

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

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

Deep dive into tumor biology using a validated panel that simplifies the CITE-seq workflow and minimizes your sequencing costs. This panel is designed with 30 key specificities that will help you explore tumor cell populations and uncover their features with ease. BD<sup>®</sup> 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<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 cost without compromising sensitivity



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

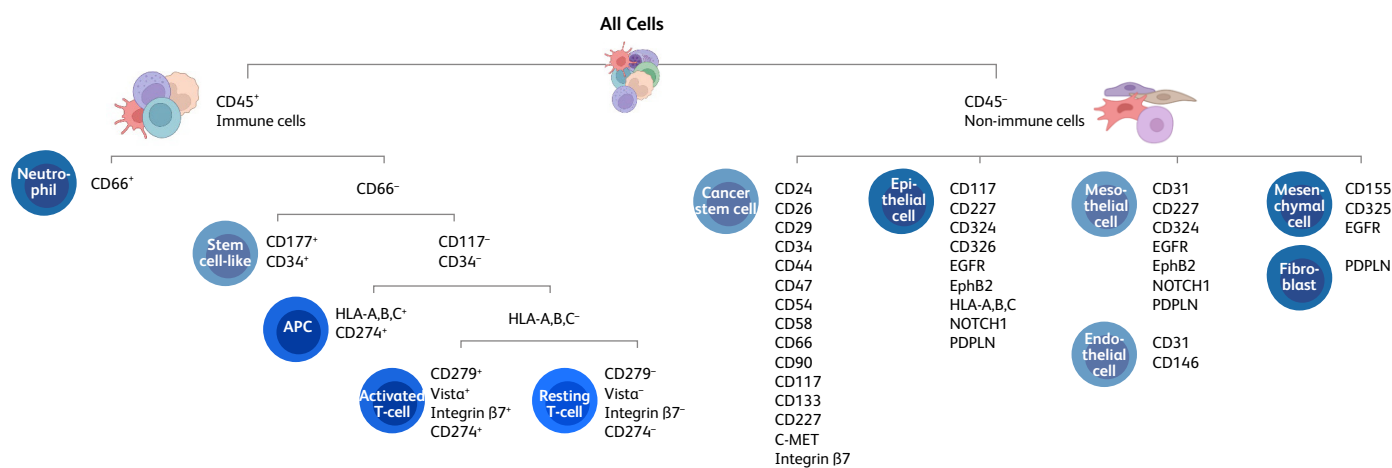
## Panel content

| Specificity    | Clone  |
|----------------|--------|
| CD24           | ML5    |
| CD26           | M-A261 |
| CD29           | MAR4   |
| CD31 (PECAM-1) | WM59   |
| CD34           | 581    |
| CD44*          | L178   |
| CD45*          | HI30   |
| CD47           | B6H12  |
| CD54           | HA58   |
| CD58           | 1C3    |

| Specificity        | Clone     |
|--------------------|-----------|
| CD117              | YB5.B8    |
| CD133              | W6B3C1    |
| CD146              | P1H12     |
| CD155              | TX24      |
| CD227 (MUC1)       | HMFG2     |
| CD66               | B1.1/CD66 |
| CD90               | 5E10      |
| CD274 (PD-L1)      | MIH1      |
| CD279 (PD-1)       | EH12.1    |
| CD324 (E-Cadherin) | 67A4      |

| Specificity        | Clone      |
|--------------------|------------|
| CD325 (N-Cadherin) | 8C11       |
| CD326 (EpCAM)      | EBA-1      |
| c-MET              | 3D6        |
| EGFR               | EGFR.1     |
| EphB2              | 2H9        |
| HLA-A,B,C*         | G46-2.6    |
| Integrin β7        | FIB504     |
| Notch1             | MHN1-519   |
| Podoplanin         | LpMab-17   |
| Vista              | MIH65.rMab |

