













	Select targets	Construct library	Prepare template	Run sequence	Analyze data
Application	Products				
Ion AmpliSeq™ Comprehensive Cancer Panel - Cat. No. 4477685   Ion AmpliSeq™ Made-to-Order Panels (Customiz your own or browse predesigned community panel ampliseq.com)   Ion AmpliSeq™ RNA Fusion Lung Cancer Research Panel   Ion AmpliSeq™ RNA Pancreatic Adenocarcinom Research Panel   Ion AmpliSeq™ RNA Breast Cancer Research Palon AmpliSeq™ RNA Cancer Panel (Visit ampliseq.com for a complete list of panels)   Ion AmpliSeq™ On-Demand Panels (Order at ampliseq.com for germline analysis)   Ion AmpliSeq™ HD Made-to-Order Panels (Order ampliseq.com)	Cat. No. 4477685  Ion AmpliSeq™ Made-to-Order Panels (Customize your own or browse predesigned community panels at ampliseq.com)  Ion AmpliSeq™ RNA Fusion Lung Cancer Research Panel Ion AmpliSeq™ RNA Pancreatic Adenocarcinoma Research Panel Ion AmpliSeq™ RNA Breast Cancer Research Panel Ion AmpliSeq™ RNA Cancer Panel (Visit ampliseq.com for a complete list of panels) Ion AmpliSeq™ On-Demand Panels (Order at ampliseq.com for germline analysis) Ion AmpliSeq™ HD Made-to-Order Panels (Order at ampliseq.com)	Automated library preparation:  Ion AmpliSeq™ Kit for Chef™ DL8 instrument - Cat. No. A29024 (32 rxns)  Manual:  For Ion AmpliSeq panels: Ion AmpliSeq™ Library Kit Plus (recommended for Ion AmpliSeq On-Demand Panels) - Cat. No. 4488990  OR Ion AmpliSeq™ Library Kit 2.0 - Cat. No. 4480441 (96 rxns)  AND Ion Xpress™ Barcode Adapters 1-96 Kit - Cat. No. 4474517  For Ion AmpliSeq™ HD panels: Ion AmpliSeq™ HD Library Kit - Cat. No. A37694 Ion AmpliSeq™ HD Dual Barcode Kit 1-24 - Cat. No. A37695  OPTIONAL Ion Library Equalizer™ Kit - Cat. No. 4482298 Ion AmpliSeq™ Sample ID Panel - Cat. No. 4479790	Ion Chef™ Instrument - Cat. No. 4484177  AND  Any of the following: Ion 510™ & Ion 520™ & Ion 530™ Kit-Chef - Cat. No. A34019 (1 run) or A34461 (2 runs) Ion 540™ Kit-Chef - Cat. No. A30011 Ion 550™ Kit-Chef - Cat. No. A34541 (Includes template preparation and sequencing reagents) OPTIONAL Ion 550™ Single Chip Supplemental Kit - Cat. No. A36953 OR Ion OneTouch™ 2 System - Cat. No. 4474779 AND Any of the following: Ion 520™ & Ion 530™ Kit-OT2 - Cat. No. A27751 Ion 540™ Kit-OT2 - Cat. No. A27753 (Includes template preparation and sequencing reagents)	Ion GeneStudio™ S5 System - Cat. No. A38194 OR Ion GeneStudio™ S5 Plus System - Cat. No. A38195 OR Ion GeneStudio™ S5 Prime System - Cat. No. A38196 Ion 510™ Chip Kit - Cat. No. A34292 (8 chips) Ion 520™ Chip Kit - Cat. No. A27762 (8 chips) Ion 530™ Chip Kit - Cat. No. A27764 (8 chips) Ion 540™ Chip Kit - Cat. No. A27765 (4 chips) or A27766 (8 chips) Ion 550™ Chip Kit** - Cat. No. A34537 (4 chips) or A34538 (8 chips) OPTIONAL Ion S5™ Controls Kit Plus - Cat. No. A30729 Ion S5™ Calibration Standard - Cat. No. A27988	Torrent Suite™ Software  Torrent Variant Caller Plugin  Ion Reporter™ Software (Server, Cat. No. 448711 or cloud, ionreporter.thermofisher.com/ir/)
