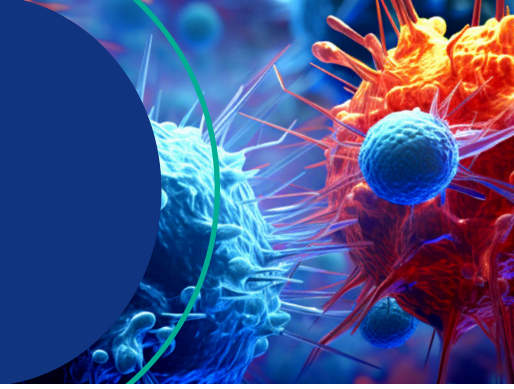
85-plex Tumor and Adaptive Immune Discovery Panel

BD® OMICS-One Immuno-Oncology Protein Panel



The power of protein + RNA without the high cost and complexity

Deep dive into tumor and adaptive immune biology using a validated panel that simplifies the CITE-seq workflow and minimizes your sequencing costs. This panel is designed with 85 key specificities that will help you profile most major T-cell, B-cell and tumor markers and uncover adaptive immune and tumor cell states with ease. BD® OMICS-One Protein Panels also support single-cell protein-only profiling studies. Reach out to your BD sales representative for more information.

Flexible: Compatible with other BD® OMICS-One Protein Panels or drop-ins from our growing library of more than 470 single-vial BD® AbSeq Antibody-Oligo Reagents

SMART: Designed to lower your sequencing cost without compromising sensitivity

Multiomics enabled: Optimized to work with single-cell RNA-seq assays for multiomics studies

Panel content

Specificity	Clone
CD1d	CD1d42
CD3	UCHT1
CD4*	SK3
CD5	UCHT2
CD8	SK1
CD9	M-L13
CD10	HI10a
CD19	SJ25C1
CD20	2H7
CD21	B-ly4
CD22	HIB22
CD23	EBVCS-5
CD24**	ML5
CD25	2A3
CD26	M-A261
CD27	M-T271
CD28	L293
CD29	MAR4
CD30	BERH8
CD31 (PECAM-1)	WM59
CD34**	581
CD38	HIT2
CD40	5C3
CD43*	1G10
CD44*/**	L178
CD45*	HI30
CD45RA	HI100
CD45RO	UCHL1
CD47	B6H12

Specificity	Clone
CD54	HA58
CD58	1C3
CD62L	DREG-56
CD66	B1.1/CD66
CD69	FN50
CD73	AD2
CD79b	CB3-1
CD80	L307.4
CD90	5E10
CD95**	DX2
CD103	Ber-ACT8
CD117	YB5.B8
CD126	M5
CD127	HIL-7R-M21
CD133	W6B3C1
CD134 (OX40)	ACT35
CD137	4B4-1
CD138	MI15
CD146	P1H12
CD154	TRAP1
CD155	TX24
CD161 (KLRB1)	HP-3G10
CD183	1C6/CXCR3
CD184 (CXCR4)	12G5
CD185 (CXCR5)	RF8B2
CD194 (CCR4)	1G1
CD196 (CCR6)	11A9
CD197 (CCR7)	2-L1-A
CD223 (LAG-3)	T47-530

Specificity	Clone
CD227 (MUC1)	HMFG2
CD268 (BAFF-R)	11C1
CD272	J168-540
CD274 (PD-L1)	MIH1
CD275	2D3/B7-H2
CD278	DX29
CD279 (PD-1)**	EH12.1
CD324 (E-Cad)	67A4
CD325 (N-Cad)	8C11
CD326 (EpCAM)	EBA-1
CD357 (GITR)	V27-580
CD366 (TIM-3)	7D3
c-MET	3D6
EGFR	EGFR.1
EphB2	2H9
HLA-A,B,C*	G46-2.6
HLA-DR*	G46-6
IgD	IA6-2
IgG	G18-145
IgM	G20-127
Integrin β7	FIB504
Notch1	MHN1-519
Podoplanin	LpMab-17
TCR Vα24-Jα18	6B11
TCRγ/δ	11F2
TIGIT	TgMab-2
Vista	MIH65.rMAb

