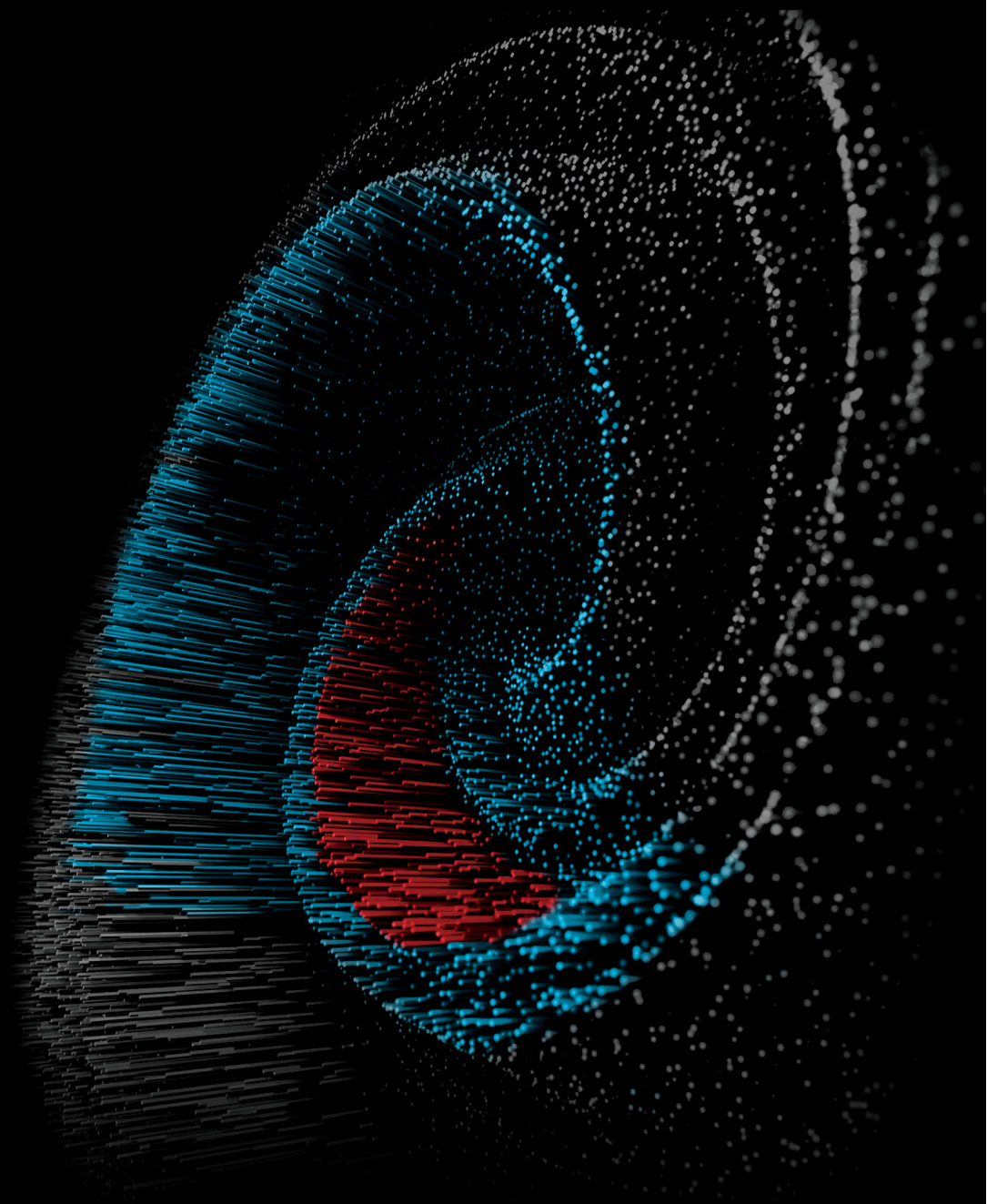
mission bio

TAPESTRI® PLATFORM

Gain the Confidence to Move Your Oncology Pipeline Forward

With Custom Assays for Targeted Genotype & Gene Expression



Single-cell targeted genotype & gene expression—all in one assay

The success of introducing a new therapy to the market hinges on a multifaceted approach that integrates biomarker selection, mechanistic disease understanding, and proactive resistance management. Mechanisms of action and resistance—such as clonal evolution, activation of alternative signaling pathways, or epigenetic reprogramming—often emerge during treatment but are difficult to predict. Traditional research methods rely on bulk transcriptomics, proteomics, or genomic sequencing—each providing a partial, averaged-out view. Leveraging Mission Bio's new Pharma Assay Development (PAD) services to analyze targeted genotype & gene expression in a single assay, drug developers can gain the confidence to move their oncology pipeline forward.

Progress your oncology pipeline by quickly and efficiently identifying:

THERAPEUTIC RESISTANCE

Unlock insights from retrospective patient samples with single-cell targeted genotype & gene expression

Reveal genetic and phenotypic drivers of relapse to inform next-gen therapies, rational combinations, and biomarker-driven strategies.

T-CELL DYSFUNCTION AND EXHAUSTION THERAPIES

Reveal phenotypes and clonal dynamics behind T-cell dysfunction

Enable design of next-gen CARs, dual-targeting strategies, and combination therapies that sustain immune pressure and reduce relapse.

CLINICAL DEVELOPMENT

Bridge the gap between translational insights and clinical action.

Enable real-time integration of molecular insights into clinical trials for smarter patient selection, adaptive dosing, and a greater chance of therapeutic success

Implement single-cell targeted genotype & gene expression in your lab effortlessly.

