abcam

ab256124

Anti-Nucleophosmin antibody [NA24] (BSA and Azide free)

Recombinant

Key facts

Isotype	IgG1
Host species	Mouse
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	NA24
Purification technique	Affinity purification Protein A
Concentration	1.037 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500

Notes	-

Species	Mouse
Dilution info	1/500
Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

Expected

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

Protein Array

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	-
Notes	-

Species	Rat
Dilution info	-
Notes	-

Species	Human
Dilution info	1 µg/mL
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	1 µg/mL
Notes	Incubate with primary antibody for 15 minutes at room temperature. Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Target data

See full target information NPM1

Function	Involved in diverse cellular processes such as ribosome biogenesis, centrosome duplication, protein chaperoning, histone assembly, cell proliferation, and

regulation of tumor suppressors p53/TP53 and ARF. Binds ribosome presumably to drive ribosome nuclear export. Associated with nucleolar ribonucleoprotein structures and bind single-stranded nucleic acids. Acts as a chaperonin for the core histones H3, H2B and H4. Stimulates APEX1 endonuclease activity on apurinic/apyrimidinic (AP) double-stranded DNA but inhibits APEX1 endonuclease activity on AP single-stranded RNA. May exert a control of APEX1 endonuclease activity within nucleoli devoted to repair AP on rDNA and the removal of oxidized rRNA molecules. In concert with BRCA2, regulates centrosome duplication. Regulates centriole duplication: phosphorylation by PLK2 is able to trigger centriole replication. Negatively regulates the activation of EIF2AK2/PKR and suppresses apoptosis through inhibition of EIF2AK2/PKR autophosphorylation. Antagonizes the inhibitory effect of ATF5 on cell proliferation and relieves ATF5-induced G2/M blockade (PubMed:22528486). In complex with MYC enhances the transcription of MYC target genes (PubMed:25956029). May act as chaperonin or cotransporter in the nucleolar localization of transcription termination factor TTF1 (By similarity).

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

ab256124 is the carrier-free version of ab238029.

Want a custom formulation?

This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

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	Nucleophosmin also known as NPM1 or B23 is a multifunctional nucleolar phosphoprotein with a molecular weight of approximately 37 kDa. It is highly expressed in the nucleolus of many human cells and is involved in various cellular processes. NPM1 aids ribosome biogenesis intracellular transport of ribosomal components and regulation of the centrosome. Its nucleocytoplasmic shuttling ability is due to its N-terminal domain which plays an important role in binding to nucleic acids and other proteins. Apart from these functions NPM1 acts as a histone chaperone and is important for maintaining genomic integrity.
Biological function summary	One of the central roles of NPM1 is its involvement in the regulation of cell growth and proliferation. NPM1 forms a complex with other nucleolar proteins affecting ribosome subunit assembly and transport. This protein also participates in the control of the ARF/p53 pathway by sequestering p53-regulating proteins which are essential for cell cycle control and apoptosis. Its interactions with proteins such as nucleolin and nucleophosmin-like proteins allow NPM1 to perform its functions in organizing the nucleolus and regulating responses to stress signals.
Pathways	The NPM1 protein is integrally involved in key cellular pathways like the regulation of the cell cycle and apoptosis. It directly interacts with pathways such as the ribosome biogenesis pathway and the p53 pathway. NPM1 has connections with proteins like ARF and MDM2 which play roles in retinoblastoma protein (pRb) regulation and in the control of tumor-suppressor activities. These pathways under NPM1's influence are critical for maintaining cellular homeostasis and ensuring proper cell cycle checkpoints.
Associated diseases and disorders	NPM1 mutations are commonly observed in acute myeloid leukemia (AML) where they affect the normal function of the protein leading to leukemogenesis. NPM1 is also linked to tumorigenesis through its impact on the p53 tumor suppressor pathway. Specifically alterations in NPM1 can disrupt the balance of other related proteins like ALK and p53 influencing the onset and progression of leukemia. Understanding the roles of NPM1 in these contexts is essential for developing targeted therapies to treat AML and other related disorders effectively.

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.

