

# BD<sup>®</sup> OMICS-One T-Cell Protein Panel

## The power of RNA + protein. Without the cost and complexity

Deep dive into T-cell biology using a validated panel that simplifies the CITE-seq workflow and minimizes your sequencing cost. As part of the family of BD<sup>®</sup> OMICS-One Protein Panels, this focused lyophilized panel targets 30 key markers to stain up to 2 million cells to uncover T-cell populations of interest. Use this panel on its own or paired with other assays from our single-cell multiomics portfolio to explore T-cell populations and uncover their activation or suppression states with ease.



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



**SMART:** Designed to lower your sequencing costs without compromising sensitivity



**Multiomics enabled:** Optimized to work with whole transcriptome, targeted and TCR/BCR profiling RNA-seq assays for multiomics studies

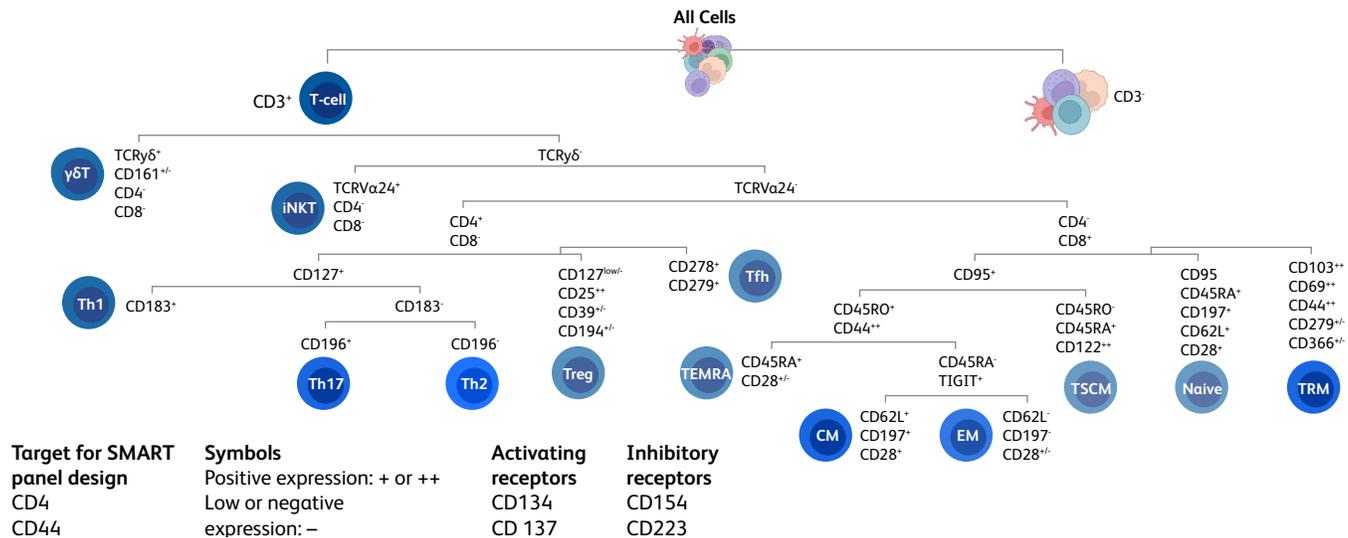
## Panel content

Specificity	Clone
CD3	UCHT1
CD4*	SK3
CD8	SK1
CD25	2A3
CD28	L293
CD44*	L178
CD45RO	UCHL1
CD45RA	HI100
CD69	FN50
CD62L	DREG-56

Specificity	Clone
CD95	DX2
CD103	BER-ACT8
CD127	HIL-7R-M21
CD134	ACT35
CD137	4B4-1
CD154	TRAP1
CD161	HP-3G10
CD183	1C6/CXCR3
CD194	1G1
CD196	11A9

Specificity	Clone
CD197	2-L1-A
CD223	T47-530
CD272	J168-540
CD278	DX29
CD279	EH12.1
CD357	V27-580
CD366	7D3
TCRγ/δ	11F2
TCR Va24-Jα18	6B11
TIGIT	TgMab-2

