

Analyte Specific Reagent.

Analytical and performance characteristics are not established.

SPECIFICITY

The CD45 family of molecules regroups single type I transmembrane glycoproteins with molecular weights ranging from 180 to 220 kDa (1).

The CD45 proteins are all coded by a single gene composed of 33 exons (1). Differential splicing of exons 4, 5 and 6 (which encode A, B, and C determinants respectively) generates at least five isoforms of the CD45 protein (i.e. ABC, AB, BC, B and O) identified by relevant antibodies (2). Antibodies reactive with all five isoforms are clustered as CD45 (CD45 "non-restricted" or pan-CD45). Antibodies reactive with restricted epitope are clustered as CD45R. The CD45RO antibodies recognize the isoform which lacks the expression of exons A, B and C (1).

The CD45 protein is composed by a large cytoplasmic region with two tyrosine phosphatase domains. The extracellular region distal to the membrane represented by A, B and C determinants contains potential sites for O-linked glycosylation. The extracellular region proximal to the membrane is probably constituted by three fibronectin type III domains with numerous N-linked carbohydrate sites (2, 3). CD45 is expressed on the surface of all nucleated hematopoietic cells (2). Mixed expression of restricted forms of CD45 among human peripheral T lymphocytes define naive (virgin or resting) CD45RA-positive lymphocytes and memory (primed or activated) CD45RO-positive cells (4). Furthermore, the percentage of CD45RO-positive cells increases with aging (5). CD45RO is weakly expressed on monocytes and granulocytes (2). The UCHL1 monoclonal antibody (mAb) recognizes the 180 kDa isoform of the CD45 which corresponds to the CD45RO restricted form (6, 7). UCHL1 mAb was assigned to the CD45RO cluster of differentiation at the IVth International Workshop on Human Leucocyte Differentiation Antigens in Vienna, Austria, in 1989 (6).

REAGENT

IOTest CD45RO-PC7
Conjugated antibody
PN B13648 - 0.5 mL - Liquid - 10 µL/test

Clone UCHL1
Isotype IgG2a, Mouse
Immunogen Human IL-2 dependent T-cell line
Hybridoma X63 x balb/c
Source Ascites fluid or supernatant of in vitro cultured hybridoma cells.
Purification Affinity chromatography
Conjugation R Phycoerythrin-Cyanine 7 (PC7)

Molar Ratio PC7 / Ig : 0.5 - 1.5
Fluorescence Excites at 488 nm
Emits at 770 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 excessively 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 AND HANDLING CONDITIONS AND STABILITY

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

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4. Callard, R.E., Gearing, A.J.H., "The cytokines and their receptors: Interleukins IL-2", 1994, *The Cytokine FactsBook*, Academic Press, 39-45.
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7. Terry, L.A., Brown, M.H., Beverley, P.C.L., "The monoclonal antibody, UCHL1, recognizes a 180,000 MW component of the human leucocyte-common antigen, CD45", 1988, *Immunology*, 64, 331-336.

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