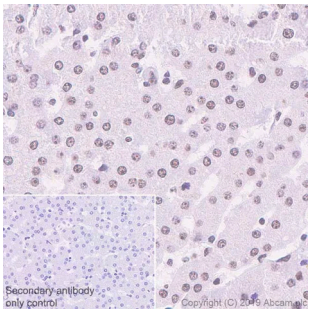
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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9 product images



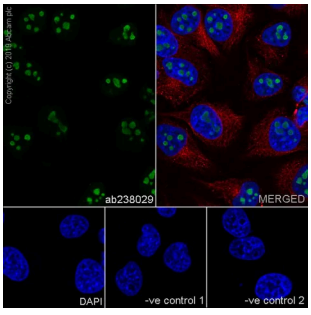
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nucleophosmin antibody [NA24] (BSA and Azide free) (ab256124)

Nucleophosmin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Nucleophosmin antibody

Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling Nucleophosmin with ab238029 at 1/100 dilution (4.76 µg/ml) followed by a ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879). Nuclear staining on human liver. The section was incubated with ab238029 overnight at 4 ☒. Counterstained with Hematoxylin.
Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879) .

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab238029).

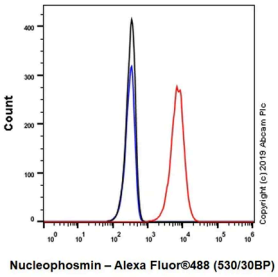


Immunocytochemistry/ Immunofluorescence - Anti-Nucleophosmin antibody [NA24] (BSA and Azide free) (ab256124)

Nucleophosmin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Nucleophosmin antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells labelling Nucleophosmin with ab238029 at 1/100 dilution, followed by ab150113 AlexaFluor®488 Goat anti-Mouse secondary antibody at 1/1000 dilution (Green). Confocal image showing nuclear staining in HeLa cells. ab179504 Anti-beta IV Tubulin antibody - Microtubule Marker was used to counterstain tubulin at 1/200 dilution, followed by ab150080 AlexaFluor®594 Goat anti-Rabbit secondary at 1/2000 diluton (Red). The Nuclear counterstain was DAPI (Blue).
The negative controls are as follows:
-ve control 1: ab238029 at 1/100 dilution, followed by ab150080 AlexaFluor®594 Goat anti-Rabbit secondary at 1/1000 dilution.
-ve control 2: ab179504 at 1/200 dilution, followed by ab150113 AlexaFluor®488 Goat anti-Mouse secondary 1/1000 dilution.

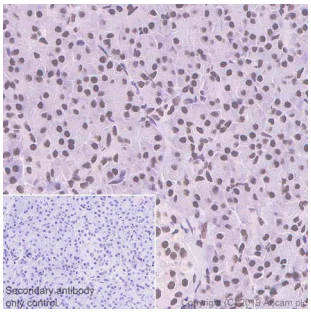
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab238029).



Flow Cytometry (Intracellular) - Anti-Nucleophosmin antibody [NA24] (BSA and Azide free) (ab256124)

Nucleophosmin Flow Cytometry (Intracellular) staining using mouse Anti-Nucleophosmin antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized HeLa (Human cervix adenocarcinoma epithelial cell) cells labelling Nucleophosmin with ab238029 at 1/500 dilution (Red) compared with a Mouse monoclonal IgG isotype control (Black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti-mouse IgG (Alexa Fluor® 488, ab150113) at 1/2000 dilution was used as the secondary antibody. Gated on viable cells.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab238029).



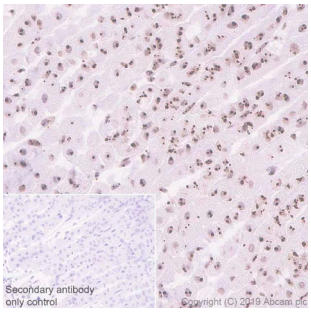
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nucleophosmin antibody [NA24] (BSA and Azide free) (ab256124)

Nucleophosmin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Nucleophosmin antibody

Immunohistochemical analysis of paraffin-embedded Human pancreas tissue labeling Nucleophosmin with ab238029 at 1/100 dilution (4.76 µg/ml) followed by a ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879) . Nuclear staining on human pancreas. The section was incubated with ab238029 overnight at 4 ☒. Counterstained with Hematoxylin.
Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879) .

