

Analyte Specific Reagent.

Analytical and performance characteristics are not established.

SPECIFICITY

The CD5 antigen is a single-chain transmembrane glycoprotein with a molecular weight of 67 kDa (1, 2).

The CD5 molecule is expressed at the surface of mature T lymphocytes, by the majority of thymocytes and by a sub-population of B lymphocytes (1 – 3). Its expression is not found in granulocytes, monocytes and platelets (3). The CD5 antigen is the ligand for the B-lymphocytes cell-surface protein CD72 (4). The CD5 / CD72 interactions contribute to T and B lymphocyte communication by cell-cell contact. These interactions are involved in the regulation of T and B lymphocyte activation and proliferation (5, 6).

B lymphocytes can be divided into so-called B-1 lymphocytes and B-2 (or conventional B) lymphocytes based on differential anatomical localization, functional characteristics and gene expression (7). The B-1 lymphocyte subset is divided into B-1a and B-1b subpopulations, which do or do not express the CD5 antigen respectively (7).

The B-1a lymphocytes may arise from a non conventional B lineage (independent of bone marrow) (7 – 9). This CD5+ B lymphocyte subset expresses immunoglobulin with inherent low affinities for self-antigens (8, 9).

The BL1a monoclonal antibody was assigned to CD5 during the 3rd HLDA Workshop on Human Leucocyte Differentiation Antigens, held in Oxford, England, in 1986 (Code WS: 520, Section T) (1, 2).

REAGENT

IOTest CD5-ECD Conjugated Antibody
PN A33096 – Liquid 1 mL
– 10 µL / test*.

Clone	BL1a
Isotype	IgG2a, mouse
Immunogen	Lymphocytes from the human thoracic duct
Hybridoma	Myeloma SP2/0-Ag 1.4 x Balb/c spleen cells
Source	Ascites fluid
Purification	Ion exchange or affinity chromatography

Conjugation The Ig is conjugated to a tandem dye constituted of R-phycoerythrin covalently linked to texas red at 0.8-1 mole of ECD[™] per mole of Ig.

Excitation wavelength: 488 nm
Maximum emission wavelength: 613 nm
Main emission color: Red

REAGENT CONTENTS

This reagent is provided in phosphate-buffered saline containing 0.1% sodium azide (NaN₃) as preservative, and 2 mg/mL bovine serum albumin (BSA).

STATEMENT OF WARNINGS

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 excessively with water.
2. Specimens, samples and all material coming in contact with them should be handled as if capable of transmitting infection 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 reagent beyond the expiration date on the vial label.
5. Minimize exposure of reagent to light during storage or incubation.
6. Avoid microbial contamination of reagent or erroneous results may occur.
7. Use good laboratory practices when handling this reagent.

STORAGE CONDITIONS AND STABILITY

This reagent is stable up to the expiration date printed on the vial label when stored at 2 – 8°C in the dark. Do not freeze. Minimize exposure to light.

REAGENT PREPARATION

No preparation is necessary. This reagent is used directly from the vial. Bring reagent to 18 – 25°C prior to use.

SELECTED RESEARCH REFERENCES

1. Horejsi, V., Angelisova, P., "Comparatives biochemical studies on the Workshop CD5 and CD3 panel antibodies", 1987, Leucocyte Typing III, White Cell Differentiation Antigens, McMichael A.J., et al., Eds., Oxford University Press, 197.
2. Disanto, J.P., Small, T.N., Dupont, B., Flomenberg, N., Knowles, R.W., "Analysis of human CD8 and CD5 antigens expressed on mouse L-lines", 1987, Leucocyte Typing III, White Cell Differentiation Antigens, McMichael A.J., et al., Eds., Oxford University Press, 210-214.
3. Reiter, C., "Cluster report : CD5", 1989, Leucocyte Typing IV, White Cell Differentiation Antigens. W. Knapp, et al., Eds., Oxford University Press, 331-332.
4. Van de Velde, H., von Hoegen, I., Luo, W., Parnes, J.R., Thielemans, K., "The B-cell surface protein CD72/Lyb-2 is the ligand for CD5", 1991, Nature, 351, 662-665.
5. Tarakhovskiy, A., Kanner, S.B., Hombach, J., Ledbetter, J.A., Müller, W., Killeen, N, Rajewsky, K., "A role for CD5 in TCR-mediated signal transduction and thymocyte selection", 1995, Science, 269, 535-537.
6. Casali, P., Notkins, A.L., "CD5+ B lymphocytes, polyreactive antibodies and the human B-cell repertoire", 1989, Immunol. Today, 10, 364-368.
7. Kantor, A.B., "The development and repertoire of B-1 cells (CD5 B cells)", 1991, Immunol. Today, 12, 389-391.
8. UytdeHaag, F., Van Der Heijden, R., Osterhaus, A., "Maintenance of immunological memory : a role for CD5+ B cells ?", 1991, Immunol. Today, 12, 439-442.
9. Borrello, M., Phipps, R., "The B/macrophage cell : An elusive link between CD5+ B lymphocytes and macrophages", 1996, Immunol. Today, 17, 471-475.

PRODUCT AVAILABILITY

IOTest CD5-ECD Conjugated Antibody
PN A33096 – Liquid 1 mL
– 10 µL / test*.

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

IOTest[®] CD5-ECD

PN A33096 – Liquid 1 mL – 10 µL / test* – Clone BL1a

For additional information in the USA, call 800-526-7694.
Outside the USA, contact your local Beckman Coulter representative.

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