**CD34 (8G12)**

**FORMS**

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<th>Form</th>
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<td>PE-Cy7</td>
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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.\(^1\)\(^,\)\(^12\) The antigen is not expressed on chronic lymphoid leukemias or lymphomas.\(^1\)\(^3\)

**Clone**

The CD34 antibody, clone 8G12 (Anti–HPCA*-2),\(^1\)\(^4\) 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 IgG\(_1\) 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 phosphate buffered saline (PBS) containing a stabilizer and a preservative.

<table>
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<th>Form</th>
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<th>Amount provided (µg)</th>
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<th>Concentration (µg/mL)</th>
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a. Volume required to stain 10⁶ cells.

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.

NOTE  As a consideration for instrument selection, the APC-R700 conjugate is read off the red laser using an appropriate longpass (LP) mirror and bandpass (BP) filter. (For your information, the technical information for this data sheet was generated on a BD FACS™ brand flow cytometer using a 640-nm red laser, a 685 LP mirror, and a 712/21 BP filter.)

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

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.

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.

WARRANTY

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