

NAT10 Antibody (N-Term)

Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP22316a

Product Information

ApplicationWB, FC, EPrimary AccessionQ9H0A0Other AccessionQ8K224

Reactivity Human, Mouse

Predicted Mouse
Host Rabbit
Clonality polyclonal
Isotype Rabbit IgG
Clone Names RB57638
Calculated MW 115730

Additional Information

Gene ID 55226

Other Names N-acetyltransferase 10, 2.3.1.-, NAT10, ALP, KIAA1709

Target/Specificity This NAT10 antibody is generated from a rabbit immunized with a KLH

conjugated synthetic peptide between 146-178 amino acids from the mouse

region of mouse NAT10.

Dilution WB~~1:2000 FC~~1:25 E~~Use at an assay dependent concentration.

Format Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide.

This antibody is purified through a protein A column, followed by peptide

affinity purification.

Storage Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store

at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions NAT10 Antibody (N-Term) is for research use only and not for use in

diagnostic or therapeutic procedures.

Protein Information

NAT10 {ECO:0000255 | HAMAP-Rule:MF 03211}

Function RNA cytidine acetyltransferase that catalyzes the formation of

N(4)-acetylcytidine (ac4C) modification on mRNAs, 18S rRNA and tRNAs

(PubMed: <u>25411247</u>, PubMed: <u>25653167</u>, PubMed: <u>30449621</u>,

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:<u>25411247</u>). 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:<u>25411247</u>, PubMed:<u>25653167</u>). 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).

Cellular Location

Nucleus, nucleolus {ECO:0000255 | HAMAP- Rule:MF_03211, ECO:0000269 | PubMed:12429849, ECO:0000269 | PubMed:14592445, ECO:0000269 | PubMed:19303003, ECO:0000269 | PubMed:24786082, ECO:0000269 | PubMed:25653167, ECO:0000269 | PubMed:30165671, ECO:0000269 | PubMed:34516797}. Midbody {ECO:0000255 | HAMAP-Rule:MF_03211, ECO:0000269 | PubMed:19303003} Note=Nucleolar in interphase and redistributes to the perichromosomal layer and to the midbody during telophase

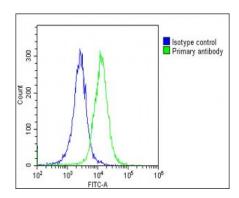
Background

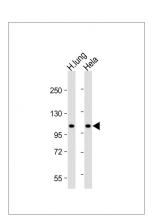
Has protein acetyltransferase activity in vitro. Can acetylate both histones and microtubules. Histone acetylation may regulate transcription and mitotic chromosome de-condensation. Activates telomerase activity by stimulating the transcription of TERT, and may also regulate telomerase function by affecting the balance of telomerase subunit assembly, disassembly, and localization. Acetylates alpha-tubulin, which may affect microtubule stability and cell division.

References

Nagase T.,et al.DNA Res. 7:347-355(2000).
Wiemann S.,et al.Genome Res. 11:422-435(2001).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Taylor T.D.,et al.Nature 440:497-500(2006).
Lv J.,et al.Biochem. Biophys. Res. Commun. 311:506-513(2003).

Images





Overlay histogram showing Hela cells stained with AP22316a(green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AP22316a, 1:25 dilution) for 60 min at 37°C. The secondary antibody used was Goat-Anti-Rabbit IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(OE188374) at 1/200 dilution for 40 min at 37°C. Isotype control antibody (blue line) was rabbit IgG1 (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.

All lanes: Anti-NAT10 Antibody (N-Term) at 1:2000 dilution Lane 1: Human lung lysate Lane 2: Hela whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size: 116 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

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