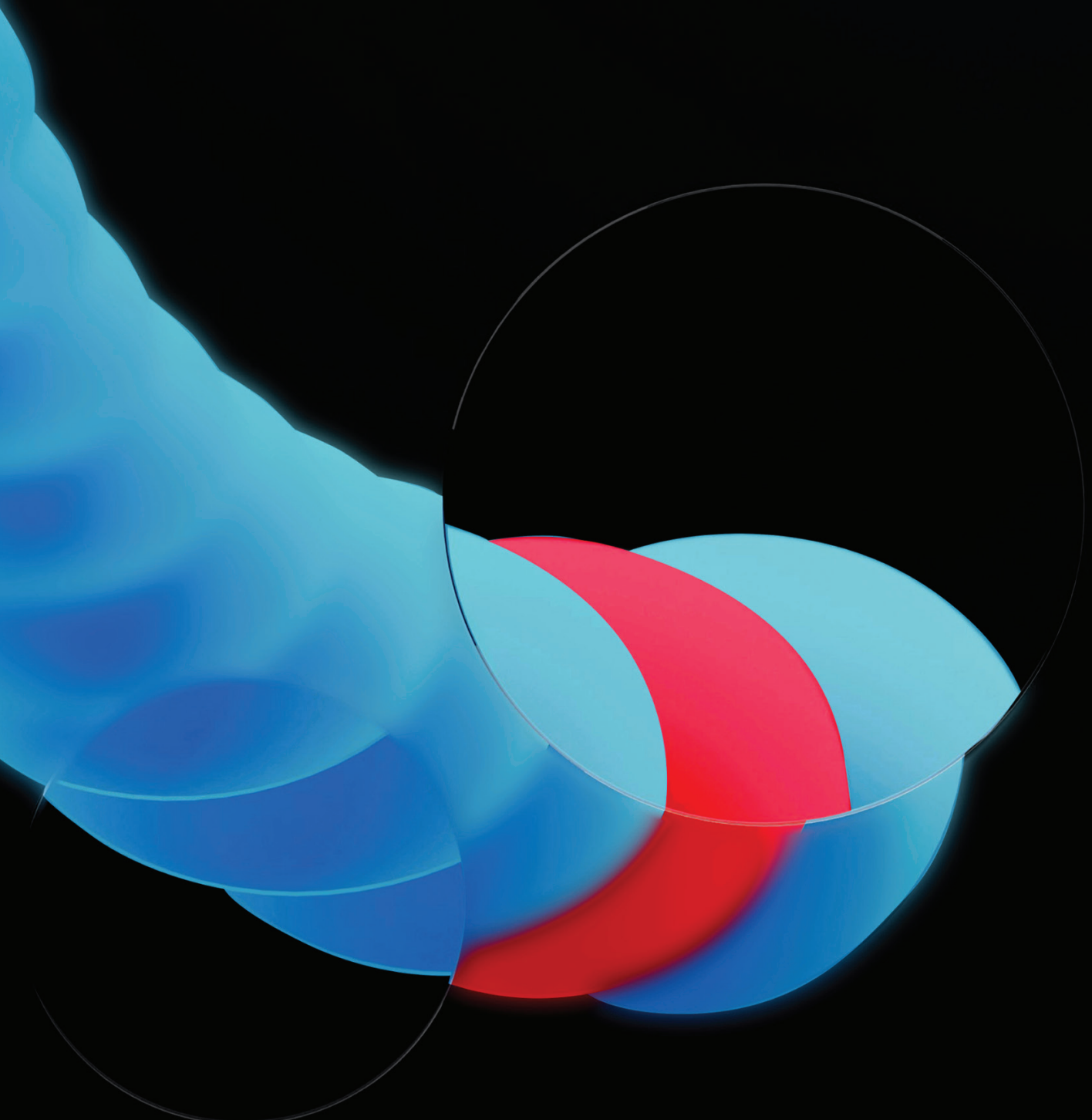


Transcriptional Profiling for Safer and Effective Cell and Gene Therapies

With Custom Assays for Targeted Gene Expression



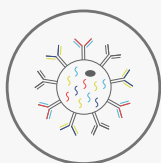
Single-cell characterization for genotype, immunophenotype, and target gene expression. All in one assay.

Unlock a deeper understanding of your therapeutic product with integrated single-cell RNA, DNA, and immunophenotypic analysis. This multiomic approach enables you to characterize clonotypes within your drug product, monitor shifts in drug product fitness, and assess gene edits.

Targeted single-cell RNA analysis reveals how your engineered cells function—beyond the edit. By capturing targeted gene expression at the single-cell level, researchers can connect vector copy number (VCN) with transgene expression, uncover endogenous transcriptional responses, and identify RNA-level signatures tied to potency, persistence, and exhaustion.

