abcam

Product datasheet

Anti-MTH1 antibody [EPR15934-50] - BSA and Azide free ab246327

KO VALIDATED | Recombinant | RabMAb

10 Images

Overview

Product name	Anti-MTH1 antibody [EPR15934-50] - BSA and Azide free
Description	Rabbit monoclonal [EPR15934-50] to MTH1 - BSA and Azide free
Host species	Rabbit
Tested applications	**Suitable for:** WB, IHC-P, IP, ICC/IF, Flow Cyt
Species reactivity	**Reacts with:** Human
Immunogen	Recombinant fragment within Human MTH1 aa 50 to the C-terminus. The exact sequence is proprietary. Database link: P36639
Positive control	WB: HEK-293T, HAP1, HeLa, Jurkat and A549 cell lysates. IHC-P: Human thymus and squamous cell carcinoma of lung tissues. ICC/IF: Jurkat and A549 cells. Flow Cyt: Jurkat cells. IP: Jurkat whole cell lysate.
General notes	Ab246327 is the carrier-free version of ab200832. This format is designed for use in antibody labeling, including fluorochromes, metal isotopes, oligonucleotides, enzymes. Our carrier-free formats are supplied in a buffer free of BSA, sodium azide and glycerol for higher conjugation efficiency. Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with <1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold. ab246327 is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm. *Maxpar® is a trademark of Fluidigm Canada Inc.* 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 production For more information see here. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

Reproducibility is key to advancing scientific discovery and accelerating scientists' next breakthrough.

Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility.

We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications & species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise™ guarantee.

In preparation for this, we have started to update the applications & species that this product is Abpromise guaranteed for.

We are also updating the applications & species that this product has been "predicted to work with," however this information is not covered by our Abpromise guarantee.

Applications & species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.

Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, as well as customer reviews and Q&As.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C. Do Not Freeze.
Storage buffer	pH: 7.2 Constituent: PBS
Carrier free	Yes
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR15934-50
Isotype	IgG

Applications

Our Abpromise guarantee covers the use of **ab246327** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		Use at an assay dependent concentration. Detects a band of approximately 18 kDa (predicted molecular weight: 23 kDa).
IHC-P		Use at an assay dependent concentration. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Application	Abreviews	Notes
IP		Use at an assay dependent concentration.
ICC/IF		Use at an assay dependent concentration.
Flow Cyt		Use at an assay dependent concentration.

Target

Function
Antimutagenic. Acts as a sanitizing enzyme for oxidized nucleotide pools, thus suppressing cell dysfunction and death induced by oxidative stress. Hydrolyzes 8-oxo-dGTP, 8-oxo-dATP and 2-OH-dATP, thus preventing misincorporation of oxidized purine nucleoside triphosphates into DNA and subsequently preventing A:T to C:G and G:C to T:A transversions. Able to hydrolyze also the corresponding ribonucleotides, 2-OH-ATP, 8-oxo-GTP and 8-oxo-ATP. Does not play a role in U8 snoRNA decapping activity. Binds U8 snoRNA.

Tissue specificity
Widely expressed with highest expression in thymus, testis, embryo and proliferating blood lymphocytes.

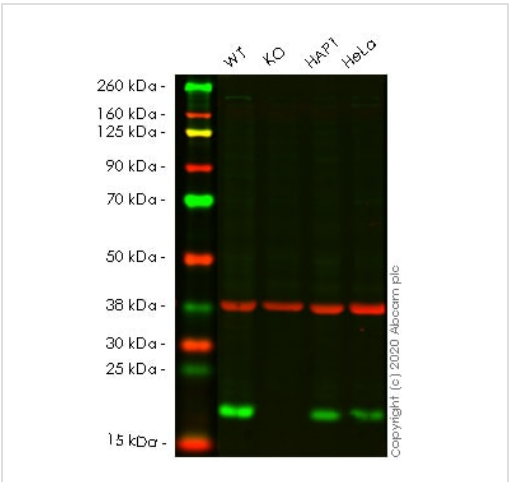
Sequence similarities
Belongs to the Nudix hydrolase family.
Contains 1 nudix hydrolase domain.

