Datasheet V3

Cell3™ Target Tumor Exome

Tumor Exome Enrichment

Highlights

Tumor relevant content

Our comprehensive Tumor Exome is designed specifically for cancer research. It offers improved coverage of clinically relevant content for tumor sequencing including key intronic regions like promoters, translocations and fusions and CNVs.

Validated for all your needs

Whatever your research needs we have validated our Tumor Exome to ensure you will get robust results. Developed for, and validated on, FFPE, FF, gDNA and ctDNA, our Tumor exome enables a range of oncology applications including testing of tumor/normal samples from as little as 1 ng input.

Highest confidence calling of ultra-low frequency somatic or mosaic germline variants

Our built-in error suppressor technology, unique molecular tags and dual indexes support accurate and confident calling of ultra-low frequency mutations down to 0.1% VAF.

Custom Exomes with a reduced cost, better uniformity and quicker delivery time

We realize your research needs might require extra content specific to your project. Our manufacturing method enables rapid, 4-week delivery of custom exome enrichment products, including NGS QC validation.

To shear or not to shear? Flexible protocol includes enzymatic shearing of FFPE/FF or no shearing for cfDNA

Cell3™ Target Tumor Exome library prep options include enzymatic fragmentation (FFPE/FF and HMW gDNA), no shearing for ctDNA and optional Covaris shearing for gDNA.

Introduction

Whole exome sequencing (WES) is a powerful method which has quickly gained recognition with both translational research and clinical laboratories for discovering causative variants in hereditary and somatic driven diseases. By focusing on the coding regions of the genome, exome sequencing offers a higher throughput of samples at a lower cost and with superior coverage to whole genome sequencing (WGS) and with a dramatically lower data storage and analysis burden. Exomes allow a more unbiased view of the genome than a targeted panel and can therefore play an important role in translational research for variant discovery or within a clinical lab as a more comprehensive test option.

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Tumor exome sequencing

When compared to WGS, WES offers a cost-effective solution for tumor profiling; allowing for deeper sequencing and enabling more sensitive mutation detection. It also offers improved tumor mutation burden (TMB) calling versus smaller panels. However, many mutation types that are known to be important in cancer, for example tumor promoters like TERT, translocations and fusions or CNVs, are not covered by standard exome enrichments.

The Cell3™ Target Tumour Exome is based on our standard whole exome product enriched with baits from our Pan-cancer panel. It includes enhanced coverage of the most clinically relevant genes from NCCN/FDA cancer treatment guidelines, 116 cancer driver genes and 345 genes in vital cancer signalling pathways. The design, whilst exon focused, covers key intronic and promoter regions like the TERT promoter, coverage of translocations and fusions and contains genome wide CNV probes to support robust copy number calling. At 37 Mb it is a comprehensive panel that allows you to accurately identify and profile novel and known variants associated with cancer.

Validated for all your needs

From as little as 1 ng input material, Cell3™ Target Tumor Exome has been validated on formalin-fixed, paraffin embedded (FFPE) DNA. Fresh frozen (FF) DNA, ctDNA (circulating tumor DNA) and genomic DNA, so you can be assured of robust results regardless of your starting material.

Robust low frequency variant detection for cancer exome sequencing

The Cell3™ Target Tumor Exome has been optimized for low frequency mutation calling. By incorporating molecular identifiers and dual unique indexes into the library preparation, PCR and sequencing errors are suppressed so you can ensure that data generated will be the cleanest possible and enable you to confidently call mutations down to 0.1% VAF.

Optimized performance

The baits used in the Cell3™ Target Tumor Exome are designed to deliver excellent uniformity of coverage. By reducing the number of low coverage exons our Tumor Exome optimises sequencing efficiency and sample capacity per sequencing run.

Custom Exomes with a reduced cost, better uniformity and quicker delivery time

The Cell3™ Target manufacturing process enables customers to design, order and receive a completely custom Exome within just 4 weeks. All custom exomes are validated by NGS to ensure that uniformity of coverage meets our strict QC requirements.

Validated, quick and convenient workflow

The Cell3™ Target technology enables enzymatic shearing of high molecular weight genomic DNA and FFPE/FF DNA samples as well as conventional End-repair / A-tailing for cell free DNA (ctDNA or cffDNA). The streamlined workflow with 8 sample pre-capture pooling for exomes reduces hands-on time and pipetting steps and takes less than 10 hours (from DNA sample to enriched library) with less than 2 hours hands-on time. It allows both manual or automated preparation of between 1 – 96 samples at a time with 384 sample indexes available for even the highest throughput laboratory.

Learn more

To learn more about the Cell3 Target Tumor Exome and to download the protocols, application notes and white papers please visit: www.nonacus.com.

Ordering information

Product	Catalogue No.
Cell3™ Target: Tumor Exome, 16 samples (available as frag or non frag kit)	NGS_C3T_TEX_FR_16/ NGS_C3T_TEX_NF_16
Cell3™ Target: Tumor Exome, 96 samples (available as frag or non frag kit)	NGS_C3T_TEX_FR_96 / NGS_C3T_TEX_NF_96

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