CancerMaster Panel

Somatic Cancer

Palex
Constant Improvement

DESCRIPTION

The CancerMaster panel is designed to detect all variant types and the I-O markers, microsatellite instability (MSI) and tumor mutational burden (TMB), which are crucial biomarkers for cancer immunotherapy. For CNV analysis, different cut-off is applied according to the ratio of cancer cells. The panel is also designed to detect Epstein-Barr virus (EBV) and Human Papillomaviruses (HPV) allowing for comprehensive analysis of cancer associated genes.

KEY FEATURES

1. Comprehensive analysis of cancer associated genes	A broad range of targeting elements including somatic variants, IO-signatures (TMB, MSI), EBV and HPV, for clinical diagnoses of different cancer types and precision medicine
2. Extensive validation studies	Robust panel performance supported by extensive validation tests with Reference and clinical specimens

SPECIFICATION

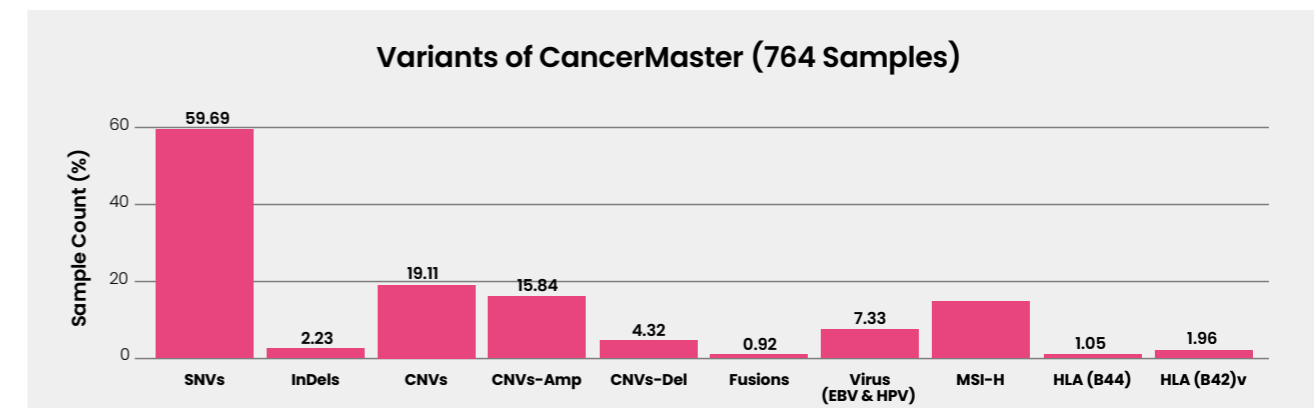|	
Gene count*	524 genes
Covered region	Whole CDS, custom regions of oncogenes, immune response genes, and EBV & HPV viruses
Target size	2.5 Mb
Mutation type	SNV, Indel, CNV, Rearrangment, TMB, MSI, EBV, HPV
Sample type	FFPE, Fresh frozen tissue (> 50 ng of fragmented DNA)
Platform	All sequencers from Illumina, Thermo Fisher, MGI, PacBio, and Oxford Nanopore
Bioinformatics pipeline	Primary, Secondary and Tertiary analysis result (FASTQ to VCF, VCF to Clinical report)
Publication	Molecular Characterization of Biliary Tract Cancer Predicts Chemotherapy and PD-1/PD-L1 Blockade Responses, Hepatology, 2021

*Gene Add-on Service: Genes can be added or removed by customer demand

GENE LIST

| OncoRisk Panel	ABL1	ALK	PDGFRA	ROS1	FGFR2	FGFR3	NTRK1	NTRK2	NTRK3	FGFR1	MET	PPARG	RET
	AKT3	BRAF	BRCA1	EGFR	ERBB2								

PANEL PERFORMANCE

The probes are designed to include the intron regions as well as clinically significant biomarkers. By conducting extensive validation studies with clinical samples, the panel was examined to show its performance with high sensitivity and specificity in detecting the variants in cancer-associated genes.

Variants of CancerMaster (764 Samples)

Variant	Sample Count (%)
SNVs	59.69
InDels	2.23
CNVs	19.11
CNVs-Amp	15.84
CNVs-Del	4.32
Fusions	0.92
Virus (EBV & HPV)	7.33
MSI-H	—
HLA (B44)	1.05
HLA (B42)v	1.96

ANALYSIS OF EBV & HPV

EBV (Epstein-Barr Virus)	**HPV** (Human Papillomavirus)
• Related disease – Lymphoma • Genes – EBV type 1 (EBNA-2)	• Related disease – Cervical cancer • Genes – HPV L1 gene (Analysis of a total of 24 types is possible)

Validation for detection of EBV type 1 (EBNA-2) in control specimens
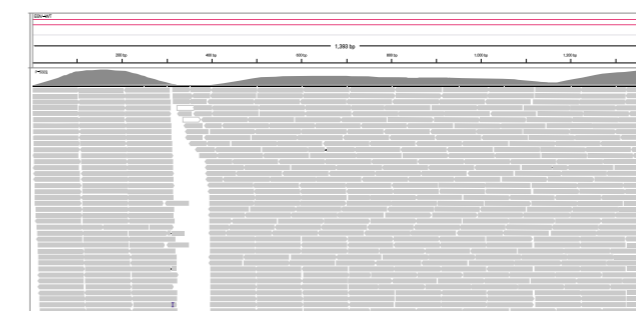
Analysis of the following 11 types of HPV types was completed using clinical specimens

Human infection HPV list
Human papillomavirus type 178
Human papillomavirus type 136
Human papillomavirus type 140
Human papillomavirus type 154
Human papillomavirus type 156
Human papillomavirus type 179
Human papillomavirus type 201
Human papillomavirus type 49
Human papillomavirus type 9
Human papillomavirus type 92
Human papillomavirus type 96

PACKAGE COMPOSITION

Package name	Compositions		
Target Enrichment	Target capture Probe	–	
Standard	Target Enrichment reagents	Library prep Kit	–
All-In-One			Beads / Polymerase

Package option	Options	
Pooling method	Single Reaction	Pre-capture Pooling
Library Preparation kits	Standard Kit	EP-kit
Hybridization Enhancer	Included	Not included