Developmental stage
In peripheral blood lymphocytes, expressed at much higher levels in proliferating cells than in resting cells.

Post-translational modifications
The N-terminus is blocked.

Cellular localization
Cytoplasm. Mitochondrion matrix and Cytoplasm. Mitochondrion matrix. Nucleus. Mostly present in cytoplasm. Variant Met-124 has decreased efficiency in translocation to mitochondria.

Images



Western blot - Anti-MTH1 antibody [EPR15934-50] - BSA and Azide free (ab246327)

All lanes : Anti-MTH1 antibody [EPR15934-50] (ab200832) at 1/5000 dilution

Lane 1 : Wild-type HEK-293T cell lysate
Lane 2 : NUDT1 knockout HEK-293T cell lysate
Lane 3 : HAP1 cell lysate
Lane 4 : HeLa cell lysate

Lysates/proteins at 20 µg per lane.

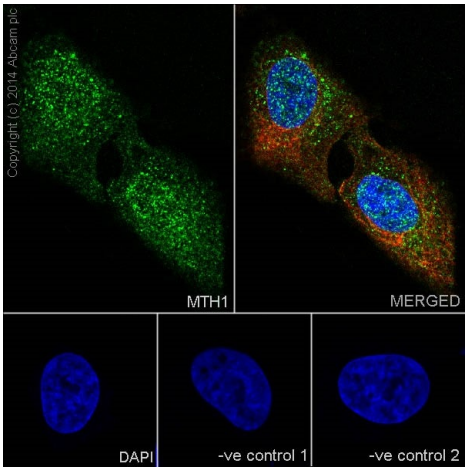
Performed under reducing conditions.

Predicted band size: 23 kDa
Observed band size: 18 kDa
why is the actual band size different from the predicted?

This data was developed using the same antibody clone in a different buffer formulation (ab200832).

Lanes 1- 4: Merged signal (red and green). Green - ab200832 observed at 18 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.

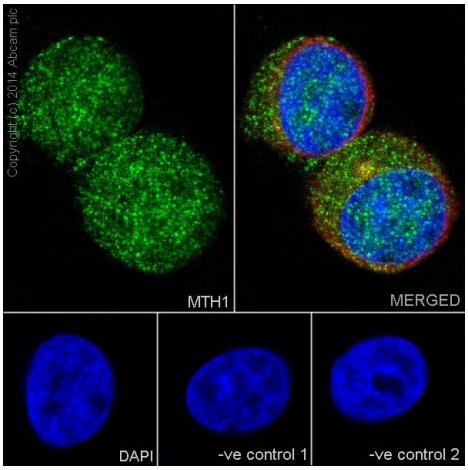
ab200832 was shown to react with MTH1 in wild-type HEK-293T cells in western blot. Loss of signal was observed when knockout cell line ab266400 (knockout cell lysate ab257565) was used. Wild-type HEK-293T and NUDT1 knockout HEK-293T cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab200832 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) overnight at 4°C at a 1 in 5000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.



Immunocytochemistry/ Immunofluorescence - Anti-MTH1 antibody [EPR15934-50] - BSA and Azide free (ab246327)

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized A549 (Human lung carcinoma) cells labeling MTH1 with ab200832 at 1/500 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/500 dilution (green). Cytoplasmic and nuclear staining on A549 cell line is observed. The nuclear counterstain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution (red).
The negative controls are as follows:-
-ve control 1: ab200832 at 1/500 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.
-ve control 2: ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/500 dilution.

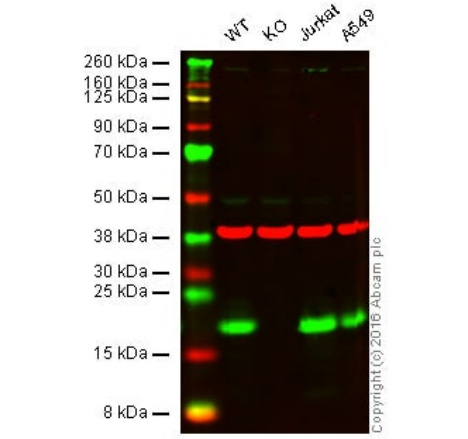
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab200832).



