

Comprehensive Profiling.

UNITED™ 600 detects clinically-relevant genomic alterations in both DNA and RNA including microsatellite instability (MSI) and tumor mutational burden (TMB) biomarkers from FFPE tissue.

Co-developed and funded by SingHealth, A*STAR, Singapore General Hospital (SGH), National Cancer Centre Singapore (NCCS)¹ and Lucence.

572**DNA targets**SNVs, Indels, CNVs,
TMB and MSI**71****RNA targets**Fusion and splice
variant mutations**2****weeks**Turnaround
Time

Benefits of UNITED™ 600

- ✓ Improves therapy recommendations with comprehensive total nucleic acid (DNA+RNA) genomic analysis²
- ✓ Matches patients to FDA-approved targeted therapies³ and available clinical trials
- ✓ Covers all solid tumor genes recommended by NCCN Guidelines⁴, ICGC⁵, and TCGA⁶

Cancer Types Covered

Multiple Solid Tumor Types Including Lung, Breast, Ovarian, Stomach, Liver, Prostate, Cholangiocarcinoma, Cervix, Colon, Nasopharyngeal and others

Suitable for

- Newly diagnosed patients
- Recurrent and metastatic disease
- Patients who are not responding well to current standard-of-care treatments

[1] Ng, CC-Y. et al. Front. Mol. Biosci. 2022. 9:963243. [2] Rodon, J. et al. Nat Med. 2019;25:751–758.
[3] Li, MM. et al. J Mol Diagn. 2017;19(1):4–23. [4] NCCN Clinical Practice Guidelines in Oncology. NCCN.
[5] Zhang, J. Nat Biotechnol. 2019;37:367–369. [6] The Cancer Genome Atlas Program. National Cancer Institute.

List of FDA-approved Matched Therapy

Cancer Type	Biomarker	FDA-approved Matched Therapy
Breast cancer	<i>BRCA1, BRCA2</i>	Olaparib, Talazoparib
	<i>PIK3CA</i>	Alpelisib
	<i>ERBB2 (HER2)</i>	Lapatinib, Margetuximab, Neratinib, Pertuzumab, Trastuzumab Emtansine, Trastuzumab, Tucatinib
Cholangiocarcinoma	<i>FGFR2</i>	Infigratinib, Pemigatinib
	<i>IDH1</i>	Ivosidenib
Colorectal cancer	<i>BRAF</i>	Cetuximab, Encorafenib
	<i>RAS (Wild-type)</i>	Cetuximab, Panitumumab
Gastric cancer	<i>ERBB2 (HER2)</i>	Trastuzumab Deruxtecan, Trastuzumab
GIST	<i>KIT</i>	Imatinib
Lymphoma	<i>ALK</i>	Crizotinib
Melanoma	<i>BRAF</i>	Binimetinib, Cobimetinib, Dabrafenib, Encorafenib, Trametinib, Vemurafenib
NSCLC	<i>ALK</i>	Alectinib, Brigatinib, Ceritinib, Crizotinib, Lorlatinib
	<i>BRAF</i>	Dabrafenib, Trametinib
	<i>EGFR</i>	Afatinib, Amivantamab-vmjw, Dacomitinib, Erlotinib, Gefitinib, Osimertinib
	<i>ROS1</i>	Crizotinib, Entrectinib
	<i>RET</i>	Pralsetinib, Selpercatinib
	<i>MET</i>	Tepotinib, Capmatinib
	<i>KRAS</i>	Sotorasib
	<i>BRCA1, BRCA2</i>	Niraparib, Olaparib, Rucaparib
Pancreatic cancer	<i>BRCA1, BRCA2</i>	Olaparib
Prostate cancer	<i>BRCA1, BRCA2</i>	Olaparib, Rucaparib
Solid tumors	<i>TMB-H</i>	Pembrolizumab
	<i>NTRK</i>	Entrectinib, Larotrectinib
	<i>MSI</i>	Ipilimumab, Nivolumab, Pembrolizumab
Thyroid cancer	<i>RET</i>	Pralsetinib, Selpercatinib
Urothelial cancer	<i>FGFR2, FGFR3</i>	Erdafitinib

Test Specifications

Methodology	Ultra-deep next-generation sequencing	
Genomic alterations profiled	SNVs, CNVs, indels, fusions, splice variants, MSI, and TMB	
Sample requirement	FFPE tumor tissue	
Turnaround time	2 weeks	
	Sensitivity	Specificity
Single Nucleotide Variants (SNVs)	98%	100%
Insertions/Deletions (Indels)	98%	100%
Fusions	91.25%	100%
MSI-High	100%	100%
	R ² Correlation to Whole Exome Sequencing	
Tumor Mutational Burden (TMB)	98.6%	

