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Data analysis and reporting for the TruSight™ Oncology 500 portfolio

Integrated bioinformatics provide sample-to-insight workflows for solid tumor CGP

DRAGEN™ secondary analysis across the entire TruSight Oncology 500 portfolio reduces analysis time by 2-10×. Run DRAGEN TruSight Oncology 500 and DRAGEN TruSight Oncology 500 ctDNA Analysis Software locally with an on-premises DRAGEN server or in the cloud via Illumina Connected Analytics, provided with each kit. Options for customized reporting and insights include Illumina Connected Insights and Velsera Clinical Genomics Workspace (CGW).

≤ 5-day workflow for comprehensive genomic profiling (CGP)

	Specimen	Extraction	Library prep	Sequencing	Variant calling	Insights and reporting
Enable CGP from tissue biopsy	TruSight Oncology 500					
	FFPE	DNA/RNA extraction kits	TruSight Oncology 500 kit	NextSeq™ 550 or NextSeq 550Dx* System Up to 8 samples	DRAGEN TruSight Oncology 500 Analysis on local DRAGEN server or with Connected Analytics	Multiple options: Connected Insights** or Velsera CGW
	TruSight Oncology 500 High-Throughput					
	FFPE	DNA/RNA extraction kits	TruSight Oncology 500 High-Throughput kit	NovaSeq 6000 or NovaSeq 6000Dx System† 16–192 samples‡	DRAGEN TruSight Oncology 500 Analysis on local DRAGEN server or with Connected Analytics	Multiple options: Connected Insights** or Velsera CGW
Enable CGP from liquid biopsy	TruSight Oncology 500 ctDNA v2					
	Blood	cfDNA extraction kits	TruSight Oncology 500 ctDNA v2 kit	NovaSeq 6000 System§ 8–24 samples	DRAGEN TruSight Oncology 500 ctDNA Analysis on local DRAGEN server or with Connected Analytics	Multiple options: Connected Insights** or Velsera CGW

* NextSeq 550Dx Instrument in research mode only. † NovaSeq 6000Dx Instrument in research mode only. Requires separate, standalone DRAGEN server if local secondary analysis is desired. ‡ TruSight Oncology 500 High-Throughput is also compatible with the NextSeq 550 System and NextSeq 550Dx Instrument (in research mode) for up to 8 samples. § NovaSeq 6000Dx Instrument in research mode has not been extensively tested, but is considered technically compatible. Requires separate, standalone DRAGEN server if local secondary analysis is desired. ** Not available in all countries. Illumina Connected Insights supports user-defined tertiary analysis through API calls to third-party knowledge sources.

Better variant calling with DRAGEN analysis

Accurate

- DRAGEN secondary analysis brings award-winning accuracy to TruSight Oncology 500
- 99.83% accuracy score with the precisionFDA Truth Challenge V2[1,2]

Comprehensive

- Comprehensive coverage of all variant classes: SNVs, indels, CNVs, MNVs, SVs; immuno-oncology and other gene signatures: TMB, MSI, and HRD (GIS)*
- New beta features† available with TruSight Oncology 500 HRD assay enable reporting of tumor fraction, ploidy, absolute copy numbers, and gene-level LOH

Fast

- DRAGEN secondary analysis completes 2-10× faster than other pipelines

		Third-party server[a]	DRAGEN Server v4
Assay	No. of samples[b]	Analysis time[c]	
TruSight Oncology 500 or TruSight Oncology 500 High-Throughput	8 tissue biopsy	5.5 hrs	2 hrs
	16 tissue biopsy	12 hrs	3 hrs
	32 tissue biopsy	18 hrs	7 hrs
	72 tissue biopsy	24 hrs	16 hrs
TruSight Oncology 500 ctDNA v2	24 liquid biopsy	216 hrs (9 days)	20 hrs (< 1 day)

a. Third-party server: c5.9×large instance (36 vCPU, 72 GiB memory).
b. Number of samples processed in a single batch per week.
c. Approximate analysis times are based on actual runs, analysis times will vary.

Flexible

- Local and cloud-based analysis allow labs to choose an option that best suits their needs
- User interface designed for general users as well as bioinformatics professionals

Easy to use

- User-friendly interface to set up and configure analysis
- No manual touchpoints available with automated data transfer and analysis kickoff

Scalable

- Cloud-based analysis enables scaling without additional hardware investment
- Reducing manual touchpoints with automation allows scalability without adding headcount

Drive more genomic insights with the TruSight Oncology 500 portfolio and DRAGEN analysis

TruSight Oncology 500 with DRAGEN analysis

DRAGEN secondary analysis

* HRD (GIS) is for tissue workflows only (not available with TruSight Oncology 500 ctDNA)
† Beta features have not been verified by Illumina. See customer release notes for v2.5+ for more details.

SNV, single nucleotide variant; indel, insertions and deletions; CNV, copy number variant; MNV, multinucleotide variant; SV, structural variant; TMB, tumor mutational burden; MSI, microsatellite instability; GIS, genomic instability; LOH, loss of heterozygosity

References

1. Food and Drug Administration. Truth Challenge V2: Calling Variants from Short and Long Reads in Difficult-to-Map Regions. precision.fda.gov/challenges/10. Accessed March 14, 2022.
2. Illumina. DRAGEN Sets New Standard for Data Accuracy in PrecisionFDA Benchmark Data. Optimizing Variant Calling Performance with Illumina Machine Learning and DRAGEN Graph. illumina.com/science/genomics-research/articles/dragen-shines-again-precisionfda-truth-challenge-v2.html. Accessed March 14, 2022.

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