\*Targets for SMART panel design

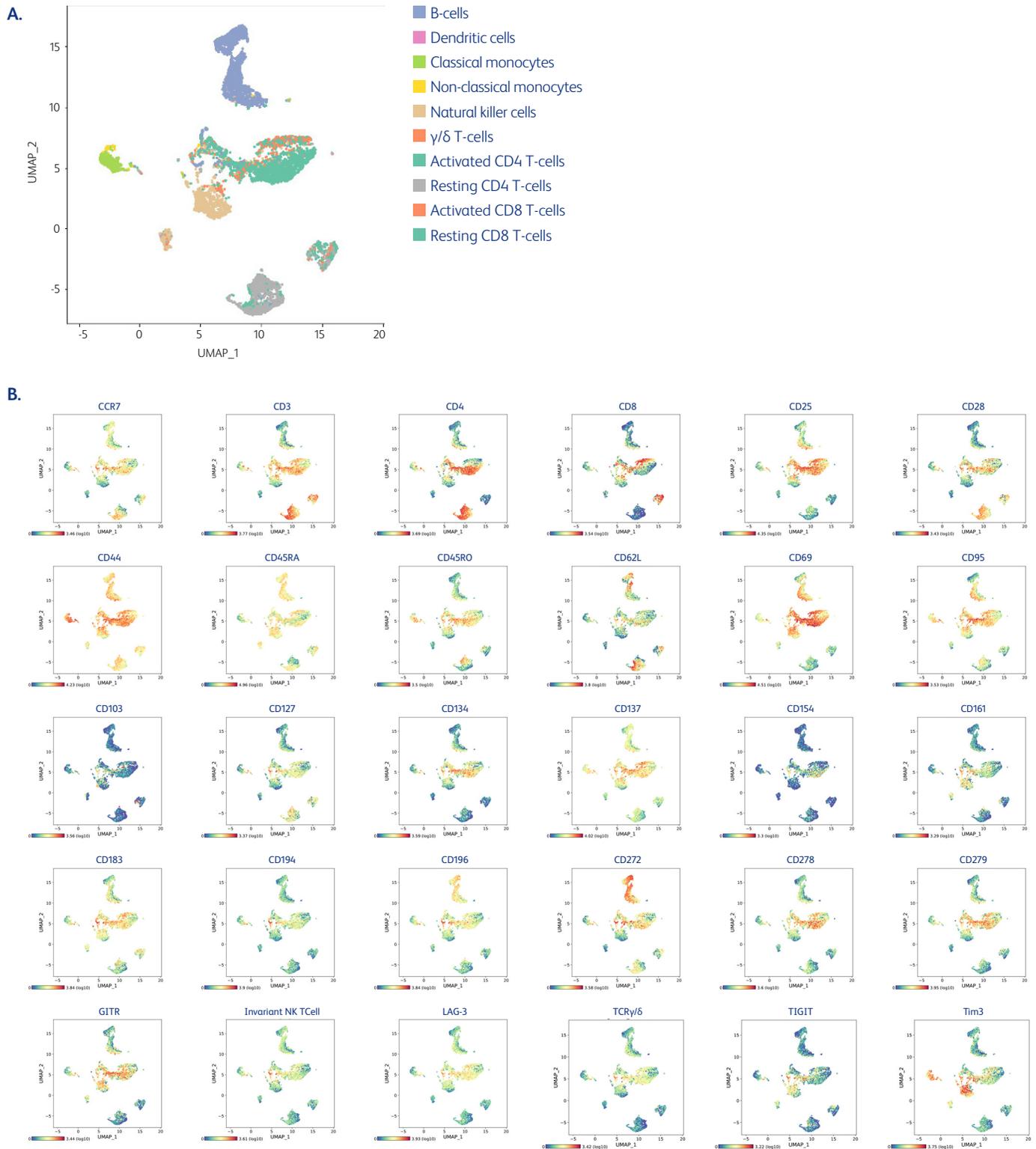


T-cell populations and activation states monitored by this panel.



# Reliably detect 30 key T-cell activation and suppression markers

Performance of all markers included in the BD<sup>®</sup> OMICS-One T-Cell Protein Panel is optimized for detection in each cell type.



**Performance of all 30 antibody-oligo specificities included in the BD<sup>®</sup> OMICS-One T-Cell Protein Panel.** Resting PBMC, stimulated PBMC with PHA and stimulated PBMC with CD3/CD28/IL2 were labeled with BD<sup>®</sup> Human Single-Cell Multiplexing Kit Sample Tags and pooled at 1:1:1 ratio. The single-cell suspension was stained with reconstituted BD<sup>®</sup> OMICS-One T-Cell Protein Panel. After staining, cells were captured on the BD Rhapsody<sup>™</sup> Single-Cell Analysis System. AbSeq, WTA and SMK libraries were generated and sequenced. **A.** Cell annotation on UMAP of resting + activated T-cells resolved by the BD<sup>®</sup> OMICS-One T-Cell Protein Panel and the WTA mRNA profile. **B.** Heat maps of each marker detected by the BD<sup>®</sup> OMICS-One T-Cell Protein Panel on UMAP showing the specificity of detection for individual cell types.