*SMART-titrated targets

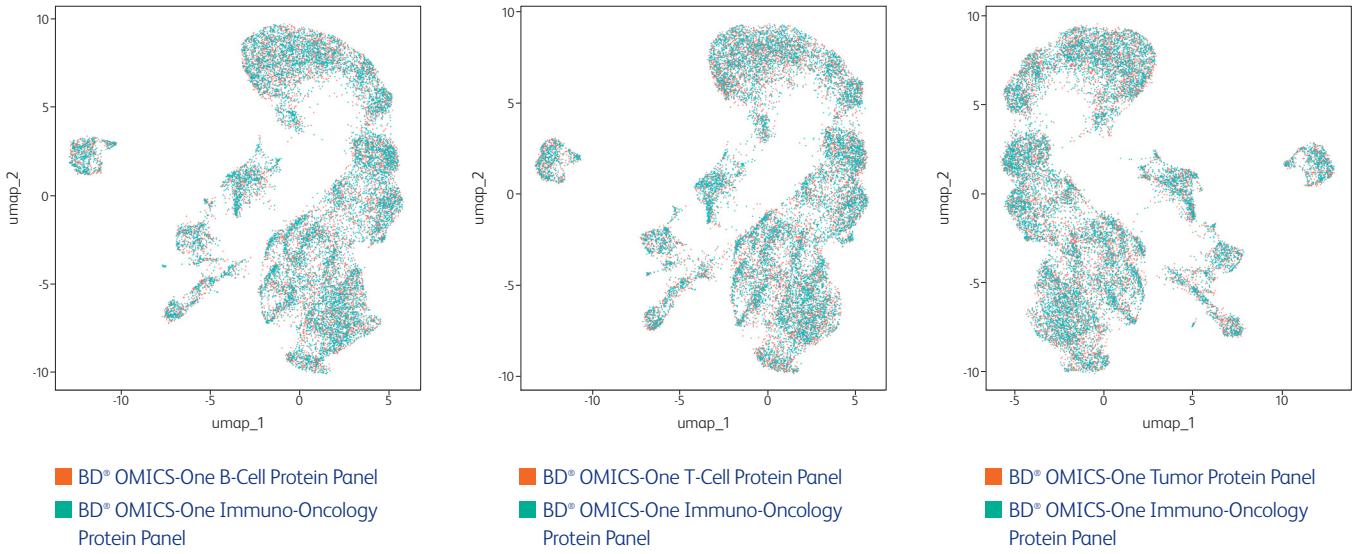
**The BD® OMICS-One Immuno-Oncology Protein Panel comprises three individual lyophilized 30-plex protein panels—the BD® OMICS-One T-Cell, B-Cell and Tumor Protein Panels; these are overlapping specificities in the three protein panels.

