abcam

ab237712

Anti-CTLA-4/CD152 antibody [CAL49]

Anti-CTLA-4/CD152 antibody [CAL49] (ab237712) is a rabbit monoclonal antibody detecting CTLA-4/CD152 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P**. Suitable for **Human, Mouse, Rhesus monkey**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 20 publications

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	CAL49
Purification technique	Affinity purification Protein A
Concentration	0.405 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purity >99%.

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

Species	Mouse, Rhesus monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Expected

Species	Rhesus monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Not recommended

Species	Mouse, Human, Rhesus monkey
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/400
Notes	-

Species	Human
Dilution info	1/400
Notes	-

Expected

Species	Rhesus monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rhesus monkey
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information CTLA-4/CD152

Function	Inhibitory receptor acting as a major negative regulator of T-cell responses (PubMed:11279501, PubMed:11279502, PubMed:16551244, PubMed:1714933, PubMed:18641304, PubMed:28484017). Acts as a decoy receptor: the affinity of CTLA4 for its natural B7 family ligands, CD80 and CD86, is considerably stronger than the affinity of their cognate stimulatory coreceptor CD28 (PubMed:11279501, PubMed:11279502, PubMed:16551244, PubMed:1714933, PubMed:28484017).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-CTLA4 antibody [CAL49] (ab237712) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P) in Human, Mouse, Rhesus monkey samples.

What is the molecular weight of CTLA4?
Anti-CTLA4 [CAL49] (ab237712) specifically detects a band for CTLA4 (UniProt: P16410) at a molecular weight of 25kDa.

Trusted by the scientific community
Anti-CTLA4 [CAL49] (ab237712) was first used in a scientific publication in 2018 and has been cited over 20 times in peer-reviewed journals.

Reviewed by scientists
Anti-CTLA4 [CAL49] (ab237712) has over 5 independent reviews from customers.

Other related products

We have a range of other formats of antibody clone [CAL49] also available for your convenience: ab237712, Carrier free - ab251599, Alexa Fluor® 647 - ab270127, PE - ab270128, Alexa Fluor® 555 - ab283489

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	CTLA-4 also known as CD152 is an immune checkpoint receptor with a molecular weight of approximately 34 kDa. This protein is expressed on the surface of T-cells especially after activation and sometimes on regulatory T-cells (Tregs). CTLA-4 competes with CD28 for binding to the same ligands CD80 and CD86 on antigen-presenting cells. Unlike CD28 which stimulates T-cell activation CTLA-4 sends inhibitory signals to downregulate immune responses. By doing this CTLA-4 helps maintain immune system homeostasis and prevents autoimmune reactions.
Biological function summary	The CTLA-4 protein functions as a critical regulator of the immune system. It interacts with CD80/CD86 in a complex that effectively transmits inhibitory signals to T-cells. CTLA-4 controls the amplitude of the initial activation of T-cells ensuring that the body's immune responses are kept under control. In regulatory T-cells CTLA-4 engagement contributes to their immunosuppressive functions through which they maintain tolerance to self-antigens and prevent overactive immune reactions.
Pathways	CTLA-4 involves itself in the adaptive immune response pathways specifically the regulation of T-cell activity. CTLA-4's interaction with CD80/CD86 modulates pathways associated with TCR (T-cell receptor) signaling. When CTLA-4 binds its ligands it recruits phosphatases such as SHP-2 that dephosphorylate signaling proteins leading to the downregulation of T-cell interaction. This pathway interaction exemplifies how CTLA-4 acts in concert with proteins like CD28 to finely tune immune responses.
Associated diseases and disorders	CTLA-4 plays a role in autoimmune diseases and cancer. The dysregulation of CTLA-4 function can lead to autoimmune disorders where the immune system attacks the body's own tissue. In cancer tumor cells may manipulate CTLA-4 pathways to evade immune surveillance. Targeted therapies like anti-CTLA-4 antibodies such as ipilimumab have been developed to block CTLA-4 aiming to enhance the immune system's ability to attack cancer cells. These treatments highlight the role of CTLA-4 in balancing immune activity and the potential to alter this balance for therapeutic benefit.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

