

Ion AmpliSeq Custom DNA Panels

Targeted sequencing for any genome



Ion AmpliSeq™ Custom DNA Panels enable affordable, targeted sequencing for your genomic region of interest. Panels can be designed using a number of preloaded reference genomes, or you can upload your own reference sequence for any other organism. The online Ion AmpliSeq™ Designer tool allows you to create and order custom panels specific to your genes of interest. Leveraging more than a decade of expertise powering the Applied Biosystems™ TaqMan® Custom Assay design pipeline, Ion AmpliSeq Designer produces optimized primer designs in just hours.

You now have full flexibility to analyze hundreds of genes of your choice, such as those implicated in particular disease states, biochemical pathways, or breeding traits.

Simplicity

- Customized to target just your genes of interest
- As little as 1 ng of input DNA required per pool
- Automated analysis with Torrent Suite™ Software** and Ion Reporter™ Software†

Scalability

- 12 to 6,144 primer pairs per pool—targeting a single gene or thousands of genes
- Supports automation for 96-well plate-based protocols, enabling rapid processing for large projects

Speed

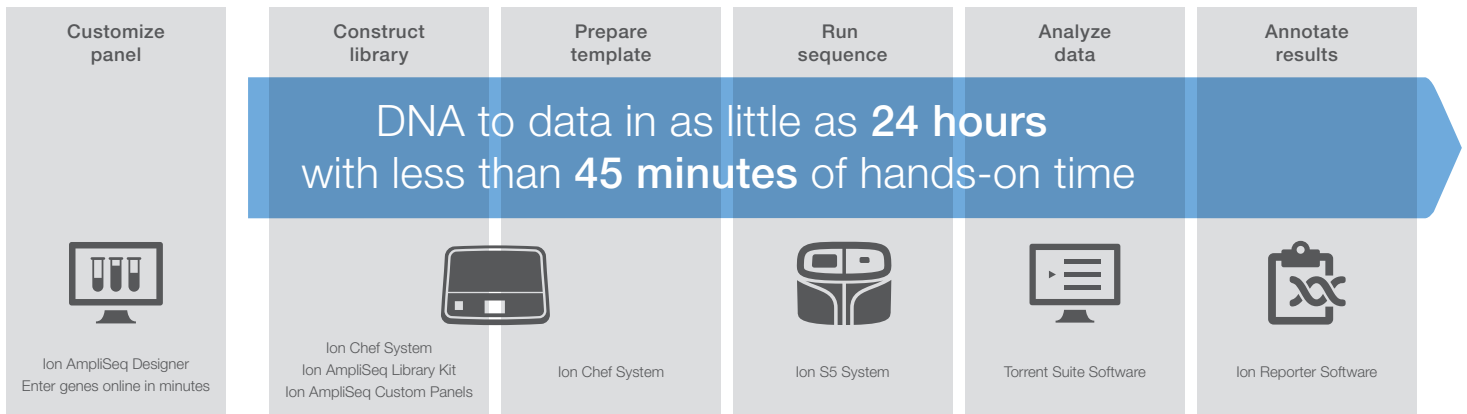
- Automated primer design in as little as 2 hours, with just minutes of hands-on time
- Go from DNA to annotated variants in as little as 24 hours

Ion AmpliSeq DNA Custom Panels	
Preloaded reference genomes available	Human Mouse Cow Chicken Pig Sheep Maize Rice Soybean Tomato Dog Chinese hamster
Custom references	Upload any reference genome to your password-protected account
Maximum amplicon length options	140 bp (optimized for cfDNA samples), 175 bp (optimized for FFPE samples), 275 bp or 375 bp (standard samples)
Primer pool size	12 to 6,144 primer pairs per pool
Input DNA required	As little as 1 ng per primer pool
Time to results	As little as 24 hours
Sample multiplexing	Up to 384 barcodes available
Pools per panel	Typically 1 to 2 pools
Panels with ≤96 primer pairs	2,250 reactions (750 pre-pooled and multiplexed)
Panels with >96 primer pairs	9,000 reactions (3,000 pre-pooled and multiplexed)
Performance	
Coverage uniformity*	>85%

* Coverage uniformity = bases covered at >20% of the mean coverage.

** Diploid genes only.

† Human and mouse genes only.



Ion AmpliSeq Custom DNA Panel workflow. Typical assay design results targeting a 10 kb region are available in as little as 2 hours and require only minutes of hands-on time. It takes as little as 24 hours to go from DNA to variants using the Ion Chef™ and Ion S5™ Systems.

Simplicity: target just your genes of interest

Ion AmpliSeq™ technology uses ultrahigh-multiplex PCR to offer simple and fast library construction for targeted sequencing. Custom high-specificity primers are generated to target just your sequences of interest—with as little as 10 ng of input DNA needed per primer pool. Target selection is completed using standard PCR equipment.

Scalability: superior flexibility

Choose to target a single gene or thousands of genes with Ion AmpliSeq panels. Flexible design inputs allow you to scale from 12 to 6,144 amplicons per pool. Additionally, Ion AmpliSeq library construction steps can be performed in standard 96-well plates or be completely automated on the Ion Chef System, further simplifying the workflow and allowing large projects to be rapidly completed with minimal sample transfer steps.

Speed: 15 minutes hands-on and 7 hours to targeted libraries

The 2-day workflow from DNA to annotated variants enables you to rapidly complete experiments and derive insights faster. No other target selection method produces targeted libraries in just 7 hours with only 15 minutes of hands-on time (using the Ion Chef System).*

* Automation on the Ion Chef System is limited to one- or two-pool Ion AmpliSeq panels.

Confirm variants using TaqMan Assays

- Integrated with the search portal for Applied Biosystems™ TaqMan® Assays, Torrent Suite Software enables direct submission of detected variants for further interrogation. TaqMan probe-based chemistry offers excellent sensitivity, specificity, reproducibility, and broad dynamic range.
- For somatic mutations, use Applied Biosystems™ TaqMan® Mutation Detection Assays, powered by castPCR™ technology, or use Applied Biosystems™ Custom TaqMan® SNP Genotyping Assays with digital PCR.
- For germline mutations, use our 4.5 million predesigned TaqMan SNP Genotyping Assays.
- For other organisms, use Custom TaqMan SNP Genotyping Assays.
- Find out how to confirm variants at thermofisher.com/ordertaqman

Find out more at thermofisher.com/ampliseqcustom

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