abcam

ab251186

Anti-NAT10 antibody [EPR18663] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR18663
Purification technique	Affinity purification Protein A
Concentration	0.975 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-

Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

ICC/IF

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

Species	Human, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information NAT10

Function

RNA cytidine acetyltransferase that catalyzes the formation of N(4)-acetylcytidine (ac4C) modification on mRNAs, 18S rRNA and tRNAs (PubMed:25411247, PubMed:25653167, PubMed:30449621, PubMed:35679869). Catalyzes ac4C modification of a broad range of mRNAs, enhancing mRNA stability and translation (PubMed:30449621, PubMed:35679869). mRNA ac4C modification is frequently present within wobble cytidine sites and promotes translation efficiency (PubMed:30449621). Mediates the formation of ac4C at position 1842 in 18S rRNA (PubMed:25411247). May also catalyze the formation of ac4C at position 1337 in 18S rRNA (By similarity). Required for early nucleolar cleavages of precursor rRNA at sites A0, A1 and A2 during 18S rRNA synthesis (PubMed:25411247, PubMed:25653167). Catalyzes the formation of ac4C in serine and leucine tRNAs (By similarity). Requires the tRNA-binding adapter protein THUMPD1 for full tRNA acetyltransferase activity but not for 18S rRNA acetylation (PubMed:25653167). In addition to RNA acetyltransferase activity, also able to acetylate lysine residues of proteins, such as histones, microtubules, p53/TP53 and MDM2, in vitro (PubMed:14592445, PubMed:17631499, PubMed:19303003, PubMed:26882543, PubMed:27993683, PubMed:30165671). The relevance of the protein lysine acetyltransferase activity is however unsure in vivo (PubMed:30449621). Activates telomerase activity by stimulating the transcription of TERT, and may also regulate telomerase function by affecting the balance of telomerase subunit assembly, disassembly, and localization (PubMed:14592445, PubMed:18082603). Involved in the regulation of centrosome duplication by acetylating CENATAC during mitosis, promoting SASS6 proteasome degradation (PubMed:31722219). Part of the small subunit (SSU) processome, first precursor of the small eukaryotic ribosomal subunit. During the assembly of the SSU processome in the nucleolus, many ribosome biogenesis factors, an RNA chaperone and ribosomal proteins associate with the nascent pre-rRNA and work in concert to generate RNA folding,

modifications, rearrangements and cleavage as well as targeted degradation of pre-ribosomal RNA by the RNA exosome (PubMed:34516797).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab251186 is the carrier-free version of ab194297.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

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.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	N-acetyltransferase 10 (NAT10) also called hALP is an enzyme with a molecular mass of about 116 kDa. The NAT10 protein is expressed ubiquitously across tissues and primarily found in the nucleolus of cells. It exhibits acetyltransferase activity facilitating the transfer of acetyl groups to specific substrates. This enzyme also has known RNA binding capacity and shows involvement in various cellular processes including cell cycle regulation and rRNA synthesis.
Biological function summary	This enzyme plays a significant role in cellular activities by modulating chromatin dynamics and influencing cell cycle progression through acetylation of histones and non-histone proteins. NAT10 participates in rRNA transcription enhancing ribosomal biogenesis and therefore supporting protein synthesis within the cell. It functions as part of larger chromatin-associated complexes indicating its involvement in broader cellular systems beyond individual enzymatic activity.
Pathways	The NAT10 protein operates within important molecular pathways such as the p53 signaling and DNA damage response pathways. It contributes toward cellular response mechanisms to damage and stress acting alongside other proteins like p53 and CREB-binding protein connecting regulation of cell cycle arrest and apoptosis with its enzymatic activity. NAT10 also modulates the acetylation dynamics in these pathways affecting cellular outcomes under stress conditions.
Associated diseases and disorders	Researchers have linked NAT10 to cancer and Hutchinson-Gilford progeria syndrome (HGPS). In cancer the relationship of NAT10 with p53 establishes its role in tumorigenesis where altered acetylation patterns may affect tumor suppression functions. In HGPS NAT10's impact on chromatin architecture connects it to lamin A dysfunction a hallmark of the disease. Its acetylation activity emerges as a critical factor influencing disease pathology making it a target for therapeutic exploration in these conditions.