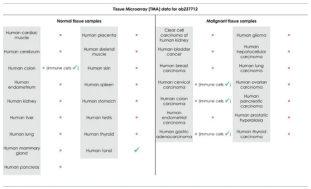
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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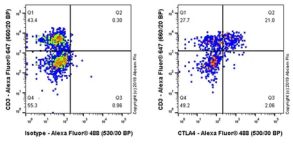
11 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712)

CTLA-4/CD152 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CTLA-4/CD152 antibody

Tissue Microarrays stained for "Anti-CTLA4 antibody [CAL49]" using "ab237712"in immunohistochemical analysis. This table provides a detailed overview of positive (tick mark) and negative (cross mark) staining per sample type tested. The sections were pre-treated using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) for 30 minutes. The sections were incubated with ab237712 for 30 mins at room temperature followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

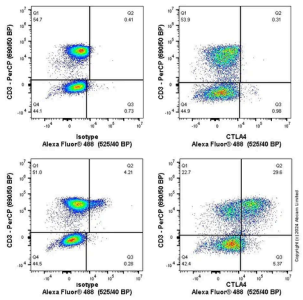


Flow Cytometry (Intracellular) - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712)

CTLA-4/CD152 Flow Cytometry (Intracellular) staining using rabbit Anti-CTLA-4/CD152 antibody

Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed, 0.1% Tween 20 permeabilized human PBMC (peripheral blood mononuclear cell) (treated with 10µg/ml PHA for 2 days) cells labeling CTLA4 with ab237712 at 1/400 (Right) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (Left).
Cells were surface stained with anti-CD3 conjugated to Alexa Fluor® 647. Then fixed with 2% PFA for 10min followed by intracellular staining with rabbit IgG (Left) and ab237712 (Right).

Goat Anti-Rabbit IgG Fc (Alexa Fluor® 488) preadsorbed (ab150097), at 1/2000 dilution was used as the secondary antibody.



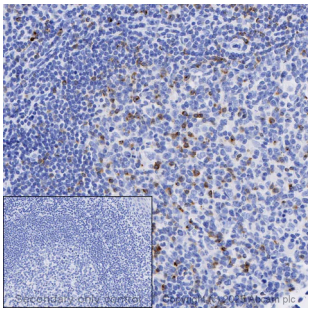
Flow Cytometry (Intracellular) - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712)

CTLA-4/CD152 Flow Cytometry (Intracellular) staining using rabbit Anti-CTLA-4/CD152 antibody

Flow cytometry staining of human peripheral blood mononuclear cells (PBMCs) (top) or PBMCs treated with 5µg/ml PHA for 48 Hours with ab237712 (right) or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (left). PBMCs were incubated for 30 min on ice in 1x PBS containing 10 µg/ml human IgG and 10 % normal goat serum to block FC receptors and non-specific protein-protein interaction. Cells were then fixed and permeabilised with BD Cytofix/Cytoperm™ for 20 min followed by the antibody ab237712 or Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (1x 10^6 in 100 µl at 0.2 µg/ml (1/10,300)) for 30 min at 22°C.

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/2000 for 30min at 22°C.

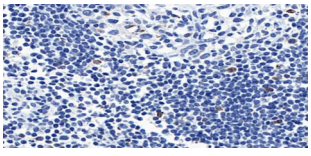
Acquisition of >30000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter. Events were gated on live cells.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712)

CTLA-4/CD152 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human tonsil using rabbit Anti-CTLA-4/CD152 antibody

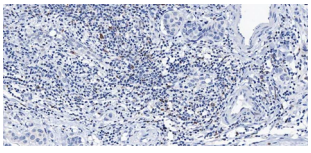
Immunohistochemical analysis of formalin fixed paraffin embedded human tonsil labelling CTLA4 with ab237712 at a concentration of 1µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH8.5 for 32mins. ab237712 Anti-CTLA4 antibody [CAL49] was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control. Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712)

CTLA-4/CD152 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CTLA-4/CD152 antibody

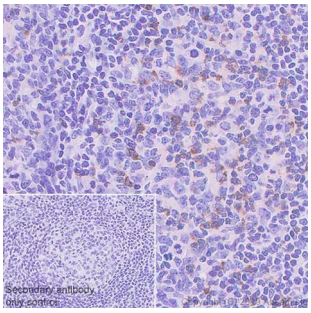
Formalin-fixed, paraffin-embedded human lymph node tissue stained for CTLA4 using ab237712 at 0.25 µg/ml in immunohistochemical analysis.
Incubate with primary antibody for 75 minutes at room temperature.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712)

