

Analyte Specific Reagent.

Analytical and performance characteristics are not established.

SPECIFICITY

The CD4 antigen is a monomeric transmembrane glycoprotein of the Ig superfamily, with a molecular weight of 59 kDa. The intracytoplasmic tail of CD4 is essential for interaction with Lck (1). The CD4 molecule is expressed on a specific subset of peripheral blood T lymphocytes named "helper" T (Th) cells or T4 lymphocytes (2, 3). It is expressed on the majority of the thymocytes, where it is frequently co-expressed with CD8 (4). CD4 is also expressed on non-T cells like the monocytes and the eosinophils. All the monocytes carry the CD4 antigen, although at a lower density than on T4 lymphocytes.

CD4 acts as an accessory molecule to the T cell receptor (TcR) complex during T-cell activation restricted to the major histocompatibility complex (MHC) class II. Studies demonstrated that tetramerisation of CD4 is required for MHC class II-dependent binding (5).

The T lymphocyte subset that expresses CD4 is involved in T-T, T-B, and B-macrophage cellular interactions (6).

Other studies suggest that CD4 should function as the receptor for IL-16 (7). IL-16 is a chemoattractant factor for CD4⁺ T cells (8), as well as for monocytes and eosinophils (7). IL-16 seems also to be a growth factor for CD4⁺ T lymphocytes, but is not able to induce cell division (7).

The 13B8.2 monoclonal antibody (mAb) recognizes an epitope located within the V1 Ig-like domain of the CD4 antigen. Epitope mapping studies using site-directed mutants, showed that the 13B8.2 mAb is affected only by mutation at residues 88-89.

The 13B8.2 mAb has been assigned to the CD4 cluster of differentiation at the 3rd International Workshop on Human Leucocyte Differentiation Antigens in Oxford, England, in 1986 (9).

REAGENT

IOTest CD4-PC5.5 Conjugated antibody
PN B16491 - 0.5 mL - Liquid - 10 µL/test

Clone	13B8.2
Isotype	IgG1, Mouse
Immunogen	Human thymocytes
Hybridoma	NS1 x balb/c
Source	Ascites fluid or supernatant of in vitro cultured hybridoma cells.
Purification	Affinity chromatography
Conjugation	R Phycoerythrin-Cyanine 5.5 (PC5.5)
Molar Ratio	PC5.5 / Ig : 0.5 - 1.5
Fluorescence	Excites at 488 nm Emits at 692 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, PC5.5 also emits light at 575 nm. This secondary emission peak varies from lot-to-lot of PC5.5. Therefore, for multi-color analysis, the compensation matrix should be carefully checked when changing the lot of a PC5.5-conjugate.

SELECTED RESEARCH REFERENCES

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8. Cruikshank, W.W., Center, D.M., Nisar, N., Natke, B., Theodore, A.C., Kornfeld, H., "Molecular and functional analysis of a lymphocyte chemoattractant factor: Association of biologic function with CD4 expression", 1994, *Proc. Natl. Acad. Sci. USA*, 91, 5109-5113.
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