	Ion Torrent™ Oncomine™ Focus Assay* - Cat. No. A359	Cat. No. A35806 (Chef-Ready) and Cat. No. A35805 (Manual) 957 and A29230 at. No. A32841 (Chef-Ready) and Cat. No. A32840 (Manual)			Torrent Suite Software  Torrent Variant Caller Plugin  Ion Reporter Software (Server, Cat. No. 4487118 cloud, ionreporter.thermofisher.com/ir/)  Oncomine™ Knowledgebase Reporter
Liquid biopsy	Ion Torrent <sup>™</sup> Oncomine <sup>™</sup> Colon cfDNA Assay* - Cat. No. A31182 Ion Torrent <sup>™</sup> Oncomine <sup>™</sup> Pan-Cancer Cell-Free Assay* - Cat. No. A37664 Ion Torrent <sup>™</sup> Oncomine <sup>™</sup> Lung Cell-Free Total Nucleic Acid Research Assay* - Cat. No. A35864 Ion Torrent <sup>™</sup> Oncomine <sup>™</sup> Breast cfDNA Research Assay v2* - Cat. No. A35865				
	Ion AmpliSeq HD Made-to-Order Panels ampliseq.com	Ion AmpliSeq HD Library Kit - Cat. No. A37694 Ion AmpliSeq HD Dual Barcode Kit 1-24 - Cat. No. A37695			
Immuno-oncology	Ion Torrent™ Oncomine™ Immune Response Research Assay - Cat. No. A32928 (Chef-Ready) and A32881 (Manual) Ion Torrent™ Oncomine™ TCR Beta-LR Assay - Cat. No. A35386 Ion Torrent™ Oncomine™ Tumor Mutation Load Assay* - Cat. No. A37910 (Chef-Ready) and Cat. No. A37909 (Manual)				
	Ion Torrent™ Oncomine™ TCR Beta-SR Assay, DNA - Cat. No. A39072 Ion Torrent™ Oncomine™ TCR Beta-SR Assay, RNA - Cat. No. A39359	Ion Torrent™ Dual Barcode Kit 1-96 - Cat. No. A39360			
Hemato-oncology	Ion Torrent™ Oncomine™ Myeloid Research Assay* - Oncomine Childhood Cancer Research Assay - Cat.	Cat. No. A36941 (Chef-Ready) and Cat. No. A36940 (Manual) No. A36485			

<sup>\*</sup> To learn more about Ion Torrent™ Oncomine™ Solutions, go to thermofisher.com/oncomine-assays. Oncomine solutions are performance-verified on specific Ion Torrent™ chip configurations and workflows; contact a member of the clinical research team to learn more. All Chef-ready library preparation configurations include the Ion AmpliSeq™ Kit for Chef DL8 containing barcodes and an equalizer. Manual library preparation assays include library prep reagents.



<sup>\*\*</sup> The Ion 550 Chip is only compatible with Ion GeneStudio Plus and Prime Systems.







	Select targets	Construct library	Prepare template	Run sequence	Analyze data
Application	Products*				
Targeted RNA sequencing	Ion AmpliSeq™ Made-to-Order RNA Panels* (Customize your own or browse predesigned community panels at ampliseq.com) Ion AmpliSeq™ Circular RNA Research Panel Ion AmpliSeq™ RNA MAPK Pathway Research Panel Ion AmpliSeq™ RNA Human Oncology Pathways Research Panel Ion AmpliSeq™ RNA Inflammation Response Research Panel Ion AmpliSeq™ RNA WNT Signaling Pathway Research Panel Ion AmpliSeq™ Long Non-coding RNA Research Panel Ion AmpliSeq™ RNA Stem Cell Research Panel Ion AmpliSeq™ RNA Apoptosis Panel (Visit ampliseq.com