abcam

ab215206

Anti-FOXP3 antibody [EPR22102-37]

Anti-FOXP3 antibody [EPR22102-37] (ab215206) is a rabbit monoclonal antibody detecting FOXP3 in **Western Blot, Flow Cytometry (Intra), IP**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 60 publications

Lab Essentials | Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR22102-37
Purification technique	Affinity purification Protein A
Specificity	We do not guarantee WB for rat. According to our preliminary WB data, this antibody failed to detect endogenous expression of FOXP3 in the tissues tested in WB, such as thymus. It might work in CD4+CD25+ Treg cells with abundant FOXP3, but we don't have experimental data to support that.
Concentration	0.39 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

mIHC

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

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

Not recommended

Species	Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	According to our preliminary WB data, this antibody failed to detect endogenous expression of FOXP3 in the tissues tested in WB, such as thymus. It might work in CD4+CD25+ Treg cells with abundant FOXP3, but we don't have experimental data to support that.

Species	Human
Dilution info	1/1000
Notes	According to our preliminary WB data, this antibody failed to detect endogenous expression of FOXP3 in the tissues tested in WB, such as thymus. It might work in CD4+CD25+ Treg cells with abundant FOXP3, but we don't have experimental data to support that.

Not recommended

Species	Rat
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

IHC-Fr

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/40
Notes	-

Species	Rat
Dilution info	1/40
Notes	-

Species	Human
Dilution info	1/40
Notes	-

Target data

See full target information FOXP3

Function

Transcriptional regulator which is crucial for the development and inhibitory function of regulatory T-cells (Treg) (PubMed:17377532, PubMed:21458306, PubMed:23947341, PubMed:24354325, PubMed:24722479, PubMed:24835996, PubMed:30513302, PubMed:32644293). Plays an essential role in maintaining homeostasis of the immune system by allowing the acquisition of full suppressive function and stability of the Treg lineage, and by directly modulating the expansion and function of conventional T-cells (PubMed:23169781). Can act either as a transcriptional repressor or a transcriptional activator depending on its interactions with other transcription factors, histone acetylases and deacetylases (PubMed:17377532, PubMed:21458306, PubMed:23947341, PubMed:24354325, PubMed:24722479). The suppressive activity of Treg involves the coordinate activation of many genes, including CTLA4 and TNFRSF18 by FOXP3 along with repression of genes encoding cytokines such as interleukin-2 (IL2) and interferon-gamma (IFNG) (PubMed:17377532, PubMed:21458306, PubMed:23947341, PubMed:24354325, PubMed:24722479). Inhibits cytokine production and T-cell effector function by repressing the activity of two key transcription factors, RELA and NFATC2 (PubMed:15790681). Mediates transcriptional repression of IL2 via its association with histone acetylase KAT5 and histone deacetylase HDAC7 (PubMed:17360565). Can activate the expression of TNFRSF18, IL2RA and CTLA4 and repress the expression of IL2 and IFNG via its association with transcription factor RUNX1 (PubMed:17377532). Inhibits the differentiation of IL17 producing helper T-cells (Th17) by antagonizing RORC function, leading to down-regulation of IL17 expression, favoring Treg development (PubMed:18368049). Inhibits the transcriptional activator activity of RORA (PubMed:18354202). Can repress the

expression of IL2 and IFNG via its association with transcription factor IKZF4 (By similarity).

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

Anti-FOXP3 antibody [EPR22102-37] (ab215206) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), IP, WB in human, mouse, rat samples.

Anti-FOXP3 antibody [EPR22102-37] (ab215206) has been cited over 67 times in peer reviewed journals and is trusted by the scientific community.

Abcams high quality manufacturing and validation processes ensure Anti-FOXP3 antibody [EPR22102-37] (ab215206) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

Anti-FOXP3 antibody [EPR22102-37] (ab215206) has 5 independent reviews from customers.

Anti-FOXP3 antibody [EPR22102-37] (ab215206) specifically detects FOXP3 (UniProt ID: Q9BZS1; Molecular weight: 47kDa) and is sold in a convenient trial size to enable initial testing (20 uL) and larger sizes for subsequent scaling up experiments (100 uL and 1 mL).

Conjugation-ready, carrier free format available for antibody clone EPR22102-37 - ab244242.

