Targeted Sequencing Library Preparation

CleanPlex® Ready-to-Use NGS Panels

Validated targeted sequencing NGS panels for fast and accurate disease profiling

Highlights

- **Relevant Gene Content**
  Expertly curated using the latest scientific findings
- **Versatile Protocol**
  Compatible with Illumina®, Torrent™ and MGISEQ™ NGS platforms
- **Fast, Streamlined Workflow**
  Generate sequencing-ready libraries in just 3 hours using a simple, three-step protocol
- **Sensitive Detection**
  Detect somatic mutations down to 1% frequency using just 10 ng of input DNA.
- **Superb Performance**
  Prepare high-quality NGS libraries with excellent on-target performance using CleanPlex® Technology to enable efficient use of sequencing reads and reduce costs

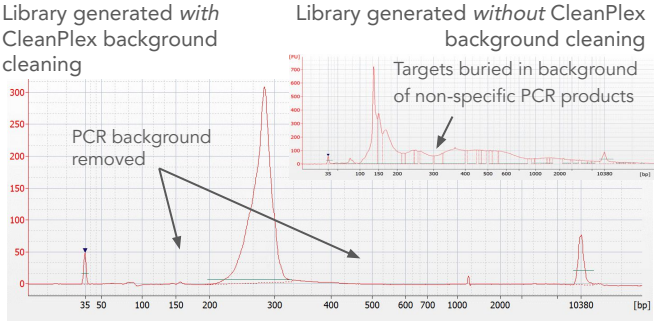
The CleanPlex® Ready-to-Use NGS Panels are multiplex PCR-based targeted resequencing assays designed for rapid variant analysis. Starting with just 10 ng of DNA, sequencing-ready libraries can be prepared using a streamlined workflow in just 3 hours. The panels are designed and optimized using advanced proprietary algorithm to deliver data with high on-target performance and high coverage uniformity to ensure efficient use of sequencing reads.

CleanPlex Streamlined Targeted Sequencing Workflow

CleanPlex Ready-to-Use NGS Panels offer a simple and streamlined workflow. Starting from purified and quantitated DNA, the multiplex PCR-based protocol can be completed in just 3 hours, with 75 minutes of hands-on time, using a three-step workflow with minimal tube-to-tube transfers. Each step consists of a thermal cycling or incubation condition, followed by "with bead" purification using magnetic beads.

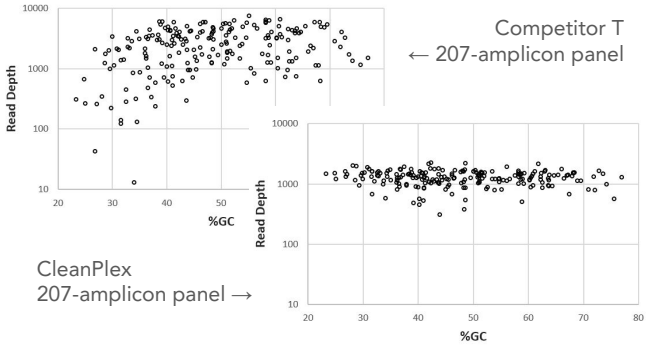
High Quality Libraries Powered by Background Cleaning

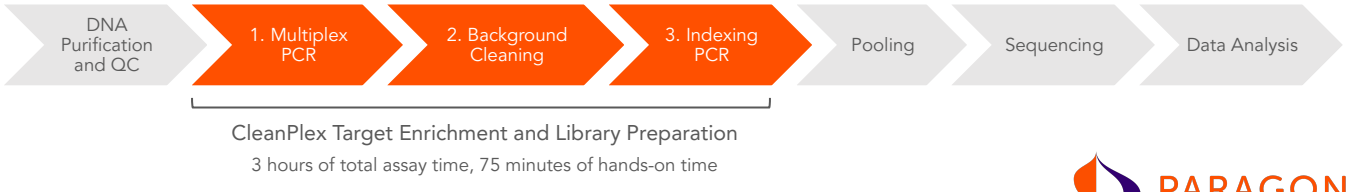
CleanPlex Ready-to-Use NGS Panels are powered by Paragon Genomics' proprietary CleanPlex Technology, which uses a proprietary multiplex PCR background cleaning chemistry to effectively remove non-specific PCR products, resulting in best-in-class target enrichment performance and efficient use of sequencing reads. Platform-specific index primers are used to generate CleanPlex target-enriched libraries that are compatible with Illumina, Ion Torrent or MGISEQ platforms.



High Performance Translates to Cost-Effective Sequencing

A 207-amplicon panel was used to generate target-enriched libraries using either the CleanPlex or Competitor T's library preparation chemistry. The results indicate that 60% less sequencing would be required using CleanPlex, which means 2.5X more samples can be sequenced on a run. To achieve similar data quality, CleanPlex's mean read depth could be reduced to 600X while Competitor T's would need to be increased to >1,500X.





