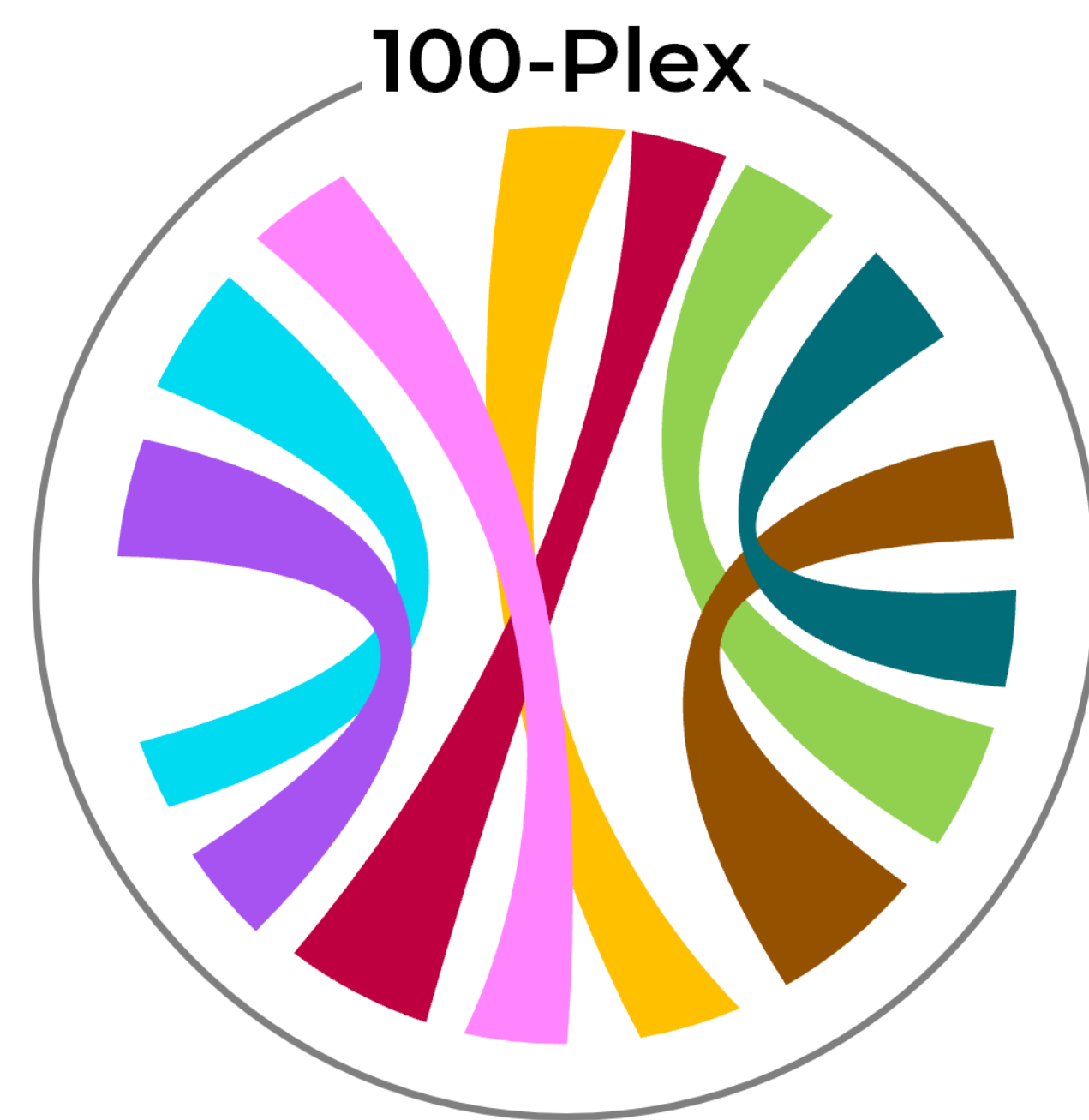


Deep Spatial Phenotyping for “Hallmarks of Cancer”

Single-cell spatial phenotyping has transformed cancer research and is poised to play formative roles in the development of effective therapeutic strategies. Here, we present the panel design used for ultrahigh-plex single-cell spatial phenotyping of whole-slide human FFPE tissues with 100+ protein biomarkers encompassing *immune cell lineage, activation states, immune checkpoints, tissue structure, apoptosis, DNA damage & metabolism.*

