

# Monoclonal Antibody CD152

PN IM2070 – Purified – Freeze-dried – 0.2 mg – Clone BNI3

**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 BNI3 monoclonal antibody was evaluated during the VIth International Workshop on Human Leukocyte Differentiation Antigens (18).

## REAGENT

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<b>Clone</b>	BNI3
<b>Isotype</b>	IgG2a (Kappa)
<b>Species</b>	Mouse
<b>Immunogen</b>	Human CTLA-4 / human IgG heavy chain fusion protein (CTLA-4/Ig).
<b>Hybridoma</b>	P3/X63 - Ag8.653 myeloma cell x Balb/c spleen cell Ascites fluid
<b>Source</b>	Ascites fluid
<b>Purification</b>	Ion exchange or affinity chromatography
<b>Buffer</b>	1 mg/mL bovine serum albumin in phosphate-buffered saline

## APPLICATION

Studies of CD152 positive cells.  
Flow cytometry.

## STATEMENT OF WARNINGS

1. 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.
2. Never pipet by mouth and avoid contact of samples with skin and mucous membranes.
3. Do not use antibody beyond the expiration date on the label.
4. Avoid microbial contamination of reagents or incorrect results might occur.
5. Use good laboratory practices when handling this reagent.

## STORAGE CONDITIONS AND STABILITY

This freeze-dried form may be stored at 2 – 8°C until the expiration date stated on the vial label.

No preservative has been added.

## REAGENT PREPARATION

Depending of usage, reconstitute with 1 mL of distilled water, with or without 0.1% sodium azide (w/v).

The reconstituted form including 0.1% sodium azide may be stored for up to one month at 2 – 8°C.

The reconstituted form without sodium azide can be stored at –20°C or less, until the expiration date stated on the vial label.

In this case, aliquotting is recommended to avoid multiple freezing / thawing cycles.

## PROCEDURE

For each application, it is recommended to establish the right range of antibody dilutions to be used for the experiment.

## SELECTED RESEARCH REFERENCES

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## PRODUCT AVAILABILITY

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