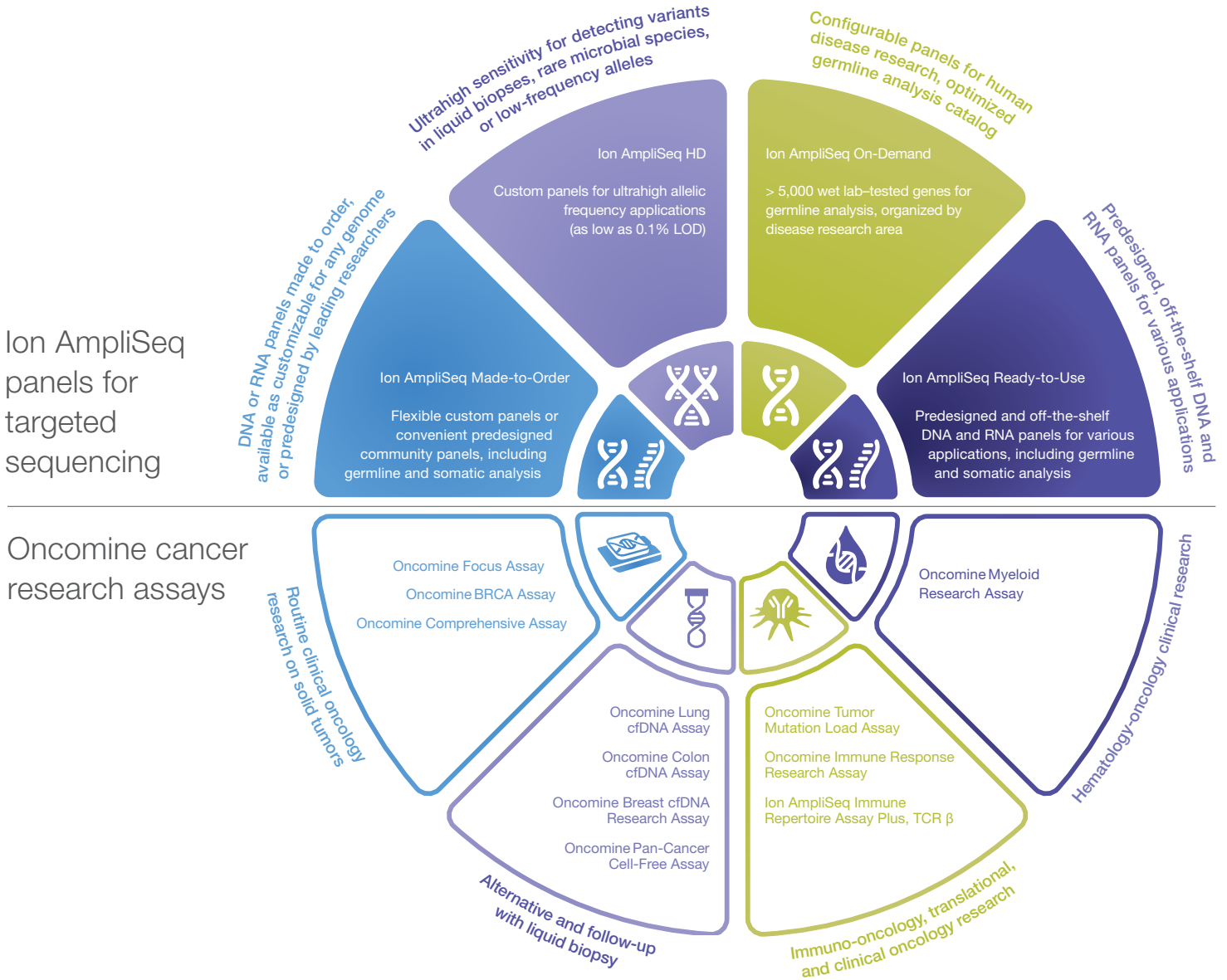
Workflow comparison



# Choose targeted sequencing

The research content you want

Optimized, off-the-shelf panels and custom designs



# The automation you need

Fast workflow, from library to data



1

## Library and template prep

30 min of hands-on time for library prep, template prep, and chip loading with the Ion Chef System

2

## Sequencing

2.5 hr sequencing runs on Ion GeneStudio S5 instruments with <15 min of setup time



3

## Data analysis

Transform data to insight with analysis, QC reporting, and variant calling on Thermo Fisher™ Cloud or an in-house Ion Reporter™ Server



# One sequencer— multiple applications

The Ion GeneStudio S5 Series system enables small and large next-generation sequencing (NGS) projects

Designed to optimize throughput and cost, the Ion GeneStudio S5 system uses semiconductor sequencing on chips to enable flexibility in analysis—from gene panels to exomes, gene expression profiling to transcriptomes, or microbial genomes to microbiomes.

