

Anti-Nucleophosmin antibody [FC82291] ab10530

★★★★★ [27 Abreviews](#) [101 References](#) [5 Images](#)

Overview

Product name	Anti-Nucleophosmin antibody [FC82291]
Description	Mouse monoclonal [FC82291] to Nucleophosmin
Host species	Mouse
Tested applications	Suitable for: ICC/IF, WB
Species reactivity	Reacts with: Mouse, Rat, Cow, Dog, Human, African green monkey, Chinese hamster
Immunogen	Full length native protein (purified) (Rat).
Epitope	The epitope recognized by the antibody lies within the 68 amino acids at the C terminus of B23.
Positive control	NIH3T3 whole cell lysate.
General notes	<p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>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, along with publications, customer reviews and Q&As</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer	<p>pH: 7.40</p> <p>Preservative: 0.097% Sodium azide</p> <p>Constituents: 0.0268% PBS, 1% BSA</p>
Purity	Protein G purified
Clonality	Monoclonal
Clone number	FC82291
Isotype	IgG1

Applications

Applications

The Abpromise guarantee

Our **Abpromise guarantee** covers the use of ab10530 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
ICC/IF	★★★★★ (5)	Use at an assay dependent concentration.
WB	★★★★★ (14)	Use a concentration of 2 - 4 µg/ml. Detects a band of approximately 37 kDa (predicted molecular weight: 33 kDa).

Target

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).

Involvement in disease

A chromosomal aberration involving NPM1 is found in a form of non-Hodgkin lymphoma. Translocation t(2;5)(p23;q35) with ALK. The resulting chimeric NPM1-ALK protein homodimerize and the kinase becomes constitutively activated.

A chromosomal aberration involving NPM1 is found in a form of acute promyelocytic leukemia. Translocation t(5;17)(q32;q11) with RARA.

A chromosomal aberration involving NPM1 is a cause of myelodysplastic syndrome (MDS). Translocation t(3;5)(q25.1;q34) with MLF1.

Defects in NPM1 are associated with acute myelogenous leukemia (AML). Mutations in exon 12 affecting the C-terminus of the protein are associated with an aberrant cytoplasmic location.

Sequence similarities

Belongs to the nucleoplasmin family.

Post-translational modifications

Acetylated at C-terminal lysine residues, thereby increasing affinity to histones.

ADP-ribosylated.

Phosphorylated at Ser-4 by PLK1 and PLK2. Phosphorylation at Ser-4 by PLK2 in S phase is required for centriole duplication and is sufficient to trigger centriole replication. Phosphorylation at Ser-4 by PLK1 takes place during mitosis. Phosphorylated by CDK2 at Ser-125 and Thr-199. Phosphorylation at Thr-199 may trigger initiation of centrosome duplication. Phosphorylated by CDK1 at Thr-199, Thr-219, Thr-234 and Thr-237 during cell mitosis. When these four sites are phosphorylated, RNA-binding activity seem to be abolished. May be phosphorylated at Ser-70 by NEK2. The Thr-199 phosphorylated form has higher affinity for ROCK2. CDK6 triggers Thr-199 phosphorylation when complexed to Kaposi's sarcoma herpesvirus (KSHV) V-cyclin, leading to viral reactivation by reducing viral LANA levels.

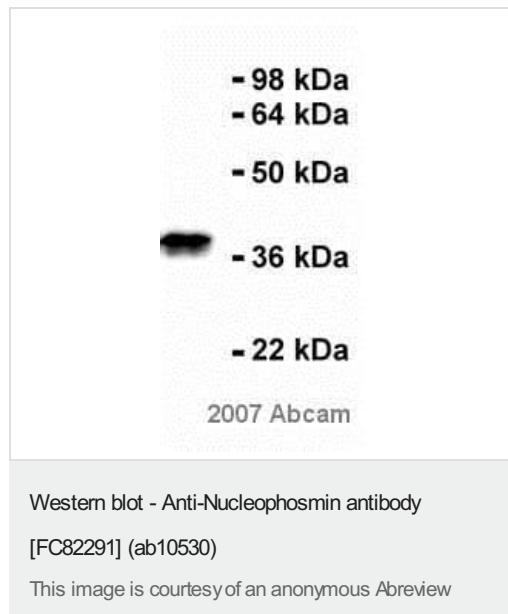
Sumoylated by ARF.

Cellular localization

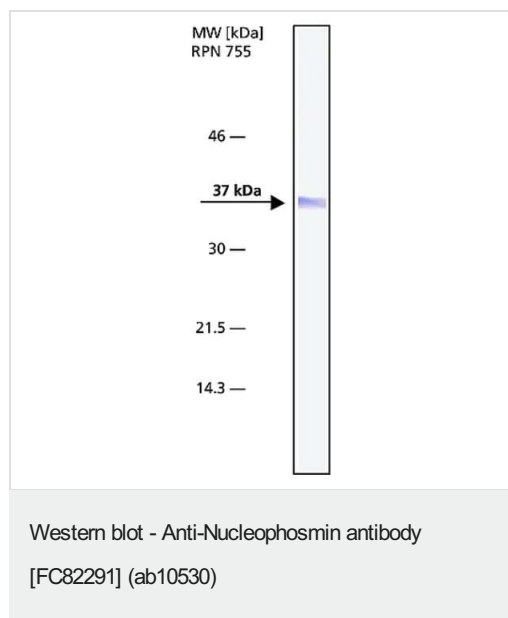
Nucleus, nucleolus. Nucleus, nucleoplasm. Cytoplasm, cytoskeleton, microtubule organizing

center, centrosome. Generally nucleolar, but is translocated to the nucleoplasm in case of serum starvation or treatment with anticancer drugs. Has been found in the cytoplasm in patients with primary acute myelogenous leukemia (AML), but not with secondary AML. Can shuttle between cytoplasm and nucleus. Co-localizes with the methylated form of RPS10 in the granular component (GC) region of the nucleolus. Colocalized with nucleolin and APEX1 in nucleoli. Isoform 1 of NEK2 is required for its localization to the centrosome during mitosis.

