Monoclonal Antibodies Detecting Human Antigens

RESEARCH APPLICATIONS

This combination of reagents can be useful for the study of normal\textsuperscript{1,2} and abnormal\textsuperscript{3,4} B-lineage development and differentiation. CD10 recognizes an early subset of B cells\textsuperscript{5} while CD5 recognizes a particular subset with a mature phenotype.\textsuperscript{6} CD19 is present during most stages of B-cell development.\textsuperscript{2} The analysis of the expression of CD5, CD10 and CD19 can be useful in the study of B-cell lymphomas\textsuperscript{7-9}, acute leukemias\textsuperscript{10,11} and chronic lymphoid leukemias.\textsuperscript{12-15}

DESCRIPTION

Specificity

The CD5 antibody recognizes a human T-lymphocyte antigen, with a molecular weight of 67 kilodaltons (kDa).\textsuperscript{16}

The CD10 antibody (Anti-CALLA) recognizes a human common acute lymphoblastic leukemia antigen (CALLA), with a molecular weight of 100 kDa.\textsuperscript{5,17} The CD10 antigen is identical to human membrane-associated neutral endopeptidase (NEP; EC 3.3.24.11), also known as enkephalinase.\textsuperscript{18}

The CD19 antibody (SJ25C1) recognizes a 90-kDa antigen that is present on human B lymphocytes.\textsuperscript{19,20}

Antigen distribution

The CD5 antigen is present on approximately 70\% of normal peripheral blood lymphocytes and on virtually all T lymphocytes in thymus and peripheral blood.\textsuperscript{21-23} The CD5 antibody reacts with most cells in T-lymphocyte areas of spleen and lymph node and with many T-cell leukemias and lymphomas.\textsuperscript{24-26} It also reacts with a distinct subset of normal B lymphocytes,\textsuperscript{6} occasional cells in B-lymphocyte areas of spleen and lymph node,\textsuperscript{24} and most Ig\textsuperscript{+} B–chronic lymphoblastic leukemia (CLL) cells.\textsuperscript{26,27} Some lymphomas also express the CD5 antigen.\textsuperscript{25,28}

The CD10 antigen is found on lymphocytes from patients with acute B-lymphoid leukemia.\textsuperscript{29} The antigen is also present on a wide variety of normal and neoplastic cell types,\textsuperscript{5} including normal granulocytes.\textsuperscript{5}

The CD19 antigen is present on approximately 7–23\% of human peripheral blood lymphocytes\textsuperscript{30} and on splenocytes.\textsuperscript{31} The CD19 antigen is present on human B lymphocytes at most stages of maturation.\textsuperscript{2,20} CD19 does not react with resting or activated T lymphocytes, granulocytes, or monocytes.\textsuperscript{2,20}

Clones

The CD5 antibody, clone L17F12,\textsuperscript{21} is derived from hybridization of NS-1/Ag4 mouse myeloma cells with spleen cells from BALB/c mice immunized with human T-ALL cells. The CD10 antibody, clone HI10a,\textsuperscript{5} 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.

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The CD19 antibody, clone SJ25C1,\textsuperscript{20} is derived from hybridization of Sp2/0 mouse cells with spleen cells from BALB/c mice immunized with NALM1 + NALM16 cells.

**Composition**

The CD5 antibody is composed of mouse IgG\textsubscript{2a} heavy chains and kappa light chains. The CD10 and CD19 antibodies are each composed of mouse IgG\textsubscript{1} heavy chains and kappa light chains.

The BD Oncomark CD5/CD10/CD19 reagent is supplied as a combination of CD5 FITC, CD10 PE (≥95% 1:1 PE:mAb ratio), and CD19 PerCP-Cy\textsuperscript{TM}5.5 in 1 mL of phosphate-buffered saline (PBS) with 0.1% sodium azide.

**PROCEDURE**

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

**REPRESENTATIVE DATA**

Performed on whole blood stained and lysed using BD FACS\textsuperscript{TM} lysing solution (Cat. No. 349202).

*Figure 1* Representative data analyzed with a BD FACS\textsuperscript{TM} 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\textsuperscript{32,33} 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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