illumina®

DRAGEN™ secondary analysis

Efficient secondary analysis of NGS data with award-winning accuracy

DRAGEN secondary analysis allows labs of all sizes and disciplines to maximize their genomic insights with award-winning accuracy,[1,2] a broad menu of applications, and efficient workflows. Get comprehensive coverage with hardware-accelerated genomic analysis algorithms, continuous innovations using machine learning, Multigenome (graph) references, and more.

Maximize the value of the genome

Accurate

Enable a 99.84% accuracy score using Multigenome (Graph) and machine learning with the Precision FDA Truth Challenge V2 benchmark data[1]

Comprehensive

Analyze whole genomes, exomes, methylomes, and transcriptomes with a single platform that would take 30 open-source tools to partially replicate[3]

Efficient

Process an entire human genome at 30× coverage in approximately 25 minutes[2] and reduce FASTQ file sizes up to 5× with DRAGEN ORA compression

Access DRAGEN software on your platform of choice

DRAGEN on-premises

Analyze and store data locally with an on-premises server in a fraction of the time compared with a traditional CPU-based system

DRAGEN onboard

Analyze data directly on the NovaSeq™ X Series, or NextSeq™ 1000, or NextSeq 2000 Systems without additional computing infrastructure or bioinformatics resources

DRAGEN on cloud

Stream data from sequencing systems to BaseSpace™ Sequence Hub or Illumina Connected Analytics for rapid analysis at scale with no hardware investment

Awards

Won the Precision FDA Truth Challenge V2 for "Difficult-to-Map" and "All Benchmark" regions, Won "Best Precision" and "Best Overall" on Panel X and "Best Applicability" in the Precision FDA NCTR Indel Calling from OncoPanel.[1,2]

Product highlights

Application	On-premises	Onboard		On-cloud	
	DRAGEN server	NovaSeq X Series	NextSeq 1000 NextSeq 2000 Systems	BaseSpace Sequence Hub	Illumina Connected Analytics
BCL conversion	✓	✓	✓	✓	✓ (custom only)
DRAGEN ORA compression	✓	✓	✓		
DRAGEN FASTQ + MultiQC	✓	✓	✓	✓	✓
Whole genome	Germline + somatic	Germline only Somatic *coming soon*	Germline only	Germline + somatic	Germline + somatic
Enrichment (including exome)	Germline + somatic	Germline + somatic	Germline + somatic	Germline + somatic	Germline + somatic
DNA amplicon	✓		✓	✓	✓
RNA	✓	✓	✓	✓	✓
Single-cell RNA	✓		✓	✓	✓
Differential expression		✓	✓	✓	
NanoString GeoMx NGS			✓	✓	
RNA amplicon	✓			✓	*Coming soon*
Methylation	✓	*Coming soon*		✓	✓
Metagenomics	✓			✓	
RNA pathogen detection				✓	
COVID	COVIDSeq. COVID Lineage		COVIDSeq. (cloud only)	COVIDSeq. COVID Lineage	
TruSight™ Oncology 500	ctDNA available, solid *coming soon*			✓ enabled in 3.10	✓
ScATAC-Seq	✓			✓	✓
Imputation	✓			✓	✓
PGx Star Allele Caller	✓	*Coming soon*		✓	✓
Illumina Complete Long Reads				✓	
DRAGEN secondary analysis for RPIP and UPIP	✓			✓	✓

Learn how customers are using DRAGEN secondary analysis.

Read about DRAGEN secondary analysis in population genomics initiatives on our resource page.

Explore recent DRAGEN publications.

Learn more

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 July 14, 2023.
2. Food and Drug Administration. NCTR Indel Calling from Oncopanel Sequencing Data Challenge Phase 1. precision.fda.gov/challenges/21. Accessed July 14, 2023.
3. Internal data on file. Illumina, Inc., 2023.

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