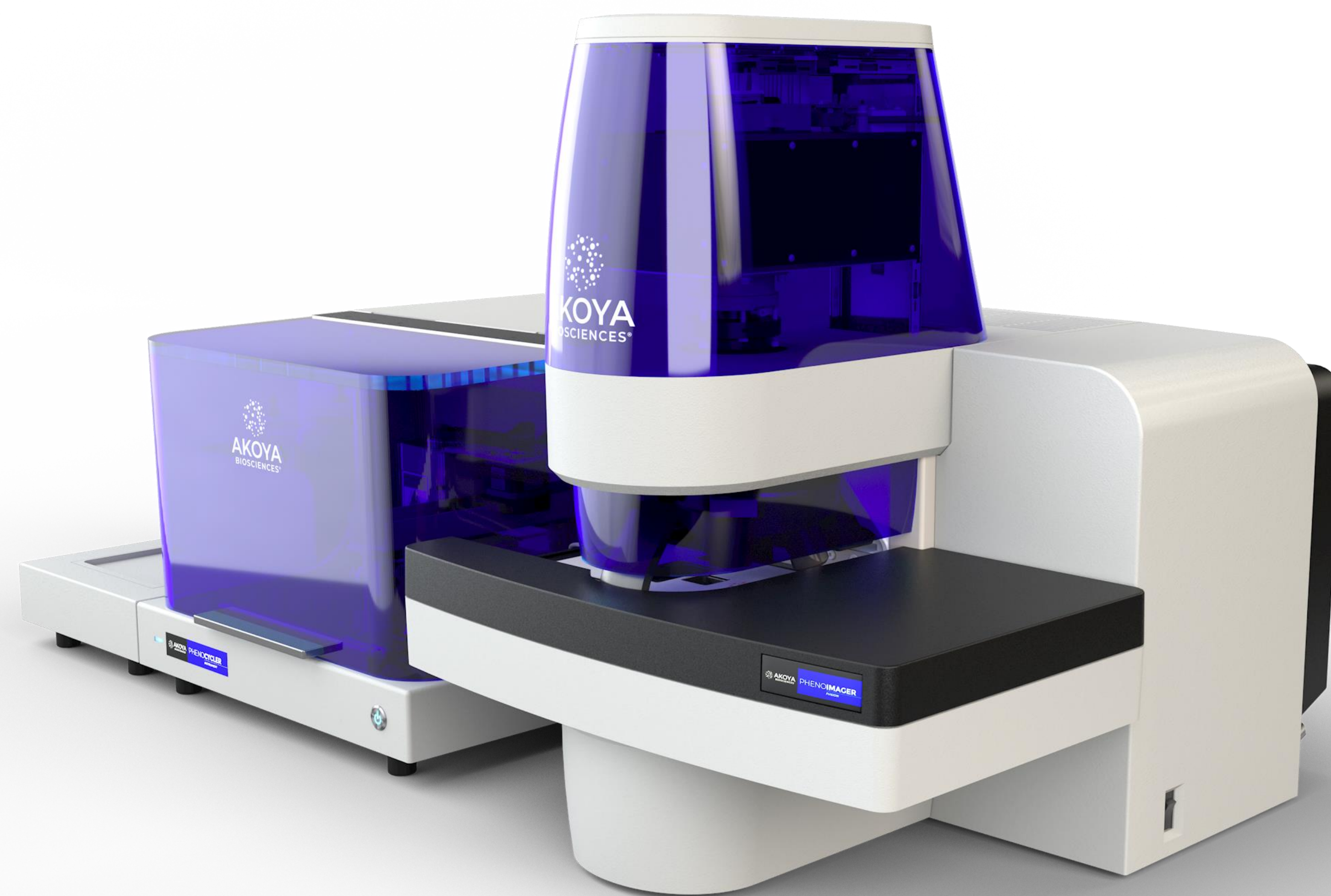


- Avoiding Immune Destruction
- Tumor promoting Inflammation
- Inducing angiogenesis
- Activating invasion and metastasis
- Deregulating cellular energetics
- Sustaining proliferative signaling
- Evading growth suppressors
- Resisting cell death

Adapted from Hanahan, *Cancer Discov* (2022) 12 (1): 31–46.