for a complete list of panels)	Ion AmpliSeq Library Kit 2.0 - Cat. No. 4480441 (96 rxns) OR Ion AmpliSeq Library Kit Plus - Cat. No. 4488990 OPTIONAL Multiplexed sequencing: Ion Xpress™ Barcode Adapters 1-16 Kit - Cat. No. 4471250 Ion Xpress Barcode Adapters 1-96 Kit - Cat. No. 4474517 OR Ion AmpliSeq Kit for Chef DL8 - Cat. No. A29024 (32 rxns)	Ion Chef Instrument - Cat. No. 4484177 AND Any of the following: Ion 510 & Ion 520 & Ion 530 Kit-Chef - Cat. No. A34019 (1 run) and A34461 (2 runs) Ion 540 Kit-Chef - Cat. No. A30011 Ion 550 Kit-Chef - Cat. No. A34541 (Includes template preparation and sequencing reagents) OR Ion OneTouch 2 System - Cat. No. 4474779 AND Any of the following: Ion 520 & Ion 530 Kit-OT2 - Cat. No. A27751 Ion 540 Kit-OT2 - Cat. No. A27753 (Includes template preparation and sequencing reagents)	Ion GeneStudio S5 System - Cat. No. A38194 OR Ion GeneStudio S5 Plus System - Cat. No. A38195 OR Ion GeneStudio S5 Prime System - Cat. No. A38196 Ion 510 Chip Kit - Cat. No. A34292 (8 chips) Ion 520 Chip Kit - Cat. No. A27762 (8 chips) Ion 530 Chip Kit - Cat. No. A27764 (8 chips) Ion 540 Chip Kit - Cat. No. A27766 (8 chips) Ion 550 Chip Kit - Cat. No. A34538 (8 chips) OPTIONAL Ion S5 Controls Kit Plus - Cat. No. A30729 Ion S5 Calibration Standard - Cat. No. A27988	Torrent Suite Software Coverage Analysis Plugin Ion AmpliSeq™ RNA Plugin AND Third-party software (e.g., Partek™ software)
	Ion AmpliSeq <sup>™</sup> Transcriptome Human Gene Expres	sion Kit - Cat. No. A36553 (24 rxns) or A36554 (96rxns) sion Panel, Chef-Ready Kit - Cat. No. A31446 (32 rxns) sion Panel, Chef-Ready Kit - Cat. No. A36412 (32 rxns)			
Whole- transcriptome RNA sequencing	rRNA depletion: Invitrogen™ RiboMinus™ Eukaryote System v2 - Cat. No. A15026 OR Invitrogen™ Low Input RiboMinus™ Eukaryote System v2 - Cat. No. A15027 OPTIONAL Sample controls: Invitrogen™ ERCC RNA Spike-In Mix - Cat. No. 4456740	Automated library preparation: Ion Total RNA-Seq Kit for AB Library Builder™ System - Cat. No. 4482416 AND Ion Total RNA Library Protocol Card for AB Library Builder™ System - Cat. No. 4482563 Manual library preparation: Ion Total RNA-Seq Kit v2 - Cat. No. 4475936 (12 rxns) and 4479789 (48 rxns) OPTIONAL			Torrent Suite Software Coverage Analysis Plugin Ion RNASeq Analysis Plugin AND Third-party software (e.g., Partek software)
mRNA sequencing	mRNA isolation: Invitrogen™ Dynabeads™ mRNA DIRECT™ Micro Purification Kit - Cat. No. 61021  OPTIONAL  Sample controls: ERCC RNA Spike-In Mix - Cat. No. 4456740	Multiplexed sequencing: Ion Xpress™ RNA-Seq Barcode 1-16 Kit - Cat. No. 4475485			
Small-RNA analysis	Invitrogen™ <i>mir</i> Vana™ miRNA Isolation Kit - Cat. No. AM1560				Torrent Suite Software Ion AmpliSeq™ Small RNA Analysis Plugi

<sup>\*</sup> RNA quality control: Invitrogen™ Qubit™ 4 Fluorometer - Cat. No. 033226 AND Invitrogen™ Qubit™ RNA HS Assay Kit - Cat. No. 032852.













