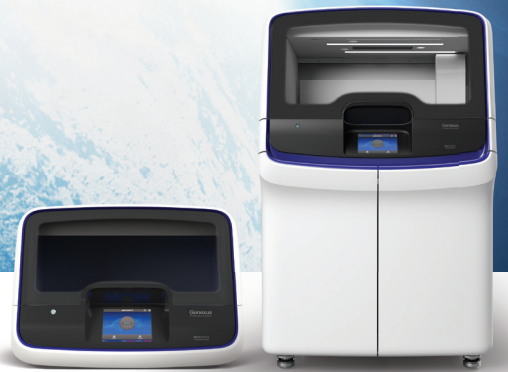


# The Genexus System

**A new day for your lab**  
A new world of NGS



# Experience in-house NGS redefined

To bring next-generation sequencing (NGS) in-house, you need a solution that is truly easy to implement and easy to use—one that can help you surmount the current barriers and redefine in-house NGS.

Specimen to report in a single day with a hands-off, automated workflow

The Ion Torrent™ Genexus™ System's hands-off, automated workflow empowers you to go from specimen to report in a single day. This first-of-its-kind, turnkey NGS solution brings in-house flexibility to your lab so you can get answers to the people who need them now.

“The instrument is extremely intuitive ... anyone without any expertise can just plug in the instrument and start working with it.”

— José Luis Costa,  
IPATIMUP, Portugal  
May 2019



# System highlights



Unprecedented specimen-to-report automation and ease of use—10 minutes of hands-on time and two user touchpoints\*



Single-day turnaround time from biological specimen to report



Ability to analyze individual samples cost-effectively, reducing your need for batching and empowering you to deliver results faster than ever

“Experienced labs can also benefit from the Genexus System because it allows them to automate many steps that are error-prone.”

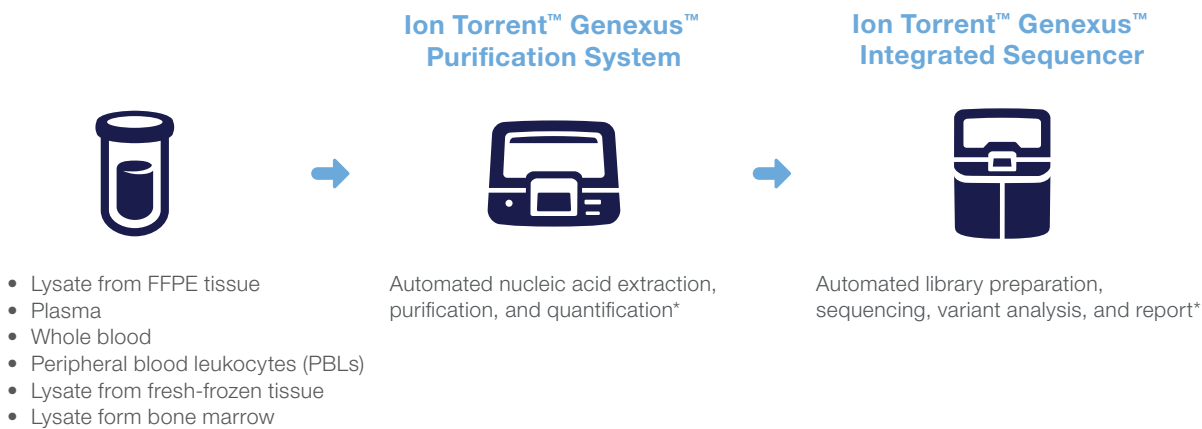
— Philip Jermann, University Hospital Basel, Switzerland  
September 2019

# In-house NGS—accessible like never before

Experience unprecedented specimen-to-report automation and ease of use\*

The hands-off, set-up-and-go workflow of the Genexus System makes NGS accessible even if your lab is new to the technology. Automated nucleic acid extraction and purification, library preparation, sequencing, and analysis reporting reduce the number of instruments and

consumables required and free up your time, boosting your lab's overall efficiency. With just 10 minutes of hands-on time and two touchpoints required to go from specimen to report, all users can get up and running quickly with significantly less training.



## Deliver answers faster with a single-day turnaround time

When you need answers in days, not weeks, the Genexus System enables you to go from a biological specimen to report in a single day, in your own lab. That allows you to generate NGS results at the same time as other single-gene methods such as immunohistochemistry (IHC).