Images



Western blot image of ab10530 staining whole cell lysate of U2OS cells. The gel was blocked with 5% milk for 1 hour at 21°C. The primary antibody was diluted to 2 µg/ml and incubated for 12 hours at 4°C. A HRP conjugated goat anti-mouse antibody was used as the secondary.

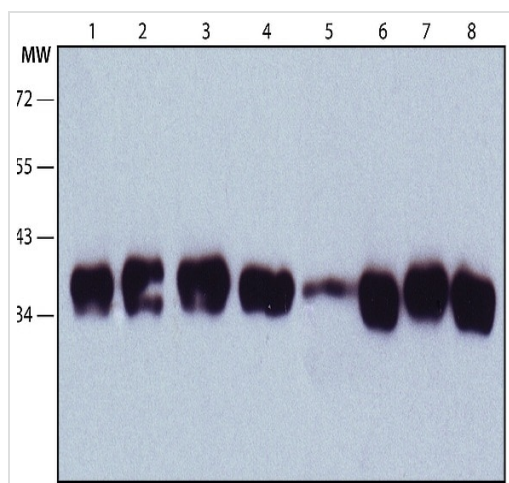


Anti-Nucleophosmin antibody [FC82291] (ab10530) at 0.2 µg/ml + 3T3 cell lysate

Secondary

Anti-Mouse IgG (Fab)

Predicted band size: 33 kDa



Western blot - Anti-Nucleophosmin antibody
[FC82291] (ab10530)

All lanes : Anti-Nucleophosmin antibody [FC82291] (ab10530) at 0.5 µg/ml

Lane 1 : HeLa cell lysate

Lane 2 : JURKAT cell lysate

Lane 3 : COS7 cell lysate

Lane 4 : NIH-3T3 cell lysate

Lane 5 : RAT2 cell lysate

Lane 6 : CHO cell lysate

Lane 7 : MDBK cell lysate

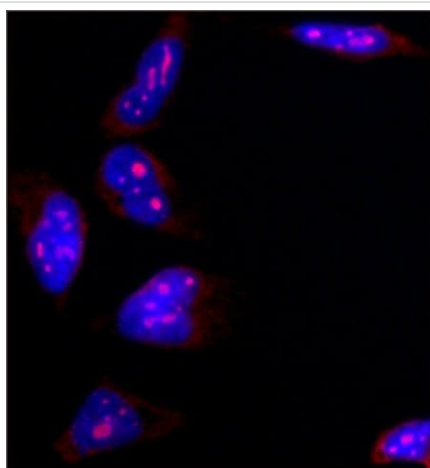
Lane 8 : MDCK cell lysate

Secondary

All lanes : Goat Anti-Mouse IgG-Peroxidase

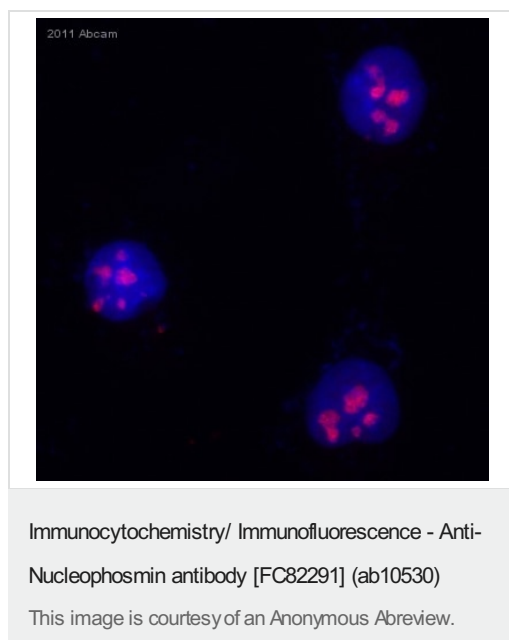
Predicted band size: 33 kDa

Cell line lysate separated on SDS-PAGE, probed with ab10530 (0.5 µg/mL)



Immunocytochemistry/ Immunofluorescence - Anti-Nucleophosmin antibody [FC82291] (ab10530)

Immunocytochemistry/ Immunofluorescence analysis of HeLa cells staining Nucleophosmin using ab10530 (dilution 1/500). Cells were fixed and permeabilized with methanol followed by methanol:acetone. Developed using Goat Anti-Mouse IgG, Cy3™ conjugate and counterstained with DAPI (blue) to stain nuclei.



ab10530 staining Nucleophosmin in immortalized Human trabecular meshwork cells by Immunocytochemistry/ Immunofluorescence. Cells were PFA-fixed and permeabilized in 0.5% Triton X-100 prior to blocking in 3% BSA for 45 minutes at room temperature. The primary antibody was diluted 1/1000 in PBS/0.3% BSA and incubated with the sample for 2 hours. The secondary antibody was Cy3[®]-conjugated Donkey anti-Mouse polyclonal, diluted 1/1000.

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