RESEARCH APPLICATIONS

Research applications include:

This combination of reagents can be used to determine lineage of leukemic blast cells. CD3 identifies lymphocytes in the T lineage; anti-myeloperoxidase (MPO) identifies cells in the myeloid lineage, and CD79a identifies lymphocytes in the B lineage. This combination of reagents should be used with an intracellular staining technique.

DESCRIPTION

Specificity

The CD3 antibody reacts with the epsilon chain of the CD3 antigen/T-cell antigen receptor (TCR) complex. The antigen recognized by CD3 antibodies is noncovalently associated with either α/β or γ/δ TCR, 70 to 90 kilodaltons (kDa).

The anti-MPO antibody reacts with intracellular MPO, a hemoprotein consisting of two molecular subunits, 60 kDa and 12 kDa. MPO is a major enzyme involved in the inflammatory responses of polymorphonuclear leucocytes. It catalyzes the production of hypochlorous acid, a potent microbicidal agent.

The CD79a antibody recognizes the cytoplasmic domain of a 47-kDa membrane glycoprotein present on B lymphocytes.

Antigen distribution

The CD3 antigen is present on 61% to 85% of normal peripheral blood lymphocytes. The MPO antigen is a lysosomal enzyme localized in the azurophilic granules of mature granulocytes and is present at low density in circulating monocytes. Detectable MPO is also present in myeloblasts from some cases of acute myeloid leukemia.

The CD79a antigen, also referred to as mb-1, is expressed on B cells at various stages of differentiation, from pre-B–cell stage, probably before expression of cytoplasmic μ chain, to plasma cell stage, where it is detected only in the cytoplasm. The CD79a antigen associates with the CD79b antigen to form part of the B-cell receptor complex. It has been suggested that the CD79a antigen can play a role in mediating the transport of IgM to the cell surface.

Clones

The CD3 antibody, clone UCHT1, is derived from the hybridization of NS-1 mouse myeloma cells with spleen cells isolated from BALB/c mice immunized with human thymocytes.

The anti-MPO antibody, clone 5B8, is derived from the hybridization of X63.Ag8-653 mouse myeloma cells with spleen cells isolated from BALB/c mice immunized with commercially purified MPO.

The CD79a antibody, clone HM47, is derived from the hybridization of Sp2/0 mouse myeloma cells with spleen cells isolated from BALB/c mice immunized with a synthetic...
peptide conjugated to thyroglobulin. The peptide had the sequence representing amino acids 202 to 216 inclusive as deduced from the human mb-1 cDNA sequence.

**Composition**
The CD3, anti-MPO, and CD79a antibodies are each composed of mouse IgG1 heavy chains and kappa light chains.

This BD Oncomark™ CD3/anti-MPO/CD79a reagent is supplied as a combination of CD3 FITC, Anti-MPO PE, and CD79a PerCP-Cy5.5 in 1 mL of phosphate-buffered saline (PBS) containing bovine serum albumin (BSA) 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.

Permeabilize cells prior to staining. Several suitable permeabilization methods have been published (see references 5 and 6 on page 3). Contact your local BD representative for more information.

**REPRESENTATIVE DATA**
Flow cytometric analysis was performed on whole blood stained with the indicated conjugated antibody. Representative data analyzed with a BD FACSTM brand flow cytometer is shown in the following plots.

**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 infection15,16 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**


**PATENTS AND TRADEMARKS**

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