

### Solid tumor genomic profiling



FFPE tissue assays



Liquid biopsy assays



Comprehensive genomic profiling assays



Custom panels

### Hematology-oncology research NGS testing



Hemato-oncology assays



Immuno-oncology assays



Custom panels



### NGS testing for other research applications



Infectious disease and microbiology



Inherited diseases



Whole-exome sequencing



Gene expression



Custom panels

### Reproductive health research NGS solutions



Preimplantation genetic testing



Expanded carrier screening



Custom panels

# Targeted NGS applications

Our broad range of kitted assays and custom panels is available to support your targeted NGS testing needs

Thermo Fisher Scientific offers a wide variety of optimized kitted assays and custom NGS panels that are used by clinical researchers and laboratory technicians to perform targeted NGS tests on Ion Torrent™ NGS platforms, Ion GeneStudio™ systems, and the Ion Torrent™ Genexus™ System.

Our menu includes NGS tests for cancer research, reproductive health research, inherited disease research, infectious disease and microbial research, and more, as well as custom Ion AmpliSeq™ panels and services.

These NGS tests are sensitive and easy to implement for laboratory use, and many assays come with available automation, bioinformatics, and reporting mechanisms to enable specimen-to-report results in as little as 24 hours.

Learn more at [thermofisher.com/iontorrent](https://www.thermofisher.com/iontorrent)

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## Solid tumor genomic profiling assays—FFPE tissue

Product	Description	Instrument	Size	Cat. No.
OncoPrint Precision Assay	Fast, targeted genomic profiling across 50 genes that enables hands-free detection of key biomarkers in as little as 24 hours; compatible with FFPE or liquid biopsy specimens	Genexus System	16 samples (DNA and RNA)	<a href="#">A46291</a>
OncoPrint Comprehensive Assay Plus	Comprehensive genomic profiling across >500 genes, plus genomic signatures like tumor mutational burden (TMB), microsatellite instability (MSI), and homologous recombination deficiency (HRD)	Ion GeneStudio systems	24 samples 32 samples	<a href="#">A48577</a> (manual, 24 samples, DNA and RNA) <a href="#">A48578</a> (manual, 24 samples, RNA) <a href="#">A49667</a> (automated, 32 samples, DNA and RNA) <a href="#">A49671</a> (automated, 32 samples, RNA)
OncoPrint Comprehensive Assay v3	Detects SNVs, CNVs, gene fusions, and indels from 161 genes across solid tumors in one streamlined workflow	Ion GeneStudio systems	24, 32, 96 samples	<a href="#">A35805</a> (manual, 24 samples) <a href="#">A35806</a> (automated, 32 samples) <a href="#">A36111</a> (manual, 96 samples)
		Genexus System	16 samples (DNA and RNA)	<a href="#">A46296</a>
OncoPrint Focus Assay	Enables simultaneous detection of hundreds of variants across 52 genes relevant to solid tumors; compatible with FFPE fine needle aspirates and core needle biopsies	Ion GeneStudio systems	16 samples 32 samples	<a href="#">A35957</a> (manual, 16 samples) <a href="#">A42008</a> (automated, 32 samples)
OncoPrint BRCA Research Assay	100% exonic coverage of <i>BRCA1</i> and <i>BRCA2</i> genes, large indels, and exon or whole-gene deletion or duplication	Ion GeneStudio systems	24 samples 32 samples	<a href="#">A32840</a> (manual, 24 samples) <a href="#">A32841</a> (automated, 32 samples)
OncoPrint BRCA Assay GX		Genexus System	32 samples	<a href="#">A47912</a>
OncoPrint tumor-specific panels	Focused, predesigned cancer research panels with content relevant for clinical research including a predesigned homologous recombination repair (HRR) panel	Ion GeneStudio systems	24, 96, 384 samples (manual) 32, 128 samples (automated)	Order at <a href="https://ampliseq.com">ampliseq.com</a>