# Manage sequencing costs and improve detection sensitivity with SMART panel design

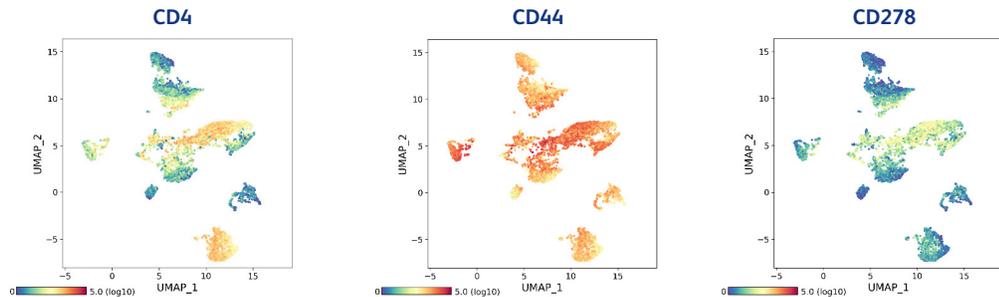
SMART panel design helps lower sequencing cost while increasing data resolution by using pre-titrated, optimal concentrations of antibody-oligos against select high-expressing primary markers in the panel. This allows re-allocation of sequencing reads otherwise allotted to these high expressors to now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

The two specificities selected for SMART panel design in the BD® OMICS-One T-Cell Protein Panel are CD4 and CD44.

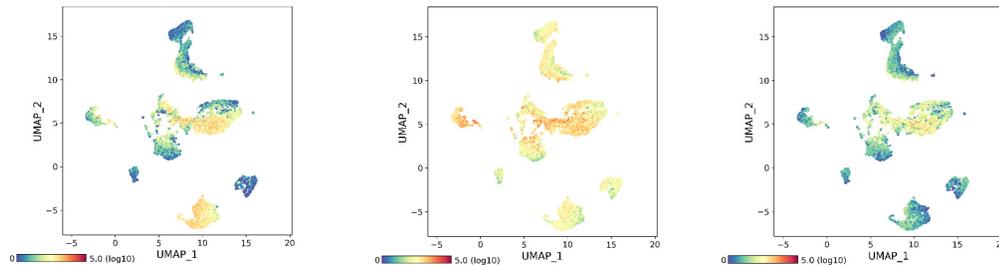
## A. Allocation of sequencing reads

Percent of Total Sequencing Reads Consumed			Percent of Total Sequencing Reads Consumed		
Markers	Without SMART panel design	With SMART panel design	Markers	Without SMART panel design	With SMART panel design
<b>Reduction of sequencing reads allocated to primary markers ▼</b>			CD279	1.77	2.67
CD4	5.92	4.07	CD366	1.80	3.39
CD44	46.10	8.70	CD103	0.23	0.46
<b>Read re-allocation to lowly expressed markers ▲</b>			CD134	0.88	1.28
CD3	2.30	4.25	CD154	0.15	0.29
CD8	0.98	1.59	CD161	0.38	0.64
CD25	3.72	7.52	CD183	4.87	4.15
CD45RO	0.87	1.48	CD194	1.94	3.79
CD45RA	3.88	9.17	CD196	2.65	4.16
CD69	9.50	19.07	CD272	1.72	3.34
CD62L	1.35	2.61	CD278	0.65	1.33
CD95	1.18	1.86	CD28	0.95	1.68
CD127	0.61	1.10	CD357	0.57	1.23
CD137	1.64	3.14	TCR Vα24-Jα18	0.86	1.93
CD197	0.91	1.76	TCRγ/δ	0.34	0.79
CD223	0.78	1.71	TIGIT	0.38	0.74

## B. Without SMART panel design



## C. With SMART panel design



**CD4 and CD44 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 like CD4 and CD44 are significantly reduced with SMART panel design. More importantly, lowly expressed markers like CD278 are now detected at a better resolution as they have a higher percentage of sequencing reads allotted. B. and C. CD4 and CD44 detection with SMART panel design is not compromised compared to a regular antibody-oligo panel without SMART panel design. Meanwhile, lowly expressed protein CD278 is better resolved with the BD® OMICS-One T-Cell Protein Panel bearing the SMART panel design approach compared to a freshly pooled antibody-oligo panel.

# Part of a complete single-cell multiomics solution

Epigenomics

Transcriptomics

Immune Profiling

CITE-Seq Protein Panels

Multiomics

Million-Cell Throughput

Validated Multiomic Kits and Protocols

Simple and Free Bioinformatics

## Ordering information

Description	Cat. No.
BD® OMICS-One T-Cell Protein Panel	572178



Visit [bdbiosciences.com/PanelTcell](https://bdbiosciences.com/PanelTcell) to learn more about this panel and review complete performance data.

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