CTLA-4/CD152 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CTLA-4/CD152 antibody

Formalin-fixed, paraffin-embedded human breast carcinoma tissue stained for CTLA4 using ab237712 at 0.25 µg/ml in immunohistochemical analysis.
Incubate with primary antibody for 75 minutes at room temperature.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712)

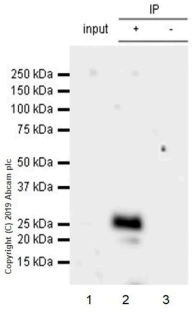
CTLA-4/CD152 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CTLA-4/CD152 antibody

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling CTLA4 with ab237712 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ready to use. Positive staining on human tonsil is observed. Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 30 mins.

The section was incubated with ab237712 for 30 mins at room temperature.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Immunoprecipitation - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712)

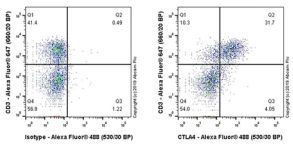
CTLA4 was immunoprecipitated from 0.35 mh human tonsil lysate with ab237712 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab237712 at 1/500 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used as secondary antibody at 1/1000 dilution.
Lane 1: Human tonsil lysate 10 µg (Input).
Lane 2: ab237712 IP in human tonsil lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab237712 in human tonsil lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 30 seconds.

All lanes:
Immunoprecipitation - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712)

Predicted band size: 24 kDa

Observed band size: 25 kDa



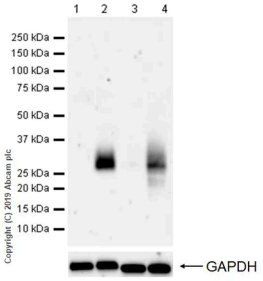
Flow Cytometry (Intracellular) - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712)

CTLA-4/CD152 Flow Cytometry (Intracellular) staining using rabbit Anti-CTLA-4/CD152 antibody

Intracellular flow cytometric analysis of2% paraformaldehyde-fixed, 0.1% Tween 20 permeabilized mouse splenocytes (treated with 2.5µg/ml Concanavalin A (ConA) for 3 days) cells labeling CTLA4

with ab237712 at 1/400 (Right) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (Left).
Cells were surface stained with anti-CD3 conjugated to Alexa Fluor® 647. Then fixed with 2% PFA for 10min followed by intracellular staining with rabbit IgG (Left) and ab237712 (Right).

Goat Anti-Rabbit IgG Fc (Alexa Fluor® 488) preadsorbed (ab150097), at 1/2000 dilution was used as the secondary antibody.



Western blot - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712)

CTLA-4/CD152 Western blot staining using rabbit Anti-CTLA-4/CD152 antibody

Blocking and dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712) at 1/1000 dilution

Lane 1:
Untreated human PBMC (human peripheral blood mononuclear cell) whole cell lysate at 20 µg

Lane 2:
Human PBMC (treated with 10µg/ml PHA for 2 days) whole cell lysate at 20 µg

Lane 3:
Untreated mouse splenocyte whole cell lysate at 20 µg

Lane 4:
Mouse splenocyte (treated with 2.5µg/ml Concanavalin A (ConA) for 3 days) whole cell lysate at 20 µg

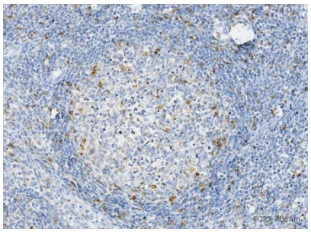
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 24 kDa

Observed band size: 25 kDa

Exposure time: 3min



This image is courtesy of Dr. Chi Ngai Chan

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CTLA-4/CD152 antibody [CAL49] (ab237712)

CTLA-4/CD152 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rhesus monkey tonsil tissue using rabbit Anti-CTLA-4/CD152 antibody

Immunohistochemical analysis of paraffin-embeded Rhesus monkey tonsil tissue labeling CTLA4 with ab251599 followed by Polink 1 Polymer HRP anti-Rabbit IgG.

Heat mediated antigen retrieval-Buffer/Enzyme Used: Dako pH9.

This data was developed using the same antibody clone in a different buffer formulation (ab251599).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.