CleanPlex® Pre-Designed and Stocked NGS Panels | Product Sheet

CleanPlex® Comprehensive Hereditary Cancer Panel

Fast and reliable analysis of genes associated with hereditary cancers

Highlights

- **Up-to-date Broad Gene Content**
  Interrogate 88 genes associated with cancers of the breast, lung, ovary, uterus, skin, colorectal, pancreatic, prostate, gastrointestinal system, and more- covering the spectrum of hereditary cancers.
- **Fast, Streamlined Workflow**
  Generate sequencing-ready libraries in just 3 hours using a rapid, three-step protocol and only two primer pools
- **Superb Performance**
  Prepare high-quality NGS libraries using CleanPlex® Technology to enable efficient use of sequencing reads and reduce costs

The CleanPlex Comprehensive Hereditary Cancer Panel is a targeted resequencing assay designed for analyzing genes associated with an increased risk of developing hereditary cancers. The panel is expertly curated using the latest research findings to target 88 genes and both single nucleotide variants (SNVs) and insertion-deletion mutations (indels). This panel is specifically designed to detect inherited mutations and is not appropriate for the detection of other types of mutations in acquired cancers. Starting with 20 ng of high-quality genomic DNA (10 ng per primer pool), sequencing-ready libraries can be prepared using a streamlined workflow in just 3 hours.

CleanPlex Comprehensive Hereditary Cancer Panel Specifications

Parameter	Specification
Enrichment Method	Multiplex PCR
Sequencing Platforms	Illumina®, Ion Torrent™, MGI
Number of Genes	88
Targets	Genes and hotspots associated with hereditary breast, lung, ovarian, uterine, skin, prostate, gastric, colorectal, pancreatic cancer, and more.
Cumulative Target Size	257,476
Variant Types	SNVs, indels [A]
Number of Amplicons	2,454
Amplicon Size	103 – 275 bp (223 bp on average)
Number of Primer Pools	2
Input DNA Requirement	5 – 40 ng per pool (10 ng per pool recommended)
Sample Types	Genomic DNA from blood or saliva
Total Assay Time	3 hours
Hands-On Time	75 minutes
Design Coverage	100%
Coverage Uniformity (targets with >0.2X mean coverage)	≥ 90%
On-Target Aligned Reads	≥ 93%

A. SNVs: single nucleotide variations; indels: insertions-deletions

CleanPlex Streamlined Workflow

The CleanPlex Comprehensive Hereditary Cancer Panel offers 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.

CleanPlex Target Enrichment and Library Preparation
3 hours of total assay time, 75 minutes of hands-on time

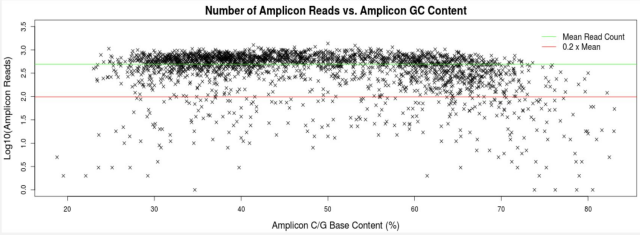
PARAGON GENOMICS

CleanPlex Comprehensive Hereditary Cancer Panel Gene List

AIP	*CDKN1B*	*GREM1*	*NBN*	*RAD50*	*SMARCB1*
ALK	*CDKN1C*	*HNF1A*	*NF1*	*RAD51C*	*STK11*
APC	*CDKN2A*	*HOXB13*	*NF2*	*RAD51D*	*SUFU*
ATM	*CEBPA*	*HRAS*	*NTHL1*	*RB1*	*TERC*
AXIN2	*CHEK2*	*KIT*	*PALB2*	*RECQL*	*TERT*
BAP1	*DICER1*	*MAX*	*PDGFRA*	*RECQL4*	*TMEM127*
BARD1	*DIS3L2*	*MEN1*	*PHOX2B*	*RET*	*TP53*
BLM	*EGFR*	*MET*	*PMS1*	*RUNX1*	*TSC1*
BMPR1A	*EPCAM*	*MITF*	*PMS2*	*SDHA*	*TSC2*
BRCA1	*FANCC*	*MLH1*	*POLD1*	*SDHAF2*	*VHL*
BRCA2	*FANCM*	*MRE11A*	*POLE*	*SDHB*	*WRN*
BRIP1	*FH*	*MSH2*	*POT1*	*SDHC*	*WT1*
CDC73	*FLCN*	*MSH3*	*PRKAR1A*	*SDHD*	*XRCC2*
CDH1	*GATA2*	*MSH6*	*PTCH1*	*SMAD4*	
CDK4	*GPC3*	*MUTYH*	*PTEN*	*SMARCA4*	

CleanPlex Amplicon Library Uniformity

The CleanPlex Comprehensive Hereditary Cancer Panel is powered by Paragon Genomics' proprietary multiplex PCR chemistry, uniquely optimized for superior library uniformity for best-in-class target enrichment performance. With our background cleaning chemistry to effectively remove non-specific PCR products, our technology enables the most efficient use of sequencing reads.



Recommended Sample Multiplexing for CleanPlex Comprehensive Hereditary Cancer Panel

Instrument	Samples per Run [A]
iSeq™ 100 System	6
MiniSeq™ System (mid-output)	13
MiniSeq System (high-output)	40
MiSeq® System (v2 chemistry Nano)	1
MiSeq System (v2 chemistry Micro)	6
MiSeq System (v2 chemistry)	24
MiSeq System (v3 chemistry)	40

A. Samples per run at an intended average read depth of 500X.

Ordering Information

The CleanPlex Comprehensive Hereditary Cancer Panel contains CleanPlex Multiplex PCR Primers and 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 more indexing options, including Illumina, Ion Torrent™, or MGI indexes, and additional product configurations, please visit www.paragongenomics.com/store/

Product	SKU
CleanPlex for MGI Comprehensive Hereditary Cancer Panel (96 rxns)	930014
CleanPlex for MGI Comprehensive Hereditary Cancer Panel (384 rxns)	930012
CleanPlex for MGI Comprehensive Hereditary Cancer Panel (1152 rxns)	930011
CleanPlex Comprehensive Hereditary Cancer Panel (96 rxns)	930015
CleanPlex Comprehensive Hereditary Cancer Panel (384 rxns)	930013

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/

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