• Results tested at the stated mutant allele frequencies using reference standards, FFPE cell line samples, and FFPE clinical samples.
• Sensitivity and specificity reported for SNVs and Indels are at 5% VAF

Genes with Full Coding Sequence (CDS) Coverage

Single Nucleotide Variants (SNVs), Insertions/Deletions (Indels) and Copy Number Variations (CNVs)

A	BCR	CRKL	ERCC5	FUBP1	ITK	MET
ABCB1	BIRC3	CRLF2	ERG	G	J	MITF
ABCC3	BIRC5	CRTC1	ERRF1	G6PD	JAK1	MKI67
ABCG2	BLM	CSF1R	ESR1	GATA1	JAK2	MLH1
ABI1	BMPR1A	CSF3R	ETV1	GATA2	JAK3	MLLT10
ABL1	BRAF	CSMD3	ETV4	GATA3	JUN	MLLT3
ABL2	BRCA1	CTCF	ETV5	GLI1	K	MMP2
ACVR1	BRCA2	CTLA4	ETV6	GLI2	KAT6A	MMP9
ACVR1B	BRD3	CTNNA1	EWSR1	GNA11	KAT6B	MN1
ACVR2A	BRD4	CTNNB1	EXT1	GNAQ	KDM4C	MPL
ADGRB3	BRIP1	CUX1	EXT2	GNAS	KDM5A	MRE11
AFDN	BTG1	CXCR4	EZH1	GOPC	KDM5C	MSH2
AFF1	BTK	CYLD	EZH2	GPC3	KDM6A	MSH3
AFF3	BUB1B	CYP2D6	EZR	GREM1	KDR	MSH6
AIM2	C	D	F	GRIN2A	KEAP1	MSI2
AKT1	CALR	DAXX	FANCA	GRM3	KIF5B	MST1R
AKT2	CARD11	DCC	FANCC	GSTP1	KIT	MTAP
AKT3	CASP8	DDB2	FANCD2	H	KLF4	MTHFR
ALK	CBFB	DDIT3	FANCE	H3-3A	KLF6	MTOR
AMER1	CBL	DDR1	FANCF	H3-3B	KMT2A	MUC1
APC	CBLB	DDR2	FANCG	H3C2	KMT2C	MUC16
AR	CCND1	DDX11	FANCL	HDAC1	KMT2D	MUTYH
ARAF	CCND2	DDX3X	FANCM	HDAC2	KNL1	MYB
ARHGAP26	CCND3	DDX5	FAS	HEY1	KRAS	MYC
ARID1A	CCNE1	DEK	FAT1	HGF	L	MYCL
ARID1B	CD274 (PD-L1)	DICER1	FAT4	HIF1A	LATS1	MYCN
ARID2	CD44	DIS3L2	FBXO11	HLA-A	LATS2	MYD88
ARNT	CD74	DLC1	FBXW7	HLA-C	LCK	MYH11
ASXL1	CD79A	DNAJB1	FCGR2A	HLF	LEPR	MYH9
ATF1	CD79B	DNMT1	FCGR3A	HNF1A	LIFR	MYOD1
ATIC	CDC73	DNMT3A	FES	HOOK3	LMO1	N
ATM	CDH1	DNMT3B	FGF19	HOXB13	LPP	NBN
ATR	CDH11	DPYD	FGF2	HRAS	LRP1B	NCOA1
ATRX	CDK12	DROSHA	FGF3	HSP90AA1	LTK	NCOA2
AURKA	CDK4	DYRK1B	FGF4	HSP90AB1	LZTR1	NCOA3
AURKB	CDK6	E	FGFR1	HSPH1	M	NCOA4
AXIN1	CDK8	EGF	FGFR2	I	MAF	NCOR1
AXIN2	CDKN1A	EGFR	FGFR3	ID1	MAFB	NCOR2
AXL	CDKN1B	EIF1AX	FGFR4	ID2	MALT1	NF1
B	CDKN2A	EIF4A2	FH	ID3	MAML2	NF2
B2M	CDKN2B	EML4	FLCN	IDH1	MAP2K1 (MEK1)	NFE2L2
BAP1	CDKN2C	EP300	FLI1	IDH2	MAP2K2 (MEK2)	NFKB2
BARD1	CDX2	EPAS1	FLNA	IGF1R	MAP2K4	NIN
BAX	CEBPA	EPCAM	FLT1	IGF2	MAP3K1	NISCH
BCL10	CHD4	EPHA2	FLT3	IKBKB	MAP3K13	NKX2-1
BCL11A	CHEK1	EPHA3	FLT4	IKBKE	MAP3K9	NOTCH1
BCL11B	CHEK2	EPHB4	FOXA1	IKZF1	MAPK1	NOTCH2
BCL2	CIC	ERBB2 (HER2)	FOXL2	IL2	MAX	NOTCH3
BCL2L11	CIP2A	ERBB3	FOXO1	IL21R	MCL1	NOTCH4
BCL3	CNBP	ERBB4	FOXO3	IL6ST	MDM2	NPM1
BCL6	COL1A1	ERCC1	FOXO4	IL7R	MDM4	NRAS
BCL9	CRBN	ERCC2	FOXP1	INPP4B	MED12^	NRG1
BCOR	CREB1	ERCC3	FRK	IRF4	MEN1	NSD1
BCORL1	CREBBP	ERCC4	FRS2	IRS2	MERTK	NSD2

