CleanPlex® Ready-to-Use NGS Panels | Product Sheet

CleanPlex® BRCA1 & BRCA2 Panel v3

Sensitive detection of somatic and germline mutations in *BRCA1* and *BRCA2*

Highlights

- **High Coverage of Target Regions**
  Target the entire coding region including 20 bases of padding around all targeted coding exons
- **Sensitive Detection**
  Detect somatic mutations as low as 1% variant allele frequency using just 20 ng of DNA
- **Fast, Streamlined Workflow**
  Generate sequencing-ready libraries in just 3 hours using a rapid, three-step protocol
- **Superb Performance**
  Prepare high-quality NGS libraries with excellent on-target and coverage uniformity performance using CleanPlex® Technology to enable efficient use of sequencing reads and reduce costs

The CleanPlex® BRCA1 & BRCA2 Panel v3 is a multiplex PCR-based targeted resequencing assay designed to simplify the evaluation of somatic and germline variants across *BRCA1* and *BRCA2* genes. The panel can be used for CNV calling. The panel targets the entire Coding Sequence (CDS) and 20 bp of flanking intronic sequences of *BRCA1* and *BRCA2*. Starting with just 20 ng of DNA, sequencing-ready libraries can be prepared using a streamlined workflow in just 3 hours. The panel is optimized to deliver data with high on-target performance and high coverage uniformity to ensure efficient use of sequencing reads.

Sensitive Detection

The CleanPlex BRCA1 & BRCA2 Panel v3 allows detection of somatic mutations down to 1% frequency using just 20 ng of input DNA (10 ng per primer pool). With an average amplicon size of 148 bp, the panel is also compatible with degraded samples such as DNA isolated from FFPE tissues.

CleanPlex BRCA1 & BRCA2 Panel v3 Specifications

Parameter	Specification
Enrichment Method	Multiplex PCR
Sequencing Platforms	Illumina®, Ion Torrent™
Number of Genes	2
Targets	Full CDS of the *BRCA1* and *BRCA2* genes with 20 bp flanking intron coverage
Cumulative Target Size	19,785 bp
Variant Types	SNVs, indels [A], CNV
Number of Amplicons	237
Amplicon Size	111 – 200 bp (148 bp on average)
Number of Primer Pools	2
Input DNA Requirement	10 – 40 ng per pool (10 ng per pool recommended)
Sample Types	Genomic DNA from blood, saliva, or tissue; FFPE DNA
Total Assay Time	3 hours
Hands-On Time	75 minutes
Design Coverage	100 %
Coverage Uniformity (targets with >0.2X mean coverage)	≥ 95%
On-Target Aligned Reads	≥ 95%

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

CleanPlex Streamlined Workflow

The CleanPlex BRCA1 & BRCA 2 Panel v3 offers a rapid 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.

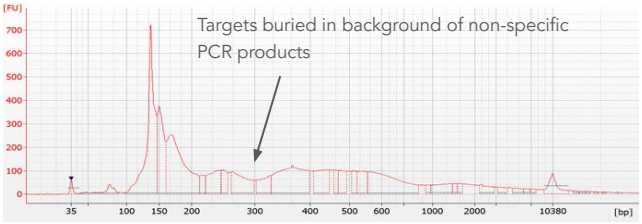
CleanPlex Target Enrichment and Library Preparation
3 hours of total assay time, 75 minutes of hands-on time

PARAGON GENOMICS

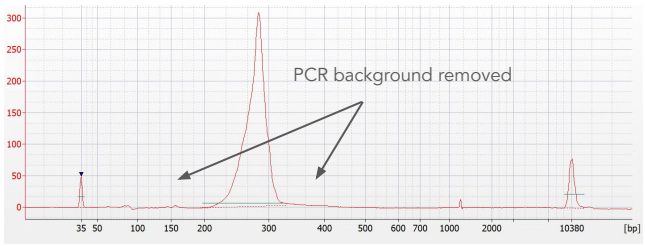
CleanPlex Background Cleaning Chemistry

The CleanPlex BRCA1 & BRCA2 Panel v3 is powered by Paragon Genomics' 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.

Library generated *without* CleanPlex technology



Library generated *with* CleanPlex technology



Recommended Sample Multiplexing for CleanPlex BRCA1 & BRCA2 Panel v3

For detecting somatic mutations:

Instrument	Samples per Run [A]
iSeq™ 100 System	7
MiniSeq™ System (mid-output)	14
MiniSeq System (high-output)	45
MiSeq® System (v2 chemistry Nano)	1
MiSeq System (v2 chemistry Micro)	7
MiSeq System (v2 chemistry)	27
MiSeq System (v3 chemistry)	45

A. Samples per run at an intended average read depth of 5,000X.

For detecting germline mutations:

Instrument	Samples per Run [B]
iSeq™ 100 System	73
MiSeq® System (v2 chemistry Nano)	18
MiSeq System (v2 chemistry Micro)	73

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

Ordering Information

The CleanPlex BRCA1 & BRCA2 Panel v3 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 Ion Torrent™ indexes, and additional product configurations visit www.paragongenomics.com/store/

Product	SKU
CleanPlex BRCA1 & BRCA2 Panel v3 (8 reactions)	916112
CleanPlex BRCA1 & BRCA2 Panel v3 (96 reactions)	916113
CleanPlex Dual-Indexed PCR Primers for Illumina® Set A (96 indexes, 96 reactions)	716006
CleanMag Magnetic Beads (1 mL)	718001
CleanMag Magnetic Beads (5 mL)	718002
CleanMag Magnetic Beads (60 mL)	718003

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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