

Trinity™ Sequencing Kits

Revolutionizing targeted sequencing workflows

Highlights

- Save up to 5 hours of hands-on time
- One hour fast hybridization enables a one-day workflow from library prep to sequencing set up
- Quality and cost match traditional, more labor-intensive workflows
- Initial validation for exome panels with expanded compatibility and additional products coming soon

Introduction

While targeted sequencing applications have benefited from innovations in probe design and manufacturing, the workflow has remained unchanged since 2008. By drastically simplifying target capture, our Trinity sequencing kits reimagine how you perform targeted sequencing, at any scale. This innovative new workflow expands what is possible on a benchtop genomics platform. By eliminating manual target capture steps and automating others on board an AVITI™ system, Trinity saves you up to 5 hours of hands-on time and removes the need for

specialized equipment. Ultimately, this accelerates your time to discovery and empowers rapid data-driven decision making.

Reimagined Workflows

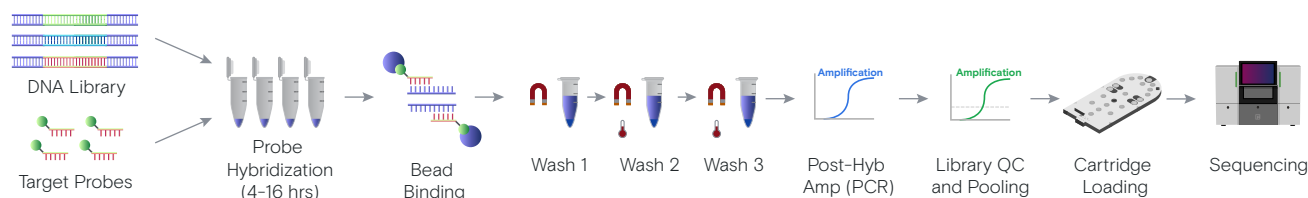
The traditional hybrid selection process for targeted panels, like exomes, involves a time-consuming process with many hands-on steps including multiple temperature-controlled washes, PCR-based amplification, and library quality control. Using the Trinity workflow, you simply hybridize your DNA library to the target probes of interest, wait the prescribed time, then load it directly on your AVITI system. Leveraging fast hybridization protocols, Trinity enables the fastest exome workflow on the market today with turnaround times as little as a day.

Improved Data Quality

Trinity empowers you to simplify your targeted sequencing workflow without compromising data quality and performance. In a comparison study with 24 matched blood and FFPE samples, exome libraries were sequenced with Trinity or in-solution phase workflows. Trinity consistently demonstrated a lower duplication rate, resulting in fewer pass filter reads needed to achieve your desired mean target coverage.

Traditional hybrid selection process

(Exome and panels)



Element Trinity workflow

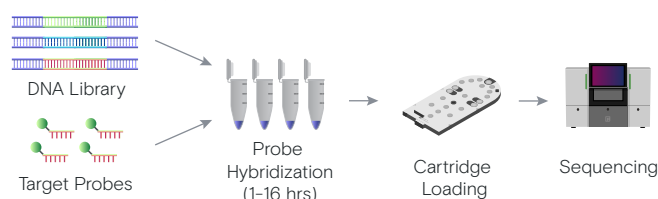


Figure 1. Trinity introduces radical time savings and improvements to the traditional target sequencing workflow.

Additionally, in these studies, Trinity delivered improved library diversity, driven by a reduction in duplicates. Importantly, this data is consistent between samples with a reliable throughput of filter passing reads.

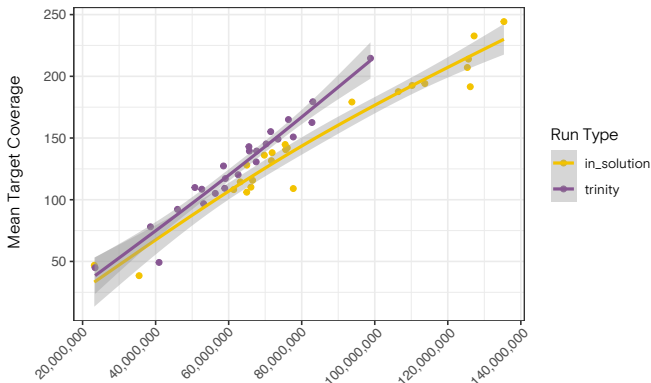


Figure 1. Trinity shows a lower duplication rate resulting in 10% fewer pass filter reads needed to achieve desired mean target coverage.

Compatible Panels

Element Biosciences is collaborating with ecosystem partners Twist Bioscience and IDT to develop validated workflows. At product release, we have established workflows for exome sequencing applications. To perform the workflow, reagents are purchased from both Element and one of our partners. Library preparation, panels, and hybridization reagents can be purchased from either of our partners. Trinity sequencing kits and binding reagents can be purchased directly from Element Biosciences.

Trinity sequencing kits are optimized for sequencing 24 exomes per flow cell on AVITI, or 36 exomes on the AVITI24™ system, achieving ≥ 50x mean target coverage, and the ability to scale the plexity depending on your coverage needs. For added TAT flexibility, Trinity is available in 2 x 75 or 2 x 150 options.

Exome sequencing is the first supported application to be enabled by Trinity, but with some optimization, Trinity sequencing kits are compatible with panels ranging from hundreds to thousands of targets. We will continue to expand our validated workflows to include guidance on running panels of various sizes and custom panels while ultimately, enabling fully on-instrument target capture.

Performance Metrics

Quality	≥ 90% Q30
On-Target %	≥ 85%
Fold 80	≤ 1.5
Run Time	2x75: 24 hours 2x150: 38 hours
Mean Target Coverage (24-plex AVITI/36-plex AVITI24)	2x75: ≥ 30x 2x150: ≥ 50x

Ordering Information

Element Biosciences	
Trinity 2x75 Sequencing Kit	860-00019
Trinity 2x150 Sequencing Kit	860-00020
Trinity Binding Reagent	830-00029
Trinity Fast Hyb Loading Buffer	830-00030
Trinity Fast Hyb Binding Reagent	830-00034
Trinity PhiX Control	830-00031
IDT	
xGen Exome Sequencing Kit Trinity for Element	10022463
Twist Bioscience	
Twist for Element Trinity, Exome 2.0 + Comp Spike, Standard Hyb Workflow	109326
Twist for Element Trinity, Exome 2.0 + Comp Spike, Fast Hyb Workflow	109327

To learn more, visit elementbiosciences.com