Monoclonal Antibodies
Detecting Human Antigens

BD FastImmune™
CD19/CD69/CD45
Catalog No. 340418 50 Tests 20 µL/test

RESEARCH APPLICATIONS
Research applications include studies of:
• Activated B lymphocytes in peripheral blood
• B-lymphocyte activation mechanisms

DESCRIPTION
Specificity
The CD19 (SJ25C1) antibody recognizes a 90-kilodalton (kDa) antigen that is present on human B lymphocytes.3,4

The CD69 antibody recognizes a very early human lymphocyte activation antigen. The CD69 antigen is a surface homodimer formed by the association of 28-kDa and 32-kDa chains that are held together by disulfide bridges.1

The CD45 antibody recognizes a 180- to 220-kDa human leucocyte antigen that is a member of the leucocyte common antigen (LCA) family.5

Antigen distribution
The CD19 antigen is present on approximately 7% to 23% of human peripheral blood lymphocytes (PBLs)6 and on splenocytes.7 CD19 is reactive with the B-lymphocyte areas of normal tonsil and lymph nodes.8 The CD19 antigen is present on human B lymphocytes at all stages of maturation but is lost on terminally differentiated plasma cells.8 CD19 does not react with resting or activated T lymphocytes, granulocytes, or monocytes.9

The CD69 antigen is present on activated T, B, and natural killer (NK) lymphocytes10 and platelets.11 CD69 is not expressed by resting PBLs.1 Upon activation, CD69 antigen expression increases on lymphocytes; peak expression generally occurs within 18 hours, preceding the appearance of HLA-DR, interleukin-2 (IL-2) receptor (CD25 antigen), and transferrin receptor (CD71 antigen).12-14 CD69 and phorbol ester are comitogenic for T lymphocytes.13 In thymus, the CD69 antigen is constitutively expressed on the bright CD3+ subset.15

The CD45 antigen is present on all human leucocytes, including lymphocytes, monocytes, granulocytes, eosinophils, and basophils in peripheral blood and has a role in signal transduction, modifying signals from other surface molecules.5 CD45 reacts weakly with mature circulating erythrocytes and platelets.5,16

Clones
The CD19 antibody, clone SJ25C1, is derived from hybridization of SP2/0 mouse cells with spleen cells from BALB/c mice immunized with NALM1 + NALM16 cells.

The CD69 antibody, clone L78, is derived from hybridization of Sp2/0-Ag14 mouse myeloma cells with lymph node cells from BALB/c mice immunized with a CD8+ alloantigen-directed cytotoxic T-lymphocyte (CTL) cell line.17

For Research Use Only. Not for use in diagnostic or therapeutic procedures.
The CD45 antibody, clone 2D1, is derived from hybridization of NS-1 mouse myeloma cells with spleen cells from BALB/c mice immunized with human peripheral blood mononuclear cells (PBMCs).

**Composition**

The CD19, CD69, and CD45 antibodies are each composed of mouse IgG1 heavy chains and kappa light chains.

The BD FastImmune™ reagent is supplied as a combination of CD19 FITC, CD69 PE, and CD45 PerCP in 1.0 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 BD procedure Flow Cytometric Procedure for Assessing Lymphocyte Activation for the complete activation protocol. This procedure follows the basic format described previously. 19

1. After the activation process, pipet 20 µL of BD FastImmune CD19/CD69/CD45 into a labeled tube.

2. Add 50 µL of whole blood.

3. Vortex gently to mix and incubate for 15 minutes in the dark at room temperature.

4. Add 450 µL of 1X BD FACS™ lysing solution (Cat. No. 349202) to the tube.

5. Vortex gently and incubate for 15 to 30 minutes in the dark at room temperature.

**REPRESENTATIVE DATA**

Flow cytometric analysis was performed on lysed whole blood with a gate (R1) set on the CD45⁺ lymphocyte fraction. Laser excitation was at 488 nm.

**Figure 1** Four-hour pokeweed mitogen (PWM)–activated CD45⁺ lysed whole blood analyzed with a BD FACScan™ 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.

THE PRODUCTS SOLD HEREUNDER ARE WARRANTED ONLY TO CONFORM TO THE QUANTITY AND CONTENTS STATED ON THE LABEL OR IN THE PRODUCT LABELING AT THE TIME OF DELIVERY TO THE CUSTOMER. BD DISCLAIMS HEREBY ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE AND NONINFRINGEMENT. BD’S SOLE LIABILITY IS LIMITED TO EITHER REPLACEMENT OF THE PRODUCTS OR REFUND OF THE PURCHASE PRICE. BD IS NOT LIABLE FOR PROPERTY DAMAGE OR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING PERSONAL INJURY, OR ECONOMIC LOSS, CAUSED BY THE PRODUCT.

REFERENCES


**PATENTS AND TRADEMARKS**

BD, BD Logo and all other trademarks are property of Becton, Dickinson and Company. © 2015 BD