

# Monoclonal Antibody IOTest®CD152 -PE

PN IM2282- 100 tests – Liquid - 20 µL/test - Clone BN13

For Research Use Only. Not for use in diagnostic procedures.

## SPECIFICITY

The CD152 antigen, also called CTLA-4 for cytolytic T-lymphocyte-associated antigen 4 is a member of the Ig superfamily (1) and its extracellular domain exhibits a single Ig V-like region.

CD152 molecule has a molecular weight close to 45 kDa (2) that is expressed as a disulfide-linked homodimer (2, 3) or as a monomer (4).

CD152 belongs to the CD28 receptor family (4, 5) and shows similar (and evolutionarily conserved) cytoplasmic tails, and 31% homology at the amino acid level (4) with CD28. The gene for CD152 maps to the same chromosomal band (2q33, in humans) as the CD28 gene (5).

Interestingly, both molecules interact with the same ligands, namely CD80 antigen (B7.1) and CD86 antigen (B7.2) (6). However, the avidity of interaction of CD80 and CD86 for CD28 is about 20-fold lower than for CD152 (2, 7).

In contrast to CD28, which is expressed on 80% of human peripheral blood T cells, CD152 is not constitutively expressed on the surface of T cells, even if the molecule is often present in the cytoplasm. It is lately and transiently detectable on the membrane, after T-cell activation. The surface expression of CD152 peaks 3 days after *in vitro* activation (8) and drops to undetectable levels 4 days later. Moreover, only low levels of CD152 are present at the surface of the activated cells at the maximum of expression (9).

Originally, CD28 and CD152 were both considered as costimulatory effectors in T-cell activation (8, 10). However, recent studies highlight an inhibitory role for CD152 (11): It was shown to down-regulate CD28-induced T-cell activation (7, 12), and it is also suspected to be involved in induction of apoptosis of human T cells (13). In the absence of CD152 expression, activated T cells can spontaneously proliferate in mice (14).

Additionally, CD152 antigen was recently reported to be expressed on human B cells at even higher levels than on activated T cells, when cultured with activated T cells, using mixed CD2 activating monoclonal antibodies (15).

Immunohistological studies on human lymphoid tissues have shown that the BNI3 monoclonal antibody reacts exclusively with  $\alpha\beta^+$  T cells (16).

In germinal centers, CD4<sup>+</sup> helper T cells are mostly CTLA-4<sup>+</sup> (70-90%) (17). The intracellular distribution of CTLA-4 is primarily concentrated in cytoplasmic vesicles (17).

The BN13 monoclonal antibody was assigned as CD152 during the VIth International Workshop on Human Leukocytes Differentiation Antigen (HLDA) held in Kobe, Japan, in 1997 (17).

## REAGENT

IOTest CD152-PE Conjugated Antibody  
PN IM2282 - 100 tests - Liquid - 20µL/test

<b>Clone</b>	BN13
<b>Isotype</b>	IgG2a, Mouse
<b>Immunogen</b>	Human CTLA-4 / human IgG heavy chain fusion protein (CTL-4/Ig)
<b>Hybridoma</b>	P3X63-Ag8.653 myeloma cell x Balb/c spleen cell
<b>Source</b>	Ascites fluid
<b>Purification</b>	Protein A affinity chromatography
<b>Conjugation</b>	R Phycoerythrin (PE)
<b>Molar Ratio</b>	PE / Ig : 0.5 - 1.5
<b>Fluorescence</b>	Excites at 486-509 nm Emits at 568-590 nm

## REAGENT CONTENTS

This antibody is provided in phosphate-buffered saline, containing 0.1% sodium azide and 2 mg/mL bovine serum albumin.

## APPLICATION

Flow cytometry.

## 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.

## PROCEDURE

This reagent is designed for Flow Cytometry. Assay volume: 20 µL per 5 x 10<sup>5</sup> cells in one test, or per 100 µL whole blood.

## SELECTED RESEARCH REFERENCES

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