	Select targets	Construct library	Prepare template	Run sequence	Analyze data	
Application	Products					
Variant detection with targeted sequencing	Ion AmpliSeq On-Demand Panels (Order at ampliseq.com) Ion AmpliSeq Made-to-Order Panels (Customize your own or browse predesigned panels at ampliseq.com) Ion AmpliSeq HD Made-to-Order Panels	Automated library preparation: Ion AmpliSeq Kit for Chef DL8 instrument - Cat. No. A29024 (32 rxns) Manual: For Ion AmpliSeq panels: Ion AmpliSeq Library Kit Plus (recommended for Ion AmpliSeq On-Demand Panels) - Cat. No. 4488990 OR Ion AmpliSeq Library Kit 2.0 - Cat. No. 4480441 (96 rxns) AND Ion Xpress Barcode Adapters 1-96 Kit - Cat. No. 4474517 For Ion AmpliSeq HD panels: Ion AmpliSeq HD Library Kit - Cat. No. A37694 Ion AmpliSeq HD Dual Barcode Kit 1-24 - Cat. No. A37695 OPTIONAL Ion Library Equalizer Kit - Cat. No. 4482298 Ion AmpliSeq Sample ID Panel - Cat. No. 4479790	Ion Chef Instrument - Cat. No. 4484177 AND Any of the following: Ion 510 & Ion 520 & Ion 530 Kit-Chef - Cat. No. A34019 (1 run) or A34461 (2 runs) Ion 540 Kit-Chef - Cat. No. A30011 Ion 550 Kit-Chef - Cat. No. A34541 (Includes template preparation and sequencing reagents) OR Ion OneTouch 2 System - Cat. No. 4474779 AND Any of the following: Ion 520 & Ion 530 Kit-OT2 - Cat. No. A27751 Ion 540 Kit-OT2 - Cat. No. A27753 (Includes template preparation and sequencing reagents)	Ion GeneStudio S5 System - Cat. No. A38194 OR Ion GeneStudio S5 Plus System - Cat. No. A38195 OR Ion GeneStudio S5 Prime System - Cat. No. A38196 Ion 510 Chip Kit - Cat. No. A34292 (8 chips) Ion 520 Chip Kit - Cat. No. A27762 (8 chips) Ion 530 Chip Kit - Cat. No. A27764 (8 chips) Ion 540 Chip Kit - Cat. No. A27766 (8 chips) Ion 550 Chip Kit - Cat. No. A34538 (8 chips) OPTIONAL Ion S5 Controls Kit Plus - Cat. No. A30729 Ion S5 Calibration Standard - Cat. No. A27988	Torrent Suite Software Torrent Variant Caller Plugin Ion Reporter Software (server or cloud) for server, Cat. No. 4487118; for cloud, go to ionreporter.thermofisher.com/ir/	
Variant detection with exome sequencing	Ion AmpliSeq <sup>™</sup> Exome RDY Kit 1x8 - Cat. No. A38262 OR Ion AmpliSeq <sup>™</sup> Exome RDY Kit 4x2 - Cat. No. A38264 Note: 2 exomes per Ion 540 Chip or 3–4 exomes per Ion 550 Chip.	Ion AmpliSeq <sup>™</sup> library kits included in Ion AmpliSeq <sup>™</sup> exome kits  Multiplexed sequencing: Ion Xpress Barcode Adapters 1-16 Kit - Cat. No. 4471250  OPTIONAL  DNA quality control Invitrogen <sup>™</sup> Qubit <sup>™</sup> 4 NGS Starter Kit - Cat. No. Q33228 (Includes Invitrogen <sup>™</sup> Qubit <sup>™</sup> 4 Fluorometer, Qubit <sup>™</sup> dsDNA HS Assay Kit, and Qubit <sup>™</sup> assay tubes)			Torrent Suite Software Ion Reporter Software (server or cloud) for server, Cat. No. 4487118; for cloud, go to ionreporter.thermofisher.com/ir/	
Preimplantation genetic screening (PGS)		1	Ion Chef Instrument - Cat. No. 4484177	Ion GeneStudio S5 System - Cat. No. A38194 OR Ion GeneStudio S5 Plus System - Cat. No. A38195 OR Ion GeneStudio S5 Prime System - Cat. No. A38196	Torrent Suite Software Ion Reporter Software (Aneuploidy workflow) for server, Cat. No. 4487118; for cloud, go to ionreporter.thermofisher.com/ir/	
	Ion ReproSeq <sup>™</sup> PGS Kit with Ion 510 Chips - Cat. No. A34899 Ion ReproSeq <sup>™</sup> PGS Kit with Ion 520 Chips - Cat. No. A34900 Ion ReproSeq <sup>™</sup> PGS Kit with Ion 530 Chips - Cat. No. A34901					











		Select targets	Construct library	Prepare template	Run sequence	Analyze data