NSD3	PICALM	PRKCB	RET	SMAD2	TCF3	U
NT5C2	PIK3CA	PRRX1	RHEB	SMAD3	TCF7L2	U2AF1
NTHL1	PIK3CB	PSIP1	RHOA	SMAD4	TCL1A	UBR5
NTRK1	PIK3CD	PTCH1	RHOH	SMARCA1	TENT5C	UGT1A1
NTRK2	PIK3CG	PTEN	RICTOR	SMARCA4	TERT [#]	V
NTRK3	PIK3R1	PTGS2	RIT1	SMARCB1	TET1	VEGFA
NUAK2	PIK3R2	PTK2	RNF213	SMARCD1	TET2	VHL
NUMA1	PIM1	PTPN11	RNF43	SMARCE1	TFE3	W
NUP214	PLAG1	PTPRB	ROS1	SMO	TFEB	WAS
NUP98	PLCG1	PTPRC	RPS6	SOCS1	TGFB2	WEE1
NUTM1	PLCG2	PTPRD	RRM1	SOX10	TLX1	WRN
P	PLK1	PTPRK	RSPO2	SOX2	TMEM127	WT1
P2RY8	PML	PTPRT	RSPO3	SOX9	TMPRSS2	WWTR1
PAK1	PMS2	Q	RUNX1	SPEN	TNFAIP3	X
PALB2	POLB	QKI	RUNX1T1	SPOP	TNFRSF14	XPA
PARP1	POLD1	R	S	SRC	TNK2	XPC
PAX3	POLE	RAC1	SBDS	SRSF2	TOP1	XPO1
PAX5	POLQ	RAD21	SDC4	SSX1	TOP2A	XRCC1
PAX7	POLR2A	RAD50	SDHA	STAG2	TP53	XRCC2
PAX8	POT1	RAD51	SDHAF2	STAG3	TP63	Z
PBRM1	POU5F1	RAD51B	SDHB	STAT3	TPMT	ZEB1
PBX1	PPARG	RAD51C	SDHC	STAT5A	TPR	ZFHX3
PDCD1LG2	PPM1D	RAD51D	SDHD	STAT5B	TRAF7	ZFP36L2
PDE4DIP	PPP2R1A	RAD54L	SEM1	STK11	TRIM24	ZNF384
PDGFB	PPP2R1B	RAF1	SETBP1	SUFU	TRIM33	ZNF521
PDGFRA	PPP6C	RANBP2	SETD2	SUZ12	TRIP11	ZRSR2
PDGFRB	PRDM1	RARA ²	SF3B1	SYK	TRRAP	
PDPK1	PREX2	RASA1	SGK1	T	TSC1	
PER1	PRF1	RB1	SH2B3	TAL1	TSC2	
PGR	PRKAA1	RBM10	SLC34A2	TBL1XR1	TSHR	
PHF6	PRKAA2	RECQL4	SLC45A3	TBX3	TTK	
PHOX2B	PRKAR1A	REL	SLCO1B1	TCF12	TYMS	

[^] Exon 1 and 2 only. [#] Hotspots only. ² Exon 5-9 only.

RNA Analysis for Fusions and Splice Variants

ABL1	DNAJB1	FGFR3	MET	PAX3	RAF1	TAL1
AFF1	EGFR	FIP1L1	NAB2	PAX7	RARA	TCF3
AKT3	EML4	FLI1	NOTCH1	PAX8	RET	TMPRSS2
ALK	ERBB4	FOXO1	NOTCH2	PBX1	ROS1	TPM3
ASPSCR1	ERG	FUS	NPM1	PDGFB	RUNX1	YAP1
BRAF	ESR1	GLIS2	NRG1	PDGFRA	SET	
CBFA2T3	ETV1	JAK2	NTRK1	PDGFRB	SSX1	
CCDC6	ETV6	JAZF1	NTRK2	PML	SSX2	
CD274 (PD-L1)	EWSR1	KIF5B	NTRK3	PPARG	STAT6	
CRLF2	FGFR1	KMT2A	NUP214	PRKACA	STIL	
CRTC1	FGFR2	LPP	NUTM1	PRKAR1A	SUZ12	

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