abcam

ab487

Anti-Nuclear Matrix Protein p84 antibody [5E10]

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human THOC1 aa 1-400. The exact immunogen used to generate this antibody is proprietary information. Database link Q96FV9
Carrier free	Yes
Clone number	5E10
Purification technique	Affinity purification Protein G
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human, Rat
Dilution info	-

Notes	-

Expected

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

IP

Tested

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

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

Expected

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

Flow Cyt

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells
Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Species	Rat
Dilution info	1 µg for 10^6 Cells

Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Expected

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

WB

Tested

Species	Mouse
Dilution info	0.3-2 µg/mL
Notes	-

Species	Human
Dilution info	0.3-2 µg/mL
Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	0.5-2 µg/mL
Notes	-

Expected

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

Target data

See full target information THOC1

Function	Component of the THO subcomplex of the TREX complex which is thought to couple mRNA transcription, processing and nuclear export, and which specifically associates with spliced mRNA and not with unspliced pre-mRNA (PubMed:15833825, PubMed:15998806, PubMed:17190602). Required for efficient export of polyadenylated RNA (PubMed:23222130). The THOC1-THOC2-THOC3 core complex alone is sufficient to bind export factor NXF1-NXT1 and promote ATPase activity of DDX39B/UAP56 (PubMed:33191911). TREX is recruited to spliced mRNAs by a transcription-independent mechanism, binds to mRNA upstream of the exon-junction complex (EJC) and is recruited in a splicing- and cap-dependent manner to a region near the 5' end of the mRNA where it functions in mRNA export to the cytoplasm via the TAP/NXF1 pathway (PubMed:15833825, PubMed:15998806, PubMed:17190602). Regulates transcriptional elongation of a subset of genes (PubMed:22144908). Involved in genome stability by preventing co-transcriptional R-loop formation (By similarity). May play a role in hair cell formation, hence may be involved in hearing (By similarity). Participates in an apoptotic pathway which is characterized by activation of caspase-6, increases in the expression of BAK1 and BCL2L1 and activation of NF-kappa-B. This pathway does not require p53/TP53, nor does the presence of p53/TP53 affect the efficiency of cell killing. Activates a G2/M cell cycle checkpoint prior to the onset of apoptosis. Apoptosis is inhibited by association with RB1. (Microbial infection) The TREX complex is essential for the export of Kaposi's sarcoma-associated herpesvirus (KSHV) intronless mRNAs and infectious virus production.

Storage

Shipped at conditions	Blue Ice
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

This product was changed from ascites to tissue culture supernatant on 2nd Feb 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

Supplementary info

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

Activity summary	Nuclear Matrix Protein p84 also known as 5E10 or simply p84 is a structural protein of the nuclear matrix. It has an approximate mass of 84 kDa. Researchers have identified it as an integral component of the nucleoskeleton providing key structural support within the cell nucleus. The expression of p84 is resourceful within various cell types especially in tissues with high rates of cellular proliferation and turnover.
Biological function summary	Nuclear Matrix Protein p84 assists in nuclear architecture maintenance and organization. It takes part in DNA replication processes and gene regulation by interacting with chromatin and transcription factors. Furthermore p84 contributes to the formation of the ribonucleoprotein complex facilitating RNA processing and transport. This involvement in multiple nuclear tasks positions it as a critical player in gene expression regulation mechanisms.
Pathways	Nuclear Matrix Protein p84 influences vital cellular activities such as the cell cycle and DNA repair. Its connections are apparent in the regulation of the p53 signaling pathway where it interacts with several regulatory proteins to monitor cell cycle progression and stress responses. p84's activity also aligns with the DNA damage response pathway highlighting its cooperation with checkpoint proteins like ATM and ATR that uphold genomic integrity during cellular stress conditions.
Associated diseases and disorders	Aberrant Nuclear Matrix Protein p84 expression aligns with cancer and autoimmune conditions. In certain cancers deregulation of p84 can result in altered cell cycle control and resistance to apoptosis. Its interaction with p53 and other tumor suppressor proteins directly influences cancer cell survival and proliferation. Additionally altered p84 expression has connections to lupus specifically affecting the autoantigen properties and leading to immune system malfunctions. Understanding these connections helps scientists investigate therapeutic targets for associated 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.

