Research applications include:

• Studies of B-cell biology

**DESCRIPTION**

**Specificity**

Anti-Lambda is specific for lambda light chains of human immunoglobulins. Anti-Kappa is specific for kappa light chains of human immunoglobulins.

CD5 recognizes a human T-lymphocyte antigen, with a molecular weight of 67 kilodalton (kDa). CD10 (Anti-CALLA) recognizes a human common acute lymphoblastic leukemia antigen (CALLA), with a molecular weight of 100 kDa. The CD10 antigen is identical to human membrane-associated neutral endopeptidase (NEP; EC 3.3.24.11), also known as enkephalinase.

CD19 (SJ25C1) recognizes a 90-kDa antigen that is present on human B lymphocytes.

The CD20 antigen is a phosphoprotein with a molecular weight of 35 or 37 kDa, depending on the degree of phosphorylation. The antigen is not glycosylated. Immunoglobulins bearing lambda light chains are present on approximately 40% of normal B lymphocytes and on Igλ+ neoplastic cells. In serum, Anti-Lambda reacts with immunoglobulins bearing lambda light chains as well as free lambda light chains.

Immunoglobulins bearing kappa light chains are present on approximately 60% of normal B lymphocytes and on Igκ+ neoplastic cells. In serum, Anti-Kappa reacts with immunoglobulins bearing kappa light chains as well as free kappa light chains.

The CD5 antigen is present on approximately 70% of normal peripheral blood lymphocytes and on virtually all T lymphocytes in thymus and peripheral blood. The CD5 antibody reacts with most cells in T-lymphocyte areas of spleen and lymph node and with many T-cell leukemias and lymphomas. It also reacts with a distinct subset of normal B lymphocytes, occasional cells in B-lymphocyte areas of spleen and lymph node, and most Ig+ B–chronic lymphoblastic leukemia (CLL) cells. Some lymphomas also express the CD5 antigen.

The CD10 antigen is found on lymphocytes from acute B-lymphoid leukemia samples. The antigen is also present on a wide variety of normal and neoplastic cell types including renal epithelium, fibroblasts, granulocytes, and some lymphoma, melanoma, and glioma cell lines.

**Antigen distribution**

For Research Use Only. Not for use in diagnostic or therapeutic procedures.
The CD19 antigen is present on approximately 7% to 23% of human peripheral blood lymphocytes\(^2\) and on splenocytes.\(^2\) The CD19 antigen is present on human B lymphocytes at most stages of maturation.\(^7,30\) CD19 does not react with resting or activated T lymphocytes, granulocytes, or monocytes.\(^7,30\)

The CD20 antigen is expressed on B lymphocytes synchronous with the expression of surface IgM.\(^8,30\) The antigen is present on both resting and activated B lymphocytes but is lost prior to differentiation into plasma cells.\(^8\) The CD20 antigen is found in both mantle-zone and germinal center areas of secondary follicles of lymphoid tissue and can be expressed on follicular dendritic cells (FDCs) in germinal centers.\(^8\) Low-level expression of the CD20 antigen has been detected on a subpopulation of T lymphocytes.\(^31\)

**Clones**

Anti-Lambda, clone 1-155-2,\(^*\) is derived from hybridization of P3-X63-Ag8.653 mouse myeloma cells with cells from BALB C/J mice immunized with human IgA\(_1\)-\(\lambda\) myeloma protein.

Anti-Kappa, clone TB28-2,\(^*\) is derived from hybridization of P3-X63-Ag8.653 mouse myeloma cells with cells from CB6 (BC57b x BALB/c) mice immunized with human IgG-\(\kappa\) myeloma protein.

CD5, clone L17F12,\(^16\) is derived from hybridization of NS-1/Ag4 mouse myeloma cells with spleen cells from BALB/c mice immunized with human T-acute lymphoblastic leukemia cells.

CD10, clone HI10a,\(^4\) is derived from the hybridization of P3-63-Ag8.653 mouse myeloma cells with spleen cells of BALB/c mice immunized with blasts from a patient with acute CALLA leukemia.

CD19, clone SJ25C1,\(^7\) is derived from the hybridization of Sp2/0 mouse cells with spleen cells from BALB/c mice immunized with NALM1 + NALM16 cells.

CD20, clone L27,\(^32\) is derived from hybridization of Sp2/0 mouse myeloma cells with spleen cells from BALB/c mice immunized with the LB lymphoblastoid cell line.

**Composition**

Anti-Lambda is composed of mouse IgG\(_1\) heavy chains and lambda light chains.

Anti-Kappa, CD19, and CD20 are each composed of mouse IgG\(_1\) heavy chains and kappa light chains.

CD5 and CD10 are each composed of mouse IgG\(_{2a}\) heavy chains and kappa light chains.

This BD Oncomark™ reagent is supplied as a combination of Anti-Lambda FITC, Anti-Kappa PE, CD5 PerCP-Cy\(_{5.5}\), CD10 PE-Cy\(_{7}\), CD19 APC, and CD20 APC-Cy\(_{7}\) 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.

To avoid serum interference when using this reagent:

1. Prewash the whole blood sample using at least 25 volumes of excess 1X PBS with 0.1% sodium azide (For example, 48 mL of 1X PBS with sodium azide per 2 mL of whole blood to be washed) and mix well.

2. Pellet cells by centrifugation.

3. Resuspend in 1X PBS with 0.1% sodium azide to the original volume.

\(^*\) This clone has not been submitted to any previous workshop on human leucocyte differentiation antigens.
NOTE  Spectral overlap values for PE-Cy7 and APC-Cy7 conjugates can vary from lot to lot. It is important to check these values on a known sample when using a new lot of reagents.

CAUTION Some APC-Cy7 conjugates, and to a lesser extent PE-Cy7 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.

REPRESENTATIVE DATA

Performed on whole blood stained and lysed using BD FACS™ lysis solution (Cat. No. 349202).

Figure 1 Analyzed with a BD FACS™ brand flow cytometer

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.

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


APC-Cy7: US Patent 5,714,386

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