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

CleanPlex® CFTR Panel

Fast and reliable assay for comprehensive detection of mutations in *CFTR*

Highlights

- **High Coverage of Target Regions**
  Target the entire exon and include 20 bases of padding around all targeted coding exons
- **Sensitive Detection with Low Input**
  Detect novel or known mutations using just 10 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® CFTR panel is a multiplex PCR-based targeted resequencing assay designed to simplify the evaluation of relevant mutations in the Cystic Fibrosis Transmembrane Conductance Regulator (*CFTR)* gene. Mutations in this gene cause the devastating disease cystic fibrosis, and more than 1700 mutations have been identified to date. Different mutations affect functioning of the CFTR gene in different ways, so a comprehensive assessment is essential for determining optimal treatment. The panel targets all exonic regions plus 20 bp of flanking intronic sequences and includes the important American College of Medical Genetics (ACMG)-recommended mutations. 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 with Low Input

The CleanPlex CFTR Panel allows detection of novel or known variants with just 10 ng (5ng per pool) of DNA. The panel is also compatible with DNA input as low as 2ng of DNA for cases where sample is limited.

CleanPlex CFTR Panel Specifications

Parameter	Specification
Enrichment Method	Multiplex PCR
Sequencing Platforms	Illumina®, Ion Torrent™
Number of Genes	1
Targets	Full exons +/-20 bp padding region of the CFTR gene
Cumulative Target Size	7,728 bp
Variant Types	SNVs, indels [A]
Number of Amplicons	65
Amplicon Size	127 – 275 bp (222 bp on average)
Number of Primer Pools	2
Input DNA Requirement	1 – 40 ng per pool (5 ng per pool recommended)
Sample Types	Genomic DNA from blood, DBS, saliva, buccal, tissue
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 CFTR Panel 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.

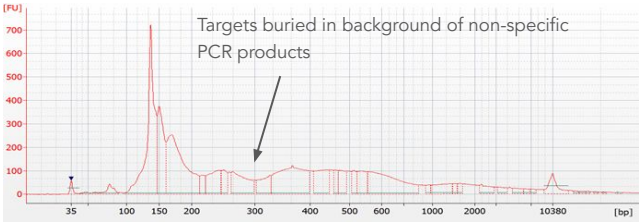
CleanPlex Target Enrichment and Library Preparation
3 hours of total assay time, 75 minutes of hands-on time

PARAGON GENOMICS

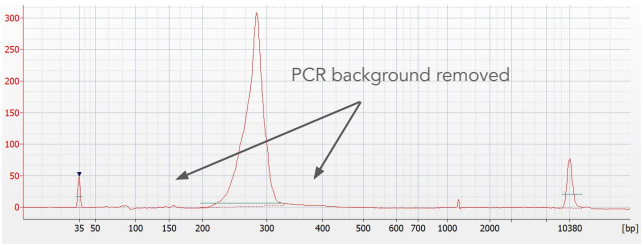
CleanPlex Background Cleaning Chemistry

The CleanPlex CFTR panel 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



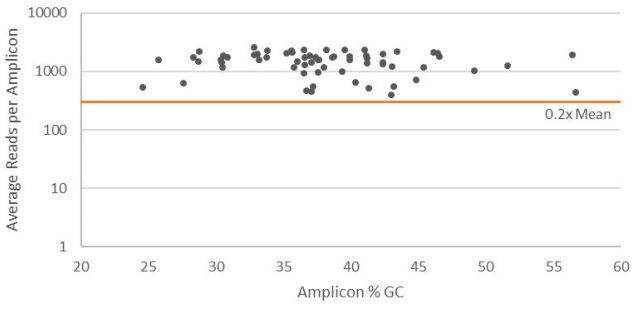
Library generated *with* CleanPlex technology



CleanPlex Amplicon Library Performance

The CleanPlex CFTR Panel is powered by Paragon Genomics' proprietary multiplex PCR chemistry, uniquely optimized for superior library uniformity for best-in-class target enrichment performance. The following data are generated with CFTR CleanPlex Amplicon Library made with 10 ng of NA12878 genomic DNA. Plot and table show 100% amplicon coverage (0.2x mean)

CFTR Cancer Panel Uniformity Plot



% uniformity	%on Target	% Mapping
100%	99.9%	99.6%

Recommended Sample Multiplexing for CleanPlex CFTR Panel

Instrument	Samples per Run [A]
iSeq™ 100 System	245
MiniSeq™ System (mid-output)	490
MiSeq® System (v2 chemistry Nano)	61
MiSeq System (v2 chemistry Micro)	245

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

Ordering Information

The CleanPlex CFTR 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 Ion Torrent™ indexes, and additional product configurations visit www.paragongenomics.com/store/

Product	SKU
CleanPlex CFTR Panel (8 reactions)	916116
CleanPlex CFTR Panel (96 reactions)	916117
CleanPlex Dual-Indexed PCR Primers for Illumina® Set A (96 indexes, 96 reactions)	716006
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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