Gain access to Mission Bio's cutting-edge Tapestri® Platform, expert assay development team, R&D scientists, and bioinformatics support. Our oncology specialists will work closely with you to:

- Define the scope of your single-cell multi-omics study with a focus on uncovering mechanisms of therapeutic resistance
- Select high-value, longitudinal sample sets to ensure clinical relevance
- Interpret findings in a report that highlights key biological insights
- Guide next-generation clinical trial design to enable more precise patient stratification

Panel options tailored to your research:

Genotype: Choose from Mission Bio's extensive catalog of pre-designed, validated panels—or create a custom panel with up to 350 amplicons to match your specific targets.

Gene Expression Targets: Use the Tapestri Targeted Single-cell Gene Expression Core Panel (covering 234 genes), customize a panel of up to 50 gene targets for focused expression profiling, or use a combination of both.

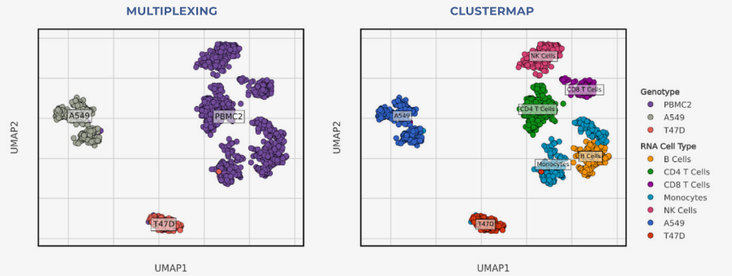
Your data will be analyzed by experienced bioinformaticians and delivered in a comprehensive report covering:

- Single-nucleotide variants (SNVs), indels, CNVs, and translocations
- Gene expression profiles, co-occurrence and zygosity of mutations within individual cells
- Identification of rare cell populations and clonal structures
- Integration of genotype and gene expression data to reveal therapeutic resistance mechanisms and tumor evolution

Translate insight into action with fully interpreted results

This experiment highlights the power of Tapestri and its ability to distinguish cell types in cell lines and PBMCs. T47D (breast cancer) and A549 (lung cancer) were chosen to highlight the variable genotypic profiles of each disease, while PBMCs were included to show how granularly the cell types within the sample type could be distinguished and categorized.

