

# Monoclonal Antibodies Detecting Human Antigens

## CD45 (2D1)

| Form        | Catalog number | Form    | Catalog number |
|-------------|----------------|---------|----------------|
| Pure        | 347460         | APC-Cy7 | 348795         |
| FITC        | 347463         | APC-H7  | 641399         |
| PerCP       | 347464         | AmCyan  | 339192         |
| PerCP-Cy5.5 | 340953         | V450    | 642275         |
| APC         | 340943         | V500-C  | 647449         |

Product availability varies by region. Contact BD Biosciences Customer Support or your local sales representative for information.

### RESEARCH APPLICATIONS

Research applications include studies of:

- Leucocyte differentiation in blood and bone marrow<sup>1,2</sup>
- Immune-cell activation and lymphocyte signaling<sup>3</sup>
- Plasma cells<sup>4</sup>

### DESCRIPTION

#### Specificity

The CD45 (anti-HLe-1) antibody recognizes members of the T200 family of human leucocyte antigens with molecular mass of 180 to 220 kilodaltons (kDa).<sup>5</sup>

#### Antigen distribution

The CD45 antigen is present on all human leucocytes including lymphocytes, monocytes, granulocytes, eosinophils, and basophils in peripheral blood. The antigen has a role in signal transduction, modifying signals from other surface molecules.<sup>5</sup> The CD45 antibody has been reported to react weakly with mature circulating erythrocytes and platelets.<sup>5,6</sup>

#### Clone

The CD45 antibody, clone 2D1,<sup>5</sup> is derived from the hybridization of NS-1 mouse myeloma cells with spleen cells from BALB/c mice immunized with human peripheral blood mononuclear cells (PBMCs).

#### Composition

The CD45 antibody is composed of mouse IgG<sub>1</sub> heavy chains and kappa light chains.

#### Product configuration

The following reagents are supplied in phosphate buffered saline (PBS) containing a stabilizer and a preservative.

| Form                       | Number of tests | Volume per test (μL) <sup>a</sup> | Amount provided (μg) | Total volume (mL) | Concentration (μg/mL) | Stabilizer | Preservative      |
|----------------------------|-----------------|-----------------------------------|----------------------|-------------------|-----------------------|------------|-------------------|
| Pure                       | 100             | 20                                | 50.0                 | 2.0               | 25                    | Gelatin    | 0.1% Sodium azide |
| FITC                       | 100             | 20                                | 100.0                | 2.0               | 50                    | Gelatin    | 0.1% Sodium azide |
| PerCP                      | 100             | 20                                | 50.0                 | 2.0               | 25                    | Gelatin    | 0.1% Sodium azide |
| PerCP-Cy <sup>TM</sup> 5.5 | 50              | 20                                | 6.0                  | 1.0               | 6                     | Gelatin    | 0.1% Sodium azide |
| APC                        | 100             | 5                                 | 12.5                 | 0.5               | 25                    | Gelatin    | 0.1% Sodium azide |
| APC-Cy <sup>TM</sup> 7     | 100             | 5                                 | 50.0                 | 0.5               | 100                   | Gelatin    | 0.1% Sodium azide |
| APC-H7                     | 100             | 5                                 | 50.0                 | 0.5               | 100                   | BSA        | ProClin® 300      |
| AmCyan                     | 100             | 5                                 | 50.0                 | 0.5               | 100                   | BSA        | 0.1% Sodium azide |
| V450 <sup>b</sup>          | 100             | 5                                 | 50                   | 0.5               | 100                   | Gelatin    | 0.1% Sodium azide |
| V500-C <sup>b</sup>        | 100             | 5                                 | 50                   | 0.5               | 100                   | BSA        | ProClin® 950      |

a. Volume required to stain 10<sup>6</sup> cells.

b. BD Horizon<sup>TM</sup> V450, BD Horizon<sup>TM</sup> V500-C

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

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**CAUTION** Some APC-Cy7 conjugates, and to a lesser extent APC-H7 conjugates, show changes in their emission spectra with prolonged exposure to paraformaldehyde or light. For overnight storage of stained cells, wash and resuspend in buffer without paraformaldehyde after 1 hour of fixation.