Powered by PhenoCycler-Fusion

The Fastest Single-Cell Spatial Biology Solution for Deep Spatial Phenotyping



103-plex Panel Design

Immune Cell Profiling Core	
Ready-to-use antibodies from Akoya (Cat No.: Description)	
CD4	4550112: Anti-Hu CD4(AKYP0048)-BX003—Alexa Fluor™ 647 for PhenoCycler
CD68	4550113: Anti-Hu CD68(AKYP0050)-BX015—Alexa Fluor™ 647 for PhenoCycler
CD20	4450018: Anti-Hu CD20(AKYP0049)-BX007—Alexa Fluor™ 750 for PhenoCycler
CD11c	4550114: Anti-Hu CD11c(AKYP0051)-BX024—Alexa Fluor™ 647 for PhenoCycler
CD8	4250012: Anti-Hu CD8(AKYP0028)-BX026—Atto 550 for PhenoCycler
HLA-DR	4550118: Anti-Hu HLA-DR(AKYP0063)-BX033—Alexa Fluor™ 647 for PhenoCycler
Ki67	4250019: Anti-Hu/Mu Ki67(AKYP0052)-BX047—Atto 550 for PhenoCycler
CD45RO	4250023: Anti-Hu CD45RO(AKYP0059)-BX017—Atto 550 for PhenoCycler
PanCK	4450020: Anti-Hu Pan-Cytokeratin(AKYP0053)-BX019—Alexa Fluor™ 750 for PhenoCycler
CD3e	4550119: Anti-Hu CD3e(AKYP0062)-BX045—Alexa Fluor™ 647 for PhenoCycler
CD44	4450041: Anti-Hu CD44(AKYP0073)-BX005—Atto 550 for PhenoCycler
CD45	4450042: Anti-Hu CD45(AKYP0074)-BX021—Cy5 for PhenoCycler
HLA-A	4450046: Anti-Hu HLA-A(AKYP0078)-BX004—Alexa Fluor™ 750 for PhenoCycler
CD14	4450047: Anti-Hu CD14(AKYP0079)-BX037—Atto 550 for PhenoCycler
CD56	4250087: Anti-Hu CD56(AKYP0118)-BX028—Atto 550 for PhenoCycler [coming soon]
Antibodies requiring conjugation (Clone, Supplier)	
CD57	HNK-1, BioLegend
CD19	RM332, RevMab
CD2	EPR6451, Abcam
CD1a	EP3622, Abcam

Advanced Myeloid Module	
Ready-to-use antibodies from Akoya (Cat No.: Description)	
CD163	4250079: Anti-Hu CD163(AKYP0114)-BX069—Atto 550 for PhenoCycler
MPO	4250083: Anti-Hu MPO(AKYP0113)-BX098—Atto 550 for PhenoCycler
CD141	4250097: Anti-Hu CD141(AKYP0124)-BX087—Atto 550 for PhenoCycler
iNOS	4250073: Anti-Hu iNOS(AKYP0104)-BX023—Atto 550 for PhenoCycler
Antibodies requiring conjugation (Clone, Supplier)	
CD11b	EP1345Y, Abcam

Immune Activation Module	
Ready-to-use antibodies from Akoya (Cat No.: Description)	
PD-1	4550038: Anti-Hu PD-1(AKYP0070)-BX046—Alexa Fluor™ 647 for PhenoCycler
PD-L1	4550072: Anti-Hu PD-L1(AKYP0103)-BX043—Alexa Fluor™ 647 for PhenoCycler
ICOS	4350059: Anti-Hu ICOS(AKYP0090)-BX054—Cy5 for PhenoCycler
LAG3	4550058: Anti-Hu LAG3(AKYP0089)-BX055—Alexa Fluor™ 647 for PhenoCycler
IDO1	4550123: Anti-Hu IDO1(AKYP0084)-BX027—Alexa Fluor™ 647 for PhenoCycler
CD40	4550064: Anti-Hu CD40(AKYP0095)-BX010—Alexa Fluor™ 647 for PhenoCycler
HLA-E	4250065: Anti-Hu HLA-E(AKYP0096)-BX034—Atto 550 for PhenoCycler
IFNG	4250062: Anti-Hu IFNG(AKYP0093)-BX020—Atto 550 for PhenoCycler
Antibodies requiring conjugation (Clone, Supplier)	
CD69	EPR21814, Abcam
TIM3	D5D5R, Cell Signaling Technology

Structural Module	
Ready-to-use antibodies from Akoya (Cat No.: Description)	
E-cadherin	4250021: Anti-Hu E-cadherin(AKYP0057)-BX014—Atto 550 for PhenoCycler
CD31	4450017: Anti-Hu CD31(AKYP0047)-BX001—Alexa Fluor™ 750 for PhenoCycler
Histone H3	4550115: Anti-Hu Histone H3 Phospho (Ser28)(AKYP0060)-BX030—Alexa Fluor™ 647 for PhenoCycler
Beta-actin	4450040: Anti-Hu Beta-actin(AKYP0072)-BX010—Alexa Fluor™ 750 for PhenoCycler
Podoplanin	4250004: Anti-Hu Podoplanin(AKYP0007)-BX023—Atto 550 for PhenoCycler
SMA	4450049: Anti-Hu SMA(AKYP0081)-BX013—Alexa Fluor™ 750 for PhenoCycler
Vimentin	4450050: Anti-Hu Vimentin(AKYP0082)-BX022—Alexa Fluor™ 750 for PhenoCycler
Collagen IV	4550122: Anti-Hu Collagen IV(AKYP0083)-BX042—Alexa Fluor™ 647 for PhenoCycler
CD34	4250057: Anti-Hu CD34(AKYP0088)-BX025—Atto 550 for PhenoCycler
b-catenin1	4450036: Anti-Hu b-Catenin1(AKYP0068)-BX020—Atto 550 for PhenoCycler
Antibodies requiring conjugation (Clone, Supplier)	
MMP-9	EP1254, Abcam
ZEB1	EPR17375, Abcam