Progress your therapeutic pipeline quickly and efficiently identifying:

CLONOTYPE-SPECIFIC RNA PROFILING



Establish a comprehensive understanding of clonotype identity based on their genotype and RNA expression to assess the safety and efficacy of your drug product.

T-CELL DYSFUNCTION AND EXHAUSTION THERAPIES



Reveal phenotypes and clonal dynamics behind T-cell dysfunction.

LINK EDITING OUTCOMES TO TRANSCRIPTIONAL IMPACT



Assess how gene edits, including on-/off-target events and zygosity, modulate downstream transcriptional assessments.

Panel options tailored to your cell and gene therapy program:

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

Translate insight into action with fully interpreted results

This experiment highlights the power of Tapestry 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.

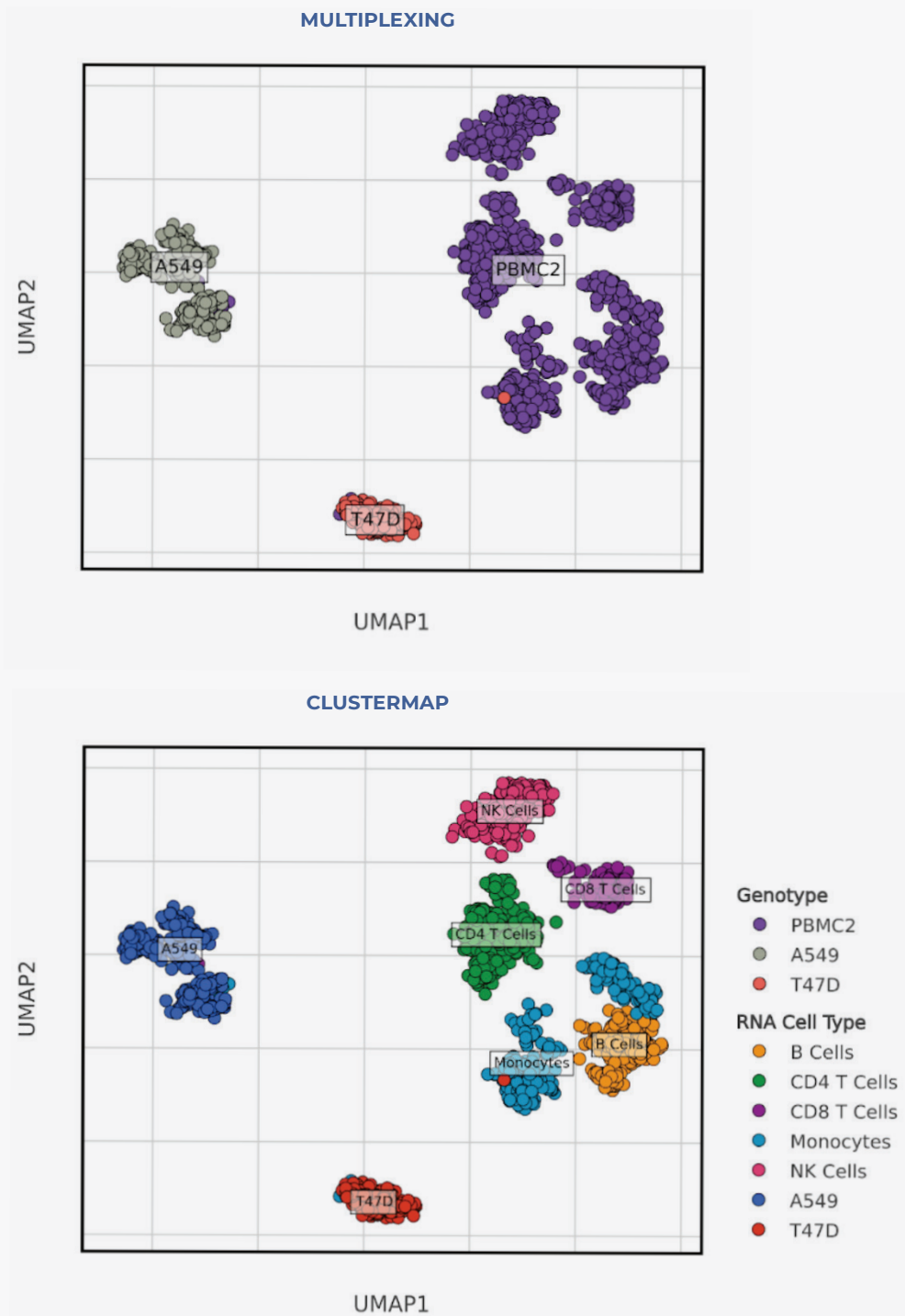


Figure 1: The 'Genotype' subplot displays cells from the multiplexed run, colored according to their genotype-level information derived from genotype demultiplexing, which identifies samples based on genotype variants. The 'RNA Cell Type' subplot shows the same cells colored by clustering results obtained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

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	

