IOTest® CD2-APC

PN A60794 - 100 tests - Liquid - 10 µL / test* - Clone 39C1.5

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

SPECIFICITY

The CD2 antigen (1) has been formerly described as the sheep E-rosette receptor and is alternatively known as T11 antigen or leucocyte function-associated molecule 2 (LFA-2). It is a 50 kDa single chain type I transmembrane glycoprotein that comprises two external domains belonging to the immunoglobulin superfamily (IgSF) (2). Crystallographic studies of soluble, deglycosylated forms of rat and human CD2 molecules (3, 4), revealed that the N-terminal, distal domain 1 of the molecule is a V-type IgSF domain, and that the proximal domain 2 is a C-type IgSF domain. The V-type domain 1 lacks the usually conserved disulphide bonds between the beta sheets. The extracellular segment includes at least three N-glycosylation sites, believed to be involved in the interactions with the CD2 ligands. CD2 has a relatively large cytoplasmic domain which is required for the activation produced by certain combinations of CD2 antibodies. Signaling molecules, such as Fyn, Lck and the PI3-kinase, have been reported to associate with the intracellular domain of CD2 (5).

The first CD2 ligand identified was CD58 (LFA-3), a heavily glycosylated molecule of 70 kDa, broadly expressed on leucocytes, erythrocytes and endothelial cells (6). The binding site for CD58 lies on one face of the first domain of human CD2 (7). In addition to CD58, there is evidence that CD48 and CD59 may be ligands for CD2. The CD2 molecule is also able to interact with CD48, but with considerably weaker affinity than with CD58 (8).

The CD58-CD2 interaction is a well known component of intercellular adhesion and costimulatory signaling in T cells (6, 9). In contrast, little is known about the physiological roles of the other putative ligands (1). CD2 has been described as being involved in the regulation of human T-cell cytokine production (10), and in a Fas-independent induced apoptosis of activated human peripheral T cells (11 – 13). CD2 is present on all human non-B peripheral lymphocytes, on the majority of thymic T cells (14), and on a subset of thymic B cells.

Several epitopes can be distinguished on the CD2 molecule (15). The 39C1.5 monoclonal antibody, also known as CD2.9 (16), reacts with the T11-1 group of epitopes.

It has been assigned to the CD2 cluster of differentiation at the 2nd International Workshop on Human Leucocyte Differentiation Antigens in Boston, USA, in 1984 (17).

REAGENT

IOTest CD2-APC Conjugated Antibody
PN A60794 - 100 tests – Liquid - 10 µL/test*.

Clone	39C1.5
Isotype	IgG2a, Rat
Immunogen	Human PHA-stimulated lymphocytic blasts
Hybridoma	P3-X63-Ag.8.653 x rat spleen cells
Source	Ascites
Purification	Ion exchange or affinity chromatography
Conjugation	Allophycocyanin (APC)
Molar Ratio	APC / Ig 0.5 – 1.5
Fluorescence	Excites at 600 – 655 nm Emits at 650 – 680 nm

REAGENT CONTENTS

This antibody is provided in phosphate-buffered saline, containing 0.1% sodium azide and 0.2% 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 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 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

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

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10. Holter, W., Schwarz, M., Cerwenka, A. Knapp, W., "The role of CD2 as a regulator of human T-cell cytokine production", 1996, Immunol. Rev., 153, 107-122.
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14. Bernard, A., Brottier, P., Georget, E., Lepage, V., Boumsell, L., "The epitopic dissection of the CD2 defined molecule: relationship of the second workshop antibodies in terms of reactivities with leukocytes, rosette blocking properties, induction of positive modulation of the molecule, and triggering T cell activation", 1985, Leucocyte Typing II, Human T lymphocytes, Reinherz, E.L., et al. Eds., 55-59.
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