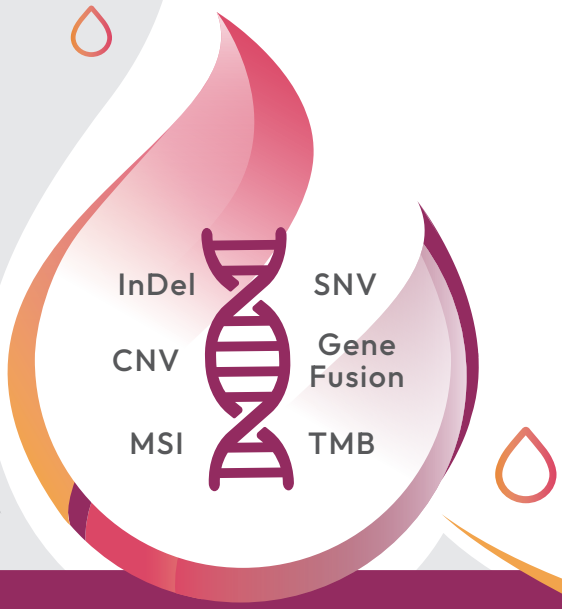


ACTLiquid™ Pro

ACTLiquid™ Pro is a comprehensive NGS-based liquid biopsy assay for pan-solid tumors covering **500+ genes** and tumor variants in circulating tumor DNA.

Key Benefits

- Covers key relevant biomarkers* included in guidelines and clinical trials for making informed treatment decisions.
- Multi-faceted bioinformatics analysis utilizes a in-house algorithm for variant curation and report generation.
- One-page summary with clear, concise, and actionable information on the detected variant and related therapies.

Clinical Applications for ACTLiquid™ Pro

ACTLiquid™ Pro targets a range of specific cancers and provides insights that will have a significant impact on patient care and treatment strategies.

Pan-solid tumors: *BRAF, NTRK1, NTRK2, RET,* MSI, TMB

Lung	Colorectal	Breast	Pancreatic cancer	cholangiocarcinoma	Ovarian	Prostate		Bladder
ALK	*BRAF*	*BRCA1*	*BRCA1*	*FGFR2*	*BRCA1*	*ATM*	*MRE11*	*FGFR3*
EGFR	*ERBB2*	*BRCA2*	*BRCA2*	*IDH1*	*BRCA2*	*ATR*	*NBN*	*ERBB2*
ERBB2	*KRAS*	*ERBB2*	*PALB2*	*ERBB2*	*KRAS*	*BARD1*	*PALB2*	*TP53*
KRAS	*NRAS*	*ESR1*	*NRG1*	*KRAS*	*ERBB2*	*BRCA1*	*RAD51B*	*AKT1*
MET	*POLD1*	*PIK3CA*	*FGFR*	*IDH2*	*TP53*	*BRCA2*	*RAD51C*	
ROS1	*POLE*	*AKT1*	*KRAS*	*ROS1*		*BRIP1*	*RAD51D*	
NRG1	*ALK*	*PTEN*	*ERBB2*	*TP53*		*CDK12*	*RAD54L*	
TP53	*ROS1*	*FGFR1*	*ALK*			*CHEK1*	*AKT1*	
	MLH1	*FGFR2*	*ROS1*			*CHEK2*	*AR*	
	MSH2	*FGFR3*	*TP53*			*FANCA*	*PIK3CA*	
	MSH6	*TP53*				*FANCL*	*PTEN*	
	PMS2					*MLH1*	*TP53*	
	PIK3CA							
	TP53							

[High level of evidence†]

* Genes listed in the table represent the approved and potential clinical biomarkers. Please refer to the latest regulatory approvals and guidelines for more information. For a full gene list, please refer to the ACTLiquid™ Pro product datasheet.