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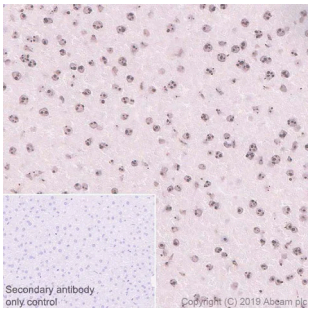
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nucleophosmin antibody [NA24] (BSA and Azide free) (ab256124)

Nucleophosmin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Nucleophosmin antibody

Immunohistochemical analysis of paraffin-embedded mouse stomach tissue labeling Nucleophosmin with ab238029 at 1/100 dilution (4.76 µg/ml) followed by a ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879). Nuclear staining on mouse stomach is observed. The section was incubated with ab238029 overnight at 4 ☒. Counterstained with Hematoxylin.
Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879) .

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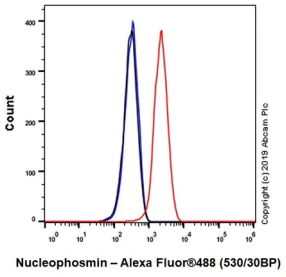
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nucleophosmin antibody [NA24] (BSA and Azide free) (ab256124)

Nucleophosmin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Nucleophosmin antibody

Immunohistochemical analysis of paraffin-embedded mouse liver tissue labeling Nucleophosmin with ab238029 at 1/100 dilution (4.76 µg/ml) followed by a ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879) . Nuclear staining on mouse liver is observed. The section was incubated with ab238029 overnight at 4 ☒. Counterstained with Hematoxylin.
Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879).

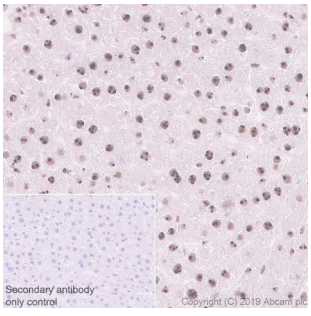
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Flow Cytometry (Intracellular) - Anti-Nucleophosmin antibody [NA24] (BSA and Azide free) (ab256124)

Nucleophosmin Flow Cytometry (Intracellular) staining using mouse Anti-Nucleophosmin antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized 3T3-L1 (Mouse embryonic fibroblast) cells labelling Nucleophosmin with ab238029 at 1/500 dilution (Red) compared with a Mouse monoclonal IgG isotype control (Black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti-mouse IgG (Alexa Fluor® 488, ab150113) at 1/2000 dilution was used as the secondary antibody. Gated on viable cells.
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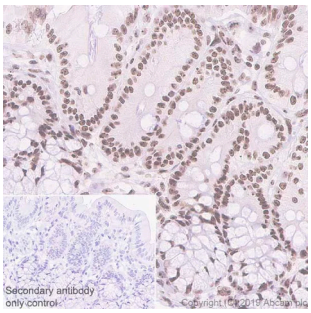
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nucleophosmin antibody [NA24] (BSA and Azide free) (ab256124)

Nucleophosmin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Nucleophosmin antibody

Immunohistochemical analysis of paraffin-embedded rat liver tissue labeling Nucleophosmin with ab238029 at 1/100 dilution (4.76 µg/ml) followed by a ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879). Nuclear staining on rat liver is observed. The section was incubated with ab238029 overnight at 4 ☒. Counterstained with Hematoxylin.
Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879) .

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab238029).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nucleophosmin antibody [NA24] (BSA and Azide free) (ab256124)

Nucleophosmin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Nucleophosmin antibody

Immunohistochemical analysis of paraffin-embedded rat colon tissue labeling Nucleophosmin with ab238029 at 1/100 dilution (4.76 µg/ml) followed by a ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879). Nuclear staining on rat colon is observed. The section was incubated with ab238029 overnight at 4 ☒. Counterstained with Hematoxylin.
Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Goat Anti-Mouse IgG H&L (HRP polymer) (ab214879) .

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab238029).

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