abcam

ab314043

Anti-TOX antibody [BLR212K] - BSA free

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.8 - 8.6 Preservative: 0.09% Sodium azide Constituents: 98% Borate buffered saline
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human TOX aa 50-100. The exact immunogen used to generate this antibody is proprietary information. Database link O94900
Clone number	BLR212K
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	0.1 µl per 1 x 10^6 cells.

Expected

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

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	-

Species	Mouse
Dilution info	1/100 - 1/500
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	20 µl/1 mg lysate

Expected

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

WB

Tested

Species	Human
Dilution info	1/1000

Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Target data

See full target information TOX

Function

Transcriptional regulator with a major role in neural stem cell commitment and corticogenesis as well as in lymphoid cell development and lymphoid tissue organogenesis (By similarity). Binds to GC-rich DNA sequences in the proximity of transcription start sites and may alter chromatin structure, modifying access of transcription factors to DNA. During cortical development, controls the neural stem cell pool by inhibiting the switch from proliferative to differentiating progenitors. Beyond progenitor cells, promotes neurite outgrowth in newborn neurons migrating to reach the cortical plate. May activate or repress critical genes for neural stem cell fate such as SOX2, EOMES and ROBO2 (By similarity). Plays an essential role in the development of lymphoid tissue-inducer (LTi) cells, a subset necessary for the formation of secondary lymphoid organs: peripheral lymph nodes and Peyer's patches. Acts as a developmental checkpoint and regulates thymocyte positive selection toward T cell lineage commitment. Required for the development of various T cell subsets, including CD4-positive helper T cells, CD8-positive cytotoxic T cells, regulatory T cells and CD1D-dependent natural killer T (NKT) cells. Required for the differentiation of common lymphoid progenitors (CMP) to innate lymphoid cells (ILC) (By similarity). May regulate the NOTCH-mediated gene program, promoting differentiation of the ILC lineage. Required at the progenitor phase of NK cell development in the bone marrow to specify NK cell lineage commitment (By similarity) (PubMed:21126536). Upon chronic antigen stimulation, diverts T cell development by promoting the generation of exhaustive T cells, while suppressing effector and memory T cell programming. May regulate the expression of genes encoding inhibitory receptors such as PDCD1 and induce the exhaustion program, to prevent the overstimulation of T cells and activation-induced cell death (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	Up to 12 months
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	+4°C

Notes

REACH authorisation
Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.
It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

Supplementary info

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

Activity summary	The TOX gene encodes the TOX protein also known as Thymocyte selection-associated high mobility group (HMG) box protein with a molecular weight of approximately 57 kDa. TOX contains a DNA-binding HMG box domain and operates mechanically as a transcription factor. It expresses mainly in the thymus where it plays a significant role in T cell development. TOX also exhibits expression in lymphoid tissues including the spleen and lymph nodes.
Biological function summary	TOX affects T cell maturation and development particularly during thymocyte selection. The protein contributes critically to the decision-making process that determines whether thymocytes become CD4+ or CD8+ T cells. TOX does not assemble into a known complex but interacts with other developmental transcription factors to influence gene expression patterns in immature T cells. Its expression is tightly regulated to ensure proper immune system development.
Pathways	TOX influences key signal transduction pathways that guide T cell lineage development. It integrates into the T cell receptor (TCR) signaling pathway impacting the expression of genes essential for T cell differentiation. TOX interacts with signaling proteins like Notch1 which affects developmental fate decisions in thymocytes. The balance of these pathways maintains immunity homeostasis and correct immune responses.
Associated diseases and disorders	TOX links to conditions involving immune dysregulation such as autoimmune diseases and certain lymphomas. Aberrant expression or dysfunction of TOX may contribute to improper immune cell development leading to pathologies like T cell leukemia. In autoimmune diseases altered TOX levels may impact self-tolerance involving proteins such as FOXP3 which governs regulatory T cell function. Understanding TOX's role in these diseases broadens insights into potential therapeutic targets for immune-related diseases.

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

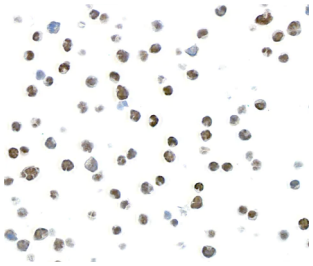
We do not recommend this combination. It is not covered by our product promise.

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.