Immunocytochemistry/ Immunofluorescence - Anti-MTH1 antibody [EPR15934-50] - BSA and Azide free (ab246327)

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized Jurkat (Human T cell leukemia cells from peripheral blood) cells labeling MTH1 with ab200832 at 1/500 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/500 dilution (green). Cytoplasmic and nuclear staining on Jurkat cell line is observed. The nuclear counterstain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution (red).
The negative controls are as follows:-
-ve control 1: ab200832 at 1/500 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.
-ve control 2: ab7291 (anti-Tubulin mouse mAb) at 1/1000 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab200832).

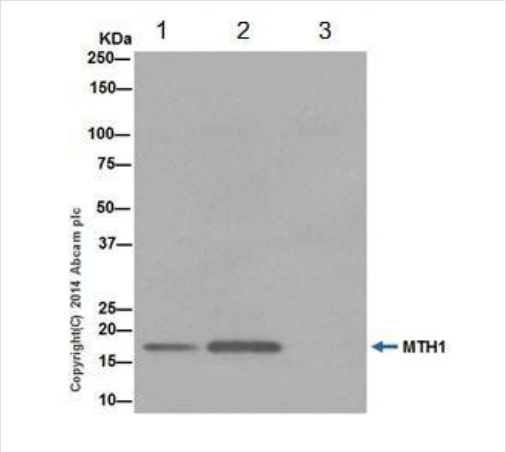


Western blot - Anti-MTH1 antibody [EPR15934-50] - BSA and Azide free (ab246327)

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: MTH1 knockout HAP1 cell lysate (20 µg)
Lane 3: Jurkat cell lysate (20 µg)
Lane 4: A549 cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab200832 observed at 18 kDa. Red - loading control, ab8245, observed at 37 kDa.

ab200832 was shown to specifically react with MTH1 when MTH1 knockout samples were used. Wild-type and MTH1 knockout samples were subjected to SDS-PAGE. ab200832 at a dilution of 1/5000 and ab8245 (loading control to GAPDH) diluted to 1/10,000 were incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10,000 dilution for 1 hour at room temperature before imaging.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab200832).



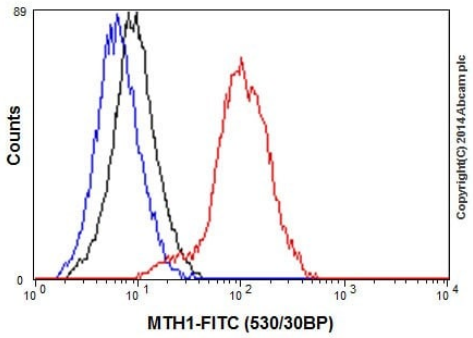
Immunoprecipitation - Anti-MTH1 antibody [EPR15934-50] - BSA and Azide free (ab246327)

MTH1 was immunoprecipitated from 1mg of Jurkat (Human T cell leukemia cells from peripheral blood) whole cell lysate with ab200832 at 1/50 dilution. Western blot was performed from the immunoprecipitate using ab200832 at 1/2000 dilution. Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG, was used as secondary antibody at 1/1500 dilution.

Lane 1: Jurkat whole cell lysate 10ug (Input).
Lane 2: ab200832 IP in Jurkat whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab200832 in Jurkat whole cell lysate.
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 seconds.

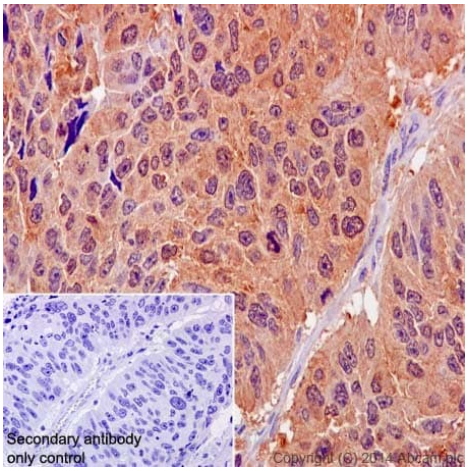
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab200832).