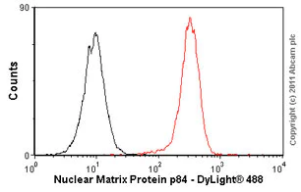
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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:
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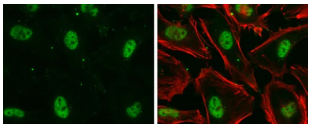
10 product images



Flow Cytometry - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487)

Nuclear Matrix Protein p84 Flow Cytometry staining using mouse Anti-Nuclear Matrix Protein p84 antibody

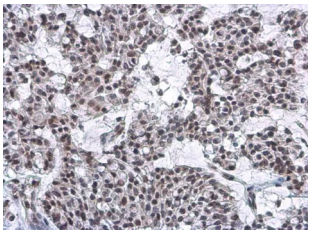
Overlay histogram showing HeLa cells stained with ab487 (red line). The cells were fixed with 100% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab487, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (ab91366, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HeLa cells fixed with 4% paraformaldehyde (10 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.
This image was generated using the ascites version of the product.



Immunocytochemistry/ Immunofluorescence - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487)

Nuclear Matrix Protein p84 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Nuclear Matrix Protein p84 antibody

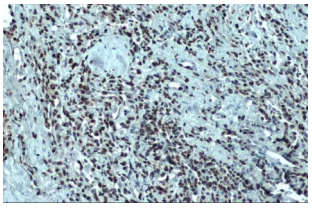
Immunocytochemical analysis of HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling Nuclear Matrix Protein p84 at the nucleus with ab487 at 1/500 dilution. Red: phalloidin, a cytoskeleton marker, diluted at 1:100.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487)

Nuclear Matrix Protein p84 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Nuclear Matrix Protein p84 antibody

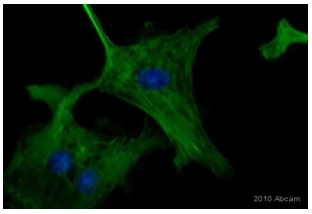
Immunohistochemical analysis of human breast carcinoma tissue labeling Nuclear Matrix Protein p84 at the nucleus with ab487 at 1/200 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487)

Nuclear Matrix Protein p84 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Nuclear Matrix Protein p84 antibody

Immunohistochemical analysis of human lung cancer tissue labeling Nuclear Matrix Protein p84 at the nucleus with ab487 at 1/100 dilution.

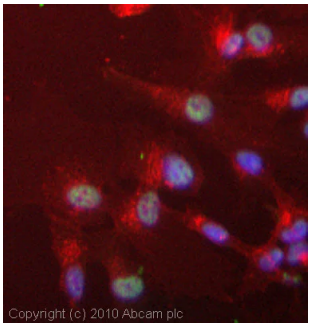


This image is a courtesy of an anonymous customer review

Immunocytochemistry/ Immunofluorescence - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487)

Nuclear Matrix Protein p84 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Nuclear Matrix Protein p84 antibody

ab487 staining Nuclear Matrix Protein p84 in Human stomach adenocarcinoma cell line (AGS) by Immunocytochemistry/ Immunofluorescence. The cells were formaldehyde fixed, permeabilised in 0.025% Triton X-100, TBS and then blocked using 5% serum for 1 hour at 23°C. Samples were then incubated with primary antibody at 2µg/ml for 1 hour at 23°C. The secondary antibody used was a goat anti-mouse IgG conjugated to Alexa Fluor® 350 (blue) used undiluted.p84 shows nuclear localization.
This image was generated using the ascites version of the product.

