IOTest® CD7-PC7

PN A46526 – 1 mL Liquid – 10 µL / test* – Clone 8H8.1

Analyte Specific Reagent.
Analytical and performance characteristics are not established.

SPECIFICITY

The CD7 antigen is a membrane-embedded glycoprotein with a molecular weight of 40 kDa (1). The extracellular region of the molecule is composed by a single immunoglobulin-like domain, and an extracellular sequence able to be O-glycosylated. The intracytoplasmic tail interacts with the lipid kinase phosphatidylinositol 3-kinase (PI3-kinase) (2). The CD7 molecule is expressed at an early stage of T lineage ontogeny, during the extrathymic prothymocytic formation. CD7 expression persists throughout T-lymphocytes differentiation defining thus CD7 as a pan-T marker (1, 3, 4). The CD7 glycoprotein is also expressed on thymocytes, on the majority of resting T-lymphocytes, and Natural Killer cells (NK), and on a subset of pre-B lymphocytes and B lymphocytes from foetal bone marrow (1, 5). CD7 expression is also detected on pluripotent hematopoietic stem cells (1).
Mature B-lymphocytes, cells from erythroid, myeloid and megacaryocytic lineage does not express the CD7 molecule (1, 6).
The CD7 molecule is involved in T lymphocytes activation (1). Its expression may be quantitatively up-regulated on stimulated T lymphocytes (1, 6).
The 8H8.1 monoclonal antibody has been assigned to the CD7 cluster of differentiation during the 2nd International Workshop on Human Leucocyte Differentiation Antigens in Boston, USA, in 1984 (7).

REAGENT

IOTest CD7-PC7 Conjugated Antibody
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Clone	8H8.1
Isotype	IgG2a, mouse
Immunogen	Human thymocytes
Hybridoma	X63-Ag8.653 x Balb/c
Source	Ascites fluid
Purification	Ion exchange or affinity chromatography
Conjugation	PC7 (Phycoerythrin-Cyanine 7)
Molar Ratio	PC7 / protein: 0.5 – 1.5
Fluorescence	
PC7 (far red)	Excites at 486 – 580 nm Emits at 750 – 810 nm
Buffer	2 mg/mL bovine serum albumin in phosphate-buffered saline containing 0.1% sodium azide.

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. All specimens and samples must be considered as potentially infectious and must be handled with care (in particular: the wearing of protective gloves, gowns and goggles).
3. Do not expose reagents to strong light during storage or incubation.
4. Avoid microbial contamination of reagents or incorrect results might occur.
5. Avoid contact of samples with skin mucosa and eyes. Never pipet by mouth
6. Do not use reagent beyond the expiration date on the vial label.
7. Let it come to room temperature (18 – 25°C) before use.
8. Use general 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. Minimize exposure to light.

EVIDENCE OF DETERIORATION

Any change in the physical appearance of this PC7-labeled reagent (clear, slightly pink to redish liquid) or any major variation in values obtained for control samples may indicate deterioration and the reagent should not be used.

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, PC7 also emits light at 575 nm. This secondary emission peak varies from lot-to-lot of PC7. Therefore, for multi-color analysis, the compensation matrix should be carefully checked when changing the lot of a PC7-conjugate.

SELECTED RESEARCH REFERENCES

1. Chang, K.L., Weiss, L.M., "CD7 : a review", 1994, Appl. Imunohistochem., 3, 2, 146-156.
2. Lee, D.M., Patel, D.D., Pendergast, A.M., Haynes, B.F., "Functional association of CD7 with phosphatidylinositol 3-kinase: Interaction via a YEDM motif", 1996, Int. Immunol., 8, 8, 1195-1203.
3. Civin, C.I., Gore, S.D., "Antigenic analysis of hematopoiesis : a review", 1993, J. Hematotherapy, 2, 137-144.
4. Mossalayi, D., Dalloul, A.H., Bertho, J.M., Lecron, J.C., De Laforest, P.G., Debre, P., "In vitro differentiation and proliferation of purified human thymic and bone marrow CD7+CD2- T-cell precursors", 1990, Exp. Hematol., 18, 326-331.
5. Grümayer, E.R., Griesinger, F., Hummel, D.S., Brunning, R.D., Kersey, J.H., "Identification of novel B-lineage cells in human fetal bone marrow that coexpress CD7",1991, Blood, 1, 77, 64-68.
6. Lazarovits, A.I., Colvin, R.B., Camerini, D., Karsh, J., Kurnick, J.T., "Modulation of CD7 is associated with T-lymphocyte function", 1987, Leucocyte Typing III, White Cell Differentiation Antigens, A.J. McMichael, 219-223.
7. Palker, T.J., Scearce, R.M., Hensley, L.L., Ho, W., Haynes, B.F., "Comparison of the CD7 (3A1) group of T cell workshop antibodies", 1985, Leucocyte Typing II, Human T lymphocytes, Reinherz, E.L., et al. Eds., 303-313.

PRODUCT AVAILABILITY

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TRADEMARKS

Manufactured by:
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(*): 10 µL is the quantity of product sufficient to stain 5×10^5 cells in a standard immunofluorescence assay