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Oncomine Comprehensive Assay v3

Empower your oncology research with proven Ion Torrent technology

The Ion Torrent™ Oncomine™ Comprehensive Assay v3 is a member of the family of Ion Torrent™ Oncomine™ assays for clinical cancer research. Oncomine assays are multiple-biomarker assays based on next-generation sequencing (NGS). They have been adopted by leading cancer institutions around the world, have been used to profile thousands of samples in different translational and clinical research projects, and have consistently delivered reliable results.

"The requirement of a lower DNA input for the Oncomine assay is a significant advantage when primary samples are becoming increasingly limited."

John Bartlett, PhD
Director of Transformative Pathology Platform,
Ontario Institute for Cancer Research

Oncomine Comprehensive Assay v3

- Content is based on the latest advances in clinical oncology research and also enriched for known childhood cancer targets
- Based on robust Ion AmpliSeq™ technology, this assay only requires 10 ng of DNA or RNA per pool, enabling analysis of even small and challenging formalin-fixed, paraffin-embedded (FFPE) samples
- Detects relevant SNVs, CNVs, gene fusions, and indels from 161 unique cancer driver genes in one streamlined workflow
- Optimized and verified for the Ion Chef™ Instrument and Ion GeneStudio™ S5 system series with the Ion 540™ Chip, enabling full automation including automated library prep on the Ion Chef Instrument

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Hotspot genes				Full-length genes			Copy number genes		Gene fusions (inter- and intragenic)		
AKT1	*ESR1*	*KIT*	*PDGFRB*	*ARID1A*	*FBXW7*	*PTEN*	*AKT1*	*FGFR4*	*AKT2*	*FGFR2*	*NUTM1*
AKT2	*EZH2*	*KNSTRN*	*PIK3CB*	*ATM*	*MLH1*	*RAD50*	*AKT2*	*FLT3*	*ALK*	*FGFR3*	*PDGFRA*
AKT3	*FGFR1*	*KRAS*	*PIK3CA*	*ATR*	*MRE11*	*RAD51*	*AKT3*	*IGF1R*	*AR*	*FGR*	*PDGFRB*
ALK	*FGFR2*	*MAGOH*	*PPP2R1A*	*ATRX*	*MSH6*	*RAD51B*	*ALK*	*KIT*	*AXL*	*FLT3*	*PIK3CA*
AR	*FGFR3*	*MAP2K1*	*PTPN11*	*BAP1*	*MSH2*	*RAD51C*	*AXL*	*KRAS*	*BRCA1*	*JAK2*	*PRKACA*
ARAF	*FGFR4*	*MAP2K2*	*RAC1*	*BRCA1*	*NBN*	*RAD51D*	*AR*	*MDM2*	*BRCA2*	*KRAS*	*PRKACB*
AXL	*FLT3*	*MAP2K4*	*RAF1*	*BRCA2*	*NF1*	*RNF43*	*BRAF*	*MDM4*	*BRAF*	*MDM4*	*PTEN*
BRAF	*FOXL2*	*MAPK1*	*RET*	*CDK12*	*NF2*	*RB1*	*CCND1*	*MET*	*CDKN2A*	*MET*	*PPARG*
BTK	*GATA2*	*MAX*	*RHEB*	*CDKN1B*	*NOTCH1*	*SETD2*	*CCND2*	*MYC*	*EGFR*	*MYB*	*RAD51B*
CBL	*GNA11*	*MDM4*	*RHOA*	*CDKN2A*	*NOTCH2*	*SLX4*	*CCND3*	*MYCL*	*ERBB2*	*MYBL1*	*RAF1*
CCND1	*GNAQ*	*MED12*	*ROS1*	*CDKN2B*	*NOTCH3*	*SMARCA4*	*CCNE1*	*MYCN*	*ERBB4*	*NF1*	*RB1*
CDK4	*GNAS*	*MET*	*SF3B1*	*CHEK1*	*PALB2*	*SMARCB1*	*CDK2*	*NTRK1*	*ERG*	*NOTCH1*	*RELA*
CDK6	*H3F3A*	*MTOR*	*SMAD4*	*CREBBP*	*PIK3R1*	*STK11*	*CDK4*	*NTRK2*	*ESR1*	*NOTCH4*	*RET*
CHEK2	*HIST1H3B*	*MYC*	*SMO*	*FANCA*	*PMS2*	*TP53*	*CDK6*	*NTRK3*	*ETV1*	*NRG1*	*ROS1*
CSF1R	*HNF1A*	*MYCN*	*SPOP*	*FANCD2*	*POLE*	*TSC1*	*EGFR*	*PDGFRA*	*ETV4*	*NTRK1*	*RSPO2*
CTNNB1	*HRAS*	*MYD88*	*SRC*	*FANCI*	*PTCH1*	*TSC2*	*ERBB2*	*PDGFRB*	*ETV5*	*NTRK2*	*RSPO3*
DDR2	*IDH1*	*NFE2L2*	*STAT3*				*ESR1*	*PIK3CB*	*FGFR1*	*NTRK3*	*TERT*
EGFR	*IDH2*	*NRAS*	*TERT*				*FGF19*	*PIK3CA*			
ERBB2	*JAK1*	*NTRK1*	*TOP1*				*FGF3*	*PPARG*			
ERBB3	*JAK2*	*NTRK2*	*U2AF1*				*FGFR1*	*RICTOR*			
ERBB4	*JAK3*	*NTRK3*	*XPO1*				*FGFR2*	*TERT*			
ERCC2	*KDR*	*PDGFRA*					*FGFR3*				

Figure 1. List of gene targets in the Oncomine Comprehensive Assay v3.

Intelligent NGS assay design

The content covers 161 of the most relevant cancer driver genes, including increased kinase domain coverage and representation of genes involved in DNA repair. Less relevant genes from the first version were removed—see details on the web page.

Optimized for challenging FFPE samples

Based on Ion AmpliSeq technology, the Oncomine Comprehensive Assay v3 requires typically three or fewer FFPE slides or as little as 10 ng of input DNA or RNA per reaction. This enables analysis of small and inferior-quality samples, such as fine-needle aspirates. Alternative methods require numerous FFPE slides and hundreds of nanograms of DNA or RNA, making them less practical for routine analysis of FFPE tumor samples.

Oncomine informatics

The Oncomine NGS oncology assay workflow provides a complete solution for NGS data analysis to go from hundreds of variants to a few relevant cancer drivers. Oncomine informatics ensures high-quality data, prioritizes and annotates driver variants, and completes with software for clinical decision support to link relevant biomarkers to labels, guidelines, and clinical trials.

Different configurations to meet the needs of any laboratory

The Oncomine Comprehensive Assay v3 is available in two configurations: manual and automated library preparation with the Ion Chef Instrument. The DNA and RNA primer panel and library preparation reagents are included.

Ordering information

Product	No. of reactions	Cat. No.
Oncomine Comprehensive Assay v3C (automated library preparation with the Ion Chef Instrument)	32	A35806
Oncomine Comprehensive Assay v3M (manual library preparation)	24	A35805
	96	A36111

Find out more at **thermofisher.com/oncomine**

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