

Hema Tumor Fusion RNA Panel

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PRODUCT OVERVIEW

Target Size: 851.1 kb

Coverage

Covering all transcript regions of 141 genes related to hematological tumor fusion

Detection range

Fusion, transcript variation and expression, etc.

Sequencing volume

3 Gb (Recommended)

Applications

Adjuvant diagnosis, medication guidance, and prognostic indication

ADVANTAGES

Sensitive and precise

Probes are designed against all transcripts in the target region for hybrid-capture enrichment, enabling low-cost, ultra-deep and highly sensitive detection.

Efficient and uniform

Powered by iGeneTech® TargetSeq® hybrid-capture technology, the kit delivers consistent, high-performance results.

Fully Flexible

Probe density can be increased and target regions expanded on demand, offering fully or semi-customized services to meet every individual requirement.

PRODUCT INFORMATION

Product Name	Spec.	Catalog #
Hema Tumor Fusion RNA Panel	24/96 rxn	PH2008285/PH2008282
IGT® Fast Stranded RNA Library Prep Kit v2.0	96 rxn	C10032
IGT® Adapter & UDI Primer 1-96*	96 rxn	C10042
TargetSeq One® Hyb & Wash Kit v3.0*	24/96 rxn	C10332
TargetSeq® Eco Universal Blocking Oligo*	24/96 rxn	C80502
TargetSeq® Cap Beads & Nuclease-Free Water*	5 mL each	C10422

*IGT® as well as universal reagents corresponding to each platform.

PERFORMANCE

-Capture performance-

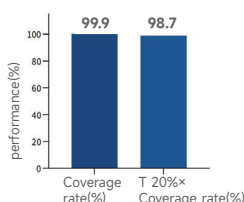


Figure 1

Capture Performance with gDNA reference standard

Libraries were constructed using 100 ng of gDNA reference G304A. After hybrid capture, the libraries were sequenced.

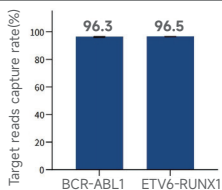
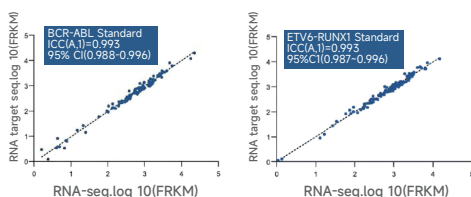


Figure 2

Capture Performance with RNA reference standards

Libraries were constructed using 100 ng of each of the following standards: fusion-gene RNA reference BCR(E14)-ABL(E2)-P210 Fusion (ChemBio, CBP20031R), and ETV6-RUNX1 Fusion (ChemBio, CBP20091R).

-Expression Consistency-



Two fusion-gene RNA standards were subjected to RNA-Seq library construction and sequencing at 100 Gb each, and simultaneously captured with the Hema Tumor Fusion RNA Panel. Read counts were tallied and FPKM values calculated, genes with zero expression were excluded before performing concordance analysis. RNA targeted sequencing showed excellent agreement with the high-depth RNA-Seq expression data.

High Sensitivity in Fusion Gene Detection

Method	BCR-ABL1 Fusion				ETV6-RUNX1 Fusion		
	Dilution rate	Input copy number	Average Unique Reads	Conclusion	Input copy number	Average Unique Reads	Conclusion
RNA target sequencing	1 Fold	13400	890.3	Detection	8800	250.5	Detection
	2 Fold	6700	407.5	Detection	4400	132.0	Detection
	4 Fold	3350	214	Detection	2200	79.5	Detection
	32 Fold	419	63.5	Detection	275	12.5	Detection
	128 Fold	105	24.5	Detection	68	3.5	Detection
	256 Fold	52	11.0	Detection	34	2.5	Detection
RNA-Seq	512 Fold	26	2.5	Detection	17	0	Not Detection
	4 Fold	3350	0	Not Detection	2200	0	Not Detection

Note: Fusion detection results under serial dilution of RNA fusion standards. Libraries were constructed from 100 ng of the fusion-gene RNA standards BCR(E14)-ABL(E2)-P210 Fusion (ChemBio, CBP20031R; ddPCR reference value: 134 copies/ng) and ETV6-RUNX1 Fusion (ChemBio, CBP20091R; ddPCR reference value: 88 copies/ng). After hybrid capture, libraries were sequenced on an Illumina NovaSeq 6000(PE150, 3 Gb raw bases, ~2000× coverage). The Hema Tumor Fusion RNA Panel reliably detected the fusions even at a 256-fold dilution.

Gene List-Cover transcripts of 141 genes

ABL1	ABL2	AFDN	AFF1	ALK	AP2A2	ARID1B	ATF7IP	BCL11A	BCL2	BCL6	BCL9
BCOR	BCR	BCSL1	BIRC3	BMP2K	CALM2	CBFA2T3	CBFB	CDKSRAP2	CD28	CHD6	CPSF6
CREBBP	CRLF2	CSF1R	CTLA4	DAZAP1	DEK	EBF1	ELL	EP300	EPOR	EPS15	ERG
ETV6	EWSR1	FGFR1	FIP1L1	FOXJ2	FOXO4	FUS	GLIS2	GTF2I	HLF	HNRNPUL1	HOXA11
HOXA13	HOXA9	HOXC11	HOMD13	HRASLS5	IKZF1	IL2RB	IQGAP2	IRF2BP2	ITK	JAK2	KDMSA
KDM6A	KIF5B	KMT2A	KMT6A	LMBRD1	MBTD1	MECOM	MEF2D	MLF1	MLLT1	MLLT10	MLLT11
MLLT3	MLLT6	MXN1	MRTFA	MYB	MYC	MYH11	MYH9	NABP1	NCOA3	NID2	NPM1
NSD1	NTRK3	NUMA1	NUP214	NUP98	P2RY8	PAX5	PBX1	PDGFRA	PDGFRB	PHF21B	PMEL
PML	PPFBP1	PRDM16	PRDX1	PRKAR1A	PRRX1	PTK2B	RANBP2	RARA	RARG	RBM15	RCSD1
RPL22	RPN1	RUNX1	RUNX1T1	SEPTINE	SET	SNX2	SS18	SSBP2	STAG2	STAT3	STAT5B
STIL	STRN	STRN3	SYK	SYNRG	TAF15	TAL1	TBL1XR1	TCF3	TERF2	TNIP1	TPR
TRIM24	TSLP	TYK2	ZBTB16	ZC3H4V1	ZEB2	ZMIZ1	ZMYND11	ZNF384			

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