† NCCN Clinical Practice Guidelines in Oncology, Non-small cell lung cancer Version 2.2026; Colon cancer Version 5.2025; Rectal cancer Version 4.2025; Breast cancer Version 5.2025; Pancreatic adenocarcinoma Version 2.2025; Biliary tract cancers Version 2.2025; Ovarian cancer including fallopian tube cancer and primary peritoneal cancer Version 3.2025; Prostate cancer Version 4.2026; Bladder cancer Version 3.2025.

Technical Specifications

Number of Genes Tested	523
Types of Gene Mutations Analyzed	• Single nucleotide variants (SNVs), small insertions and deletions (InDels) • Copy number variants (CNVs) • MSI • Gene fusions • TMB
Sensitivity‡	≥95%
Specificity‡	≥99%
Limit of Detection	VAF≥0.5%
Cancer Type	Pan-solid tumors
Specimen Requirements	2 Streck tubes of whole blood (8-10ml per tube)
Turnaround Time	8 working days (starting from the date of receipt of approved samples at our CAP-accredited laboratory)

‡ This information is generated using the 30ng cfDNA input.

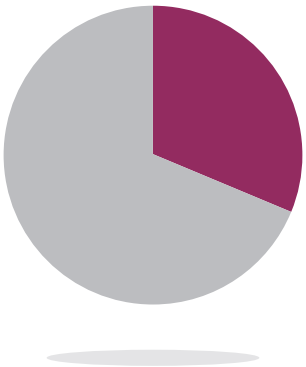
This material is intended for healthcare professionals only.

ACT GENOMICS®

Circulating tumor DNA (ctDNA) is tumor-derived fragmented DNA in the bloodstream that can act as a non-invasive cancer biomarker, offering a potential alternative to invasive tissue biopsies.[1] Testing using ctDNA provides the benefits of being minimally invasive, being able to capture tumor heterogeneity, facilitating serial testing, and involving a short turnaround time.[2]

Fulfilling Unmet Needs: Comprehensive ctDNA Liquid Testing Can Overcome the Limitations in Tissue Testing

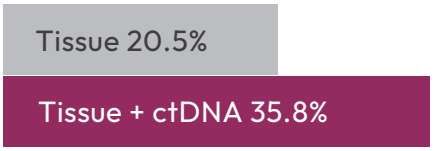
Studies from metastatic NSCLC[3] and CRPC[4] demonstrated that approximately 30% of patients were unable to benefit from tissue testing due to insufficient tissue, tumor content, or unqualified sequencing data.
Comprehensive ctDNA liquid testing can fulfill the unmet needs for such patients.



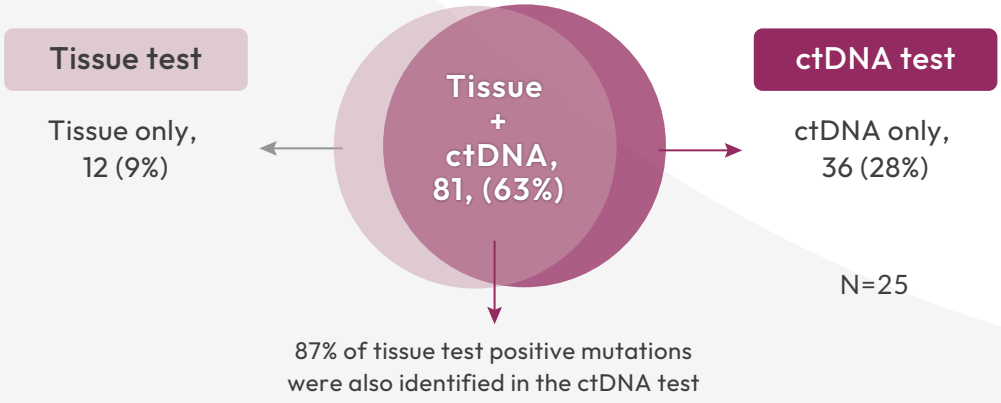
30% of patients were unavailable for tissue testing and may benefit from ctDNA testing

ctDNA Testing Helps to Overcome Tumor Heterogeneity

Integration of ctDNA testing into routine tissue testing can also increase the detection rate of actionable biomarkers in



Concordance Analysis of Tumor and Plasma Samples in Late-Stage NSCLC Patients[5]



1. Jeanne Tie. Presented at ASCO 2022.
2. HT Chan *et al.* Cancers (Basel). 2022 Jul 4;14(13):3275.
3. C Aggarwal, *et al.* JAMA Oncol. 2019 Feb; 5(2): 173–180.
4. M Hussain *et al.* N Engl J Med. 2020 Dec 10;383(24):2345–2357.
5. Karlovich et al. Presented at AMP annual meeting 2020.