FOXP3 is a key transcription factor that regulates the development and function of regulatory T cells (Tregs), which help maintain immune tolerance. In oncology, high FOXP3 expression is often linked to poor prognosis as it can enable tumors to evade the immune system. This makes FOXP3 a potential biomarker for predicting the effectiveness of immunotherapy treatments.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

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

Activity summary	FOXP3 also recognized as Forkhead box P3 is a transcription factor critical for immune system function. It weighs approximately 47 kDa. FOXP3 is mainly expressed in regulatory T cells (Tregs) which play a role in maintaining immune tolerance. Scientists primarily identify its presence in the nucleus where it facilitates transcriptional regulation. Methods like 'FOXP3 IHC' and 'FOXP3 IHC mouse' are useful for detecting this protein in tissue samples while 'FOXP3 antibodies' aid in research on this target. Techniques like 'FOXP3 staining' and 'FOXP3 flow cytometry' further allow for the analysis of its expression and function.
Biological function summary	This transcription factor operates by regulating the expression of a variety of genes involved in Treg cell development and function. FOXP3 can interact with other proteins to form complexes that modulate gene expression. Its role is essential in enabling Tregs to suppress immune responses a process necessary for preventing autoimmunity. The interaction extends to other key regulators within Tregs such as the protein complex 221D which may have overlapping functional responsibilities. 'FOXP3 236a/E7' reflects its genetic variants detectable in different studies providing insights into its biological functions.
Pathways	FOXP3 is a significant player within the immune regulation pathway. It integrates into the TGF-beta signaling pathway in which it controls the expression of genes important for Treg functions. The protein recruits other transcription factors like NF-kB coordinating intricate network regulations within immune cells. FOXP3's activity orchestrates the balance between immune activation and suppression ensuring a well-functioning immune response that prevents overreactions leading to autoimmune conditions.
Associated diseases and disorders	FOXP3 mutations or dysregulation can link to autoimmune diseases like immune dysregulation polyendocrinopathy enteropathy X-linked syndrome (IPEX). This transcription factor's malfunction implicates cancer where inadequate Treg function can either suppress antitumor immunity or result in tumor progression. Proteins such as CTLA-4 which is also involved in immune regulation connect to FOXP3 in these contexts emphasizing FOXP3’s significant role in maintaining immune homeostasis and its impact on disease development.

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.

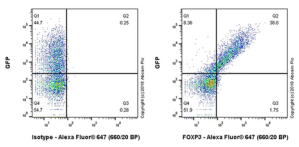
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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

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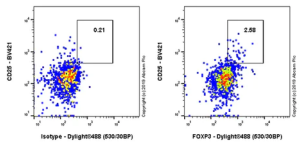
7 product images



Flow Cytometry (Intracellular) - Anti-FOXP3 antibody [EPR22102-37] (ab215206)

FOXP3 Flow Cytometry (Intracellular) staining using rabbit Anti-FOXP3 antibody

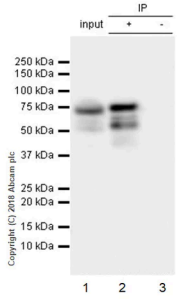
Intracellular flow cytometric analysis of4% paraformaldehyde-fixed, 90% methanol-permeabilized HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) cell line transfected with a GFP-tagged FOXP3 expression construct labeling FOXP3 with ab215206 at 1/40 dilution (Right) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (Left). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 647) (ab150079), at 1/2000 dilution was used as the secondary antibody.



Flow Cytometry (Intracellular) - Anti-FOXP3 antibody [EPR22102-37] (ab215206)

FOXP3 Flow Cytometry (Intracellular) staining using rabbit Anti-FOXP3 antibody

Human PBMCs were stained with Alexa Fluor® 647 conjugated anti-human CD4 and BV421 conjugated anti-human CD25. Cells were then fixed with 2% PFA for 10min and permeabilized with True-Nuclear™ permeabilization buffer, followed by intracellular staining with rabbit IgG (ab172730, Left) or anti-FOXP3 RabMab (Right, 1/40). ab98462, Dylight®488-conjugated goat anti-rabbit IgG was used as the secondary at a dilution of 1/2000.
Gating strategy and expression pattern is consistent with literature (PMID: 27330808).



Immunoprecipitation - Anti-FOXP3 antibody [EPR22102-37] (ab215206)

FOXP3 was immunoprecipitated from 0.35 mg of HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) cells transfected with a GFP-tagged FOXP3 expression construct whole cell lysate with ab215206 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab215206 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5000 dilution.
Lane 1: HEK-293T cells transfected with a GFP-tagged FOXP3 expression construct whole cell lysate 10 µg (Input).
Lane 2: ab215206 IP in HEK-293T cells transfected with a GFP-tagged FOXP3 expression construct whole cell lysate (+).
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab215206 in HEK-293T cells transfected with a GFP-tagged FOXP3 expression construct whole cell lysate (-).