\*SMART-titrated targets



**Target for SMART panel design**  
CD44, CD45, HLA-A,B,C

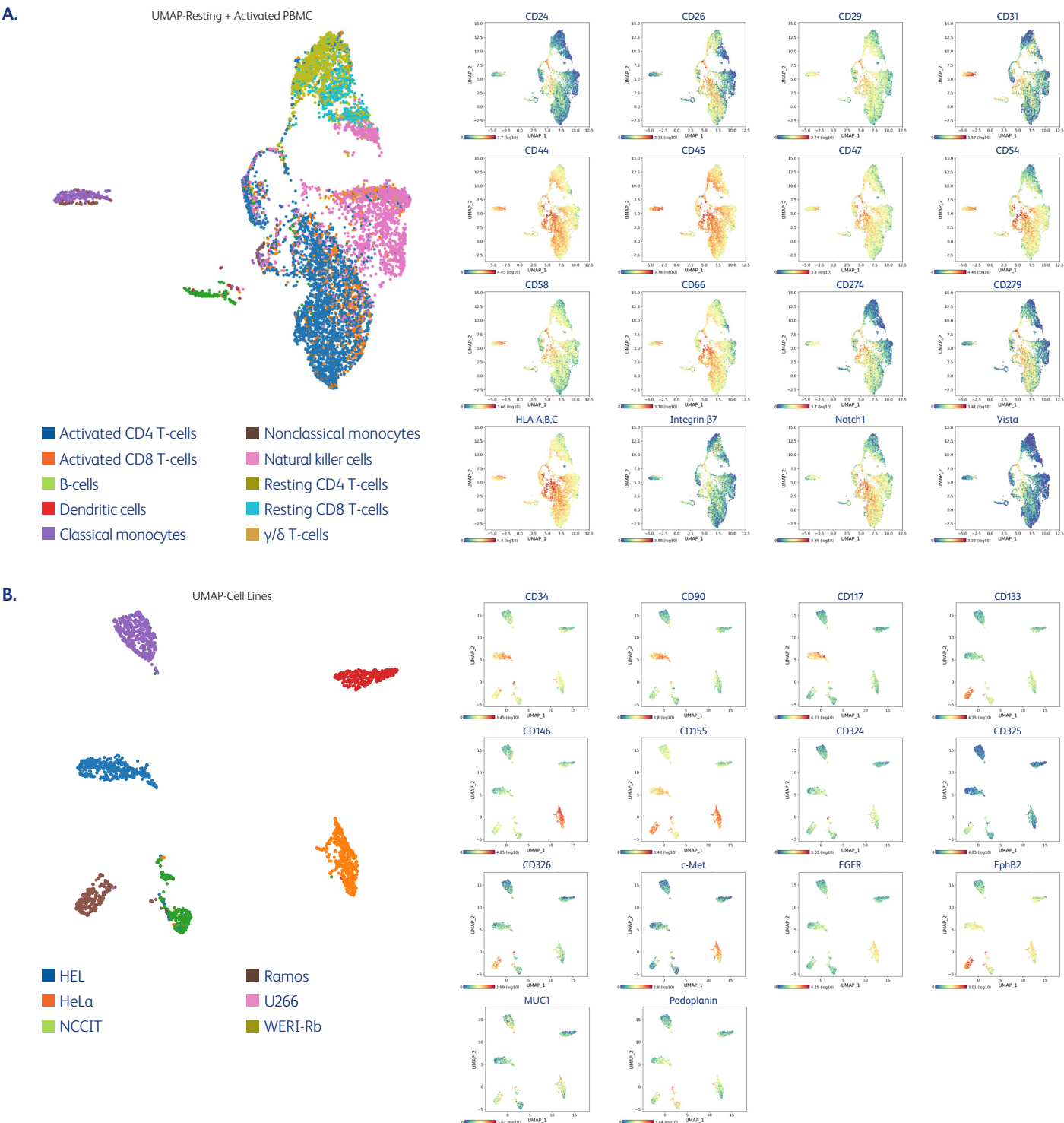
**Symbols**  
Positive expression: + or ++  
Low or negative expression: -

Tumor cell states, functions and immune interactions monitored by this panel.



# Reliably detect 30 key tumor-associated markers

Performance of all 30 markers included in the BD® OMICS-One Tumor Protein Panel is optimized for detection in each cell type.



**Performance of all 30 antibody-oligos included in the BD® OMICS-One Tumor Protein 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. In another experiment, six cell lines HEL, HeLa, NCCIT, Ramos, U266 and WERI-Rb1 were labeled with BD® Human Single-Cell Multiplexing Kit Sample Tags and pooled at a 1:1:1:1:1:1 ratio. Both samples were stained with reconstituted BD® OMICS-One Tumor Protein Panel. After staining, both samples were captured on the BD Rhapsody™ Single-Cell Analysis System. AbSeq, Sample Tag and WTA libraries of each sample were prepared and sequenced. **A.** UMAP visualization of resting + activated PBMCs annotated by cell type, with heat maps displaying the expression of 16 immune cell markers detected by the BD® OMICS-One Tumor Protein Panel. **B.** UMAP visualization of pooled cell lines annotated by cell type, with heat maps displaying the expression of 14 tumor markers detected by the BD® OMICS-One Tumor Protein Panel. The heat maps highlight the specificity of marker detection across individual cell types, as resolved by mRNA profiles.

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

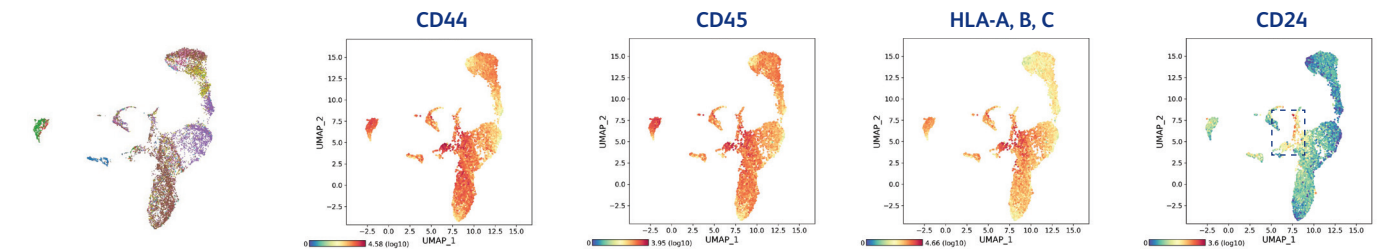
SMART panel design helps lower sequencing costs while increasing data resolution by using pretitrated, optimal concentrations of antibody-oligos against select high-expressing primary markers in the panel. This allows reallocation of sequencing reads otherwise allotted to these high expressors to now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

The three specificities selected for SMART panel design in the BD® OMICS-One Tumor Protein Panel are CD44, CD45 and HLA-A,B,C.

