Automating TruSight™ Oncology 500 High-Throughput with Beckman Coulter

Streamlined, consistent library prep with automated methods from Beckman Coulter

Scalable enablement of comprehensive genomic profiling

TruSight Oncology 500 High-Throughput is built on the foundation of the TruSight Oncology 500 assay, with flexibilty for higher sample throughput and batching options. TruSight Oncology 500:

- Targets > 500 DNA and selected RNA biomarkers across relevant tumor types
- Measures genomic signatures such as microsatellite instability (MSI) and tumor mutational burden (TMB)
- Provides a comprehensive workflow that allows users to go from initial sample to results in 4–5 days

Streamlined library prep

Multiple routine and repetitive pipetting steps performed by lab professionals are highly amenable to automation solutions that:

- Reduce manual touchpoints and hands-on time
- Decrease variation related to user error
- Increase lab productivity and help achieve high-quality sequencing results reproducibly

Automation partnerships

By partnering with Beckman Coulter, a leading provider of liquid-handling solutions, Illumina provides qualified automated solutions that are proven to perform at a level equal to, or better than, manual methods (Figure 1, Figure 2).

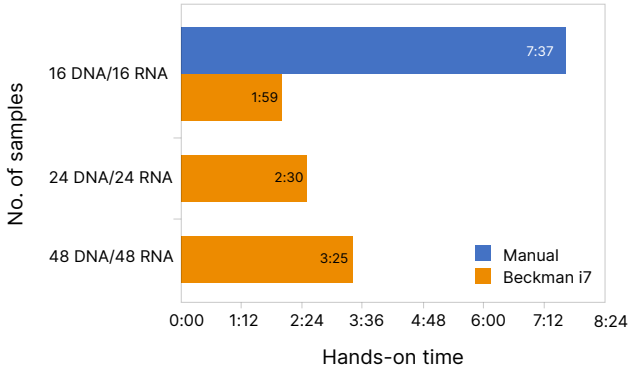

Figure 1: Faster library prep when automating TruSight Oncology 500 High-Throughput—Illumina Qualified methods on the Beckman i7 system significantly reduce hands-on time (Illumina data on file).

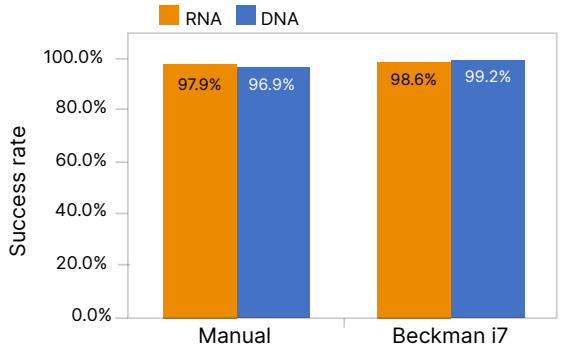

Figure 2: Consistent performance with automating TruSight Oncology 500 High-Throughput—Illumina Qualified methods on the Beckman i7 system produce consistent performance and low failure rates that are comparable to manual processing (Illumina data on file).

Scalability with automation

Illumina Qualified methods provide scalability for sample throughput, ranging 16–96 samples in a single run, with the option for parallel processing of DNA and RNA samples (Table 1).

Table 1: Automated method batch sizes

DNA only	DNA/RNA
16	—
32	16 DNA + 16 RNA
48	24 DNA + 24 RNA
64	32 DNA + 32 RNA
72	32 Tumor DNA + 32 Normal DNA (64 total DNA) + 32 RNA
96	48 DNA + 48 RNA

Preconfigured deck layout

The Beckman i7 Automated Liquid Handling system features preconfigured workstation layouts (Beckman Coulter, Catalog no. C71831 (with thermal cycler) and C71830 (without thermal cycler)) designed in collaboration with Illumina to support the TruSight Oncology 500 assay (Figure 3).

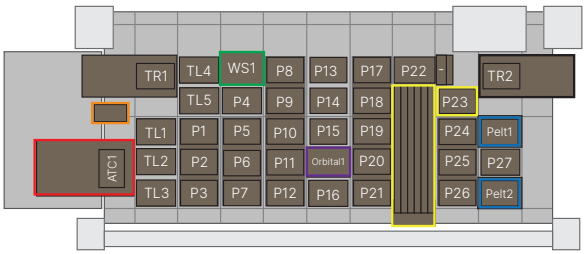

Figure 3: Beckman i7 Automated Liquid Handling Workstation—The Beckman i7 system includes multiple features to support TruSight Oncology High-Throughput, including an orbital shaker (purple), a tube scan ALP (yellow), static Peltier (blue), an MC96 wash station (green), a fly-by barcode reader (orange), and an optional integrated thermal cycler (red).

Summary

Illumina has collaborated with Beckman Coulter to provide scalable, automated solutions for the TruSight Oncology 500 High-Throughput assay that reduce preparation time and provide consistent performance. Illumina continues to work with automation partners to deliver a wide range of system options to meet future throughput and application requirements.

Learn more

TruSight Oncology 500 High-Throughput, illumina.com/products/by-type/clinical-research-products/trusight-oncology-500-ht.html

Illumina automation solutions, illumina.com/techniques/sequencing/ngs-library-prep/automation.html

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