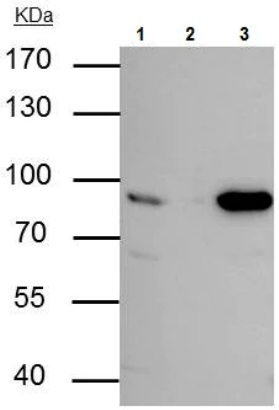


Immunocytochemistry/ Immunofluorescence - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487)

Nuclear Matrix Protein p84 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Nuclear Matrix Protein p84 antibody

ICC/IF image of ab487 stained HepG2 cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab487, 5µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

This image was generated using the ascites version of the product.



Immunoprecipitation - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487)

Nuclear Matrix Protein p84 was immunoprecipitated from HepG2 (human liver hepatocellular carcinoma cell line) whole cell lysate with 3 µg ab487. Western blot was performed from the immunoprecipitate using ab487. Anti-Rabbit IgG was used as a secondary reagent.
Lane 1: HepG2 whole cell lysate 30 µg.

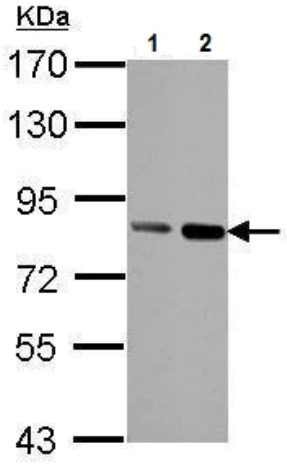
Lane 2: Control IP in HepG2 whole cell lysate with 3 µg of pre-immune mouse IgG.

Lane 3: ab487 IP in HepG2 whole cell lysate.

This image was generated using the ascites version of the product.

All lanes:
Immunoprecipitation - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487)

Predicted band size: 76 kDa



Western blot - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487)

7.5% SDS-PAGE gel.
This image was generated using the ascites version of the product.

All lanes:
Western blot - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487) at 1/1000 dilution

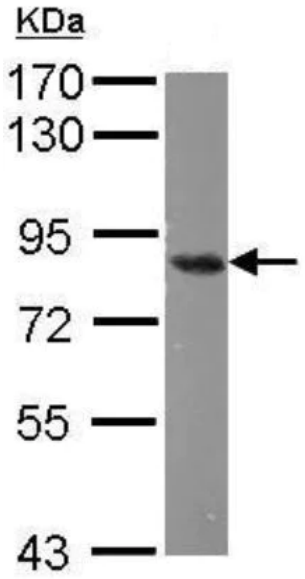
Lane 1:
HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 30 µg

Lane 2:
HeLa (human epithelial cell line from cervix adenocarcinoma) nuclear lysate at 30 µg

Secondary

All lanes:
HRP-conjugated anti-mouse IgG

Predicted band size: 76 kDa



Western blot - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487)

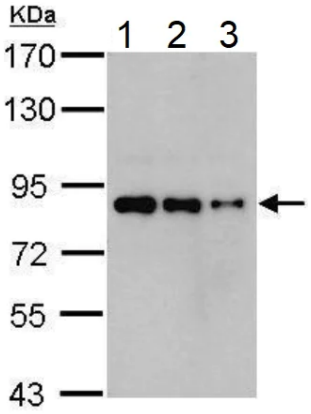
All lanes:
Western blot - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487) at 1/1000 dilution

All lanes:
Mouse cerebellum tissue lysates at 50 µg

Secondary

All lanes:
anti-mouse IgG HRP-conjugated antibody

Predicted band size: 47 kDa, 50 kDa, 68 kDa, 70 kDa, 71 kDa, 73 kDa, 74 kDa, 76 kDa, 77 kDa, 78 kDa, 80 kDa, 82 kDa, 88 kDa, 90 kDa



Western blot - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487)

All lanes:
Western blot - Anti-Nuclear Matrix Protein p84 antibody [5E10] (ab487) at 1/1000 dilution

Lane 1:
HEK-293T (Human epithelial cell line from embryonic kidney transformed with large T antigen) whole cell lysate at 20 µg

Lane 2:
HEK-293T whole cell lysate at 10 µg

Lane 3:
HEK-293T whole cell lysate at 5 µg

Secondary

All lanes:
anti-mouse IgG HRP-conjugated antibody

Predicted band size: 76 kDa

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