Genes Covered by ACTLiquid™ Pro for the Detection of SNV, InDel, CNV, and Fusion

ABL1 ◆ ●
ABL2 ◆
ACVR1 ◆
ACVR1B ◆
AKT1 ◆
AKT2 ◆ ■
AKT3 ◆
ALK ◆ ■ ●
ALOX12B ◆
ANKRD11 ◆
ANKRD26 ◆
APC ◆
AR ◆ ■
ARAF ◆
ARFRP1 ◆
ARID1A ◆
ARID1B ◆
ARID2 ◆
ARID5B ◆
ASXL1 ◆
ASXL2 ◆
ATM ◆ ■
ATR ◆
ATRX ◆
AURKA ◆
AURKB ◆
AXIN1 ◆
AXIN2 ◆
AXL ◆
B2M ◆
BAP1 ◆
BARD1 ◆
BBC3 ◆
BCL10 ◆
BCL2 ◆
BCL2L1 ◆
BCL2L11 ◆
BCL2L2 ◆
BCL6 ◆
BCOR ◆
BCORL1 ◆
BCR ◆ ●
BIRC3 ◆
BLM ◆
BMPR1A ◆
BRAF ◆ ■ ●
BRCA1 ◆ ■
BRCA2 ◆ ■
BRD4 ◆
BRIP1 ◆
BTG1 ◆
BTK ◆
C11orf30 ◆
CALR ◆
CARD11 ◆
CASP8 ◆
CBFB ◆
CBL ◆
CCND1 ◆ ■
CCND2 ◆
CCND3 ◆ ■
CCNE1 ◆ ■
CD274 ◆
CD276 ◆
CD74 ◆ ●
CD79A ◆
CD79B ◆
CDC73 ◆
CDH1 ◆
CDK12 ◆
CDK4 ◆ ■
CDK6 ◆ ■
CDK8 ◆
CDKN1A ◆
CDKN1B ◆

CDKN2A ◆
CDKN2B ◆
CDKN2C ◆
CEBPA ◆
CENPA ◆
CHD2 ◆
CHD4 ◆
CHEK1 ◆ ■
CHEK2 ◆ ■
CIC ◆
CREBBP ◆
CRKL ◆
CRLF2 ◆
CSF1R ◆
CSF3R ◆
CSNK1A1 ◆
CTCF ◆
CTLA4 ◆
CTNNA1 ◆
CTNNB1 ◆
CUL3 ◆
CUX1 ◆
CXCR4 ◆
CYLD ◆
DAXX ◆
DCUN1D1 ◆
DDR2 ◆
DDX41 ◆
DHX15 ◆
DICER1 ◆
DIS3 ◆
DNAJB1 ◆
DNMT1 ◆
DNMT3A ◆
DNMT3B ◆
DOT1L ◆
E2F3 ◆
EED ◆
EGFL7 ◆
EGFR ◆ ■ ●
EIF1AX ◆
EIF4A2 ◆
EIF4E ◆
EML4 ◆
EP300 ◆
EPCAM ◆
EPHA3 ◆
EPHA5 ◆
EPHA7 ◆
EPHB1 ◆
ERBB2 ◆ ■
ERBB3 ◆ ■
ERBB4 ◆
ERCC1 ◆ ■
ERCC2 ◆ ■
ERCC3 ◆
ERCC4 ◆
ERCC5 ◆
ERG ◆
ERRFI1 ◆
ESR1 ◆ ■
ETS1 ◆
ETV1 ◆ ●
ETV4 ◆ ●
ETV5 ◆
ETV6 ◆ ●
EWSR1 ◆ ●
EZH2 ◆
FAM123B ◆
FAM175A ◆
FAM46C ◆
FANCA ◆
FANCC ◆
FANCD2 ◆
FANCE ◆