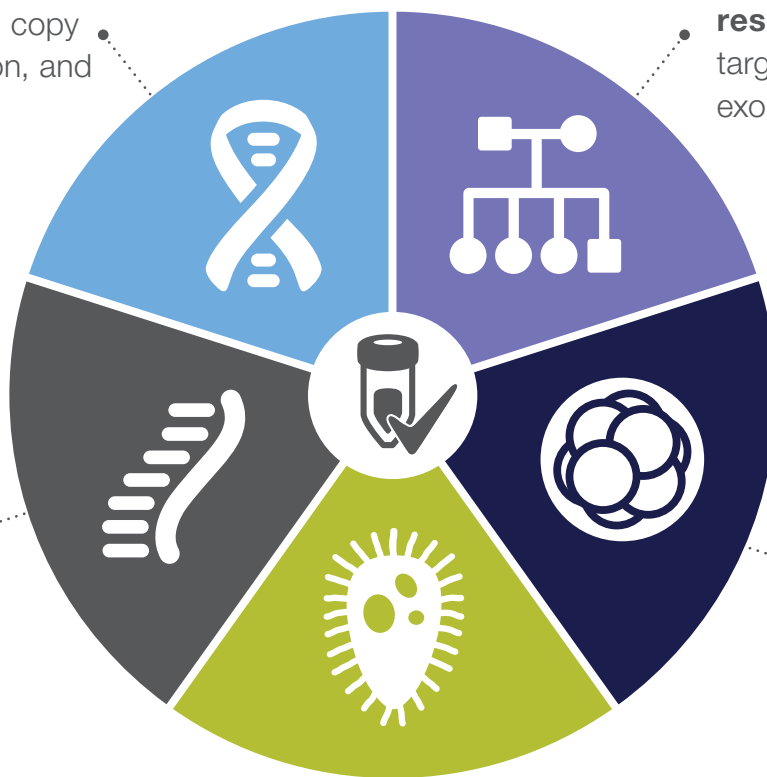
**Cancer research:** gene panels for SNPs, indels, copy number, gene expression, and gene fusion analysis

**Inherited disease research:** panels for targeted gene or whole exome analysis

**Gene expression analysis:** whole transcriptome RNA-Seq, targeted RNA sequencing, and small RNA sequencing

**Reproductive health research:** aneuploidy detection

**Microbiology/infectious disease research:** microbial whole genomes, microbial genotyping, and metagenomics





“

Exome trios are straightforward in a single Ion 550 chip run. We've also tried mouse transcriptome, DNA, and RNA panels. Data quality is excellent, comparable with our Ion 540 chip data. The 550 workflow can support double the samples per chip.

”

**Adam Aneur, bioinformatician**

Department of Immunology, Genetics and Pathology  
National Genomics Infrastructure (NGI), SciLifeLab Uppsala

**System performance**

	<b>Ion GeneStudio S5 System</b>	<b>Ion GeneStudio S5 Plus System</b>	<b>Ion GeneStudio S5 Prime System</b>
<b>Maximum throughput/day (chip type)</b>	15 Gb (one Ion 540 chip)	30 Gb (two Ion 540 chips)	50 Gb (two Ion 550 chips)
<b>Total sequencing and analysis time at maximum throughput</b>	19 hr (Ion 540 chip)	10 hr (Ion 540 chip) 11.5 hr (Ion 550 chip)	8.5 hr (Ion 540 chip) 8.5 hr (Ion 550 chip)
<b>Compatible chips</b>	Ion 510, 520, 530, and 540 chips	Ion 510, 520, 530, 540, and 550 chips	

“

In my institute, many customers outsource for exome and whole genome studies. They come to me for speed, and flexibility for different gene panels, tailored to disease areas of interest. This is the most elegant workflow on the market today, and I can now offer a range of applications and deliver the data in the fastest turnaround time in the market, at costs that are competitive.

”

**Morten Dunoe, lab manager**

Molecular Genetic Laboratory, Department of Clinical Genetics  
Rigshospitalet, Copenhagen University Hospital, Denmark



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- **Service plans**—scheduled planned maintenance and guaranteed response times

## Ordering information

Product	Cat. No.
Ion GeneStudio S5 System	A38194
Ion GeneStudio S5 Plus System	A38195
Ion GeneStudio S5 Prime System	A38196
Ion Chef Instrument	4484177