BD

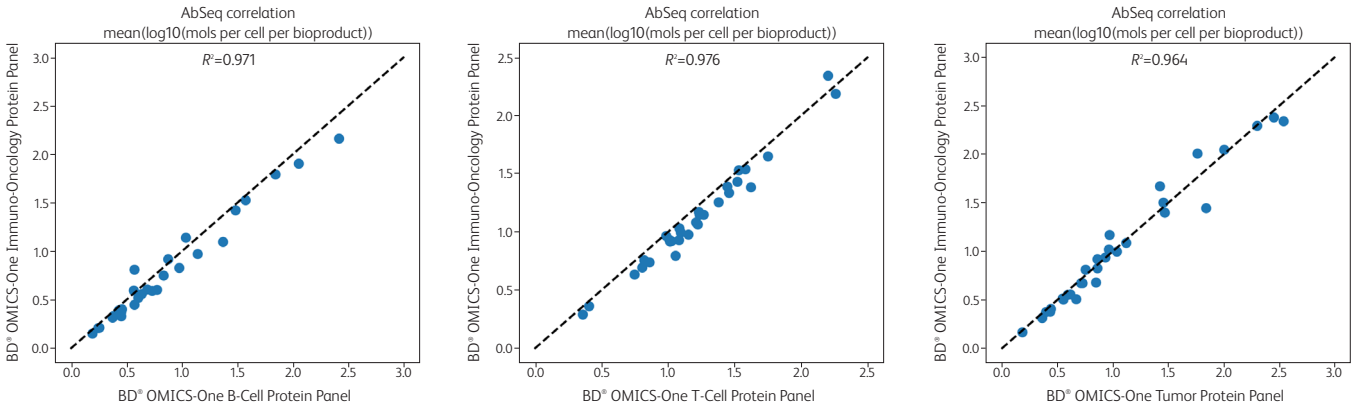
Scalable high-plex protein profiling solution with modular panel design

The 85-plex BD® OMICS-One Immuno-Oncology Protein Panel offers unmatched flexibility by combining three independently lyophilized 30-plex antibody-oligo panels—BD® OMICS-One T-Cell, B-Cell and Tumor Protein Panels—while preserving the performance of each individual panel. This modular design also allows the seamless addition of other BD® OMICS-One Protein Panels or the addition of drop-ins from BD® AbSeq Antibody-Oligo Reagents of interest.

A.



B.



Similar performance between the lyophilized BD® OMICS-One Immuno-Oncology Protein Panel versus each lyophilized component panel. PBMCs (resting, PHA-stimulated and CD3/CD28/IL2-stimulated) were labeled with BD® Human Single-Cell Multiplexing Kit Sample Tags and pooled at 1:1:1 ratio. Aliquots of the cell suspension were stained with the reconstituted BD® OMICS-One T-Cell, B-Cell, Tumor or Immuno-Oncology Protein Panel. AbSeq, Sample Tag and WTA libraries of each sample were prepared and sequenced. Data were analyzed using the BD Rhapsody™ Sequence Analysis Pipeline. **A.** mRNA-driven UMAP demonstrated strong overlap in the cell groups identified between each 30-plex component protein panel and the combined 85-plex BD® OMICS-One Immuno-Oncology Protein Panel, indicating that mRNA detection was not impacted by the combination of the individual lyophilized BD® OMICS-One Protein Panels. **B.** The total number of antibody-oligo molecules detected by each 30-plex component protein panel showed a high AbSeq correlation with R^2 >0.96 when compared to the combined 85-plex BD® OMICS-One Immuno-Oncology Protein Panel, indicating that protein marker detection was not impacted by the combination of the individual lyophilized BD® OMICS-One Protein Panels.

Manage sequencing costs and improve detection sensitivity with SMART panel design

SMART panel design helps lower sequencing costs while increasing data resolution by using pretitrated, optimal concentrations of antibody-oligos against select high-expressing primary markers in the panel. This allows reallocation of sequencing reads otherwise allotted to these high expressors to now detect secondary and tertiary cell surface markers expressed at lower levels.

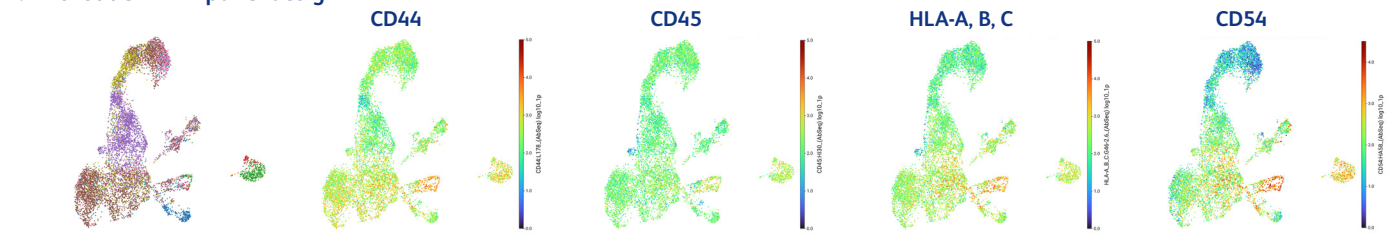
The six specificities selected for SMART panel design in the BD® OMICS-One Immuno-Oncology Protein Panel are CD4, CD43, CD44, CD45, HLA-DR and HLA-A,B,C.