## Solid tumor genomic profiling assays—liquid biopsy

Product	Description	Instrument	Size	Cat. No.
OncoPrint Precision Assay	Fast, targeted genomic profiling across 50 genes that enables hands-free detection of key biomarkers in as little as 24 hours; compatible with FFPE or liquid biopsy specimens	Genexus System	16 samples (DNA and RNA)	<a href="#">A46291</a>
OncoPrint Colon cfDNA Assay	Plasma analysis of cell-free DNA (cfDNA) for colon cancer-related variants (SNVs/indels) across 14 genes	Ion GeneStudio systems	8 samples	<a href="#">A31182</a>
OncoPrint Breast cfDNA Research Assay v2	Plasma analysis of cfDNA for breast cancer-related variants across 12 genes, including SNVs, CNVs, and high coverage of TP53	Ion GeneStudio systems	8 samples	<a href="#">A35865</a>
OncoPrint Lung Cell-Free Total Nucleic Acid Research Assay	Plasma analysis of cfDNA and cell-free RNA (cfRNA) across 14 lung cancer-related genes covering SNVs, indels, CNVs, and fusions	Ion GeneStudio systems	8 samples	<a href="#">A35864</a>
OncoPrint Pan-Cancer Cell-Free Assay	Plasma analysis of cfDNA across 52 genes to evaluate SNVs, indels, CNVs, and fusions for multiple tumor types	Ion GeneStudio systems	8 samples	<a href="#">A37664</a>

## Hematology-oncology research assays

Product	Description	Instrument	Size	Cat. No.
OncoPrint Myeloid Research Assay	Profiling of multiple relevant driver genes associated with myeloid malignancies	Ion GeneStudio systems	24, 32 samples	<a href="#">A36940</a> (manual, 24 samples) <a href="#">A36941</a> (automated, 32 samples)
OncoPrint Myeloid Assay GX v2		Genexus System	32 samples	<a href="#">A50694</a> (DNA and RNA) <a href="#">A50753</a> (DNA) <a href="#">A50754</a> (RNA)
OncoPrint Myeloid MRD Assay (RUO)	Detect important myeloid measurable residual disease (MRD) biomarkers with high sensitivity (limit of detection down to 0.05% allele frequency); available in a DNA or RNA assay	Ion GeneStudio systems	24 samples	<a href="#">A53838</a> (DNA) <a href="#">A53839</a> (RNA)
Ion AmpliSeq Liverpool Lymphoid Network Panel	Comprehensive coverage of key biomarkers (including <i>NOTCH1</i> 3'UTR) applicable for the study of a range of lymphoid neoplasms, including both B and T cell lymphomas	Ion GeneStudio systems Genexus System	Custom order	Order at <a href="https://www.ampliseq.com">ampliseq.com</a>
Ion AmpliSeq Liverpool MPN Panel	Categorization of myeloproliferative neoplasm (MPN) samples covering the canonical MPN mutations in <i>JAK2</i> , <i>MPL</i> , and <i>CALR</i> genes and key targets in 22 additional genes (including <i>FLT3</i> , <i>IDH1</i> , and <i>IDH2</i> )	Genexus System	Custom order	Order at <a href="https://www.ampliseq.com">ampliseq.com</a>
OncoPrint Childhood Cancer Research Assay	Comprehensive genomic profiling of childhood and young-adult cancer samples	Ion GeneStudio systems	24, 32 samples	<a href="#">A36485</a> (manual, 24 samples) <a href="#">A36486</a> (automated, 32 samples)
OncoPrint BCR Pan-Clonality Assay	Profiling of multiple B cell receptor targets (IGH, IgK, IgL, KDE, c-intron) for clonality and MRD assessment with a single assay	Ion GeneStudio systems	24, 96 samples	<a href="#">A51559</a> (24 samples) <a href="#">A51547</a> (96 samples)
OncoPrint TCR Pan-Clonality Assay	Profiling of multiple T cell receptor targets (TCRB, TCRG) for clonality and MRD assessment with a single assay	Ion GeneStudio systems	24 samples	<a href="#">A51562</a>
OncoPrint BCR IGHV Leader-J Assay	Accurate measurement of somatic hypermutation across the <i>BCR IGHV</i> gene	Ion GeneStudio systems	24 samples	<a href="#">A51563</a>

