

Analyte Specific Reagent.

Analytical and performance characteristics are not established.

SPECIFICITY

The CD19 antigen (also called B4) is a type I membrane glycoprotein with a molecular weight of 95 kDa (1, 2).

Its extracellular domain comprises 280 amino acids organized as two C2-type Ig-like domains separated by a smaller potentially disulfide-linked domain. The extensive cytoplasmic domain of CD19 contains nine conserved tyrosine residues, and several of these are located within potential src-homology region 2 (SH2)-binding sites.

CD19 is a signal transduction molecule that regulates lymphocyte development, activation, and differentiation (3, 4).

The molecule is expressed on all normal B lymphocytes including pro-B lymphocytes, but is lost in maturation to plasma cells (3, 5).

It is also found on the surface of follicular dendritic cells, on the early cells of myelomonocytic lineage and on most stabilized B cell lines. It is not present on normal T lymphocytes, NK cells, monocytes, and granulocytes.

CD19 can be associated within the membrane to form hetero-oligomeric structures with other surface molecules including CD21, the complement receptor type 2 (CR2), and CD81 (TAPA-1) (6). The extracellular and transmembrane domains of CD19 are required for the interaction of this molecule with CD21 and CD81. Co-ligation of the CD19-CD21-CD81 complex with the surface IgM-B-cell antigen receptor (BCR) leads to the phosphorylation of CD19 by Syk (6, 7), followed by the recruitment, through tyrosine phosphorylated CD19, of positive signal transduction effectors such as phosphatidylinositol 3 kinase (PI3 kinase), Lyn, and Fyn (8, 9).

In vitro studies show that the CD19 antibodies have an inhibitory effect on the activation and proliferation of B lymphocytes. They also inhibit the B cell response after co-stimulation by anti-immunoglobulin and interleukin 4.

The J3-119 monoclonal antibody (mAb) reacts with B lymphocytes, not with T lymphocytes, monocytes or granulocytes. It stains mantle-zone and germinal-center lymphoid cells, as well as follicular dendritic cells. Plasma cells are negative.

The J3-119 mAb has been assigned to the CD19 cluster of differentiation during the fourth HLDA Workshop on Human Leucocyte Differentiation Antigens held in Vienna, Austria in 1989 (1, 2).

REAGENT

IOTest CD19-APC-Alexa Fluor 750
Conjugated antibody
PN A78838 - 50 tests - Liquid - 10 µL/test*

Clone	J3-119
Isotype	IgG1, Mouse
Immunogen	SKLY 18 Lymphoma
Hybridoma	NS1 x spleen B cells
Source	Ascites fluid
Purification	Affinity chromatography
Conjugation	Allophycocyanin -Alexa Fluor 750 (APC-Alexa Fluor 750)
Molar Ratio	APC-Alexa Fluor 750 / Ig : 0.5 - 1.5
Fluorescence	Excites at 633/638 nm Emits at 775 nm

REAGENT CONTENTS

This antibody is provided in phosphate-buffered saline, containing 0.1% sodium azide and 2 mg/mL bovine serum albumin.

STATEMENTS OF WARNING

1. This reagent contains 0.1% sodium azide. Sodium azide under acid conditions yields hydrazoic acid, an extremely toxic compound. Azide compounds should be flushed with running water while being discarded. These precautions are recommended to avoid deposits in metal piping in which explosive conditions can develop. If skin or eye contact occurs, wash extensively with water.
2. Specimens, samples and all material coming in contact with them should be considered potentially infectious and disposed of with proper precautions.
3. Never pipet by mouth and avoid contact of samples with skin and mucous membranes.
4. Do not use antibody beyond the expiration date on the label.
5. Do not expose reagents to strong light during storage or incubation.
6. Avoid microbial contamination of reagents or incorrect results might occur.
7. Use good laboratory practices when handling this reagent.

STORAGE CONDITIONS AND STABILITY

This reagent is stable up to the expiration date when stored at 2 – 8°C. Do not freeze.

REAGENT PREPARATION

No reconstitution is necessary. This monoclonal antibody may be used directly from the vial. Bring reagent to 18 – 25°C prior to use.

PRECAUTIONS

Due to the tandem structure of the fluorochrome, APC-Alexa Fluor 750 also emits light at 660 nm. This secondary emission peak varies from lot-to-lot of APC-Alexa Fluor 750. Therefore, for multi-color analysis, the compensation matrix should be carefully checked when changing the lot of a APC-Alexa Fluor 750-conjugate.

SELECTED RESEARCH REFERENCES

1. "CD Guide " Compiled by the organizing committee, 1989, Leucocyte Typing IV, White Cell Differentiation Antigens. W. Knapp, et al., Eds., Oxford University Press, 1078.
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8. Tedder, T.F., Zhou, L.J., Engel, P., "The CD19/CD21 signal transduction complex of B lymphocytes", 1994, Immunol. Today, 15, 437-442.
9. Kurosaki, T., "Molecular mechanisms in B cell antigen receptor signaling", 1997, Curr. Opin. Immunol., 9, 309-

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Printed in France.

Made in France.

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(*): 10 µL is the quantity of product sufficient to stain
5 x 10⁵ cells in a standard immunofluorescence assay