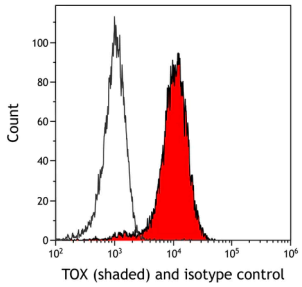
Full details and terms and conditions can be found here:
Terms & Conditions.

5 product images



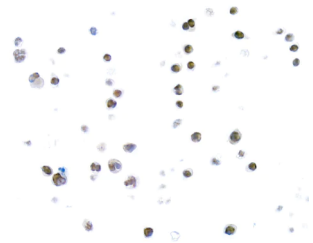
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TOX antibody [BLR212K] - BSA free (ab314043)

FFPE section of MOLT-4 (Human lymphoblastic leukemia cell line) cells. Antibody: Standard version of ab314043 at 1/100 dilution. Secondary: HRP-conjugated goat anti-rabbit IgG.



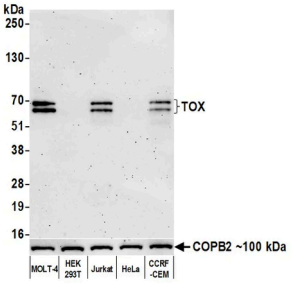
Flow Cytometry (Intracellular) - Anti-TOX antibody [BLR212K] - BSA free (ab314043)

Detection of human TOX in Jurkat cells by Flow Cytometry (Intracellular). Antibody: Standard version of ab314043 (shaded) or isotype control (unshaded). Secondary: DyLight® 488-conjugated goat anti-rabbit IgG.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TOX antibody [BLR212K] - BSA free (ab314043)

FFPE section of BW5147.3 (Mouse cell line) cells. Antibody: Standard version of ab314043. Secondary: HRP-conjugated goat anti-rabbit IgG.



Western blot - Anti-TOX antibody [BLR212K] - BSA free (ab314043)

Samples:Whole cell lysate (10 µg) from MOLT-4, HEK293T, Jurkat, HeLa, and CCRF-CEM cells prepared using NETN lysis buffer. Antibody:Rabbit anti-TOX recombinant monoclonal antibody [BLR212K] (A700-212 lot 1) used at 1:1000. Secondary:HRP-conjugated goat anti-rabbit IgG . Chemiluminescence with an exposure time of 3 minutes. Lower Panel: Rabbit anti-COPB2 antibody (A304-523A).
All lanes:
Western blot - Anti-TOX antibody [BLR212K] - BSA free (ab314043) at 1/1000 dilution

Lane 1:
MOLT-4 (Human lymphoblastic leukemia cell line) whole cell lysate at 10 µg

Lane 2:
HEK-293T (Human epithelial cell line from embryonic kidney transformed with large T antigen) whole cell lysate at 10 µg

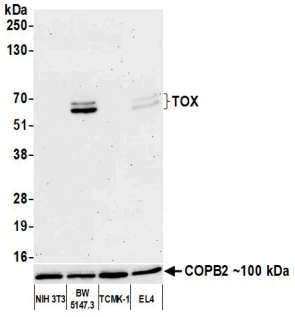
Lane 3:
Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate at 10 µg

Lane 4:
HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 10 µg

Lane 5:
CCRF-CEM (Human lymphoblastoid cell line) whole cell lysate at 10 µg

Secondary

All lanes:
HRP-conjugated goat anti-rabbit IgG



Western blot - Anti-TOX antibody [BLR212K] - BSA free (ab314043)

Samples:Whole cell lysate (10 µg) from NIH 3T3, BW5147.3, TCMK-1, and EL4 cells prepared using NETN lysis buffer. Antibody: Rabbit anti-TOX recombinant monoclonal antibody [BLR212K] (A700-212 lot 1) used at 1:1000. Secondary: HRP-conjugated goat anti-rabbit IgG (A120-101P). Chemiluminescence with an exposure time of 75 seconds. Lower Panel: Rabbit anti-COPB2 antibody (A304-523A
All lanes:
Western blot - Anti-TOX antibody [BLR212K] - BSA free (ab314043) at 1/1000 dilution

Lane 1:
NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate at 10 µg

Lane 2:
BW5147.3 (Mouse cell line) whole cell lysate at 10 µg

Lane 3:
TCMK-1 (Mouse kidney epithelial cell line) whole cell lysate at 10 µg

Lane 4:
EL4 (Mouse T-cell lymphoma cell line) whole cell lysate at 10 µg

Secondary

All lanes:
HRP-conjugated goat anti-rabbit IgG

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