A. Allocation of sequencing reads for selected markers

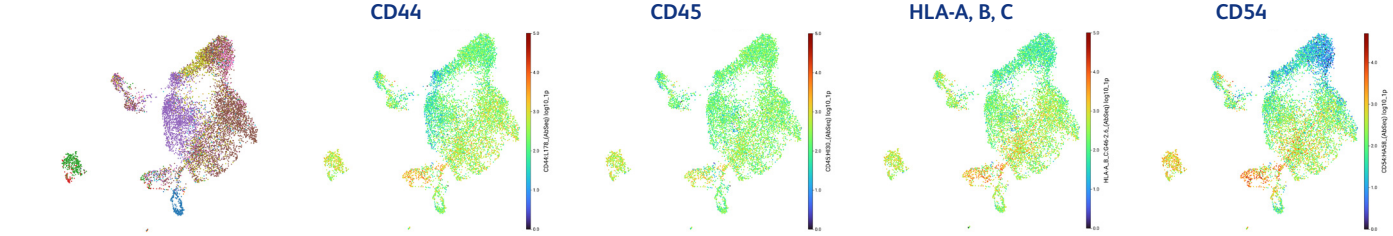
Percent of Total Sequencing Reads Consumed		
Markers	Without SMART panel design	With SMART panel design
Reduction of sequencing reads allocated to primary markers ▼		
CD44	27.14	8.80
HLA-DR	13.42	8.74
CD43	6.07	3.37
HLA-A,B,C	5.61	4.45
CD4	2.10	1.47
CD45	3.19	1.48
Read re-allocation to selected lowly expressed markers ▲		
CD34	3.23	3.40
CD54	2.38	4.33
CD69	3.37	6.90
CD5	2.04	3.25
CD20	0.46	1.21
CD27	1.44	2.07
CD19	0.43	0.75
CD25	1.32	2.72

Percent of Total Sequencing Reads Consumed		
Markers	Without SMART panel design	With SMART panel design
CD279	1.16	1.76
CD79b	0.98	1.45
CD196	0.94	1.51
CD95	0.91	1.30
CD73	0.83	1.28
CD3	0.81	1.54
CD38	0.76	1.23
CD194	0.69	1.37
CD366	0.64	1.23
CD9	0.62	1.00
CD47	0.62	1.07
CD155	0.62	0.88
CD23	0.61	0.96
CD272	0.61	1.21
IgM	0.61	0.99
CD275	0.60	1.42

