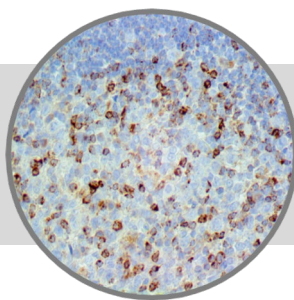


# CTLA-4/CD152

**Clone: BSB-88**

Mouse Monoclonal

**ASR**
**Bio SB**  
 BIOSCIENCE FOR THE WORLD

www.biosb.com

*Inset: IHC of CTLA-4/CD152 on a FFPE Lymph Node Tissue*

## Intended Use

Analyte Specific Reagent.

Analytical and performance characteristics for CTLA-4/CD152 antibody, clone BSB-88, are not established.

## Immunogen

Synthetic peptide corresponding to residues of the C-terminus of the human CTLA-4 protein.

## Summary and Explanation

CTLA4 or CTLA-4 (cytotoxic T-lymphocyte-associated protein 4), classified as CD152, is a protein receptor known to function as an immune checkpoint which downregulates the immune system. CTLA4 is found on the surface of T cells, and acts as an "off" switch when bound to CD80 or CD86 on the surface of antigen-presenting cells. The CTLA-4 protein is encoded by the *Ctla4* gene in mice and the *CTLA4* gene in humans. CTLA4 is a member of the immunoglobulin superfamily that is expressed on the surface of Helper T cells and transmits an inhibitory signal to T cells. CTLA4 is similar to the T-cell co-stimulatory protein, CD28, and both molecules bind to CD80 and CD86, also called B7-1 and B7-2 respectively, on antigen-presenting cells. CTLA4 transmits an inhibitory signal to T cells, whereas CD28 transmits a stimulatory signal. Intracellular CTLA4 is also found in regulatory T cells and may be important to their function. T cell activation through the T cell receptor and CD28 leads to increased expression of CTLA-4, an inhibitory receptor for B7 molecules.

Mutations in this gene have been associated with insulin-dependent diabetes mellitus, Graves' disease, Hashimoto's thyroiditis, celiac disease, systemic lupus erythematosus, thyroid-associated orbitopathy, primary biliary cirrhosis and other autoimmune diseases. Polymorphisms of the CTLA-4 gene are associated with autoimmune diseases such as autoimmune thyroid disease and multiple sclerosis, though this association is often weak. In Systemic Lupus Erythematosus (SLE), the splice variant sCTLA-4 is found to be aberrantly produced and found in the serum of patients with active SLE. Germline haploinsufficiency of CTLA4 leads to CTLA4 deficiency or CHAI disease (CTLA4 haploinsufficiency with autoimmune infiltration), a rare genetic disorder of the immune system. This may cause a dysregulation of the immune system and may result in lymphoproliferation, autoimmunity, hypogammaglobulinemia, recurrent infections, and may slightly increase one's risk of lymphoma.

<b>Antibody Type</b>	Mouse Monoclonal	<b>Clone</b>	BSB-88
<b>Isotype</b>	IgG2a/K	<b>Reactivity</b>	Paraffin, Frozen
<b>Localization</b>	Membranous	<b>Control</b>	Tonsil, Lymph Node, Colon, Thymus
<b>Species Reactivity</b>		Human	

## Presentation

CTLA-4/CD152 is a mouse monoclonal antibody derived from cell culture supernatant that is concentrated, dialyzed, filter sterilized and diluted in buffer pH 7.5, containing BSA and sodium azide as a preservative.

<b>Catalog No.</b>	<b>Antibody Type</b>	<b>Dilution</b>	<b>Volume/Qty</b>
BSB 2880	Tinto Prediluted	Ready-to-Use	3.0 mL
BSB 2881	Tinto Prediluted	Ready-to-Use	7.0 mL
BSB 2882	Tinto Prediluted	Ready-to-Use	15.0 mL
BSB 2883	Concentrated	1:25 - 1:100	0.1 mL
BSB 2884	Concentrated	1:25 - 1:100	0.5 mL
BSB 2885	Concentrated	1:25-1:100	1.0 mL