PARAGON GENOMICS

CleanPlex® Ready-to-Use NGS Panels

CleanPlex OncoZoom Cancer Hotspot Panel

8 reactions (SKU 916001), 96 reactions (SKU 916002)

601 amplicons targeting 2,900+ hotspots from 65 oncogenes and tumor suppressor genes

ABL1	*CTNNB1*	*FGFR3*	*JAK3*	*NF2*	*RET*
AKT1	*DDR2*	*FLT3*	*KDR*	*NOTCH1*	*SMAD4*
ALK	*DNMT3A*	*FOXL2*	*KIT*	*NPM1*	*SMARCB1*
APC	*EGFR*	*GNA11*	*KRAS*	*NRAS*	*SMO*
ATM	*ERBB2*	*GNAQ*	*MAP2K1*	*PDGFRA*	*SRC*
BRAF	*ERBB3*	*GNAS*	*MET*	*PIK3CA*	*STK11*
BRCA1	*ERBB4*	*HNF1A*	*MLH1*	*PIK3R1*	*TERT*
BRCA2	*EZH2*	*HRAS*	*MPL*	*PTCH1*	*TP53*
CDH1	*FBXW7*	*IDH1*	*MSH6*	*PTEN*	*TSC1*
CDKN2A	*FGFR1*	*IDH2*	*MTOR*	*PTPN11*	*VHL*
CSF1R	*FGFR2*	*JAK2*	*NF1*	*RB1*	

CleanPlex BRCA1 & BRCA2 Panel

8 reactions (SKU 916005), 96 reactions (SKU 916006)

218 amplicons targeting the full exon of the BRCA1 and BRCA2 genes

CleanPlex Hereditary Cancer Panel*

8 reactions (SKU 916070), 96 reactions (SKU 916071)

1,443 amplicons targeting 37 genes associated with cancers of the breast, ovary, uterus, skin, prostate, and gastrointestinal system, which includes the stomach, colon, rectum, and pancreas, including rs12516 and rs8176318 in BRCA1 and Boland inversion in MSH2.

APC	*BRIP1*	*MEN1*	*PALB2*	*RNF139*
ATM	*CDH1*	*MITF*	*PMS2*	*SMAD4*
BAP1	*CDK4*	*MLH1*	*POLD1*	*STK11*
BARD1	*CDKN2A*	*MRE11A*	*POLE*	*TP53*
BLM	*CHEK2*	*MSH2*	*PTEN*	*XRCC2*
BMPR1A	*EPCAM*	*MSH6*	*RAD50*	
BRCA1	*FAM175A*	*MUTYH*	*RAD51C*	
BRCA2	*GREM1*	*NBN*	*RAD51D*	

Target Type: Exon
Coding Sequence (CDS)

The CleanPlex Hereditary Cancer Panel also detects hotspot mutations rs12516 and rs8176318 in the *BRCA1* 3′ UTR and structural rearrangement of exons 1-7 in *MSH2* (5′ and 3′ breakpoints of Boland inversion). Exons 14 and 15 of the *PMS2* gene are not covered.

CleanPlex TP53 Panel*

8 reactions (SKU 916008), 96 reactions (SKU 916009)

29 amplicons targeting the full exon of the TP53 gene

CleanPlex Mitochondrial Disease Panel*

8 reactions (SKU 916062), 96 reactions (SKU 916063)

102 amplicons targeting the whole human mitochondrial genome

MT-ATP6	*MT-ND3*	*MT-TC*	*MT-TL1*	*MT-TS2*
MT-ATP8	*MT-ND4*	*MT-TD*	*MT-TL2*	*MT-TT*
MT-CO1	*MT-ND4L*	*MT-TE*	*MT-TM*	*MT-TV*
MT-CO2	*MT-ND5*	*ME-TF*	*MT-TN*	*MT-TW*
MT-CO3	*MT-ND6*	*MT-TG*	*MT-TP*	*MT-TY*
MT-CYB	*MT-RNR1*	*MT-TH*	*MT-TQ*	
MT-ND1	*MT-RNR2*	*MT-TI*	*MT-TR*	
MT-ND2	*MT-TA*	*MT-TK*	*MT-TS1*	

* To use these panels with MGISeq platforms, please be sure to order the ancillary reagents for library prep.

Ordering Information

Each CleanPlex Ready-to-Use Panel contains panel-specific CleanPlex Multiplex PCR Primers and a CleanPlex Targeted Library Kit. CleanPlex Indexed PCR Primers and CleanMag® Magnetic Beads are ordered separately to complete the workflow from input DNA to sequencing-ready NGS libraries. For additional product configurations visit www.paragongenomics.com/store/

Related Products	SKU
CleanPlex Dual-Indexed PCR Primers for Illumina® Set A1 (16 indexes, 16 reactions)	716005
CleanPlex Dual-Indexed PCR Primers for Illumina® Set A (96 indexes, 96/384 reactions)	716006 716017
CleanPlex Dual-Indexed PCR Primers for Illumina® Set B (96 indexes, 96/384 reactions)	716018 716019

Learn More

To learn more about CleanPlex Ready-to-Use NGS Panels, visit www.paragongenomics.com/cleanplex_panels/

To learn more about CleanPlex Technology, visit www.paragongenomics.com/cleanplex_technology/

Paragon Genomics, Inc. | 5020 Brandin Court, FL 2, Fremont, CA 94538, USA | +1.650.822.7545
www.paragongenomics.com | techsupport@paragongenomics.com

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