## Immuno-oncology research assays

Product	Description	Instrument	Size	Cat. No.
OncoPrint Comprehensive Assay Plus	Comprehensive genomic profiling across >500 genes, plus key immuno-oncology research biomarkers like TMB, MSI, and HRD	Ion GeneStudio systems	24, 32 samples	<a href="#">A48577</a> (manual, DNA and RNA) <a href="#">A48578</a> (manual, RNA) <a href="#">A49667</a> (automated, DNA and RNA) <a href="#">A49671</a> (automated, RNA)
OncoPrint Tumor Mutation Load Assay	Quantitative assessment of TMB	Ion GeneStudio systems	24, 32 samples	<a href="#">A37909</a> (manual, 24 samples) <a href="#">A37910</a> (automated, 32 samples)
OncoPrint BCR IGH LR Assay, RNA	Comprehensive coverage of the B cell receptor (BCR) immunoglobulin heavy (IgH) chain	Ion GeneStudio systems	24 samples	<a href="#">A45485</a>
OncoPrint BCR IGH SR Assay	Identify and measure clonal expansion of B lymphocytes through targeting of the highly diverse complementarity-determining region 3 (CDR3) of the B cell receptor (BCR) immunoglobulin heavy (IgH) chain	Ion GeneStudio systems	24 samples	<a href="#">A45483</a> (DNA) <a href="#">A45484</a> (RNA)
OncoPrint TCR Beta-LR Assay	Measurement of T cell diversity and clonal expansion from all regions of the T cell beta chain, i.e., CDR1, 2, and 3	Ion GeneStudio systems	24 reactions	<a href="#">A35386</a>
		Genexus System	32 samples	<a href="#">A46297</a>
OncoPrint TCR Beta-SR Assay	Identification of T cell clones; measurement of clonal expansion from CDR3 of the T cell beta chain	Ion GeneStudio systems	24 samples	<a href="#">A39072</a> (DNA) <a href="#">A39359</a> (RNA)
OncoPrint Immune Response Research Assay	400-gene assay covering gene expression of tumor-immune system interactions	Ion GeneStudio systems	32 samples	<a href="#">A32881</a> <a href="#">A32928</a>
OncoPrint TCR Pan-Clonality Assay	Predicting immunotherapy response and adverse events through next-generation sequencing of peripheral blood T cell repertoires	Ion GeneStudio systems	24 samples	<a href="#">A51562</a>

For Research Use Only. Not for use in diagnostic procedures.

## Reproductive health research NGS solutions

Application	Product	Description	Instrument	Size	Cat. No.
Preimplantation genetic testing	Ion ReproSeq PGS Kit	End-to-end NGS workflow for rapid and reliable aneuploidy analysis (PGT-A)	Ion GeneStudio systems	64 samples	<a href="#">A34899</a> Kit with Ion 510 chips (16 samples/run)
				96 samples	<a href="#">A34900</a> Kit with Ion 520 chips (24 samples/run)
				384 samples	<a href="#">A34901</a> Kit with Ion 530 chips (96 samples/run)
	Ion ReproSeq PGT-A GX5 Kit		Genexus System	192 samples	<a href="#">GX34902</a>
			384 samples	<a href="#">GX34903</a>	
	Ion AmpliSeq Polyploidy Panel Kit		Leverages SNP-based assessments for accurate quality controls in preimplantation genetic testing for aneuploidy (PGT-A)	Ion GeneStudio systems	480 samples
		80 samples			<a href="#">GS45691</a>
	PGD-SEQ kits	Gene panels to research the embryo sample status of >500 common and rare monogenic/single-gene disorders (PGT-M)	Ion GeneStudio systems	Up to 15 samples	<a href="#">BA03784</a> (Spinal muscular atrophy) <a href="#">BA03800</a> (Cystic fibrosis) <a href="#">BA03803</a> (Osteogenesis imperfecta) <a href="#">BA03816</a> (Fragile X Syndrome) <a href="#">BA03820</a> (Beta-thalassemia) <a href="#">BA03864</a> (Alpha-thalassemia) Growing menu of >500 panels; visit <a href="http://thermofisher.com/pgdseq">thermofisher.com/pgdseq</a>
Expanded carrier screening	CarrierSeq ECS Kit	Rapid and cost-effective 420-gene NGS panel targeting the full coding region of all genes and enabling the analysis of >36,000 non-benign ClinVar variants for SNVs, indels, and CNVs	Ion GeneStudio systems	24 samples	<a href="#">A48022</a> Kit with Ion 530 chips (3 samples/chip)
				96 samples	<a href="#">A43585</a> Kit with Ion 530 chips (4 samples/chip)
				120 samples	<a href="#">A48023</a> Kit with Ion 540 chips (15 samples/chip)
				384 samples	<a href="#">A43586</a> Kit with Ion 540 chips (16 samples/chip)
Custom assays	Ion AmpliSeq on-demand panels	Customizable content from >5,000 lab-tested genes for targeted sequencing covering broad research areas for germline analysis and newborn screening research	Ion GeneStudio systems	24, 96 samples (manual)	Order at <a href="http://ampliseq.com">ampliseq.com</a>
				8, 32 samples (automated)	
	Genexus System		16 samples (32 barcodes) 24 samples (48 barcodes)		
Ion AmpliSeq made-to-order panels	For maximum flexibility, use the Ion AmpliSeq Designer tool to design and create customized Ion AmpliSeq panels to meet your needs	Ion GeneStudio systems	Genexus System	Custom order	Order at <a href="http://ampliseq.com">ampliseq.com</a>