## Control Slides Available

<b>Catalog No.</b>	<b>Quantity</b>
BSB 2886	5 slides

## Precautions

1. For professional users only. Results should be interpreted by a qualified medical professional.
2. This product contains <0.1% sodium azide (NaN<sub>3</sub>) as a preservative. Ensure proper handling procedures are used with this reagent.
3. Always wear personal protective equipment such as laboratory coat, goggles and gloves when handling reagents.
4. Dispose of unused solution with copious amount of water.
5. Do not ingest reagent. If reagent is ingested, seek medical advice immediately.
6. Avoid contact with eyes. If contact occurs, flush with large quantities of water.
7. Follow safety precautions of the heating device used for epitope retrieval (TintoRetriever Pressure Cooker or similar).
8. For additional safety information refer to Safety Data Sheet for this product.
9. For complete recommendations for handling biological specimens, please refer to the CDC document, "Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories" (see References in this document).

**Storage** Store at 2-8°C

## Stability

**This product is stable up to the expiration date on the product label.** Do not use after expiration date listed on package label. Temperature fluctuations should be avoided. Store appropriately when not in use, and avoid prolonged exposure to room temperature conditions.

## Specimen Preparation

**Paraffin sections:** The antibody can be used on formalin-fixed paraffin-embedded (FFPE) tissue sections. Ensure tissue undergoes appropriate fixation for best results. Pre-treatment of tissues with heat-induced epitope retrieval (HIER) is recommended using Bio SB ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023), ImmunoDNA Retriever with EDTA (BSB 0030-BSB 0033) or ImmunoDNA Digestor (BSB 0108-0112). See reverse side for complete protocol. Tissue should remain hydrated via use of Bio SB Immuno/DNA Washer solutions (BSB 0029 & BSB 0042).

**Frozen sections and cell preparations:** The antibody can be used for labeling acetone-fixed frozen sections and acetone-fixed cell preparations.

## This Antibody has been quality control tested by immunohistochemistry as follows

### Quality Control Procedure

Step	ImmunoDetector AP/HRP	PolyDetector AP/HRP	PolyDetector Plus HRP
Peroxidase/AP Blocker	5 min.	5 min.	5 min
Primary Antibody	30-60 min.	30-60 min.	30-60 min.
1st Step Detection	10 min.	30-45 min.	15 min.
2nd Step Detection	10 min.	Not Applicable	15 min.
Substrate-Chromogen	5-10 min.	5-10 min.	5-10 min.
Counterstain / Coverslip	Varies	Varies	Varies

## Mounting Protocols

For detailed instructions using biodegradable permanent mounting media such as XyGreen PermaMounter (BSB 0169-0174) or organic solvent based resin such as PermaMounter (BSB 0094-0097), refer to PI0174 or PI0097.







## Product Limitations

Due to inherent variability present in immunohistochemical procedures (including fixation time of tissues, dilution factor of antibody, retrieval method utilized and incubation time), optimal performance should be established through the use of positive and negative controls. Results should be interpreted by a qualified medical professional.

## References

- Denizot F, et al. A new member of the immunoglobulin superfamily--CTLA-4. Nature 1987; 328 (6127): 267-70.
- Dariavach P, et al. Human Ig superfamily CTLA-4 gene: chromosomal localization and identity of protein sequence between murine and human CTLA-4 cytoplasmic domains. Eur. J. Immunol. 1988; 18 (12): 1901-5.
- Krummel MF, Allison JP. CD28 and CTLA-4 have opposing effects on the response of T cells to stimulation. J. Exp. Med. 1995. 182 (2): 459-65.
- Kuehn HS, et al. Immune dysregulation in human subjects with heterozygous germline mutations in CTLA4. Science 2014; 345 (6204): 1623-7
- U.S. Department of Health and Human Services: Centers for Disease Control and Prevention. Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories. Supplement / Vol. 61, January 6, 2012.

## Symbol Key / Légende des symboles/Erläuterung der Symbole

	Storage Temperature Limites de température Zulässiger Temperaturbereich		Manufacturer Fabricant Hersteller		Catalog Number Référence du catalogue Bestellnummer
	Read Instructions for Use Consulter les instructions d'utilisation Gebrauchsanweisung beachten		Expiration Date Utiliser jusque Verwendbar bis		Lot Number Code du lot Chargenbezeichnung



69 Santa Felicia Dr., Santa Barbara, CA 93117, USA  
Tel. (805) 692-2768 | Tel. (800) 561-1145 | Fax. (805) 692-2769  
E-mail: sales@biosb.com | Website: www.biosb.com