	Application	Products				
	Discovery and characterization		Ion Xpress™ Plus Fragment Library Kit - Cat. No. 4471269 Ion Xpress Barcode Adapters 1-96 Kit - Cat. No. 4474517 OR Thermo Scientific™ MuSeek™ Library Preparation Kit, Ion Torrent™ system-compatible - Cat. No. K1331 Thermo Scientific™ MuSeek™ Barcode Set 1, Ion Torrent system-compatible - Cat. No. K1541 RNA Ion Total RNA-Seq Kit v2 - Cat. No. 4475936	Ion Chef Instrument - Cat. No. 4484177 AND Any of the following: Ion 510 & Ion 520 & Ion 530 Kit-Chef - Cat. Nos. A34019 and A3446 Ion 540 Kit-Chef - Cat. No. A30011 Ion 550 Kit-Chef - Cat. No. A34541 For 600 bp (Ionger-read) sequencing: Ion 520™ & Ion 530™ ExT Kit-Chef - Cat. No. A30670 (Template preparation and sequencing reagents for 400- to 600-base read libraries) OR Ion OneTouch 2 System - Cat. No. 4474779 AND Any of the following: Ion 520/530 Kit-OT2 - Cat. No. A27751 Ion 540 Kit-OT2 - Cat. No. A27753 (Includes template preparation and sequencing reagents)	Ion GeneStudio S5 System - Cat. No. A38194 OR Ion GeneStudio S5 Plus System - Cat. No. A38195 OR Ion GeneStudio S5 Prime System - Cat. No. A38196 Ion 510 Chip Kit - Cat. No. A34292 (8 rxns) Ion 520 Chip Kit - Cat. No. A27762 (8 rxns) Ion 530 Chip Kit - Cat. No. A27764 (8 rxns) Ion 540 Chip Kit - Cat. No. A27766 (8 rxns) Ion 550 Chip Kit - Cat. No. A34538 (8 rxns) OPTIONAL Ion S5 Controls Kit Plus - Cat. No. A30729 Ion S5 Calibration Standard - Cat. No. A27988 Ion S5™ ExT Calibration Standard - Cat. No. A30738 Ion Torrent™ E. coli Control 600 Library - Cat. No. A32470	Torrent Suite Software Assembler SPAdes v3.1 Plugin
	Bacterial and viral analysis  •	Ion AmpliSeq Made-to-Order Panels (Customize your own panel for any genome, or select from the following predesigned panels at ampliseq.com) Ion AmpliSeq™ Pan-Bacterial Research Panel Ion AmpliSeq™ Anti-Microbial Resistance Research Panel Ion AmpliSeq™ TB Research Panel Ion AmpliSeq™ Ebola Research Panel Ion AmpliSeq™ Ebola Research Panel	Automated library preparation: Ion AmpliSeq Kit for Chef DL8 - Cat. No. A29024 (32 rxns) Manual: For Ion AmpliSeq panels: Ion AmpliSeq Library Kit Plus (recommended for Ion AmpliSeq On-Demand Panels) - Cat. No. 4488990 OR Ion AmpliSeq Library Kit 2.0 - Cat. No. 4480441 (96 rxns) AND Ion Xpress Barcode Adapters 1-96 Kit - Cat. No. 4474517 For Ion AmpliSeq HD panels: Ion AmpliSeq HD Library Kit - Cat. No. A37694 Ion AmpliSeq HD Dual Barcode Kit 1-24 - Cat. No. A37695 OPTIONAL Ion Library Equalizer Kit - Cat. No. 4482298 Ion AmpliSeq Sample ID Panel - Cat. No. 4479790			Torrent Suite Software Pathogen Detector Plugin Applied Biosystems™ ABL ViroScore-HIV application subscription Ion Reporter Software (Cloud or server) for server, Cat. No. 4487118; for cloud, go to ionreporter.thermofisher.com/ir/
		Ion AmpliSeq Transcriptome Human Gene Expression Kit - Cat. No. A26325 (24 rxns) or A26326 (96 rxns) or A26327 (384 rxns) Ion AmpliSeq Transcriptome Human Gene Expression Panel, Chef-Ready Kit - Cat. No. A31446 (32 rxns)				
	Metagenomics •	Ion 16S™ Metagenomics Kit - Cat. No. A26216	Ion Xpress Plus Fragment Library Kit - Cat. No. 4471269 (For microbial community characterization by 16S rDNA sequencing) Ion Xpress Barcode Adapters 1-96 Kit - Cat. No. 4474517 or other Ion Xpress Barcode Adapters Kits Ion Universal Library Quantitation Kit - Cat. No. A26217			Torrent Suite Software Ion Reporter Software (16S metagenomics workflow) for server, Cat. No. 4487118; for cloud, go to ionreporter.thermofisher.com/ir/