## Infectious disease and microbiology research NGS assays

Application	Product	Description	Instrument	Size	Cat. No.
<b>Antimicrobial resistance</b>	Ion AmpliSeq Antimicrobial Resistance Research Panel	Sensitive, user-friendly method to assess AMR diversity across 478 antimicrobial resistance genes	Ion GeneStudio systems	Custom order	Order at <a href="https://www.ampliseq.com">ampliseq.com</a>
<b>Viral genome sequencing</b>	Ion AmpliSeq Ebola Research Panel	Designed to detect Ebola virus with >99% genome coverage	Ion GeneStudio systems Genexus System	Custom order	Order at <a href="https://www.ampliseq.com">ampliseq.com</a>
<b>SARS-CoV-2 genome sequencing</b>	Ion AmpliSeq SARS-CoV-2 Insight Research Assay	Designed to detect SARS-CoV-2 with >99% genome coverage; complete workflow from biological sample to sequencing report, even for low viral load samples	Ion GeneStudio systems	96 samples, manual	<a href="#">A51305</a>
			Ion GeneStudio systems	32 samples, automated	<a href="#">A51306</a>
			Genexus System	32 samples	<a href="#">A51307</a>
<b>Bacterial typing/ pathogen response</b>	Ion AmpliSeq TB Research Panel	Rapidly identifies mutations related to MTB drug susceptibility	Ion GeneStudio systems Genexus System	Custom order	Order at <a href="https://www.ampliseq.com">ampliseq.com</a>
	Ion AmpliSeq Pan-Bacterial Research Panel	Rapidly identifies bacteria and genes against 31 different antibiotic classes	Ion GeneStudio systems	Custom order	Order at <a href="https://www.ampliseq.com">ampliseq.com</a>
	Ion 16S Metagenomics Kit	Rapid, comprehensive, and broad-range analyses of mixed microbial populations	Ion GeneStudio systems	100 samples	<a href="#">A26216</a>
<b>Microbiome analysis</b>	Ion AmpliSeq Microbiome Health Research Assay	Accurate metagenomic studies and biomarker research on gut flora from stool samples	Ion GeneStudio systems	48 samples 256 samples 384 samples	<a href="#">A46495</a> <a href="#">A46496</a> <a href="#">A46497</a>
<b>Custom assays</b>	Ion AmpliSeq made-to-order panels	For maximum flexibility, use the Ion AmpliSeq Designer tool to design and create customized Ion AmpliSeq panels to meet your needs using your own reference sequence	Ion GeneStudio systems Genexus System	Custom order	Order at <a href="https://www.ampliseq.com">ampliseq.com</a>

## Inherited disease research NGS assays

Method	Product	Description	Instrument	Size	Cat. No.
Whole-exome sequencing	Ion AmpliSeq Exome RDY Kit	The Ion AmpliSeq Exome RDY Kit enables the fastest and simplest method of exome enrichment, now even easier with oligo pools for ultrahigh-multiplex PCR exome enrichment dried down in a 96-well plate	Ion GeneStudio systems	8 reactions	<a href="#">A38262</a>
	Ion AmpliSeq community panels	Ion AmpliSeq community panels are designed with input from leading disease researchers, verified for performance, and fully customizable to help meet your unique project requirements; popular community panels support clinical research in breast and ovarian cancer, cardiac disease, inherited cancer, primary immune deficiency, pulmonary disease, dementia, and pharmacogenomics research	Ion GeneStudio systems Genexus System	Custom order	Order at <a href="#">ampliseq.com</a>
Custom assays	Ion AmpliSeq on-demand panels	Build custom panels from over 5,000 pretested genes that are most relevant in the research of inherited diseases—these include hereditary cancer, primary immunodeficiency, hearing loss, muscular dystrophy, and many more	Ion GeneStudio systems Genexus System	24, 96 samples (manual) 8, 32 samples (automated) 16 samples (32 barcodes) 24 samples (48 barcodes)	Order at <a href="#">ampliseq.com</a>
	Ion AmpliSeq made-to-order panels	For maximum flexibility, use the Ion AmpliSeq Designer tool to design and create customized Ion AmpliSeq panels to meet your needs	Ion GeneStudio systems Genexus System	Custom order	Order at <a href="#">ampliseq.com</a>

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