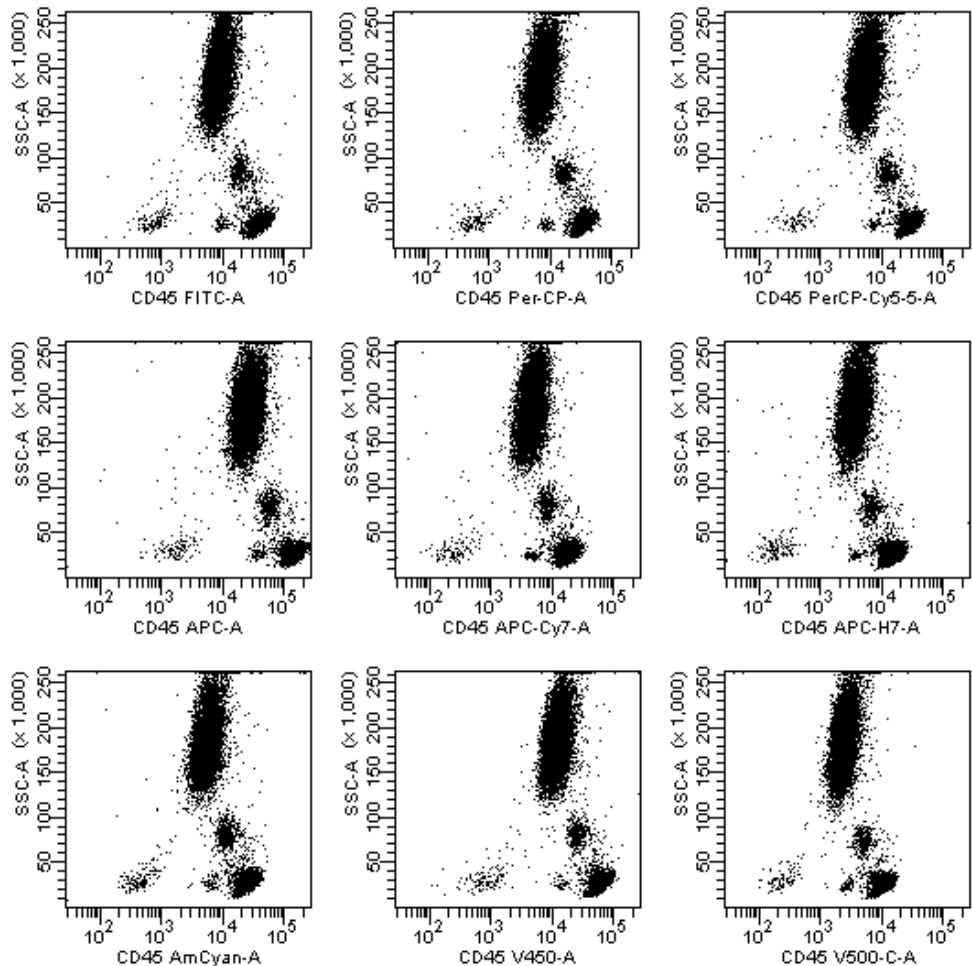
**CAUTION** Prolonged exposure of cells to paraformaldehyde can lead to increased autofluorescence in the violet channels. For overnight storage of stained cells, wash and resuspend in buffer without paraformaldehyde after 1 hour of fixation.

## PROCEDURE

Visit our website ([bdbiosciences.com](http://bdbiosciences.com)) or contact your local BD representative for the lyse/wash protocol for direct immunofluorescence.

## REPRESENTATIVE DATA

Flow cytometric analysis was performed on whole blood stained with the indicated conjugated antibody. Laser excitation was at 405 nm, 488 nm, or 635 nm. Representative data analyzed with a BD FACS™ brand flow cytometer is shown in the following plots.



## HANDLING AND STORAGE

Store vials at 2°C–8°C. Conjugated forms should not be frozen. Protect from exposure to light. Each reagent is stable until the expiration date shown on the bottle label when stored as directed.

## WARNING

All biological specimens and materials coming in contact with them are considered biohazards. Handle as if capable of transmitting infection<sup>7,8</sup> and dispose of with proper precautions in accordance with federal, state, and local regulations. Never pipette by mouth. Wear suitable protective clothing, eyewear, and gloves.

Some reagents are bottled with ProClin 300, and contain 0.003% of a mixture of CMIT/MIT (3:1), CAS number 55965-84-9.



#### Warning

H317 May cause an allergic skin reaction.

Wear protective gloves/eye protection. Wear protective clothing. Avoid breathing mist/vapours/spray. If skin irritation or rash occurs: Get medical advice/attention. IF ON SKIN: Wash with plenty of water. Dispose of contents/container in accordance with local/regional/national/international regulations.

## CHARACTERIZATION

To ensure consistently high-quality reagents, each lot of antibody is tested for conformance with characteristics of a standard reagent. Representative flow cytometric data is included in this data sheet.

## WARRANTY

Unless otherwise indicated in any applicable BD general conditions of sale for non-US customers, the following warranty applies to the purchase of these products.

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## REFERENCES

1. Terstappen LWMM, Levin J. Bone marrow cell differential counts obtained by multidimensional flow cytometry. *Blood Cells*. 1992;18:311–330.
2. Loken MR, Brosnan J, Bach B, Ault K. Establishing optimal lymphocyte gates for immunophenotyping by flow cytometry. *Cytometry*. 1990;11:453–459.
3. Hermiston ML, Xu Z, Weiss A. CD45: a critical regulator of signaling thresholds in immune cells. *Annu Rev Immunol*. 2003;21:107–137.
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5. Schwinzer R. Cluster report: CD45/CD45R. In: Knapp W, Dörken B, Gilks WR, et al., eds. *Leucocyte Typing IV: White Cell Differentiation Antigens*. New York, NY: Oxford University Press; 1989:628–634.
6. Jackson A. Basic phenotyping of lymphocytes: selection and testing of reagents and interpretation of data. *Clin Immunol Newslett*. 1990;10:43–55.
7. *Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline—Third Edition*. Wayne, PA: Clinical and Laboratory Standards Institute; 2005. CLSI document M29-A3.
8. Centers for Disease Control. Perspectives in disease prevention and health promotion update: universal precautions for prevention of transmission of human immunodeficiency virus, hepatitis B virus, and other bloodborne pathogens in health-care settings. *MMWR*. 1988;37:377-388.

## PATENTS AND TRADEMARKS

APC-Cy7: US Patent 5,714,386

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