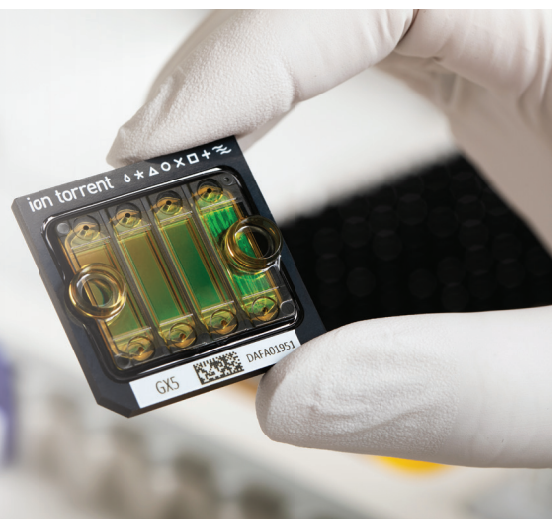
\* Specimen-to-report workflow will be available after the Genexus Purification System and integrated reporting capabilities are added in 2020.



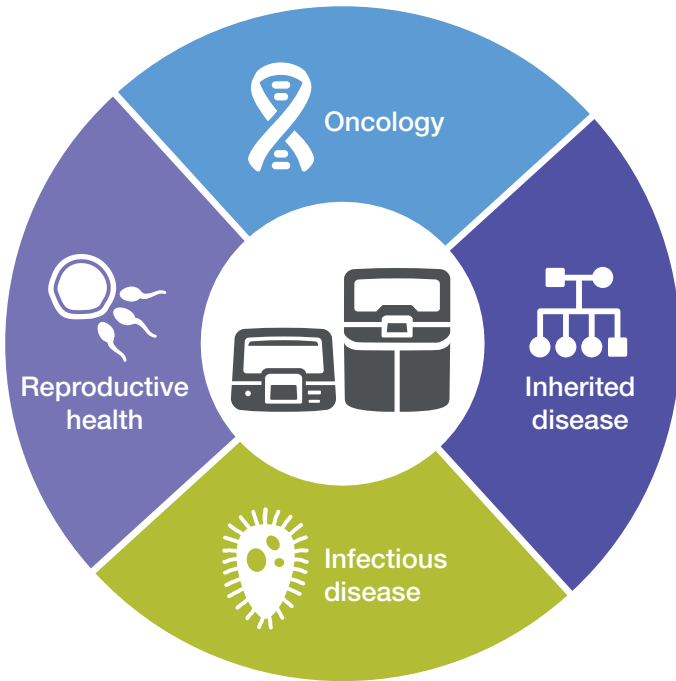
## Analyze individual samples cost-effectively

Operation is easy with prefilled reagents and an onboard vision system that tracks reagent placement and detects errors through automated barcode scanning.

The new Ion Torrent™ GX5™ Chip is designed with four lanes to support variability in sample intake, so you can process one to four samples at once cost-effectively. This reduces your need for batching and empowers you to generate results faster than ever.



# Versatile NGS solution for clinical research



NGS utilizes massively parallel sequencing to enable rapid and scalable sequencing of samples, opening doors to new applications that were once difficult to accomplish in a practical way.

Ion Torrent™ semiconductor sequencing technology helps you implement a fast and simple workflow that scales to your research needs across multiple applications on a single platform. Use the Genexus System across clinical research applications, including oncology and inherited disease, with more applications to come.

## Featured applications:

### **Oncomine Precision Assay for oncology clinical research**

Featuring carefully curated biomarker content spanning 50 genes, the Ion Torrent™ Oncomine™ Precision Assay provides a single-day turnaround time and a highly automated workflow on the Genexus System. Enhanced fusion detection provides broad coverage for the most prevalent isoforms, along with novel fusions from DNA or RNA with FFPE or plasma samples.

Find out more at [thermofisher.com/oncomine](https://thermofisher.com/oncomine)

### **Ion AmpliSeq On-Demand Panels for inherited disease clinical research**

With >5,000 pretested genes that are most relevant in the research of inherited diseases including autoimmune, neurological, and cardiovascular diseases and hereditary cancer, Ion AmpliSeq™ On-Demand Panels on the Genexus System provide a rapid and easy targeted sequencing workflow.

