

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 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 (6).

REAGENT

IOTest CD4-Krome Orange
Conjugated antibody
PN A96417 - 0.5 mL - Liquid - 10 µL/test*

Clone	13B8.2
Isotype	IgG1, Mouse
Immunogen	Thymocytes
Hybridoma	NS1 x balb/c
Source	Ascites fluid
Purification	Affinity chromatography
Conjugation	Krome Orange
Molar Ratio	Krome Orange / Ig : 8.9 - 11.9
Fluorescence	Excites at 405 nm Emits at 528 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 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.

SELECTED RESEARCH REFERENCES

1. Ryan, T.C., Cruikshank, W.W., Kornfeld, H., Collins, T.L., Center, D.M., "The CD4-associated tyrosine kinase p56lck is required for lymphocyte chemoattractant factor-induced T lymphocyte migration", 1995, J. Biol. Chem., 29, 270, 17081-17086.

2. Hannel, I., Erkeller-Yuksel, F., Lydyard, P., Deneys, V., DeBruyère, M., "Developmental and maturational changes in human blood lymphocyte subpopulations", 1992, Immunol. Today, 13, 215-218.
3. Sprent, J., "T lymphocytes and the thymus", 1989, Fundamental Immunology, Chap 4, 2nd Ed., 69-93.
4. Miceli, M.C., Parnes, J.R., "The roles of CD4 and CD8 in T cell activation", 1991, Immunol., 3, 133-141.
5. König, R., Shen, X., Germain, R.N., "Involvement of both major histocompatibility complex class II alpha and beta chains in CD4 function indicates a role for ordered oligomerization in T cell activation", 1995, J. Exp. Med., 182, 779-787.
6. Taylor, G.M., Williams, A., Morten, J., Morten, H., "Analysis of CD4 monoclonal antibodies using human X mouse hybrid cell-lines OKT4", 1987, Leucocyte Typing III, White Cell Differentiation Antigens, A.J. McMichael, 234-238.

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