

# CleanPlex® for MGI OncoZoom® Cancer Hotspot Panel

## Rapid survey of hotspot regions in 65 oncogenes and tumor suppressor genes

### Highlights

- **Relevant Gene Content**  
Target 2,900+ hotspots in 65 genes with known cancer associations
- **Fast, Single-Tube Workflow**  
Generate sequencing-ready libraries in just 3 hours using a three-step, single-tube 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® for MGI OncoZoom® Cancer Hotspot Panel is a multiplex PCR-based targeted resequencing assay designed for rapid detection of somatic mutations across the hotspot regions of 65 oncogenes and tumor suppressor genes. Starting with just 10 ng of DNA, sequencing-ready libraries can be prepared using a single-tube 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 for MGI OncoZoom Cancer Hotspot Panel Gene List

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

### CleanPlex for MGI OncoZoom Cancer Hotspot Panel Specifications

| Parameter  | Specification  |
|--|--|
| Enrichment Method                                      | Multiplex PCR  |
| Sequencing Platforms                                   | MIGSEQ™  |
| Number of Genes  | 65   |
| Targets  | 2,900+ hotspots from 65 oncogenes and tumor suppressor genes |
| Cumulative Target Size                                 | 55,199 bp  |
| Variant Types  | SNVs, indels <sup>A</sup>                                    |
| Number of Amplicons                                    | 601  |
| Amplicon Size  | 125 – 175 bp (146 bp on average)                             |
| Number of Primer Pools                                 | 1  |
| Input DNA Requirement                                  | 10 – 40 ng per pool<br>(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                                | ≥ 90%  |

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

### High Concordance Between Expected and Detected Variant Frequency

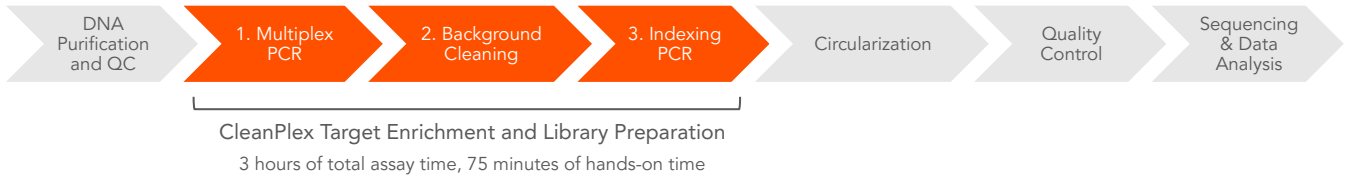
| Gene   | Variant           | Expected Frequency | Observed Frequency | Standard Deviation |
|--------|-------------------|--------------------|--------------------|--------------------|
| KRAS   | G12D              | 1.3                | 1.3                | 0.29               |
| EGFR   | ΔE746 - A750      | 1.0                | 0.8                | 0.14               |
| EGFR   | V769 - D770insASV | 1.0                | 0.9                | 0.12               |
| EGFR   | T790M             | 1.0                | 1.2                | 0.14               |
| EGFR   | L858R             | 1.0                | 0.9                | 0.14               |
| NRAS   | Q61K              | 1.3                | 1.5                | 0.14               |
| NRAS   | A59T              | 1.3                | 1.6                | 0.14               |
| PIK3CA | E545K             | 1.3                | 1.3                | 0.39               |

Input DNA: 20 ng of Horizon Discovery HD780 Multiplex I cfDNA Reference Standard (n=3)

# CleanPlex® for MGI OncoZoom® Cancer Hotspot Panel | Product Sheet

## CleanPlex Single-Tube Workflow

The CleanPlex for MGI OncoZoom Cancer Hotspot 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, single-tube workflow to minimize sample loss and handling errors. Each step consists of a thermal cycling or incubation condition, followed by “with bead” purification using magnetic beads.



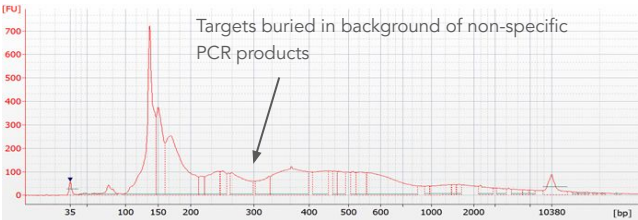
## Sensitive Detection

The CleanPlex for MGI OncoZoom Cancer Hotspot Panel allows detection of somatic mutations down to 1% frequency using 10 ng of input DNA. With an average amplicon size of 146 bp, the panel is also compatible with degraded samples such as DNA isolated from FFPE tissues.

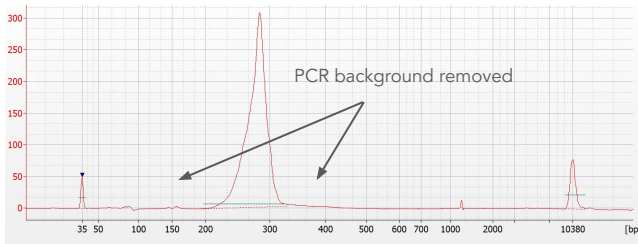
## CleanPlex Background Cleaning Chemistry

The CleanPlex for MGI OncoZoom Cancer Hotspot 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



## Learn More

To learn more about CleanPlex for MGI Ready-to-Use NGS Panels, visit [www.paragongenomics.com/cleanplex\\_mgi\\_panels/](http://www.paragongenomics.com/cleanplex_mgi_panels/)

To learn more about CleanPlex Technology, visit [www.paragongenomics.com/cleanplex\\_technology/](http://www.paragongenomics.com/cleanplex_technology/)

## Ordering Information

The CleanPlex for MGI OncoZoom Cancer Hotspot Panel contains CleanPlex for MGI Multiplex PCR Primers and CleanPlex Targeted Library Kit. CleanPlex for MGI Indexed PCR Primers and CleanMag® Magnetic Beads are ordered separately to complete the workflow from input DNA to sequencing-ready NGS libraries. For more information about CleanPlex for MGI Indexed PCR Primers, and additional product configurations please visit [www.paragongenomics.com/store\\_mgi/](http://www.paragongenomics.com/store_mgi/)

| Product   | SKU              |
|---|------------------|
| CleanPlex® for MGI - CleanPlex® OncoZoom® Cancer Hotspot Panel (8 reactions)      | 317001           |
| CleanPlex® for MGI - CleanPlex® OncoZoom® Cancer Hotspot Panel (96 reactions)     | 317002           |
| CleanPlex for MGI Single-Indexed PCR Primers, Set A (16 indexes, 32/96 reactions) | 318001<br>318007 |
| CleanPlex for MGI Single-Indexed PCR Primers, Set B (16 indexes, 32/96 reactions) | 318002<br>318008 |
| CleanPlex for MGI Single-Indexed PCR Primers, Set C (16 indexes, 32/96 reactions) | 318003<br>318009 |
| CleanPlex for MGI Single-Indexed PCR Primers, Set D (16 indexes, 32/96 reactions) | 318004<br>318010 |
| CleanPlex for MGI Single-Indexed PCR Primers, Set E (16 indexes, 32/96 reactions) | 318005<br>318011 |
| CleanPlex for MGI Single-Indexed PCR Primers, Set F (16 indexes, 32/96 reactions) | 318006<br>318012 |
| CleanMag Magnetic Beads (1 mL)  | 718001           |
| CleanMag Magnetic Beads (5 mL)  | 718002           |
| CleanMag Magnetic Beads (60 mL)   | 718003           |

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