CD34 (8G12)

FORMS

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DESCRIPTION

Specificity

The CD34 antibody recognizes a 105–120-kilodalton (kDa) single-chain transmembrane glycoprotein. Clone 8G12 recognizes an epitope on CD34 distinct from the one recognized by clone My10; at least three epitopes have been identified.\(^1,2\)

Antigen distribution

The CD34 antigen is present on immature hematopoietic precursor cells and all hematopoietic colony-forming cells in bone marrow and blood, including unipotent (CFU-GM, BFU-E) and pluripotent progenitors (CFU-GEMM, CFU-Mix, and CFU-Blast).\(^3-5\) The CD34 antigen is a differentiation stage–specific leucocyte antigen.\(^1-3,6\) Terminal deoxynucleotidyl transferase–positive B- and T-lymphoid precursors in normal bone marrow are CD34\(^+\).\(^3,7\) The CD34 antigen is present on early myeloid cells that express the CD33 antigen but lack the CD14 and CD15 antigens and on early erythroid cells that express the CD71 antigen and dimly express the CD45 antigen.\(^5,8,9\)

The CD34 antigen is also found on capillary endothelial cells and approximately 1% of human thymocytes.\(^10\) Normal peripheral blood lymphocytes, monocytes, granulocytes, and platelets do not express the CD34 antigen.\(^1\) CD34 antigen density is highest on early hematopoietic progenitor cells and decreases as cells mature. The antigen is absent on fully differentiated hematopoietic cells.\(^5\) Uncommitted CD34\(^+\) progenitor cells are CD38\(^-\) and lack lineage-specific antigens such as CD71, CD33, CD10, and CD5, while CD34\(^+\) cells that are lineage-committed express the CD38 antigen at high density.\(^5\)

Most CD34\(^+\) cells reciprocally express either the CD45RO or CD45RA antigens, with the CD45RO\(^+\) population being the more primitive.\(^6\)

Approximately 60% of acute B-lymphoid leukemias and acute myeloid leukemias (AML) and 1% to 5% of acute T-lymphoid leukemias express the CD34 antigen.\(^11,12\) The antigen is not expressed on chronic lymphoid leukemias or lymphomas.\(^13\)

Clone

The CD34 antibody, clone 8G12 (Anti–HPCA*-2),\(^14\) is derived from the hybridization of Sp2/0-Ag14 mouse myeloma cells with spleen cells of BALB/c mice immunized with the human cell line KG-1a.\(^1\)

Composition

The CD34 antibody is composed of mouse IgG1 heavy chains and kappa light chains.

* Human progenitor cell antigen

Analyte Specific Reagent. Analytical and performance characteristics are not established.
The following are supplied in buffer containing a stabilizer and a preservative.

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a. Volume required to stain 10⁶ cells.

b. BD Horizon™ APC-R700, BD Horizon Brilliant™ Violet 421

**CAUTION** Some PE-Cy7 and APC-R700 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** Higher levels of nonspecific staining can result when ammonium chloride lysis is used for cell preparation before staining.

**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.

**CAUTION** If you choose to combine BD Horizon Brilliant™ reagents in a multicolor staining cocktail, dyes may bind to one another without the use of a buffering solution, such as BD Horizon™ Brilliant Stain Buffer.

**Purity**

FITC: ≤5% free fluorophore at bottling, as measured by size-exclusion chromatography (SEC)

PE, PerCP-Cy5.5, PE-Cy7, PerCP, APC, APC-R700: ≤20% free fluorophore at bottling, as measured by SEC

BV421: ≤25% free fluorophore, as measured by ion-exchange chromatography (IEC)

**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 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.

The APC-R700 conjugate is bottled with ProClin 300, and contains 0.003% of a mixture of CMIT/MIT (3:1), CAS number 55965-84-9.
Visit regdocs.bd.com to download the Safety Data Sheets.

**CHARACTERIZATION**

To ensure consistently high-quality reagents, each lot of antibody is tested for conformance with characteristics of a standard reagent.

**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.

The products sold hereunder are warranted only to conform to the quantity and contents stated on the label or in the product labeling at the time of delivery to the customer. BD disclaims hereby all other warranties, expressed or implied, including warranties of merchantability and fitness for any particular purpose and noninfringement. BD’s sole liability is limited to either replacement of the products or refund of the purchase price. BD is not liable for property damage or any incidental or consequential damages, including personal injury, or economic loss, caused by the product.

**REFERENCES**


**PATENTS AND TRADEMARKS**

BV421 is covered by one or more of the following US patents: 8,158,444; 8,362,193; 8,575,303; or 8,354,239.

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