Find out more at [thermofisher.com/inherited-genexus](https://thermofisher.com/inherited-genexus)

### **Ion AmpliSeq SARS-CoV-2 Research Panel for coronavirus research**

With a set of highly specific, universal coronavirus primers and a high-fidelity master mix, the Ion AmpliSeq™ SARS-CoV-2 Research Panel on the Genexus Integrated Sequencer provides a rapid, automated NGS workflow for complete genome sequencing and epidemiological studies of SARS-CoV-2. This new solution enables you to go from nucleic acid to variant report in less than a single day with minimal hands-on time.

Find out more at [thermofisher.com/coronavirus-genexus](https://thermofisher.com/coronavirus-genexus)



**Coming soon:**  
**Genexus Purification System**



**Genexus Integrated Sequencer**



**Genexus System**

**Coming soon:**

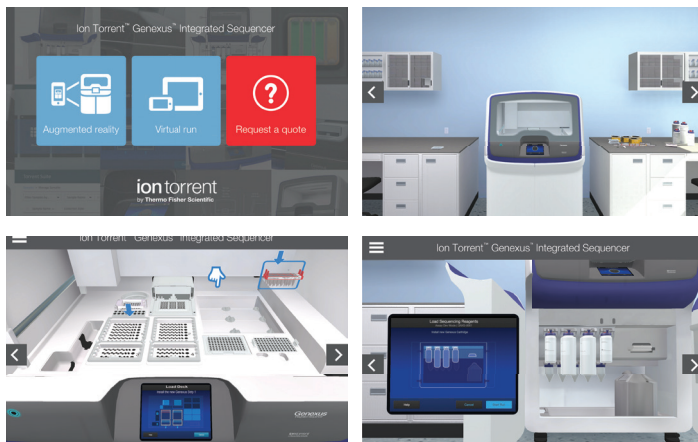
- **Automation**—automate nucleic acid extraction, purification, and quantitation on a single platform requiring just one touchpoint and five minutes of hands-on time
- **Integrated NGS workflow**—combine with the Genexus Integrated Sequencer to enable specimen-to-report NGS automation and track samples and run-plan information to the final variant report\*
- **Broad range of applications**—complete DNA, RNA, and cfTNA purification from multiple specimen types including plasma; whole blood; PBLs; and lysate from FFPE, fresh-frozen tissue, and bone marrow
- **Automation**—library prep, sequencing, and reporting all happen on one instrument with a set-up-and-go workflow
- **Flexibility to accommodate small sample batches**—on-instrument reagent and chip stability supports sample intake variability
- **Innovative multilane chip**—simultaneously process up to four compatible assays in a single run
- **Easy operation**—with prefilled reagents and preset protocols, you only need two touchpoints and 10 min of total hands-on time to go from specimen to report
- **Onboard vision system**—understand reagent placement and detect errors through automated barcode scanning
- **Robust, high-quality instruments**—our systems are manufactured at an FDA-registered and ISO 13485–certified facility

\*Specimen-to-report workflow will be available after the Genexus Purification System and integrated reporting capabilities are added in 2020.

## Educational resources

Learn more about the specimen-to-report NGS workflow and the Genexus System at [thermofisher.com/genexus](http://thermofisher.com/genexus):

- Read about the workflow and applications
- Hear from our customers
- Access demo videos, interactive mobile app, and performance data



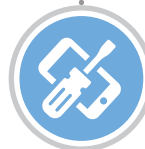
Perform a virtual NGS run on the Genexus Integrated Sequencer or visualize how the instrument will fit in your own lab using the Ion Torrent™ Genexus™ Interactive App on your mobile device.

To download the app, visit [thermofisher.com/genexus](http://thermofisher.com/genexus)

## Services and support



**Accelerate scientific advancement with a direct line to superior services and support**



**Service plans**—on-site instrument support includes planned maintenance and is designed to maximize instrument performance



**SmartStart Orientation**—hands-on training in your laboratory to get you up and running quickly



**Bioinformatics and IT services**—consulting training and services to build your bioinformatics and data analysis expertise



**Education services**—courses and programs available at our training centers located throughout the world, in your lab, or through web-based instruction



**Compliance services**—audit-ready documentation managed by a compliance specialist to ensure your instrument is installed and performing to manufacturer's specifications