FANCF ◆
FANCG ◆
FANCI ◆
FANCL ◆
FAS ◆
FAT1 ◆
FBXW7 ◆
FGF1 ◆ ■
FGF10 ◆ ■
FGF14 ◆ ■
FGF19 ◆ ■
FGF2 ◆ ■
FGF23 ◆ ■
FGF3 ◆ ■
FGF4 ◆ ■
FGF5 ◆ ■
FGF6 ◆ ■
FGF7 ◆ ■
FGF8 ◆ ■
FGF9 ◆ ■
FGFR1 ◆ ■
FGFR2 ◆ ■ ●
FGFR3 ◆ ■ ●
FGFR4 ◆ ■
FH ◆
FLCN ◆
FLI1 ◆
FLT1 ◆
FLT3 ◆
FLT4 ◆
FOXA1 ◆
FOXL2 ◆
FOXO1 ◆
FOXP1 ◆
FRS2 ◆
FUBP1 ◆
FYN ◆
GABRA6 ◆
GATA1 ◆
GATA2 ◆
GATA3 ◆
GATA4 ◆
GATA6 ◆
GEN1 ◆
GID4 ◆
GLI1 ◆
GNA11 ◆
GNA13 ◆
GNAQ ◆
GNAS ◆
GPR124 ◆
GPS2 ◆
GREM1 ◆
GRIN2A ◆
GRM3 ◆
GSK3B ◆
H3F3A ◆
H3F3B ◆
H3F3C ◆
HGF ◆
HIST1H1C ◆
HIST1H2BD ◆
HIST1H3A ◆
HIST1H3B ◆
HIST1H3C ◆
HIST1H3D ◆
HIST1H3E ◆
HIST1H3F ◆
HIST1H3G ◆
HIST1H3H ◆
HIST1H3I ◆
HIST1H3J ◆
HIST2H3A ◆
HIST2H3C ◆
HIST2H3D ◆

HIST3H3 ◆
HLA-A ◆
HLA-B ◆
HLA-C ◆
HNF1A ◆
HNRNPK ◆
HOXB13 ◆
HRAS ◆
HSD3B1 ◆
HSP90AA1 ◆
ICOSLG ◆
ID3 ◆
IDH1 ◆
IDH2 ◆
IFNGR1 ◆
IGF1 ◆
IGF1R ◆
IGF2 ◆
IKBKE ◆
IKZF1 ◆
IL10 ◆
IL7R ◆
INHA ◆
INHBA ◆
INPP4A ◆
INPP4B ◆
INSR ◆
IRF2 ◆
IRF4 ◆
IRS1 ◆
IRS2 ◆
JAK1 ◆
JAK2 ◆ ■
JAK3 ◆
JUN ◆
KAT6A ◆
KDM5A ◆
KDM5C ◆
KDM6A ◆
KDR ◆
KEAP1 ◆
KEL ◆
KIF5B ◆
KIT ◆ ■
KLF4 ◆
KLHL6 ◆
KMT2B ◆
KMT2C ◆
KMT2D ◆
KRAS ◆ ■
LAMP1 ◆ ■
LATS1 ◆
LATS2 ◆
LMO1 ◆
LRP1B ◆
LYN ◆
LZTR1 ◆
MAGI2 ◆
MALT1 ◆
MAP2K1 ◆
MAP2K2 ◆
MAP2K4 ◆
MAP3K1 ◆
MAP3K13 ◆
MAP3K14 ◆
MAP3K4 ◆
MAPK1 ◆
MAPK3 ◆
MAX ◆
MCL1 ◆
MDC1 ◆
MDM2 ◆ ■
MDM4 ◆ ■
MED12 ◆
MEF2B ◆

