BD Oncomark™

Anti–HLA-DR/CD34

Catalog No. 341146 50 Tests 20 µL/test Not for sale in the US.

RESEARCH APPLICATIONS

This reagent combination can be used to study development of B lymphocytes and myeloid cells. Anti–HLA-DR reacts with many cells in the lymphoid, myeloid, and monocytic lineages while CD34 only recognizes precursor cells from early stages in the lineages. These reagents are useful in the research of acute leukemias.1-8 The addition of CD45, in conjunction with side scatter, might be useful as a gating aid for blast identification.9-12

DESCRIPTION

Specificity

Anti–HLA-DR recognizes a human class II major histocompatibility complex (MHC) antigen.13,14 The antigen is a transmembrane glycoprotein composed of α and β subunits that have molecular weights of 36 and 27 kilodalton (kDa), respectively.13,14

The CD34 antibody recognizes a single-chain transmembrane glycoprotein, with a molecular weight of 105 to 120 kDa. The CD34 antigen is associated with human hematopoietic progenitor cells and is a differentiation stage–specific leucocyte antigen.15-20 Anti–HPCA-1 and Anti–HPCA-2 (clone 8G12) recognize two distinct CD34 epitopes; at least three epitopes have been identified.15,18 Clone 8G12 recognizes the class 3 epitope.

Antigen distribution

HLA-DR is expressed on B lymphocytes, monocytes, macrophages, activated T lymphocytes, activated natural killer (NK) lymphocytes, and human progenitor cells.21-26 It is also present on thymic epithelium, B-lymphocyte–dependent areas of spleen and lymph node, and B-cell lymphomas.23-29

The CD34 antigen is present on immature hematopoietic precursor cells and all hematopoietic colony-forming cells in bone marrow and blood.17,20 The CD34 antigen is also found on capillary endothelial cells and approximately 1% of human thymocytes.17,30 Normal peripheral blood lymphocytes, monocytes, granulocytes, and platelets do not express the CD34 antigen.15,17,20 CD34 antigen density is highest on early hematopoietic progenitor cells and decreases as cells mature. The antigen is absent on fully differentiated hematopoietic cells.17,31,32

Approximately 60% of acute B-lymphoid leukemias and acute myeloid leukemias (AML) and 1–5% of acute T-lymphoid leukemias (ATLL) express the CD34 antigen.17,33,34 The antigen is not expressed on chronic lymphoid leukemias (CLL) or lymphomas.17

Clones

Anti–HLA-DR, clone L243, is derived from the hybridization of NS-1/1-Ag4 mouse myeloma cells with spleen cells from BALB/c mice immunized with the human lymphoblastoid B-cell line RPMI 8866.13

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CD34 (Anti–HPCA-2), clone 8G12, is derived from hybridization of Sp2/0-Ag14 mouse cells with spleen cells of BALB/c mice immunized with the human cell line KG-1a.\textsuperscript{15}

**Composition**

Anti–HLA-DR is composed of mouse IgG\textsubscript{2a} heavy chains and kappa light chains.

CD34 (Anti–HPCA-2) is composed of mouse IgG\textsubscript{1} heavy chains and kappa light chains.

The BD Oncomark Anti–HLA-DR/CD34 reagent is supplied as a combination of Anti–HLA-DR FITC and CD34 PE in 1 mL of phosphate-buffered saline (PBS) containing gelatin and 0.1% sodium azide.

**PROCEDURE**

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

**CAUTION** Higher levels of nonspecific staining may occur when using ammonium chloride lysis for cell preparation prior to staining compared to staining and then lysing using BD FACS™ Lysing Solution.

**REPRESENTATIVE DATA**

Performed on bone marrow stained, then lysed using BD FACS lysing solution (Cat. No. 349202).

*Figure 1* Representative data analyzed with a BD FACSTM brand flow cytometer

![Flow cytometry chart](chart_url)

**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\textsuperscript{35,36} 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.

**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


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