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

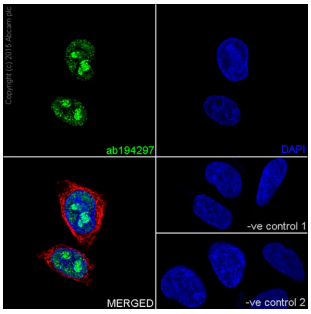
We do not recommend this combination. It is not covered by our product promise.

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.

11 product images



Immunocytochemistry/ Immunofluorescence - Anti-NAT10 antibody [EPR18663] - BSA and Azide free (ab251186)

NAT10 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-NAT10 antibody

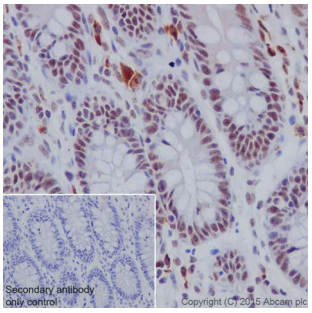
This data was developed using ab194297, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling NAT10 with ab194297 at 1/2000 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).

Confocal image showing nuclear staining on HeLa cell line.

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 1/1000 dilution (red).

The negative controls are as follows:-
-ve control 1: ab194297 at 1/2000 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 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 1/1000 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NAT10 antibody [EPR18663] - BSA and Azide free (ab251186)

NAT10 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NAT10 antibody

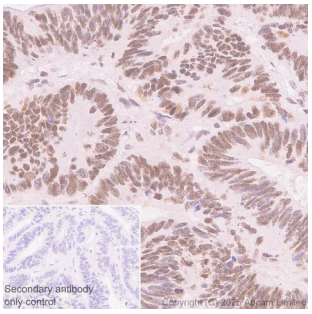
This data was developed using ab194297, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human colon tissue labeling NAT10 with ab194297 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Nucleus staining on Human colon 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.

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-NAT10 antibody [EPR18663] - BSA and Azide free (ab251186)

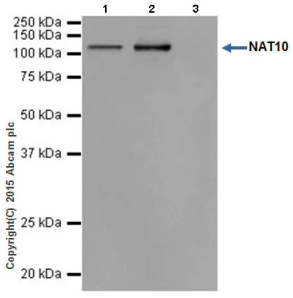
NAT10 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human colon cancer using rabbit Anti-NAT10 antibody

This data was developed using ab1942997 the same antibody clone in a different buffer formulation
Immunohistochemical analysis of paraffin-embedded human colon cancer tissue labeling NAT10 with ab194297 at 1/500 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Nuclear staining in human colon cancer.The section was incubated with ab194297 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument
Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) for 20 mins.



Immunoprecipitation - Anti-NAT10 antibody [EPR18663] - BSA and Azide free (ab251186)

This data was developed using ab194297, the same antibody clone in a different buffer formulation.
NAT10 was immunoprecipitated from 1mg of HeLa (Human epithelial cells from cervix adenocarcinoma) cell lysate with ab194297 at 1/80 dilution.

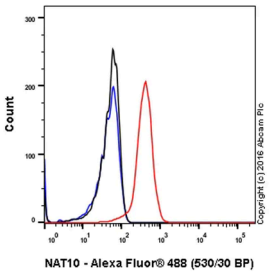
Lane 1: HeLa cell lysate 10ug (Input).
Lane 2: ab194297 IP in HeLa cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab194297 in HeLa cell lysate.

Western blot was performed from the immunoprecipitate using ab194297 at 1/1000 dilution. Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG, was used as secondary antibody at 1/1500.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 seconds.
All lanes:
Immunoprecipitation - Anti-NAT10 antibody [EPR18663] (ab194297)

Predicted band size: 115 kDa



Flow Cytometry (Intracellular) - Anti-NAT10 antibody [EPR18663] - BSA and Azide free (ab251186)

NAT10 Flow Cytometry (Intracellular) staining using rabbit Anti-NAT10 antibody

This data was developed using ab194297, the same antibody clone in a different buffer formulation.
Intracellular Flow Cytometry analysis of NIH/3T3 (mouse embryo) cells labelling NAT10 (red) with purified ab194297 at dilution of 1/600. The secondary antibody used was Alexa Fluor® 488 goat-anti-rabbit IgG (1/2000). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. Isotype control antibody used was Rabbit Monoclonal IgG (black). The blue line shows cells without incubation with primary antibody and secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NAT10 antibody [EPR18663] - BSA and Azide free (ab251186)

NAT10 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat colon using rabbit Anti-NAT10 antibody