Flow Cytometry - Anti-MTH1 antibody [EPR15934-50] - BSA and Azide free (ab246327)

Flow cytometric analysis of 2% paraformaldehyde-fixed Jurkat (Human T cell leukemia cells from peripheral blood) cells labeling MTH1 with ab200832 at 1/150 dilution (red) compared with a rabbit monoclonal IgG isotype control (ab172730; black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (FITC) at 1/150 dilution was used as the secondary antibody.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab200832).



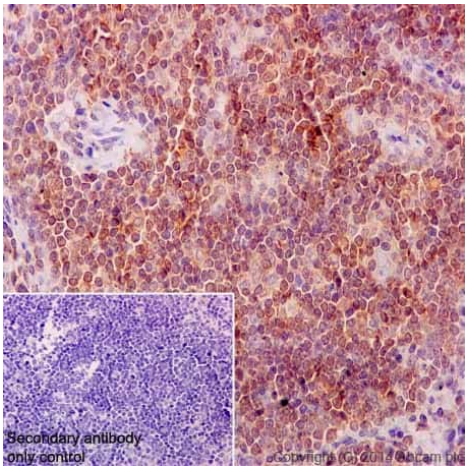
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MTH1 antibody [EPR15934-50] - BSA and Azide free (ab246327)

Immunohistochemical analysis of paraffin-embedded Human squamous cell carcinoma of lung tissue labeling MTH1 with ab200832 at 1/100 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Cytoplasmic and nuclear staining on Human squamous cell carcinoma of lung tissue 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) (ab97051) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab200832).

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



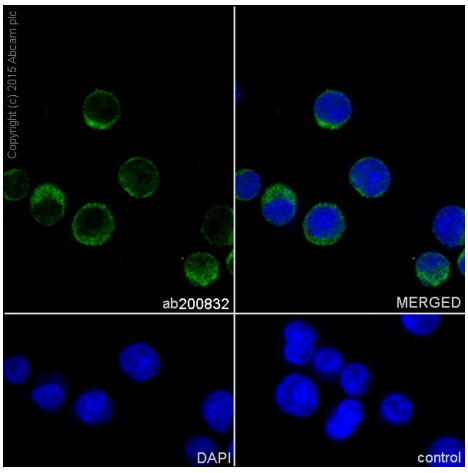
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MTH1 antibody [EPR15934-50] - BSA and Azide free (ab246327)

Immunohistochemical analysis of paraffin-embedded Human thymus tissue labeling MTH1 with ab200832 at 1/100 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Cytoplasmic and nuclear staining on Human thymus tissue 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) (ab97051) at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab200832).

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

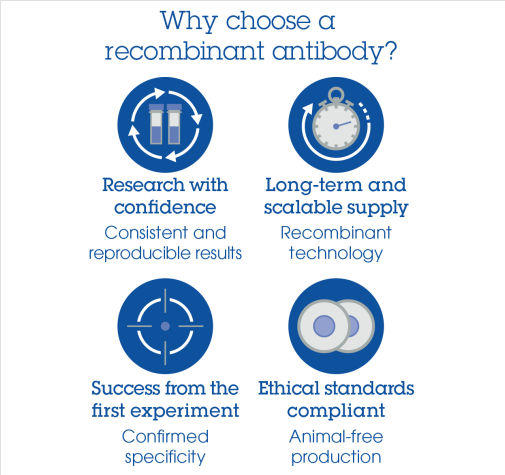


Immunocytochemistry/ Immunofluorescence - Anti-MTH1 antibody [EPR15934-50] - BSA and Azide free (ab246327)

Immunocytochemistry/Immunofluorescence analysis of Daudi (human Burkitt's lymphoma) labelling MTH-1 with purified ab200832 at 1/500. Cells were fixed with 100% methanol. An Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody (Ab150077). Nuclei counterstained with DAPI (blue).

Control: PBS only

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab200832).



Anti-MTH1 antibody [EPR15934-50] - BSA and Azide free (ab246327)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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