MEN1 ◆
MET ◆ ■
MGA ◆
MITF ◆
MLH1 ◆
MLL ◆
MLLT3 ◆
MPL ◆
MRE11A ◆
MSH2 ◆
MSH3 ◆
MSH6 ◆
MST1 ◆
MST1R ◆
MTOR ◆
MUTYH ◆
MYB ◆
MYC ◆ ■
MYCL ◆ ■
MYCN ◆ ■
MYD88 ◆
MYOD1 ◆
NAB2 ◆ ●
NBN ◆
NCOA3 ◆
NCOR1 ◆
NEGR1 ◆
NF1 ◆
NF2 ◆
NFE2L2 ◆
NFKBIA ◆
NKX2-1 ◆
NKX3-1 ◆
NOTCH1 ◆
NOTCH2 ◆
NOTCH3 ◆
NOTCH4 ◆
NPM1 ◆
NRAS ◆ ■
NRG1 ◆ ■
NSD1 ◆
NTRK1 ◆ ●
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NTRK3 ◆
NUP93 ◆
NUTM1 ◆ ●
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PAK3 ◆
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PARK2 ◆
PARP1 ◆
PAX3 ◆ ●
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PIK3R2 ◆

PIK3R3 ◆
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PLCG2 ◆
PLK2 ◆
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PMS1 ◆
PMS2 ◆
PNRC1 ◆
POLD1 ◆
POLE ◆
PPARG ◆ ●
PPM1D ◆
PPP2R1A ◆
PPP2R2A ◆
PPP6C ◆
PRDM1 ◆
PREX2 ◆
PRKAR1A ◆
PRKCI ◆
PRKDC ◆
PRSS8 ◆
PTCH1 ◆
PTEN ◆ ■
PTPN11 ◆
PTPRD ◆
PTPRS ◆
PTPRT ◆
QKI ◆
RAB35 ◆
RAC1 ◆
RAD21 ◆
RAD50 ◆
RAD51 ◆
RAD51B ◆
RAD51C ◆
RAD51D ◆
RAD52 ◆
RAD54L ◆
RAF1 ◆ ■
RANBP2 ◆
RARA ◆
RASA1 ◆
RB1 ◆
RBM10 ◆
RECQL4 ◆
REL ◆
RET ◆ ■ ●
RFWD2 ◆
RHEB ◆
RHOA ◆
RICTOR ◆ ■
RIT1 ◆
RNF43 ◆
ROS1 ◆ ●
RPS6KA4 ◆
RPS6KB1 ◆ ■
RPS6KB2 ◆
RPTOR ◆
RUNX1 ◆
RUNX1T1 ◆
RYBP ◆
SDHA ◆
SDHAF2 ◆
SDHB ◆
SDHC ◆
SDHD ◆
SETBP1 ◆
SETD2 ◆
SF3B1 ◆
SH2B3 ◆
SH2D1A ◆
SHQ1 ◆
SLIT2 ◆
SLX4 ◆
SMAD2 ◆

SMAD3 ◆
SMAD4 ◆
SMARCA4 ◆
SMARCB1 ◆
SMARCD1 ◆
SMC1A ◆
SMC3 ◆
SMO ◆
SNCAIP ◆
SOCS1 ◆
SOX10 ◆
SOX17 ◆
SOX2 ◆
SOX9 ◆
SPEN ◆
SPOP ◆
SPTA1 ◆
SRC ◆
SRSF2 ◆
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STAG2 ◆
STAT3 ◆
STAT4 ◆
STAT5A ◆
STAT5B ◆
STK11 ◆
STK40 ◆
SUFU ◆
SUZ12 ◆
SYK ◆
TAF1 ◆
TBX3 ◆
TCEB1 ◆
TCF3 ◆
TCF7L2 ◆
TERC ◆
TERT ◆
TET1 ◆
TET2 ◆
TFE3 ◆ ●
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TGFBR2 ◆
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TMPRSS2 ◆ ●
TNFAIP3 ◆
TNFRSF14 ◆
TOP1 ◆
TOP2A ◆
TP53 ◆
TP63 ◆
TRAF2 ◆
TRAF7 ◆
TSC1 ◆
TSC2 ◆
TSHR ◆
U2AF1 ◆
VEGFA ◆
VHL ◆
VTCN1 ◆
WISP3 ◆
WT1 ◆
XIAP ◆
XPO1 ◆
XRCC2 ◆
YAP1 ◆
YES1 ◆
ZBTB2 ◆
ZBTB7A ◆
ZFHX3 ◆
ZNF217 ◆
ZNF703 ◆
ZRSR2 ◆