Figure 1: The 'Genotype' subplot displays cells from the multiplexed run, colored according to their genotype-level information derived from genotype demultiplexing, which identifies samples based on genotype variants. The 'RNA Cell Type' subplot shows the same cells colored by clustering results obtained from gene expression profiles of the targeted gene panel or probes.



Pharma Assay Development (PAD) services – Your partner across therapeutic development

PAD services are the only way to fully leverage the Tapestri platform to consolidate assays, produce multi-attribute datasets, and glean powerful single-cell insights to advance your oncology pipeline. Our PAD team will work closely with you to develop, run, validate, and transfer these powerful assays to your site, CRO, or CDMO of choice to accelerate your clinical pipeline.

Proof-of-concept study

Validate orthogonal data sets

Targeted and custom assay design

Assay transfer to site/CRO/CDMO

Streamline drug product release

Tapestri Single-cell Targeted Gene Expression panel

Kinase Signaling & Signal Transduction	
AKT1	STAT3
AKT2	STAT4
MAP2K1	STAT5B
MAP2K2	CHUK
MAPK1	FYN
MAPK14	LCK
MAPK3	MTOR
JAK1	RAF1
JAK2	ZAP70
STAT1	PRKCB
STAT2	

Cytokine & Immune Signaling	
CX3CL1	IL23A
CXCL1	IL24
CXCL2	IL3
IFNA1	IL4
IFNB1	IL5
IFNG	IL6
IL10	IL9
IL12A	LIF
IL12B	OSM
IL1A	TGFB1
IL1B	TGFB2
IL1RN	TNF
IL2	

Transcription & Gene Regulation	
BATF	NFKB1
CEBPB	NFKB2
CREBBP	RELA
FOS	RUNX1
FOXP3	SMAD2
GATA3	SMAD3
HIF1A	SMAD5
IRF2	TBX21
JUN	TCF7
NFATC1	

Apoptosis & Cell Death	
BAX	FADD
BCL2	FAS
BID	FASLG
CASP3	TNF

Cell Adhesion & Migration	
CDH1	ITGAE
ICAM1	ITGB1
PECAM1	THBS1
VCAM1	

Immune Checkpoints & Regulation	
BTLA	CTLA4
CD160	LAG3
CD244	PDCD1 (PD-1)
CD274 (PD-L1)	TIGIT
CD276 (B7-H3)	

B Cell Function & Activation	
CD19	CD27
CD22	CD38

DNA Repair & Genome Stability	
ATM	APC
RAD51	CTNNB1

Cell Cycle & Proliferation	
CCNB1	MYC
CCND3	RB1
CDKN1A	RBX1
CDKN2A	TTK
MKI67	TP53

Toll-Like Receptor (TLR) Signaling	
TLR1	TLR3
TLR2	TLR4

Myeloid & Macrophage Function	
CD14	CSF1
CD33	CSF1R
CD68	CSF2
CD163	CSF3
CD209	CSF3R

T Cell Function & Activation	
CD3D	CD8A
CD3E	CD8B
CD3G	CD28
CD4	CD69
CD5	ICOS
CD6	ICOSLG
CD7	SLAMF6

Chemokine & Cytokine Receptors	
CCR1	IL1R1
CCR2	IL1R2
CX3CR1	IL2RA
CXCR2	IL21R
CXCR3	IL23R
CXCR4	IL4R
IL10RA	IL6R
IL11RA	IL6ST
IL12RB1	IFNGR1

Growth Factor Signaling	
ANGPT1	HGF
ANGPT2	MET
EGF	PDGFRA
FGFR1	PDGFRB
FLT1	VEGFA
FLT3	VEGFC

Metabolism & Oxidative Stress	
ARG1	NOS2
GAPDH	PGK1
G6PD	

Proteolysis & Protein Degradation	
MMP9	PLAU
PSMB9	RBX1

Membrane Transport & Antigen Processing	
TAP1	SLC2A1
TAPBP	