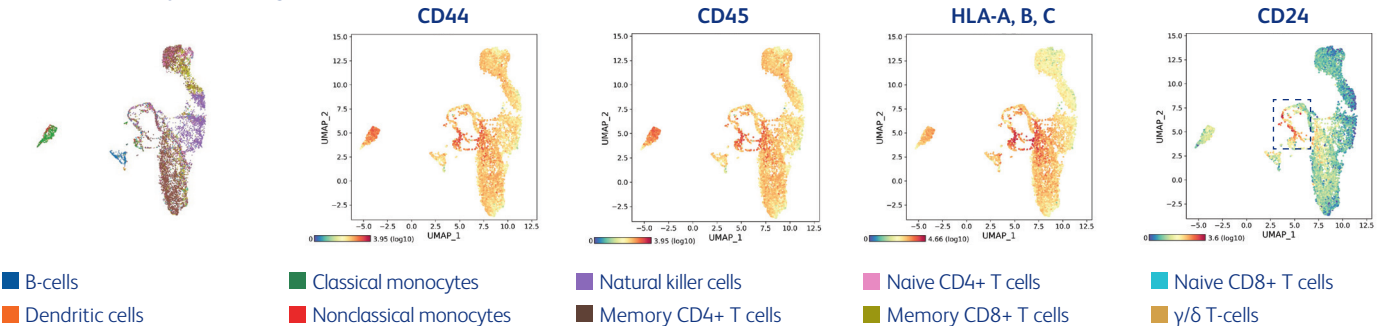
## A. Allocation of sequencing reads

| 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 |
| Reduction of sequencing reads allocated to primary markers ▼ |                            |                         | CD31                                       | 0.84                       | 1.70                    |
| CD44   | 35.47                      | 19.23                   | CD274                                      | 0.79                       | 1.67                    |
| HLA-A,B,C  | 18.41                      | 15.14                   | CD117                                      | 0.78                       | 1.62                    |
| CD45   | 10.48                      | 5.03                    | CD26                                       | 0.75                       | 1.58                    |
| Read re-allocation to lowly expressed markers ▲              |                            |                         | CD324                                      | 0.73                       | 1.54                    |
| CD54   | 7.83                       | 14.72                   | Notch1                                     | 0.73                       | 1.46                    |
| CD47   | 4.58                       | 4.68                    | CD227                                      | 0.66                       | 1.24                    |
| CD34   | 3.46                       | 4.13                    | EphB2                                      | 0.52                       | 1.15                    |
| EGFR   | 2.04                       | 3.64                    | CD90                                       | 0.47                       | 0.96                    |
| CD58   | 2.02                       | 3.00                    | Integrin β7                                | 0.43                       | 0.90                    |
| CD66   | 1.75                       | 2.70                    | c-MET                                      | 0.37                       | 0.70                    |
| CD279  | 1.65                       | 2.69                    | CD326                                      | 0.32                       | 0.67                    |
| Podoplanin   | 1.24                       | 2.54                    | Vista                                      | 0.30                       | 0.60                    |
| CD155  | 1.13                       | 2.04                    | CD133                                      | 0.20                       | 0.38                    |
| CD24   | 1.00                       | 2.04                    | CD325                                      | 0.19                       | 0.37                    |
| CD29   | 0.84                       | 1.78                    | CD146                                      | 0.04                       | 0.13                    |

## B. Without SMART panel design




## C. With SMART panel design




**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., CD44, CD45 and HLA-A,B,C) are significantly reduced with SMART panel design. More importantly, lowly expressed markers like CD24 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 CD24 is better resolved with the BD® OMICS-One Tumor Protein Panel with SMART panel design compared to a freshly pooled antibody-oligo panel.


Part of a complete single-cell multiomics solution




Epigenomics




Transcriptomics




Immune Profiling




CITE-Seq  
Protein Panels



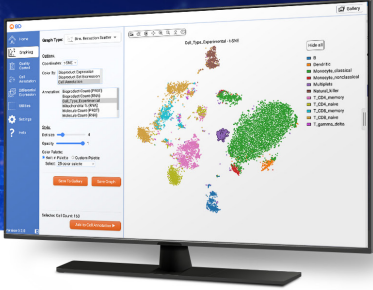
Multiomics



Million-Cell  
Throughput



Validated Multiomic  
Kits and Protocols



Simple and Free  
Bioinformatics

Ordering information

| Description                       | Cat. No. |
|-----------------------------------|----------|
| BD® OMICS-One Tumor Protein Panel | 572310   |



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

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BD Life Sciences, Milpitas, CA 95035, U.S.

[bdbiosciences.com](https://bdbiosciences.com)

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