◆ SNV / InDel ■ CNV ● Fusion

Our Report | One-Page Summary of the Patient's Results

Identifier
Project ID:
Report No.:
Report Date:

ACTLiquid™ Pro Report

Subject		
Identifier:		Subject ID:
Date of Birth:		Gender:
Diagnosis: Lung Cancer		
Ordering Physician		
Referral Doctor:		Tel:
Referral Institution:		
Address:		
Specimen		
Specimen ID:	Collection Site:	Specimen Type: Blood
Date Received:	Sample ID:	D/ID:

ABOUT ACTLiquid™ Pro

ACTLiquid™ Pro is a next-generation sequencing (NGS) assay profiling 523 cancer-related genes. For further details of the test, please refer to "Gene List" section.

1 **Report Summary for Actionable Variants/Biomarkers**

2

Immune Checkpoint Inhibitor (ICI) Related Biomarkers	
Detected Biomarker Status	**Corresponding Therapies**
Tumor Mutational Burden (TMB): 7.5 muts/Mb	-
Microsatellite Status (MSI): MSI-H not detected	-

S Sensitive R Resistant

3

Variants/Biomarkers with Clinical Significance (Target Therapy)		
Genomic Alterations	**Evidence Level 1, 2 (FDA-approved, NCCN guideline)**	**Evidence Level 3A, 3B, 4 (Others)**
CD74-ROS1 fusion	S Crizotinib, Entrectinib, Lorlatinib, Repotrectinib, Taletrectinib	S Brigatinib, Cabozantinib, Ceritinib

Variants/Biomarkers with Clinical Significance (Hormone Therapy)		
Genomic Alterations	**Evidence Level 1, 2 (FDA-approved, NCCN guideline)**	**Evidence Level 3A, 3B, 4 (Others)**
Not detected		

Cancer-Specific Genes Evaluated

FDA-Approved Biomarkers Assessed by This Assay: ALK, BRAF, EGFR, ERBB2, KRAS, MET, RET, ROS1

Note:

ACT GENOMICS®

ACT Genomics' laboratory is accredited by CAP (CAP number: 9028096).
ACT Genomics only provides a technical report of the test; please consult a specialist physician to determine the appropriate clinical solution and follow the instructions of the physician. The results are only valid for the tested sample(s).
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Email: service@actgenomics.com T: +886-2-2795-3660 F: +886-2-2795-5016

The images used are for illustrative purposes only. The actual products may differ.

1. One-page actionable summary of the detected variant and related therapies.
2. Immune checkpoint inhibitor biomarkers like MSI and TMB are used to predict the effectiveness of immune checkpoint inhibitors.
3. Ranking of the detected actionable alterations by ACT Genomic levels of evidence (right figure). Level 1 to 4 were used to prioritize important evidence level and enable fast evaluation of the treatment plan.

ACT Genomics Levels of Evidence

	Drugs	X	Biomarkers
1	On-label		FDA-recognized
2	Off-label		Standard care (NCCN recommended)
3A			Approved or recommended in other cancer types
3B			Serve as inclusion criteria for clinical trials
4			Show plausible therapeutic significance based on small studies, few case reports, or preclinical studies

Note: All tests carried out by ACT Genomics are conducted in a CAP-accredited laboratory. Please consult your physician for any enquiries related to clinical interpretation of the test results.

ACT GENOMICS®

ACT Genomics Co.,Ltd.

Member of Delta Group

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