LeXOnCT Panel v1.0 is a compact panel designed for analysis of solid tumors and liquid biopsy. This panel involves a total number of 69 genes with selected regions covered. With an optimized probe design, this panel offers highly uniform coverage over targeted regions for both FFPE and cell-free DNA.

Genes with coding regions covered

AKT1	*ALK*	***APC***	***AR***	*ARAF*	***ATM***	***BRAF***	***BRCA1***	***BRCA2***	***CCND1***	***CDH1***	***CDK12***
CDK4	***CDK6***	***CDKN2A***	*CTNNB1*	*DDR2*	***EGFR***	***ERBB2***	*ERCC2*	*ESR1*	*EZH2*	***FGFR1***	***FGFR2***
FGFR3	*GNA11*	*GNAQ*	*GNAS*	*HRAS*	*IDH1*	*IDH2*	*JAK2*	*JAK3*	*KDM6A*	***KIT***	***KRAS***
MAP2K1	*MAP2K2*	***MDM2***	***MET***	***MLH1***	*MPL*	***MSH2***	***MSH6***	*MTOR*	***MYC***	***NF1***	*NPM1*
NRAS	*NTRK1*	*NTRK2*	*NTRK3*	***PDGFRA***	***PIK3CA***	***PMS2***	*PTCH1*	***PTEN***	***PTPN11***	***RAF1***	***RB1***
RET	*ROS1*	*SMARCB1*	***SMO***	***STK11***	*TERT*	***TP53***	*TSC1*	*TSC2*			

Genes with full coding regions shown in bold.

Genes with selected introns covered

ALK	*BRAF*	*EGFR*	*FGFR2*	*FGFR3*	*MET*	*NTRK1*	*NTRK2*	*PDGFRA*	*RET*	*ROS1*

Microsatellite markers

BAT-25	*BAT-26*	*BAT-40*	*BAT-RII*	*NR-21*	*NR-22*	*NR-24*	*NR-27*	*MONO-27*	*D2S123*	*D5S346*
D17S261	*D17S520*	*D18S34*								

Performance

On-target Rate

Table 1. On-target rate for gDNA and cfDNA samples

Platform	gDNA On-target rate (%)	cfDNA On-target rate (%)
HiSeq X Ten, PE150	87.02	87.35
DNBSEQ-G400, PE100	85.47	87.00

The DNA libraries were prepared using LeXPrep library kits with 50 ng of human genomic DNA (Promega, G1512) and 10 ng of plasma cfDNA from a healthy donor, respectively. 1 M read pairs were subsampled for the analysis. On-target rates were calculated as the percentage of mapped read pairs that overlap with probe regions.

Coverage Uniformity

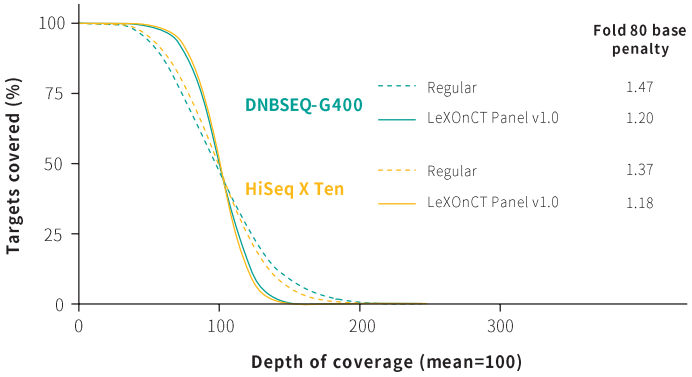

Fig 1. Improved design for cfDNA capture. The optimized design of the LeXOnCT Panel v1.0 showed improved coverage uniformity for cfDNA libraries on both Illumina® and MGI platforms.

Variant Analysis

Gene	Variants	Allele frequency by digital PCR	Observed frequency by Vardict	
			HiSeq X Ten	DNBSEQ-G400
NRAS	Q61K	12.5%	13.5%	12.4%
PIK3CA	E545K	9.0%	10.9%	7.0%
PIK3CA	H1047R	17.5%	15.1%	14.0%
EGFR	G719S	24.5%	26.6%	28.2%
EGFR	ΔE746 - A750	2.0%	1.6%	1.9%
EGFR	T790M	1.0%	0.9%	0.6%
EGFR	L858R	3.0%	2.6%	3.2%
BRAF	V600E	10.5%	10.9%	8.8%
KRAS	G13D	15.0%	14.8%	15.4%
KRAS	G12D	6.0%	5.8%	5.4%

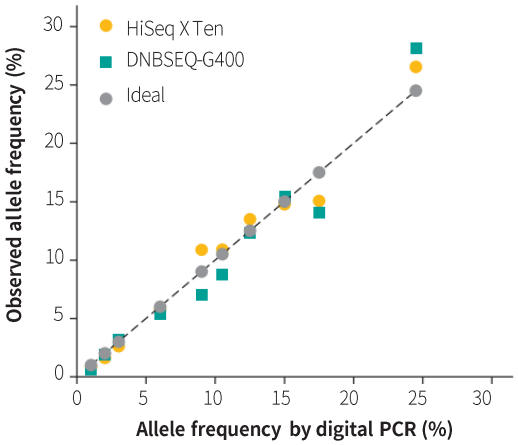

Fig 2. Evaluation of the LeXOnCT Panel v1.0 on the analysis of SNVs and indels. DNA libraries were prepared from Onco SNV Multiplex 1–25% gDNA (GeneWell, GW-OGTM004) using LeXPrep library kits. The enriched libraries were sequenced either on HiSeq X Ten (PE150) or DNBSEQ-G400 (PE100).

Ordering Information

Product	Catalog #
LeXOnCT Panel v1.0, 16 rxn	LX01902
LeXOnCT Panel v1.0, 96 rxn	LX01901

For research use only. Not for use in diagnostic procedures.

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