B. Without SMART panel design



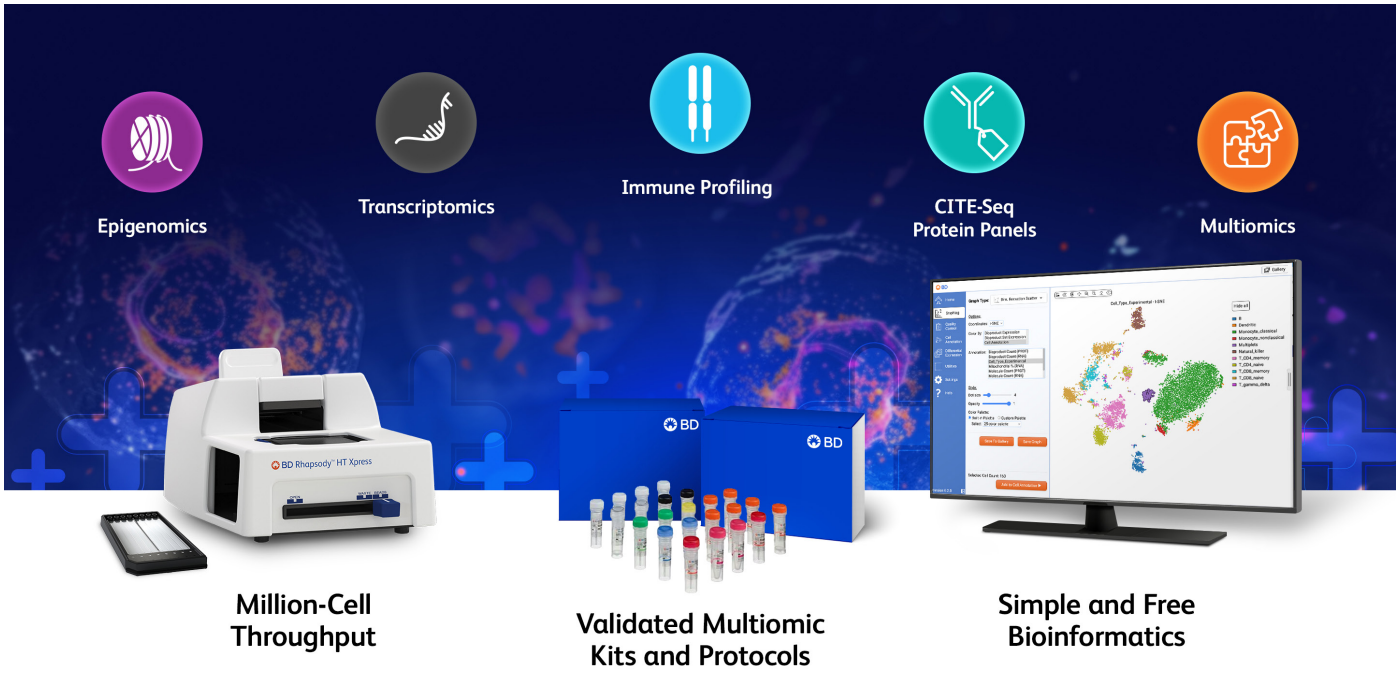
C. With SMART panel design



B-cells
Classical monocytes
Natural killer cells
Naive CD4+ T cells
Naive CD8+ T cells
Dendritic cells
Nonclassical monocytes
Memory CD4+ T cells
Memory CD8+ T cells
γ/δ T-cells

SMART-titrated marker detection is not compromised, while better resolution of low expressors is achieved with SMART panel design. A. Percentage of reads taken up by highly expressed markers (i.e., CD4, CD43, CD44, CD45, HLA-DR and HLA-A,B,C) are significantly reduced with SMART panel design. More importantly, lowly expressed markers like CD54 are now detected at a better resolution as they have a higher percentage of sequencing reads allotted. **B. and C.** CD44, CD45 and HLA-A,B,C detection with SMART panel design is not compromised compared to a regular antibody-oligo panel without SMART panel design. Meanwhile, lowly expressed protein CD54 is better resolved with the BD® OMICS-One Immuno-Oncology Protein Panel with SMART panel design compared to a freshly pooled antibody-oligo panel.

Part of a complete single-cell multiomics solution



Ordering information

Description	Cat. No.
BD® OMICS-One Immuno-Oncology Protein Panel	572316

Visit **bdbiosciences.com/ImmunoOncologyPanel** to learn more about this panel and review complete performance data.

For Research Use Only. Not for use in diagnostic or therapeutic procedures.

BD Life Sciences, Milpitas, CA 95025, US.

bdbiosciences.com