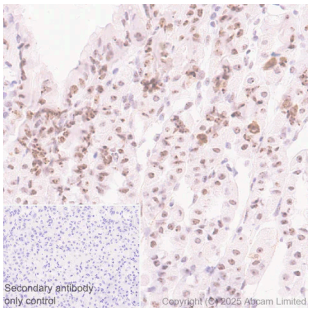
This data was developed using ab1942997, the same antibody clone in a different buffer formulation
Immunohistochemical analysis of paraffin-embedded rat colon tissue labeling NAT10 with ab194297 at 1/2000 dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Nuclear staining in rat colon.
The section was incubated with ab194297 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NAT10 antibody [EPR18663] - BSA and Azide free (ab251186)

NAT10 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse stomach using rabbit Anti-NAT10 antibody

This data was developed using ab1942997, the same antibody clone in a different buffer formulation.

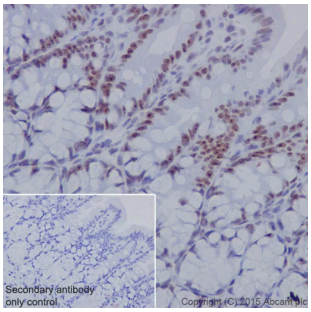
Immunohistochemical analysis of paraffin-embedded mouse stomach tissue labeling NAT10 with ab194297 at 1/2000 dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Nuclear staining in mouse stomach.
The section was incubated with ab194297 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NAT10 antibody [EPR18663] - BSA and Azide free (ab251186)

NAT10 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NAT10 antibody

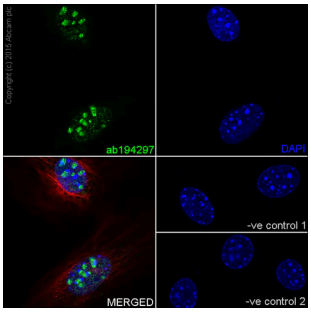
This data was developed using ab194297, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Rat colon tissue labeling NAT10 with ab194297 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Nucleus staining on rat colon 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.

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



Immunocytochemistry/ Immunofluorescence - Anti-NAT10 antibody [EPR18663] - BSA and Azide free (ab251186)

NAT10 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-NAT10 antibody

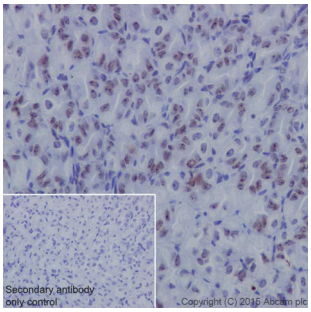
This data was developed using ab194297, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (Mouse embryo fibroblast cells) cells labeling NAT10 with ab194297 at 1/2000 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).

Confocal image showing nuclear staining on NIH/3T3 cell line.

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 1/1000 dilution (red).

The negative controls are as follows:-
-ve control 1: ab194297 at 1/2000 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/1000 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 1/1000 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NAT10 antibody [EPR18663] - BSA and Azide free (ab251186)

NAT10 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NAT10 antibody

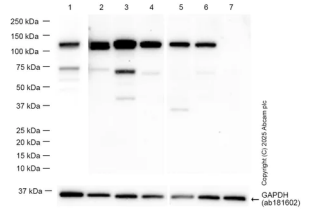
This data was developed using ab194297, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Mouse stomach tissue labeling NAT10 with ab194297 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Nucleus staining on mouse stomach 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.

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



Western blot - Anti-NAT10 antibody [EPR18663] - BSA and Azide free (ab251186)

NAT10 Western blot staining using rabbit Anti-NAT10 antibody

This data was developed using ab194297, the same antibody clone in a different buffer formulation.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/1000000 dilution.

Exposure time: Lane 1: 1 second; Lane 2-7: 40 seconds

Negative: kidney (PMID: 37349316).
All lanes:
Western blot - Anti-NAT10 antibody [EPR18663] (ab194297) at 1/1000 dilution

Lane 1:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HepG2 (Human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
Mouse spleen tissue lysate at 20 µg

Lane 4:
Mouse lung tissue lysate at 20 µg

Lane 5:
Rat spleen tissue lysate at 20 µg

Lane 6:
Rat lung tissue lysate at 20 µg

Lane 7:
Rat kidney tissue lysate at 20 µg

Secondary

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

Observed band size: 115 kDa

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