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

CleanPlex® Mitochondrial Disease Panel

Fast and accurate screening of mitochondrial mutations

Highlights

- **Relevant Gene Content**
  Detect and investigate important variants with complete coverage of the entire human mitochondrial genome
- **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 performance using CleanPlex® Technology to enable efficient use of sequencing reads and reduce costs

The CleanPlex® Mitochondrial Disease Panel is a multiplex PCR-based targeted resequencing assay designed to simplify the evaluation of the entire human mitochondrial genome for mutations. The panel enriches for and provides complete coverage of all 37 genes of the ~17 kb mitochondrial genome, allowing identification of important variants. Starting with just 2 ng of high-quality genomic DNA (1 ng per primer pool), 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.

CleanPlex Mitochondrial Disease Panel Specifications

Parameter	Specification
Enrichment Method	Multiplex PCR
Sequencing Platforms	Illumina®, Ion Torrent™
Number of Genes	37
Targets	Whole human mitochondrial genome
Cumulative Target Size	16,714 bp
Variant Types	SNVs, indels [A]
Number of Amplicons	102
Amplicon Size	143 – 289 bp (254 bp on average)
Number of Primer Pools	2
Input DNA Requirement	1 – 10 ng per pool (10 ng per pool recommended)
Sample Types	Genomic DNA from blood, saliva, or 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 Mitochondrial Disease 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

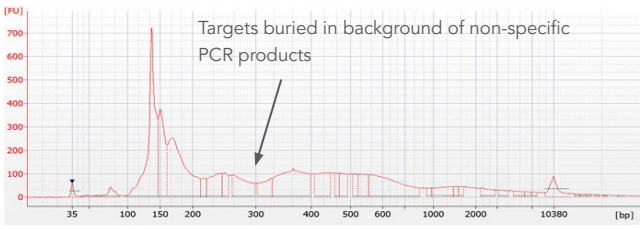
CleanPlex Mitochondrial Disease Panel Gene List

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*	

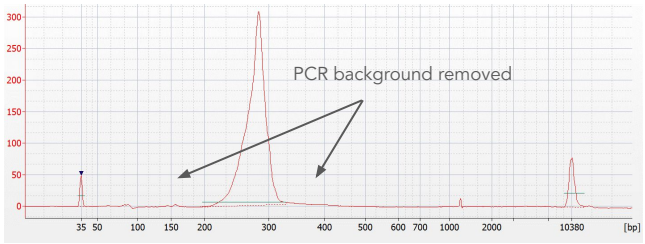
CleanPlex Background Cleaning Chemistry

The CleanPlex Mitochondrial Disease 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



Recommended Sample Multiplexing for CleanPlex Mitochondrial Disease Panel

Instrument	Samples per Run [A]
iSeq™ 100 System	156
MiSeq® System (v2 chemistry Nano)	39
MiSeq System (v2 chemistry Micro)	156

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

Ordering Information

The CleanPlex Mitochondrial Disease 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 Mitochondrial Disease Panel (8 reactions)	916062
CleanPlex Mitochondrial Disease Panel (96 reactions)	916063
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 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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