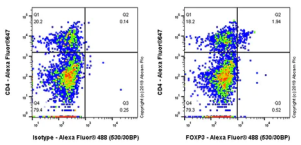
Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 3 seconds.

FOXP3 isoforms have been described in the literature. (PMID: 19568423).

All lanes:
Immunoprecipitation - Anti-FOXP3 antibody [EPR22102-37] (ab215206)

Predicted band size: 47 kDa, 90 kDa

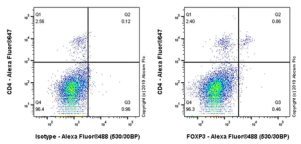
Observed band size: 55-73 kDa



Flow Cytometry (Intracellular) - Anti-FOXP3 antibody [EPR22102-37] (ab215206)

FOXP3 Flow Cytometry (Intracellular) staining using rabbit Anti-FOXP3 antibody

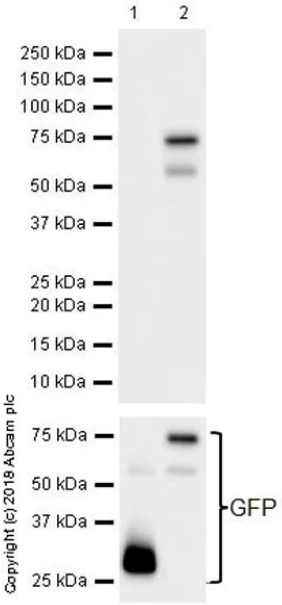
Rat splenocytes were stained with Alexa Fluor® 647 conjugated anti-rat CD4. Cells were then fixed with 2% PFA for 10min and permeabilized with True-Nuclear™ permeabilization buffer, followed by intracellular staining with rabbit IgG (ab172730, Left) or anti-FOXP3 RabMab (Right, 1/40). ab150077, Alexa Fluor®488-conjugated goat anti-rabbit IgG was used as the secondary at a dilution of 1/2000.



Flow Cytometry (Intracellular) - Anti-FOXP3 antibody [EPR22102-37] (ab215206)

FOXP3 Flow Cytometry (Intracellular) staining using rabbit Anti-FOXP3 antibody

Mouse splenocytes were stained with Alexa Fluor® 647 conjugated anti-mouse CD4. Cells were then fixed with 2% PFA for 10min and permeabilized with True-Nuclear™ permeabilisation buffer, followed by intracellular staining with rabbit IgG (ab172730, Left) or anti-FOXP3 RabMab (Right, 1/40). ab150077, Alexa Fluor® 488-conjugated goat anti-rabbit IgG was used as the secondary at a dilution of 1/2000.



Western blot - Anti-FOXP3 antibody [EPR22102-37] (ab215206)

Blocking and dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-FOXP3 antibody [EPR22102-37] (ab215206) at 1/1000 dilution

Lane 1:
HEK-293T (human embryonic kidney) transfected with an empty vector (vector control), containing a GFP-myc tag, whole cell lysate at 10 µg

Lane 2:
HEK-293T transfected with FOXP3 (WT) expression vector containing a GFP-myc tag, whole cell lysate at 10 µg

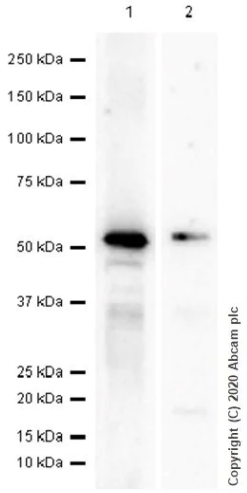
Secondary

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

Predicted band size: 47 kDa

Observed band size: 73 kDa

Exposure time: 6s



Western blot - Anti-FOXP3 antibody [EPR22102-37] (ab215206)

Blocking buffer and concentration: 5% NFDM /TBST
Lane 1:
Western blot - Anti-FOXP3 antibody [EPR22102-37] (ab215206) at 1/200 dilution

Lane 2:
Western blot - Anti-FOXP3 antibody [EPR22102-37] (ab215206) at 1/1000 dilution

All lanes:
Full-length C-MYC/DDK tagged Recombinant Mouse Foxp3 protein 10ng

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 47 kDa

Observed band size: 50 kDa

Exposure time: 180s

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