Ion AmpliSeq Exome RDY Kit

High uniformity and simplified workflows

Easy exome sequencing
The Ion AmpliSeq™ Exome RDY Kit enables the fastest and simplest exome enrichment, with oligo pools for ultrahigh-multiplex PCR exome enrichment dried down in a 96-well plate. With half the number of target amplification pipetting steps compared to the original protocol, and the elimination of small pipetting volumes, exome libraries can now be produced with superior ease, typically in under 6 hours with less than 50 minutes of hands-on time. The Ion AmpliSeq Exome RDY Kit is also compatible with the Ion Library Equalizer™ Kit for ease of library normalization. The Ion AmpliSeq Exome RDY Kit enables high-efficiency enrichment, with more than 90% on-target bases and more than 90% bases covered at 20x (Figure 1). Leveraging the ultrahigh-multiplex PCR approach of Ion AmpliSeq™ technology along with the Ion S5™ XL System, the Ion AmpliSeq Exome RDY Kit allows rapid sequencing of key exonic regions of the genome, enabling you to go from DNA to variants in just 2 days (Figure 2).

Figure 1. Ion AmpliSeq Exome RDY Kit results, based on an average of 22 exomes across 11 sequencing runs. The coverage data for the Illumina™ Nextera™ Rapid Capture Exome Kit were obtained from the BaseSpace Blog by Illumina. The uniformity value was obtained from the Nextera Rapid Capture Exome Kit data sheet.

$\text{Coverage uniformity}$

$\%$ of bases with 20x coverage

<table>
<thead>
<tr>
<th>Kit</th>
<th>Coverage uniformity</th>
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<tbody>
<tr>
<td>Ion AmpliSeq Exome RDY Kit</td>
<td>90%</td>
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<tr>
<td>Nextera Rapid Capture Exome Kit on the MiSeq System</td>
<td>90%</td>
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- Easy exome enrichment
  Simplicity, specificity, and the speed of PCR, with less than 50 minutes of hands-on time with dried-down primers

- On-demand exome sequencing
  Flexible throughput of 1–3 exomes per run, or up to 80 exomes per week

- Integrated bioinformatics
  Easy, integrated software workflow delivers a focused list of annotated variants

“ Ion AmpliSeq Exome RDY provides the simplest exome enrichment. The dried-down primers reduce the number of pipetting steps and allow preparation of reproducible libraries that sequence with high uniformity. The straightforward workflow—similar to PCR—allows for someone with little to no next-generation sequencing experience to successfully perform the protocol.”

Richard Allcock
Director, Lotterywest State Biomedical Facility Genomics
School of Pathology and Laboratory Medicine
The University of Western Australia

Get the data (under the Datasets tab) and see for yourself at thermofisher.com/ioncommunity
Simple and efficient exome enrichment
The Ion AmpliSeq Exome RDY Kit requires less than 50 minutes of hands-on time, enabling enrichment of 1 to 8 samples in less than 6 hours. The kit requires the least hands-on time when compared with other exome enrichment technologies (Figure 3), and as little as 50 ng of input DNA can be used. The combination of the Ion S5 XL System, the Ion Chef™ System (for fully automated template preparation), and a simplified analysis workflow makes Ion AmpliSeq exome sequencing the simplest and most cost-effective solution in the market.

Figure 2. Ion AmpliSeq Exome RDY 2-day workflow for 1–3 exomes, from DNA to annotated variants.

Figure 3. Comparison of hands-on and total turnaround time for a single exome enrichment workflow.

See the Ion Ampliseq exome kit difference at thermofisher.com/ionexome