Proliferation	
Ready-to-use antibodies from Akoya (Cat No.: Description)	
PCNA	4550124: Anti-Hu PCNA(AKYP0085)-BX036—Alexa Fluor™ 647 for PhenoCycler
Antibodies requiring conjugation (Clone, Supplier)	
pRPS6	SP45, Abcam
Cyclin D1	RM241, RevMab

Advanced Lymphocyte Module	
Ready-to-use antibodies from Akoya (Cat No.: Description)	
CD107a	4550098: Anti-Hu CD107a(AKYP0004)-BX006—Alexa Fluor™ 647 for PhenoCycler
CD21	4450027: Anti-Hu CD21(AKYP0061)-BX032—Atto 550 for PhenoCycler
FOXP3	4550071: Anti-Hu FOXP3(AKYP0102)-BX031—Alexa Fluor™ 647 for PhenoCycler
Granzyme B	4250055: Anti-Hu Granzyme B(AKYP0086)-BX041—Atto 550 for PhenoCycler
CD38	4250080: Anti-Hu CD38(AKYP0110)-BX089—Atto 550 for PhenoCycler
CD39	4250076: Anti-Hu CD39(AKYP0107)-BX099—Atto 550 for PhenoCycler
CD79a	4450078: Anti-Hu CD79a(AKYP0109)-BX090—Alexa Fluor™ 750 for PhenoCycler
TIGIT	4250061: Anti-Hu TIGIT(AKYP0092)-BX002—Atto 550 for PhenoCycler
Antibodies requiring conjugation (Clone, Supplier)	
Pax5	RM331, RevMab

Advanced Immune Module	
Antibodies requiring conjugation (Clone, Supplier)	
HLA-DPB1	EPR11226, Abcam
LEF1	EPR2029Y, Abcam
Galectin 9	9M1-3, BioLegend
CD138	EPR6454, Abcam
MC Tryptase	EPR9522, Abcam
OX40	Polyclonal, R&D Systems
ZAP70	RM408, RevMab
CD7	EPR4242, Abcam
C1Qa	EPR2980Y, Abcam
CCR6	EPR22259, Abcam
CD15	HI98, BioLegend
AXL	EPR19880, Abcam
CD227	HMPV, BD; 16A, BioLegend

Metabolism	
Antibodies requiring conjugation (Clone, Supplier)	
ASCT2	CAL33, Abcam
Na/K ATPase	EP1845Y, Abcam
HK1	EPR10134(B), Abcam
LDHA	EP1566Y, Abcam
G6PD	EPR20668, Abcam
IDH2	EPR7577, Abcam
GLUT1	EPR3915, Abcam
pNRF2	EP1809Y, Abcam
ATPA5	EPR13030(B), Abcam
SDHA	EPR9043(B), Abcam
Citrate Synthase	EPR8067, Abcam
CPT1A	EPR21843-71-2F, Abcam

Tissue Specific/Custom	
Ready-to-use antibodies from Akoya (Cat No.: Description)	
TP63	4550081: Anti-Hu TP63(AKYP0111)-BX093—Alexa Fluor™ 647 for PhenoCycler
TFAM	4450033: Anti-Hu TFAM(AKYP0066)-BX029—Atto 550 for PhenoCycler
GATA3	4250085: Anti-Hu GATA3(AKYP0116)-BX049—Atto 550 for PhenoCycler
EpCAM	4450088: Anti-Hu EpCAM(AKYP0119)-BX091—Alexa Fluor™ 750 for PhenoCycler
Caveolin	4450084: Anti-Hu Caveolin(AKYP0115)-BX086—Alexa Fluor™ 750 for PhenoCycler
Antibodies requiring conjugation (Clone, Supplier)	
S100A4	S100A4, BioLegend
GP100	HMB45, Abcam
LaminB1	EPR8985(B), Abcam
CK17	W16131A, BioLegend
CK19	A53/B-A2, Abcam
SOX2	SP76, Abcam

Stress & Death	
Antibodies requiring conjugation (Clone, Supplier)	
PARP	E51, Abcam
BAK	Y164, Abcam
BCL-XL	E18, Abcam
BAX	E63, Abcam
BAD	Y208, Abcam
Cytochrome C	EP1326-80-5, Abcam
LC3B	EPR18709, Abcam
Beclin-1	EPR20473, Abcam
H2A.X	2F3, Abcam